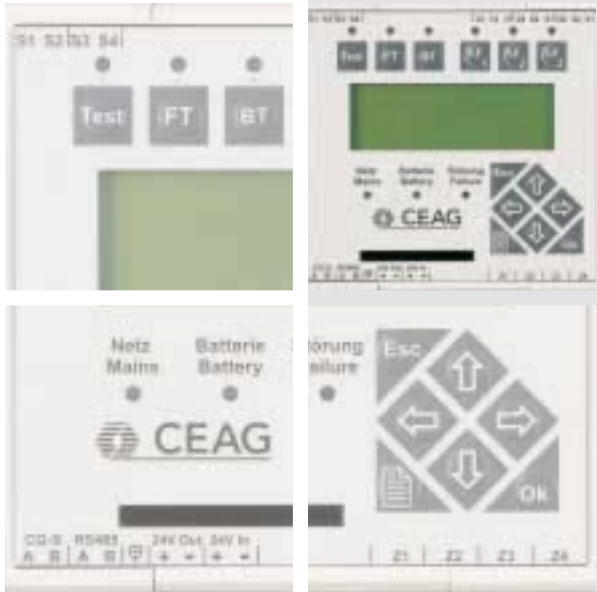


Central Battery System ZB-S with STAR Technology



What is ZB-S?



S = Switching

T = Technology

A = Advanced

R = Revision

Switch to safety!

ZB-S is a logical onward development of the successful ZB 96 Central Battery System. For many years now the ZB 96 system has enjoyed an enviable reputation as a dependable supply and monitoring system, and features the fully automatic **CEWA Guard** function monitoring and individual monitoring system.

The continuing development of this monitoring system has led to the creation of the

**Switching
Technology
Advanced
Revision,**

or **STAR** for short. This new **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.

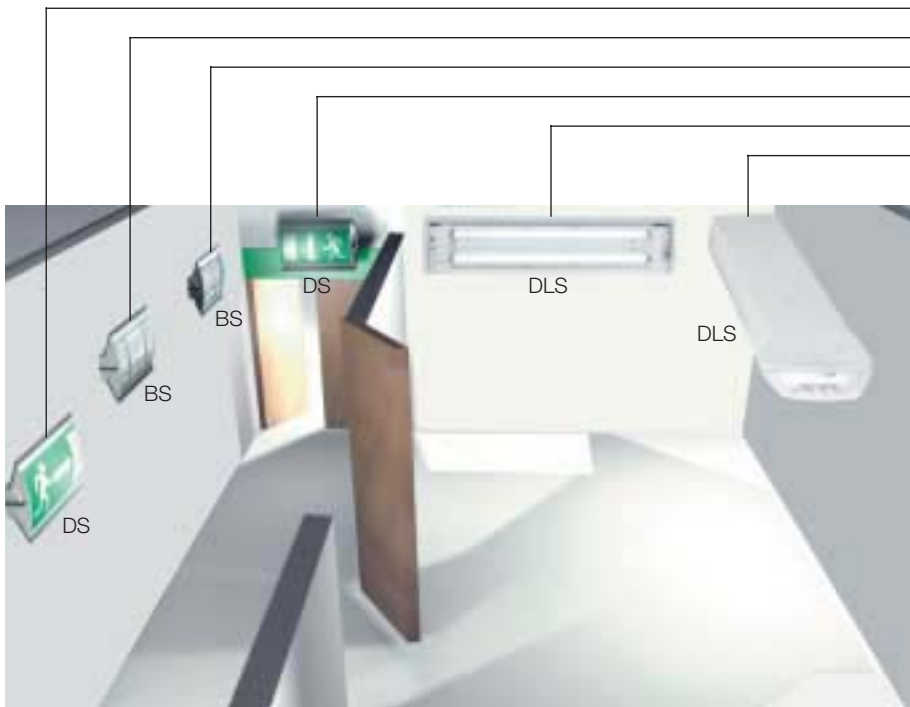
As a result, the new technology offers not just the proven CEWA Guard safety when it comes to operating a safety lighting system, it also gives planners the confidence of knowing that the system can respond and adapt at any time to any changes that are made to a building and its use.

The New STAR-Technology – Easy Planning



Your Advantages:

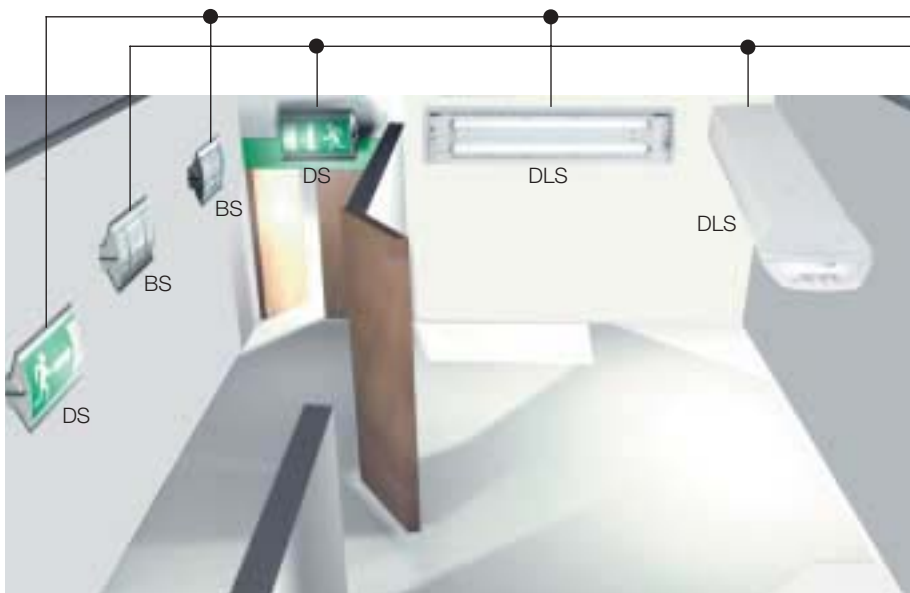
The number of outgoing circuits needed can be sharply reduced, since continuously operating, stand-by and switchable permanent lighting can be realised in one common circuit. This allows the use of shorter cable distances, reduces installation costs and minimises the effects of burning materials. Any 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.



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

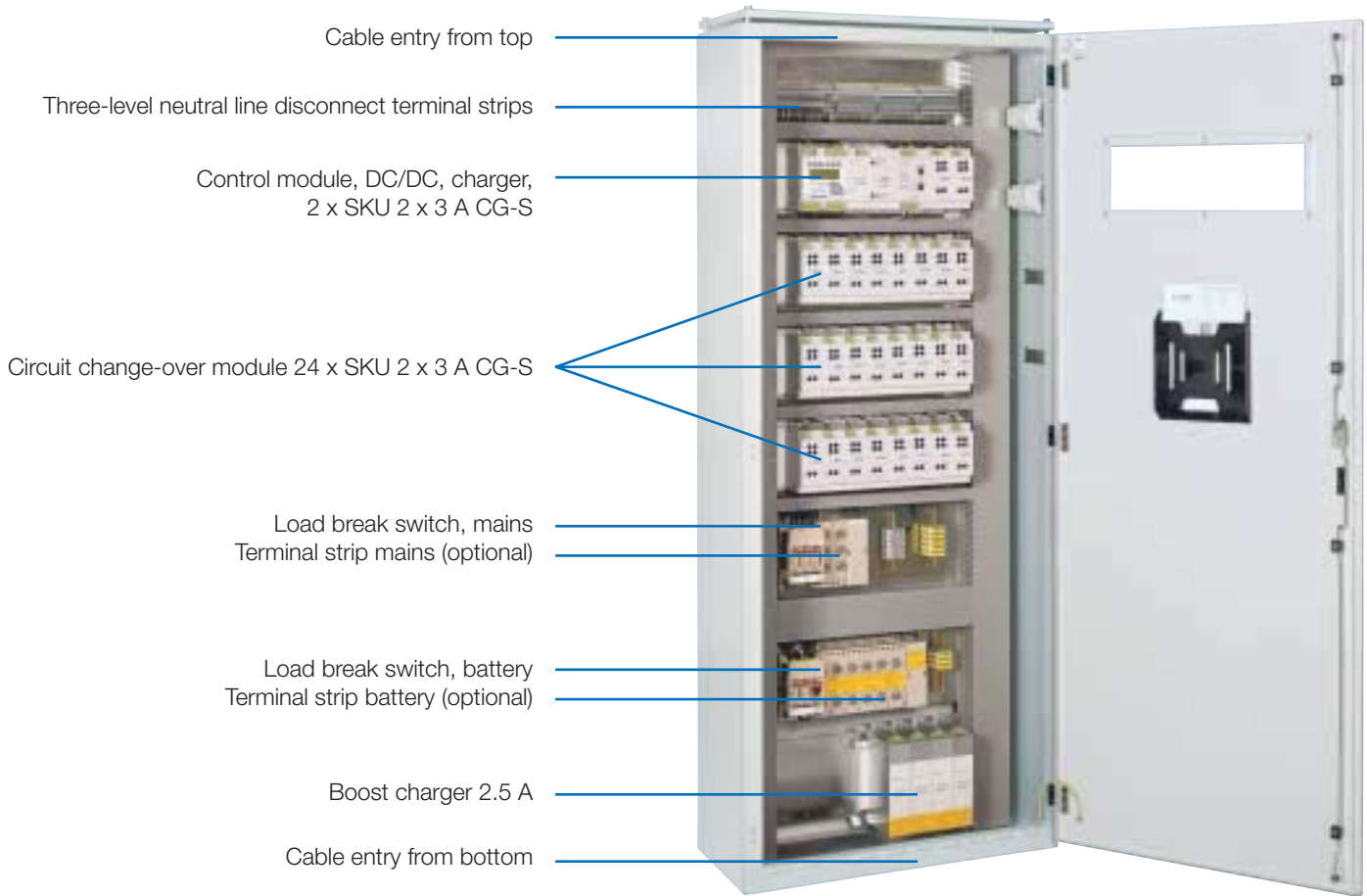


ZB-S Installation with STAR-Technology:

- 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



Plenty of connection space for convenient wiring

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

Boost chargers each with a charging current of 2.5 A

The LT.1 2,5A charging module drives the boost chargers to which the standby power batteries that are installed outside the switch cabinet are connected.



ZB-S: Inspired engineering for the switch cabinet

Freely programmable control module

separate keys for
 Test (emergency function) ■
 Function test ■
 Duration test ■

Connections for phase monitor and blocking switch with differential loop monitoring

LEDs for operation display

Terminals for data bus

Test book and device configuration easily stored on SD-Card. Easy programming from PC using SD-card-reader and CEAG's software.

Three potential-free alarm contacts, freely assignable

three function keys, freely assignable

4 x 20 character display, backlit, contrast and brightness adjustable

Seven control buttons for user-friendly navigation

four 24 V-inputs, freely allocated

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

separate fuse protection for mains- and battery operation (two-pole)

fuses on front side of the module, easily accessible

LED display for operation/ON and failure of each circuit

Service key for direct display in clear text at the control module of the change-over module status

External DLS/3PH-Bus-Module

for common switching of safety- and general lighting

Freely programmable assignment of independent DLS inputs (2.5 mm²) per emergency lighting circuit or per light

8 DLS-inputs with LED display

can be used as phase monitor module and for light switch monitoring

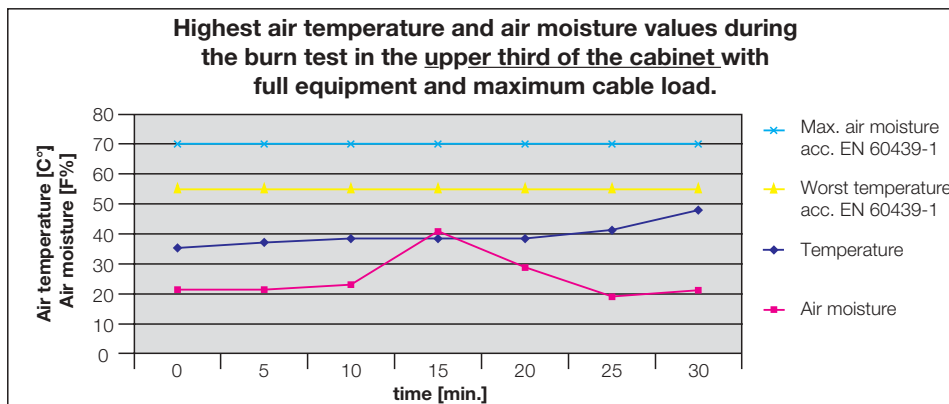
Function retention without compromise

ESF-E30

Admitted by the German DIBT as supply cabinet for emergency lighting systems with functional endurance of 30 minutes in the event of fire.



Type	ZB-S		ZB 96/EURO ZB.1	
	ESF-E30/13-S Wall cabinet	ESF-E30/28-S Standing alone cabinet	ESF-E30/17 Wall cabinet	ESF-E30/28 Standing alone cabinet
Fire protection data				
Fire exposure from the outside (min.)	30			
Maximum air moisture beyond 30 min. (%)	40	47	40	47
Maximum air temperature increase acc. to EN 60439-1 (K)	13	15	13	15
Weight (kg)	235	388	235	388



ESF-E30 as wall or standing alone cabinet



Line partition

Easy insertion of the lines through prepunched roof sheeting:

- 26 x M25 (60 x M25 standing alone cabinet)
- 8 x M16
- 4 x M40

Line cooling room

Substantial measurements at different burn tests showed that heat and humidity permeate through the lines into the fire protection cabinet. Temperatures on the lines are up to 50% higher with direct insertion than with line cooling section. Furthermore, the chemically adhered water in the isolation of the lines condenses at the roof of the fire protection cabinet. The dripping water can cause failures in the electronics. The cooling room avoids an unduly high heat and humidity entry via the lines.



Cross point closing

For supply cabinets with functional endurance the closeness of the enclosure is a significant matter for the construction. The equal grip of the cross point closing guarantees an optimal closeness. Even a left open door by mistake as it can happen with separate sash fasteners can thus be avoided. A further advantage is that the rotary lever handhold is able to adjust all standardised profile half cylinder so that a project-specific closing can be realised.

Technical aeration

Supply cabinets with functional endurance in the event of fire must protect the embedded equipment from temperatures of up to 850° C. Among others, an accordant insulation body can provide this. What in the event of fire protects the electrical equipment, can in normal operation cause problems due to the emerging loss of heat of the electronics. The heat transmission value of a supply cabinet with functional endurance compared with a normal sheet steel cabinet is 3:1. To conduct the loss of heat, the supply cabinet must be aerated. Herewith, the aeration may not affect the fire protection behaviour of the enclosure.

Central Battery System ZB-S with STAR Technology Programmable Switching



As well as providing a dependable supply of power (230V AC/220 V DC) to safety and exit luminaires, the ZB-S automatically tests the system 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 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 LCD display monitors and controls the central battery system. It automatically tests all the functions of the devices and emergency luminaires that are 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.

- **Hybrid operation of all switching modes within a single circuit**
- **Automatic search function**
- **Three separate test keys**
- **Three user-assignable function keys**
- **Module status can be polled directly**
- **Plain text display on the control module down to the last luminaire**
- **When there is a phase-to-ground fault in AC operation, fault-free DC operation can continue**
- **Flexible data storage for test log and system configuration with Secure-Digital-Card**
- **Electronic modules wired ready for connection to 3-level isolating neutral terminals 4 mm²**
- **Individual monitoring of up to 20 emergency luminaires per circuit**

Central Battery System ZB-S with STAR Technology



Ordering information

Type	Scope of supply	Order No.
Central battery system ZB-S/26	Central battery system type ZB-S/26 incl. ST-S, LT.1 and DC/DC.2 26 free module slots	4 0071 347 080
Central battery system ZB-S/18	Central battery system type ZB-S/18 incl. ST-S, LT.1 and DC/DC.2 18 free module slots	4 0071 347 081
Central battery system ZB-S/10 C	Central battery system type ZB-S/10 C incl. ST-S, LT.1 and DC/DC.2 10 free module slots	4 0071 347 082
Central battery system ZB-S/10 C6	Central battery system type ZB-S/10 C6 incl. ST-S, LT.1 and DC/DC.2 10 free module slots	4 0071 347 083
Central battery system ZB-S/18 C3	Central battery system type ZB-S/18 C3 incl. ST-S, LT.1 and DC/DC.2 18 free module slots	4 0071 347 084
Central battery system ZB-S/10 C3	Central battery system type ZB-S/10 C3 incl. ST-S, LT.1 and DC/DC.2 10 free module slots	4 0071 347 085
Central battery system ZB-S/LAD	Central battery system type ZB-S/LAD incl. ST-S, LT.1 and DC/DC.2 (2 free module slots possible)	4 0071 347 099
Substation US-S/36	Substation type US-S/36 incl. ST-S and DC/DC.2 36 free module slots	4 0071 347 086
Substation US-S/28	Substation type US-S/28 incl. ST-S and DC/DC.2 28 free module slots	4 0071 347 087
Substation US-S/21	Substation type US-S/21 incl. ST-S and DC/DC.2 21 free module slots	4 0071 347 088
Substation US-S/13	Substation type US-S/13 incl. ST-S and DC/DC.2 13 free module slots	4 0071 347 089
Substation US-S/5	Substation type US-S/5 incl. ST-S and DC/DC.2 5 free module slots	4 0071 347 090
Substation ESF-E30/13-S	Substation type ESF-E30/13-S incl. ST-S and DC/DC.2 13 free module slots	4 0071 347 710
Substation ESF-E30/28-S	Substation type ESF-E30/28-S incl. ST-S and DC/DC.2 28 free module slots	4 0071 347 780

Ordering information for accessories

Type	Order No.
4 off DIN mounting rail incl. fixing accessories	4 0071 347 125
3 off C-section rail incl. fixing accessories	4 0071 347 126
200 mm plinth for ZB-S, depth 400 mm	4 0071 347 121
100 mm plinth for ZB-S, depth 400 mm	4 0071 347 120
200 mm plinth for ZB-S/18C3 and 10C3, depth 300 mm	4 0071 347 122
3-piece baseplate for ZB-S, depth 400 mm, mouse-proof	4 0071 347 124
Cable support rail	4 0071 347 123
Metal flange plate for ZB-S battery cabinet, undrilled	4 0071 346 225
Flange plate with foam rubber for ZB-S battery cabinet	4 0036 070 164
Fireproof dowel M10 for E30 sub-distribution board, pack of 12, for installation in concrete walls	4 0036 070 298
Wall mounting plate for ESF-E30/13-S	4 0071 347 726

Table of Covers Technical Data ZB-S

Type	ZB-S/26	ZB-S/18	ZB-S/LAD	ZB-S/10 C	ZB-S/10 C 6	ZB-S/18 C 3
Rated voltage 400/230 V 50 Hz	400/230 V 50 Hz	400/230 V 50 Hz	400/230 V 50 Hz	230 V 50 Hz	230 V 50 Hz	230 V 50 Hz
Modules:						
Control module: ST-S	1	1	1	1	1	1
DC/DC.2-converter	1	1	1	1	1	1
Charging module 2.5 A	1	1	1	1	1	1
Circuit module SKU CG-S	0-26	0-18	0-2 ²	0-10	0-10	0-18
Charging booster 2.5 A	0-6 ¹	0-6 ¹	0-10	0-1 ³	0-2 ⁴	–
Cabinet construction:						
Conductor size for mains and battery supply	50 mm ²	50 mm ²	50 mm ²	16 mm ²	16 mm ²	16 mm ²
Three-phase distribution	yes	yes	yes	no	no	no
Conductor size Outgoing circuits	6 feeders, 16 mm ²	6 feeders, 16 mm ²	15 feeders, 16 mm ²	1 feeder 35 mm ²	1 feeder 35 mm ²	1 feeder 16 mm ²
Max. conductor size Final circuit	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²
Cable entry from top	yes	yes	yes ⁷	yes	yes	yes
Cable entry from bottom	yes	yes	yes ⁷	no	no	no
Enclosure class	IP 21	IP 21	IP 21	IP 21	IP 21	IP 21
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	2050 x 800 x 600	1800 x 600 x 350
Base (optional)	100/200	100/200	100/200	200	–	200
Lock	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way
Battery capacity, installed in:						
Compact cabinet	–	–	–	5.5-53 Ah	5.5-90 Ah	5.5-22 Ah
Battery cabinet	22-249 Ah ⁶	22-249 Ah ⁶	22-249 Ah ⁶	–	–	–
Battery rack	22-249 Ah ⁶	22-249 Ah ⁶	22-249 Ah ⁶	–	–	–

Other battery sizes on application

¹ When 6 boosters are fitted, a double bus carrier is necessary.

² Up to 8 boost chargers are possible when 2 SKU are fitted.

³ When 1 booster is fitted a single booster adapter is necessary.

⁴ When 2 boosters are fitted a double booster adapter is necessary.

Table of Covers Technical Data ZB-S

ZB-S/10 C3	US-S/36	US-S/28	US-S/21	US-S/13	US-S/5	ESF-E30/13-S ⁸	ESF-E30/28-S ⁸
230 V 50 Hz	400/230 V 50 Hz	400/230 V 50 Hz	230 V 50 Hz	230 V 50 Hz	230 V 50 Hz	230 V 50 Hz	400/230 V 50 Hz
1	1	1	1	1	1	1	1
1	1-2	1-2	1	1	1	1	1
1	–	–	–	–	–	–	–
0-10	0-36 ⁵	0-28 ⁵	0-21	0-13	0-5	0-13	0-26
–	–	–	–	–	–	–	–
16 mm ²	35 mm ²	35 mm ²	35 mm ²	16 mm ²	16 mm ²	16 mm ²	16 mm ²
no	yes	yes	no	no	no	no	yes
1 feeder 16 mm ²	–	–	–	–	–	–	–
4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²	4 mm ²
yes	yes	yes	yes	yes	yes	yes	yes
no	yes	yes	no	no	no	no	no
IP 21	IP 21	IP 21	IP 54	IP 54	IP 54	IP 54	IP 54
1800 x 600 x 350	2050 x 800 x 400	2050 x 800 x 400	1200 x 600 x 300	800 x 600 x 250	600 x 400 x 250	1150 x 885 x 405	2190 x 885 x 405
200	100/200	100/200	300	–	–	–	–
3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way	3 mm two-way
5.5-22 Ah	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–

⁵ The DC/DC.2 converter can supply up to 26 SKU CG-S. A second DC/DC.2 converter for 27 SKU and more is necessary.

⁶ Higher battery capacities B 130 Ah are achieved by connecting several battery sets in parallel.

⁷ Please indicate the cable entry when planning the system.

⁸ With admittance no. Z-86.2-1. The supply cabinets ESF-E30 must be mounted at a solid wall with a function retention of at least 30 minutes.