

Central Battery System ZB-S with STAR Technology



- Shortened inspection effort due to **CEWA GUARD** technology; automatic function monitoring of up to 20 luminaires per circuit
- Reduced installation expenditures by **STAR-technology**; freely programmable mixed operation of the switching modes per luminaire in one circuit
- Less installation costs as no data line is required to the luminaires
- Automatic luminaire search function
- Plain text display on the control module down to the last luminaire
- Flexible data storage for test log and system configuration with memory card
- Modular charging technology in the range of 5.5 to 1,000 Ah
- Energy-saving and increased service life via alternating switching of the charging modules and optimised efficiency

As well as providing a dependable supply of power (230V AC/220 V DC) to safety and exit luminaires, the central battery system ZB-S tests itself automatically and individually monitors each CG-S luminaire (up to 20 per circuit), and it does all this using the power supply cable alone.

The new type of STAR technology allows the switching mode of every connected CG-S luminaire to be freely programmed within a 50 or 60 Hz supply network using the central battery system's controller. This means that maintained light, switched maintained light and non-maintained light modes can be combined in one and the same circuit – there is no need for separate data cables!

The control module with its nonvolatile program memory and large graphic display monitors and controls the central battery system. It automatically tests all functions of the devices and emergency luminaires connected to it, and reports any faults that occur.

An integral search function automatically detects all system-dependent luminaires and modules that are assigned an address during installation. A central monitoring device can be connected via an interface.

What is STAR?



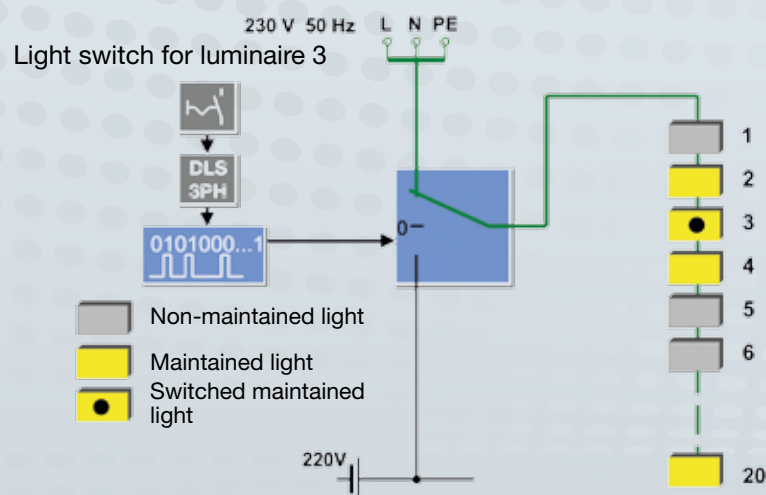
Switch to safety!

The continuing development of the CEWA GUARD monitoring system has led to the creation of the

**Switching
Technology
Advanced
Revision,**

or **STAR** for short. This **CG-STAR** technology allows different switching modes to be implemented in one and the same circuit, and the switching mode of each individual luminaire can be re-programmed at any time.

As a result, this technology offers not just the proven CEWA Guard safety when it comes to operating a safety lighting system, it also gives planners the confidence and flexibility of knowing that the system can respond and adapt at any time to any changes that are made to a building and its use.



Operation of the STAR technology

STAR-Technology – Easy Planning

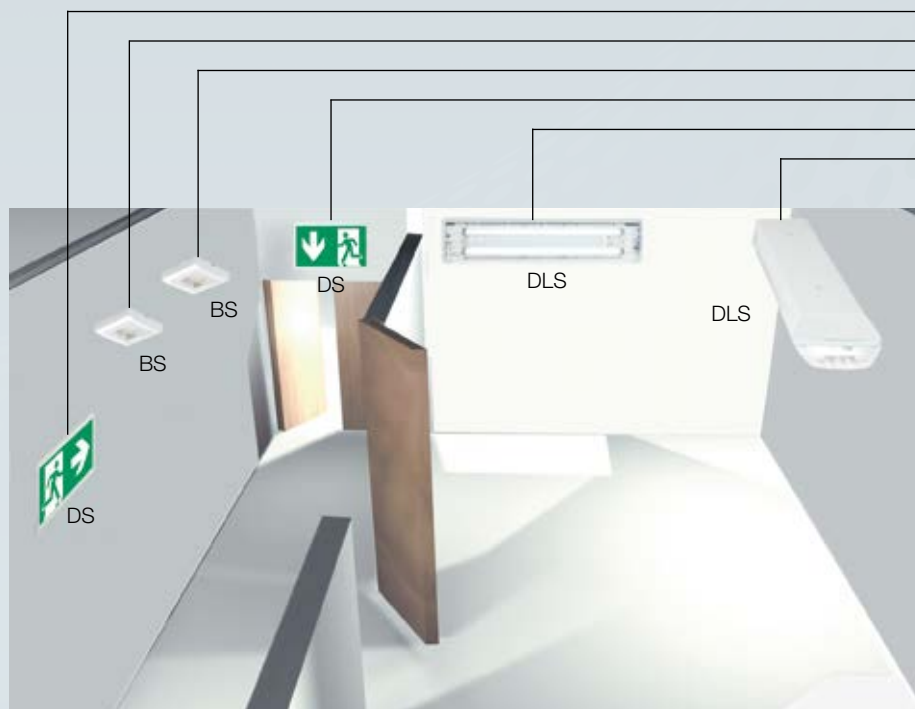
STAR TECHNOLOGY

Your Advantages:

The number of outgoing circuits needed can be sharply reduced, since continuously operating, stand-by and switchable permanent lighting can be realised in one common circuit.

This allows the use of shorter cable distances, reduces installation costs and minimises the effects of burning materials. Any mode of operation can be assigned at a later date – **without encroachment in the lighting installation**. This enables simple project planning without having to take all possible types of operation into account.

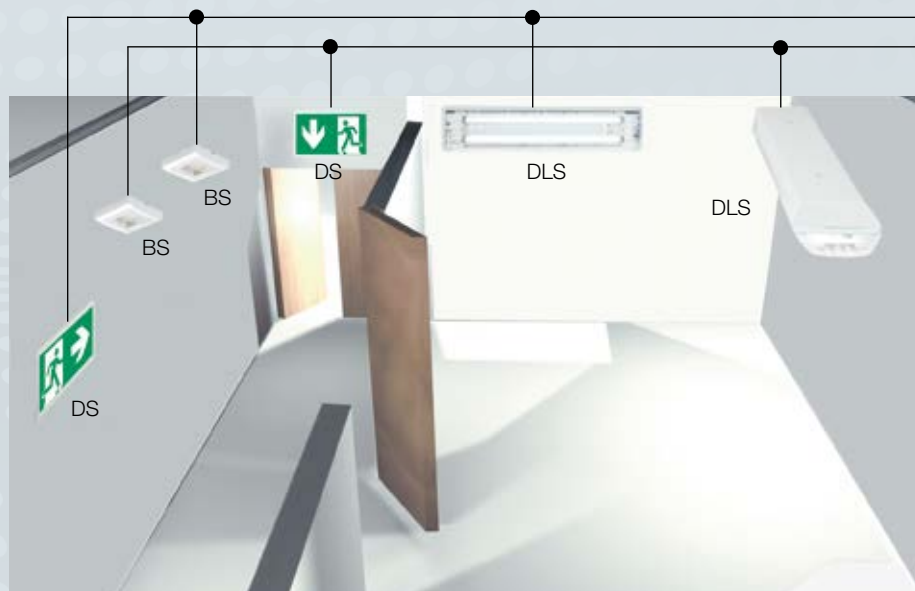
As with CEWA GUARD technology, the patented STAR technology requires no additional data cable to the luminaires.



Conventional Installation:

Maintained light 1 (DS)
Non-maintained light 1 (BS)
Non-maintained light 2 (BS)
Maintained light 2 (DS)
Switched maintained light 1 (DLS)
Switched maintained light 2 (DLS)

- Each type of switching mode requires two circuits
- Only one type of switching mode is possible per circuit
- Any later modifications involve a large amount of work and expense



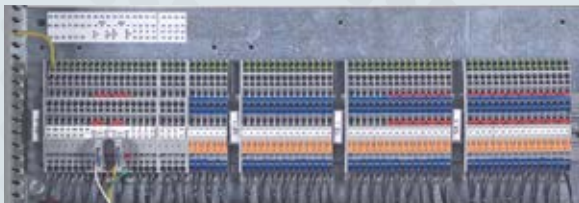
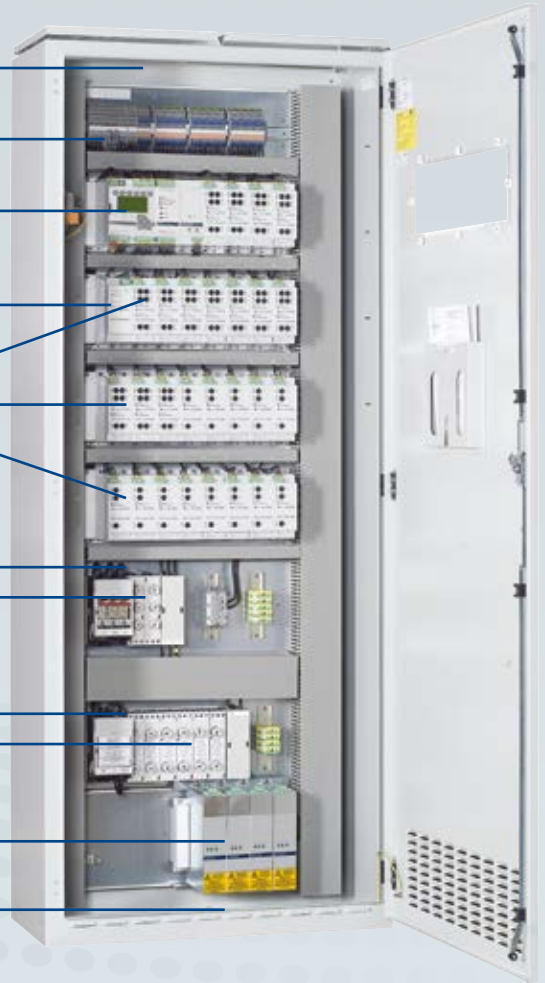
ZB-S Installation with STAR-Technology:

All types of switching modes
All types of switching modes

- Only two outgoing circuits for all types of switching modes
- Maintained light, non-maintained light and switched maintained light are possible in one common circuit
- Later circuit modifications do not pose any problems

ZB-S: Inspired engineering for the switch cabinet

- Cable entry from top
- 3-tier-installation terminal with tension spring connection and N-isolation
- Control module (CU CG-S), battery control module (BCM), charge module CM 1.7 A, 4 x SKU's
- DC/DC converter (DCM)
- Circuit change-over module 23 x SKU's
- Load break switch, mains
Terminal strip mains (optional)
- Load break switch, battery
Terminal strip battery (optional)
- Charging module CM 3,4 A
- Cable entry from bottom



Plenty of connection space for convenient wiring

All connections are run to 3-level neutral disconnect terminals at the top of the switch cabinet.

The wiring of the control module and the battery control module is standard. Wiring of the SKUs to 4 mm² triple deck installation terminals with spring connection and N disconnect terminal is optional.

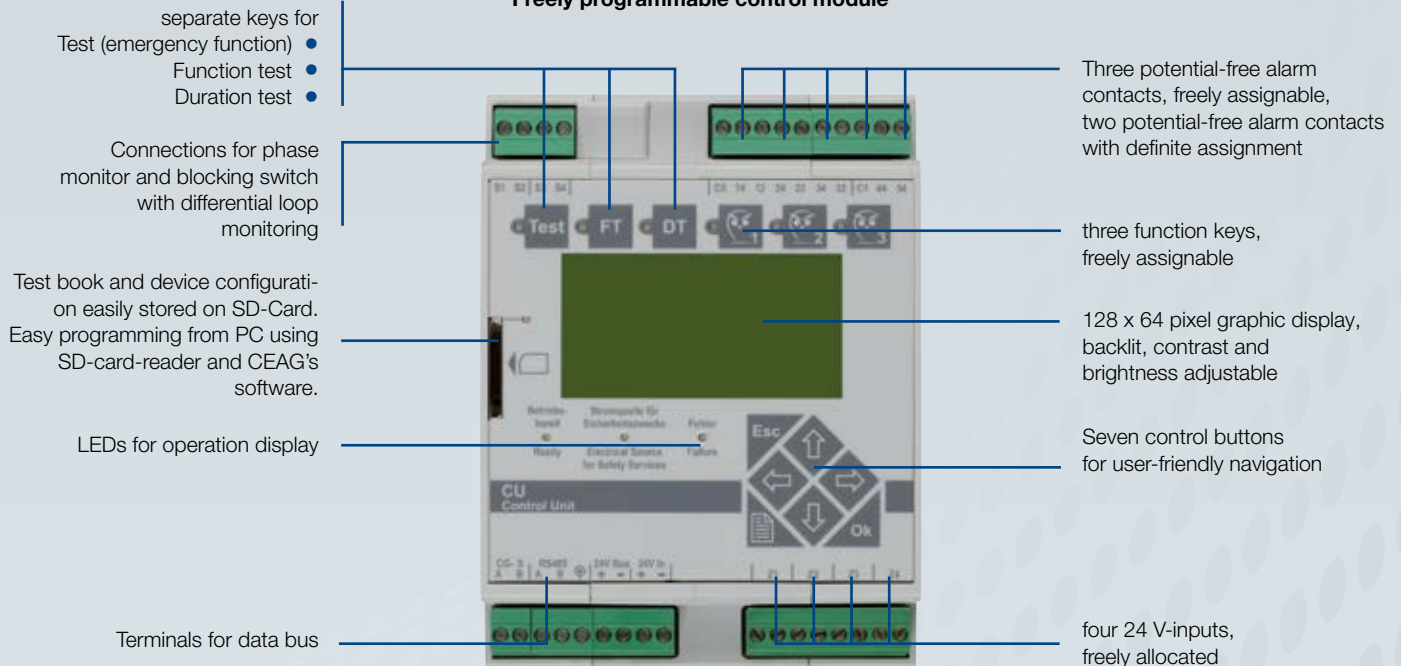
Charge modules CM 3.4 A each with a charging current of 3.4 A

The battery control module (BCM) drives up to 32 Charge modules CM 3.4 A to which the standby power batteries with a rated capacity of up to 1,000 Ah that are installed outside the switch cabinet are connected.



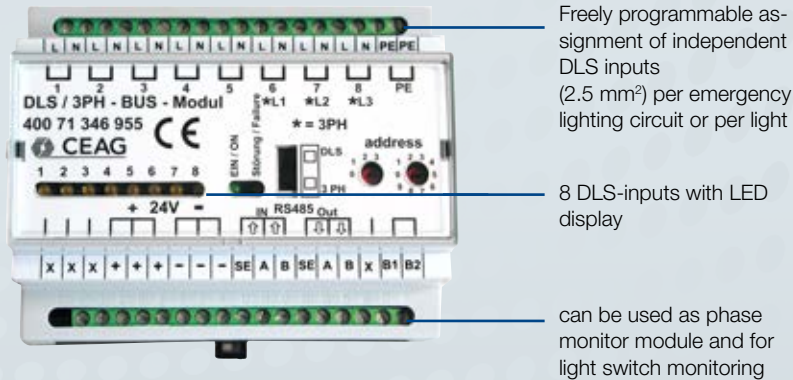
ZB-S: Inspired engineering for the switch cabinet

Freely programmable control module

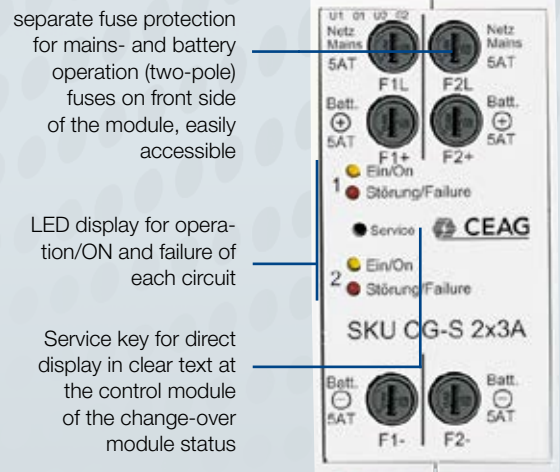


External DLS/3PH-Bus-Module

for common switching of safety- and general lighting

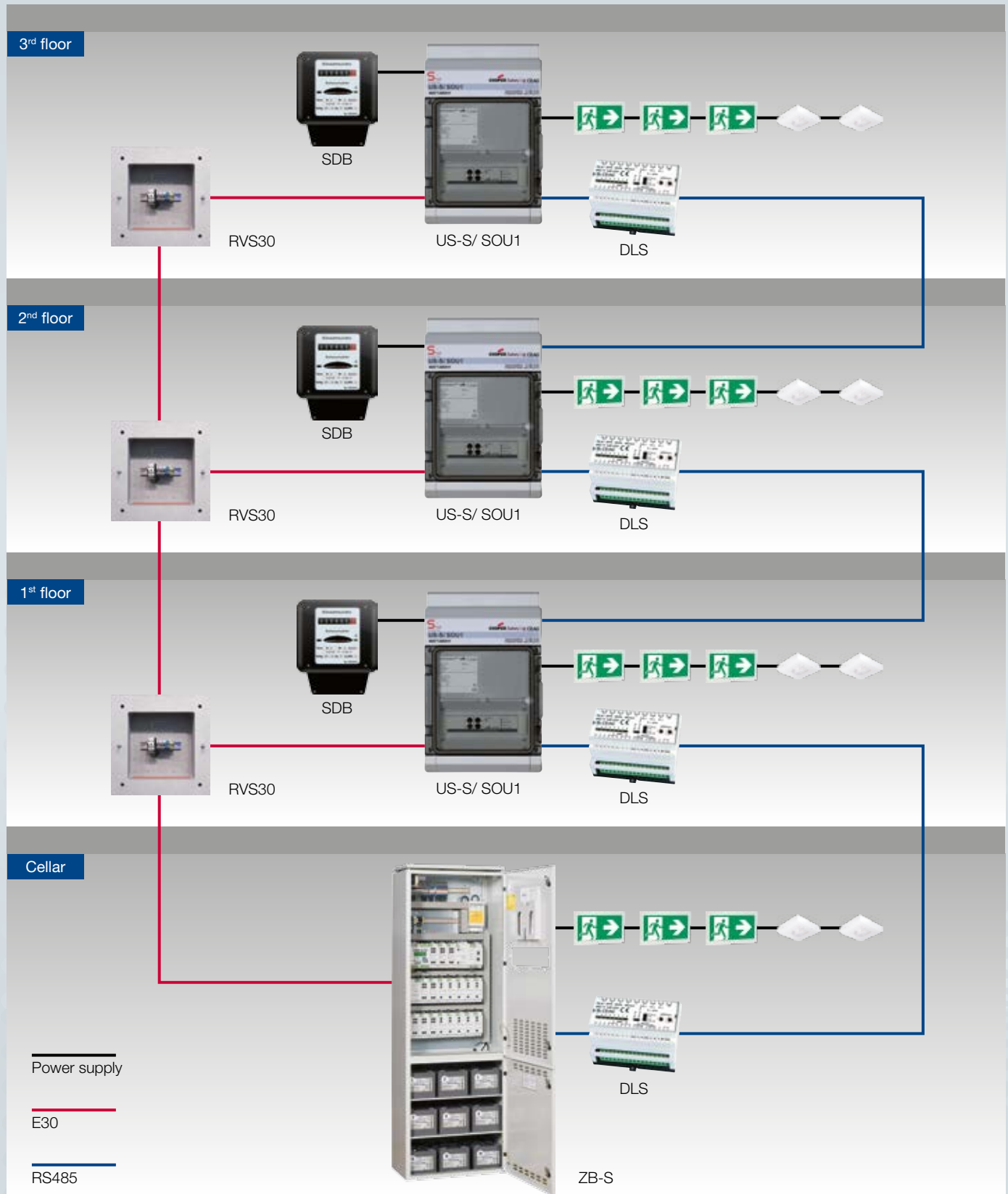


Circuit change-over module SKU CG-S 2 x 3 A



Distribution Board US-S/ SOU1

Installation example Emergency lighting system ZB-S with distribution board US-S/ SOU1



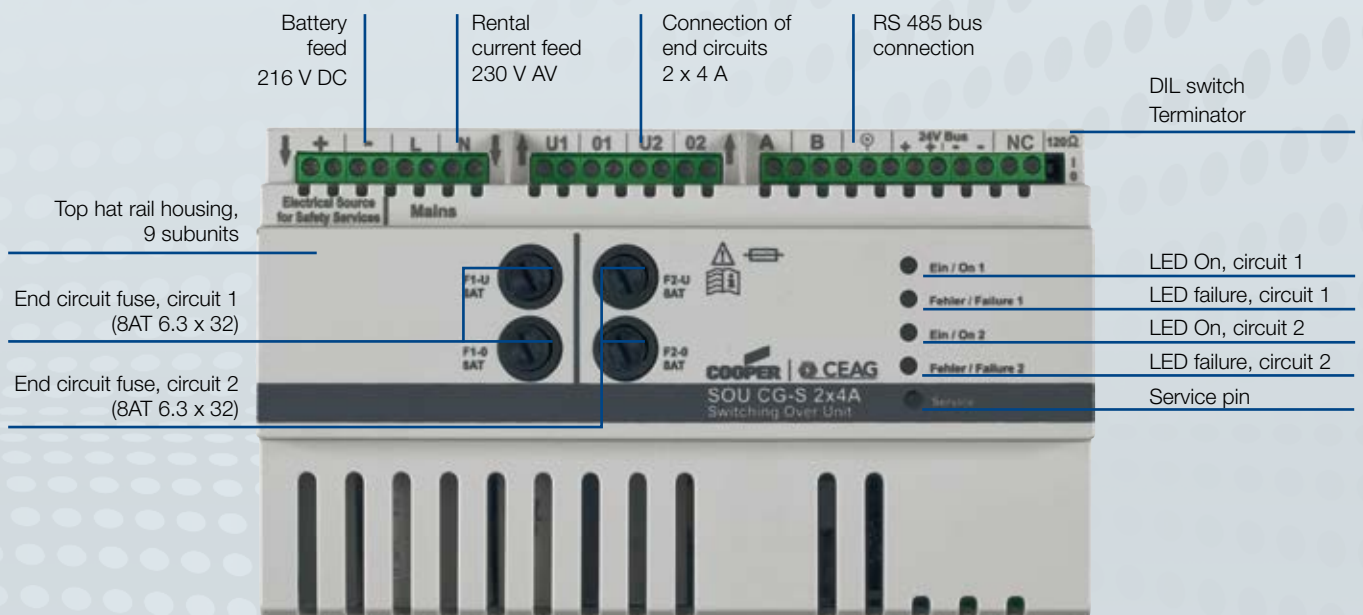
Distribution Board US-S/ SOU1



Distribution Board US-S/ SOU1

- Area by area installation
- Electricity costs allocation per rental area
- Maintained light, non-maintained light and switched maintained light are possible in one common circuit
- Later circuit modifications do not pose any problem

Switching over unit SOU CG-S 2 x 4 A



Central Battery System ZB-S with STAR Technology



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	40071347080
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	40071347081
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	40071347082
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	40071689062
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	40071347083
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	40071347084
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	40071347085
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	40071347086
Substation US-S/28	Substation type US-S/28 incl. CU CG-S and DC/DC.2 28 free module slots	40071347087
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
Substation ESF-E30/13-S	Substation type ESF-E30/13-S, incl. control module ST-S, DC/DC.2-converter, 13 free module slots	40071347710
Substation ESF-E30/28-S	Substation type ESF-E30/28-S, incl. control module ST-S, DC/DC.2-converter, 28 free module slots	40071347780
Distribution board ESF-RVS30	Fire proof distribution board with D02-NEOZED fuses	40071347920

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

Central Battery System ZB-S with STAR Technology



Ordering details

Type	Order No.
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	40071347121
Base 100 mm for ZB-S, depth 400 mm	40071347120
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	40071689084
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	40071689082
Door with left hinge for ZB-S/10C and ZB-10C6	40071689083

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Table of Covers

Technical data ZB-S

Type	ZB-S/26	ZB-S/18	ZB-S/LAD	ZB-S/10 C	
Modules:					
Control module: CU CG-S	1	1	1	1	
DC/DC.2-converter (DCM) ⁵	1	1	1	1	
BCM	1	1	1	1	
Circuit module SKU CG-S ⁵	0-26 ⁸	0-18 ⁸	0-2 ²	0-10 ⁸	
Maximum number of SWR 150 due to 100% luminous flux and max. rated power	7	7	2	7	
Charging module 1,7 A	0-2	0-2	0-2	0-2	
Charging module 3,4 A	0-6 ¹	0-6 ¹	0-10	0-1 ³	
Electrical cabinet construction:					
Rated voltage	400/230 V	400/230 V	400/230 V	230 V	
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
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 ⁹	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	
Insulation class	1	1	1	1	
Degree of protection	IP21	IP21	IP21	IP21	
Max. current rating mains [Σ L1, L2, L3] [A]	80	80	100	60	
Max. rated power mains [KW]	18.4	18.4	23	13.8	
Max. current rating battery [A]	80	80	100	35	
Max. rated power battery [KW]	17.3	17.3	21.6	7.6	
Three-phase distribution	yes	yes	yes	no	
Conductor size for mains and battery supply	50 mm ²	50 mm ²	50 mm ²	16 mm ²	
Outgoing circuits	0 - 6 Feeders	0 -6 Feeders	0 - 15 Feeders	1 Feeder	
Conductor size	16 mm ²	16 mm ²	16 mm ²	35 mm ²	
Max. conductor size final circuits	4 mm ²	4 mm ²	4 mm ²	4 mm ²	
Max. number of final circuit terminals	80	68	8	40	
Mechanical cabinet construction:					
Dimensions H x W x D (mm)	2050 x 800 x 400	2050 x 800 x 400	2050 x 800 x 400	2050 x 800 x 400	
Material / Design	Sheet steel / Cabinet	Sheet steel / Cabinet	Sheet steel / Cabinet	Sheet steel / Compact cabinet	
Door stop	right	right	right	right	
Outer coating	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint	
Colour	RAL 7035	RAL 7035	RAL 7035	RAL 7035	
Partial viewing door	Yes	Yes	No	Yes	
Lock	3 mm Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way	
Cable entry from above	yes	yes	yes ⁷	yes	
Cable entry from below	yes	yes	yes ⁷	no	
Base (optional)	100/200	100/200	100/200	200	
Weight (without batteries)	approx. 180 kg	approx. 170 kg	approx. 170 kg	approx. 155 kg	
Battery capacity, installed in:					
Compact cabinet	–	–	–	23.3-53.7 Ah	
Battery cabinet	23.3-245 Ah ⁶	23.3-245 Ah ⁶	23.3-308 Ah ⁶	–	
Battery rack	23.3-245 Ah ⁶	23.3-245 Ah ⁶	23.3-308 Ah ⁶	–	

Other battery sizes on application

*1 When 6 charging modules CM 3,4 A are fitted an additional charging module rack 2-way is necessary.

*2 Max. 8 charging modules are possible when 2 SKUs are fitted.

*3 When 1 charging module CM 3,4 A is fitted an additional charging module rack 1-way is necessary.

*4 When 2 charging modules CM 3,4 A are fitted an additional charging module rack 2-way is necessary. (>240 Ah Special design)

*5 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.

Table of Covers

Technical data ZB-S

	ZB-S/26 C6	ZB-S/18 C6	ZB-S/10 C6	ZB-S/18 C3	ZB-S/10 C3	ZB-S/2 C3
	1	1	1	1	1	1
	1	1	1	1	1	1
	1	1	1	1	1	1
	0-26 ^{*8}	0-18 ^{*8}	0-10 ^{*8}	0-19	0-11	0-3
	7	7	7	7	7	2
	0-2	0-2	0-2	0-2	0-2	1
	0-2 ^{*3/4}	0-2 ^{*3}	0-2 ^{*3/4}	–	–	–
	400/230 V	400/230 V	230 V	230 V	230 V	230 V
	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT
	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C
	1	1	1	1	1	1
	IP21	IP21	IP21	IP21	IP21	IP21
	63	63	63	25	25	15
	14.5	14.5	14.5	5.8	5.8	3.5
	63	63	63	25	25	12
	13.6	13.6	13.6	5.4	5.4	2.6
	yes	yes	no	no	no	no
	35 mm ²	35 mm ²	16 mm ²	16 mm ²	16 mm ²	16 mm ²
	2 Feeders	2 Feeders	1 Feeder	1 Feeder	1 Feeder	–
	35 mm ²	35 mm ²	35 mm ²	16 mm ²	16 mm ²	–
	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²
	60	60	40	50	40	12
	2250 x 800 x 600	2050 x 800 x 600	2050 x 800 x 600	1800 x 600 x 350	1800 x 600 x 350	1000 x 600 x 300
	Sheet steel / Compact cabinet	Sheet steel / Compact cabinet	Sheet steel / Compact cabinet	Sheet steel / Compact cabinet	Sheet steel / Compact cabinet	Sheet steel / Compact cabinet
	right	right	right	right	right	right
	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint
	RAL 7035	RAL 7035	RAL 7035	RAL 7035	RAL 7035	RAL 7035
	Yes	Yes	Yes	Yes	Yes	No
	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm
	Two-way	Two-way	Two-way	Two-way	Two-way	Two-way
	yes	yes	yes	yes	yes	yes
	no	no	no	no	no	no
	–	–	–	200	200	–
	approx. 250 kg	approx. 205 kg	approx. 206 kg	approx. 120 kg	approx. 115 kg	approx. 50 kg
	5.5-89.4 Ah	5.5-89.4 Ah	5.5-89.4 Ah	5.5-23.3 Ah	5.5-23.3 Ah	5.5-14 Ah
	–	–	–	–	–	–
	–	–	–	–	–	–

*6 Higher battery capacities =>118 Ah are achieved by connecting several battery sets in parallel.

After 8 h discharge the maximum battery capacity will be 195.4 Ah.

*7 Please indicate the cable entry when planning the system.

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

*9 Optimal ambient battery temperature +20 °C.

Table of Covers

Technical data ZB-S

Type	US-S/36	US-S/28	US-S/21	US-S/13	
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}	0-36	0-28	0-21	0-13	
Maximum number of SWR 150 due to 100% luminous flux and max. rated power	7	7	–	–	
Electrical cabinet construction:					
Rated voltage	400/230 V	400/230 V	230 V	230 V	
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	
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 up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	
Insulation class	1	1	1	1	
Degree of protection	IP54	IP54	IP54	IP54	
Max. current rating mains [Σ L1, L2, L3] [A]	80	80	50	50	
Max. rated power mains [kW]	18.4	18.4	11.5	11.5	
Max. current rating battery [A]	80	80	50	50	
Max. rated power Battery [kW]	17.3	17.3	10.8	10.8	
Three-phase distribution	yes	yes	no	no	
Conductor size for mains and battery supply	35 mm ²	35 mm ²	35 mm ²	16 mm ²	
Outgoing circuits	–	–	–	–	
Max. conductor size final circuits	4 mm ²	4 mm ²	4 mm ²	4 mm ²	
Max. number of final circuit terminals	80	80	52	24	
Mechanical cabinet construction:					
Dimensions H x W x D (mm)	2050 x 800 x 400	2050 x 800 x 400	1200 x 600 x 300	800 x 600 x 250	
Material / Design	Sheet steel / Cabinet	Sheet steel / Cabinet	Sheet steel / Wall cabinet	Sheet steel / Wall cabinet	
Door stop	right	right	right	right	
Outer coating	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint	
Colour	RAL 7035	RAL 7035	RAL 7035	RAL 7035	
Partial viewing door	Yes	Yes	No	No	
Lock	3 mm Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way	
Cable entry from above	yes	yes	yes	yes	
Cable entry from below	yes	yes	no	no	
Base (optional)	100/200	100/200	300	–	
Weight (without batteries)	approx. 170 kg	approx. 165 kg	approx. 110 kg	approx. 75 kg	

Other battery sizes on application

^{*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} With admittance no. Z-86.2-1. The supply cabinets ESF-E30 must be mounted on a solid wall with fire resistance of at least 30 minutes.

^{*3} The housing has insulation class II. The earth conductor must however be routed in the housing.

^{*4} IP54 with optional IP54 hood.

Table of Covers

Technical data ZB-S

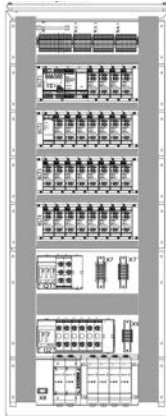
	US-S/5	US-S/ SOU2	US-S/ SOU1	ESF-E30/13-S ²	ESF-E30/28-S ²
	1	–	–	1	1
	1	–	–	1	1
	0-5	incl. 2 x SOU CG-S 2 x 4 A	incl. 1 x SOU CG-S 2 x 4 A	0-13	0-28
	–	–	–	–	–
	230 V	230 V	230 V	230 V	400/230 V
	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT	TN-C-S / IT
	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C	-5 °C up to +35 °C
	1	2 ³	2 ³	1	1
	IP54	IP65	IP65	IP41 ¹⁴	IP41 ¹⁴
	30	16	8	35	50
	6.9	3,6	1,8	8.1	11.5
	30	16	8	35	50
	6.5	3.4	1.7	7.6	10.8
	no	no	no	no	yes
	16 mm ²	10 mm ²	10 mm ²	16 mm ²	16 mm ²
	–	–	–	–	–
	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²
	20	4	2	26	56
	600 x 400 x 250	583 x 295 x 129	458 x 295 x 129	1150 x 885 x 405	2190 x 885 x 405
	Sheet steel / Wall cabinet	Plastic / Small distribution board	Plastic / Small distribution board	Sheet steel / func. endurance 30 min. / Wall cabinet	Sheet steel / func. endurance 30 min. / Stand alone cabinet
	right	right	right	right	right
	Textured powder paint	–	–	Textured powder paint	Textured powder paint
	RAL 7035	RAL 7035	RAL 7035	RAL 7035	RAL 7035
	No	Yes	Yes	No	No
	3 mm Two-way	On request	On request	3 mm Two-way	3 mm Two-way
	yes	yes	yes	yes	yes
	no	no	no	no	no
	–	–	–	–	–
	approx. 42 kg	approx. 8.8 kg	approx. 7.5 kg	approx. 235 kg	approx. 390 kg

ZB-S Appendix

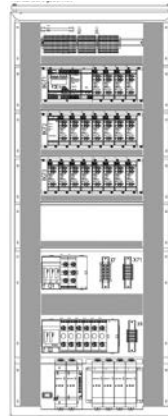
Overview Cabinets

Overview cabinets

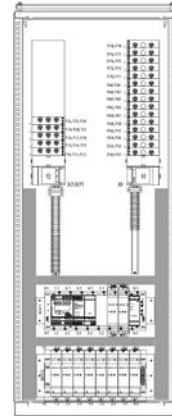
ZB-S/26



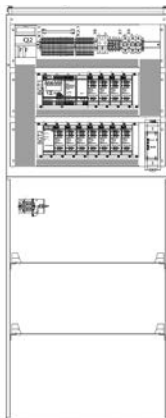
ZB-S/18



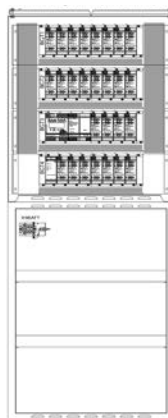
ZB-S/LAD



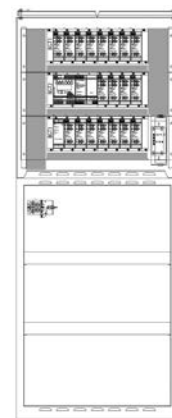
ZB-S/10C



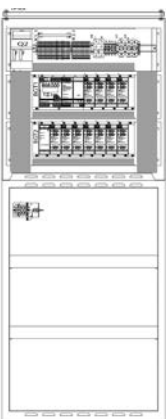
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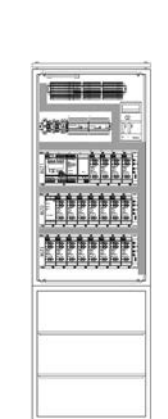
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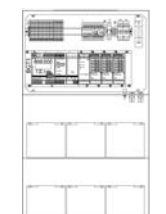
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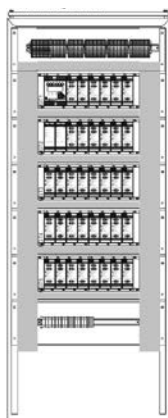
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ZB-S/2C3



US-S/36



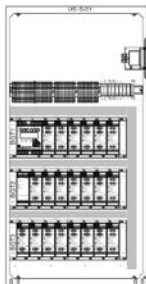
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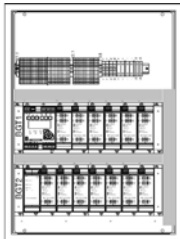
ZB-S Appendix

Overview Cabinets

US-S/21



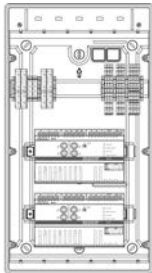
US-S/13



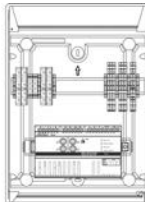
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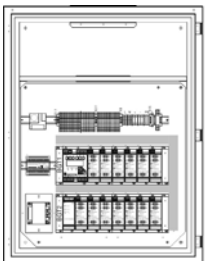
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US-S/ SOU1



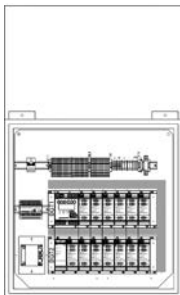
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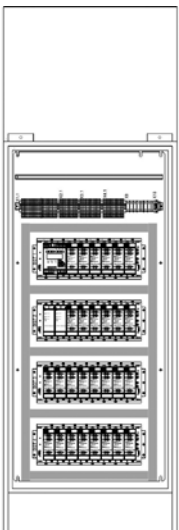
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ESF-E30/13S-P



ESF-E30/28S-P



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