

ZB-S

Components and Options



Controle module

A freely programmable control module with non-volatile program memory and 4-line alphanumeric display monitors and controls the central battery system.

All functions such as charging, mains/ emergency lighting selection and deep discharge protection of the devices and the emergency luminaires are tested automatically. Any faults that occur are signalled immediately. An interface enables a central monitoring facility to be connected. In the event of a short circuit or open circuit in current loops, differential monitors immediately power on the system (maintained light) or put the system in readiness.

- Non-volatile memory
- Automatic luminaire search function
- Individual luminaire monitoring
- Automatic DLS/TLS search function
- Selective manual reset/circuit
- Selective emergency light/circuit
- Password function
- Final circuit fuse monitoring
- Module-selective battery operation
- Control module with multi-master mode M³

Displays include:

- Date/Time
- Charging malfunction
- Deep discharge protection
- Battery voltage/charge current (+)
- Battery discharge current in test or failure (-)
- Manual reset
- Test mode
- Delay-time on mains return (remaining time in min.)
- Luminaire failure with location label
- Insulation fault with circuit indication
- Failure mains sub DB (with location label)
- Failure/programming information

Connections

- Connection for disable switch:

Control loops for blocking the installation during factory shutdowns with differential loop monitoring for short-circuit and open circuit detection. Differential monitoring: Short-circuit or open circuit result in readiness for operation of the system.

- Connection for phase monitor:

24V current loop for requesting emergency lighting using differential loop monitoring for the detection of short-circuit and open circuits. Differential monitoring: Short-circuit or open circuit result in immediate power on (maintained light) of the system.

- Connection for floating signalling contacts and buzzer:

3 floating relays, each 1x UM, 24V 0.5A; buzzer
One or more of 11 different signals can be assigned to each floating contact or to the buzzer. Freely programmable, DIN VDE 0100, part 718 requirement can be called at any time as a preset.

- Connection for analog inputs:

4 of freely assignable 24 V analog inputs, can be programmed negated and non-negated, e.g. for start / cancel function test, start / cancel operating duration test, disable / enable system, manual reset, maintained light on / off, power on safety lighting as continuity lighting.

Sealed keypad with 3 keys for:



- Test (mains failure - battery operation)
- Function test start / cancel
- Operating duration test start / cancel

3 freely assignable function keys for:



- System disable/enable
- Manual reset
- Cancel function test
- Show fault list
- Maintained light off/on
- Power on complete safety lighting system (continuity lighting)
- Mains failure simulation UV-A (emergency operation)
- Reset deep discharge protection
- Find insulation failure
- Service Pin Message

7 control keys

for user-friendly navigation



LED indicators for:



- Mains
- Battery
- Fault

Display:

4 x 20 characters, backlit, program adjustable contrast and brightness.

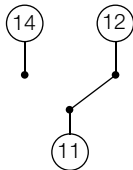
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Display	4 x 20 character display, program adjustable contrast
Illumination	backlighting, program adjustable brightness
Keypad	sealed, with 6 function and 7 control keys
Readout	Battery voltage Battery charge current (+) Battery discharge current in test or failure (-) Charge fault Luminaire failure with location label Deep discharge protection Manual reset Delay-time on mains return Failure mains sub DB (with location label) Test mode Date/Time Insulation fault with circuit label Failure information Programming information
Status	- Mains - Battery - Controller

Programmable signalling contacts, each
1 x changer /
1 x 24 / 0 V and 0.5 A



Potential-free signal contacts, buzzer

3 floating relays, each 1 x UM, 24 V 0.5 A; buzzer

Free programmable, VDE 0108 requirement can be called at any time as a preset.

Status	11/12/14 Group fault	21/22/24 Ready	31/32/34 Battery operation (Emerg. operation)
Mains operation	-	X	-
Mains failure	X	-	X
Mains failure S3-S4/LON	X	-	-
Charge failure	X	-	-
Converter failure	X	-	-
Luminaire failure	X	-	-
Group failure	X	-	-
Deep discharge protection	X	-	-
Insul. monitor	X	-	-
Function test	-	X	X
Operating duration test	-	X	X
Contact assignment	11/14: NO 11/12: NC	21/24: NO 21/22: NC	31/34: NO 31/32: NC

Ordering details

Type	Model	Order No.
Control module ZB-S compl. with SD	Plug-in module all devices	4 0071 347 890

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SD Card

Secure-Digital-Card

Flexible data storage for system and log book configuration, e.g. of the mandatory archiving of log book information for a minimum of 4 years.

The system can also be programmed at any PC using optional SD-card reader and CEAG software. Texts can also be entered on the control module in the switch cabinet.

Storage of:

- 360,000 log book entries
- Location texts for the luminaires (20 characters per luminaire)
- Location texts of external modules such as phase monitor, DLS, TLS (20 characters per module)
- Circuit names (20 characters per circuit)
- System name (20 characters)

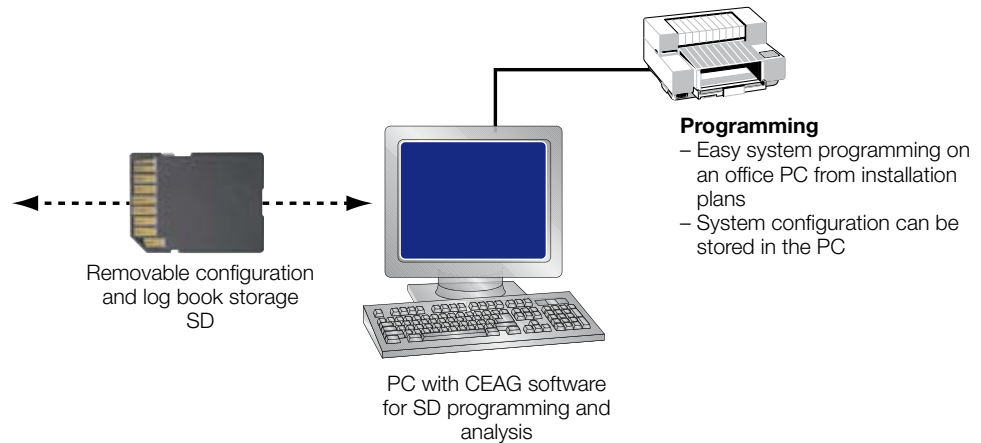


SD card reader

Ordering details

Type	Model	Order No.
SD card	SD card formatted for ZB-S	4 0071 347 911
SD card reader	SD card reader for USB-Port	4 0064 070 561
Software	Software for external programming of the ZB-S via PC	4 0071 347 152

Basic information about the SD card (Secure-Digital-Card)



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DC-DC converter.2

DC/DC-Converter.2

The DC/DC converter.2 converts the 220 V DC battery voltage to 24 V DC and 6 V DC to supply the modules and processor.

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:

- Supplies 26 SKUs CG-S 2 x 3 A/1 x 6 A or 13 x 4 x 1.5 A
- Incoming supply can be run via AC/AC

24 V external	20 W continuous rating Outgoing circuit with front panel connector Isolated voltage
24 V internal	100 W continuous rating 140 W peak rating (20 ms)

Ordering details

Type	Order No.
DC/DC-converter.2	7 0071 347 071



AC-Module

AC Module

Together with the DC/DC converter.2, the optional AC module supplies the internal system voltage when the battery supply is isolated, e. g. for maintenance.

Constructed to	EN 61558/VDE 570
Rated voltage	230 V 50 Hz
Nominal power	240 VA
Fusing	1,6 A

Ordering details

Type	Scope of supply	Order No.
AC-Module	external transformer module AC/AC-module 240 VA incl. mounting adapter	4 0071 347 162

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SKU CG-S 4 x 1.5 A

SKU CG-S 4 x 1.5 A

Hybrid operation of maintained light, non-maintained light and switched maintained light per module can be programmed with no additional data cable.

- Up to 20 luminaires can be monitored individually
- Individual selection per AC/DC circuit
- When there is a phase-to-ground fault in AC operation, fault-free DC operation may continue
- Easy access to fuses
- LED indicates fault and Run/ON for each circuit
- Supplies ballast and LED luminaires
- Service-friendly modular units are wired up and ready to connect to 3-tier 4 mm² disconnect neutral terminals

Fusing	2.5 AT/250 V, 6.3 x 32
Continuous current rating	1.5 A per circuit
Max. inrush current	60 A/ms per circuit
Typical switch over time	AC/DC approx. 450 ms
Own consumption	7.7 W

Ordering details

Type	Scope of supply	Order No.
SKU	Circuit change over module SKU CG-S 4 x 1.5 A	4 0071 347 840
Spare part	Fuse 2.5 AT (6.3 x 32) 250 V (PU 10 pcs.)	4 0071 070 716



SKU CG-S 2 x 3 A

SKU CG-S 2 x 3 A

Hybrid operation of maintained light, non-maintained light and switched maintained light in a single circuit can be programmed with no additional data cable.

- Up to 20 luminaires can be monitored individually
- Individual selection per AC/DC circuit
- Separate fusing for mains and battery operation
- Easy access to fuses
- LED indicates fault and Run/ON for each circuit
- Supplies ballast and LED-luminaires
- Service-friendly modular units are wired up and ready to connect to 3-tier 4 mm² disconnect neutral terminals

Fusing	5 AT/250 V, 6.3 x 32
Continuous current rating	3 A per circuit
Max. inrush current	250 A/ms per circuit
Typical switch over time	AC/DC approx. 450 ms
Own consumption	3.85 W

Ordering details

Type	Scope of supply	Order No.
SKU	Circuit change over module SKU CG-S 2 x 3 A	4 0071 347 051
Spare part	Fuse 5.0 AT (6.3 x 32) 250 V (PU 10 pcs.)	4 0071 689 047

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Components and Options



SKU CG-S 1 x 6 A

SKU CG-S 1 x 6 A

Hybrid operation of maintained light, non-maintained light and switched maintained light in a single circuit can be programmed with no additional data cable.

- Up to 20 luminaires can be monitored individually
- Separate fusing for mains and battery operation
- Easy access to fuses
- LED indicates fault and Run/ON for each circuit
- Supplies ballast and LED luminaires
- Service-friendly modular units are wired up and ready to connect to 3-tier 4 mm² disconnect neutral terminals

Fusing	10 AT/250 V, 6.3 x 32
Continuous current rating	6 A per circuit
Max. inrush current	250 A/ms per circuit
Typical switch over time	AC/DC approx. 450 ms
Own consumption	3.85 W

Ordering details

Type	Scope of supply	Order No.
SKU	Circuit change over module SKU CG-S 1 x 6 A	4 0071 347 345
Spare part	Fuse 10 AT (6.3 x 32) 250 V (PU 10 pcs.)	4 0071 070 715

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Components and Options



SKU CG 2 x 3 A

SKU CG 2 x 3 A

Change-over module SKU, module without S-Function

- Up to 20 luminaires can be monitored individually
- Individual selection per AC/DC circuit
- Separate fusing for mains and battery operation
- Easy access to fuses
- LED indicates fault and Run/ON for each circuit
- Supplies ballast and LED-luminaires
- Service-friendly modular units are wired up and ready to connect to 3-tier 4 mm² disconnect neutral terminals

Fusing	5 AT/250 V, 6.3 x 32
Continuous current rating	3 A per circuit
Max. inrush current	120 A/ms per circuit
Typical switch over time	AC/DC approx. 450 ms
Own consumption	3.85 W

Ordering details

Type	Scope of supply	Order No.
SKU	Circuit change over module SKU CG 2 x 3 A	4 0071 347 290
Spare part	Fuse 5 AT (6.3 x 32) 250 V (PU 10 pcs.)	4 0071 689 047



SKU CG 1 x 6 A

SKU CG 1 x 6 A

Change-over module SKU, module without S-Function

- Up to 20 luminaires can be monitored individually
- Separate fusing for mains and battery operation
- Easy access to fuses
- LED indicates fault and Run/ON
- Supplies ballast and LED luminaires
- Service-friendly modular units are wired up and ready to connect to 4 mm² 3-tier disconnect neutral terminals

Fusing	10 AT/250 V, 6.3 x 32
Continuous current rating	6 A per circuit
Max. inrush current	180 A/ms per circuit
Typical switch over time	AC/DC approx. 450 ms
Own consumption	3.85 W

Ordering details

Type	Scope of supply	Order No.
SKU	Circuit change over module SKU CG 1 x 6 A	4 0071 347 346
Spare part	Fuse 10 AT (6.3 x 32) 250 V (PU 10 pcs.)	4 0071 070 715

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SWR 150 sinus inverter supplies

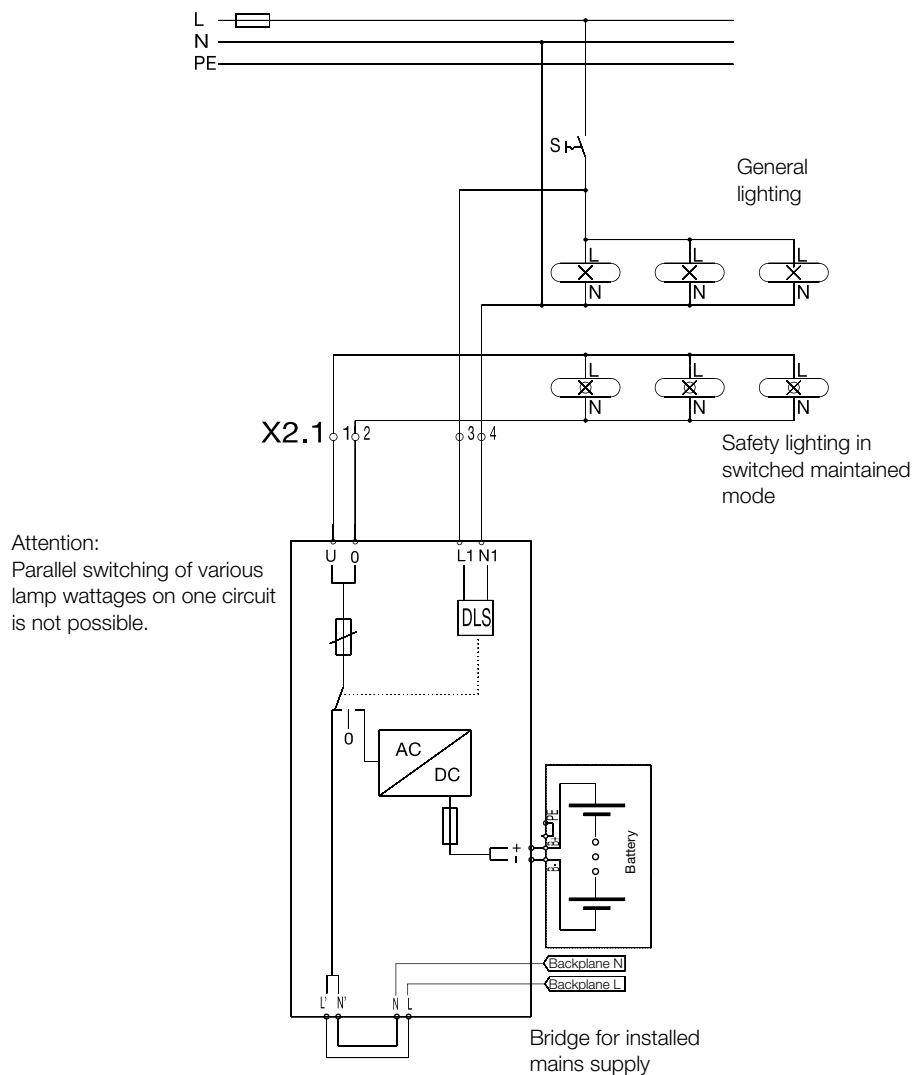
SWR 150

The SWR 150 sinus inverter supplies and monitors emergency luminaires with conventional ballasts. In battery operation, the sinus inverter supplies a sinus voltage of 230 V AC. By altering the frequency of the output sinus voltage, the luminous flux of emergency luminaires with conventional ballast can be regulated in emergency lighting operation so that an optimum utilization of the available power is ensured. The functioning of a connected luminaire is checked by circuit monitoring.

Slots		1
Fusing	G-Fuse 0.5 x 20	1.6 AT
Max. rated current AC		0.65 A
Max. rated current DC		1.00 A
Max. connection terminals		150 VA
for luminaire		KVG
Rated power DC/DC-converter		2.3 W
Distortion factor		< 5 %

Ordering details

Type	Scope of supply	Order No.
SWR 150	Indicate light source and luminous flux ratio	4 0071 347 960



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Table 1. Battery current consumption values (A) dependent upon number of luminaires and luminous flux ratio (LV%) at 20°C ambient temperature at the luminaire.

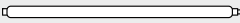
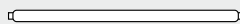
International description	T5 					
Base	G5					
Lamp power (W)	8W-VVG					
Luminous flux ratio (%)	100		51		35	
Switch setting	0		4		9	
Number of luminaires / Current consumption from the battery / Apparent power	[A] [VA]		[A] [VA]		[A] [VA]	
1	0.175 / 36		0.123 / 19		0.118 / 12	
2	0.258 / 72		0.150 / 37		0.090 / 24	
3	-		0.213 / 56		0.120 / 36	
4	-		0.246 / 74		0.157 / 48	
5	-		0.276 / 92		0.192 / 60	
6	-		0.322 / 110		0.220 / 71	
7	-		-		0.240 / 83	
8	-		-		0.260 / 94	
9	-		-		0.280 / 105	

Table 2. Battery current consumption values (A) dependent upon number of luminaires and luminous flux ratio (LV%) at 20°C ambient temperature at the luminaire.

International description	T26 																					
Base	G13																					
Lamp power (W)	58				36				18													
Luminous flux ratio (%)	100	48	32	100	75	54	32	100	87	54	36											
Switch setting	0	5	9	0	2	4	8	0	1	5	9											
Number of luminaires / Current consumption from the battery / Apparent power	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]										
1	0.62	147	0.37	84	0.35	81	0.47	107	0.34	80	0.31	71	0.30	70	0.37	85	0.31	72	0.26	60	0.26	60
2	-	-	-	-	-	-	-	-	0.59	137	0.47	109	0.36	83	-	-	0.56	121	0.33	75	0.29	67
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47	108	0.35	82

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Table 3. Battery current consumption values (A) dependent upon number of luminaires and luminous flux ratio (LV%) at 20 °C ambient temperature at the luminaire.

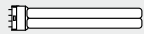
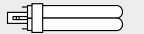
International description	TC-L 																					
Base	2G11																					
Lamp power (W)	36				24				18													
Luminous fluxverhältnis (%)	100	59	43		100	73	57	46	100	71	52	47										
Switch setting	0	5	9		0	3	6	9	0	3	7	9										
Number of luminaires / Current consumption from the battery / Apparent power	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]						
1	0.47	108	0.30	70	0.29	68	0.38	89	0.28	64	0.27	62	0.27	65	0.39	90	0.26	60	0.26	60	0.25	60
2	-	-	0.43	96	0.33	76	-	-	0.42	99	0.34	79	0.32	74	-	-	0.42	98	0.31	70	0.28	65
3	-	-	0.58	135	0.44	103	-	-	0.61	136	0.44	103	0.37	86	-	-	0.57	135	0.40	94	0.34	80
4	-	-	-	-	-	-	-	-	-	-	0.56	130	0.47	105	-	-	-	-	0.50	117	0.46	104

Table 4. Battery current consumption values (A) dependent upon number of luminaires and luminous flux ratio (LV%) at 20 °C ambient temperature at the luminaire.

International description	TC-D 																													
Base	G24Q1, G24Q2																													
Lamp power (W)	26				18				13				10																	
Luminous flux ratio (%)	100	71	61	47	100	79	63	48	100	77	63	42	100	68	52															
Switch setting	0	3	5	9	0	2	5	9	0	2	4	9	0	4	9															
Number of luminaires / Current consumption from the battery / Apparent power	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]	[A]	[VA]								
1	0.36	85	0.28	63	0.27	61	0.27	64	0.30	51	0.26	37	0.24	29	0.23	24	0.26	60	0.26	49	0.21	49	0.21	49	0.25	58	0.21	49	0.20	44
2	-	-	0.39	93	0.35	80	0.33	76	0.47	87	0.35	64	0.29	47	0.28	37	0.39	90	0.30	68	0.28	63	0.29	66	0.39	90	0.26	58	0.26	62
3	-	-	0.54	126	0.45	104	0.36	80	0.65	114	0.48	86	0.36	65	0.32	48	0.53	121	0.41	91	0.32	73	0.30	71	0.54	125	0.31	74	0.30	70
4	-	-	-	-	0.57	132	0.43	97	-	-	0.60	106	0.44	81	0.34	62	-	-	0.53	110	0.38	87	0.32	74	-	-	0.38	88	0.32	72
5	-	-	-	-	-	-	-	-	-	-	0.71	125	0.53	94	0.40	73	-	-	0.57	130	0.48	103	0.33	76	-	-	0.47	104	0.36	75
6	-	-	-	-	-	-	-	-	-	-	-	0.60	108	0.44	83	-	-	-	-	0.52	120	0.38	87	-	-	0.54	121	0.40	81	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.59	136	0.42	94	-	-	0.59	137	0.45	94		

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PD 3 printer

The printer logs and memorizes all function tests and mains failures of a ZB-S cover or a substation. After the performance of an automatic function test, the results are printed out in plain text stating also the time and date. The printing is automatic with each entry into the log book of the control module. A mains failure is also logged with time and date. The printer documents the operational state of emergency luminaires of a emergency lighting supply system. By means of the printer, the information on possible failures of the luminaires (e. g. defective lamp) can be printed out in detail.



PD 3 printer

Printing paper	Woodfree printer paper
Paper width	57.5 mm
Max. diameter of the paper roll	61 mm
Plug-in module	12 mm

Ordering details

Type	Scope of supply	Order No.
PD 3	Plug-in module	4 0071 347 316
Spare part	1 roll printing paper	4 0078 079 666
Spare part package	1 colour ribbon and 1 roll printing paper	4 0071 346 042

CG IV / CG V relay modules

The bipolar CG IV relay module transmits data and operational states of the covers/substations to a central building management system.



CG IV relay modules

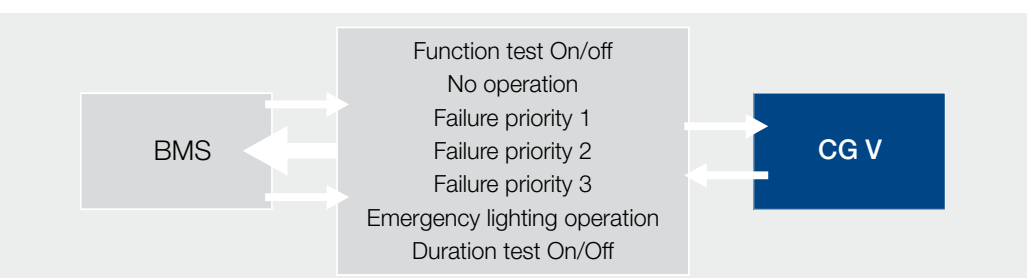
Connection terminals/Clamp terminals	2.5 mm ² rigid and flexible
Switching capacity of the contacts	24 V/0.5 A AC DC

Ordering details

Type	Scope of supply	Order No.
CG IV	Plug-in module	4 0071 343 971
CG V	Plug-in module	4 0071 347 800

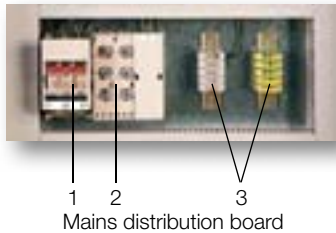


CG V relay modules



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Mains distribution module
D02-E18

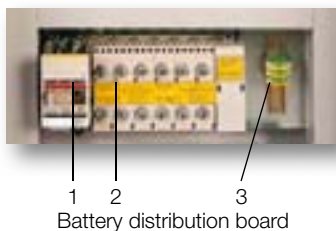
Mains distribution board

The mains supply to a ZB-S/26 or ZB-S/18 system comes via a modular mains distribution board. This includes a size 00C load disconnecter (1) with a maximum conductor size of 50 mm² and allows the connection of up to 6 slave stations to modular size D02-E18 outgoing mains circuits (2) with the necessary terminals for neutral and ground (3). The same mains distribution boards must also be used three-phase for feeders to powerful slave-stations (accommodates up to 2 slave stations in this case). The components are simply plugged on from the front and securely contacted.

Current rating	63 A
Rated operating voltage	400 V
Box terminal for circulator conductor	to 16 mm ²
Material	Polyamide (PA 6.6), 30 % glass-fibre-reinforced
Scope of supply	incl. 3 pcs. screw caps E18 and 3 pcs. D02-fuse inserts 25 A

Ordering details

Type	Scope of supply	Order No.
Mains distribution module for track mounting	incl. 3 pcs. screw caps E18 and 3 pcs. D02-fuse inserts 25 A	4 0071 347 160



Battery distribution module
D02-E18

Battery distribution board

The battery supply to a ZB-S/26 or ZB-S/18 system comes via a modular battery distribution board. This includes a size 00C load disconnecter (1) with a maximum conductor size of 50 mm² and allows the connection of up to 6 slave stations to modular size D02-E18 outgoing battery circuits (2) with related terminals for ground (3). The components are simply plugged on from the front and securely contacted.

Current rating	63 A
Rated operating voltage	400 V
Box terminal for circulator conductor	to 16 mm ²
Material	Polyamide (PA 6.6), 30 % glass-fibre-reinforced
Scope of supply	incl. 2 pcs. screw caps E18 and 2 pcs. D02-fuse inserts 25 A

Ordering details

Type	Scope of supply	Order No.
Battery distribution module for track mounting	incl. 2 pcs. screw caps E18 and 2 pcs. D02-fuse inserts 25 A	4 0071 347 161

Cover strip

Busbar guard: Cover strip for clip-mounting to the trunking section. Ready-cut to module width.
Material: Hard PVC.

Ordering details

Type	Scope of supply	Order No.
Busbar cover strip	Cover strip in module width for clip mounting at the trunking section	4 0071 347 192

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Charging module LT.1 2.5 A

Charging module LT.1 2.5 A

The charging section is used to recharge 216 V batteries. The charging current is 2.5 A. Additional boost chargers with a charging current of 2.5 A are used for higher battery ratings. The boosters are driven by the LT.1 2.5 A. Signals such as failure, insulation fault and boost charging can be transmitted with the charger's floating signalling contacts. A display on the actual device indicates the current state of charge (capacity > 10 %, > 50 %, 100 %). The built-in insulation monitor reports an insulation fault between battery + and PE or battery - and PE.

Charging characteristic	IU
Terminals	2.5 mm ² rigid and flexible
Fusing mains	6.3 AT/250 V/5 x 20
Fusing battery	3.15 AT/250 V/5 x 20
End-of-charge voltage	boost charge 259.2 V DC trickle charge 248.4 V DC
Max. charging current	charging module LT 2.5 2.5 A booster 2.5 A
Deep discharge protection	183.6 V DC
Potential-free signal contacts	0.5 A/24 V AC/DC

Ordering details

Type	Scope of supply	Order No.
LT.1 2,5 A	Plug-in module	4 0071 346 555
Charging module 2.5	separate module	4 0071 346 345

Charging booster

As well as the charging module of the ZB-S Central Battery System, boost chargers must be individually installed to achieve the battery recharge time required by statute for configured battery sets. The number of additional boosters that are required for your configuration can be found in Table 3 (acc. to DIN EN50171) of this chapter.



Charging booster 2.5 A

Charge current	2.5 A
The booster must be used in conjunction with the LT.1 charger (4 0071 346 555)	
The booster cuts in when boost charging is active and the charging voltage is < 247 V	

Ordering details

Type	Scope of supply	Order No.
Charging booster	Charging booster 2.5 A (only in conjunction with charging module LT.1 Order No. 4 0071 346 555)	4 0071 346 345

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Booster rack 4-way

Booster rack

A 4-way booster rack with 3-phase supply is mounted in system types ZB-S/26 and ZB-S/18. For supplying the 2.5 A boost chargers only! The optional 2-way booster rack can be used to expand the system to 6 slots.

Connection voltage	400 V AC/220 V DC
Slots 3-phase split	
Conductor size	max. 4 mm ²



Booster rack 2-way

Ordering details

Type	Scope of supply	Order No.
Booster rack 4-way	Unit accommodates 4 booster chargers 2.5 A for ZB-S/26 and ZB-S/18	4 0071 347 043
Booster rack 2-way	Unit accommodates 2 additional booster chargers 2.5 A for ZB-S/26 and ZB-S/18 (only in conjunction with 4 0071 347 043)	4 0071 347 130



Booster rack 1-way, compact

Booster rack, compact

The compact version of the booster rack is intended for use in ZB-S compact systems. The single and double compact booster racks have been designed for system types ZB-S/10 C and ZB-S/10 C6 respectively. These are for supplying 2.5 A boost chargers only!

Connection voltage	230 V AC/220 V DC
Conductor size	max. 2.5 mm ²

Ordering details

Type	Scope of supply	Order No.
Booster rack 1-way	Unit accommodates 1 booster chargers 2.5 A compact for ZB-S/10 C	4 0071 347 167
Booster rack 2-way	Unit accommodates 2 booster chargers 2.5 A compact for ZB-S/10 C6	4 0071 347 130

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. 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/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
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/26 C6	Central battery system type ZB-S/26 C6 incl. ST-S, LT.1 and DC/DC.2 26 free module slots	4 0071 689 064
Central battery system ZB-S/18 C6	Central battery system type ZB-S/18 C6 incl. ST-S, LT.1 and DC/DC.2 18 free module slots	4 0071 689 062
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/2 C3	Central battery system type ZB-S/2 C3 incl. ST-S, LT.1 and DC/DC.2 2 free module slots	4 0071 360 201
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. control module ST-S, DC/DC.2-converter, 13 free module slots	4 0071 347 710
Substation ESF-E30/28-S	Substation type ESF-E30/28-S, incl. control module ST-S, DC/DC.2-converter, 28 free module slots	4 0071 347 780

Central Battery System ZB-S with STAR Technology

Ordering details

Type	Order No.
4 pcs. DIN-mounting rail incl. mounting accessories	4 0071 347 125
3 pcs. C-section rail incl. mounting accessories	4 0071 347 126
Base 200 mm for ZB-S, depth 400 mm	4 0071 347 121
Base 100 mm for ZB-S, depth 400 mm	4 0071 347 120
Base 200 mm for ZB-S/18C3 and 10C3, depth 330 mm	4 0071 360 049
Base 800 x 600 x 200 mm for ZB-S/10C6-18C6 and 26C6	4 0071 689 084
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 undrilled for battery cabinet ZB-S	4 0071 346 225
Flange plate for foam rubber for battery cabinet ZB-S	4 0036 070 164
Fireproof dowel M10 for E30 substation, Set of = 12 pcs., for installation in concrete walls	4 0036 070 298
Optional wall mounting plate for wall mounting for ESF-E30/13-S	4 0071 347 726
Door with left hinge for ZB-S/18 and ZB-S/26	4 0071 689 081
Door with left hinge for ZB-S/10C3	4 0071 689 082
Door with left hinge for ZB-S/10C and ZB-10C6	4 0071 689 083

Table of Covers

Technical data ZB-S

Type	ZB-S/26	ZB-S/18	ZB-S/LAD	ZB-S/10 C	
Modules:					
Control module: ST-S	1	1	1	1	
DC/DC.2-converter ⁵	1	1	1	1	
Charging module 2.5 A	1	1	1	1	
Circuit module SKU CG-S ⁵	0-26	0-18	0-2 ²	0-10	
Maximum number of SWR 150 due to 100% luminous flux and max. rated power	7	7	2	7	
Charging booster 2.5 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	
Insulation class	1	1	1	1	
Degree of protection	IP 21	IP 21	IP 21	IP 21	
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	10.8	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	
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 boosters are fitted, a double bus carrier is necessary.

*2 Up to 8 boost chargers are possible when 2 SKUs 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. (>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	0-18	0-10	0-18	0-10	0-2
	7	7	7	7	7	2
	0-2 ^{3/4}	0-2 ^{3/4}	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
	1	1	1	1	1	1
	IP 21	IP 21	IP 21	IP 21	IP 21	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	8
	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 Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way
	yes	yes	yes	yes	yes	yes
	no	no	no	no	no	no
	-	-	-	200	200	-
	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.

Table of Covers

Technical data ZB-S

Type	US-S/36	US-S/28	US-S/21	
Modules:				
Control module: ST-S	1	1	1	
DC/DC.2-converter*1	1	1	1	
Circuit module SKU CG-S**	0-36	0-28	0-21	
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	
Rated frequency	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	
Insulation class	1	1	1	
Degree of protection	IP 54	IP 54	IP 54	
Max. current rating mains [Σ L1, L2, L3] [A]	80	80	50	
Max. rated power mains [KW]	18.4	18.4	11.5	
Max. current rating battery [A]	80	80	50	
Max. rated power Battery [KW]	17,3	17,3	10,8	
Three-phase distribution	yes	yes	no	
Conductor size for mains and battery supply	35 mm ²	35 mm ²	35 mm ²	
Outgoing circuits	-	-	-	
Max. conductor size final circuits	4 mm ²	4 mm ²	4 mm ²	
Max. number of final circuit terminals	80	80	52	
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	
Material / Design	Sheet steel / Cabinet	Sheet steel / Cabinet	Sheet steel / Wall cabinet	
Door stop	right	right	right	
Outer coating	Textured powder paint	Textured powder paint	Textured powder paint	
Colour	RAL 7035	RAL 7035	RAL 7035	
Partial viewing door	Yes	Yes	No	
Lock	3 mm Two-way	3 mm Two-way	3 mm Two-way	
Cable entry from above	yes	yes	yes	
Cable entry from below	yes	yes	no	
Base (optional)	100/200	100/200	300	

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.

Table of Covers

Technical data ZB-S

	US-S/13	US-S/5	ESF-E30/13-S ²	ESF-E30/28-S ²
	1	1	1	1
	1	1	1	1
	0-13	0-5	0-13	0-28
	-	-	-	-
	230 V	230 V	230 V	400/230 V
	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
	1	1	1	1
	IP 54	IP 54	-	-
	50	30	35	50
	11.5	6.9	8.1	11.5
	50	30	35	50
	10,8	6,5	7,6	10,8
	no	no	no	yes
	16 mm ²	16 mm ²	16 mm ²	16 mm ²
	-	-	-	-
	4 mm ²	4 mm ²	4 mm ²	4 mm ²
	24	20	26	56
	800 x 600 x 250	600 x 400 x 250	1150 x 885 x 405	2190 x 885 x 405
	Sheet steel / Wall cabinet	Sheet steel / Wall cabinet	Sheet steel / func. endurance 30 min. / Wall cabinet	Sheet steel / func. endurance 30 min. / Stand alone cabinet
	right	right	right	right
	Textured powder paint	Textured powder paint	Textured powder paint	Textured powder paint
	RAL 7035	RAL 7035	RAL 7035	RAL 7035
	No	No	No	No
	3 mm Two-way	3 mm Two-way	3 mm Two-way	3 mm Two-way
	yes	yes	yes	yes
	no	no	no	no
	-	-	-	-