Installation calculation report

VANI1
Full

Company information

Name :	
Street :	-
City :	-
Zip code :	-
Phone number :	-
Web site :	-

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1 Project description

1.1 Project general settings

Installation standard	IEC60364
Calculation standard	TR50480
Circuit breaker standard	IEC 60947-2
Frequency	50 Hz

1.2 Settings for wiring device calculation

Maximal CSA	300 mm²

1.3 List of loads

1.3.1 Generic loads

Name	Sr (kVA)	Pr (kW)	Ir (A)	Cosφ	Nbr	Polarity	Non linear load	THDi 3 (%)
AA 1	3.53	3	5.09	0.85	1	3Ph+N	No	0
AA 2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 3	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 4	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 5	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 6	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 7	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 8	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 9	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 10	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 11	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 12	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 13	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 14	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 15	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 16	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 17	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 18	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 19	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 20	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 21	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 22	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 23	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 3A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 4A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 5A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 6A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 8A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 9A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 10A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 11A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 12A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 13A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 14A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 15A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 16A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 17A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 18A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 19A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0

AA 20A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 21A	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 22A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 23A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 1A	3.53	3	5.09	0.85	1	3Ph+N	No	0
AA 17 H	8.24	7	11.9	0.85	1	3Ph+N	No	0
AA 1 H	10	8.5	14.4	0.85	1	3Ph+N	No	0
AA 2 H	10	8.5	14.4	0.85	1	3Ph+N	No	0
AA 3 H	10	8.5	14.4	0.85	1	3Ph+N	No	0
AA 4 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 5 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 6 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 8 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 9 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 10 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 11 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 12 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 13 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 14 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 15 H	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 16 H	17.6	15	25.5	0.85	1	3Ph+N	No	0
AA 3-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 4-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 5-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 6-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 7-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 8-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 9-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 10-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 11-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 12-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 13-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 14-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 15-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 2-3B	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 1-3B	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 8-3A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7-3A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 6-3A	0.588	0.5	0.849	0.85	1	3Ph+N	No	0
AA 5-3A	0.588	0.5	0.849	0.85	1	3Ph+N	No	0
AA 4-3A	0.588	0.5	0.849	0.85	1	3Ph+N	No	0
AA 3-3A	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 5-3	0.7	0.7	1.01	1	1	3Ph+N	No	0
AA 4-3	0.2	0.2	0.866	1	1	1Ph+N	No	0
AA 2-3	0.2	0.2	0.866	1	1	1Ph+N	No	0
AA 3-3	0.2	0.2	0.866	1	1	1Ph+N	No	0
AA 8-3	0.2	0.2	0.866	1	1	1Ph+N	No	0
AA 1-3	1.5	1.5	2.17	1	1	3Ph+N	No	0
AA 1-3A	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 1-2A	3.53	3	5.09	0.85	1	3Ph+N	No	0
AA 2-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 3-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 4-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 5-2A	0.588	0.5	0.849	0.85	1	3Ph+N	No	0
AA 6-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7-2A	3.53	3	5.09	0.85	1	3Ph+N	No	0
AA 8-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 9-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 10-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 11-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0

AA 12-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 13-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 14-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 15-2A	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 2-3A	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 1-2	3.53	3	5.09	0.85	1	3Ph+N	No	0
AA 2-2	1.18	1	5.09	0.85	1	1Ph+N	No	0
AA 1-2B	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 2-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 3-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 4-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 5-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 6-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 8-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 9-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 10-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 11-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 12-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 13-2B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7-3	0.5	0.5	2.17	1	1	1Ph+N	No	0
AA 6-3	0.7	0.7	3.03	1	1	1Ph+N	No	0
AA 3-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 4-3B	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
AA 5-3B	1.18	1	1.7	0.85	1	3Ph+N	No	0
AA 6-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 7-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 8-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 10-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 9-3B	0.588	0.5	2.55	0.85	1	1Ph+N	No	0
AA 1-4	1.5	1.5	2.17	1	1	3Ph+N	No	0
AA 2-4	1.5	1.5	2.17	1	1	3Ph+N	No	0
AA 3-4	3	3	4.33	1	1	3Ph+N	No	0
AA 1-4A	1.5	1.5	2.17	1	1	3Ph+N	No	0
AA 2-4A	1.5	1.5	2.17	1	1	3Ph+N	No	0
AA 3-4A	3	3	4.33	1	1	3Ph+N	No	0
WRF1	1.18	1	1.7	0.85	1	3Ph+N	No	0
WRF2	1.18	1	1.7	0.85	1	3Ph+N	No	0
WRF3	1.18	1	1.7	0.85	1	3Ph+N	No	0
WRF4	1.18	1	1.7	0.85	1	3Ph+N	No	0
WRF5	14.1	12	20.4	0.85	1	3Ph+N	No	0
WRF6	14.1	12	20.4	0.85	1	3Ph+N	No	0
WRF7	14.1	12	20.4	0.85	1	3Ph+N	No	0
WRF8	14.1	12	20.4	0.85	1	3Ph+N	No	0
WRF9	23.5	20	34	0.85	1	3Ph+N	No	0
WRF10	23.5	20	34	0.85	1	3Ph+N	No	0
WRF11	23.5	20	34	0.85	1	3Ph+N	No	0
WRF12	23.5	20	34	0.85	1	3Ph+N	No	0
WRF13	23.5	20	34	0.85	1	3Ph+N	No	0
WRF14	23.5	20	34	0.85	1	3Ph+N	No	0
WRF15	23.5	20	34	0.85	1	3Ph+N	No	0
WRF16	23.5	20	34	0.85	1	3Ph+N	No	0
WRF17	14.1	12	20.4	0.85	1	3Ph+N	No	0
WRF18	21.2	18	30.6	0.85	1	3Ph+N	No	0

WRF19	1.76	1.5	2.55	0.85	1	3Ph+N	No	0
WRF20	2.35	2	3.4	0.85	1	3Ph+N	No	0
AHU3	8.24	7	11.9	0.85	1	3Ph+N	No	0
AHU5	7.06	6	10.2	0.85	1	3Ph+N	No	0
AHU6	17.6	15	25.5	0.85	1	3Ph+N	No	0
AHU4	5.88	5	8.49	0.85	1	3Ph+N	No	0
AHU 7	17.6	15	25.5	0.85	1	3Ph+N	No	0
VEN3	2.59	2.2	3.74	0.85	1	3Ph+N	No	0
VEN4	1.41	1.2	2.04	0.85	1	3Ph+N	No	0
VEN5	1.18	1	1.7	0.85	1	3Ph+N	No	0
VEN6	2.35	2	3.4	0.85	1	3Ph+N	No	0
PUMP1	1.76	1.5	2.55	0.85	1	3Ph+N	No	0
PUMP2	0.412	0.35	0.594	0.85	1	3Ph+N	No	0
PUMP3	2.94	2.5	4.25	0.85	1	3Ph+N	No	0
PUMP4	2.94	2.5	4.25	0.85	1	3Ph+N	No	0
WRF-20	4.12	3.5	5.94	0.85	1	3Ph+N	No	0
WRF-19	9.4	8	13.6	0.85	1	3Ph+N	No	0
Boil 1	0.294	0.25	0.425	0.85	1	3Ph+N	No	0
Boil 2	0.294	0.25	0.425	0.85	1	3Ph+N	No	0
Outdoor Lighting1	3.18	2.7	4.58	0.85	1	3Ph+N	No	0
Outdoor Lighting 2	0.824	0.7	1.19	0.85	1	3Ph+N	No	0
Outdoor Lighting 3	0.235	0.2	1.02	0.85	1	1Ph+N	No	0
Outdoor Lighting 4	0.353	0.3	1.53	0.85	1	1Ph+N	No	0
Outdoor Lighting 5	1.65	1.4	2.38	0.85	1	3Ph+N	No	0
Outdoor Lighting 6	2.94	2.5	4.25	0.85	1	3Ph+N	No	0

2 Installation general design

2.1 List of devices

2.1.1 MV/LV transformer

Name	Nbr	Range	Insulation	Sr (kVA)	ukrT (%)	Connection	U2 (V)	SEA	Rb (mΩ)
TA	1	Trihal	Dry-type	250	4	D	420	TN-S	10000

2.1.2 LV backup generator

Name	Nbr	Sr (kVA)	x"d (%)	x'd (%)	x0 (%)	U (V)	SEA	Rb (mΩ)
G 26	1	45	20	30	6	400	TN-S	10000

2.1.3 LV switchboards and busbar

Switchboard name	Range	Rating (A)	IP
MDB	No preference	0.00	Undefined
DB1	No preference	0.00	Undefined
DB2	No preference	0.00	Undefined
DB3	No preference	0.00	Undefined
DB4	No preference	0.00	Undefined
DB5	No preference	0.00	Undefined
DB6	No preference	0.00	Undefined
DB7	No preference	0.00	Undefined

Busbar name	Switchboard name	Ks	Polarity	SEA	Equipotential bounding
WC in	MDB	1	3Ph+N	TN-S	With
WC 1	DB1	1	3Ph+N	TN-S	Without
WC 3	DB3	1	3Ph+N	TN-S	Without
WC 2	DB2	1	3Ph+N	TN-S	Without
WC 4	DB 4	1	3Ph+N	TN-S	Without
WC 5	DB5	1	3Ph+N	TN-S	Without
WC 6	DB6	1	3Ph+N	TN-S	Without
WC 7	DB7	1	3Ph+N	TN-S	Without

2.1.4 Circuit breaker

Name	Nbr	Range - Designation	Rating (A)	Poles	Trip unit/Curve	RCD	RCD class
QA in	1	Compact NSX - NSX400F	400	4P4d	Micrologic 5.3 A		
QA 01	1	Acti9 C120 - C120N	125	4P4d	C		
QA 01 bis	1	Acti9 C120 - C120N	125	4P4d	C		
QA 1	1	Acti9 iC60 - iC60N	6	3P3d	C		
QA 2	1	Acti9 iC60 - iC60N	6	1P1d	C		
QA 3	1	Acti9 iC60 - iC60N	6	1P1d	C		
QA 4	1	Acti9 iC60 - iC60N	6	1P1d	C		
QA 5	1	Acti9 iC60 - iC60N	6	1P1d	C		
QA 6	1	Acti9 iC60 - iC60N	6	1P1d	C		
QA 7	1	Acti9 iC60 -	6	1P1d	C		

		iC60N			
QA 8	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 11	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 14	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 15	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 16	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 17	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 18	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 19	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 20	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 21	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 22	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 23	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 4A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 11A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 14A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 15A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 16A	1	Acti9 iC60 - iC60N	6	1P1d	C

QA 17A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 18A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 19A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 20A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 21A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 22A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 23A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1A	1	Acti9 iC60 - iC60N	6	4P4d	C
QA 17 H	1	Acti9 iC60 - iC60N	13	3P3d	C
QA 1 H	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 2 H	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 3 H	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 4 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 11 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 14 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 15 H	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 16 H	1	Acti9 iC60 - iC60N	32	3P3d	C
QA 3-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 4-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9-2	1	Acti9 iC60 -	6	1P1d	C

		iC60N			
QA 10-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 11-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 14-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 15-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 2-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8-3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6-3A	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 5-3A	1	Acti9 iC60 - iC60N	6	4P4d	C
QA 4-3A	1	Acti9 iC60 - iC60N	6	4P4d	C
QA 3-3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5-3	1	Acti9 iC60 - iC60L	6	4P4d	C
QA 4-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 2-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 3-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1-3	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 1-3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1-2A	1	Acti9 iC60 - iC60N	6	4P4d	C
QA 2-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 3-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 4-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5-2A	1	Acti9 iC60 - iC60N	1	3P3d	C
QA 6-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-2A	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 8-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10-2A	1	Acti9 iC60 - iC60N	6	1P1d	C

QA 11-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 14-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 15-2A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 2-3A	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1-2	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 2-2	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 1-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 2-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 3-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 4-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 8-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 11-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 12-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 13-2B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 6-3	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 03	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 03bis	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 02	1	Acti9 iC60 - iC60N	50	4P4d	C
QA 02bis	1	Acti9 iC60 - iC60N	50	4P4d	C
QA 3-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 4-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 5-3B	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 6-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 7-3B	1	Acti9 iC60 -	6	1P1d	C

		iC60N			
QA 8-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 10-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 9-3B	1	Acti9 iC60 - iC60N	6	1P1d	C
QA 04	1	Acti9 iC60 - iC60N	16	4P4d	C
QA 04bis	1	Acti9 iC60 - iC60N	13	4P4d	C
QA 1-4	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 2-4	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 3-4	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 1-4A	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 2-4A	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 3-4A	1	Acti9 iC60 - iC60N	6	3P3d	C
QA 05	1	Compact NSX - NSX400F	400	4P4d	
QA 05bis	1	Compact NSX - NSX400F	400	4P4d	
QF1	1	Acti9 iC60 - iC60N	6	3P3d	C
QF2	1	Acti9 iC60 - iC60N	6	3P3d	C
QF3	1	Acti9 iC60 - iC60N	6	3P3d	C
QF4	1	Acti9 iC60 - iC60N	6	3P3d	C
QF5	1	Acti9 iC60 - iC60N	25	3P3d	C
QF6	1	Acti9 iC60 - iC60N	25	3P3d	C
QF7	1	Acti9 iC60 - iC60N	25	3P3d	C
QF8	1	Acti9 iC60 - iC60N	25	3P3d	C
QF9	1	Acti9 iC60 - iC60N	40	3P3d	C
QF10	1	Acti9 iC60 - iC60N	40	3P3d	C
QF11	1	Acti9 iC60 - iC60N	40	3P3d	C
QF12	1	Acti9 iC60 - iC60N	40	3P3d	C
QF13	1	Acti9 iC60 - iC60N	40	3P3d	C
QF14	1	Acti9 iC60 - iC60N	40	3P3d	C
QF15	1	Acti9 iC60 - iC60N	40	3P3d	C
QF16	1	Acti9 iC60 - iC60N	40	3P3d	C
QF17	1	Acti9 iC60 -	25	3P3d	C

		iC60N					
QF18	1	Acti9 iC60 - iC60N	32	3P3d	C		
QF19	1	Acti9 iC60 - iC60N	3	3P3d	C		
QF20	1	Acti9 iC60 - iC60N	4	3P3d	C		
QF21	1	Acti9 iC60 - iC60N	13	3P3d	C		
QF22	1	Acti9 iC60 - iC60N	13	3P3d	C		
QF23	1	Acti9 iC60 - iC60N	32	3P3d	C		
QF24	1	Acti9 iC60 - iC60N	10	3P3d	C		
Qcap	1	Acti9 C120 - C120N	100	3P3d	C		
QA 06	1	Acti9 iC60 - iC60N	32	4P4d	C		
QA 06bis	1	Acti9 iC60 - iC60N	32	4P4d	C		
QF25	1	Acti9 iC60 - iC60N	32	4P4d	C		
QF26	1	Acti9 iC60 - iC60N	4	4P4d	C		
QF27	1	Acti9 iC60 - iC60N	3	4P4d	C		
QF28	1	Acti9 iC60 - iC60N	2	4P4d	C		
QF29	1	Acti9 iC60 - iC60N	4	4P4d	C		
QF 30	1	Acti9 iC60 - iC60N	3	4P4d	C		
QF 31	1	Acti9 iC60 - iC60N	1	4P4d	C		
QF 32	1	Acti9 iC60 - iC60N	6	4P4d	C		
QF 33	1	Acti9 iC60 - iC60N	6	4P4d	C		
QF37	1	Acti9 iC60 - iC60N	6	3P3d	C		
QF36	1	Acti9 iC60 - iC60N	16	3P3d	C		
QF 34	1	Acti9 iC60 - iC60N	0.5	4P4d	C		
QF 34 (1)	1	Acti9 iC60 - iC60N	0.5	4P4d	C		
QA Gen	1	Acti9 NG125 - NG125N	80	4P4d	B	Vigi NG125	A
QA 07	1	Acti9 iC60 - iC60N	10	4P4d	C		
QA 07bis	1	Acti9 iC60 - iC60N	10	4P4d	C		
QL 1	1	Acti9 iC60 - iC60N	6	3P3d	C		
QL 2	1	Acti9 iC60 - iC60L	6	3P3d	C		
QL 3	1	Acti9 iC60 - iC60L	6	1P1d	C		
QL 4	1	Acti9 iC60 - iC60L	6	1P1d	C		
QL 5	1	Acti9 iC60 - iC60N	6	3P3d	C		

QL 6	1	Acti9 iC60 - iC60N	6	3P3d	C

2.1.5 Cable schedule

Name	Nbr	Incomer	Feeder	Type	Insulation	L (m)	L1/L2/L3	N	PE/PEN
WDO1	1	QL 1	Outdoor Lighting 1	Multi-core	XLPE	96	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WDO6	1	QL 6	Outdoor Lighting 6	Multi-core	XLPE	70	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WDO5	1	QL 5	Outdoor Lighting 5	Multi-core	XLPE	60	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD in	1	TA	QA in	Multi-core	XLPE	60	1x185 Copper	1x185 Copper	1x95 Copper
WD5H 2	1	QA 5-3B	AA 5-3B	Multi-core	XLPE	58	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD10 H 1	1	QA 10-2B	AA 10-2B	Multi-core	XLPE	55	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD1H 2	1	QA 1-3B	AA 1-3B	Multi-core	XLPE	49	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WDO2	1	QL 2	Outdoor Lighting 2	Multi-core	XLPE	48	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WDO4	1	QL 4	Outdoor Lighting 4	Multi-core	XLPE	45	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WDO3	1	QL 3	Outdoor Lighting 3	Multi-core	XLPE	45	1x1.5 Copper	1x1.5 Copper	1x4 Copper
0 WL1	1	QA 1-3A	AA 1-3A	Multi-core	XLPE	45	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WS1	1	QA 1-3	AA 1-3	Multi-core	XLPE	45	1x1.5 Copper	1x1.5 Copper	1x4 Copper
0 WL2	1	QA 2-3A	AA 2-3A	Multi-core	XLPE	43	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WS2	1	QA 2-3	AA 2-3	Multi-core	XLPE	43	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WS3	1	QA 3-3	AA 3-3	Multi-core	XLPE	40	1x4 Copper	1x4 Copper	1x4 Copper
0 WL3	1	QA 3-3A	AA 3-3A	Multi-core	XLPE	40	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-7WL17	1	QA 17A	AA 17A	Multi-core	XLPE	40	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WS17	1	QA 17	AA 17	Multi-core	XLPE	40	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD12 H 1	1	QA 12-2B	AA 12-2B	Multi-core	XLPE	39	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS1	1	QA 1-2	AA 1-2	Multi-core	XLPE	38	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-3WL1	1	QA 1-2A	AA 1-2A	Multi-core	XLPE	38	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD2H 2	1	QA 2-3B	AA 2-3B	Multi-core	XLPE	38	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WL9	1	QA 9A	AA 9A	Multi-core	XLPE	38	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WS9	1	QA 9	AA 9	Multi-core	XLPE	38	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD10 H2	1	QA 10-3B	AA 10-3B	Multi-core	XLPE	37	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD3H	1	QA 3-3B	AA 3-3B	Multi-core	XLPE	37	1x1.5	1x1.5	1x4 Copper

2							Copper	Copper	
0 WS8	1	QA 8-3	AA 8-3	Multi-core	XLPE	37	1x2.5	1x2.5	1x4 Copper
							Copper	Copper	
0 WL8	1	QA 8-3A	AA 8-3A	Multi-core	XLPE	37	1x2.5	1x2.5	1x4 Copper
							Copper	Copper	
WD13	1	QA 13-	AA 13-	Multi-core	XLPE	36	1x1.5	1x1.5	1x4 Copper
H 1		2B	2B				Copper	Copper	
WD5H	1	QA 5 H	AA 5 H	Multi-core	XLPE	36	1x1.5	1x1.5	1x4 Copper
							Copper	Copper	
WD1H	1	QA 1 H	AA 1 H	Multi-core	XLPE	36	1x4 Copper	1x4 Copper	1x4 Copper
-	1	QA 19A	AA 19A	Multi-core	XLPE	36	1x1.5	1x1.5	1x4 Copper
7WL19							Copper	Copper	
-7WL3	1	QA 3A	AA 3A	Multi-core	XLPE	36	1x1.5	1x1.5	1x4 Copper
							Copper	Copper	
-	1	QA 19	AA 19	Multi-core	XLPE	36	1x2.5	1x2.5	1x4 Copper
7WS1							Copper	Copper	
9									
WD4H	1	QA 4-3B	AA 4-3B	Multi-core	XLPE	35	1x1.5	1x1.5	1x4 Copper
2							Copper	Copper	
-3WS2	1	QA 2-2	AA 2-2	Multi-core	XLPE	35	1x2.5	1x2.5	1x4 Copper
							Copper	Copper	
-3WL2	1	QA 2-2A	AA 2-2A	Multi-core	XLPE	35	1x1.5	1x1.5	1x4 Copper
							Copper	Copper	
WD2H	1	QA 2 H	AA 2 H	Multi-core	XLPE	35	1x4 Copper	1x4 Copper	1x4 Copper
-	1	QA 18A	AA 18A	Multi-core	XLPE	35	1x1.5	1x1.5	1x4 Copper
7WL18							Copper	Copper	
-	1	QA 10A	AA 10A	Multi-core	XLPE	35	1x1.5	1x1.5	1x4 Copper
7WL10							Copper	Copper	
-	1	QA 18	AA 18	Multi-core	XLPE	35	1x2.5	1x2.5	1x4 Copper
7WS1							Copper	Copper	
8									
-	1	QA 10	AA 10	Multi-core	XLPE	35	1x2.5	1x2.5	1x4 Copper
7WS1							Copper	Copper	
0									
-	1	QA 16A	AA 16A	Multi-core	XLPE	34	1x1.5	1x1.5	1x4 Copper
7WL16							Copper	Copper	
-	1	QA 16	AA 16	Multi-core	XLPE	34	1x2.5	1x2.5	1x4 Copper
7WS1							Copper	Copper	
6									
-	1	QA 11A	AA 11A	Multi-core	XLPE	32	1x1.5	1x1.5	1x4 Copper
7WL11							Copper	Copper	
-	1	QA 11	AA 11	Multi-core	XLPE	32	1x2.5	1x2.5	1x4 Copper
7WS1							Copper	Copper	
1									
WD6H	1	QA 6 H	AA 6 H	Multi-core	XLPE	31	1x1.5	1x1.5	1x4 Copper
							Copper	Copper	
-	1	QA 20A	AA 20A	Multi-core	XLPE	31	1x1.5	1x1.5	1x4 Copper
7WL20							Copper	Copper	
-	1	QA 20	AA 20	Multi-core	XLPE	31	1x2.5	1x2.5	1x4 Copper
7WS2							Copper	Copper	
0									
WD 05	1	QA 05	QA	Multi-core	XLPE	30	1x185	1x185	1x95
			05bis				Copper	Copper	Copper
WD11	1	QA 11-	AA 11-	Multi-core	XLPE	30	1x1.5	1x1.5	1x4 Copper
H 1		2B	2B				Copper	Copper	
WD14	1	QA 14 H	AA 14 H	Multi-core	XLPE	30	1x1.5	1x1.5	1x4 Copper
H							Copper	Copper	
WD4H	1	QA 4 H	AA 4 H	Multi-core	XLPE	30	1x1.5	1x1.5	1x4 Copper
							Copper	Copper	
WD3H	1	QA 3 H	AA 3 H	Multi-core	XLPE	30	1x4 Copper	1x4 Copper	1x4 Copper
WD17	1	QA 17 H	AA 17 H	Multi-core	XLPE	30	1x4 Copper	1x4 Copper	1x4 Copper
H									
-7WL1	1	QA 1A	AA 1A	Multi-core	XLPE	30	1x1.5	1x1.5	1x4 Copper

-7WS1	1	QA 1	AA 1	Multi-core	XLPE	30	Copper 1x2.5	Copper 1x2.5	1x4 Copper
0 WS4	1	QA 4-3	AA 4-3	Multi-core	XLPE	29	Copper 1x2.5	Copper 1x2.5	1x4 Copper
0 WL4	1	QA 4-3A	AA 4-3A	Multi-core	XLPE	29	Copper 1x1.5	Copper 1x1.5	1x4 Copper
WD15 H	1	QA 15 H	AA 15 H	Multi-core	XLPE	29	Copper 1x1.5	Copper 1x1.5	1x4 Copper
WD2H 1	1	QA 2-2B	AA 2-2B	Multi-core	XLPE	28	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WL15	1	QA 15A	AA 15A	Multi-core	XLPE	28	Copper 1x1.5	Copper 1x1.5	1x4 Copper
-7WL8	1	QA 8A	AA 8A	Multi-core	XLPE	28	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WS1 5	1	QA 15	AA 15	Multi-core	XLPE	28	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-7WS8	1	QA 8	AA 8	Multi-core	XLPE	28	Copper 1x2.5	Copper 1x2.5	1x4 Copper
WD9H	1	QA 9 H	AA 9 H	Multi-core	XLPE	27	Copper 1x1.5	Copper 1x1.5	1x4 Copper
WD7H	1	QA 7 H	AA 7 H	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WL14	1	QA 14A	AA 14A	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WL12	1	QA 12A	AA 12A	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
-7WL7	1	QA 7A	AA 7A	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
-7WL6	1	QA 6A	AA 6A	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
-7WL2	1	QA 2A	AA 2A	Multi-core	XLPE	26	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WS1 4	1	QA 14	AA 14	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
- 7WS1 2	1	QA 12	AA 12	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-7WS7	1	QA 7	AA 7	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-7WS6	1	QA 6	AA 6	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-7WS3	1	QA 3	AA 3	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-7WS2	1	QA 2	AA 2	Multi-core	XLPE	26	Copper 1x2.5	Copper 1x2.5	1x4 Copper
WD 06	1	QA 06	QA 06bis	Multi-core	XLPE	25	Copper 1x10	Copper 1x10	1x4 Copper
WD1H 1	1	QA 1-2B	AA 1-2B	Multi-core	XLPE	25	Copper 1x1.5	Copper 1x1.5	1x4 Copper
-3WL3	1	QA 3-2A	AA 3-2A	Multi-core	XLPE	25	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 3WS1 5	1	QA 15-2	AA 15-2	Multi-core	XLPE	25	Copper 1x2.5	Copper 1x2.5	1x4 Copper
-3WS3	1	QA 3-2	AA 3-2	Multi-core	XLPE	25	Copper 1x2.5	Copper 1x2.5	1x4 Copper
- 7WL13	1	QA 13A	AA 13A	Multi-core	XLPE	25	Copper 1x1.5	Copper 1x1.5	1x4 Copper
- 7WS1	1	QA 13	AA 13	Multi-core	XLPE	25	Copper 1x2.5	Copper 1x2.5	1x4 Copper

3									
0 WS5	1	QA 5-3	AA 5-3	Multi-core	XLPE	24	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WL5	1	QA 5-3A	AA 5-3A	Multi-core	XLPE	24	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD8H	1	QA 8 H	AA 8 H	Multi-core	XLPE	24	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD3H 1	1	QA 3-2B	AA 3-2B	Multi-core	XLPE	23	1x1.5 Copper	1x1.5 Copper	1x4 Copper
- 3WL15	1	QA 15-2A	AA 15-2A	Multi-core	XLPE	23	1x1.5 Copper	1x1.5 Copper	1x4 Copper
- 3WL14 3	1	QA 14-2A	AA 14-2A	Multi-core	XLPE	23	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WL4	1	QA 4-2A	AA 4-2A	Multi-core	XLPE	23	1x1.5 Copper	1x1.5 Copper	1x4 Copper
- 3WS1 4	1	QA 14-2	AA 14-2	Multi-core	XLPE	23	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-3WS4	1	QA 4-2	AA 4-2	Multi-core	XLPE	23	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD6H 2	1	QA 6-3B	AA 6-3B	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD5H 1	1	QA 5-2B	AA 5-2B	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WL7	1	QA 7-2A	AA 7-2A	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-WL5	1	QA 5-2A	AA 5-2A	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS7	1	QA 7-2	AA 7-2	Multi-core	XLPE	21	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-3WS5	1	QA 5-2	AA 5-2	Multi-core	XLPE	21	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-7WL5	1	QA 5A	AA 5A	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WL4	1	QA 4A	AA 4A	Multi-core	XLPE	21	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WS5	1	QA 5	AA 5	Multi-core	XLPE	21	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-7WS4	1	QA 4	AA 4	Multi-core	XLPE	21	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD 04	1	QA 04	QA 04bis	Multi-core	XLPE	20	1x6 Copper	1x6 Copper	1x4 Copper
WD12 H	1	QA 12 H	AA 12 H	Multi-core	XLPE	20	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR21	1	QF21	AHU3	Multi-core	XLPE	19	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD4H 1	1	QA 4-2B	AA 4-2B	Multi-core	XLPE	19	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD8H 2	1	QA 8-3B	AA 8-3B	Multi-core	XLPE	18	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD9H 1	1	QA 9-2B	AA 9-2B	Multi-core	XLPE	18	1x1.5 Copper	1x1.5 Copper	1x4 Copper
- 3WL13	1	QA 13-2A	AA 13-2A	Multi-core	XLPE	18	1x1.5 Copper	1x1.5 Copper	1x4 Copper
- 3WS1 3	1	QA 13-2	AA 13-2	Multi-core	XLPE	18	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD10 H	1	QA 10 H	AA 10 H	Multi-core	XLPE	18	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR22	1	QF22	AHU5	Multi-core	XLPE	17	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD11	1	QA 11 H	AA 11 H	Multi-core	XLPE	17	1x1.5	1x1.5	1x4 Copper

H							Copper	Copper	
WR 25	1	QF25	AHU 7	Multi-core	XLPE	16	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD7H 2	1	QA 7-3B	AA 7-3B	Multi-core	XLPE	16	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD8H 1	1	QA 8-2B	AA 8-2B	Multi-core	XLPE	16	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WL6	1	QA 6-2A	AA 6-2A	Multi-core	XLPE	16	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS6	1	QA 6-2	AA 6-2	Multi-core	XLPE	16	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR23	1	QF23	AHU6	Multi-core	XLPE	15	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR13	1	QF13	WRF13	Multi-core	XLPE	15	1x4 Copper	1x4 Copper	1x4 Copper
WR1	1	QF1	WRF1	Multi-core	XLPE	15	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD 03	1	QA 03	QA 03bis	Multi-core	XLPE	15	1x6 Copper	1x6 Copper	1x4 Copper
-3WL11	1	QA 11-2A	AA 11-2A	Multi-core	XLPE	15	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS11	1	QA 11-2	AA 11-2	Multi-core	XLPE	15	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR24	1	QF24	AHU4	Multi-core	XLPE	14	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR14	1	QF14	WRF14	Multi-core	XLPE	14	1x4 Copper	1x4 Copper	1x4 Copper
WR9	1	QF9	WRF9	Multi-core	XLPE	14	1x4 Copper	1x4 Copper	1x4 Copper
WR5	1	QF5	WRF5	Multi-core	XLPE	14	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR2	1	QF2	WRF2	Multi-core	XLPE	14	1x1.5 Copper	1x1.5 Copper	1x4 Copper
0 WS7	1	QA 7-3	AA 7-3	Multi-core	XLPE	14	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WL7	1	QA 7-3A	AA 7-3A	Multi-core	XLPE	14	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD13 H	1	QA 13 H	AA 13 H	Multi-core	XLPE	14	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WL23	1	QA 23A	AA 23A	Multi-core	XLPE	14	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WL22	1	QA 22A	AA 22A	Multi-core	XLPE	14	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WS23	1	QA 23	AA 23	Multi-core	XLPE	14	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-7WS22	1	QA 22	AA 22	Multi-core	XLPE	14	1x2.5 Copper	1x2.5 Copper	1x4 Copper
1WL-1A	1	QA 1-4A	AA 1-4A	Multi-core	XLPE	13	1x2.5 Copper	1x2.5 Copper	1x4 Copper
1WS-1	1	QA 1-4	AA 1-4	Multi-core	XLPE	13	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD7H 1	1	QA 7-2B	AA 7-2B	Multi-core	XLPE	13	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD6H 1	1	QA 6-2B	AA 6-2B	Multi-core	XLPE	13	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WL12	1	QA 12-2A	AA 12-2A	Multi-core	XLPE	13	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS12	1	QA 12-2	AA 12-2	Multi-core	XLPE	13	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR37	1	QF37	WRF-20	Multi-core	XLPE	12	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR 29	1	QF29	VEN6	Multi-core	XLPE	12	1x1.5	1x1.5	1x4 Copper

							Copper	Copper	
WR15	1	QF15	WRF15	Multi-core	XLPE	12	1x4 Copper	1x4 Copper	1x4 Copper
WR10	1	QF10	WRF10	Multi-core	XLPE	12	1x4 Copper	1x4 Copper	1x4 Copper
WR6	1	QF6	WRF6	Multi-core	XLPE	12	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR3	1	QF3	WRF3	Multi-core	XLPE	12	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WD9H2	1	QA 9-3B	AA 9-3B	Multi-core	XLPE	12	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WL8	1	QA 8-2A	AA 8-2A	Multi-core	XLPE	12	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS8	1	QA 8-2	AA 8-2	Multi-core	XLPE	12	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR36	1	QF36	WRF-19	Multi-core	XLPE	11	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR 28	1	QF28	VEN5	Multi-core	XLPE	11	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR20	1	QF20	WRF20	Multi-core	XLPE	11	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR18	1	QF18	WRF18	Multi-core	XLPE	11	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR16	1	QF16	WRF16	Multi-core	XLPE	11	1x4 Copper	1x4 Copper	1x4 Copper
WR7	1	QF7	WRF7	Multi-core	XLPE	11	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR4	1	QF4	WRF4	Multi-core	XLPE	11	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WL21	1	QA 21A	AA 21A	Multi-core	XLPE	11	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-7WS21	1	QA 21	AA 21	Multi-core	XLPE	11	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR 35	1	QF 34 (1)	Boil 2	Multi-core	XLPE	10	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR 34	1	QF 34	Boil 1	Multi-core	XLPE	10	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR 27	1	QF27	VEN4	Multi-core	XLPE	10	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR 26	1	QF26	VEN3	Multi-core	XLPE	10	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR19	1	QF19	WRF19	Multi-core	XLPE	10	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR11	1	QF11	WRF11	Multi-core	XLPE	10	1x4 Copper	1x4 Copper	1x4 Copper
WDM02	1	QA 02	QA 02bis	Multi-core	XLPE	10	1x6 Copper	1x6 Copper	1x6 Copper
WR17	1	QF17	WRF17	Multi-core	XLPE	9	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR8	1	QF8	WRF8	Multi-core	XLPE	9	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-3WL9	1	QA 9-2A	AA 9-2A	Multi-core	XLPE	9	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS9	1	QA 9-2	AA 9-2	Multi-core	XLPE	9	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WR31	1	QF 31	PUMP2	Multi-core	XLPE	8	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR12	1	QF12	WRF12	Multi-core	XLPE	8	1x4 Copper	1x4 Copper	1x4 Copper
1WL-3A	1	QA 3-4A	AA 3-4A	Multi-core	XLPE	8	1x2.5 Copper	1x2.5 Copper	1x4 Copper
1WS-3	1	QA 3-4	AA 3-4	Multi-core	XLPE	8	1x2.5 Copper	1x2.5 Copper	1x4 Copper
-3WL10	1	QA 10-2A	AA 10-2A	Multi-core	XLPE	8	1x1.5 Copper	1x1.5 Copper	1x4 Copper
-3WS1	1	QA 10-2	AA 10-2	Multi-core	XLPE	8	1x2.5 Copper	1x2.5 Copper	1x4 Copper

0									
WR33	1	QF 33	PUMP4	Multi-core	XLPE	7	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR32	1	QF 32	PUMP3	Multi-core	XLPE	7	1x1.5 Copper	1x1.5 Copper	1x4 Copper
WR30	1	QF 30	PUMP1	Multi-core	XLPE	7	1x1.5 Copper	1x1.5 Copper	1x4 Copper
1WL-2A	1	QA 2-4A	AA 2-4A	Multi-core	XLPE	7	1x2.5 Copper	1x2.5 Copper	1x4 Copper
1WS-2	1	QA 2-4	AA 2-4	Multi-core	XLPE	7	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WS6	1	QA 6-3	AA 6-3	Multi-core	XLPE	7	1x2.5 Copper	1x2.5 Copper	1x4 Copper
0 WL6	1	QA 6-3A	AA 6-3A	Multi-core	XLPE	7	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD 07	1	QA 07	QA 07bis	Multi-core	XLPE	5	1x6 Copper	1x6 Copper	1x4 Copper
WD gen	1	G 26	QA Gen	Multi-core	XLPE	5	1x16 Copper	1x16 Copper	1x16 Copper
WD cap	1	Qcap	CA	Multi-core	XLPE	5	1x16 Copper		1x16 Copper
WD16 H	1	QA 16 H	AA 16 H	Multi-core	XLPE	5	1x2.5 Copper	1x2.5 Copper	1x4 Copper
WD 0	1	QA 01	QA 01 bis	Multi-core	XLPE	5	1x25 Copper	1x25 Copper	1x16 Copper

2.1.6 MV Cable

Name	Nbr	Designation	CSA (mm²)	Icc (A)	In (A)	Un (kV)
MVWD 0	1	NA	1 x 400 Al	35.4	558	12

3 Calculation notes

3.1 Source circuits

3.1.1 Circuit Source 0

MV power supply	W 0
Max. upstream short circuit power	500 MVA
Min. upstream short circuit power	250 MVA
MV Cable	**MVWD 0**
Parameters	
Length	10 m
Type of cable	Single core
Ib	14 A
Nb of conductor per phase	1
Cross section area	1 x 400 Al mm²
Core	Aluminium
Short circuit withstand	35.4 kA
Assigned voltage	10 kV
Insulation voltage	12 kV

MV/LV transformer	TA
Range	Trihal
Technology	Dry-type
Rated power	250 kVA
ukrT	4 %
Type of losses	Normal
PkrT	3.1 kW
System earthing arrangement	TN-S
MV Connection	D
LV Connection	yn
No load secondary voltage Ur0	420V
Ur LV	400V
Rb (neutral grounding)	NA
Ra (mass grounding)	NA
Sizing information	UkrT and PkrT calculated by system
Cable	**WD in**
Parameters	
Length	60 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	361 A
Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1

Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x185 mm²
Core	Copper
Iz under real conditions	456 A
Selected neutral	
Cross section area	1x185 mm²
Core	Copper
Iz under real conditions	456 A
Selected PE	
Cross section area	1x95 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	8.89	7.70	8.89	5.11	4.72	5.90	0.00
Operating mode backup							
(kA)	8.89	7.70	8.89	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	8.89	7.70	8.89	5.11	4.72	5.90	0.00

Circuit breaker	**QA in**
Ib	361 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Compact NSX
Designation	NSX400F
Circuit breaker rating	400 A
Breaking capacity	36 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	Micrologic 5.3 A
Trip unit rating	400 A
Long delay settings	
Ir	361 A
Tr	16 s
Short delay settings	
Isd current	3610 A
Tsd	0 s
Instantaneous tripping	
Ii current	4800 A

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	

NA	Discrimination can't be determinated : no upstream Lv Breaker

Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	353.059	343.185	330.162	19.9
Operating mode backup				
(A)	0.000	0.000	0.000	0
Synthesis for all operating mode				
(A)	353.059	343.185	330.162	19.9

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.415	1.415
ΔU_{L1L2} (%)	1.634	1.634
ΔU_{L2L3} (%)	1.634	1.634
ΔU_{L3L1} (%)	1.634	1.634
ΔU_{L1N} (%)	1.415	1.415
ΔU_{L2N} (%)	1.415	1.415
ΔU_{L3N} (%)	1.415	1.415
Operating mode backup		
ΔU_{3L} (%)	0.000	0.000
ΔU_{L1L2} (%)	0.000	0.000
ΔU_{L2L3} (%)	0.000	0.000
ΔU_{L3L1} (%)	0.000	0.000
ΔU_{L1N} (%)	0.000	0.000
ΔU_{L2N} (%)	0.000	0.000
ΔU_{L3N} (%)	0.000	0.000

3.2 Generator circuits

3.2.1 Circuit Source 26

LV generator	G 26
Rated power	45 kVA
Subtransient reactance x”d	20 %
Transient reactance x’d	30 %
Zero sequence reactance x0	6 %
System earthing arrangement	TN-S
Ur	400 V
Rb (neutral grounding)	NA
Ra (mass grounding)	NA
Cable	**WD gen**

Parameters	
Length	5 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	65 A
Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x16 mm²
Core	Copper
Iz under real conditions	100 A
Selected neutral	
Cross section area	1x16 mm²
Core	Copper
Iz under real conditions	100 A
Selected PE	
Cross section area	1x16 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	0.36	0.31	0.32	NA	NA	NA	NA
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00

Circuit breaker	QA Gen
Ib	65 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 NG125
Designation	NG125N
Circuit breaker rating	80 A

Breaking capacity	25 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	B
Trip unit rating	80 A
Long delay settings	
Ir	80 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	
NA	Discrimination can't be determinated : no upstream Lv Breaker
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

RCD designation	**Vigi NG125**
Class	A
IΔn	3000 mA
Break Time	0.3 s
Δt	0 s
Discrimination	NA
Normative required break time	[0.00 ; 5.00] s
Normative required sensitivity	[0.03 ; 62.12] mA

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	
NA	Discrimination not analyzed
Operating mode backup	
NA	Discrimination not analyzed

Design current				
	IL1	**IL2**	**IL3**	**IN**
Operating mode Normal				
(A)	0.000	0.000	0.000	0

Operating mode backup				
(A)	23.977	50.223	43.254	23.5

Synthesis for all operating mode				
(A)	23.977	50.223	43.254	23.5

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	0.000	0.000
ΔU_{L1L2} (%)	0.000	0.000
ΔU_{L2L3} (%)	0.000	0.000
ΔU_{L3L1} (%)	0.000	0.000
ΔU_{L1N} (%)	0.000	0.000
ΔU_{L2N} (%)	0.000	0.000
ΔU_{L3N} (%)	0.000	0.000
Operating mode backup		
ΔU_{3L} (%)	0.196	0.196
ΔU_{L1L2} (%)	0.222	0.222
ΔU_{L2L3} (%)	0.219	0.219
ΔU_{L3L1} (%)	0.223	0.223
ΔU_{L1N} (%)	0.196	0.196
ΔU_{L2N} (%)	0.189	0.189
ΔU_{L3N} (%)	0.190	0.190

3.3 Capacitor bank circuits

3.3.1 Circuit Capacitors

Circuit breaker	Qcap
Ib	72.2 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 C120
Designation	C120N
Circuit breaker rating	100 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	100 A
Long delay settings	
Ir	100 A
Tr	NA
Short delay settings	
Isd current	850 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	No Discrimination

Cable	WD cap
Parameters	
Length	5 m
Max length	5 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE

Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	72 A
Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x16 mm²
Core	Copper
Iz under real conditions	100 A
Selected PE	
Cross section area	1x16 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	7.21	6.24	0.00	NA	NA	NA	NA
Operating mode backup							
(kA)	0.36	0.31	0.00	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	7.21	6.24	0.00	0.00	0.00	0.00	0.00

LV capacitor bank	**CA**
Target P.F.	0.928
Downstream reactive power to correct	41.4 kvar
Upstream reactive power to correct	5 kvar
Range of the capacitor bank	VarSet
Qr of the capacitor bank	50 kvar
Step	2x6,25+12,5+25
Accord	N/A
U	400 V
Frequency	50 Hz
Pollution Gh/Sn	0 %
Type of correction	Classic
P.F. after correction	0.933

Design current				
	IL1	**IL2**	**IL3**	**IN**
Operating mode Normal				
(A)	72.169	72.169	72.169	0

Operating mode backup				
(A)	72.169	72.169	72.169	0

Synthesis for all operating mode				
(A)	72.169	72.169	72.169	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.428	0.013
ΔU_{L1L2} (%)	1.649	0.014
ΔU_{L2L3} (%)	1.649	0.014
ΔU_{L3L1} (%)	1.649	0.014
ΔU_{L1N} (%)	1.415	0.000
ΔU_{L2N} (%)	1.415	0.000
ΔU_{L3N} (%)	1.415	0.000
Operating mode backup		
ΔU_{3L} (%)	0.208	0.013
ΔU_{L1L2} (%)	0.237	0.014
ΔU_{L2L3} (%)	0.233	0.014
ΔU_{L3L1} (%)	0.237	0.014
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

3.4 Feeder circuits

3.4.1 Circuit Feeder circuit 1

Circuit breaker	QA 01
Ib	116 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 C120
Designation	C120N
Circuit breaker rating	125 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	125 A
Long delay settings	
Ir	125 A
Tr	NA
Short delay settings	
Isd current	1062 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination

Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	No Discrimination

Cable	WD 0
Parameters	
Length	5 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	116 A
Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x25 mm²
Core	Copper
Iz under real conditions	127 A
Selected neutral	
Cross section area	1x25 mm²
Core	Copper
Iz under real conditions	127 A
Selected PE	
Cross section area	1x16 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	7.21	6.24	6.01	4.87	4.33	5.01	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00

Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.28	0.28	0.00

Circuit breaker	QA 01 bis
Ib	116 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 C120
Designation	C120N
Circuit breaker rating	125 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	125 A
Long delay settings	
Ir	125 A
Tr	NA
Short delay settings	
Isd current	1062 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 C120N C 125 A / 4P4d	No Discrimination
Operating mode backup	
QA 01 C120N C 125 A / 4P4d	No Discrimination

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	115.640	83.546	85.074	31.4
Operating mode backup				
(A)	5.094	19.868	21.396	15.6

Synthesis for all operating mode

(A)	115.640	83.546	85.074	31.4

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.628	0.212
ΔU_{L1L2} (%)	1.845	0.211
ΔU_{L2L3} (%)	1.813	0.179
ΔU_{L3L1} (%)	1.847	0.213
ΔU_{L1N} (%)	1.685	0.270
ΔU_{L2N} (%)	1.626	0.211
ΔU_{L3N} (%)	1.629	0.214
Operating mode backup		
ΔU_{3L} (%)	0.235	0.039
ΔU_{L1L2} (%)	0.249	0.026
ΔU_{L2L3} (%)	0.263	0.044
ΔU_{L3L1} (%)	0.251	0.028
ΔU_{L1N} (%)	0.234	0.038
ΔU_{L2N} (%)	0.254	0.065
ΔU_{L3N} (%)	0.258	0.068

3.4.2 Circuit Feeder circuit 3

Circuit breaker	QA 03
Ib	13.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	320 A

Cable	WD 03
Parameters	
Length	15 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	14 A

Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected neutral	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	7.21	6.24	6.01	2.29	1.48	1.30	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.27	0.00
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.28	0.27	0.00

Circuit breaker	**QA 03bis**
Ib	13.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA

Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit

Operating mode Normal	
QA 03 iC60N C 16 A / 4P4d	No Discrimination

Operating mode backup	
QA 03 iC60N C 16 A / 4P4d	No Discrimination

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	9.037	13.729	11.681	4.07
Operating mode backup				
(A)	1.783	4.992	4.279	2.92
Synthesis for all operating mode				
(A)	9.037	13.729	11.681	4.07

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.747	0.332
ΔU_{L1L2} (%)	1.948	0.314
ΔU_{L2L3} (%)	1.989	0.355
ΔU_{L3L1} (%)	1.920	0.286
ΔU_{L1N} (%)	1.729	0.314
ΔU_{L2N} (%)	1.849	0.434
ΔU_{L3N} (%)	1.801	0.385
Operating mode backup		
ΔU_{3L} (%)	0.306	0.110
ΔU_{L1L2} (%)	0.309	0.086
ΔU_{L2L3} (%)	0.337	0.118
ΔU_{L3L1} (%)	0.300	0.077
ΔU_{L1N} (%)	0.300	0.104
ΔU_{L2N} (%)	0.364	0.175
ΔU_{L3N} (%)	0.349	0.159

3.4.3 Circuit Feeder circuit 2

Circuit breaker	QA 02
Ib	46.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	50 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	50 A
Long delay settings	
Ir	50 A
Tr	NA
Short delay settings	
Isd current	400 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	320 A

Cable	WDM02
Parameters	
Length	10 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	46 A

Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected neutral	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected PE	
Cross section area	1x6 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	7.21	6.24	6.01	2.92	1.99	2.17	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.28	0.28	0.00

Circuit breaker	**QA 02bis**
Ib	46.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	50 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	50 A
Long delay settings	
Ir	50 A
Tr	NA
Short delay settings	
Isd current	400 A
Tsd	NA

Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit

Operating mode Normal	
QA 02 iC60N C 50 A / 4P4d	No Discrimination

Operating mode backup	
QA 02 iC60N C 50 A / 4P4d	No Discrimination

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	34.132	46.358	28.630	15.7
Operating mode backup				
(A)	6.623	20.377	11.207	12.1
Synthesis for all operating mode				
(A)	34.132	46.358	28.630	15.7

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.098	0.682
ΔU_{L1L2} (%)	2.318	0.684
ΔU_{L2L3} (%)	2.271	0.637
ΔU_{L3L1} (%)	2.168	0.533
ΔU_{L1N} (%)	2.149	0.734
ΔU_{L2N} (%)	2.329	0.914
ΔU_{L3N} (%)	2.068	0.653
Operating mode backup		
ΔU_{3L} (%)	0.496	0.300
ΔU_{L1L2} (%)	0.452	0.229
ΔU_{L2L3} (%)	0.487	0.268
ΔU_{L3L1} (%)	0.374	0.151
ΔU_{L1N} (%)	0.472	0.276
ΔU_{L2N} (%)	0.668	0.478
ΔU_{L3N} (%)	0.534	0.343

3.4.4 Circuit Feeder circuit 4

Circuit breaker	QA 04
Ib	12.1 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	320 A

Cable	WD 04
Parameters	
Length	20 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	12 A

Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected neutral	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	7.21	6.24	6.01	1.88	1.18	1.01	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.27	0.27	0.00
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.27	0.27	0.00

Circuit breaker	**QA 04bis**
Ib	12.1 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	13 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	13 A
Long delay settings	
Ir	13 A
Tr	NA
Short delay settings	
Isd current	104 A

Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit

Operating mode Normal	
QA 04 iC60N C 16 A / 4P4d	128 A

Operating mode backup	
QA 04 iC60N C 16 A / 4P4d	128 A

Design current				
	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	12.124	12.124	12.124	0
Operating mode backup				
(A)	7.794	7.794	7.794	0
Synthesis for all operating mode				
(A)	12.124	12.124	12.124	0

Voltage drop		
	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.830	0.415
ΔU_{L1L2} (%)	2.113	0.479
ΔU_{L2L3} (%)	2.113	0.479
ΔU_{L3L1} (%)	2.113	0.479
ΔU_{L1N} (%)	1.830	0.415
ΔU_{L2N} (%)	1.830	0.415
ΔU_{L3N} (%)	1.830	0.415
Operating mode backup		
ΔU_{3L} (%)	0.463	0.267
ΔU_{L1L2} (%)	0.530	0.308
ΔU_{L2L3} (%)	0.527	0.308
ΔU_{L3L1} (%)	0.531	0.308
ΔU_{L1N} (%)	0.463	0.267
ΔU_{L2N} (%)	0.456	0.267
ΔU_{L3N} (%)	0.457	0.267

3.4.5 Circuit Feeder circuit 5

Circuit breaker	QA 05
Ib	295 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Compact NSX
Designation	NSX400F
Circuit breaker rating	400 A
Breaking capacity	36 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	Micrologic 2.3
Trip unit rating	400 A
Long delay settings	
Ir	298 A
Tr	16 s
Short delay settings	
Isd current	2976 A
Tsd	0.02 s
Instantaneous tripping	
Ii current	4800 A

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	3235 A
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	No Discrimination

Cable	WD 05
Parameters	
Length	30 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	295 A

Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x185 mm²
Core	Copper
Iz under real conditions	456 A
Selected neutral	
Cross section area	1x185 mm²
Core	Copper
Iz under real conditions	456 A
Selected PE	
Cross section area	1x95 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	7.21	6.24	6.01	4.72	4.17	4.73	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	4.72	4.17	4.73	0.00

Circuit breaker	**QA 05bis**
Ib	295 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Compact NSX
Designation	NSX400F
Circuit breaker rating	400 A
Breaking capacity	36 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	Micrologic 5.3 A
Trip unit rating	400 A
Long delay settings	
Ir	296 A
Tr	4 s
Short delay settings	
Isd current	2960 A

Tsd	0 s
Instantaneous tripping	
Ii current	4800 A

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	
QA 05 NSX400F Micrologic 2.3 400 A / 4P4d	No Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Design current				
	IL1	**IL2**	**IL3**	**IN**
Operating mode Normal				
(A)	295.467	295.467	295.467	0
Operating mode backup				
(A)	0.000	0.000	0.000	0
Synthesis for all operating mode				
(A)	295.467	295.467	295.467	0

Voltage drop		
	Cumulated from upstream	**Circuit**
Operating mode Normal		
ΔU_{3L} (%)	1.995	0.580
ΔU_{L1L2} (%)	2.304	0.669
ΔU_{L2L3} (%)	2.303	0.669
ΔU_{L3L1} (%)	2.304	0.669
ΔU_{L1N} (%)	1.995	0.580
ΔU_{L2N} (%)	1.995	0.580
ΔU_{L3N} (%)	1.995	0.580
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

3.4.6 Circuit Feeder circuit 6

Circuit breaker	QA 06
Ib	29.3 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	320 A

Cable	WD 06
Parameters	
Length	25 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	29 A

Sizing constraint	Iz
Sizing Information	Sized with In
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x10 mm²
Core	Copper
Iz under real conditions	75 A
Selected neutral	
Cross section area	1x10 mm²
Core	Copper
Iz under real conditions	75 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	7.21	6.24	6.01	2.28	1.48	0.97	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	2.28	1.48	0.97	0.00

Circuit breaker	**QA 06bis**
Ib	29.3 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A

Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	
QA 06 iC60N C 32 A / 4P4d	No Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Design current				
	IL1	**IL2**	**IL3**	**IN**
Operating mode Normal				
(A)	29.292	29.292	29.292	0
Operating mode backup				
(A)	0.000	0.000	0.000	0
Synthesis for all operating mode				
(A)	29.292	29.292	29.292	0

Voltage drop		
	Cumulated from upstream	**Circuit**
Operating mode Normal		
ΔU_{3L} (%)	2.067	0.652
ΔU_{L1L2} (%)	2.387	0.753
ΔU_{L2L3} (%)	2.387	0.753
ΔU_{L3L1} (%)	2.387	0.753
ΔU_{L1N} (%)	2.067	0.652
ΔU_{L2N} (%)	2.067	0.652
ΔU_{L3N} (%)	2.067	0.652
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

3.4.7 Circuit Feeder circuit 7

Circuit breaker	QA 07
Ib	9.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	10 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	10 A
Long delay settings	
Ir	10 A
Tr	NA
Short delay settings	
Isd current	80 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA in NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
QA Gen NG125N B 80 A / 4P4d	Full Discrimination

Cable	WD 07
Parameters	
Length	5 m
Max length	NA
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	10 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected neutral	
Cross section area	1x6 mm²
Core	Copper
Iz under real conditions	54 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	7.21	6.24	6.01	3.89	2.96	2.98	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.28	0.28	0.00

Circuit breaker	**QA 07bis**
Ib	9.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	10 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	10 A
Long delay settings	
Ir	10 A
Tr	NA
Short delay settings	
Isd current	80 A

Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	**Discrimination Limit**
Operating mode Normal	
QA 07 iC60N C 10 A / 4P4d	No Discrimination
Operating mode backup	
QA 07 iC60N C 10 A / 4P4d	No Discrimination

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	8.677	9.747	9.390	0.943
Operating mode backup				
(A)	8.677	9.747	9.390	0.943
Synthesis for all operating mode				
(A)	8.677	9.747	9.390	0.943

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.487	0.072
ΔU_{L1L2} (%)	1.713	0.078
ΔU_{L2L3} (%)	1.716	0.081
ΔU_{L3L1} (%)	1.711	0.077
ΔU_{L1N} (%)	1.486	0.071
ΔU_{L2N} (%)	1.494	0.079
ΔU_{L3N} (%)	1.491	0.076
Operating mode backup		
ΔU_{3L} (%)	0.268	0.072
ΔU_{L1L2} (%)	0.301	0.078
ΔU_{L2L3} (%)	0.300	0.081
ΔU_{L3L1} (%)	0.300	0.077
ΔU_{L1N} (%)	0.267	0.071
ΔU_{L2N} (%)	0.268	0.079
ΔU_{L3N} (%)	0.266	0.076

3.5 Generic load circuits

3.5.1 Circuit Load 1

Circuit breaker	QA 1
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS1
Parameters	
Length	30 m
Max length	199 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C

Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.62	0.36	0.45	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.62	0.36	0.45	0.00

Charge	**AA 1**
U	400 V
S	3.53 kVA
P	3 kW
I	5.09 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current				
	IL1	**IL2**	**IL3**	**IN**
Operating mode Normal				
(A)	5.094	5.094	5.094	0

Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	5.094	5.094	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.164	0.536
ΔU_{L1L2} (%)	2.464	0.619
ΔU_{L2L3} (%)	2.432	0.619
ΔU_{L3L1} (%)	2.466	0.619
ΔU_{L1N} (%)	2.221	0.536
ΔU_{L2N} (%)	2.162	0.536
ΔU_{L3N} (%)	2.165	0.536
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.164
ΔU_{L1L2} (%)	2.464
ΔU_{L2L3} (%)	2.432
ΔU_{L3L1} (%)	2.466
ΔU_{L1N} (%)	2.221
ΔU_{L2N} (%)	2.162
ΔU_{L3N} (%)	2.165

3.5.2 Circuit Load 2

Circuit breaker	QA 2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS2
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Charge	AA 2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.3 Circuit Load 3

Circuit breaker	QA 3
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS3
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Charge	AA 3
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.4 Circuit Load 4

Circuit breaker	QA 4
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS4
Parameters	
Length	21 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.85	0.51	0.62	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.85	0.51	0.62	0.00

Charge	AA 4
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.003	0.375
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.435	0.750
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.003
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.435
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.5 Circuit Load 5

Circuit breaker	QA 5
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS5
Parameters	
Length	21 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.85	0.51	0.62	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.85	0.51	0.62	0.00

Charge	AA 5
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.003	0.375
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.435	0.750
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.003
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.435
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.6 Circuit Load 6

Circuit breaker	QA 6
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS6
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Charge	AA 6
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.7 Circuit Load 7

Circuit breaker	QA 7
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS7
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Charge	AA 7
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.8 Circuit Load 8

Circuit breaker	QA 8
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS8
Parameters	
Length	28 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.66	0.39	0.48	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.66	0.39	0.48	0.00

Charge	AA 8
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.128	0.500
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.686	1.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.128
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.686
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.9 Circuit Load 9

Circuit breaker	QA 9
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS9
Parameters	
Length	38 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.50	0.29	0.36	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.50	0.29	0.36	0.00

Charge	AA 9
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.306	0.679
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	3.043	1.358
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.306
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	3.043
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.10 Circuit Load 10

Circuit breaker	QA 10
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS10
Parameters	
Length	35 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.54	0.31	0.39	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.54	0.31	0.39	0.00

Charge	AA 10
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.253	0.625
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.936	1.250
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.253
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.936
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.11 Circuit Load 11

Circuit breaker	QA 11
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS11
Parameters	
Length	32 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.58	0.34	0.42	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.58	0.34	0.42	0.00

.

Charge	AA 11
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.199	0.572
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.828	1.143
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.199
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.828
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.12 Circuit Load 12

Circuit breaker	QA 12
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS12
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 12
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.13 Circuit Load 13

Circuit breaker	QA 13
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS13
Parameters	
Length	25 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.73	0.43	0.53	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.73	0.43	0.53	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 13
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.074	0.447
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.578	0.893
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.074
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.578
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.14 Circuit Load 14

Circuit breaker	QA 14
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS14
Parameters	
Length	26 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.70	0.42	0.51	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 14
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.464
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.614	0.929
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.614
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.15 Circuit Load 15

Circuit breaker	QA 15
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS15
Parameters	
Length	28 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.66	0.39	0.48	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.66	0.39	0.48	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 15
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.128	0.500
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.686	1.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.128
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.686
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.16 Circuit Load 16

Circuit breaker	QA 16
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS16
Parameters	
Length	34 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.55	0.32	0.40	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.55	0.32	0.40	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 16
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.235	0.607
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.900	1.215
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.235
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.900
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.17 Circuit Load 17

Circuit breaker	QA 17
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS17
Parameters	
Length	40 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.47	0.28	0.34	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.47	0.28	0.34	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 17
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.342	0.715
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	3.114	1.429
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.342
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	3.114
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.18 Circuit Load 18

Circuit breaker	QA 18
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS18
Parameters	
Length	35 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.54	0.31	0.39	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.54	0.31	0.39	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 18
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.253	0.625
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.936	1.250
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.253
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.936
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.19 Circuit Load 19

Circuit breaker	QA 19
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS19
Parameters	
Length	36 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.52	0.31	0.38	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.52	0.31	0.38	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 19
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.271	0.643
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.971	1.286
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.271
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.971
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.20 Circuit Load 20

Circuit breaker	QA 20
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS20
Parameters	
Length	31 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.60	0.35	0.43	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.60	0.35	0.43	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 20
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.181	0.554
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.793	1.107
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.181
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.793
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.21 Circuit Load 21

Circuit breaker	QA 21
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS21
Parameters	
Length	11 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	1.46	0.89	1.09	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	1.46	0.89	1.09	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 21
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	5.094	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	5.094	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.824	0.196
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.022	0.393
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.824
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.022

3.5.22 Circuit Load 22

Circuit breaker	QA 22
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS22
Parameters	
Length	14 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	1.21	0.73	0.89	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	1.21	0.73	0.89	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 22
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.878	0.250
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	2.185	0.500
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.878
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	2.185
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	1.629

3.5.23 Circuit Load 23

Circuit breaker	QA 23
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-7WS23
Parameters	
Length	14 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	1.21	0.73	0.89	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	1.21	0.73	0.89	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 23
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	5.094	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	5.094	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.878	0.250
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.126	0.500
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.878
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.126
ΔU_{L3N} (%)	1.629

3.5.24 Circuit Load 2A

Circuit breaker	QA 2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL2
Parameters	
Length	26 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.399	0.772
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.621	0.386
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.027	0.772
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.399
ΔU_{L3N} (%)	1.629

3.5.25 Circuit Load 3A

Circuit breaker	QA 3A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL3
Parameters	
Length	36 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.32	0.19	0.27	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.16	0.20	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.16	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.162	0.535
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.699	1.070
Operating mode backup		
ΔU_{3L} (%)	0.770	0.535
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.328	1.070

Synthesis for all operating mode	
ΔU_{3L} (%)	2.162
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.699

3.5.26 Circuit Load 4A

Circuit breaker	QA 4A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL4
Parameters	
Length	21 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.54	0.31	0.45	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.21	0.24	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.21	0.24	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 4A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.940	0.312
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.250	0.624
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.547	0.312
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.878	0.624
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.940
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.250
ΔU_{L3N} (%)	1.629

3.5.27 Circuit Load 5A

Circuit breaker	QA 5A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL5
Parameters	
Length	21 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.54	0.31	0.45	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.21	0.24	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.21	0.24	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 5A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.940	0.312
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.253	0.624
Operating mode backup		
ΔU_{3L} (%)	0.547	0.312
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.882	0.624

Synthesis for all operating mode	
ΔU_{3L} (%)	1.940
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.253

3.5.28 Circuit Load 6A

Circuit breaker	QA 6A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL6
Parameters	
Length	26 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 6A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.399	0.772
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.621	0.386
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.027	0.772
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.399
ΔU_{L3N} (%)	1.629

3.5.29 Circuit Load 7A

Circuit breaker	QA 7A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL7
Parameters	
Length	26 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 7A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.401	0.772
Operating mode backup		
ΔU_{3L} (%)	0.621	0.386
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.030	0.772

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.401

3.5.30 Circuit Load 8A

Circuit breaker	QA 8A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL8
Parameters	
Length	28 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.41	0.24	0.34	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.18	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 8A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.044	0.416
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.458	0.832
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.651	0.416
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.086	0.832
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.044
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.458
ΔU_{L3N} (%)	1.629

3.5.31 Circuit Load 9A

Circuit breaker	QA 9A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL9
Parameters	
Length	38 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.31	0.18	0.26	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.15	0.19	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.15	0.15	0.19	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 9A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.192	0.564
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.758	1.129
Operating mode backup		
ΔU_{3L} (%)	0.800	0.564
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.387	1.129

Synthesis for all operating mode	
ΔU_{3L} (%)	2.192
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.758

3.5.32 Circuit Load 10 (1)

Circuit breaker	QA 10A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL10
Parameters	
Length	35 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.33	0.19	0.28	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.16	0.20	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.16	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 10A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.148	0.520
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.666	1.040
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.755	0.520
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.294	1.040
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.148
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.666
ΔU_{L3N} (%)	1.629

3.5.33 Circuit Load 11A

Circuit breaker	QA 11A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL11
Parameters	
Length	32 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.36	0.21	0.30	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.17	0.21	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.17	0.21	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 11A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.103	0.475
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.580	0.951
Operating mode backup		
ΔU_{3L} (%)	0.711	0.475
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.209	0.951

Synthesis for all operating mode	
ΔU_{3L} (%)	2.103
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.580

3.5.34 Circuit Load 12A

Circuit breaker	QA 12A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL12
Parameters	
Length	26 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 12A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.399	0.772
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.621	0.386
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.027	0.772
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.399
ΔU_{L3N} (%)	1.629

3.5.35 Circuit Load 13A

Circuit breaker	QA 13A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL13
Parameters	
Length	25 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.46	0.27	0.38	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.23	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 13A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.999	0.371
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.372	0.743
Operating mode backup		
ΔU_{3L} (%)	0.607	0.371
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.001	0.743

Synthesis for all operating mode	
ΔU_{3L} (%)	1.999
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.372

3.5.36 Circuit Load 14A

Circuit breaker	QA 14A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL14
Parameters	
Length	26 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 14A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.399	0.772
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.621	0.386
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.027	0.772
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.399
ΔU_{L3N} (%)	1.629

3.5.37 Circuit Load 15A

Circuit breaker	QA 15A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL15
Parameters	
Length	28 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.41	0.24	0.34	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.22	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.18	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 15A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.044	0.416
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.461	0.832
Operating mode backup		
ΔU_{3L} (%)	0.651	0.416
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.090	0.832

Synthesis for all operating mode	
ΔU_{3L} (%)	2.044
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.461

3.5.38 Circuit Load 16A

Circuit breaker	QA 16A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL16
Parameters	
Length	34 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.34	0.20	0.29	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.16	0.20	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.16	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 16A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.133	0.505
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.636	1.010
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.740	0.505
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.264	1.010
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.133
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.636
ΔU_{L3N} (%)	1.629

3.5.39 Circuit Load 17A

Circuit breaker	QA 17A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL17
Parameters	
Length	40 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.29	0.17	0.24	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.15	0.18	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.15	0.15	0.18	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 17A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.222	0.594
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.817	1.188
Operating mode backup		
ΔU_{3L} (%)	0.829	0.594
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.446	1.188

Synthesis for all operating mode	
ΔU_{3L} (%)	2.222
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.817

3.5.40 Circuit Load 18A

Circuit breaker	QA 18A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL18
Parameters	
Length	35 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.33	0.19	0.28	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.16	0.20	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.16	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 18A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.148	0.520
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.666	1.040
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.755	0.520
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.294	1.040
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.148
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.666
ΔU_{L3N} (%)	1.629

3.5.41 Circuit Load 19A

Circuit breaker	QA 19A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL19
Parameters	
Length	36 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.32	0.19	0.27	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.16	0.20	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.16	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 19A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.162	0.535
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.699	1.070
Operating mode backup		
ΔU_{3L} (%)	0.770	0.535
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	1.328	1.070

Synthesis for all operating mode	
ΔU_{3L} (%)	2.162
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.699

3.5.42 Circuit Load 20A

Circuit breaker	QA 20A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL20
Parameters	
Length	31 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.37	0.22	0.31	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.17	0.21	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.17	0.21	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 20A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.088	0.460
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.547	0.921
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.696	0.460
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	1.175	0.921
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.088
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.547
ΔU_{L3N} (%)	1.629

3.5.43 Circuit Load 21A

Circuit breaker	QA 21A
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL21
Parameters	
Length	11 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.96	0.57	0.81	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.25	0.27	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.18	0.25	0.27	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 21A**
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	5.094	5.09

Operating mode backup				
(A)	0.000	0.000	5.094	5.09

Synthesis for all operating mode				
(A)	0.000	0.000	5.094	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.954	0.327
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.283	0.654
Operating mode backup		
ΔU_{3L} (%)	0.562	0.327
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.912	0.654

Synthesis for all operating mode	
ΔU_{3L} (%)	1.954
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.283

3.5.44 Circuit Load 22A

Circuit breaker	QA 22A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL22
Parameters	
Length	14 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.78	0.46	0.66	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.24	0.26	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.24	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 22A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.836	0.208
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.042	0.416
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.443	0.208
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.670	0.416
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.836
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.042
ΔU_{L3N} (%)	1.629

3.5.45 Circuit Load 23A

Circuit breaker	QA 23A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL23
Parameters	
Length	14 m
Max length	64 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.78	0.46	0.66	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.24	0.26	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.17	0.24	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 23A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.836	0.208
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.045	0.416
Operating mode backup		
ΔU_{3L} (%)	0.443	0.208
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.674	0.416

Synthesis for all operating mode	
ΔU_{3L} (%)	1.836
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.045

3.5.46 Circuit Load 1A

Circuit breaker	QA 1A
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination

Cable	-7WL1
Parameters	
Length	30 m
Max length	117 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.38	0.22	0.32	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.21	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.16	0.18	0.21	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 1A**
U	400 V
S	3.53 kVA
P	3 kW
I	5.09 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	5.094	5.094	0

Operating mode backup				
(A)	5.094	5.094	5.094	0

Synthesis for all operating mode				
(A)	5.094	5.094	5.094	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.519	0.891
ΔU_{L1L2} (%)	2.875	1.029
ΔU_{L2L3} (%)	2.842	1.029
ΔU_{L3L1} (%)	2.876	1.029
ΔU_{L1N} (%)	2.576	0.891
ΔU_{L2N} (%)	2.517	0.891
ΔU_{L3N} (%)	2.520	0.891
Operating mode backup		
ΔU_{3L} (%)	1.127	0.891
ΔU_{L1L2} (%)	1.278	1.029
ΔU_{L2L3} (%)	1.292	1.029
ΔU_{L3L1} (%)	1.280	1.029
ΔU_{L1N} (%)	1.125	0.891
ΔU_{L2N} (%)	1.146	0.891
ΔU_{L3N} (%)	1.149	0.891

Synthesis for all operating mode	
ΔU_{3L} (%)	2.519
ΔU_{L1L2} (%)	2.875
ΔU_{L2L3} (%)	2.842
ΔU_{L3L1} (%)	2.876
ΔU_{L1N} (%)	2.576
ΔU_{L2N} (%)	2.517
ΔU_{L3N} (%)	2.520

3.5.47 Circuit Load 17 H

Circuit breaker	QA 17 H
Ib	11.9 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	13 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	13 A
Long delay settings	
Ir	13 A
Tr	NA
Short delay settings	
Isd current	104 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	2600 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD17H
Parameters	
Length	30 m
Max length	146 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	12 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.94	0.56	0.57	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.94	0.56	0.57	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 17 H
U	400 V
S	8.24 kVA
P	7 kW
I	11.9 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	11.887	11.887	11.887	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	11.887	11.887	11.887	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.412	0.784
ΔU_{L1L2} (%)	2.751	0.905
ΔU_{L2L3} (%)	2.718	0.905
ΔU_{L3L1} (%)	2.752	0.905
ΔU_{L1N} (%)	2.469	0.784
ΔU_{L2N} (%)	2.410	0.784
ΔU_{L3N} (%)	2.413	0.784
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.412
ΔU_{L1L2} (%)	2.751
ΔU_{L2L3} (%)	2.718
ΔU_{L3L1} (%)	2.752
ΔU_{L1N} (%)	2.469
ΔU_{L2N} (%)	2.410
ΔU_{L3N} (%)	2.413

3.5.48 Circuit Load 1 H

Circuit breaker	QA 1 H
Ib	14.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	2300 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD1H
Parameters	
Length	36 m
Max length	118 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	14 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.80	0.47	0.48	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.80	0.47	0.48	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1 H
U	400 V
S	10 kVA
P	8.5 kW
I	14.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	14.434	14.434	14.434	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	14.434	14.434	14.434	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.770	1.142
ΔU_{L1L2} (%)	3.164	1.319
ΔU_{L2L3} (%)	3.132	1.319
ΔU_{L3L1} (%)	3.166	1.319
ΔU_{L1N} (%)	2.827	1.142
ΔU_{L2N} (%)	2.768	1.142
ΔU_{L3N} (%)	2.771	1.142
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.770
ΔU_{L1L2} (%)	3.164
ΔU_{L2L3} (%)	3.132
ΔU_{L3L1} (%)	3.166
ΔU_{L1N} (%)	2.827
ΔU_{L2N} (%)	2.768
ΔU_{L3N} (%)	2.771

3.5.49 Circuit Load 2 H

Circuit breaker	QA 2 H
Ib	14.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	2300 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD2H
Parameters	
Length	35 m
Max length	118 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	14 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.82	0.49	0.49	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.82	0.49	0.49	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2 H
U	400 V
S	10 kVA
P	8.5 kW
I	14.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	14.434	14.434	14.434	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	14.434	14.434	14.434	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.738	1.111
ΔU_{L1L2} (%)	3.128	1.282
ΔU_{L2L3} (%)	3.095	1.282
ΔU_{L3L1} (%)	3.129	1.282
ΔU_{L1N} (%)	2.796	1.111
ΔU_{L2N} (%)	2.737	1.111
ΔU_{L3N} (%)	2.740	1.111
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.738
ΔU_{L1L2} (%)	3.128
ΔU_{L2L3} (%)	3.095
ΔU_{L3L1} (%)	3.129
ΔU_{L1N} (%)	2.796
ΔU_{L2N} (%)	2.737
ΔU_{L3N} (%)	2.740

3.5.50 Circuit Load 3 H

Circuit breaker	QA 3 H
Ib	14.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	2300 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD3H
Parameters	
Length	30 m
Max length	118 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	14 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.94	0.56	0.57	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.94	0.56	0.57	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3 H
U	400 V
S	10 kVA
P	8.5 kW
I	14.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	14.434	14.434	14.434	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	14.434	14.434	14.434	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.580	0.952
ΔU_{L1L2} (%)	2.945	1.099
ΔU_{L2L3} (%)	2.912	1.099
ΔU_{L3L1} (%)	2.946	1.099
ΔU_{L1N} (%)	2.637	0.952
ΔU_{L2N} (%)	2.578	0.952
ΔU_{L3N} (%)	2.581	0.952
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.580
ΔU_{L1L2} (%)	2.945
ΔU_{L2L3} (%)	2.912
ΔU_{L3L1} (%)	2.946
ΔU_{L1N} (%)	2.637
ΔU_{L2N} (%)	2.578
ΔU_{L3N} (%)	2.581

3.5.51 Circuit Load 4 H

Circuit breaker	QA 4 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD4H
Parameters	
Length	30 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.38	0.22	0.32	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.38	0.22	0.32	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 4 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.073	0.446
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.517	0.891
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.073
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.517
ΔU_{L3N} (%)	1.629

3.5.52 Circuit Load 5 H

Circuit breaker	QA 5 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD5H
Parameters	
Length	36 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.32	0.19	0.27	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.32	0.19	0.27	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 5 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.162	0.535
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.699	1.070
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.162
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.699

3.5.53 Circuit Load 6 H

Circuit breaker	QA 6 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD6H
Parameters	
Length	31 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.37	0.22	0.31	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.37	0.22	0.31	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 6 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.088	0.460
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.547	0.921
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.088
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.547
ΔU_{L3N} (%)	1.629

3.5.54 Circuit Load 7 H

Circuit breaker	QA 7 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD7H
Parameters	
Length	26 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.44	0.26	0.37	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 7 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.386
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.401	0.772
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.401

3.5.55 Circuit Load 8 H

Circuit breaker	QA 8 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD8H
Parameters	
Length	24 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.47	0.28	0.40	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.47	0.28	0.40	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 8 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.984	0.357
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.339	0.713
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.984
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.339
ΔU_{L3N} (%)	1.629

3.5.56 Circuit Load 9 H

Circuit breaker	QA 9 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD9H
Parameters	
Length	27 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.42	0.25	0.36	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.42	0.25	0.36	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 9 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.029	0.401
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.431	0.802
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.029
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.431

3.5.57 Circuit Load 10 H

Circuit breaker	QA 10 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD10H
Parameters	
Length	18 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.62	0.36	0.52	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.62	0.36	0.52	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 10 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.895	0.267
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.161	0.535
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.895
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.161
ΔU_{L3N} (%)	1.629

3.5.58 Circuit Load 11 H

Circuit breaker	QA 11 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD11H
Parameters	
Length	17 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.65	0.38	0.55	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.65	0.38	0.55	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 11 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.880	0.253
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.134	0.505
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.880
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.134

3.5.59 Circuit Load 12 H

Circuit breaker	QA 12 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD12H
Parameters	
Length	20 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.56	0.33	0.47	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.56	0.33	0.47	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 12 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.925	0.297
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.220	0.594
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.925
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.220
ΔU_{L3N} (%)	1.629

3.5.60 Circuit Load 13 H

Circuit breaker	QA 13 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD13H
Parameters	
Length	14 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.78	0.46	0.66	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.78	0.46	0.66	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 13 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.836	0.208
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.045	0.416
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.836
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.045

3.5.61 Circuit Load 14 H

Circuit breaker	QA 14 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD14H
Parameters	
Length	30 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.38	0.22	0.32	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.38	0.22	0.32	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 14 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.073	0.446
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	2.517	0.891
ΔU_{L3N} (%)	1.629	0.000
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.073
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	2.517
ΔU_{L3N} (%)	1.629

3.5.62 Circuit Load 15 H

Circuit breaker	QA 15 H
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD15H
Parameters	
Length	29 m
Max length	68.4 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	0.40	0.23	0.33	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	0.40	0.23	0.33	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 15 H
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.058	0.431
ΔU_{L1L2} (%)	1.845	0.000
ΔU_{L2L3} (%)	1.813	0.000
ΔU_{L3L1} (%)	1.847	0.000
ΔU_{L1N} (%)	1.685	0.000
ΔU_{L2N} (%)	1.626	0.000
ΔU_{L3N} (%)	2.491	0.862
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.058
ΔU_{L1L2} (%)	1.845
ΔU_{L2L3} (%)	1.813
ΔU_{L3L1} (%)	1.847
ΔU_{L1N} (%)	1.685
ΔU_{L2N} (%)	1.626
ΔU_{L3N} (%)	2.491

3.5.63 Circuit Load 16 H

Circuit breaker	QA 16 H
Ib	25.5 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 01 bis C120N C 125 A / 4P4d	1500 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD16H
Parameters	
Length	5 m
Max length	35.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	25 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	2.49	1.64	1.98	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	2.49	1.64	1.98	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 16 H
U	400 V
S	17.6 kVA
P	15 kW
I	25.5 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	25.471	25.471	25.471	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	25.471	25.471	25.471	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.074	0.447
ΔU_{L1L2} (%)	2.361	0.516
ΔU_{L2L3} (%)	2.329	0.516
ΔU_{L3L1} (%)	2.363	0.516
ΔU_{L1N} (%)	2.132	0.447
ΔU_{L2N} (%)	2.073	0.447
ΔU_{L3N} (%)	2.076	0.447
Operating mode backup		
ΔU_{3L} (%)	0.235	0.000
ΔU_{L1L2} (%)	0.249	0.000
ΔU_{L2L3} (%)	0.263	0.000
ΔU_{L3L1} (%)	0.251	0.000
ΔU_{L1N} (%)	0.234	0.000
ΔU_{L2N} (%)	0.254	0.000
ΔU_{L3N} (%)	0.258	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.074
ΔU_{L1L2} (%)	2.361
ΔU_{L2L3} (%)	2.329
ΔU_{L3L1} (%)	2.363
ΔU_{L1N} (%)	2.132
ΔU_{L2N} (%)	2.073
ΔU_{L3N} (%)	2.076

3.5.64 Circuit Load 3-2

Circuit breaker	QA 3-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS3
Parameters	
Length	25 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.64	0.38	0.46	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.64	0.38	0.46	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	5.094	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	5.094	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.544	0.447
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.222	0.893
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.544
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.222
ΔU_{L3N} (%)	2.068

3.5.65 Circuit Load 4-2

Circuit breaker	QA 4-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS4
Parameters	
Length	23 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.69	0.41	0.49	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.69	0.41	0.49	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 4-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	5.094	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	5.094	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.508	0.411
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.151	0.822
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.508
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.151
ΔU_{L3N} (%)	2.068

3.5.66 Circuit Load 5-2

Circuit breaker	QA 5-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS5
Parameters	
Length	21 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.74	0.44	0.52	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.74	0.44	0.52	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 5-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	5.094	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	5.094	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.473	0.375
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.818	0.750
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.473
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.818

3.5.67 Circuit Load 6-2

Circuit breaker	QA 6-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS6
Parameters	
Length	16 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.90	0.54	0.64	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.90	0.54	0.64	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 6-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	5.094	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	5.094	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.383	0.286
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.640	0.572
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.383
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.640

3.5.68 Circuit Load 7-2

Circuit breaker	QA 7-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS7
Parameters	
Length	21 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.74	0.44	0.52	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.74	0.44	0.52	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 7-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.473	0.375
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.899	0.750
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.473
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.899
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.69 Circuit Load 8-2

Circuit breaker	QA 8-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS8
Parameters	
Length	12 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	1.10	0.66	0.78	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	1.10	0.66	0.78	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 8-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.312	0.214
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.578	0.429
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.312
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.578
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.70 Circuit Load 9-2

Circuit breaker	QA 9-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS9
Parameters	
Length	9 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	1.31	0.79	0.93	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	1.31	0.79	0.93	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 9-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.258	0.161
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.471	0.322
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.258
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.471
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.71 Circuit Load 10-2

Circuit breaker	QA 10-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS10
Parameters	
Length	8 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	1.40	0.85	0.99	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	1.40	0.85	0.99	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 10-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.241	0.143
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.435	0.286
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.241
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.435
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.72 Circuit Load 11-2

Circuit breaker	QA 11-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS11
Parameters	
Length	15 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.94	0.56	0.67	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.94	0.56	0.67	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 11-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.366	0.268
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.685	0.536
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.366
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.685
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.73 Circuit Load 12-2

Circuit breaker	QA 12-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS12
Parameters	
Length	13 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	1.04	0.62	0.74	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	1.04	0.62	0.74	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 12-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	5.094	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	5.094	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.330	0.232
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.793	0.464
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.330
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.793
ΔU_{L3N} (%)	2.068

3.5.74 Circuit Load 13-2

Circuit breaker	QA 13-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS13
Parameters	
Length	18 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.83	0.49	0.59	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.83	0.49	0.59	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 13-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.419	0.322
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.792	0.643
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.419
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.792
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.75 Circuit Load 14-2

Circuit breaker	QA 14-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS14
Parameters	
Length	23 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.69	0.41	0.49	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.69	0.41	0.49	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 14-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.508	0.411
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.971	0.822
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.508
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.971
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.76 Circuit Load 15-2

Circuit breaker	QA 15-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS15
Parameters	
Length	25 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.64	0.38	0.46	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.64	0.38	0.46	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 15-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	0.000	0.000	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	0.000	0.000	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.544	0.447
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	3.042	0.893
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.544
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	3.042
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.068

3.5.77 Circuit Load 2-3B

Circuit breaker	QA 2-3B
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD2H2
Parameters	
Length	38 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.28	0.16	0.22	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.28	0.16	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2-3B
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	1.019	1.02
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	1.019	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.973	0.226
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.252	0.452
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.973
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.252

3.5.78 Circuit Load 1-3B

Circuit breaker	QA 1-3B
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD1H2
Parameters	
Length	49 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.22	0.13	0.18	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.22	0.13	0.18	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1-3B
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	1.019	1.02
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	1.019	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.038	0.291
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.383	0.582
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.038
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.383

3.5.79 Circuit Load 8-3A

Circuit breaker	QA 8-3A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL8
Parameters	
Length	37 m
Max length	101 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.44	0.26	0.30	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.20	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.17	0.19	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 8-3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.077	0.330
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.461	0.661
Operating mode backup		
ΔU_{3L} (%)	0.637	0.330
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	1.010	0.661

Synthesis for all operating mode	
ΔU_{3L} (%)	2.077
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.461

3.5.80 Circuit Load 7-3A

Circuit breaker	QA 7-3A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL7
Parameters	
Length	14 m
Max length	101 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.90	0.53	0.57	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.25	0.25	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.17	0.25	0.25	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 7-3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit

Operating mode Normal		
ΔU_{3L} (%)	1.872	0.125
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.099	0.250
ΔU_{L3N} (%)	1.801	0.000

Operating mode backup		
ΔU_{3L} (%)	0.431	0.125
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.614	0.250
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.872
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.099
ΔU_{L3N} (%)	1.801

3.5.81 Circuit Load 6-3A

Circuit breaker	QA 6-3A
Ib	0.849 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL6
Parameters	
Length	7 m
Max length	190 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	1.30	0.79	0.80	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.26	0.26	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.18	0.26	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 6-3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	0.849 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.849	0.849	0.849	0

Operating mode backup				
(A)	0.849	0.849	0.849	0

Synthesis for all operating mode				
(A)	0.849	0.849	0.849	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.768	0.021
ΔU_{L1L2} (%)	1.972	0.024
ΔU_{L2L3} (%)	2.013	0.024
ΔU_{L3L1} (%)	1.944	0.024
ΔU_{L1N} (%)	1.750	0.021
ΔU_{L2N} (%)	1.870	0.021
ΔU_{L3N} (%)	1.821	0.021
Operating mode backup		
ΔU_{3L} (%)	0.327	0.021
ΔU_{L1L2} (%)	0.333	0.024
ΔU_{L2L3} (%)	0.361	0.024
ΔU_{L3L1} (%)	0.324	0.024
ΔU_{L1N} (%)	0.321	0.021
ΔU_{L2N} (%)	0.385	0.021
ΔU_{L3N} (%)	0.370	0.021

Synthesis for all operating mode	
ΔU_{3L} (%)	1.768
ΔU_{L1L2} (%)	1.972
ΔU_{L2L3} (%)	2.013
ΔU_{L3L1} (%)	1.944
ΔU_{L1N} (%)	1.750
ΔU_{L2N} (%)	1.870
ΔU_{L3N} (%)	1.821

3.5.82 Circuit Load 5-3A

Circuit breaker	QA 5-3A
Ib	0.849 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL5
Parameters	
Length	24 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.42	0.24	0.32	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.21	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.16	0.18	0.21	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 5-3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	0.849 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.849	0.849	0.849	0

Operating mode backup				
(A)	0.849	0.849	0.849	0

Synthesis for all operating mode				
(A)	0.849	0.849	0.849	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.866	0.119
ΔU_{L1L2} (%)	2.085	0.137
ΔU_{L2L3} (%)	2.126	0.137
ΔU_{L3L1} (%)	2.057	0.137
ΔU_{L1N} (%)	1.848	0.119
ΔU_{L2N} (%)	1.968	0.119
ΔU_{L3N} (%)	1.919	0.119
Operating mode backup		
ΔU_{3L} (%)	0.425	0.119
ΔU_{L1L2} (%)	0.446	0.137
ΔU_{L2L3} (%)	0.474	0.137
ΔU_{L3L1} (%)	0.437	0.137
ΔU_{L1N} (%)	0.419	0.119
ΔU_{L2N} (%)	0.483	0.119
ΔU_{L3N} (%)	0.468	0.119

Synthesis for all operating mode	
ΔU_{3L} (%)	1.866
ΔU_{L1L2} (%)	2.085
ΔU_{L2L3} (%)	2.126
ΔU_{L3L1} (%)	2.057
ΔU_{L1N} (%)	1.848
ΔU_{L2N} (%)	1.968
ΔU_{L3N} (%)	1.919

3.5.83 Circuit Load 4-3A

Circuit breaker	QA 4-3A
Ib	0.849 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL4
Parameters	
Length	29 m
Max length	114 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.36	0.21	0.28	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.17	0.20	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.16	0.17	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 4-3A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	0.849 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.849	0.849	0.849	0

Operating mode backup				
(A)	0.849	0.849	0.849	0

Synthesis for all operating mode				
(A)	0.849	0.849	0.849	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.891	0.144
ΔU_{L1L2} (%)	2.114	0.166
ΔU_{L2L3} (%)	2.155	0.166
ΔU_{L3L1} (%)	2.086	0.166
ΔU_{L1N} (%)	1.873	0.144
ΔU_{L2N} (%)	1.993	0.144
ΔU_{L3N} (%)	1.944	0.144
Operating mode backup		
ΔU_{3L} (%)	0.450	0.144
ΔU_{L1L2} (%)	0.475	0.166
ΔU_{L2L3} (%)	0.503	0.166
ΔU_{L3L1} (%)	0.466	0.166
ΔU_{L1N} (%)	0.443	0.144
ΔU_{L2N} (%)	0.507	0.144
ΔU_{L3N} (%)	0.493	0.144

Synthesis for all operating mode	
ΔU_{3L} (%)	1.891
ΔU_{L1L2} (%)	2.114
ΔU_{L2L3} (%)	2.155
ΔU_{L3L1} (%)	2.086
ΔU_{L1N} (%)	1.873
ΔU_{L2N} (%)	1.993
ΔU_{L3N} (%)	1.944

3.5.84 Circuit Load 3-3A

Circuit breaker	QA 3-3A
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL3
Parameters	
Length	40 m
Max length	101 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.42	0.24	0.28	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.20	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.16	0.18	0.20	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 3-3A**
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	1.019	0.000	1.02

Operating mode backup				
(A)	0.000	1.019	0.000	1.02

Synthesis for all operating mode				
(A)	0.000	1.019	0.000	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.890	0.143
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.135	0.286
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.449	0.143
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.650	0.286
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.890
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.135
ΔU_{L3N} (%)	1.801

3.5.85 Circuit Load 5-3

Circuit breaker	QA 5-3
Ib	1.01 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60L
Circuit breaker rating	6 A
Breaking capacity	25 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS5
Parameters	
Length	24 m
Max length	194 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.62	0.37	0.41	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.62	0.37	0.41	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 5-3
U	400 V
S	0.7 kVA
P	0.7 kW
I	1.01 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.010	1.010	1.010	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.010	1.010	1.010	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.846	0.100
ΔU_{L1L2} (%)	2.063	0.115
ΔU_{L2L3} (%)	2.104	0.115
ΔU_{L3L1} (%)	2.035	0.115
ΔU_{L1N} (%)	1.829	0.100
ΔU_{L2N} (%)	1.949	0.100
ΔU_{L3N} (%)	1.900	0.100
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.846
ΔU_{L1L2} (%)	2.063
ΔU_{L2L3} (%)	2.104
ΔU_{L3L1} (%)	2.035
ΔU_{L1N} (%)	1.829
ΔU_{L2N} (%)	1.949
ΔU_{L3N} (%)	1.900

3.5.86 Circuit Load 4-3

Circuit breaker	QA 4-3
Ib	0.866 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS4
Parameters	
Length	29 m
Max length	108 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.54	0.32	0.36	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.54	0.32	0.36	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 4-3
U	400 V
S	0.2 kVA
P	0.2 kW
I	0.866 A
cosφ	1
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	0.866	0.866
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	0.866	0.866

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.850	0.103
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.007	0.206
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.850
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.007

3.5.87 Circuit Load 2-3

Circuit breaker	QA 2-3
Ib	0.866 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS2
Parameters	
Length	43 m
Max length	108 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.39	0.23	0.27	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.39	0.23	0.27	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2-3
U	400 V
S	0.2 kVA
P	0.2 kW
I	0.866 A
cosφ	1
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.866	0.000	0.866
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.866	0.000	0.866

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.900	0.153
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.155	0.306
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.900
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.155
ΔU_{L3N} (%)	1.801

3.5.88 Circuit Load 3-3

Circuit breaker	QA 3-3
Ib	0.866 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS3
Parameters	
Length	40 m
Max length	171 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	49 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	49 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.60	0.35	0.34	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.60	0.35	0.34	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3-3
U	400 V
S	0.2 kVA
P	0.2 kW
I	0.866 A
cosφ	1
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	0.866	0.866
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	0.866	0.866

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.836	0.089
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	1.978	0.178
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.836
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	1.978

3.5.89 Circuit Load 8-3

Circuit breaker	QA 8-3
Ib	0.866 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS8
Parameters	
Length	37 m
Max length	108 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.44	0.26	0.30	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.44	0.26	0.30	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 8-3
U	400 V
S	0.2 kVA
P	0.2 kW
I	0.866 A
cosφ	1
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.866	0.000	0.866
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.866	0.000	0.866

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.878	0.131
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.112	0.263
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.878
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.112
ΔU_{L3N} (%)	1.801

3.5.90 Circuit Load 1-3

Circuit breaker	QA 1-3
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS1
Parameters	
Length	45 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.24	0.14	0.19	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.24	0.14	0.19	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1-3
U	400 V
S	1.5 kVA
P	1.5 kW
I	2.17 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.165	2.165	2.165	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.165	2.165	2.165	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.413	0.666
ΔU_{L1L2} (%)	2.717	0.769
ΔU_{L2L3} (%)	2.759	0.769
ΔU_{L3L1} (%)	2.689	0.769
ΔU_{L1N} (%)	2.396	0.666
ΔU_{L2N} (%)	2.515	0.666
ΔU_{L3N} (%)	2.467	0.666
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.413
ΔU_{L1L2} (%)	2.717
ΔU_{L2L3} (%)	2.759
ΔU_{L3L1} (%)	2.689
ΔU_{L1N} (%)	2.396
ΔU_{L2N} (%)	2.515
ΔU_{L3N} (%)	2.467

3.5.91 Circuit Load 1-3A

Circuit breaker	QA 1-3A
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL1
Parameters	
Length	45 m
Max length	101 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.38	0.22	0.26	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.17	0.19	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.16	0.17	0.19	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 1-3A**
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	1.019	0.000	1.02

Operating mode backup				
(A)	0.000	1.019	0.000	1.02

Synthesis for all operating mode				
(A)	0.000	1.019	0.000	1.02

Voltage drop	Cumulated from upstream	Circuit

Operating mode Normal		
ΔU_{3L} (%)	1.908	0.161
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.171	0.322
ΔU_{L3N} (%)	1.801	0.000

Operating mode backup		
ΔU_{3L} (%)	0.467	0.161
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.685	0.322
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.908
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.171
ΔU_{L3N} (%)	1.801

3.5.92 Circuit Load 1-2A

Circuit breaker	QA 1-2A
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL1
Parameters	
Length	38 m
Max length	115 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.29	0.17	0.24	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.14	0.18	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.15	0.14	0.18	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 1-2A**
U	400 V
S	3.53 kVA
P	3 kW
I	5.09 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	5.094	5.094	0

Operating mode backup				
(A)	5.094	5.094	5.094	0

Synthesis for all operating mode				
(A)	5.094	5.094	5.094	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.227	1.129
ΔU_{L1L2} (%)	3.622	1.304
ΔU_{L2L3} (%)	3.575	1.304
ΔU_{L3L1} (%)	3.471	1.304
ΔU_{L1N} (%)	3.278	1.129
ΔU_{L2N} (%)	3.458	1.129
ΔU_{L3N} (%)	3.197	1.129
Operating mode backup		
ΔU_{3L} (%)	1.625	1.129
ΔU_{L1L2} (%)	1.755	1.304
ΔU_{L2L3} (%)	1.791	1.304
ΔU_{L3L1} (%)	1.678	1.304
ΔU_{L1N} (%)	1.601	1.129
ΔU_{L2N} (%)	1.797	1.129
ΔU_{L3N} (%)	1.663	1.129

Synthesis for all operating mode	
ΔU_{3L} (%)	3.227
ΔU_{L1L2} (%)	3.622
ΔU_{L2L3} (%)	3.575
ΔU_{L3L1} (%)	3.471
ΔU_{L1N} (%)	3.278
ΔU_{L2N} (%)	3.458
ΔU_{L3N} (%)	3.197

3.5.93 Circuit Load 2-2A

Circuit breaker	QA 2-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL2
Parameters	
Length	35 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.31	0.18	0.26	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.15	0.19	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.15	0.15	0.19	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 2-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.618	0.520
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.369	1.040
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	1.016	0.520
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.707	1.040
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.618
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.369
ΔU_{L3N} (%)	2.068

3.5.94 Circuit Load 3-2A

Circuit breaker	QA 3-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL3
Parameters	
Length	25 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.42	0.25	0.34	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.16	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 3-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.469	0.371
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.072	0.743
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.867	0.371
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.410	0.743
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.469
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.072
ΔU_{L3N} (%)	2.068

3.5.95 Circuit Load 4-2A

Circuit breaker	QA 4-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL4
Parameters	
Length	23 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.45	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 4-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.439	0.342
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.012	0.683
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.838	0.342
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.351	0.683
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.439
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.012
ΔU_{L3N} (%)	2.068

3.5.96 Circuit Load 5-2A

Circuit breaker	QA 5-2A
Ib	0.849 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	1 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	1 A
Long delay settings	
Ir	1 A
Tr	NA
Short delay settings	
Isd current	8 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-WL5
Parameters	
Length	21 m
Max length	721 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.49	0.29	0.40	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.20	0.23	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.20	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 5-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	0.849 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.849	0.849	0.849	0

Operating mode backup				
(A)	0.849	0.849	0.849	0

Synthesis for all operating mode				
(A)	0.849	0.849	0.849	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.202	0.104
ΔU_{L1L2} (%)	2.438	0.120
ΔU_{L2L3} (%)	2.391	0.120
ΔU_{L3L1} (%)	2.288	0.120
ΔU_{L1N} (%)	2.253	0.104
ΔU_{L2N} (%)	2.433	0.104
ΔU_{L3N} (%)	2.172	0.104
Operating mode backup		
ΔU_{3L} (%)	0.600	0.104
ΔU_{L1L2} (%)	0.572	0.120
ΔU_{L2L3} (%)	0.607	0.120
ΔU_{L3L1} (%)	0.494	0.120
ΔU_{L1N} (%)	0.576	0.104
ΔU_{L2N} (%)	0.772	0.104
ΔU_{L3N} (%)	0.638	0.104

Synthesis for all operating mode	
ΔU_{3L} (%)	2.202
ΔU_{L1L2} (%)	2.438
ΔU_{L2L3} (%)	2.391
ΔU_{L3L1} (%)	2.288
ΔU_{L1N} (%)	2.253
ΔU_{L2N} (%)	2.433
ΔU_{L3N} (%)	2.172

3.5.97 Circuit Load 6-2A

Circuit breaker	QA 6-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL6
Parameters	
Length	16 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.61	0.36	0.49	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.22	0.24	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.22	0.24	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 6-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.335	0.238
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.804	0.475
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.734	0.238
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.143	0.475
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.335
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.804
ΔU_{L3N} (%)	2.068

3.5.98 Circuit Load 7-2A

Circuit breaker	QA 7-2A
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL7
Parameters	
Length	21 m
Max length	115 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.49	0.29	0.40	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.20	0.23	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.20	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 7-2A**
U	400 V
S	3.53 kVA
P	3 kW
I	5.09 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	5.094	5.094	0

Operating mode backup				
(A)	5.094	5.094	5.094	0

Synthesis for all operating mode				
(A)	5.094	5.094	5.094	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.722	0.624
ΔU_{L1L2} (%)	3.039	0.720
ΔU_{L2L3} (%)	2.992	0.720
ΔU_{L3L1} (%)	2.888	0.720
ΔU_{L1N} (%)	2.773	0.624
ΔU_{L2N} (%)	2.953	0.624
ΔU_{L3N} (%)	2.692	0.624
Operating mode backup		
ΔU_{3L} (%)	1.120	0.624
ΔU_{L1L2} (%)	1.172	0.720
ΔU_{L2L3} (%)	1.208	0.720
ΔU_{L3L1} (%)	1.095	0.720
ΔU_{L1N} (%)	1.096	0.624
ΔU_{L2N} (%)	1.291	0.624
ΔU_{L3N} (%)	1.157	0.624

Synthesis for all operating mode	
ΔU_{3L} (%)	2.722
ΔU_{L1L2} (%)	3.039
ΔU_{L2L3} (%)	2.992
ΔU_{L3L1} (%)	2.888
ΔU_{L1N} (%)	2.773
ΔU_{L2N} (%)	2.953
ΔU_{L3N} (%)	2.692

3.5.99 Circuit Load 8-2A

Circuit breaker	QA 8-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL8
Parameters	
Length	12 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.77	0.45	0.61	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.24	0.26	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.24	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 8-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.276	0.178
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.685	0.357
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.674	0.178
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.024	0.357
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.276
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.685
ΔU_{L3N} (%)	2.068

3.5.100 Circuit Load 9-2A

Circuit breaker	QA 9-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL9
Parameters	
Length	9 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.95	0.56	0.75	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.25	0.26	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.18	0.25	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 9-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.231	0.134
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.596	0.267
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.630	0.134
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.935	0.267
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.231
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.596
ΔU_{L3N} (%)	2.068

3.5.101 Circuit Load 10-2A

Circuit breaker	QA 10-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL10
Parameters	
Length	8 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	1.02	0.61	0.81	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.26	0.27	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.18	0.26	0.27	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 10-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.216	0.119
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.306	0.238
Operating mode backup		
ΔU_{3L} (%)	0.615	0.119
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.771	0.238

Synthesis for all operating mode	
ΔU_{3L} (%)	2.216
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.306

3.5.102 Circuit Load 11-2A

Circuit breaker	QA 11-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL11
Parameters	
Length	15 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.64	0.38	0.52	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.23	0.25	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.23	0.25	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 11-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.320	0.223
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.774	0.446
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.719	0.223
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.113	0.446
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.320
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.774
ΔU_{L3N} (%)	2.068

3.5.103 Circuit Load 12-2A

Circuit breaker	QA 12-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL12
Parameters	
Length	13 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.72	0.43	0.58	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.23	0.25	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.23	0.25	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 12-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.291	0.193
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.454	0.386
Operating mode backup		
ΔU_{3L} (%)	0.689	0.193
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.920	0.386

Synthesis for all operating mode	
ΔU_{3L} (%)	2.291
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.454

3.5.104 Circuit Load 13-2A

Circuit breaker	QA 13-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL13
Parameters	
Length	18 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.56	0.33	0.45	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.21	0.24	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.21	0.24	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 13-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.365	0.267
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.864	0.535
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.763	0.267
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.202	0.535
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.365
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.864
ΔU_{L3N} (%)	2.068

3.5.105 Circuit Load 14-2A

Circuit breaker	QA 14-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL14 3
Parameters	
Length	23 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.45	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 14-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55

Operating mode backup				
(A)	0.000	0.000	2.547	2.55

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.439	0.342
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.751	0.683
Operating mode backup		
ΔU_{3L} (%)	0.838	0.342
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	1.217	0.683

Synthesis for all operating mode	
ΔU_{3L} (%)	2.439
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.751

3.5.106 Circuit Load 15-2A

Circuit breaker	QA 15-2A
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
QA 02bis iC60N C 50 A / 4P4d	Full Discrimination

Cable	-3WL15
Parameters	
Length	23 m
Max length	61.8 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.45	0.26	0.37	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.17	0.19	0.22	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.17	0.19	0.22	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 15-2A**
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55

Operating mode backup				
(A)	0.000	2.547	0.000	2.55

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.439	0.342
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.012	0.683
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.838	0.342
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	1.351	0.683
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.439
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.012
ΔU_{L3N} (%)	2.068

3.5.107 Circuit Load 2-3A

Circuit breaker	QA 2-3A
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
QA 03bis iC60N C 16 A / 4P4d	130 A

Cable	0 WL2
Parameters	
Length	43 m
Max length	101 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.39	0.23	0.27	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.16	0.18	0.19	0.00
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.16	0.18	0.19	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 2-3A**
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	1.019	1.02

Operating mode backup				
(A)	0.000	0.000	1.019	1.02

Synthesis for all operating mode				
(A)	0.000	0.000	1.019	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.901	0.154
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.108	0.307
Operating mode backup		
ΔU_{3L} (%)	0.460	0.154
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.656	0.307

Synthesis for all operating mode	
ΔU_{3L} (%)	1.901
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.108

3.5.108 Circuit Load 1-2

Circuit breaker	QA 1-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS1
Parameters	
Length	38 m
Max length	196 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.45	0.27	0.32	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.45	0.27	0.32	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1-2
U	400 V
S	3.53 kVA
P	3 kW
I	5.09 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.094	5.094	5.094	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.094	5.094	5.094	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.776	0.679
ΔU_{L1L2} (%)	3.102	0.784
ΔU_{L2L3} (%)	3.055	0.784
ΔU_{L3L1} (%)	2.951	0.784
ΔU_{L1N} (%)	2.828	0.679
ΔU_{L2N} (%)	3.008	0.679
ΔU_{L3N} (%)	2.747	0.679
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.776
ΔU_{L1L2} (%)	3.102
ΔU_{L2L3} (%)	3.055
ΔU_{L3L1} (%)	2.951
ΔU_{L1N} (%)	2.828
ΔU_{L2N} (%)	3.008
ΔU_{L3N} (%)	2.747

3.5.109 Circuit Load 2-2

Circuit breaker	QA 2-2
Ib	5.09 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	-3WS2
Parameters	
Length	35 m
Max length	110 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.49	0.29	0.35	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.49	0.29	0.35	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2-2
U	400 V
S	1.18 kVA
P	1 kW
I	5.09 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	5.094	5.09
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	5.094	5.09

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.723	0.625
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	3.318	1.250
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.723
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	3.318

3.5.110 Circuit Load 1-2B

Circuit breaker	QA 1-2B
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD1H 1
Parameters	
Length	25 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.42	0.25	0.34	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.42	0.25	0.34	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1-2B
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	1.019	1.02
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	1.019	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.246	0.149
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.365	0.297
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.246
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.365

3.5.111 Circuit Load 2-2B

Circuit breaker	QA 2-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD2H 1
Parameters	
Length	28 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.38	0.22	0.31	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.38	0.22	0.31	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.514	0.416
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.161	0.832
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.514
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.161
ΔU_{L3N} (%)	2.068

3.5.112 Circuit Load 3-2B

Circuit breaker	QA 3-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD3H 1
Parameters	
Length	23 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.45	0.26	0.37	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.45	0.26	0.37	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.439	0.342
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.012	0.683
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.439
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.012
ΔU_{L3N} (%)	2.068

3.5.113 Circuit Load 4-2B

Circuit breaker	QA 4-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD4H 1
Parameters	
Length	19 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.53	0.31	0.43	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.53	0.31	0.43	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 4-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.380	0.282
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.893	0.564
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.380
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.893
ΔU_{L3N} (%)	2.068

3.5.114 Circuit Load 5-2B

Circuit breaker	QA 5-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD5H 1
Parameters	
Length	21 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.49	0.29	0.40	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.49	0.29	0.40	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 5-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.410	0.312
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.953	0.624
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.410
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.953
ΔU_{L3N} (%)	2.068

3.5.115 Circuit Load 6-2B

Circuit breaker	QA 6-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD6H 1
Parameters	
Length	13 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.72	0.43	0.58	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.72	0.43	0.58	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 6-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.291	0.193
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.715	0.386
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.291
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.715
ΔU_{L3N} (%)	2.068

3.5.116 Circuit Load 7-2B

Circuit breaker	QA 7-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD7H 1
Parameters	
Length	13 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.72	0.43	0.58	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.72	0.43	0.58	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 7-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.291	0.193
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.715	0.386
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.291
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.715
ΔU_{L3N} (%)	2.068

3.5.117 Circuit Load 8-2B

Circuit breaker	QA 8-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD8H 1
Parameters	
Length	16 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.61	0.36	0.49	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.61	0.36	0.49	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 8-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.335	0.238
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.804	0.475
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.335
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.804
ΔU_{L3N} (%)	2.068

3.5.118 Circuit Load 9-2B

Circuit breaker	QA 9-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD9H 1
Parameters	
Length	18 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.56	0.33	0.45	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.56	0.33	0.45	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 9-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.365	0.267
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.603	0.535
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.365
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.603

3.5.119 Circuit Load 10-2B

Circuit breaker	QA 10-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD10H 1
Parameters	
Length	55 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.21	0.12	0.17	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.21	0.12	0.17	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 10-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.915	0.817
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.963	1.634
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.915
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.963
ΔU_{L3N} (%)	2.068

3.5.120 Circuit Load 11-2B

Circuit breaker	QA 11-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD11H 1
Parameters	
Length	30 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.36	0.21	0.29	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.36	0.21	0.29	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 11-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.543	0.446
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	2.959	0.891
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.543
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	2.959

3.5.121 Circuit Load 12-2B

Circuit breaker	QA 12-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD12H 1
Parameters	
Length	39 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.28	0.16	0.23	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.28	0.16	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 12-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.677	0.579
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	3.487	1.159
ΔU_{L3N} (%)	2.068	0.000
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.677
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	3.487
ΔU_{L3N} (%)	2.068

3.5.122 Circuit Load 13-2B

Circuit breaker	QA 13-2B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 02bis iC60N C 50 A / 4P4d	770 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD13H 1
Parameters	
Length	36 m
Max length	66.2 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	0.30	0.18	0.25	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	0.30	0.18	0.25	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 13-2B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.632	0.535
ΔU_{L1L2} (%)	2.318	0.000
ΔU_{L2L3} (%)	2.271	0.000
ΔU_{L3L1} (%)	2.168	0.000
ΔU_{L1N} (%)	2.149	0.000
ΔU_{L2N} (%)	2.329	0.000
ΔU_{L3N} (%)	3.137	1.070
Operating mode backup		
ΔU_{3L} (%)	0.496	0.000
ΔU_{L1L2} (%)	0.452	0.000
ΔU_{L2L3} (%)	0.487	0.000
ΔU_{L3L1} (%)	0.374	0.000
ΔU_{L1N} (%)	0.472	0.000
ΔU_{L2N} (%)	0.668	0.000
ΔU_{L3N} (%)	0.534	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.632
ΔU_{L1L2} (%)	2.318
ΔU_{L2L3} (%)	2.271
ΔU_{L3L1} (%)	2.168
ΔU_{L1N} (%)	2.149
ΔU_{L2N} (%)	2.329
ΔU_{L3N} (%)	3.137

3.5.123 Circuit Load 7-3

Circuit breaker	QA 7-3
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS7
Parameters	
Length	14 m
Max length	108 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.90	0.53	0.57	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.90	0.53	0.57	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 7-3
U	400 V
S	0.5 kVA
P	0.5 kW
I	2.17 A
cosφ	1
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.165	2.17
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.165	2.17

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.871	0.124
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.049	0.249
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.871
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.049

3.5.124 Circuit Load 6-3

Circuit breaker	QA 6-3
Ib	3.03 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	0 WS6
Parameters	
Length	7 m
Max length	108 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	36 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	1.30	0.79	0.80	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	1.30	0.79	0.80	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 6-3
U	400 V
S	0.7 kVA
P	0.7 kW
I	3.03 A
cosφ	1
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	3.031	0.000	3.03
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	3.031	0.000	3.03

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.834	0.087
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.023	0.174
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.834
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.023
ΔU_{L3N} (%)	1.801

3.5.125 Circuit Load 3-3B

Circuit breaker	QA 3-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD3H2
Parameters	
Length	37 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.29	0.17	0.23	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.29	0.17	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.547	0.000	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.547	0.000	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.297	0.550
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	2.829	1.099
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.297
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	2.829
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	1.801

3.5.126 Circuit Load 4-3B

Circuit breaker	QA 4-3B
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD4H2
Parameters	
Length	35 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.30	0.18	0.24	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.30	0.18	0.24	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 4-3B
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	1.019	0.000	1.02
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	1.019	0.000	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.955	0.208
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.265	0.416
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.955
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.265
ΔU_{L3N} (%)	1.801

3.5.127 Circuit Load 5-3B

Circuit breaker	QA 5-3B
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD5H2
Parameters	
Length	58 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.19	0.11	0.15	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.19	0.11	0.15	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 5-3B
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.321	0.574
ΔU_{L1L2} (%)	2.611	0.663
ΔU_{L2L3} (%)	2.652	0.663
ΔU_{L3L1} (%)	2.583	0.663
ΔU_{L1N} (%)	2.304	0.574
ΔU_{L2N} (%)	2.423	0.574
ΔU_{L3N} (%)	2.375	0.574
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.321
ΔU_{L1L2} (%)	2.611
ΔU_{L2L3} (%)	2.652
ΔU_{L3L1} (%)	2.583
ΔU_{L1N} (%)	2.304
ΔU_{L2N} (%)	2.423
ΔU_{L3N} (%)	2.375

3.5.128 Circuit Load 6-3B

Circuit breaker	QA 6-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD6H2
Parameters	
Length	21 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.46	0.27	0.35	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.46	0.27	0.35	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 6-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.547	0.000	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.547	0.000	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.059	0.312
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	2.353	0.624
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.059
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	2.353
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	1.801

3.5.129 Circuit Load 7-3B

Circuit breaker	QA 7-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD7H2
Parameters	
Length	16 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.58	0.34	0.43	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.58	0.34	0.43	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 7-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	2.547	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	0.000	2.547	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.985	0.238
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	2.276	0.475
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.985
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	2.276

3.5.130 Circuit Load 8-3B

Circuit breaker	QA 8-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD8H2
Parameters	
Length	18 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.53	0.31	0.39	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.53	0.31	0.39	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 8-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.014	0.267
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.384	0.535
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.014
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.384
ΔU_{L3N} (%)	1.801

3.5.131 Circuit Load 10-3B

Circuit breaker	QA 10-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD10H2
Parameters	
Length	37 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.29	0.17	0.23	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.29	0.17	0.23	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 10-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L1-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.547	0.000	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.547	0.000	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.297	0.550
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	2.829	1.099
ΔU_{L2N} (%)	1.849	0.000
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.297
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	2.829
ΔU_{L2N} (%)	1.849
ΔU_{L3N} (%)	1.801

3.5.132 Circuit Load 9-3B

Circuit breaker	QA 9-3B
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 03bis iC60N C 16 A / 4P4d	130 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WD9H2
Parameters	
Length	12 m
Max length	64.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.66	3.17	2.12	0.71	0.42	0.51	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	0.71	0.42	0.51	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 9-3B
U	400 V
S	0.588 kVA
P	0.5 kW
I	2.55 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	2.547	0.000	2.55
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.000	2.547	0.000	2.55

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.925	0.178
ΔU_{L1L2} (%)	1.948	0.000
ΔU_{L2L3} (%)	1.989	0.000
ΔU_{L3L1} (%)	1.920	0.000
ΔU_{L1N} (%)	1.729	0.000
ΔU_{L2N} (%)	2.206	0.357
ΔU_{L3N} (%)	1.801	0.000
Operating mode backup		
ΔU_{3L} (%)	0.306	0.000
ΔU_{L1L2} (%)	0.309	0.000
ΔU_{L2L3} (%)	0.337	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.300	0.000
ΔU_{L2N} (%)	0.364	0.000
ΔU_{L3N} (%)	0.349	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.925
ΔU_{L1L2} (%)	1.948
ΔU_{L2L3} (%)	1.989
ΔU_{L3L1} (%)	1.920
ΔU_{L1N} (%)	1.729
ΔU_{L2N} (%)	2.206
ΔU_{L3N} (%)	1.801

3.5.133 Circuit Load 1-4

Circuit breaker	QA 1-4
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
QA 04bis iC60N C 13 A / 4P4d	104 A

Cable	1WS-1
Parameters	
Length	13 m
Max length	187 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	0.86	0.51	0.53	0.00
Operating mode backup							
(kA)	0.35	0.31	0.32	0.17	0.25	0.25	0.00
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	0.17	0.25	0.25	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 1-4**
U	400 V
S	1.5 kVA
P	1.5 kW
I	2.17 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.165	2.165	2.165	0

Operating mode backup				
(A)	2.165	2.165	2.165	0

Synthesis for all operating mode				
(A)	2.165	2.165	2.165	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.946	0.116
ΔU_{L1L2} (%)	2.246	0.133
ΔU_{L2L3} (%)	2.246	0.133
ΔU_{L3L1} (%)	2.246	0.133
ΔU_{L1N} (%)	1.946	0.116
ΔU_{L2N} (%)	1.945	0.116
ΔU_{L3N} (%)	1.945	0.116
Operating mode backup		
ΔU_{3L} (%)	0.578	0.116
ΔU_{L1L2} (%)	0.664	0.133
ΔU_{L2L3} (%)	0.660	0.133
ΔU_{L3L1} (%)	0.664	0.133
ΔU_{L1N} (%)	0.578	0.116
ΔU_{L2N} (%)	0.571	0.116
ΔU_{L3N} (%)	0.572	0.116

Synthesis for all operating mode	
ΔU_{3L} (%)	1.946
ΔU_{L1L2} (%)	2.246
ΔU_{L2L3} (%)	2.246
ΔU_{L3L1} (%)	2.246
ΔU_{L1N} (%)	1.946
ΔU_{L2N} (%)	1.945
ΔU_{L3N} (%)	1.945

3.5.134 Circuit Load 2-4

Circuit breaker	QA 2-4
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
QA 04bis iC60N C 13 A / 4P4d	104 A

Cable	1WS-2
Parameters	
Length	7 m
Max length	187 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	1.15	0.69	0.68	0.00
Operating mode backup							
(kA)	0.35	0.31	0.32	0.18	0.26	0.26	0.00
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	0.18	0.26	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 2-4**
U	400 V
S	1.5 kVA
P	1.5 kW
I	2.17 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.165	2.165	2.165	0

Operating mode backup				
(A)	2.165	2.165	2.165	0

Synthesis for all operating mode				
(A)	2.165	2.165	2.165	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.892	0.062
ΔU_{L1L2} (%)	2.185	0.072
ΔU_{L2L3} (%)	2.185	0.072
ΔU_{L3L1} (%)	2.185	0.072
ΔU_{L1N} (%)	1.892	0.062
ΔU_{L2N} (%)	1.892	0.062
ΔU_{L3N} (%)	1.892	0.062
Operating mode backup		
ΔU_{3L} (%)	0.525	0.062
ΔU_{L1L2} (%)	0.602	0.072
ΔU_{L2L3} (%)	0.599	0.072
ΔU_{L3L1} (%)	0.603	0.072
ΔU_{L1N} (%)	0.525	0.062
ΔU_{L2N} (%)	0.518	0.062
ΔU_{L3N} (%)	0.519	0.062

Synthesis for all operating mode	
ΔU_{3L} (%)	1.892
ΔU_{L1L2} (%)	2.185
ΔU_{L2L3} (%)	2.185
ΔU_{L3L1} (%)	2.185
ΔU_{L1N} (%)	1.892
ΔU_{L2N} (%)	1.892
ΔU_{L3N} (%)	1.892

3.5.135 Circuit Load 3-4

Circuit breaker	QA 3-4
Ib	4.33 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
QA 04bis iC60N C 13 A / 4P4d	104 A

Cable	1WS-3
Parameters	
Length	8 m
Max length	187 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	1.09	0.65	0.65	0.00
Operating mode backup							
(kA)	0.35	0.31	0.32	0.18	0.26	0.26	0.00
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	0.18	0.26	0.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**AA 3-4**
U	400 V
S	3 kVA
P	3 kW
I	4.33 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	4.330	4.330	4.330	0

Operating mode backup				
(A)	4.330	4.330	4.330	0

Synthesis for all operating mode				
(A)	4.330	4.330	4.330	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.972	0.142
ΔU_{L1L2} (%)	2.277	0.164
ΔU_{L2L3} (%)	2.277	0.164
ΔU_{L3L1} (%)	2.277	0.164
ΔU_{L1N} (%)	1.972	0.142
ΔU_{L2N} (%)	1.972	0.142
ΔU_{L3N} (%)	1.972	0.142
Operating mode backup		
ΔU_{3L} (%)	0.605	0.142
ΔU_{L1L2} (%)	0.694	0.164
ΔU_{L2L3} (%)	0.691	0.164
ΔU_{L3L1} (%)	0.695	0.164
ΔU_{L1N} (%)	0.605	0.142
ΔU_{L2N} (%)	0.598	0.142
ΔU_{L3N} (%)	0.599	0.142

Synthesis for all operating mode	
ΔU_{3L} (%)	1.972
ΔU_{L1L2} (%)	2.277
ΔU_{L2L3} (%)	2.277
ΔU_{L3L1} (%)	2.277
ΔU_{L1N} (%)	1.972
ΔU_{L2N} (%)	1.972
ΔU_{L3N} (%)	1.972

3.5.136 Circuit Load 1-4A

Circuit breaker	QA 1-4A
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	1WL-1 A
Parameters	
Length	13 m
Max length	192 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	0.86	0.51	0.53	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	0.86	0.51	0.53	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 1-4A
U	400 V
S	1.5 kVA
P	1.5 kW
I	2.17 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.165	2.165	2.165	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.165	2.165	2.165	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.946	0.116
ΔU_{L1L2} (%)	2.246	0.133
ΔU_{L2L3} (%)	2.246	0.133
ΔU_{L3L1} (%)	2.246	0.133
ΔU_{L1N} (%)	1.946	0.116
ΔU_{L2N} (%)	1.945	0.116
ΔU_{L3N} (%)	1.945	0.116
Operating mode backup		
ΔU_{3L} (%)	0.463	0.000
ΔU_{L1L2} (%)	0.530	0.000
ΔU_{L2L3} (%)	0.527	0.000
ΔU_{L3L1} (%)	0.531	0.000
ΔU_{L1N} (%)	0.463	0.000
ΔU_{L2N} (%)	0.456	0.000
ΔU_{L3N} (%)	0.457	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.946
ΔU_{L1L2} (%)	2.246
ΔU_{L2L3} (%)	2.246
ΔU_{L3L1} (%)	2.246
ΔU_{L1N} (%)	1.946
ΔU_{L2N} (%)	1.945
ΔU_{L3N} (%)	1.945

3.5.137 Circuit Load 2-4A

Circuit breaker	QA 2-4A
Ib	2.17 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	1WL-2A
Parameters	
Length	7 m
Max length	192 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	1.15	0.69	0.68	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	1.15	0.69	0.68	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 2-4A
U	400 V
S	1.5 kVA
P	1.5 kW
I	2.17 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.165	2.165	2.165	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.165	2.165	2.165	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.892	0.062
ΔU_{L1L2} (%)	2.185	0.072
ΔU_{L2L3} (%)	2.185	0.072
ΔU_{L3L1} (%)	2.185	0.072
ΔU_{L1N} (%)	1.892	0.062
ΔU_{L2N} (%)	1.892	0.062
ΔU_{L3N} (%)	1.892	0.062
Operating mode backup		
ΔU_{3L} (%)	0.463	0.000
ΔU_{L1L2} (%)	0.530	0.000
ΔU_{L2L3} (%)	0.527	0.000
ΔU_{L3L1} (%)	0.531	0.000
ΔU_{L1N} (%)	0.463	0.000
ΔU_{L2N} (%)	0.456	0.000
ΔU_{L3N} (%)	0.457	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.892
ΔU_{L1L2} (%)	2.185
ΔU_{L2L3} (%)	2.185
ΔU_{L3L1} (%)	2.185
ΔU_{L1N} (%)	1.892
ΔU_{L2N} (%)	1.892
ΔU_{L3N} (%)	1.892

3.5.138 Circuit Load 3-4A

Circuit breaker	QA 3-4A
Ib	4.33 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 04bis iC60N C 13 A / 4P4d	104 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	1WL-3A
Parameters	
Length	8 m
Max length	192 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	1.09	0.65	0.65	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	1.09	0.65	0.65	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AA 3-4A
U	400 V
S	3 kVA
P	3 kW
I	4.33 A
cosφ	1
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	4.330	4.330	4.330	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	4.330	4.330	4.330	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.972	0.142
ΔU_{L1L2} (%)	2.277	0.164
ΔU_{L2L3} (%)	2.277	0.164
ΔU_{L3L1} (%)	2.277	0.164
ΔU_{L1N} (%)	1.972	0.142
ΔU_{L2N} (%)	1.972	0.142
ΔU_{L3N} (%)	1.972	0.142
Operating mode backup		
ΔU_{3L} (%)	0.463	0.000
ΔU_{L1L2} (%)	0.530	0.000
ΔU_{L2L3} (%)	0.527	0.000
ΔU_{L3L1} (%)	0.531	0.000
ΔU_{L1N} (%)	0.463	0.000
ΔU_{L2N} (%)	0.456	0.000
ΔU_{L3N} (%)	0.457	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.972
ΔU_{L1L2} (%)	2.277
ΔU_{L2L3} (%)	2.277
ΔU_{L3L1} (%)	2.277
ΔU_{L1N} (%)	1.972
ΔU_{L2N} (%)	1.972
ΔU_{L3N} (%)	1.972

3.5.139 Circuit Load WRF1

Circuit breaker	QF1
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR1
Parameters	
Length	15 m
Max length	120 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.73	0.43	0.62	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.73	0.43	0.62	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF1
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.144	0.149
ΔU_{L1L2} (%)	2.475	0.172
ΔU_{L2L3} (%)	2.475	0.172
ΔU_{L3L1} (%)	2.475	0.172
ΔU_{L1N} (%)	2.144	0.149
ΔU_{L2N} (%)	2.143	0.149
ΔU_{L3N} (%)	2.143	0.149
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.144
ΔU_{L1L2} (%)	2.475
ΔU_{L2L3} (%)	2.475
ΔU_{L3L1} (%)	2.475
ΔU_{L1N} (%)	2.144
ΔU_{L2N} (%)	2.143
ΔU_{L3N} (%)	2.143

3.5.140 Circuit Load WRF2

Circuit breaker	QF2
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR2
Parameters	
Length	14 m
Max length	120 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.78	0.46	0.66	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.78	0.46	0.66	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF2
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.134	0.139
ΔU_{L1L2} (%)	2.464	0.160
ΔU_{L2L3} (%)	2.464	0.160
ΔU_{L3L1} (%)	2.464	0.160
ΔU_{L1N} (%)	2.134	0.139
ΔU_{L2N} (%)	2.134	0.139
ΔU_{L3N} (%)	2.134	0.139
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.134
ΔU_{L1L2} (%)	2.464
ΔU_{L2L3} (%)	2.464
ΔU_{L3L1} (%)	2.464
ΔU_{L1N} (%)	2.134
ΔU_{L2N} (%)	2.134
ΔU_{L3N} (%)	2.134

3.5.141 Circuit Load WRF3

Circuit breaker	QF3
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR3
Parameters	
Length	12 m
Max length	120 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.89	0.53	0.75	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.89	0.53	0.75	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF3
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.114	0.119
ΔU_{L1L2} (%)	2.441	0.137
ΔU_{L2L3} (%)	2.441	0.137
ΔU_{L3L1} (%)	2.441	0.137
ΔU_{L1N} (%)	2.114	0.119
ΔU_{L2N} (%)	2.114	0.119
ΔU_{L3N} (%)	2.114	0.119
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.114
ΔU_{L1L2} (%)	2.441
ΔU_{L2L3} (%)	2.441
ΔU_{L3L1} (%)	2.441
ΔU_{L1N} (%)	2.114
ΔU_{L2N} (%)	2.114
ΔU_{L3N} (%)	2.114

3.5.142 Circuit Load WRF4

Circuit breaker	QF4
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR4
Parameters	
Length	11 m
Max length	120 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF4
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.104	0.109
ΔU_{L1L2} (%)	2.429	0.126
ΔU_{L2L3} (%)	2.429	0.126
ΔU_{L3L1} (%)	2.429	0.126
ΔU_{L1N} (%)	2.104	0.109
ΔU_{L2N} (%)	2.104	0.109
ΔU_{L3N} (%)	2.104	0.109
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.104
ΔU_{L1L2} (%)	2.429
ΔU_{L2L3} (%)	2.429
ΔU_{L3L1} (%)	2.429
ΔU_{L1N} (%)	2.104
ΔU_{L2N} (%)	2.104
ΔU_{L3N} (%)	2.104

3.5.143 Circuit Load WRF5

Circuit breaker	QF5
Ib	20.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	25 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	25 A
Long delay settings	
Ir	25 A
Tr	NA
Short delay settings	
Isd current	200 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR5
Parameters	
Length	14 m
Max length	46.7 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	20 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.21	0.73	0.89	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.21	0.73	0.89	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF5
U	400 V
S	14.1 kVA
P	12 kW
I	20.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	20.377	20.377	20.377	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	20.377	20.377	20.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.995	1.000
ΔU_{L1L2} (%)	3.459	1.155
ΔU_{L2L3} (%)	3.459	1.155
ΔU_{L3L1} (%)	3.459	1.155
ΔU_{L1N} (%)	2.995	1.000
ΔU_{L2N} (%)	2.995	1.000
ΔU_{L3N} (%)	2.995	1.000
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.995
ΔU_{L1L2} (%)	3.459
ΔU_{L2L3} (%)	3.459
ΔU_{L3L1} (%)	3.459
ΔU_{L1N} (%)	2.995
ΔU_{L2N} (%)	2.995
ΔU_{L3N} (%)	2.995

3.5.144 Circuit Load WRF6

Circuit breaker	QF6
Ib	20.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	25 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	25 A
Long delay settings	
Ir	25 A
Tr	NA
Short delay settings	
Isd current	200 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR6
Parameters	
Length	12 m
Max length	46.7 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	20 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.37	0.83	1.01	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.37	0.83	1.01	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF6
U	400 V
S	14.1 kVA
P	12 kW
I	20.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	20.377	20.377	20.377	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	20.377	20.377	20.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.852	0.857
ΔU_{L1L2} (%)	3.294	0.990
ΔU_{L2L3} (%)	3.294	0.990
ΔU_{L3L1} (%)	3.294	0.990
ΔU_{L1N} (%)	2.852	0.857
ΔU_{L2N} (%)	2.852	0.857
ΔU_{L3N} (%)	2.852	0.857
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.852
ΔU_{L1L2} (%)	3.294
ΔU_{L2L3} (%)	3.294
ΔU_{L3L1} (%)	3.294
ΔU_{L1N} (%)	2.852
ΔU_{L2N} (%)	2.852
ΔU_{L3N} (%)	2.852

3.5.145 Circuit Load WRF7

Circuit breaker	QF7
Ib	20.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	25 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	25 A
Long delay settings	
Ir	25 A
Tr	NA
Short delay settings	
Isd current	200 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR7
Parameters	
Length	11 m
Max length	46.7 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	20 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.47	0.90	1.09	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.47	0.90	1.09	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF7
U	400 V
S	14.1 kVA
P	12 kW
I	20.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	20.377	20.377	20.377	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	20.377	20.377	20.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.781	0.786
ΔU_{L1L2} (%)	3.211	0.908
ΔU_{L2L3} (%)	3.211	0.908
ΔU_{L3L1} (%)	3.211	0.908
ΔU_{L1N} (%)	2.781	0.786
ΔU_{L2N} (%)	2.781	0.786
ΔU_{L3N} (%)	2.781	0.786
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.781
ΔU_{L1L2} (%)	3.211
ΔU_{L2L3} (%)	3.211
ΔU_{L3L1} (%)	3.211
ΔU_{L1N} (%)	2.781
ΔU_{L2N} (%)	2.781
ΔU_{L3N} (%)	2.781

3.5.146 Circuit Load WRF8

Circuit breaker	QF8
Ib	20.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	25 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	25 A
Long delay settings	
Ir	25 A
Tr	NA
Short delay settings	
Isd current	200 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR8
Parameters	
Length	9 m
Max length	46.7 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	20 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.71	1.06	1.28	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.71	1.06	1.28	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF8
U	400 V
S	14.1 kVA
P	12 kW
I	20.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	20.377	20.377	20.377	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	20.377	20.377	20.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.638	0.643
ΔU_{L1L2} (%)	3.046	0.743
ΔU_{L2L3} (%)	3.046	0.743
ΔU_{L3L1} (%)	3.046	0.743
ΔU_{L1N} (%)	2.638	0.643
ΔU_{L2N} (%)	2.638	0.643
ΔU_{L3N} (%)	2.638	0.643
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.638
ΔU_{L1L2} (%)	3.046
ΔU_{L2L3} (%)	3.046
ΔU_{L3L1} (%)	3.046
ΔU_{L1N} (%)	2.638
ΔU_{L2N} (%)	2.638
ΔU_{L3N} (%)	2.638

3.5.147 Circuit Load WRF9

Circuit breaker	QF9
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR9
Parameters	
Length	14 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.74	1.08	1.11	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.74	1.08	1.11	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF9
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.040	1.045
ΔU_{L1L2} (%)	3.510	1.207
ΔU_{L2L3} (%)	3.510	1.207
ΔU_{L3L1} (%)	3.510	1.207
ΔU_{L1N} (%)	3.040	1.045
ΔU_{L2N} (%)	3.040	1.045
ΔU_{L3N} (%)	3.040	1.045
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.040
ΔU_{L1L2} (%)	3.510
ΔU_{L2L3} (%)	3.510
ΔU_{L3L1} (%)	3.510
ΔU_{L1N} (%)	3.040
ΔU_{L2N} (%)	3.040
ΔU_{L3N} (%)	3.040

3.5.148 Circuit Load WRF10

Circuit breaker	QF10
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR10
Parameters	
Length	12 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.94	1.22	1.26	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.94	1.22	1.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF10
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.891	0.896
ΔU_{L1L2} (%)	3.338	1.035
ΔU_{L2L3} (%)	3.338	1.035
ΔU_{L3L1} (%)	3.338	1.035
ΔU_{L1N} (%)	2.891	0.896
ΔU_{L2N} (%)	2.891	0.896
ΔU_{L3N} (%)	2.891	0.896
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.891
ΔU_{L1L2} (%)	3.338
ΔU_{L2L3} (%)	3.338
ΔU_{L3L1} (%)	3.338
ΔU_{L1N} (%)	2.891
ΔU_{L2N} (%)	2.891
ΔU_{L3N} (%)	2.891

3.5.149 Circuit Load WRF11

Circuit breaker	QF11
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR11
Parameters	
Length	10 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	2.18	1.40	1.45	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	2.18	1.40	1.45	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF11
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.742	0.747
ΔU_{L1L2} (%)	3.166	0.862
ΔU_{L2L3} (%)	3.166	0.862
ΔU_{L3L1} (%)	3.166	0.862
ΔU_{L1N} (%)	2.742	0.747
ΔU_{L2N} (%)	2.741	0.747
ΔU_{L3N} (%)	2.741	0.747
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.742
ΔU_{L1L2} (%)	3.166
ΔU_{L2L3} (%)	3.166
ΔU_{L3L1} (%)	3.166
ΔU_{L1N} (%)	2.742
ΔU_{L2N} (%)	2.741
ΔU_{L3N} (%)	2.741

3.5.150 Circuit Load WRF12

Circuit breaker	QF12
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR12
Parameters	
Length	8 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	2.49	1.64	1.71	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	2.49	1.64	1.71	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF12
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.592	0.597
ΔU_{L1L2} (%)	2.993	0.690
ΔU_{L2L3} (%)	2.993	0.690
ΔU_{L3L1} (%)	2.993	0.690
ΔU_{L1N} (%)	2.592	0.597
ΔU_{L2N} (%)	2.592	0.597
ΔU_{L3N} (%)	2.592	0.597
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.592
ΔU_{L1L2} (%)	2.993
ΔU_{L2L3} (%)	2.993
ΔU_{L3L1} (%)	2.993
ΔU_{L1N} (%)	2.592
ΔU_{L2N} (%)	2.592
ΔU_{L3N} (%)	2.592

3.5.151 Circuit Load WRF13

Circuit breaker	QF13
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR13
Parameters	
Length	15 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.65	1.02	1.05	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.65	1.02	1.05	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF13
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.115	1.120
ΔU_{L1L2} (%)	3.597	1.293
ΔU_{L2L3} (%)	3.597	1.293
ΔU_{L3L1} (%)	3.597	1.293
ΔU_{L1N} (%)	3.115	1.120
ΔU_{L2N} (%)	3.115	1.120
ΔU_{L3N} (%)	3.115	1.120
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.115
ΔU_{L1L2} (%)	3.597
ΔU_{L2L3} (%)	3.597
ΔU_{L3L1} (%)	3.597
ΔU_{L1N} (%)	3.115
ΔU_{L2N} (%)	3.115
ΔU_{L3N} (%)	3.115

3.5.152 Circuit Load WRF14

Circuit breaker	QF14
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR14
Parameters	
Length	14 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.74	1.08	1.11	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.74	1.08	1.11	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF14
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.040	1.045
ΔU_{L1L2} (%)	3.510	1.207
ΔU_{L2L3} (%)	3.510	1.207
ΔU_{L3L1} (%)	3.510	1.207
ΔU_{L1N} (%)	3.040	1.045
ΔU_{L2N} (%)	3.040	1.045
ΔU_{L3N} (%)	3.040	1.045
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.040
ΔU_{L1L2} (%)	3.510
ΔU_{L2L3} (%)	3.510
ΔU_{L3L1} (%)	3.510
ΔU_{L1N} (%)	3.040
ΔU_{L2N} (%)	3.040
ΔU_{L3N} (%)	3.040

3.5.153 Circuit Load WRF15

Circuit breaker	QF15
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR15
Parameters	
Length	12 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.94	1.22	1.26	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.94	1.22	1.26	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF15
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.891	0.896
ΔU_{L1L2} (%)	3.338	1.035
ΔU_{L2L3} (%)	3.338	1.035
ΔU_{L3L1} (%)	3.338	1.035
ΔU_{L1N} (%)	2.891	0.896
ΔU_{L2N} (%)	2.891	0.896
ΔU_{L3N} (%)	2.891	0.896
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.891
ΔU_{L1L2} (%)	3.338
ΔU_{L2L3} (%)	3.338
ΔU_{L3L1} (%)	3.338
ΔU_{L1N} (%)	2.891
ΔU_{L2N} (%)	2.891
ΔU_{L3N} (%)	2.891

3.5.154 Circuit Load WRF16

Circuit breaker	QF16
Ib	34 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	40 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	40 A
Long delay settings	
Ir	40 A
Tr	NA
Short delay settings	
Isd current	320 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR16
Parameters	
Length	11 m
Max length	93.6 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	34 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected neutral	
Cross section area	1x4 mm²
Core	Copper
Iz under real conditions	42 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	2.05	1.31	1.35	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	2.05	1.31	1.35	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF16
U	400 V
S	23.5 kVA
P	20 kW
I	34 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	33.962	33.962	33.962	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	33.962	33.962	33.962	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.816	0.821
ΔU_{L1L2} (%)	3.252	0.948
ΔU_{L2L3} (%)	3.252	0.948
ΔU_{L3L1} (%)	3.252	0.948
ΔU_{L1N} (%)	2.816	0.821
ΔU_{L2N} (%)	2.816	0.821
ΔU_{L3N} (%)	2.816	0.821
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.816
ΔU_{L1L2} (%)	3.252
ΔU_{L2L3} (%)	3.252
ΔU_{L3L1} (%)	3.252
ΔU_{L1N} (%)	2.816
ΔU_{L2N} (%)	2.816
ΔU_{L3N} (%)	2.816

3.5.155 Circuit Load WRF17

Circuit breaker	QF17
Ib	20.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	25 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	25 A
Long delay settings	
Ir	25 A
Tr	NA
Short delay settings	
Isd current	200 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR17
Parameters	
Length	9 m
Max length	46.7 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	20 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.71	1.06	1.28	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.71	1.06	1.28	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF17
U	400 V
S	14.1 kVA
P	12 kW
I	20.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	20.377	20.377	20.377	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	20.377	20.377	20.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.638	0.643
ΔU_{L1L2} (%)	3.046	0.743
ΔU_{L2L3} (%)	3.046	0.743
ΔU_{L3L1} (%)	3.046	0.743
ΔU_{L1N} (%)	2.638	0.643
ΔU_{L2N} (%)	2.638	0.643
ΔU_{L3N} (%)	2.638	0.643
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.638
ΔU_{L1L2} (%)	3.046
ΔU_{L2L3} (%)	3.046
ΔU_{L3L1} (%)	3.046
ΔU_{L1N} (%)	2.638
ΔU_{L2N} (%)	2.638
ΔU_{L3N} (%)	2.638

3.5.156 Circuit Load WRF18

Circuit breaker	QF18
Ib	30.6 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR18
Parameters	
Length	11 m
Max length	35.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	31 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.47	0.90	1.09	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.47	0.90	1.09	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF18
U	400 V
S	21.2 kVA
P	18 kW
I	30.6 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	30.566	30.566	30.566	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	30.566	30.566	30.566	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.174	1.179
ΔU_{L1L2} (%)	3.665	1.361
ΔU_{L2L3} (%)	3.665	1.361
ΔU_{L3L1} (%)	3.665	1.361
ΔU_{L1N} (%)	3.174	1.179
ΔU_{L2N} (%)	3.174	1.179
ΔU_{L3N} (%)	3.174	1.179
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.174
ΔU_{L1L2} (%)	3.665
ΔU_{L2L3} (%)	3.665
ΔU_{L3L1} (%)	3.665
ΔU_{L1N} (%)	3.174
ΔU_{L2N} (%)	3.174
ΔU_{L3N} (%)	3.174

3.5.157 Circuit Load WRF19

Circuit breaker	QF19
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	3 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	3 A
Long delay settings	
Ir	3 A
Tr	NA
Short delay settings	
Isd current	24 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR19
Parameters	
Length	10 m
Max length	241 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.05	0.63	0.88	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.05	0.63	0.88	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF19
U	400 V
S	1.76 kVA
P	1.5 kW
I	2.55 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.547	2.547	2.547	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.547	2.547	2.547	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.144	0.149
ΔU_{L1L2} (%)	2.475	0.172
ΔU_{L2L3} (%)	2.475	0.172
ΔU_{L3L1} (%)	2.475	0.172
ΔU_{L1N} (%)	2.144	0.149
ΔU_{L2N} (%)	2.143	0.149
ΔU_{L3N} (%)	2.143	0.149
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.144
ΔU_{L1L2} (%)	2.475
ΔU_{L2L3} (%)	2.475
ΔU_{L3L1} (%)	2.475
ΔU_{L1N} (%)	2.144
ΔU_{L2N} (%)	2.143
ΔU_{L3N} (%)	2.143

3.5.158 Circuit Load WRF20

Circuit breaker	QF20
Ib	3.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	4 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	4 A
Long delay settings	
Ir	4 A
Tr	NA
Short delay settings	
Isd current	32 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR20
Parameters	
Length	11 m
Max length	180 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF20
U	400 V
S	2.35 kVA
P	2 kW
I	3.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	3.396	3.396	3.396	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	3.396	3.396	3.396	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.213	0.218
ΔU_{L1L2} (%)	2.555	0.252
ΔU_{L2L3} (%)	2.555	0.252
ΔU_{L3L1} (%)	2.555	0.252
ΔU_{L1N} (%)	2.213	0.218
ΔU_{L2N} (%)	2.213	0.218
ΔU_{L3N} (%)	2.213	0.218
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.213
ΔU_{L1L2} (%)	2.555
ΔU_{L2L3} (%)	2.555
ΔU_{L3L1} (%)	2.555
ΔU_{L1N} (%)	2.213
ΔU_{L2N} (%)	2.213
ΔU_{L3N} (%)	2.213

3.5.159 Circuit Load AHU3

Circuit breaker	QF21
Ib	11.9 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	13 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	13 A
Long delay settings	
Ir	13 A
Tr	NA
Short delay settings	
Isd current	104 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	4800 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR21
Parameters	
Length	19 m
Max length	55 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	12 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.59	0.35	0.50	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.59	0.35	0.50	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AHU3
U	400 V
S	8.24 kVA
P	7 kW
I	11.9 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	11.887	11.887	11.887	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	11.887	11.887	11.887	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.312	1.317
ΔU_{L1L2} (%)	3.824	1.521
ΔU_{L2L3} (%)	3.824	1.521
ΔU_{L3L1} (%)	3.824	1.521
ΔU_{L1N} (%)	3.312	1.317
ΔU_{L2N} (%)	3.312	1.317
ΔU_{L3N} (%)	3.312	1.317
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.312
ΔU_{L1L2} (%)	3.824
ΔU_{L2L3} (%)	3.824
ΔU_{L3L1} (%)	3.824
ΔU_{L1N} (%)	3.312
ΔU_{L2N} (%)	3.312
ΔU_{L3N} (%)	3.312

3.5.160 Circuit Load AHU5

Circuit breaker	QF22
Ib	10.2 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	13 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	13 A
Long delay settings	
Ir	13 A
Tr	NA
Short delay settings	
Isd current	104 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	4800 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR22
Parameters	
Length	17 m
Max length	55 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	10 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.65	0.38	0.55	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.65	0.38	0.55	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AHU5
U	400 V
S	7.06 kVA
P	6 kW
I	10.2 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	10.189	10.189	10.189	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	10.189	10.189	10.189	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.005	1.010
ΔU_{L1L2} (%)	3.470	1.166
ΔU_{L2L3} (%)	3.470	1.166
ΔU_{L3L1} (%)	3.470	1.166
ΔU_{L1N} (%)	3.005	1.010
ΔU_{L2N} (%)	3.005	1.010
ΔU_{L3N} (%)	3.005	1.010
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.005
ΔU_{L1L2} (%)	3.470
ΔU_{L2L3} (%)	3.470
ΔU_{L3L1} (%)	3.470
ΔU_{L1N} (%)	3.005
ΔU_{L2N} (%)	3.005
ΔU_{L3N} (%)	3.005

3.5.161 Circuit Load AHU6

Circuit breaker	QF23
Ib	25.5 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR23
Parameters	
Length	15 m
Max length	35.9 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	25 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	1.14	0.69	0.84	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	1.14	0.69	0.84	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AHU6
U	400 V
S	17.6 kVA
P	15 kW
I	25.5 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	25.471	25.471	25.471	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	25.471	25.471	25.471	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.335	1.340
ΔU_{L1L2} (%)	3.851	1.547
ΔU_{L2L3} (%)	3.850	1.547
ΔU_{L3L1} (%)	3.850	1.547
ΔU_{L1N} (%)	3.335	1.340
ΔU_{L2N} (%)	3.335	1.340
ΔU_{L3N} (%)	3.335	1.340
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.335
ΔU_{L1L2} (%)	3.851
ΔU_{L2L3} (%)	3.850
ΔU_{L3L1} (%)	3.850
ΔU_{L1N} (%)	3.335
ΔU_{L2N} (%)	3.335
ΔU_{L3N} (%)	3.335

3.5.162 Circuit Load AHU4

Circuit breaker	QF24
Ib	8.49 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	10 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	10 A
Long delay settings	
Ir	10 A
Tr	NA
Short delay settings	
Isd current	80 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR24
Parameters	
Length	14 m
Max length	71.3 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	8 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.78	0.46	0.66	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.78	0.46	0.66	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AHU4
U	400 V
S	5.88 kVA
P	5 kW
I	8.49 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	8.490	8.490	8.490	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	8.490	8.490	8.490	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.688	0.693
ΔU_{L1L2} (%)	3.104	0.800
ΔU_{L2L3} (%)	3.104	0.800
ΔU_{L3L1} (%)	3.104	0.800
ΔU_{L1N} (%)	2.688	0.693
ΔU_{L2N} (%)	2.688	0.693
ΔU_{L3N} (%)	2.688	0.693
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.688
ΔU_{L1L2} (%)	3.104
ΔU_{L2L3} (%)	3.104
ΔU_{L3L1} (%)	3.104
ΔU_{L1N} (%)	2.688
ΔU_{L2N} (%)	2.688
ΔU_{L3N} (%)	2.688

3.5.163 Circuit Load AHU7

Circuit breaker	QF25
Ib	25.5 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	32 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	32 A
Long delay settings	
Ir	32 A
Tr	NA
Short delay settings	
Isd current	256 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	No Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 25
Parameters	
Length	16 m
Max length	30.1 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	25 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.83	0.49	0.46	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.83	0.49	0.46	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	AHU 7
U	400 V
S	17.6 kVA
P	15 kW
I	25.5 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	25.471	25.471	25.471	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	25.471	25.471	25.471	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.496	1.429
ΔU_{L1L2} (%)	4.037	1.650
ΔU_{L2L3} (%)	4.037	1.650
ΔU_{L3L1} (%)	4.037	1.650
ΔU_{L1N} (%)	3.496	1.429
ΔU_{L2N} (%)	3.496	1.429
ΔU_{L3N} (%)	3.496	1.429
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	3.496
ΔU_{L1L2} (%)	4.037
ΔU_{L2L3} (%)	4.037
ΔU_{L3L1} (%)	4.037
ΔU_{L1N} (%)	3.496
ΔU_{L2N} (%)	3.496
ΔU_{L3N} (%)	3.496

3.5.164 Circuit Load ven3

Circuit breaker	QF26
Ib	3.74 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	4 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	4 A
Long delay settings	
Ir	4 A
Tr	NA
Short delay settings	
Isd current	32 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	430 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 26
Parameters	
Length	10 m
Max length	177 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	VEN3
U	400 V
S	2.59 kVA
P	2.2 kW
I	3.74 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	3.736	3.736	3.736	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	3.736	3.736	3.736	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.285	0.218
ΔU_{L1L2} (%)	2.639	0.252
ΔU_{L2L3} (%)	2.639	0.252
ΔU_{L3L1} (%)	2.639	0.252
ΔU_{L1N} (%)	2.285	0.218
ΔU_{L2N} (%)	2.285	0.218
ΔU_{L3N} (%)	2.285	0.218
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.285
ΔU_{L1L2} (%)	2.639
ΔU_{L2L3} (%)	2.639
ΔU_{L3L1} (%)	2.639
ΔU_{L1N} (%)	2.285
ΔU_{L2N} (%)	2.285
ΔU_{L3N} (%)	2.285

3.5.165 Circuit Load ven4

Circuit breaker	QF27
Ib	2.04 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	3 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	3 A
Long delay settings	
Ir	3 A
Tr	NA
Short delay settings	
Isd current	24 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	480 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 27
Parameters	
Length	10 m
Max length	237 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	VEN4
U	400 V
S	1.41 kVA
P	1.2 kW
I	2.04 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.038	2.038	2.038	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.038	2.038	2.038	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.186	0.119
ΔU_{L1L2} (%)	2.524	0.137
ΔU_{L2L3} (%)	2.524	0.137
ΔU_{L3L1} (%)	2.524	0.137
ΔU_{L1N} (%)	2.186	0.119
ΔU_{L2N} (%)	2.186	0.119
ΔU_{L3N} (%)	2.186	0.119
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.186
ΔU_{L1L2} (%)	2.524
ΔU_{L2L3} (%)	2.524
ΔU_{L3L1} (%)	2.524
ΔU_{L1N} (%)	2.186
ΔU_{L2N} (%)	2.186
ΔU_{L3N} (%)	2.186

3.5.166 Circuit Load ven5

Circuit breaker	QF28
Ib	1.7 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	2 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	2 A
Long delay settings	
Ir	2 A
Tr	NA
Short delay settings	
Isd current	16 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	780 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 28
Parameters	
Length	11 m
Max length	359 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.75	0.45	0.47	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.75	0.45	0.47	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	VEN5
U	400 V
S	1.18 kVA
P	1 kW
I	1.7 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.698	1.698	1.698	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	1.698	1.698	1.698	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.176	0.109
ΔU_{L1L2} (%)	2.513	0.126
ΔU_{L2L3} (%)	2.513	0.126
ΔU_{L3L1} (%)	2.513	0.126
ΔU_{L1N} (%)	2.176	0.109
ΔU_{L2N} (%)	2.176	0.109
ΔU_{L3N} (%)	2.176	0.109
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.176
ΔU_{L1L2} (%)	2.513
ΔU_{L2L3} (%)	2.513
ΔU_{L3L1} (%)	2.513
ΔU_{L1N} (%)	2.176
ΔU_{L2N} (%)	2.176
ΔU_{L3N} (%)	2.176

3.5.167 Circuit Load ven6

Circuit breaker	QF29
Ib	3.4 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	4 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	4 A
Long delay settings	
Ir	4 A
Tr	NA
Short delay settings	
Isd current	32 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	430 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 29
Parameters	
Length	12 m
Max length	177 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.71	0.42	0.45	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.71	0.42	0.45	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	VEN6
U	400 V
S	2.35 kVA
P	2 kW
I	3.4 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	3.396	3.396	3.396	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	3.396	3.396	3.396	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.305	0.238
ΔU_{L1L2} (%)	2.662	0.274
ΔU_{L2L3} (%)	2.662	0.274
ΔU_{L3L1} (%)	2.662	0.274
ΔU_{L1N} (%)	2.305	0.238
ΔU_{L2N} (%)	2.305	0.238
ΔU_{L3N} (%)	2.305	0.238
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.305
ΔU_{L1L2} (%)	2.662
ΔU_{L2L3} (%)	2.662
ΔU_{L3L1} (%)	2.662
ΔU_{L1N} (%)	2.305
ΔU_{L2N} (%)	2.305
ΔU_{L3N} (%)	2.305

3.5.168 Circuit Load pump1

Circuit breaker	QF 30
Ib	2.55 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	3 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	3 A
Long delay settings	
Ir	3 A
Tr	NA
Short delay settings	
Isd current	24 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	480 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR30
Parameters	
Length	7 m
Max length	237 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	3 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	PUMP1
U	400 V
S	1.76 kVA
P	1.5 kW
I	2.55 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.547	2.547	2.547	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	2.547	2.547	2.547	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.171	0.104
ΔU_{L1L2} (%)	2.507	0.120
ΔU_{L2L3} (%)	2.507	0.120
ΔU_{L3L1} (%)	2.507	0.120
ΔU_{L1N} (%)	2.171	0.104
ΔU_{L2N} (%)	2.171	0.104
ΔU_{L3N} (%)	2.171	0.104
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.171
ΔU_{L1L2} (%)	2.507
ΔU_{L2L3} (%)	2.507
ΔU_{L3L1} (%)	2.507
ΔU_{L1N} (%)	2.171
ΔU_{L2N} (%)	2.171
ΔU_{L3N} (%)	2.171

3.5.169 Circuit Load pump2

Circuit breaker	QF 31
Ib	0.594 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	1 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	1 A
Long delay settings	
Ir	1 A
Tr	NA
Short delay settings	
Isd current	8 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	2400 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR31
Parameters	
Length	8 m
Max length	720 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.93	0.55	0.55	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.93	0.55	0.55	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	PUMP2
U	400 V
S	0.412 kVA
P	0.35 kW
I	0.594 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.594	0.594	0.594	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.594	0.594	0.594	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.095	0.028
ΔU_{L1L2} (%)	2.419	0.032
ΔU_{L2L3} (%)	2.419	0.032
ΔU_{L3L1} (%)	2.419	0.032
ΔU_{L1N} (%)	2.095	0.028
ΔU_{L2N} (%)	2.095	0.028
ΔU_{L3N} (%)	2.095	0.028
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.095
ΔU_{L1L2} (%)	2.419
ΔU_{L2L3} (%)	2.419
ΔU_{L3L1} (%)	2.419
ΔU_{L1N} (%)	2.095
ΔU_{L2N} (%)	2.095
ΔU_{L3N} (%)	2.095

3.5.170 Circuit Load pump3

Circuit breaker	QF 32
Ib	4.25 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	380 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR32
Parameters	
Length	7 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	PUMP3
U	400 V
S	2.94 kVA
P	2.5 kW
I	4.25 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	4.245	4.245	4.245	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	4.245	4.245	4.245	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.241	0.173
ΔU_{L1L2} (%)	2.587	0.200
ΔU_{L2L3} (%)	2.587	0.200
ΔU_{L3L1} (%)	2.587	0.200
ΔU_{L1N} (%)	2.241	0.173
ΔU_{L2N} (%)	2.241	0.173
ΔU_{L3N} (%)	2.241	0.173
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.241
ΔU_{L1L2} (%)	2.587
ΔU_{L2L3} (%)	2.587
ΔU_{L3L1} (%)	2.587
ΔU_{L1N} (%)	2.241
ΔU_{L2N} (%)	2.241
ΔU_{L3N} (%)	2.241

3.5.171 Circuit Load pump4

Circuit breaker	QF 33
Ib	4.25 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	380 A
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR33
Parameters	
Length	7 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	1.00	0.60	0.58	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	PUMP4
U	400 V
S	2.94 kVA
P	2.5 kW
I	4.25 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	4.245	4.245	4.245	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	4.245	4.245	4.245	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.241	0.173
ΔU_{L1L2} (%)	2.587	0.200
ΔU_{L2L3} (%)	2.587	0.200
ΔU_{L3L1} (%)	2.587	0.200
ΔU_{L1N} (%)	2.241	0.173
ΔU_{L2N} (%)	2.241	0.173
ΔU_{L3N} (%)	2.241	0.173
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.241
ΔU_{L1L2} (%)	2.587
ΔU_{L2L3} (%)	2.587
ΔU_{L3L1} (%)	2.587
ΔU_{L1N} (%)	2.241
ΔU_{L2N} (%)	2.241
ΔU_{L3N} (%)	2.241

3.5.172 Circuit Load WRF-20

Circuit breaker	QF37
Ib	5.94 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR37
Parameters	
Length	12 m
Max length	120 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	6 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.89	0.53	0.75	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.89	0.53	0.75	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF-20
U	400 V
S	4.12 kVA
P	3.5 kW
I	5.94 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	5.943	5.943	5.943	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	5.943	5.943	5.943	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.411	0.416
ΔU_{L1L2} (%)	2.784	0.480
ΔU_{L2L3} (%)	2.784	0.480
ΔU_{L3L1} (%)	2.784	0.480
ΔU_{L1N} (%)	2.411	0.416
ΔU_{L2N} (%)	2.411	0.416
ΔU_{L3N} (%)	2.411	0.416
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.411
ΔU_{L1L2} (%)	2.784
ΔU_{L2L3} (%)	2.784
ΔU_{L3L1} (%)	2.784
ΔU_{L1N} (%)	2.411
ΔU_{L2N} (%)	2.411
ΔU_{L3N} (%)	2.411

3.5.173 Circuit Load WRF-19

Circuit breaker	QF36
Ib	13.6 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	16 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	16 A
Long delay settings	
Ir	16 A
Tr	NA
Short delay settings	
Isd current	128 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 05bis NSX400F Micrologic 5.3 A 400 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR36
Parameters	
Length	11 m
Max length	44.3 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	14 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	0.96	0.57	0.81	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	WRF-19
U	400 V
S	9.4 kVA
P	8 kW
I	13.6 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	13.585	13.585	13.585	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	13.585	13.585	13.585	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.866	0.871
ΔU_{L1L2} (%)	3.310	1.006
ΔU_{L2L3} (%)	3.310	1.006
ΔU_{L3L1} (%)	3.310	1.006
ΔU_{L1N} (%)	2.866	0.871
ΔU_{L2N} (%)	2.866	0.871
ΔU_{L3N} (%)	2.866	0.871
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.866
ΔU_{L1L2} (%)	3.310
ΔU_{L2L3} (%)	3.310
ΔU_{L3L1} (%)	3.310
ΔU_{L1N} (%)	2.866
ΔU_{L2N} (%)	2.866
ΔU_{L3N} (%)	2.866

3.5.174 Circuit Boiler 1

Circuit breaker	QF 34
Ib	0.425 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	0.5 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	0.5 A
Long delay settings	
Ir	0.5 A
Tr	NA
Short delay settings	
Isd current	4 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 34
Parameters	
Length	10 m
Max length	1445 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	0 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	Boil 1
U	400 V
S	0.294 kVA
P	0.25 kW
I	0.425 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.425	0.425	0.425	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.425	0.425	0.425	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.025
ΔU_{L1L2} (%)	2.416	0.029
ΔU_{L2L3} (%)	2.416	0.029
ΔU_{L3L1} (%)	2.416	0.029
ΔU_{L1N} (%)	2.092	0.025
ΔU_{L2N} (%)	2.092	0.025
ΔU_{L3N} (%)	2.092	0.025
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	2.416
ΔU_{L2L3} (%)	2.416
ΔU_{L3L1} (%)	2.416
ΔU_{L1N} (%)	2.092
ΔU_{L2N} (%)	2.092
ΔU_{L3N} (%)	2.092

3.5.175 Circuit Boiler 2

Circuit breaker	QF 34 (1)
Ib	0.425 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	0.5 A
Breaking capacity	50 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	4P4d
Trip unit designation	C
Trip unit rating	0.5 A
Long delay settings	
Ir	0.5 A
Tr	NA
Short delay settings	
Isd current	4 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 06bis iC60N C 32 A / 4P4d	Full Discrimination
Operating mode backup	
NA	Discrimination can't be determinated : no upstream Lv Breaker

Cable	WR 35
Parameters	
Length	10 m
Max length	1445 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	0 A
Sizing constraint	Iz
Sizing Information	Sized with Ir

Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	0.80	0.48	0.50	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	Boil 2
U	400 V
S	0.294 kVA
P	0.25 kW
I	0.425 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.425	0.425	0.425	0
Operating mode backup				
(A)	0.000	0.000	0.000	0

Synthesis for all operating mode				
(A)	0.425	0.425	0.425	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.092	0.025
ΔU_{L1L2} (%)	2.416	0.029
ΔU_{L2L3} (%)	2.416	0.029
ΔU_{L3L1} (%)	2.416	0.029
ΔU_{L1N} (%)	2.092	0.025
ΔU_{L2N} (%)	2.092	0.025
ΔU_{L3N} (%)	2.092	0.025
Operating mode backup		
ΔU_{3L} (%)	0.196	0.000
ΔU_{L1L2} (%)	0.222	0.000
ΔU_{L2L3} (%)	0.219	0.000
ΔU_{L3L1} (%)	0.223	0.000
ΔU_{L1N} (%)	0.196	0.000
ΔU_{L2N} (%)	0.189	0.000
ΔU_{L3N} (%)	0.190	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	2.092
ΔU_{L1L2} (%)	2.416
ΔU_{L2L3} (%)	2.416
ΔU_{L3L1} (%)	2.416
ΔU_{L1N} (%)	2.092
ΔU_{L2N} (%)	2.092
ΔU_{L3N} (%)	2.092

3.5.176 Circuit Lighting1

Circuit breaker	QL 1
Ib	4.58 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO1
Parameters	
Length	96 m
Max length	194 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	5 A

Sizing constraint	Voltage drop
Sizing Information	The CSA of cable WDO1 has been increased from 1.5 to 2.5 to comply with the voltage drop in the circuit.□□Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected neutral	
Cross section area	1x2.5 mm²
Core	Copper
Iz under real conditions	32 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current							
	Ik3max	**Ik2max**	**Ik1max**	**Ik2min**	**Ik1min**	**Ief**	**Ief2min**
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.20	0.12	0.14	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.13	0.11	0.13	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.13	0.11	0.13	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting1**
U	400 V
S	3.18 kVA
P	2.7 kW
I	4.58 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current			
IL1	**IL2**	**IL3**	**IN**

Operating mode Normal				
(A)	4.585	4.585	4.585	0

Operating mode backup				
(A)	4.585	4.585	4.585	0

Synthesis for all operating mode				
(A)	4.585	4.585	4.585	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.030	1.543
ΔU_{L1L2} (%)	3.495	1.782
ΔU_{L2L3} (%)	3.498	1.782
ΔU_{L3L1} (%)	3.493	1.782
ΔU_{L1N} (%)	3.030	1.543
ΔU_{L2N} (%)	3.037	1.543
ΔU_{L3N} (%)	3.035	1.543
Operating mode backup		
ΔU_{3L} (%)	1.811	1.543
ΔU_{L1L2} (%)	2.083	1.782
ΔU_{L2L3} (%)	2.082	1.782
ΔU_{L3L1} (%)	2.082	1.782
ΔU_{L1N} (%)	1.810	1.543
ΔU_{L2N} (%)	1.811	1.543
ΔU_{L3N} (%)	1.809	1.543

Synthesis for all operating mode	
ΔU_{3L} (%)	3.030
ΔU_{L1L2} (%)	3.495
ΔU_{L2L3} (%)	3.498
ΔU_{L3L1} (%)	3.493
ΔU_{L1N} (%)	3.030
ΔU_{L2N} (%)	3.037
ΔU_{L3N} (%)	3.035

3.5.177 Circuit Lighting 2

Circuit breaker	QL 2
Ib	1.19 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60L
Circuit breaker rating	6 A
Breaking capacity	25 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO2
Parameters	
Length	48 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.24	0.14	0.20	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.14	0.12	0.16	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.14	0.12	0.16	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting 2**
U	400 V
S	0.824 kVA
P	0.7 kW
I	1.19 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	1.189	1.189	1.189	0

Operating mode backup				
(A)	1.189	1.189	1.189	0

Synthesis for all operating mode				
(A)	1.189	1.189	1.189	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.820	0.333
ΔU_{L1L2} (%)	2.097	0.384
ΔU_{L2L3} (%)	2.100	0.384
ΔU_{L3L1} (%)	2.095	0.384
ΔU_{L1N} (%)	1.819	0.333
ΔU_{L2N} (%)	1.827	0.333
ΔU_{L3N} (%)	1.824	0.333
Operating mode backup		
ΔU_{3L} (%)	0.600	0.333
ΔU_{L1L2} (%)	0.685	0.384
ΔU_{L2L3} (%)	0.685	0.384
ΔU_{L3L1} (%)	0.684	0.384
ΔU_{L1N} (%)	0.600	0.333
ΔU_{L2N} (%)	0.601	0.333
ΔU_{L3N} (%)	0.599	0.333

Synthesis for all operating mode	
ΔU_{3L} (%)	1.820
ΔU_{L1L2} (%)	2.097
ΔU_{L2L3} (%)	2.100
ΔU_{L3L1} (%)	2.095
ΔU_{L1N} (%)	1.819
ΔU_{L2N} (%)	1.827
ΔU_{L3N} (%)	1.824

3.5.178 Circuit Lighting 3

Circuit breaker	QL 3
Ib	1.02 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60L
Circuit breaker rating	6 A
Breaking capacity	25 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO3
Parameters	
Length	45 m
Max length	63 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	1 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.25	0.15	0.21	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.13	0.17	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.15	0.13	0.17	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting 3**
U	400 V
S	0.235 kVA
P	0.2 kW
I	1.02 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L3-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	0.000	1.019	1.02

Operating mode backup				
(A)	0.000	0.000	1.019	1.02

Synthesis for all operating mode				
(A)	0.000	0.000	1.019	1.02

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.755	0.267
ΔU_{L1L2} (%)	1.713	0.000
ΔU_{L2L3} (%)	1.716	0.000
ΔU_{L3L1} (%)	1.711	0.000
ΔU_{L1N} (%)	1.486	0.000
ΔU_{L2N} (%)	1.494	0.000
ΔU_{L3N} (%)	2.026	0.535
Operating mode backup		
ΔU_{3L} (%)	0.535	0.267
ΔU_{L1L2} (%)	0.301	0.000
ΔU_{L2L3} (%)	0.300	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.267	0.000
ΔU_{L2N} (%)	0.268	0.000
ΔU_{L3N} (%)	0.801	0.535

Synthesis for all operating mode	
ΔU_{3L} (%)	1.755
ΔU_{L1L2} (%)	1.713
ΔU_{L2L3} (%)	1.716
ΔU_{L3L1} (%)	1.711
ΔU_{L1N} (%)	1.486
ΔU_{L2N} (%)	1.494
ΔU_{L3N} (%)	2.026

3.5.179 Circuit Lighting 4

Circuit breaker	QL 4
Ib	1.53 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60L
Circuit breaker rating	6 A
Breaking capacity	25 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	1P1d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results	
UpStream	Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO4
Parameters	
Length	45 m
Max length	63 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	26 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.25	0.15	0.21	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.15	0.13	0.17	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.15	0.13	0.17	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting 4**
U	400 V
S	0.353 kVA
P	0.3 kW
I	1.53 A
cosφ	0.85
Polarity	1Ph+N
Phase connection	L2-N
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	0.000	1.528	0.000	1.53

Operating mode backup				
(A)	0.000	1.528	0.000	1.53

Synthesis for all operating mode				
(A)	0.000	1.528	0.000	1.53

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	1.888	0.401
ΔU_{L1L2} (%)	1.713	0.000
ΔU_{L2L3} (%)	1.716	0.000
ΔU_{L3L1} (%)	1.711	0.000
ΔU_{L1N} (%)	1.486	0.000
ΔU_{L2N} (%)	2.296	0.802
ΔU_{L3N} (%)	1.491	0.000
Operating mode backup		
ΔU_{3L} (%)	0.669	0.401
ΔU_{L1L2} (%)	0.301	0.000
ΔU_{L2L3} (%)	0.300	0.000
ΔU_{L3L1} (%)	0.300	0.000
ΔU_{L1N} (%)	0.267	0.000
ΔU_{L2N} (%)	1.070	0.802
ΔU_{L3N} (%)	0.266	0.000

Synthesis for all operating mode	
ΔU_{3L} (%)	1.888
ΔU_{L1L2} (%)	1.713
ΔU_{L2L3} (%)	1.716
ΔU_{L3L1} (%)	1.711
ΔU_{L1N} (%)	1.486
ΔU_{L2N} (%)	2.296
ΔU_{L3N} (%)	1.491

3.5.180 Circuit Lighting 5

Circuit breaker	QL 5
Ib	2.38 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO5
Parameters	
Length	60 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	2 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.19	0.11	0.16	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.13	0.10	0.14	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.13	0.10	0.14	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting 5**
U	400 V
S	1.65 kVA
P	1.4 kW
I	2.38 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	2.377	2.377	2.377	0

Operating mode backup				
(A)	2.377	2.377	2.377	0

Synthesis for all operating mode				
(A)	2.377	2.377	2.377	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	2.319	0.832
ΔU_{L1L2} (%)	2.673	0.961
ΔU_{L2L3} (%)	2.676	0.961
ΔU_{L3L1} (%)	2.672	0.961
ΔU_{L1N} (%)	2.318	0.832
ΔU_{L2N} (%)	2.326	0.832
ΔU_{L3N} (%)	2.323	0.832
Operating mode backup		
ΔU_{3L} (%)	1.100	0.832
ΔU_{L1L2} (%)	1.261	0.961
ΔU_{L2L3} (%)	1.261	0.961
ΔU_{L3L1} (%)	1.260	0.961
ΔU_{L1N} (%)	1.099	0.832
ΔU_{L2N} (%)	1.100	0.832
ΔU_{L3N} (%)	1.098	0.832

Synthesis for all operating mode	
ΔU_{3L} (%)	2.319
ΔU_{L1L2} (%)	2.673
ΔU_{L2L3} (%)	2.676
ΔU_{L3L1} (%)	2.672
ΔU_{L1N} (%)	2.318
ΔU_{L2N} (%)	2.326
ΔU_{L3N} (%)	2.323

3.5.181 Circuit Lighting 6

Circuit breaker	QL 6
Ib	4.25 A
Distance from origin	NA
Sizing Information	Sized by system
Range	Acti9 iC60
Designation	iC60N
Circuit breaker rating	6 A
Breaking capacity	10 kA
TNS One pole breaking capacity	NA
IT One pole breaking capacity	NA
Reinforced breaking capacity	NA
Pole & protected pole	3P3d
Trip unit designation	C
Trip unit rating	6 A
Long delay settings	
Ir	6 A
Tr	NA
Short delay settings	
Isd current	48 A
Tsd	NA
Instantaneous tripping	
Ii current	NA

Discrimination Results UpStream	 Discrimination Limit
Operating mode Normal	
QA 07bis iC60N C 10 A / 4P4d	80 A
Operating mode backup	
QA 07bis iC60N C 10 A / 4P4d	80 A

Cable	WDO6
Parameters	
Length	70 m
Max length	116 m
Installation method	31 E Multi-core cables on horizontal perforated tray
Type of cable	Multi-core
Nb of additional touching circuits	0
Insulation	XLPE
Ambient temperature	30 °C
Level of third harmonic THDI	0 %
Ib	4 A

Sizing constraint	Iz
Sizing Information	Sized with Ir
Correction factors	
Temperature factor	1
Standard table reference	A-52-14
Soil thermal resistivity factor	1
Standard table reference	A-52-16
Loaded neutral factor	1
Standard table reference	D-52-1
Touching conductor factor	1
Standard table reference	A-52-20
User correction factor	1
Overall factor	1

Selected phase	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected neutral	
Cross section area	1x1.5 mm²
Core	Copper
Iz under real conditions	23 A
Selected PE	
Cross section area	1x4 mm²
Core	Copper

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	0.17	0.10	0.14	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.12	0.09	0.12	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.12	0.09	0.12	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Charge	**Outdoor Lighting 6**
U	400 V
S	2.94 kVA
P	2.5 kW
I	4.25 A
cosφ	0.85
Polarity	3Ph+N
Phase connection	
Number of circuit	1
Ku (Normal)	1
Harmonic generator	No
THDI3	0
Sensitivity to over voltage	NA

Design current	IL1	IL2	IL3	IN
Operating mode Normal				
(A)	4.245	4.245	4.245	0

Operating mode backup				
(A)	4.245	4.245	4.245	0

Synthesis for all operating mode				
(A)	4.245	4.245	4.245	0

Voltage drop	Cumulated from upstream	Circuit
Operating mode Normal		
ΔU_{3L} (%)	3.220	1.733
ΔU_{L1L2} (%)	3.714	2.001
ΔU_{L2L3} (%)	3.717	2.001
ΔU_{L3L1} (%)	3.712	2.001
ΔU_{L1N} (%)	3.219	1.733
ΔU_{L2N} (%)	3.227	1.733
ΔU_{L3N} (%)	3.224	1.733
Operating mode backup		
ΔU_{3L} (%)	2.001	1.733
ΔU_{L1L2} (%)	2.302	2.001
ΔU_{L2L3} (%)	2.301	2.001
ΔU_{L3L1} (%)	2.301	2.001
ΔU_{L1N} (%)	2.000	1.733
ΔU_{L2N} (%)	2.001	1.733
ΔU_{L3N} (%)	1.999	1.733

Synthesis for all operating mode	
ΔU_{3L} (%)	3.220
ΔU_{L1L2} (%)	3.714
ΔU_{L2L3} (%)	3.717
ΔU_{L3L1} (%)	3.712
ΔU_{L1N} (%)	3.219
ΔU_{L2N} (%)	3.227
ΔU_{L3N} (%)	3.224

3.6 Busbar circuits

3.6.1 Circuit WC in

Busbar	WC in	
Parameters		
Switchboard Name	MDB	
Switchboard Range	No preference	
Rating (A)	0	
IP	Undefined	
Feeder		
Circuit name	Protection name	Protection type
Feeder circuit 1	QA 01	C120N
Feeder circuit 2	QA 02	iC60N
Feeder circuit 3	QA 03	iC60N
Feeder circuit 4	QA 04	iC60N
Feeder circuit 5	QA 05	NSX400F
Capacitors	Qcap	C120N
Feeder circuit 6	QA 06	iC60N
Feeder circuit 7	QA 07	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	7.21	6.24	6.01	5.23	4.95	6.04	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	7.21	6.24	6.01	0.18	0.28	0.28	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.2 Circuit WC 1

Busbar	WC 1	
Parameters		
Switchboard Name	DB1	
Switchboard Range	No preference	
Rating (A)	0	
IP	Undefined	
Feeder		
Circuit name	Protection name	Protection type
Load 1	QA 1	iC60N
Load 2	QA 2	iC60N
Load 3	QA 3	iC60N
Load 4	QA 4	iC60N
Load 5	QA 5	iC60N
Load 6	QA 6	iC60N
Load 7	QA 7	iC60N
Load 8	QA 8	iC60N

Load 9	QA 9	iC60N
Load 10	QA 10	iC60N
Load 11	QA 11	iC60N
Load 12	QA 12	iC60N
Load 13	QA 13	iC60N
Load 14	QA 14	iC60N
Load 15	QA 15	iC60N
Load 16	QA 16	iC60N
Load 17	QA 17	iC60N
Load 18	QA 18	iC60N
Load 19	QA 19	iC60N
Load 20	QA 20	iC60N
Load 21	QA 21	iC60N
Load 22	QA 22	iC60N
Load 23	QA 23	iC60N
Load 2A	QA 2A	iC60N
Load 3A	QA 3A	iC60N
Load 4A	QA 4A	iC60N
Load 5A	QA 5A	iC60N
Load 6A	QA 6A	iC60N
Load 7A	QA 7A	iC60N
Load 8A	QA 8A	iC60N
Load 9A	QA 9A	iC60N
Load 10 (1)	QA 10A	iC60N
Load 11A	QA 11A	iC60N
Load 12A	QA 12A	iC60N
Load 13A	QA 13A	iC60N
Load 14A	QA 14A	iC60N
Load 15A	QA 15A	iC60N
Load 16A	QA 16A	iC60N
Load 17A	QA 17A	iC60N
Load 18A	QA 18A	iC60N
Load 19A	QA 19A	iC60N
Load 20A	QA 20A	iC60N
Load 21A	QA 21A	iC60N
Load 22A	QA 22A	iC60N
Load 23A	QA 23A	iC60N
Load 1A	QA 1A	iC60N
Load 17 H	QA 17 H	iC60N
Load 1 H	QA 1 H	iC60N
Load 2 H	QA 2 H	iC60N
Load 3 H	QA 3 H	iC60N
Load 4 H	QA 4 H	iC60N
Load 5 H	QA 5 H	iC60N
Load 6 H	QA 6 H	iC60N
Load 7 H	QA 7 H	iC60N
Load 8 H	QA 8 H	iC60N
Load 9 H	QA 9 H	iC60N
Load 10 H	QA 10 H	iC60N
Load 11 H	QA 11 H	iC60N
Load 12 H	QA 12 H	iC60N
Load 13 H	QA 13 H	iC60N
Load 14 H	QA 14 H	iC60N
Load 15 H	QA 15 H	iC60N
Load 16 H	QA 16 H	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.81	5.90	5.41	4.87	4.33	5.01	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	6.81	5.90	5.41	4.87	4.33	5.01	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.3 Circuit WC 3

Busbar	WC 3
Parameters	
Switchboard Name	DB3
Switchboard Range	No preference
Rating (A)	0
IP	Undefined

Feeder

Circuit name	Protection name	Protection type
Load 6-3	QA 6-3	iC60N
Load 7-3	QA 7-3	iC60N
Load 8-3	QA 8-3	iC60N
Load 3-3	QA 3-3	iC60N
Load 1-3	QA 1-3	iC60N
Load 2-3	QA 2-3	iC60N
Load 4-3	QA 4-3	iC60N
Load 5-3	QA 5-3	iC60L
Load 1-3A	QA 1-3A	iC60N
Load 2-3A	QA 2-3A	iC60N
Load 3-3A	QA 3-3A	iC60N
Load 4-3A	QA 4-3A	iC60N
Load 5-3A	QA 5-3A	iC60N
Load 6-3A	QA 6-3A	iC60N
Load 7-3A	QA 7-3A	iC60N
Load 8-3A	QA 8-3A	iC60N
Load 8-3B	QA 8-3B	iC60N
Load 1-3B	QA 1-3B	iC60N
Load 2-3B	QA 2-3B	iC60N
Load 3-3B	QA 3-3B	iC60N
Load 4-3B	QA 4-3B	iC60N
Load 5-3B	QA 5-3B	iC60N
Load 6-3B	QA 6-3B	iC60N
Load 7-3B	QA 7-3B	iC60N
Load 10-3B	QA 10-3B	iC60N
Load 9-3B	QA 9-3B	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min

Operating mode Normal							
(kA)	3.66	3.17	2.12	2.29	1.48	1.30	0.00

Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.27	0.00

Synthesis for all operating mode							
(kA)	3.66	3.17	2.12	2.29	1.48	1.30	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.4 Circuit WC 2

Busbar	WC 2
Parameters	
Switchboard Name	DB2
Switchboard Range	No preference
Rating (A)	0
IP	Undefined

Feeder

Circuit name	Protection name	Protection type
Load 3-2	QA 3-2	iC60N
Load 1-2	QA 1-2	iC60N
Load 2-2	QA 2-2	iC60N
Load 6-2	QA 6-2	iC60N
Load 7-2	QA 7-2	iC60N
Load 8-2	QA 8-2	iC60N
Load 9-2	QA 9-2	iC60N
Load 10-2	QA 10-2	iC60N
Load 11-2	QA 11-2	iC60N
Load 12-2	QA 12-2	iC60N
Load 13-2	QA 13-2	iC60N
Load 14-2	QA 14-2	iC60N
Load 15-2	QA 15-2	iC60N
Load 1-2A	QA 1-2A	iC60N
Load 2-2A	QA 2-2A	iC60N
Load 3-2A	QA 3-2A	iC60N
Load 4-2A	QA 4-2A	iC60N
Load 5-2A	QA 5-2A	iC60N
Load 6-2A	QA 6-2A	iC60N
Load 7-2A	QA 7-2A	iC60N
Load 8-2A	QA 8-2A	iC60N
Load 9-2A	QA 9-2A	iC60N
Load 10-2A	QA 10-2A	iC60N
Load 11-2A	QA 11-2A	iC60N
Load 12-2A	QA 12-2A	iC60N
Load 13-2A	QA 13-2A	iC60N
Load 14-2A	QA 14-2A	iC60N
Load 15-2A	QA 15-2A	iC60N
Load 4-2	QA 4-2	iC60N
Load 5-2	QA 5-2	iC60N
Load 1-2B	QA 1-2B	iC60N
Load 2-2B	QA 2-2B	iC60N
Load 3-2B	QA 3-2B	iC60N
Load 4-2B	QA 4-2B	iC60N
Load 5-2B	QA 5-2B	iC60N

Load 6-2B	QA 6-2B	iC60N
Load 7-2B	QA 7-2B	iC60N
Load 8-2B	QA 8-2B	iC60N
Load 9-2B	QA 9-2B	iC60N
Load 10-2B	QA 10-2B	iC60N
Load 11-2B	QA 11-2B	iC60N
Load 12-2B	QA 12-2B	iC60N
Load 13-2B	QA 13-2B	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	4.52	3.92	2.79	2.92	1.99	2.17	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	4.52	3.92	2.79	2.92	1.99	2.17	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.5 Circuit WC 4

Busbar	WC 4	
Parameters		
Switchboard Name	DB 4	
Switchboard Range	No preference	
Rating (A)	0	
IP	Undefined	
Feeder		
Circuit name	Protection name	Protection type
Load 1-4	QA 1-4	iC60N
Load 2-4	QA 2-4	iC60N
Load 3-4	QA 3-4	iC60N
Load 1-4A	QA 1-4A	iC60N
Load 2-4A	QA 2-4A	iC60N
Load 3-4A	QA 3-4A	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.04	2.63	1.70	1.88	1.18	1.01	0.00
Operating mode backup							
(kA)	0.35	0.31	0.32	0.18	0.27	0.27	0.00
Synthesis for all operating mode							
(kA)	3.04	2.63	1.70	0.18	0.27	0.27	0.00

Calculation results in accordance with CENELEC technical report TR50480.

All assumptions and device choices are the user's responsibility.

3.6.6 Circuit WC 5

Busbar	WC 5
Parameters	
Switchboard Name	DB5
Switchboard Range	No preference
Rating (A)	0
IP	Undefined

Feeder

Circuit name	Protection name	Protection type
Load WRF1	QF1	iC60N
Load WRF2	QF2	iC60N
Load WRF3	QF3	iC60N
Load WRF4	QF4	iC60N
Load WRF5	QF5	iC60N
Load WRF6	QF6	iC60N
Load WRF7	QF7	iC60N
Load WRF8	QF8	iC60N
Load WRF9	QF9	iC60N
Load WRF10	QF10	iC60N
Load WRF11	QF11	iC60N
Load WRF12	QF12	iC60N
Load WRF13	QF13	iC60N
Load WRF14	QF14	iC60N
Load WRF15	QF15	iC60N
Load WRF16	QF16	iC60N
Load WRF17	QF17	iC60N
Load WRF18	QF18	iC60N
Load WRF19	QF19	iC60N
Load WRF20	QF20	iC60N
Load AHU3	QF21	iC60N
Load AHU5	QF22	iC60N
Load AHU6	QF23	iC60N
Load AHU4	QF24	iC60N
Load WRF-19	QF36	iC60N
Load WRF-20	QF37	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	6.56	5.68	5.14	4.72	4.17	4.73	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	6.56	5.68	5.14	4.72	4.17	4.73	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.7 Circuit WC6

Busbar	WC6
Parameters	
Switchboard Name	DB6
Switchboard Range	No preference
Rating (A)	0
IP	Undefined

Feeder

Circuit name	Protection name	Protection type
Load AHU7	QF25	iC60N
Load ven3	QF26	iC60N
Load ven4	QF27	iC60N
Load ven5	QF28	iC60N
Load ven6	QF29	iC60N
Load pump1	QF 30	iC60N
Load pump2	QF 31	iC60N
Load pump3	QF 32	iC60N
Load pump4	QF 33	iC60N
Boiler 1	QF 34	iC60N
Boiler 2	QF 34 (1)	iC60N

Short circuit current	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	3.64	3.15	2.11	2.28	1.48	0.97	0.00
Operating mode backup							
(kA)	NA	NA	NA	NA	NA	NA	NA
Synthesis for all operating mode							
(kA)	3.64	3.15	2.11	2.28	1.48	0.97	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

3.6.8 Circuit WC 7

Busbar	WC 7
Parameters	
Switchboard Name	DB7
Switchboard Range	No preference
Rating (A)	0
IP	Undefined

Feeder

Circuit name	Protection name	Protection type
Lighting1	QL 1	iC60N
Lighting 2	QL 2	iC60L
Lighting 3	QL 3	iC60L
Lighting 4	QL 4	iC60L
Lighting 5	QL 5	iC60N
Lighting 6	QL 6	iC60N

Short circuit current

	Ik3max	Ik2max	Ik1max	Ik2min	Ik1min	Ief	Ief2min
Operating mode Normal							
(kA)	5.74	4.97	3.98	3.89	2.96	2.98	0.00
Operating mode backup							
(kA)	0.36	0.31	0.32	0.18	0.28	0.28	0.00
Synthesis for all operating mode							
(kA)	5.74	4.97	3.98	0.18	0.28	0.28	0.00

Calculation results in accordance with CENELEC technical report TR50480.
All assumptions and device choices are the user's responsibility.

Name	Polarity	Conductor metal of phase(s)	Phase CSA (mm²)	Cable length (m)	Unit catalogue price €	Total catalogue price €
WD in	3Ph+N+PE	Copper	185	60	83.55	5,012.74
WD 05	3Ph+N+PE	Copper	185	30	83.55	2,506.37
					-	7,519.10
WD 0	3Ph+N+PE	Copper	25	5	13.17	65.86
					-	65.86
WD cap	3Ph+N+PE	Copper	16	5	8.23	41.14
WD gen	3Ph+N+PE	Copper	16	5	8.23	41.14
					-	82.28
WD 06	3Ph+N+PE	Copper	10	25	5.35	133.75
					-	133.75
WD02	3Ph+N+PE	Copper	6	10	2.80	28.03
WD 03	3Ph+N+PE	Copper	6	15	2.80	42.05
WD 04	3Ph+N+PE	Copper	6	20	2.80	56.07
WD 07	3Ph+N+PE	Copper	6	5	2.80	14.02
WL1	3Ph+N+PE	Copper	6	12	2.80	33.64
					-	173.81
WD17H	3Ph+N+PE	Copper	4	30	3.17	95.02
WD1H	3Ph+N+PE	Copper	4	36	3.17	114.02
WD2H	3Ph+N+PE	Copper	4	35	3.17	110.85
WD3H	3Ph+N+PE	Copper	4	30	3.17	95.02
WR9	3Ph+N+PE	Copper	4	14	3.17	44.34
WR10	3Ph+N+PE	Copper	4	12	3.17	38.01
WR11	3Ph+N+PE	Copper	4	10	3.17	31.67
WR12	3Ph+N+PE	Copper	4	8	3.17	25.34
WR13	3Ph+N+PE	Copper	4	15	3.17	47.51
WR14	3Ph+N+PE	Copper	4	14	3.17	44.34
WR15	3Ph+N+PE	Copper	4	12	3.17	38.01
WR16	3Ph+N+PE	Copper	4	11	3.17	34.84
					-	718.95
-7WS1	3Ph+N+PE	Copper	2.5	30	1.23	36.92
WD16H	3Ph+N+PE	Copper	2.5	5	1.23	6.15
0 WL6	3Ph+N+PE	Copper	2.5	7	1.23	8.61
0 WS5	3Ph+N+PE	Copper	2.5	24	1.23	29.53
-3WS1	3Ph+N+PE	Copper	2.5	38	1.23	46.76
1WS-1	3Ph+N+PE	Copper	2.5	13	1.23	16.00
1WS-2	3Ph+N+PE	Copper	2.5	7	1.23	8.61
1WS-3	3Ph+N+PE	Copper	2.5	8	1.23	9.84
1WL-1 A	3Ph+N+PE	Copper	2.5	13	1.23	16.00
1WL-2A	3Ph+N+PE	Copper	2.5	7	1.23	8.61
1WL-3A	3Ph+N+PE	Copper	2.5	8	1.23	9.84
WR5	3Ph+N+PE	Copper	2.5	14	1.23	17.23
WR6	3Ph+N+PE	Copper	2.5	12	1.23	14.77
WR7	3Ph+N+PE	Copper	2.5	11	1.23	13.54
WR8	3Ph+N+PE	Copper	2.5	9	1.23	11.07

WR17	3Ph+N+PE	Copper	2.5	9	1.23	11.07
WR18	3Ph+N+PE	Copper	2.5	11	1.23	13.54
WR23	3Ph+N+PE	Copper	2.5	15	1.23	18.46
WR 25	3Ph+N+PE	Copper	2.5	16	1.23	19.69
_ *7 WL1*	3Ph+N+PE	Copper	2.5	*30*	1.23	36.92
_ 7 WS1	3Ph+N+PE	Copper	2.5	30	1.23	36.92
					-	390.07
-7WL1	3Ph+N+PE	Copper	1.5	30	0.82	24.72
0 WL5	3Ph+N+PE	Copper	1.5	24	0.82	19.77
0 WL4	3Ph+N+PE	Copper	1.5	29	0.82	23.89
0 WS1	3Ph+N+PE	Copper	1.5	45	0.82	37.08
-3WL1	3Ph+N+PE	Copper	1.5	38	0.82	31.31
-WL5	3Ph+N+PE	Copper	1.5	21	0.82	17.30
-3WL7	3Ph+N+PE	Copper	1.5	21	0.82	17.30
WD3H2	3Ph+N+PE	Copper	1.5	37	0.82	30.48
WD10H2	3Ph+N+PE	Copper	1.5	37	0.82	30.48
WD9H2	3Ph+N+PE	Copper	1.5	12	0.82	9.89
WR1	3Ph+N+PE	Copper	1.5	15	0.82	12.36
WR2	3Ph+N+PE	Copper	1.5	14	0.82	11.53
WR3	3Ph+N+PE	Copper	1.5	12	0.82	9.89
WR4	3Ph+N+PE	Copper	1.5	11	0.82	9.06
WR19	3Ph+N+PE	Copper	1.5	10	0.82	8.24
WR20	3Ph+N+PE	Copper	1.5	11	0.82	9.06
WR21	3Ph+N+PE	Copper	1.5	19	0.82	15.65
WR22	3Ph+N+PE	Copper	1.5	17	0.82	14.01
WR24	3Ph+N+PE	Copper	1.5	14	0.82	11.53
WR 26	3Ph+N+PE	Copper	1.5	10	0.82	8.24
WR 27	3Ph+N+PE	Copper	1.5	10	0.82	8.24
WR 28	3Ph+N+PE	Copper	1.5	11	0.82	9.06
WR 29	3Ph+N+PE	Copper	1.5	12	0.82	9.89
WR30	3Ph+N+PE	Copper	1.5	7	0.82	5.77
WR31	3Ph+N+PE	Copper	1.5	8	0.82	6.59
WR32	3Ph+N+PE	Copper	1.5	7	0.82	5.77
WR33	3Ph+N+PE	Copper	1.5	7	0.82	5.77
WR37	3Ph+N+PE	Copper	1.5	12	0.82	9.89
WR36	3Ph+N+PE	Copper	1.5	11	0.82	9.06
WR 34	3Ph+N+PE	Copper	1.5	10	0.82	8.24
WR 35	3Ph+N+PE	Copper	1.5	10	0.82	8.24
					-	438.31
0 WS3	1Ph+N+PE	Copper	4	40	1.16	46.22
					-	46.22
-7WS2	1Ph+N+PE	Copper	2.5	26	0.74	19.20
-7WS3	1Ph+N+PE	Copper	2.5	26	0.74	19.20
-7WS4	1Ph+N+PE	Copper	2.5	21	0.74	15.50
-7WS5	1Ph+N+PE	Copper	2.5	21	0.74	15.50
-7WS6	1Ph+N+PE	Copper	2.5	26	0.74	19.20
-7WS7	1Ph+N+PE	Copper	2.5	26	0.74	19.20

-7WS8	1Ph+N+PE	Copper	2.5	28	0.74	20.67
-7WS9	1Ph+N+PE	Copper	2.5	38	0.74	28.06
-7WS10	1Ph+N+PE	Copper	2.5	35	0.74	25.84
-7WS11	1Ph+N+PE	Copper	2.5	32	0.74	23.63
-7WS12	1Ph+N+PE	Copper	2.5	26	0.74	19.20
-7WS13	1Ph+N+PE	Copper	2.5	25	0.74	18.46
-7WS14	1Ph+N+PE	Copper	2.5	26	0.74	19.20
-7WS15	1Ph+N+PE	Copper	2.5	28	0.74	20.67
-7WS16	1Ph+N+PE	Copper	2.5	34	0.74	25.10
-7WS17	1Ph+N+PE	Copper	2.5	40	0.74	29.53
-7WS18	1Ph+N+PE	Copper	2.5	35	0.74	25.84
-7WS19	1Ph+N+PE	Copper	2.5	36	0.74	26.58
-7WS20	1Ph+N+PE	Copper	2.5	31	0.74	22.89
-7WS21	1Ph+N+PE	Copper	2.5	11	0.74	8.12
-7WS22	1Ph+N+PE	Copper	2.5	14	0.74	10.34
-7WS23	1Ph+N+PE	Copper	2.5	14	0.74	10.34
-3WS3	1Ph+N+PE	Copper	2.5	25	0.74	18.46
-3WS4	1Ph+N+PE	Copper	2.5	23	0.74	16.98
-3WS5	1Ph+N+PE	Copper	2.5	21	0.74	15.50
-3WS6	1Ph+N+PE	Copper	2.5	16	0.74	11.81
-3WS7	1Ph+N+PE	Copper	2.5	21	0.74	15.50
-3WS8	1Ph+N+PE	Copper	2.5	12	0.74	8.86
-3WS9	1Ph+N+PE	Copper	2.5	9	0.74	6.64
-3WS10	1Ph+N+PE	Copper	2.5	8	0.74	5.91
-3WS11	1Ph+N+PE	Copper	2.5	15	0.74	11.07
-3WS12	1Ph+N+PE	Copper	2.5	13	0.74	9.60
-3WS13	1Ph+N+PE	Copper	2.5	18	0.74	13.29
-3WS14	1Ph+N+PE	Copper	2.5	23	0.74	16.98
-3WS15	1Ph+N+PE	Copper	2.5	25	0.74	18.46
0 WL8	1Ph+N+PE	Copper	2.5	37	0.74	27.32
0 WL7	1Ph+N+PE	Copper	2.5	14	0.74	10.34
0 WL3	1Ph+N+PE	Copper	2.5	40	0.74	29.53
0 WS4	1Ph+N+PE	Copper	2.5	29	0.74	21.41
0 WS2	1Ph+N+PE	Copper	2.5	43	0.74	31.75
0 WS8	1Ph+N+PE	Copper	2.5	37	0.74	27.32
0 WL1	1Ph+N+PE	Copper	2.5	45	0.74	33.22
0 WL2	1Ph+N+PE	Copper	2.5	43	0.74	31.75
-3WS2	1Ph+N+PE	Copper	2.5	35	0.74	25.84
0 WS7	1Ph+N+PE	Copper	2.5	14	0.74	10.34
0 WS6	1Ph+N+PE	Copper	2.5	7	0.74	5.17
_ 7 WS2	1Ph+N+PE	Copper	2.5	26	0.74	19.20
_ 7 WS3	1Ph+N+PE	Copper	2.5	26	0.74	19.20
_ 7 WS4	1Ph+N+PE	Copper	2.5	21	0.74	15.50
_ 7 WS5	1Ph+N+PE	Copper	2.5	21	0.74	15.50
_ 7 WS6	1Ph+N+PE	Copper	2.5	24	0.74	17.72
_ 7 WS7	1Ph+N+PE	Copper	2.5	26	0.74	19.20
_ 7 WS8	1Ph+N+PE	Copper	2.5	28	0.74	20.67

_ 7 WS9	1Ph+N+PE	Copper	2.5	38	0.74	28.06
_ 7 WS10	1Ph+N+PE	Copper	2.5	35	0.74	25.84
_ 7 WS11	1Ph+N+PE	Copper	2.5	32	0.74	23.63
_ 7 WS12	1Ph+N+PE	Copper	2.5	26	0.74	19.20
_ 7 WS13	1Ph+N+PE	Copper	2.5	25	0.74	18.46
_ 7 WS14	1Ph+N+PE	Copper	2.5	26	0.74	19.20
_ 7 WS15	1Ph+N+PE	Copper	2.5	28	0.74	20.67
_ 7 WS16	1Ph+N+PE	Copper	2.5	34	0.74	25.10
_ 7 WS17	1Ph+N+PE	Copper	2.5	40	0.74	29.53
_ 7 WS18	1Ph+N+PE	Copper	2.5	35	0.74	25.84
_ 7 WS19	1Ph+N+PE	Copper	2.5	36	0.74	26.58
_ 7 WS20	1Ph+N+PE	Copper	2.5	31	0.74	22.89
_ 7 WS21	1Ph+N+PE	Copper	2.5	11	0.74	8.12
_ 7 WS22	1Ph+N+PE	Copper	2.5	14	0.74	10.34
_ 7 WS23	1Ph+N+PE	Copper	2.5	14	0.74	10.34
					-	1,306.05
-7WL2	1Ph+N+PE	Copper	1.5	26	0.49	12.80
-7WL3	1Ph+N+PE	Copper	1.5	36	0.49	17.72
-7WL4	1Ph+N+PE	Copper	1.5	21	0.49	10.34
-7WL5	1Ph+N+PE	Copper	1.5	21	0.49	10.34
-7WL6	1Ph+N+PE	Copper	1.5	26	0.49	12.80
-7WL7	1Ph+N+PE	Copper	1.5	26	0.49	12.80
-7WL8	1Ph+N+PE	Copper	1.5	28	0.49	13.78
-7WL9	1Ph+N+PE	Copper	1.5	38	0.49	18.70
-7WL10	1Ph+N+PE	Copper	1.5	35	0.49	17.23
-7WL11	1Ph+N+PE	Copper	1.5	32	0.49	15.75
-7WL12	1Ph+N+PE	Copper	1.5	26	0.49	12.80
-7WL13	1Ph+N+PE	Copper	1.5	25	0.49	12.31
-7WL14	1Ph+N+PE	Copper	1.5	26	0.49	12.80
-7WL15	1Ph+N+PE	Copper	1.5	28	0.49	13.78
-7WL16	1Ph+N+PE	Copper	1.5	34	0.49	16.73
-7WL17	1Ph+N+PE	Copper	1.5	40	0.49	19.69
-7WL18	1Ph+N+PE	Copper	1.5	35	0.49	17.23
-7WL19	1Ph+N+PE	Copper	1.5	36	0.49	17.72
-7WL20	1Ph+N+PE	Copper	1.5	31	0.49	15.26
-7WL21	1Ph+N+PE	Copper	1.5	11	0.49	5.41
-7WL22	1Ph+N+PE	Copper	1.5	14	0.49	6.89
-7WL23	1Ph+N+PE	Copper	1.5	14	0.49	6.89
WD4H	1Ph+N+PE	Copper	1.5	30	0.49	14.77
WD5H	1Ph+N+PE	Copper	1.5	36	0.49	17.72
WD6H	1Ph+N+PE	Copper	1.5	31	0.49	15.26
WD7H	1Ph+N+PE	Copper	1.5	26	0.49	12.80
WD8H	1Ph+N+PE	Copper	1.5	24	0.49	11.81
WD9H	1Ph+N+PE	Copper	1.5	27	0.49	13.29
WD10H	1Ph+N+PE	Copper	1.5	18	0.49	8.86
WD11H	1Ph+N+PE	Copper	1.5	17	0.49	8.37
WD12H	1Ph+N+PE	Copper	1.5	20	0.49	9.84

WD13H	1Ph+N+PE	Copper	1.5	14	0.49	6.89
WD14H	1Ph+N+PE	Copper	1.5	30	0.49	14.77
WD15H	1Ph+N+PE	Copper	1.5	29	0.49	14.27
WD2H2	1Ph+N+PE	Copper	1.5	38	0.49	18.70
WD1H2	1Ph+N+PE	Copper	1.5	49	0.49	24.12
-3WL2	1Ph+N+PE	Copper	1.5	35	0.49	17.23
-3WL3	1Ph+N+PE	Copper	1.5	25	0.49	12.31
-3WL4	1Ph+N+PE	Copper	1.5	23	0.49	11.32
-3WL6	1Ph+N+PE	Copper	1.5	16	0.49	7.88
-3WL8	1Ph+N+PE	Copper	1.5	12	0.49	5.91
-3WL9	1Ph+N+PE	Copper	1.5	9	0.49	4.43
-3WL10	1Ph+N+PE	Copper	1.5	8	0.49	3.94
-3WL11	1Ph+N+PE	Copper	1.5	15	0.49	7.38
-3WL12	1Ph+N+PE	Copper	1.5	13	0.49	6.40
-3WL13	1Ph+N+PE	Copper	1.5	18	0.49	8.86
-3WL14 3	1Ph+N+PE	Copper	1.5	23	0.49	11.32
-3WL15	1Ph+N+PE	Copper	1.5	23	0.49	11.32
WD1H 1	1Ph+N+PE	Copper	1.5	25	0.49	12.31
WD2H 1	1Ph+N+PE	Copper	1.5	28	0.49	13.78
WD3H 1	1Ph+N+PE	Copper	1.5	23	0.49	11.32
WD4H 1	1Ph+N+PE	Copper	1.5	19	0.49	9.35
WD5H 1	1Ph+N+PE	Copper	1.5	21	0.49	10.34
WD6H 1	1Ph+N+PE	Copper	1.5	13	0.49	6.40
WD7H 1	1Ph+N+PE	Copper	1.5	13	0.49	6.40
WD8H 1	1Ph+N+PE	Copper	1.5	16	0.49	7.88
WD9H 1	1Ph+N+PE	Copper	1.5	18	0.49	8.86
WD10H 1	1Ph+N+PE	Copper	1.5	55	0.49	27.07
WD11H 1	1Ph+N+PE	Copper	1.5	30	0.49	14.77
WD12H 1	1Ph+N+PE	Copper	1.5	39	0.49	19.20
WD13H 1	1Ph+N+PE	Copper	1.5	36	0.49	17.72
WD4H2	1Ph+N+PE	Copper	1.5	35	0.49	17.23
WD5H2	1Ph+N+PE	Copper	1.5	58	0.49	28.55
WD6H2	1Ph+N+PE	Copper	1.5	21	0.49	10.34
WD7H2	1Ph+N+PE	Copper	1.5	16	0.49	7.88
WD8H2	1Ph+N+PE	Copper	1.5	18	0.49	8.86
_ 7 WL2	1Ph+N+PE	Copper	1.5	*26*	0.49	12.80
_ 7 WL3	1Ph+N+PE	Copper	1.5	*26*	0.49	12.80
_ 7 WL4	1Ph+N+PE	Copper	1.5	*21*	0.49	10.34
_ 7 WL5	1Ph+N+PE	Copper	1.5	*21*	0.49	10.34
_ 7 WL6	1Ph+N+PE	Copper	1.5	*24*	0.49	11.81
_ 7 WL7	1Ph+N+PE	Copper	1.5	*26*	0.49	12.80
_ 7 WL8	1Ph+N+PE	Copper	1.5	*28*	0.49	13.78
_ 7 WL9	1Ph+N+PE	Copper	1.5	*38*	0.49	18.70
_ 7 WL10	1Ph+N+PE	Copper	1.5	*35*	0.49	17.23
_ 7 WL11	1Ph+N+PE	Copper	1.5	*32*	0.49	15.75
_ 7 WL12	1Ph+N+PE	Copper	1.5	*26*	0.49	12.80
_ 7 WL13	1Ph+N+PE	Copper	1.5	*25*	0.49	12.31

_ 7 WL14	1Ph+N+PE	Copper	1.5	26	0.49	12.80
_ 7 WL15	1Ph+N+PE	Copper	1.5	28	0.49	13.78
_ 7 WL16	1Ph+N+PE	Copper	1.5	34	0.49	16.73
_ 7 WL17	1Ph+N+PE	Copper	1.5	40	0.49	19.69
_ 7 WL18	1Ph+N+PE	Copper	1.5	35	0.49	17.23
_ 7 WL19	1Ph+N+PE	Copper	1.5	36	0.49	17.72
_ 7 WL20	1Ph+N+PE	Copper	1.5	31	0.49	15.26
_ 7 WL21	1Ph+N+PE	Copper	1.5	11	0.49	5.41
_ 7 WL22	1Ph+N+PE	Copper	1.5	14	0.49	6.89
_ 7 WL23	1Ph+N+PE	Copper	1.5	14	0.49	6.89
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_7WF1	1Ph+N	Copper	1	2	0.35	0.71
_7WF2	1Ph+N	Copper	1	2	0.35	0.71
_7WF3	1Ph+N	Copper	1	4	0.35	1.41
_7WF4	1Ph+N	Copper	1	2	0.35	0.71
_7WF6	1Ph+N	Copper	1	5	0.35	1.77
_7WF11	1Ph+N	Copper	1	4	0.35	1.41
_7WF12	1Ph+N	Copper	1	6	0.35	2.12
_7WF13	1Ph+N	Copper	1	3	0.35	1.06
_7WF18	1Ph+N	Copper	1	6	0.35	2.12
_7WF10	1Ph+N	Copper	1	2	0.35	0.71
_7WF17	1Ph+N	Copper	1	2	0.35	0.71
_7WF20	1Ph+N	Copper	1	2	0.35	0.71
_7WF21	1Ph+N	Copper	1	8	0.35	2.82
_7WF23	1Ph+N	Copper	1	10	0.35	3.53
					-	20.48
WDO1	3Ph+N+PE	Copper	2.5	96	1.23	118.13
WDO2	3Ph+N+PE	Copper	1.5	48	0.82	39.55
WDO3	1Ph+N+PE	Copper	1.5	45	0.49	22.15
WDO4	1Ph+N+PE	Copper	1.5	45	0.49	22.15
WDO5	3Ph+N+PE	Copper	1.5	60	0.82	49.43
WDO6	3Ph+N+PE	Copper	1.5	70	0.82	57.67
					-	309.08

SUM **12,335.55**

Project	MDB				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 01 bi	Acti9 NG125 - NG125L	18376	16.31	16.31
1	QA 1	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 17	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 18	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 19	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 20	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 21	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 22	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 23	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48

1	QA 6A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 17A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 18A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 19A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 20A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 21A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 22A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 23A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1A	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	15.37	15.37
1	QA 1 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 2 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 3 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 4 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48

1	QA 15 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16 H	ACTI9 IC60N 3P 32A C MINIATURE CIRCUIT B	A9F74332	10.98	10.98
1	QA 1 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
					253.94
Project	DB1				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 01 bi	Acti9 NG125 - NG125L	18376	16.31	16.31
1	QA 1	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 17	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 18	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 19	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 20	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 21	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 22	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 23	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48

1	QA 2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 17A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 18A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 19A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 20A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 21A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 22A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 23A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1A	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	15.37	15.37
1	QA 1 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 2 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 3 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 4 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48

1	QA 11 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15 H	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 16 H	ACTI9 IC60N 3P 32A C MINIATURE CIRCUIT B	A9F74332	10.98	10.98
1	QA 1 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
2	QA 1 H	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74417	15.37	30.73
1	Switchboard			123.05	123.05
					407.72

Project	DB2				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 02bis	ACTI9 IC60N 4P 50A C MINIATURE CIRCUIT B	A9F74450	24.28	24.28
1	QA 2-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1-2	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 3-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 15-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 14-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48

1	QA 11-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7-2A	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 6-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5-2A	ACTI9 IC60N 3P 1A C MINIATURE CIRCUIT BR	A9F74301	13.50	13.50
1	QA 4-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 2-2A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1-2A	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	15.37	15.37
1	QA 5-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4-2	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 2-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 11-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 12-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 13-2B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	Switchboard			76.18	76.18
					247.7799
Project	MDB				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €

1	QA 03bis	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 6-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 1-3	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 2-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4-3	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5-3	ACTI9 IC60L 4P 6A C MINIATURE CIRCUIT BR	A9F94406	15.37	15.37
1	QA 1-3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 2-3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3-3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4-3A	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	15.37	15.37
1	QA 5-3A	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	15.37	15.37
1	QA 6-3A	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 7-3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-3A	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 7-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 6-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 5-3B	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 1-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 2-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 4-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 3-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 8-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 10-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1	QA 9-3B	ACTI9 IC60N 1P 6A C MINIATURE CIRCUIT BR	A9F74106	2.48	2.48
1		LOT ASSOCIATION KAEDRA	13934	2.53	2.53
2	Switchboard			76.18	152.37
					298.46
Project	DB4				
Switchboard	Switchboard	1			

Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 04bis	ACTI9 IC60N 4P 16A C MINIATURE CIRCUIT B	A9F74416	15.37	15.37
1	QA 1-4	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 2-4	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 3-4	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 1-4A	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 2-4A	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QA 3-4A	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	Switchboard			72.76	72.76
					153.03
Project	DB 5				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 05bis	4P NSX100B WITHOUT TRIP UNIT COMPACT CI	LV429015	70.13	70.13
1	QF1	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QF2	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QF3	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QF4	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QF5	ACTI9 IC60N 3P 25A C MINIATURE CIRCUIT B	A9F74325	10.82	10.82
1	QF6	ACTI9 IC60N 3P 25A C MINIATURE CIRCUIT B	A9F74325	10.82	10.82
1	QF7	ACTI9 IC60N 3P 25A C MINIATURE CIRCUIT B	A9F74325	10.82	10.82
1	QF8	ACTI9 IC60N 3P 25A C MINIATURE CIRCUIT B	A9F74325	10.82	10.82
1	QF9	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF10	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF11	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF12	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF13	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF14	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF15	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43

1	QF16	ACTI9 IC60N 3P 40A C MINIATURE CIRCUIT B	A9F74340	11.43	11.43
1	QF17	ACTI9 IC60N 3P 25A C MINIATURE CIRCUIT B	A9F74325	10.82	10.82
1	QF18	ACTI9 IC60N 3P 32A C MINIATURE CIRCUIT B	A9F74332	10.98	10.98
1	QF19	ACTI9 IC60N 3P 3A C MINIATURE CIRCUIT BR	A9F74303	12.93	12.93
1	QF20	ACTI9 IC60N 3P 4A C MINIATURE CIRCUIT BR	A9F74304	12.93	12.93
1	QF21	ACTI9 IC60N 3P 13A C MINIATURE CIRCUIT B	A9F74313	10.82	10.82
1	QF22	ACTI9 IC60N 3P 13A C MINIATURE CIRCUIT B	A9F74313	10.82	10.82
1	QF23	ACTI9 IC60N 3P 32A C MINIATURE CIRCUIT B	A9F74332	10.98	10.98
1	QF24	ACTI9 IC60N 3P 10A C MINIATURE CIRCUIT B	A9F74310	10.82	10.82
1	QF37	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QF36	ACTI9 IC60N 3P 16A C MINIATURE CIRCUIT B	A9F74316	10.82	10.82
1	Switchboard			75.97	75.97
					436.77
Project	DB6				
Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 06bis	ACTI9 IC60N 4P 32A C MINIATURE CIRCUIT B	A9F74432	14.74	14.74
1	QF25	ACTI9 IC60N 4P 32A C MINIATURE CIRCUIT B	A9F74432	14.74	14.74
1	QF26	ACTI9 IC60N 4P 4A C MINIATURE CIRCUIT BR	A9F74404	16	16
1	QF27	ACTI9 IC60N 4P 3A C MINIATURE CIRCUIT BR	A9F74403	16	16
1	QF28	ACTI9 IC60N 4P 2A C MINIATURE CIRCUIT BR	A9F74402	16	16
1	QF29	ACTI9 IC60N 4P 4A C MINIATURE CIRCUIT BR	A9F74404	16	16
1	QF 30	ACTI9 IC60N 4P 3A C MINIATURE CIRCUIT BR	A9F74403	16	16
1	QF 31	ACTI9 IC60N 4P 1A C MINIATURE CIRCUIT BR	A9F74401	17.06	17.06
1	QF 32	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	14.36	14.36
1	QF 33	ACTI9 IC60N 4P 6A C MINIATURE CIRCUIT BR	A9F74406	14.36	14.36
1	QF 34	ACTI9 IC60N 4P 0,5A C MINIATURE CIRCUIT	A9F74470	17.97	17.97
1	QF 34 (1	ACTI9 IC60N 4P 0,5A C MINIATURE CIRCUIT	A9F74470	17.97	17.97
2	Switchboard			71	142
					333.2
Project	DB7				

Switchboard	Switchboard	1			
Quantity	Functional name	Designation	Part number	Unit catalogue price €	Total catalogue price €
1	QA 07bis	ACTI9 IC60N 4P 10A C MINIATURE CIRCUIT B	A9F74410	15.37	15.37
1	QL 1	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QL 2	ACTI9 IC60L 3P 6A C MINIATURE CIRCUIT BR	A9F94306	10.82	10.82
1	QL 4	ACTI9 IC60L 1P 6A C MINIATURE CIRCUIT BR	A9F94106	2.48	2.48
1	QL 3	ACTI9 IC60L 1P 6A C MINIATURE CIRCUIT BR	A9F94106	2.48	2.48
1	QL 5	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1	QL 6	ACTI9 IC60N 3P 6A C MINIATURE CIRCUIT BR	A9F74306	10.82	10.82
1		OPALE ENCLOSURE 2 R	13402	21.40	21.40
					85.00
SUM					**2,215.91**

Name	Description	Unit Of Measure	length (m)	Unit catalogue price €	Total catalogue price €
MV/LV transformer	250 kVa	pcs	1	7490	7,490.00
MV Cell		pcs	1	39590	39,590.00
GENERATOR 45KVA	45KVA	pcs	1	17120	17,120.00
Cable trays	150X60	m	278	5.35	1,487.30
Sockets	13A	pcs	365	4.494	1,640.31
Two-button Switch	13A	pcs	3	5.136	15.41
One-button Switch	13A	pcs	69	4.922	339.62
Reversing Switch	13A	pcs	2	6.634	13.27
Emergency Exit Lights with Battery backup	LED Light	pcs	76	21.4	1,626.40
	LED Light Fitting: 1xLEDS_FIT Ø WW Light output ratio: 99.89% Lamp luminous flux: 689 lm Luminaire Luminous Flux: 688 lm Power: 12.0 W Light yield: 57.4 lm/W	pcs	352	55.64	19,585.28
	Fitting: 1x35-2512-14-37 Light output ratio: 98.82% Lamp luminous flux: 1395 lm Luminaire Luminous Flux: 1379 lm Power: 26.0 W Light yield: 53.0 lm/W	pcs	138	215.07	29,679.66
3ph Light track with accessories		m	11.5	203.3	2,337.95
	Road and Street Luminaire 4000K 3443Lm	pcs	27	219.35	5,922.45

	Capri Injection Aluminium Indirect Luminaires 12000Lm	pcs	10	331.7	3,317.00
	6 LED 0,5W 4000K 64lm 0º	pcs	26	49.22	1,279.72
	6 LED 0,5W 4000K 64lm 22º	pcs	40	49.22	1,968.80

	LED BRIDGELUX 6,7W 3000K 640lm	pcs	27	59.92	1,617.84
	400W MHL 4000K	pcs	6	128.4	770.40
SUM					**135,801.40**

განმარტებითი ბარათი

ელმომარაგების მუშა დოკუმენტაცია შემუშაებული იქნა
П У Э 6 და 7, М Г С Н 2. 06–99, С П 31–110–2003, П Т Э Э П-ის თანახმად.

დადგმული სიმძლავრე HVAC- ქსელის ჩათვლით შეადგენს 190 KvA-ს.
პროექტის მოცულობაში შესულა განათების და საროზეტო ქსელი და ძალოვანი ნაწილი.

საიმედოების კატეგორია 2 .
ობიექტზე გათვალისწინებულია ალტერნატიული კვების წყარო.
დამიწების სისტემა TN–S

კაბელების კვეთები გათვლილია П У Э თ. 1. 3, პ.პ. 1. 4. 9, 7. 1. 33, С П31–110–2003 პ. 12 -ის მიხედვით.

ფაზებს შორის დატვირთვის გადანაწილების გათვლა განხორციელებულია С П31–110–2003 პ.პ.. 9. 5-ს თანახმად.

გადანაცილების არათანაბარდობა არ აღემატება 15%.

IP-ს მინიმალური რეკომენდირებული ხარისხი განისაზღვრება П У Э 7. п . 7. 1. 47, Г О С Т Р 50571. 11. -ით.

გამტარების ფერების სტანდარტი პ.2. 1. 31 П У Э გამ. 6, პ. 1. 1. 29 გამ. 7

ობიექტის სპეციფიკიდან გამომდინარე სანათების ტექნიკური მონაცემები შეესაბამება გალერეებისა და საგამოფენო სივრცეების განათების მოთხოვნებს.

სისტემა მობილურია და ითვალისწინებს სანათების მდებარეობისა და ნათების მიმართულების შეცვლას ექსპოზიციის ცვლილებასთან ერთად. ასევე შესაძლებელია მოთხოვნილების შესაბამისად დაემატოს სანათები (ტრეკის პარამეტრების გათვალისწინებით) ან აქსესუარები (დამათებითი ეფექტების მისაღებად). განათება მართვა თითოეულ დარბაზში ხორციელდება დამოუკიდებელ ჯგუფებად, დარბაზშივე განლაგებული გამანაწილებელი ფარიდან, რაც საშუალებას იძლევა ექსპოზიციის მოთხოვნის თანახმად შეიცვალოს განათება
ПУЭ- ს 6.1.21 მუხლის თანახმად ავარიული განათების ქსელი გაყოფილია უსაფრთხოების და საევაკუაციო ნაწილად.
ПУЭ- ს 6.1.21 მუხლის მოთხოვნის თანახმად ორივე ტიპის განათება არ უერთდება მუშა განათების ქსელს. კვება უზრუნველყოფილია დამოუკიდებელი ქსელით
ფერის გადაცემის ინდექსი CRI უნდა აღემატებოდეს 90-ს.