Agenda

• New charging technology
• System Configuration
• Internal Modules
• External Modules
• Battery Management System
• PC Software
• CG Vision

Date, Venue
More efficient Solutions for Emergency Lighting Systems

**CG Technology**

Individual single luminaire monitoring of up to 20 luminaires per circuit without additional data line.

**CG Line Technology**

Central monitoring and control of self-contained luminaires including automatic function- and duration test.

**STAR Technology**

Free programmability of switching mode of each individual luminaire per circuit without additional data line.

**S+STAR Technology**

All well-proven advantages of the STAR and CG Technology, now available for AC safety power sources.

**CG Vision Technology**

Comfortable visualization software which allows the configuration and monitoring of all CEAG systems.
**System Benefits**

**New charging technology**
- Increased safety via alternating booster switching
- Less energy consumption of 10 % due to optimized efficiency
- System for automated battery block monitoring
- Maximum 1000 Ah battery capacity
- Up to two supplementary module slots for circuit change-over
- Active control via Charge Control Bus, thus measurement of float charge voltage no longer required
- Individual monitoring of CM charge modules
- Redundant assembly possible as required

**Small distribution box US-SOU/2 and US-SOU/1**
- Area-specific installation enables electricity cost assignment per rental area
- Reduced installation costs via programmable mixed operation
- No additional data lines to the luminaires.
- Housed in small, plastic distribution box, rated IP54
- Up to 40 SOU modules and up to 25 DLS modules per control unit
New charging technology
New charging technology

Installation example new charging technology

1. Distribution board for general mains
2. Connection terminal X0
3. CU CG-S control unit
4. Battery control module BCM
5. Charge module CM 1.7 A (max. 2 pcs.)
6. Circuit change-overs SKU CG-S 2 x 3 A
7. DC/DC converter.2
8. Charge modules CM 3.4 A (max. 8 pcs., to 32 modules on request)
9. Mains supply
10. Battery supply
New charging technology

**CCB bus**

- Up to 32 boosters permitted on the bus
- Individual addressing for each booster
- Addressing implemented directly at device with a rotary coding switch
- If the booster is set to address "0" it functions in compatibility mode, i.e. it behaves as booster 2.5 A ZB96
- Transmission rate: 1200 bits/s
- Designation of bus lines is CCB+ and CCB-
- The bus interface is polarity reversal-protected
- No special requirements for cable material as long as BCM and CM 1.7/3.4 A are installed in same cabinet
- CCB connection CM 3.4 A via gear tray (connection terminal at CM 3.4 A for replacement booster 2.5 A)
System Configuration
System Configuration

- Cable input from above
- Triple deck tension spring installation terminal with neutral wire disconnect terminal
- Control unit CU CG-S
- BCM battery control module
- DC/DC converter.2
- Circuit modules 23 x SKU
- Mains circuit breaker
- Mains distribution box (optional)
- Battery circuit breaker
- Battery distribution box (optional)
- Cable input from below
- Charge module CM 1.7 A (max. 2 modules)
- Circuit modules 3 x SKU
- Charge module CM 3.4 A (max. 6 modules)
## System Configuration

### Cabinet variants

<table>
<thead>
<tr>
<th>Type</th>
<th>ZB-S/26</th>
<th>ZB-S/18</th>
<th>ZB-S/10 C</th>
<th>ZB-S/10/18/26 C6</th>
<th>ZB-S/10/18 C3</th>
<th>ZB-S/2 C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Diagram]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Max. number CM 1.7 A</th>
<th>2</th>
<th>2</th>
<th>2</th>
<th>2</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. number CM 3.4 A</td>
<td>6</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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Internal Modules
Internal Modules

Control unit CU CG-S

- Graphic display
- Foil keyboard
- Two supplementary signal contacts
- Access to servicing menu and software update via special service SD card
- Displaced SD card slot
- Downwards-compatible to ST-S control unit
- New LED / button designations
- Web connection not directly accessible
## Internal Modules

### Technical data CU CG-S

<table>
<thead>
<tr>
<th>Mechanic</th>
<th>RS485/CG-S Bus</th>
<th>Optional Inputs Z1-Z4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (WxHxD)</td>
<td>110 x 170 x 155 mm</td>
<td>Output voltage</td>
</tr>
<tr>
<td>Installation</td>
<td>vertical</td>
<td>Polarity</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10°C ... +55°C</td>
<td></td>
</tr>
<tr>
<td>Relative humidity</td>
<td>10 to 95 % no condensation</td>
<td></td>
</tr>
<tr>
<td>Allowed degree of pollution</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Input voltage (Mains)</td>
<td>220…240 V AC</td>
<td>Input voltage</td>
</tr>
<tr>
<td>Input voltage (Battery)</td>
<td>173…300 V DC</td>
<td>≥ 12 V DC ➔ ON</td>
</tr>
<tr>
<td>Permissible mains frequency</td>
<td>47…63 Hz</td>
<td>Input frequency</td>
</tr>
<tr>
<td>Power consumption</td>
<td>4,4 W</td>
<td></td>
</tr>
</tbody>
</table>

### 24 V Current loops S1S2 / S3S4

<table>
<thead>
<tr>
<th>Range of resistor</th>
<th>Output voltage</th>
<th>≤ 30 V DC, ≤ 10 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1S2: &lt; 600 Ω or &gt; 3200 Ω released</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3S4: &lt; 600 Ω or &gt; 3200 Ω mains failure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Relaisausgänge

<table>
<thead>
<tr>
<th>Switching voltage</th>
<th>≤ 30 V DC/AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous current</td>
<td>≤ 0,5 A</td>
</tr>
<tr>
<td>Inrush current</td>
<td>≤ 5 A</td>
</tr>
</tbody>
</table>

### Display

<table>
<thead>
<tr>
<th>Resolution</th>
<th>128 x 64 Pixel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>monochrome (green-yellow backlight)</td>
</tr>
</tbody>
</table>

### Optional Inputs Z1-Z4

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>≤ 2 V DC ➔ OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 12 V DC ➔ ON</td>
<td></td>
</tr>
</tbody>
</table>

### Keyboard

<table>
<thead>
<tr>
<th>Life cycles</th>
<th>≥ 50,000</th>
</tr>
</thead>
</table>

### Memory Card

<table>
<thead>
<tr>
<th>Type</th>
<th>Secure Digital Memory Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>3…3,6 V DC</td>
</tr>
<tr>
<td>Supported capacity</td>
<td>8 MB - 1 GB</td>
</tr>
</tbody>
</table>
Internal Modules

- Connection for blocking switch and external phase monitor
- 3 buttons for: test (mains failure battery operation), function test, duration test
- SD card slot
- Status LED displays
- RS 485 / CG-S bus connection
- 3 freely programmable signal contacts
- 2 contacts permanently programmed
- 3 freely assignable function buttons
- Graphic display, 4 x 20 characters, backlit, contrast and brightness can be set via programmes
- 7 control buttons for user-friendly navigation
- 4 freely assignable 24 V analogue inputs

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Internal Modules

S3/S4: 24 V monitoring loop external phase monitors

S1/S2: External key-operated switch, system blocked

E/G/A connection: from VPS Phase IV

C0/14/12/24/22/32/C1/44/54: 5 zero-potential signal contacts, freely programmable

S3/S4: 24 V monitoring loop external phase monitors

S1/S2: External key-operated switch, system blocked

Web module connection

ST-S

11/12/14, 21/22/24, 31/32/34: 3 zero-potential signal contacts, freely programmable
## Potential free relays

- The device has 3 floating signaling contacts (relay outputs) and one buzzer inside.
- Programmable signaling contacts each 1 x UM; 1 x 24 / 0 V and 0,5 A.
- DIN VDE - requirements available as pre-adjustment.

### ZB-S default setting

<table>
<thead>
<tr>
<th>Designation</th>
<th>Relay 1</th>
<th>Relay 2</th>
<th>Relay 3</th>
<th>Relay 4</th>
<th>Relay 5</th>
<th>Buzzer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C0/14/12</td>
<td>C0/24/22</td>
<td>C0/34/32</td>
<td>C1/44</td>
<td>C1/54</td>
<td></td>
</tr>
<tr>
<td>Mains operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mains failure</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Mains failure UV</td>
<td>X</td>
<td></td>
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<tr>
<td>Charging fault</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit fault</td>
<td>X</td>
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<tr>
<td>Luminaire fault</td>
<td>X</td>
<td></td>
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<tr>
<td>Common system fault</td>
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<td>Total discharge</td>
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<tr>
<td>Total discharge</td>
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<tr>
<td>Total discharge</td>
<td>X</td>
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<tr>
<td>ISO fault</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device fault</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- X = active, i.e. contacts C0/14 and C0/24 and C0/34 are closed.

5 programmable
free relays:
C0/14/12/24/22/34/32/
C1/44/54:
Internal Modules

3 freely assignable function buttons for:

- Block/release system
- Manual reset
- Display error list
- Switch on/off maintained mode
- Switch on complete safety lighting (corridor lighting)
- Simulation of mains failure UV-A (emergency operation)
- Confirm total discharge protection
- Search for ISO error
Internal Modules

LCD display, e.g.

- Date/time
- Charging fault
- Total discharge protection
- Battery voltage/charging current (+)
- Battery discharge current in test or error case (-)
- Manual reset
- Test operation
- Delay on mains return
- Luminaire error notification with location specification
- Isolation error with specification of circuit
- UV-AV failure (location specification)
- Error info/programming info.
Secure digital card:

- Flexible data storage for system and log-book configuration, e.g. regulations-compliant archiving of log-book information over at least 4 years
- System programming is on any PC via optional SD card reader and CEAG software. Texts can also be entered at the control unit of the central unit
- Original CEAG SD cards are required
- Software update possible via special service SD card

Data saved:

- 360,000 log-book entries
- Target location indication of luminaires (20 characters per luminaire)
- Target location texts of external modules, such as phase monitors, DLS, TLS (20 characters per module)
- Names of circuits (20 characters per circuit), system name (20 characters)
**Internal Modules**

**CG-S bus:**
CGVision connection

**RS 485 bus:** Connection of external modules such as DLS, SOU

**24 V In/Out connections:** Connection of 24 V supply of external modules such as DLS, F3 remote display

**Z1 to Z4, connection for analogue inputs:**
4 freely assignable 24 V analogue inputs, can be programmed either inverted or non-inverted for e.g.:
- Start / abort function test
- Start / abort duration test
- Block/release system
- Manual reset
- Switch on / off maintained mode
- Switch on safety lighting as corridor lighting
- Ventilation Monitoring
- External ISO Monitoring
- External Battery Monitoring
- External Monitoring
Internal Modules

BCM battery control module

• The BCM battery control module controls the CM 1.7 A and CM 3.4 A charging boosters via the CCB bus.

• Messages, such as fault, isolation fault and boost charge, can be forwarded via the zero-potential signal contacts of the BCM.

• LEDs on the module signal ‘boost charge’, ‘charge fault’ and ‘isolation fault’ between battery + and PE or battery – and PE (Protective Earth).

• For simulating a battery isolation fault (1 MΩ), there are two buttons: ISO + and ISO –.

CM 1.7 A and CM 3.4 A charge modules

• A suitable number of charge modules should be planned for complying with the legislative recharging duration for the planned battery sets.

• See the planning documents for the number of charge modules.

• The CM modules have their own calibrated charge control and also function independently of the BCM.

• Less thermal energy, optimized efficiency (10%), integrated fan monitoring
# Internal Modules

## Technical Data BCM

<table>
<thead>
<tr>
<th>Dimension (WxHxD)</th>
<th>55 x 170 x 155 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>vertical</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10°C to 55°C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>10% to 95% no condensation</td>
</tr>
<tr>
<td>Allowed degree of pollution</td>
<td>2</td>
</tr>
<tr>
<td>Input voltage battery</td>
<td>173 V DC - 300 V DC</td>
</tr>
<tr>
<td>Input voltage 24 VDC</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Switching voltage</td>
<td>≤ 30 V DC/V AC</td>
</tr>
<tr>
<td>Continuous current</td>
<td>≤ 0.5 A</td>
</tr>
<tr>
<td>Inrush current</td>
<td>≤ 5 A</td>
</tr>
<tr>
<td>Polarity</td>
<td>Independent</td>
</tr>
</tbody>
</table>
Internal Modules

Exchange

2.5 A charging booster for CM 3.4 A charge module

- Activate system
- Set both CM 3.4 A address switches to address 0
- Subsequently the CM 3.4 A behaves exactly as a 2.5 A booster, the charging current is then limited to 2.5 A

Charger.1 2.5 A for BCM and CM 1.7 A

- Log off charger.1 2.5 A at the control unit
- Activate system and disassemble charger. 1 2.5 A
- Install BCM and CM 1.7 A (CM 1.7 A is sufficient to 32 Ah/1 h)
- Set address at CM 1.7 A to 1 (right address switch = 1... addresses, left address switch =10... addresses).
- Switch on the system
- Briefly press the BCM service pin and confirm installation at control unit
- Set the float charge voltage
3 zero-potential signal contacts for:

- Contact 11/12 is closed during a fault.
- Contact 21/22 is closed during an isolation fault.
- Contact 31/32, for external fan control (closed during boost charge)

4 LED displays for:

- LED ON
  The LED lights up when the BCM is in operation. If the LED does not light up then the BCM is faulty, there is no mains supply or a function test has been triggered.

- Light emitting diode boost charge
  The light emitting diode boost charge lights up during boost charging, e.g. after a mains failure or a duration test.

- Light emitting diode charge fault
  The light emitting diode charge fault lights up when the BCM, the charge booster CM 1.7 A and CM 3.4 A or the batteries are faulty. Further error messages can be queried via the control unit. With faults of the CM 1.7 and 3.4 A modules, error display relates to the module address.

- Light emitting diode ISO-Failure
  The Light emitting diode ISO-Failure lights up when an isolation fault exists in the battery circuit.
Internal Modules

**Service Pin:**
- short press = register and log off BCM at control unit
- press >8 s = setting of float charge voltage via the ISO + and ISO – buttons

**ISO-Test + / ISO-Test - button:**
- Simulation of isolation fault

**24 V In**
- Connection of 24 V power supply for BCM module

**CCB**
- Connection of charge control bus (Max. 32 addresses)

**I +/-**
- Connection of shunt for measurement of battery current

**F +/-**
- Connection of external temperature sensor for charging voltage control
- With temperature-independent charging voltage control:
  Install fixed resistor 2 KΩ
**Setting of float charge voltage**

- Press service pin of BCM >8 s.
- The display of the CU CG-S control unit shows the current set value (1) and the registered number of charge modules (2).
- The "On" and "Boost charge" LEDs flash alternately.

1. Set the desired value with the ISO + and ISO – buttons in 1V steps (float charge voltage (1) acc. to manufacturer specification at +20 °C)

2. Press service pin of BCM >8 s. The set value will be saved and the LED On will light up.
Central Battery System ZB-S

External Modules
## External Modules

### Cabinet variants

<table>
<thead>
<tr>
<th>Type</th>
<th>US-S/ SOU 2</th>
<th>US-S/ SOU 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Order number</strong></td>
<td>40071360510</td>
<td>40071360511</td>
</tr>
<tr>
<td><strong>Max. number of SOU CG-S 2 x 4 A</strong></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Max. number of 4 A circuits</strong></td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
Future planning with only one riser

3rd floor
- UVA
- US-S/SOU 1
- DLS

2nd floor
- UVA
- US-S/SOU 1
- DLS

1st floor
- UVA
- US-S/SOU 1
- DLS

Cellar
- Power supply
- E30
- RS485
- HVA
- DLS

Future planning

3rd floor
- UVA
- US-S/SOU 1
- DLS

2nd floor
- UVA
- US-S/SOU 1
- DLS

1st floor
- UVA
- US-S/SOU 1
- DLS

Cellar
- Power supply
- E30
- RS485
- HVA
- DLS
External Modules

Installation example US-SOU/ 2

1. Network supply
2. General lighting
3. Emergency luminaires
4. DLS 3-Ph bus module
5. ZB-S system
6. Mains distribution box
7. Battery distribution box
8. CGVision
9. General power supply
10. Rental current meter
11. US-SOU/ 2
External Modules

- SOU CG-S
- DLS
- CG Controller ZB-S
- CG Vision
- RS485 Bus
- CG-S Bus (FTT10A)
- US-S
**External Modules**

**RS 485 Bus**

RS 485 bus for communication with external CG-S modules (SOU CG-S module, DLS/3PH and TLS bus module).

The terminator (120 Ω, 0.5 W) can be switched in the DLS/3Ph-, TLS bus module modules by wiring a bridge at the connection terminals B1; B2 (1) and with the SOU modules via a DIL switch (2).

A resistor is also included in the scope of supply of the ZB-S switching cabinet. If only one cable is installed, this must be applied here.

**Notes:**

Bus topology: linear, double terminated (no branch cables permissible). The mandatory terminating resistors are contained in the switching cabinet.

Cable type (minimum requirement): JY(ST)Y 4 x 2 x 0.8 mm (twisted pair, shielded)

The cable cross-section required for the 24 V bus voltage depends on the cable length and number of bus modules (Umin = 19 V DC).

SOU = Switching Over Unit
DLS = external maintained mode switching module (DLS/3PH bus module)
TLS = external stairway light switching module
External Modules

Logging onto the control unit via the search function

1. In the "Circuit setup" submenu, activate search for external SOU's.

2. Assign a module support slot to the assembly (5/8 counting downwards from right to left)

<table>
<thead>
<tr>
<th>Neuron ID number</th>
<th>Assignment</th>
<th>Installation location</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOU module</td>
<td>CU CG-S control unit</td>
<td>Building/ floor</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 01</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 02</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 03</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 04</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 05</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 06</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 07</td>
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<td>2</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 08</td>
<td>5</td>
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</tr>
<tr>
<td>NID07 00 00C2 B9 09</td>
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<td>8</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 10</td>
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<td>NID07 00 00C2 B9 11</td>
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</tr>
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<td>NID07 00 00C2 B9 12</td>
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</tr>
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<td>NID07 00 00C2 B9 13</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 14</td>
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<td>3</td>
</tr>
<tr>
<td>NID07 00 00C2 B9 15</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Note before the configuration
Assign during the configuration
External Modules

Logging onto the control unit via the service pin

1. Briefly press the service pin.

2. Assign a module support slot to the assembly 5/8 counting downwards from right to left.
Status output with flash code via service pin

1. Pressing the service pin for at least 5 s activates the flash code.

2. The display mode is shown with alternating flashing with the red LEDs 1, 2.

3. Following 1 s pause (both LEDs off), display of the code for circuit 1 starts.

4. Briefly pressing the service button calls the next fault.

   Flash code description:
   - 1 flash = luminaire fault
   - 2 flash = fuse fault
   - 3 flash = overload
   - 4 flash = over-temperature

5. This now proceeds with the second circuit (from step 3).

If point 4 is not implemented, normal display is resumed after approx. 30 s.
External Modules

US-S/ SOU2

- Type plate, quick start guide
- Sighting window
- Circuit labelling field
- Cable input from above
- Two feeds (rental current and battery)
- End circuit terminals
- RS 485 bus-connection
- SOU CG-S 2 x 4 A switching module
- Cable input from below
External Modules

**SOU CG-S 2 x 4 A**

- Area-specific installation enables electricity cost assignment per rental area
- Reduced installation costs via programmable mixed operation
- **No** additional data lines to the luminaires
- ISO fault search integrated
External Modules

Technical Data SOU CG-S 2 x 4 A

<table>
<thead>
<tr>
<th>Mechanic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (WxHxD)</td>
<td>178 x 108 x 60 mm</td>
</tr>
<tr>
<td>Installation</td>
<td>For top hat rail mounting</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Climatic conditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-10 … +55° C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>10 … 95 % no condensation</td>
</tr>
<tr>
<td>Allowed degree of pollution</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Parameter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage Mains</td>
<td>220…240 V AC</td>
</tr>
<tr>
<td>Input voltage Battery</td>
<td>183…275 V DC</td>
</tr>
<tr>
<td>Number of Circuits</td>
<td>2</td>
</tr>
<tr>
<td>Continuous current rating</td>
<td>4 A per circuit</td>
</tr>
<tr>
<td>Input Fusing</td>
<td>16 A per circuit, fuses 6,3 x 32 mm, Max. high breaking capacity1500 A DC</td>
</tr>
<tr>
<td>Output Fusing</td>
<td>8 AT per circuit, fuses 6,3 x 32 mm, Max. high breaking capacity1500 A DC</td>
</tr>
</tbody>
</table>

| Maximum Inrush current        | 250 A per circuit      |
|Permissible mains frequency    | 50 or 60 Hz            |
|Over all power loss            | ≤ 9 W (at 2 x 4 A)     |
|Luminaire addresses            | Up to 20               |
|Connecting terminals           | Solid: 0,2…4,0 mm²     |
|                               | Stranded: 0,2…2,5 mm²  |

| RS485 Bus - LON               |                        |
|Input/Output voltage           | ≤ 30 V                 |
|Polarity                       | Independent            |

| 24V +/- Bus / In              |                        |
|Eingangsspannung               | 22…28,9 V DC           |
|Eingangsstrom                  | ≤ 50 mA                |
|Einschaltstrom                 | ≤ 500 mA               |
External Modules

- Battery feed 216 V DC
- Rental current feed 230 V AV
- Connection of end circuits 2 x 4 A
- RS 485 bus connection

Top hat rail housing, 9 subunits

- End circuit fuse, circuit 1 (8AT 6.3 x 32)
- End circuit fuse, circuit 2 (8AT 6.3 x 32)

LED On, circuit 1
LED failure, circuit 1
LED On, circuit 2
LED failure, circuit 2

Service pin

DIL switch
Terminator

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