

Safe operation under the most extreme environmental conditions

There are different types of sub-distributors available for compliance with the requirements on functional integrity of MLAR 11/2005.



ESF-E30/13-S

Sub-distributor in sheet steel housing

In accordance with the model guideline on fire protection requirements pertaining to wire systems (MLAR specimen guideline on wire systems), version 11/2005, verified by a National Material Testing Office.

Approved by the Deutsches Institut für Bautechnik (DIBT- German Institute for Civil Engineering) as an electrical distributor with functional integrity, including electrical equipment and technical air ventilation with approval number: Z-86.3-72.



Electric distributor with functional integrity

Experimental design for application as an electrical distributor with functional integrity. The functioning of all the installed electronic components was tested in a fire test.



US-S ESF30 13-P

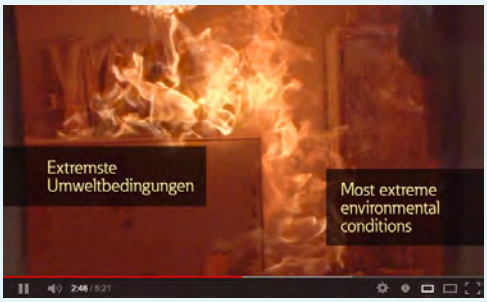


Sub-distributor in Priodec housing

In accordance with the model guideline on fire protection requirements pertaining to wire systems (MLAR specimen guideline on wire systems), version 11/2005, verified by a National Material Testing Office.

Approved by the Deutsches Institut für Bautechnik (DIBT- German Institute for Civil Engineering) as an empty enclosure for fire protection with a fire resistance rating of minimum 30 minutes in case of external fire exposure, approval number of the empty enclosure: Z-86.1-46

Functional integrity exceeding 30 minutes is certified in an expert opinion, based on a fire test.



Please scan the following QR code for direct access:

Fire test in a video documentation

Please watch the video documentation of the fire test of the types of enclosures presented here:
http://youtu.be/dk8qieMSiTI



ESF30 SOU2

Small distributor

In accordance with the model guideline on fire protection requirements pertaining to wire systems (MLAR specimen guideline on wire systems), version 11/2005, verified by a National Material Testing Office.

Tested by a Material Testing Office (MPA) as an empty fire protection enclosure with a fire resistance rating of minimum 30 minutes in case of an external fire exposure, with fire test number: No. 210006480-01.

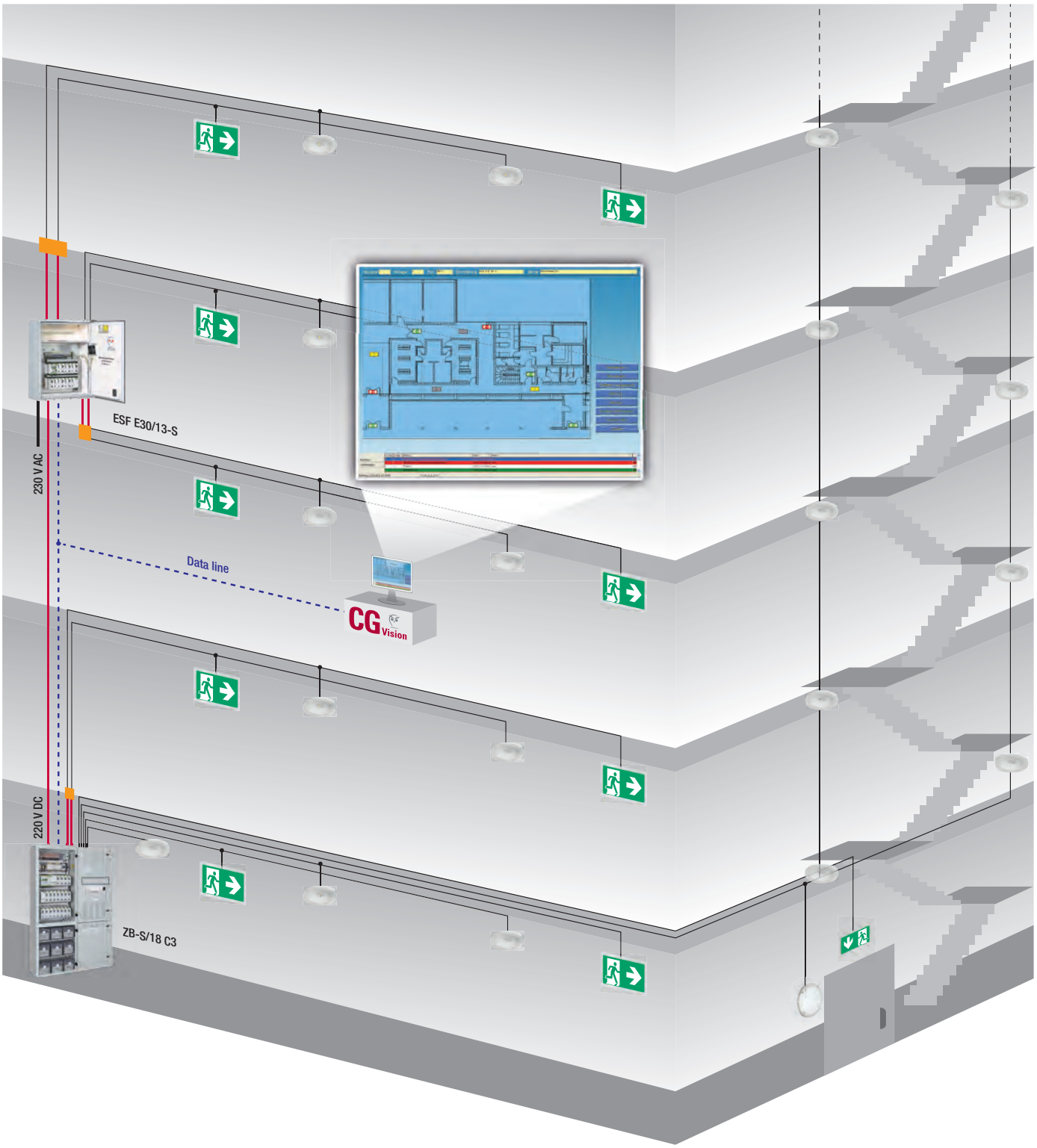
Functional integrity exceeding 30 minutes is certified by a VDE certificate, together with an expert opinion relating to the electrical equipment based on a fire test.



Central battery system ZB-S with STAR technology

Installation example

Please note the country-specific regulations and guidelines for planning and realisation.



Central battery system ZB-S with STAR technology

Ordering details





Ordering details

Type	Scope of supply	Order No.
Central battery system ZB-S/26	Central battery system type ZB-S/26 incl. CU CG-S, BCM and DC/DC.2, 26 free module slots*[1]	40071362905
Central battery system ZB-S/18	Central battery system type ZB-S/18 incl. CU CG-S, BCM and DC/DC.2, 18 free module slots*[1]	40071362906
Central battery system ZB-S/LAD	Central battery system type ZB-S/LAD incl. CU CG-S, BCM and DC/DC.2, (2 free module slots possible)	40071347099
Central battery system ZB-S/10 C	Central battery system type ZB-S/10 C, incl. CU CG-S, BCM and DC/DC.2, 10 free module slots*[1]	40071362900
Central battery system ZB-S/26 C6	Central battery system type ZB-S/26 C6 incl. CU CG-S, BCM and DC/DC.2, 26 free module slots*[1]	40071689064
Central battery system ZB-S/18 C6	Central battery system type ZB-S/18 C6 incl. CU CG-S, BCM and DC/DC.2, 18 free module slots*[1]	40071362904
Central battery system ZB-S/10 C6	Central battery system type ZB-S/10 C6 incl. CU CG-S, BCM and DC/DC.2, 10 free module slots*[1]	40071362903
Central battery system ZB-S/18 C3	Central battery system type ZB-S/18 C3, incl. CU CG-S, BCM and DC/DC.2, 19 free module slots	40071362902
Central battery system ZB-S/10 C3	Central battery system type ZB-S/10 C3, incl. CU CG-S, BCM and DC/DC.2, 11 free module slots	40071362901
Central battery system ZB-S/2 C3	Central battery system type ZB-S/2 C3, incl. CU CG-S, BCM and DC/DC.2, 3 free module slots	40071360201
Substation US-S/36	Substation type US-S/36 incl. CU CG-S and DC/DC.2, 36 free module slots	40071362907
Substation US-S/28	Substation type US-S/28 incl. CU CG-S and DC/DC.2, 28 free module slots	40071362908
Substation US-S/21	Substation type US-S/21 incl. CU CG-S and DC/DC.2, 21 free module slots	40071347088
Substation US-S/13	Substation type US-S/13 incl. CU CG-S and DC/DC.2, 13 free module slots	40071347089
Substation US-S/5	Substation type US-S/5 incl. CU CG-S and DC/DC.2, 5 free module slots	40071347090
Substation US-S/ SOU2	Substation type US-S/ SOU2 **incl.** 2 x SOU CG-S 2 x 4 A	40071360510
Substation US-S/ SOU1	Substation type US-S/ SOU1 **incl.** 1 x SOU CG-S 2 x 4 A	40071360511
E30 junction box ESF-RVS30-1	For small cabinets type US-S/SOU with 2 NEOZED fuses inside	40036071032
Substation ESF-E30/13-S	Substation type ESF-E30/13-S, equipped with control module CU CG-S, DC/DC 2-converter, with space reserve for expansion to max. 40 final circuits, but max. 13 variable circuit modules	40071362912
Substation ESF-E30/28-S	Substation type ESF-E30/28-S, equipped with control module CU CG-S, DC/DC 2-converter, with space reserve for expansion to max. 60 final circuits, but max. 28 variable circuit modules	40071362913
Substation US-S ESF30 28-P	Substation type US-S ESF30 28-P incl. control module CU CG-S and DC/DC.2, with space reserve for final assembly up to max. 60 final circuits, however accepts max. 28 variable change-over modules	40071360738
Substation US-S ESF30 13-P	Substation type US-S ESF30 13-P incl. control module CU CG-S and DC/DC.2, with space reserve for final assembly up to max. 40 final circuits, however accepts max. 13 variable change-over modules	40071360737

*[1] Plus max. two additional slots in correlation of CM 1.7 A and CM 3.4 A placement.

Ordering details

Type	Scope of supply	Order No.
Substation US-S ESF30 SOU5	Small distribution board US-S ESF30 SOU5, incl. 5 switching over units SOU CG-S 2 x 4 A	40071360734
Substation US-S ESF30 SOU3	Small distribution board US-S ESF30 SOU3, incl. 3 switching over units SOU CG-S 2 x 4 A	40071360732
Substation US-S ESF30 SOU2	Small distribution board US-S ESF30 SOU2, incl. 2 switching over units SOU CG-S 2 x 4 A	40071360729
Substation US-S ESF30 SOU1	Small distribution board US-S ESF30 SOU1, incl. 1 switching over unit SOU CG-S 2 x 4 A	40071360726
ESF-RVS30	E30 junktion box ESF-RVS30 for ESF-E30 with 4 Neozed fuse inside	40071347920
Reduction	Reduction M32 to M20 cable glands for E30 junction boxes incl. M20 cable gland	40071071033
4 pcs. DIN-mounting rail	incl. mounting accessories	40071347125
3 pcs. C-section rail	incl. mounting accessories	40071347126
Base 200 mm	for ZB-S, depth 400 mm	40071361216
Base 100 mm	for ZB-S, depth 400 mm	40071361215
Base 200 mm	for ZB-S/18C3 and 10C3, depth 330 mm	40071360049
Base 800 x 600 x 200 mm	for ZB-S/10C6-18C6 and 26C6	40017361219
3-piece baseplate	for ZB-S, depth 400 mm, mouse-proof	40071347124
Cable support rail		40071347123
Metal flange plate	undrilled for battery cabinet ZB-S	40071346225
Flange plate	for foam rubber for battery cabinet ZB-S	40036070164
Fireproof dowel M10	for E30 substation, Set of = 12 pcs., for installation in concrete walls	40036070298
Optional wall mounting plate for wall mounting for ESF-E30/13-S		40071347726
Door with left hinge for ZB-S/18 and ZB-S/26		40071689081
Door with left hinge for ZB-S/10C3		40071361325
Door with left hinge for ZB-S/10C and ZB-10C6		40071361326
Door with left hinge for battery cabinet		40071689085

Central battery system ZB-S with STAR technology

Table of covers, technical data ZB-S

Type	ESF-E30/13-S	ESF-E30/28-S	US-S ESF30 13-P	US-S ESF30 28-P
Modules:				
Control module: CU CG-S	1	1	1	1
DC/DC.2-converter (DCM)*1	1	1	1	1
Circuit module SKU CG-S 1 x 6 A	0-13	0-28	0-13	0-28
Circuit module SKU CG-S 2 x 3 A	0-13	0-28	0-13	0-28
Circuit module SKU CG-S 4 x 1.5 A	0-13	0-28	0-13*3	0-28*4
Switching over unit SOU CG-S 2 x 4 A	–	–	–	–
Maximum number of SWR 150 due to 100% luminous flux and max. rated power	–	–	–	–
Interface module DLS/TLS	1	2	2	2
Web module	1	1	1	1
Electrical cabinet construction:				
Rated voltage	230 V	400/230 V	230 V	400/230 V
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Artificial ventilation, sound pressure level (dB)	46	60	55	55
Conductor order and system of earthing in mains power operation/battery operation	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT
Max. ambient temperature	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +30 °C
Insulation class	1	1	I	I
Degree of protecton	IP20	IP20	IP42	IP42
Maximal permitted heating power loss [W]	100	215	45	90
Maximal rated power [A] depending on the ambient temperature				
+25 °C	35	50	35 (30)*6	40 (45)*6
+30 °C	35	50	17.3 (30)*6	20 (45)*6
+35 °C	35	50	11 (30)*6	– (45)*6
Maximal rated power [kW] depending on the ambient temperature				
+25 °C	7.6	10.8	7.5 (6.4)*6	8.6 (9.7)*6
+30 °C	7.6	10.8	3.7 (6.4)*6	4.3 (9.7)*6
+35 °C	7.6	10.8	2.3 (6.4)*6	– (9.7)*6
Three-phase distribution	no	yes	no	yes
Conductor size for mains and battery supply	35 mm²	35 mm²	35 mm²	35 mm²
Max. conductor size final circuits	4 mm²	4 mm²	4 mm²	4 mm²
Max. number of final circuit terminals	40	60	40	60
Mechanical cabinet construction:				
Dimensions H x W x D (mm)	1150 x 885 x 405	2190 x 885 x 405	1278 x 918 x 496	2278 x 918 x 604
Material / Design	Sheet steel / func. endurance 30 min. / Wall cabinet	Sheet steel / func. endurance 30 min. / Stand alone cabinet	Coated plaster board / Wall cabinet	Coated plaster board / Wall cabinet
Door stop	right	right	right	right
Colour	RAL 7035	RAL 7035		
Cable entry	from above*7	from above*7	from above	from above*7
Base (optional)	–	–	–	– only with base
Weight (without batteries)	approx. 235 kg	approx. 390 kg	approx. 169 kg	approx. 330 kg
Certification / Verification				
ABZ housing including modules	yes	yes	Requested	Requested
ABZ housing without modules	–	–	yes	yes
Fire test fire protection test report short form MPA NRW	–	–	yes	yes
VDE certificate	–	–	–	–
Declaration of expert	–	–	yes	yes

*1: After more than 13 SKU CG-S 4 x 1.5 A or 26 SKU CG-S 2 x 3 A / 1 x 6 A a second DC/DC converter is needed. Please observe that all DC/DC-converters are operated on the same module assembly frame next to each other.

*2: Protective isolated acc. to VDE 0106

*3: Max. 40 circuits. Attention: Please note the maximum rated power!

*4: Max. 60 circuits. Attention: Please note the maximum rated power!

*5: Please note: Each DLS module reduces the possible number of SOU modules.

*6: (...) = Plannings with SKU CG-S 2 x 3 A and SKU CG-S 1 x 6 A modules.

*7: Cable entry from below on request

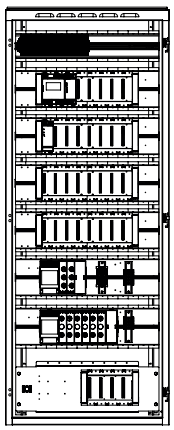
US-S ESF30 SOU5	US-S ESF30 SOU3	US-S ESF30 SOU2	US-S ESF30 SOU1
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
5	3	2	1
–	–	–	–
2*5	1*5	1	–
–	–	–	–
230 V	230 V	230 V	230 V
50 or 60 Hz	50 or 60 Hz	50 or 60 Hz	50 or 60 Hz
–	–	–	–
TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT
-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C
I*2	I*2	I*2	I*2
IP65	IP65	IP65	IP65
–	–	–	–
33 28 16	20 17 10	15 12 9	8 6 5
7.1 6.0 3.4	4.3 3.6 2.1	3.2 2.5 1.3	1.7 1.2 1.0
no	no	no	no
10 mm²	10 mm²	10 mm²	10 mm²
4 mm²	4 mm²	4 mm²	4 mm²
10	6	4	2
1135 x 396 x 230	835 x 396 x 230	685 x 396 x 230	535 x 396 x 230
Coated plaster board / Wall cabinet	Coated plaster board / Wall cabinet	Coated plaster board / Wall cabinet	Coated plaster board / Wall cabinet
left	left	left	left
from above	from above	from above	from above
–	–	–	–
approx. 81 kg	approx. 61 kg	approx. 51 kg	approx. 34 kg
Requested Requested yes yes yes	Requested Requested yes yes yes	Requested Requested yes yes yes	Requested Requested yes yes yes

Central battery system ZB-S with STAR technology

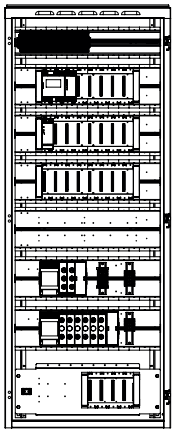
Appendix overview cabinets

Central battery systems

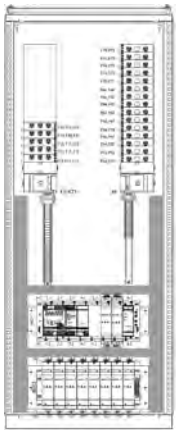
ZB-S/26



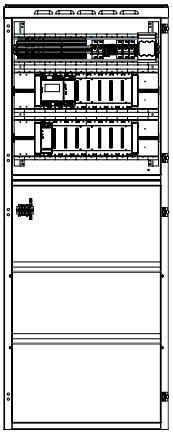
ZB-S/18



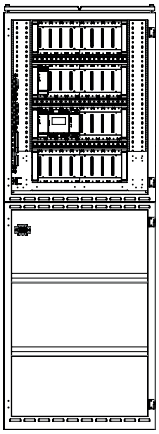
ZB-S/LAD



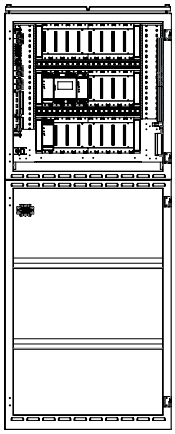
ZB-S/10C



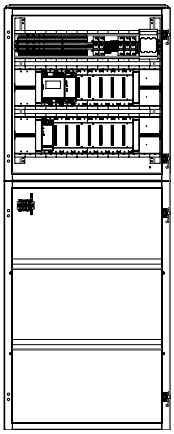
ZB-S/26C6



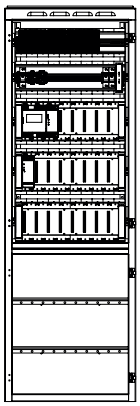
ZB-S/18C6



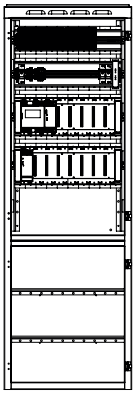
ZB-S/10C6



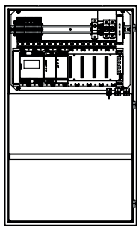
ZB-S/18C3



ZB-S/10C3

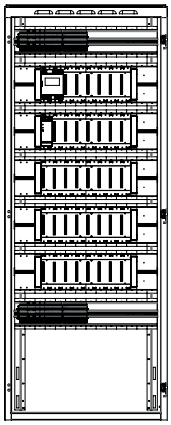


ZB-S/2C3

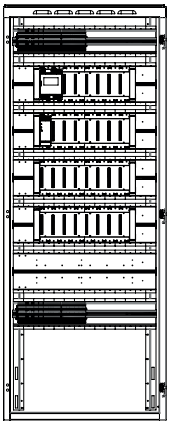


Substations

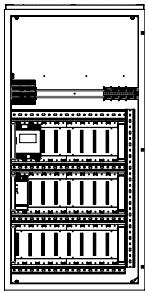
US-S/36



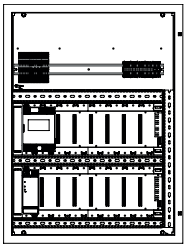
US-S/28



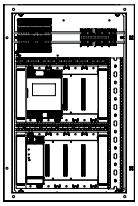
US-S/21



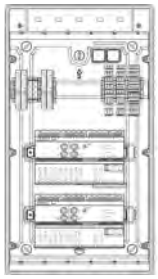
US-S/13



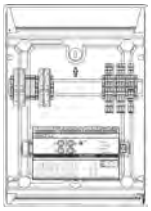
US-S/5



US-S/SOU2

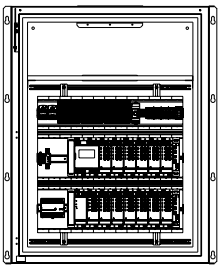


US-S/SOU1

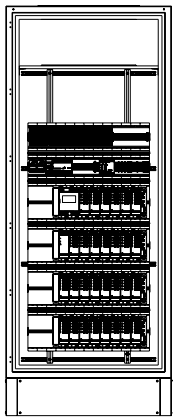


Substations with functional integrity

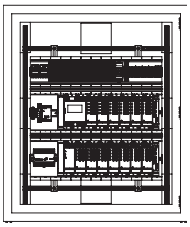
ESF-E30/13S



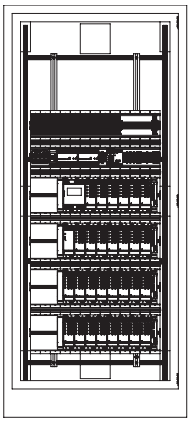
ESF-E30/28S



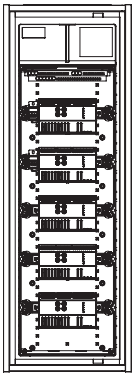
US-S ESF30 13-P



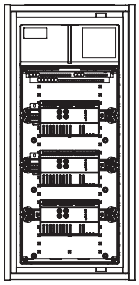
US-S ESF30 28-P



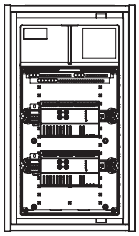
US-S ESF30 SOU5



US-S ESF30 SOU3



US-S ESF30 SOU2



US-S ESF30 SOU1

