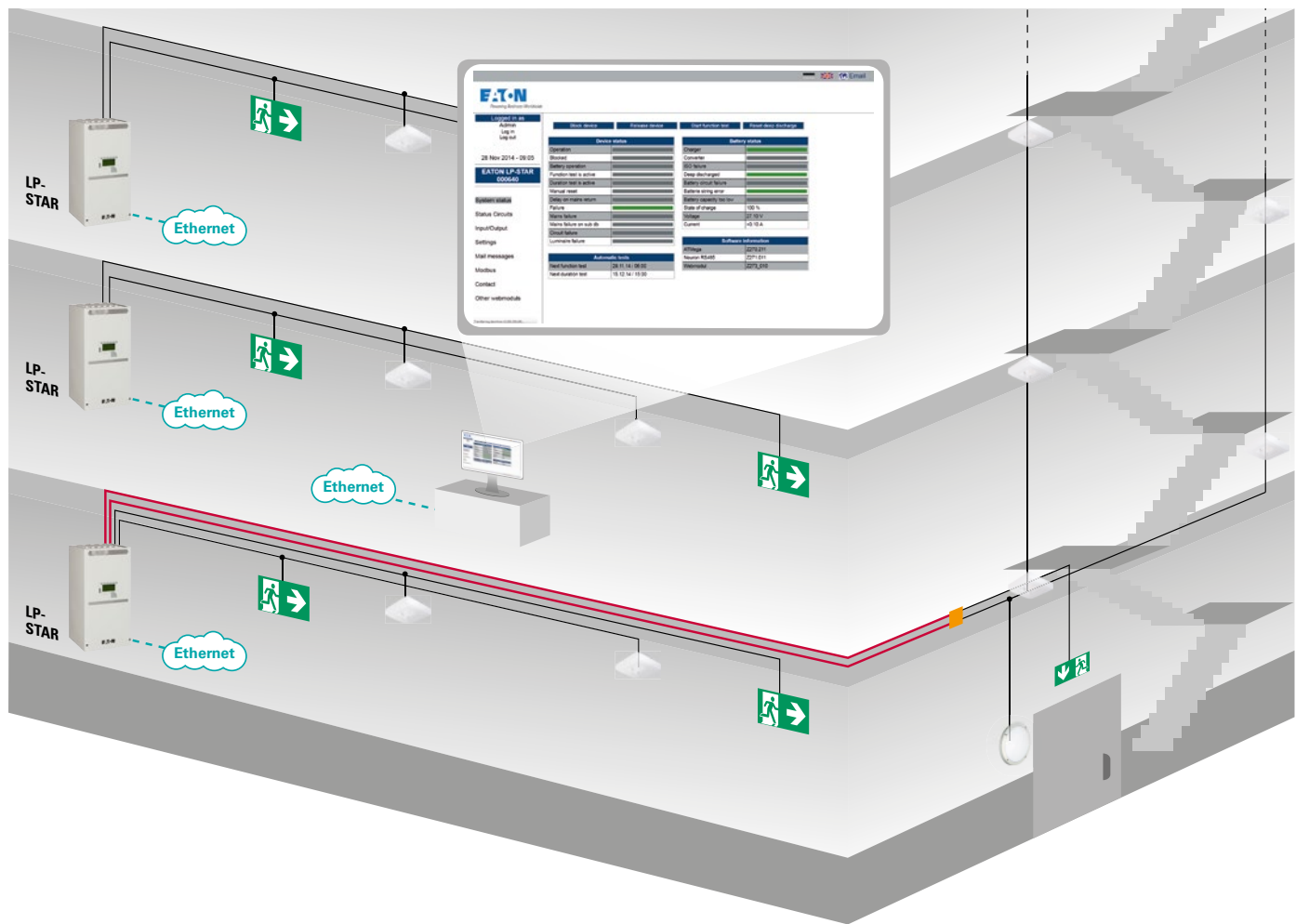
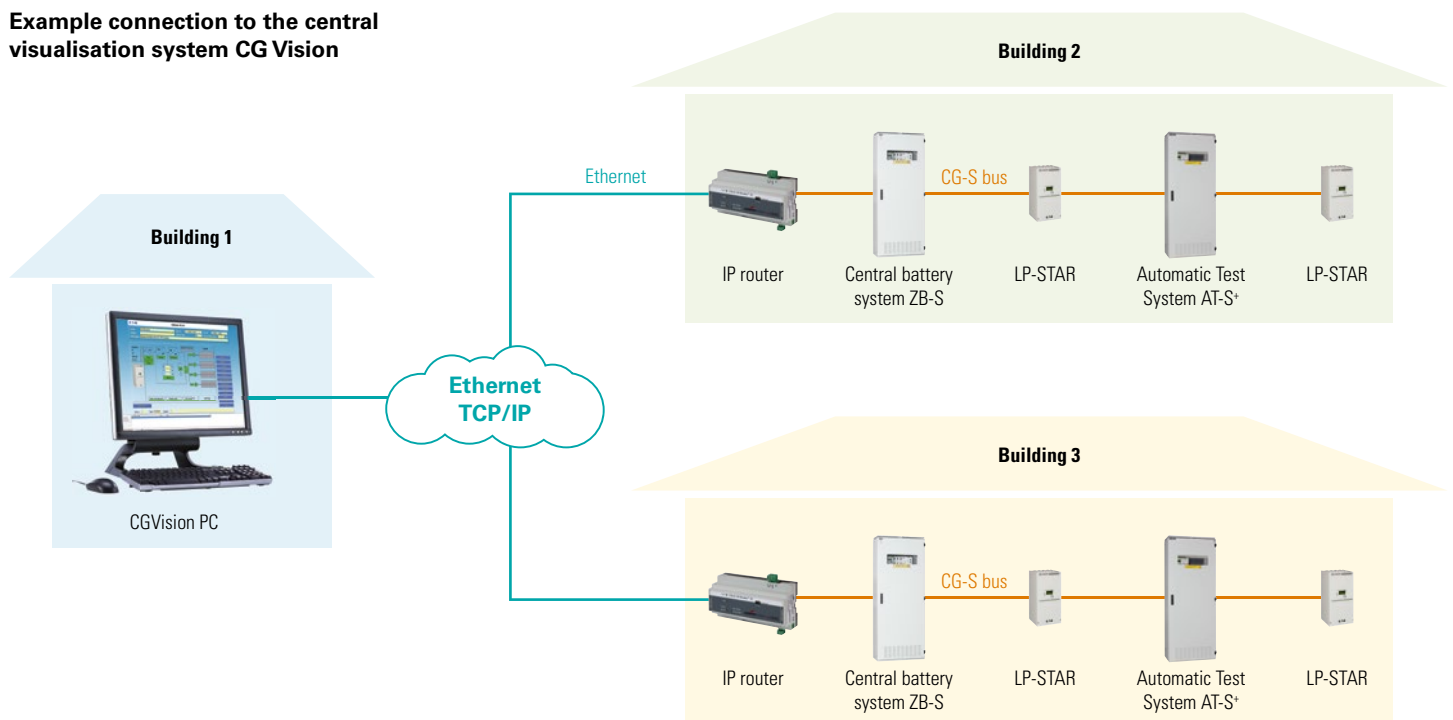


LP-STAR emergency lighting power supply in a compact design

Installation example



Example connection to the central visualisation system CG Vision



Simple installation and reliable power supply



4

LP-STAR is especially recommended in case of the separate supply of emergency lighting systems of individual fire areas to save on installation costs incurred by installing E30 cabling to cover different fire areas.

The LP-STAR System supplies reliable power to the escape luminaires and exit sign luminaires (230V AC/220 V DC) according to EN 50171 and BGV A3. It is suitable for emergency lighting systems according to DIN VDE 0100-718, DIN EN 50172 and E DIN VDE 0108-100.

The system performs an automatic self-check and monitors all CG-S luminaires connected (up to 20 luminaires per circuit) simply through a feed line. The circuit type of each connected CG-S luminaire can be programmed freely in the 50 Hz or 60 Hz supply network with the control module based on the STAR technology. This means that the same power circuit is used for mixed operation including maintained light, switched maintained light and non-maintained light, all this without an additional data cable!

The control module including a non-volatile program memory as well as a big graphical display that monitors and controls the LP-STAR device and checks all functions of the connected emergency luminaires according to EN 62034 and it reports the operating states of the entire system. The integrated search function detects all luminaires addressed during installation automatically. A central monitoring system can be connected using the optional bus interface.

The main scope for the protection of electrical rooms is the protection of the environment against the hazards involved with technical devices, transformer stations and switching stations of over 1 kV. At the same time, for example in case of fire, the operation of safety-relevant systems, central battery systems and fixed power generators must be maintained for a specific period of time.

The LP-STAR System was designed to meet the requirements concerning batteries and these have been verified according to EN 60950 and EN 50272-2.

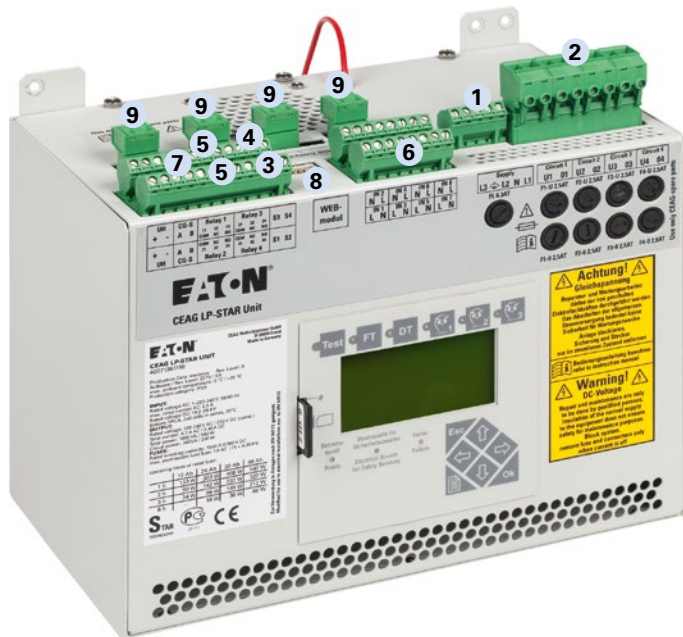
Features

- No special requirements concerning the housing on functionality in case of installation in separate fire areas
- Cost savings as E30 wiring is not required because devices are installed in separate fire areas
- Natural ventilation is generally sufficient due to the closed form and low capacity of batteries
- Additional safety even in case of fire due to the decentralised arrangement of systems
- Simple operation and commissioning based on a smart programming and operating plan
- 230V AC / 220V DC supply voltage selectable to power the escape luminaires and exit sign luminaires to comply with architectural issues
- Standard integrated phase monitor for monitoring general power supply conditions
- Additional phase monitor input including line monitoring for an external phase monitor
- Standard eight digital 230 V input channels for switching each luminaire separately, for example, freely programmable
- Optional webmodule for the automatic monitoring of LP-STAR according to EN 62034
- Optional CG-S interface for connecting to the CG-S bus for CGVision or master/slave operation for connecting several LP-STAR devices
- Shorter inspection time using the CEWA GUARD technology, automatic function monitoring of up to 20 luminaires per circuit
- Reduced installation costs due to the STAR technology, freely programmable mixed operation of switching modes per luminaire in a single circuit without an additional data cable
- Automatic luminaire search function
- Plain text display at the control module for all luminaires
- Flexible data memory for the test log and device configuration using the Secure Digital card
- Absence of retroactive effect of different circuits in case of a short-circuit due to the automatic, selective shut-off function
- EoL shut-off, programmable as standard

LP-STAR emergency lighting power supply in a compact design

Construction

Overview of connections



1 Grid connection terminal

3-phase feed-in incl. phase monitoring function

2 Connection for end circuits

Double assignment, 2.5 mm² solid/flexible

3 Connection for disable switch

Control loop for disabling the system during operating downtimes with differential loop monitoring for short circuit and wire breakage detection. Differential monitoring: Short circuit or interruption lead to the system going into standby.

4 24 V connection for external phase monitors

24 V power loop for the emergency luminaires with differential loop monitoring for short circuit and wire breakage detection. Differential monitoring: Short circuit or interruption lead to the system switching on (maintained light) immediately.

5 Connection for potential-free indicator contacts and buzzer

4 relays with a separate root, each 1x changeover contact, 24 V 0.5 A.

The four potential-free contacts and the buzzer can be assigned freely to one or several of 12 different messages. The DIN VDE specification can be loaded any time and used as a default setting.

6 Connection for digital inputs

8 freely assignable inputs 230V, programmable as inverted and non-inverted for example start/stop function test, start/stop duration test, block/release device, manual reset, turn on/off maintained light, turn on emergency lighting as corridor lighting, for light switch query and switching emergency lighting depending on the general lighting conditions (DLS function).

7 Optional interface (factory-installed)

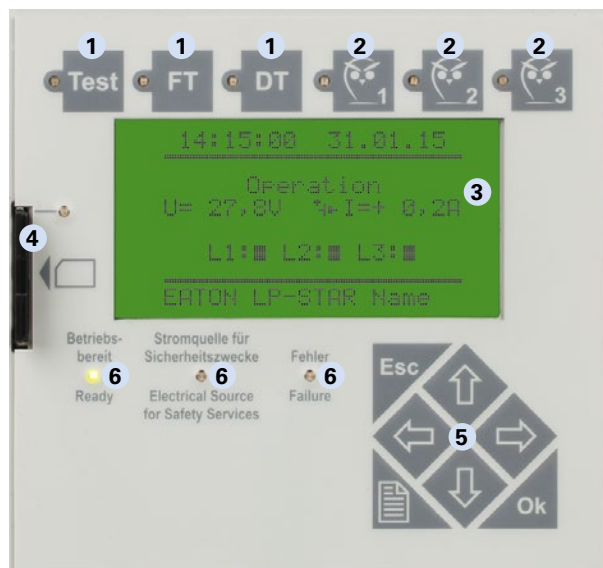
The interface for connecting to a CGVision can be installed on site, see page 13.

8 Webmodule connection

9 Battery connection, wires 1-4

Maximum 4 sets per 2 battery blocks, 12 V.

Freely programmable control module



1 Separate buttons for:

- Test (emergency luminaire function)
- Function test
- Duration test

2 Three freely assignable function keys

3 128 x 64 pixel graphical display

Back-lit, adjustable contrast and brightness

4 Log book and device configuration

Save the log book and device configuration comfortably on the memory card. Easily programmable on the PC using an SD card reader and the CEAG software.

5 Seven control buttons for a user-friendly navigation

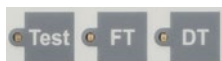
6 Function display using LEDs



Control module

A freely programmable control module with a non-volatile program memory and 4-lines, alphanumeric, graphic display monitors and controls the LP-STAR system. All functions such as loading, mains/emergency switch-over and deep discharge protection of devices and the connected emergency luminaires are automatically inspected. The errors are reported immediately. A central monitoring system can be connected using the interface. In case of a short circuit or interruption of control current loops, differential monitoring leads to the system immediately switching on (maintained light) or to the system being put in standby.

- Non-volatile program memory
- Automatic luminaire search function
- Single luminaire monitoring
- Manual reset
- Password function
- Fuse monitoring of the end circuits
- Control module with master/slave function



Sealed keypad with 3 buttons for:

- Test (mains failure- battery operation)
- Start/stop function test
- Start/stop duration test



3 freely assignable function keys for:

- Block/release device
- Manual reset
- Stop function test
- Display error list
- Turn on/off maintained light
- Turn on complete emergency lighting (continuity lighting)
- Power failure simulation UV-A (emergency operation)
- Confirm deep discharge protection



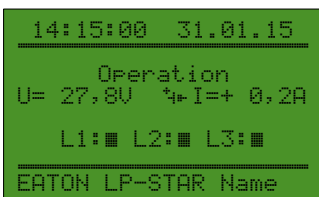
7 control keys

for a user-friendly navigation



LED indicators for:

- Ready
- Operation through the electrical source for safety services
- Failure

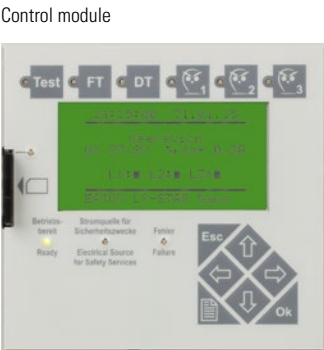


Graphic display:

128 x 64 pixels, back-lit, program adjustable contrast and brightness.

LP-STAR emergency lighting power supply in a compact design

Components and options



Graphical display	128 x 64 pixel adjustable contrast
Illumination	Adjustable background luminosity
Keypad	Sealed, with 6 function and 7 control keys
Readout	Battery voltage Battery charge current (+) Battery discharge current in test or by failure (-) Charge Fault Luminaire failure with location label Deep discharge protection Manual reset Delay-time on mains return Fault UV-AV (location label) Test mode Date/time Insulation fault with circuit label Failure information Programming information
Status	<ul style="list-style-type: none">• Ready• Electrical source for safety services• Failure

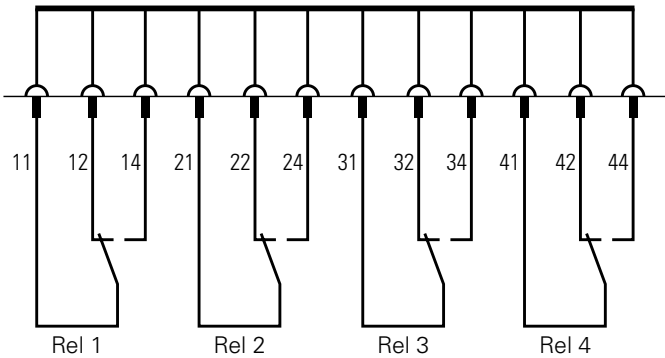
Potential-free signal contacts, buzzer

4 relays with a common potential, 1x switching contact each, 24 V 0.5 A.

The three potential-free contacts and the buzzer can be assigned freely to one or several of 12 different messages. The DIN VDE specification can be loaded any time and used as a default setting.

Default settings LP-STAR

Name	Relay 1	Relay 2	Relay 3	Relay 4	Buzzer
Mains operation		X			
Mains failure	X		X		
UV mains failure	X				
Charge fault	X				
Circuit fault	X				
Luminaire fault	X				
Common system fault	X				
Total discharge protection	X				
ISO fault	X				
Function test		X			
Duration test		X			
Device fault					



Note:
NO = Normal Open
(normally open)
NC = Normal Closed
(normally closed)
The device is fitted with 4 potential-free signal contacts (relay outputs) and an integrated buzzer.
Signal contacts freely programmable including:
1 x changeover contact
1 x 24 V; 0.5 A capacity

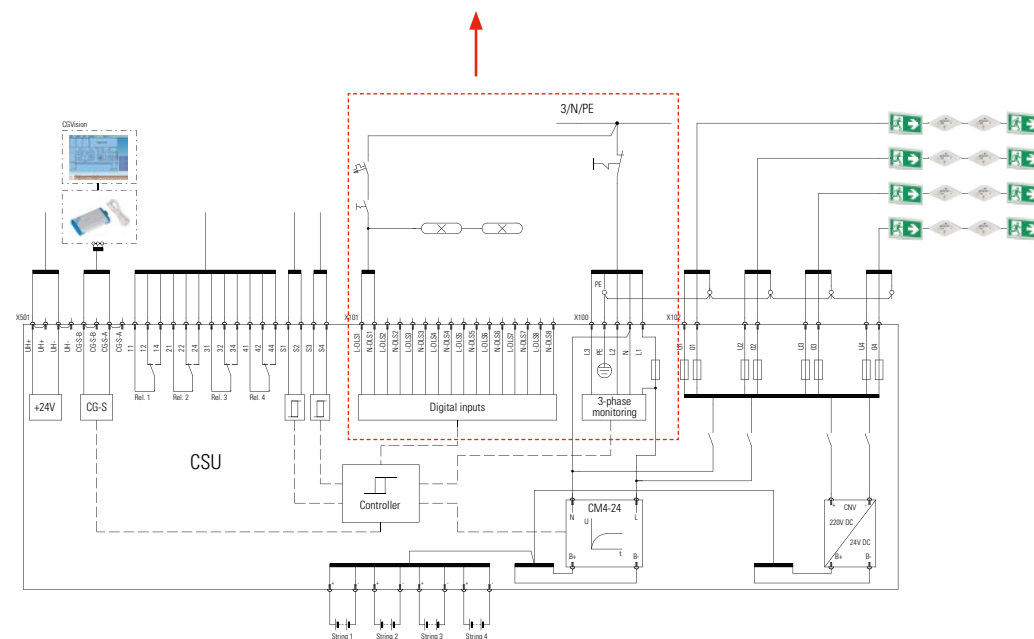
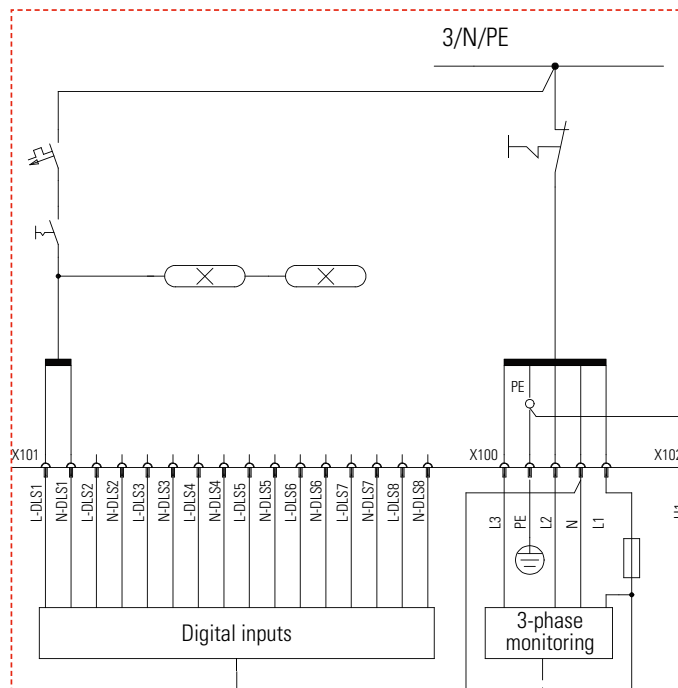
LP-STAR emergency lighting power supply in a compact design

Components and options

Digital inputs, for example light switch query

The standard 8 digital inputs (two for each circuit) can be used to query the switch for the combined switching of emergency and general lighting.

Schematic diagram



LP-STAR emergency lighting power supply in a compact design

Technical Data

LP-STAR-4-24



Input

Rated voltage AC	1 ~ 220-240 V
Rated frequency	50/60 Hz
Max. rated current AC	5.5 A
Rated voltage DC	19.2- 28.8 V
Battery	VRLA, 2x6 cells in series, 20 °C

Output

Rated voltage AC	220-240 V AC / 220 V DC constant
Total current	4.7 A AC / 2.45 A DC
Total power	1080 VA / 540 W
Circuit power	345 VA / 330 W
Rated breaking capacity	1500 A @ 300 V DC

	LP-STAR 4-12	LP-STAR 4-24	LP-STAR-4-36	LP-STAR-4-48
Circuits	4	4	4	4
Max. battery size (C10; 1.8 V/Z, +20 °C)	2 x 12 V / 12 Ah	4 x 12 V / 12 Ah	6 x 12 V / 12 Ah	8 x 12 V / 12 Ah
Dimensions (W x H x D)	550 x 260 x 260 mm		730 x 260 x 260 mm	
Max. ambient temperature	For storage: -20 °C to + 40 °C, For operation*: -5 °C to + 35 °C			
Sound pressure level at mains operation / emergency mode (converter operation)	0 dB / 50 dB			
Housing colour	RAL 7035			
Degree of protection / insulation class	IP20 / I			
Weight (approx.) without battery	17 kg		21 kg	

* Maximum Design Lifetime at +20 °C: 10 years

Ordering details

Type	Model	Order No.
LP-STAR 4-12	LP-STAR-4-12, incl. control module, 1 charging unit, 4 circuits and battery packs 2 x 12 V / 12 Ah	40071362120
LP-STAR 4-24	LP-STAR-4-24, incl. control module, 1 charging unit, 4 circuits and battery packs 4 x 12 V / 24 Ah	40071362240
LP-STAR 4-36	LP-STAR-4-36, incl. control module, 1 charging unit, 4 circuits and battery packs 6 x 12 V / 36 Ah	40071362360
LP-STAR 4-48	LP-STAR-4-48, incl. control module, 1 charging unit, 4 circuits and battery packs 8 x 12 V / 48 Ah	40071362480

Optional battery compartment



LP-STAR-4-24



Battery

Rated capacity AhK10, 1,8 V/Z, +20 °C	Dimensions of one battery L x W x H (mm)	Number of batteries $U_b = 12\text{ V}$ pieces	Total weight of all batteries (kg)
10 Y: 12 Ah	152 x 98 x 102	max. 8	4 pieces: 15.25 8 pieces: 30.50

Battery ordering details

Type	Model	Order No.
12 V/12 Ah	Battery block, period of use: 10 years	40066071147

Period of use specified for a max. battery temperature of +20 °C

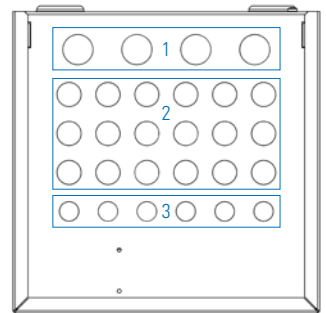
Fuse ordering details

Type	Model	Order No.
Final circuit fuses	2.5 AT / 250 V (packaging unit 10 pieces)	400713611235
Mains feed-in circuits	6.3 AT / 250 V (packaging unit 10 pieces)	400713611234

Accessories ordering details

Type	Model	Order No.
Clamping gland set, 28 pieces	4 x M25, 18 x M20, 6 x M16	40071361159

Pre-cut cable entries LP-STAR



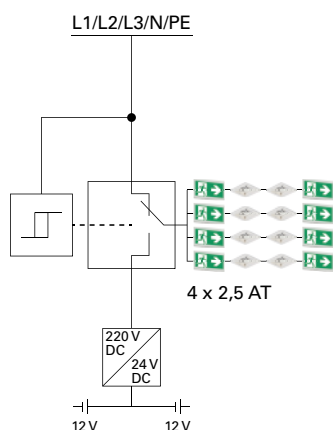
1 = 4 x M25

2 = 18 x M20

3 = 6 x M16

LP-STAR emergency lighting power supply in a compact design

Technical Data



Circuit change-over module

The circuit change-over module supplies 230 V AC in mains operation and 220 V DC in emergency lighting operation to the luminaires of the emergency lighting system according to EN 60598-2-22.


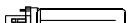
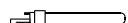

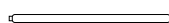

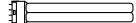
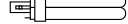

The CEWA GUARD monitoring checks the operation of the connected luminaires. Up to 20 luminaires can be connected.

Mechanical structure	Circuit board
Fuse	2,5 AT / 250 V 5 x 20 mm
Max. operating time in battery operation	Maximum 330 W per circuit and total maximum 540 W for all circuits
Max. power in mains operation	Maximum 345 VA per circuit and total maximum 1080 W for all circuits
Max. inrush current transformer output	250 A
Output voltage	220 V constant
For the luminaires	EVG

Luminaire series	Luminaire type	Power consumption battery operation [W]*	Power consumption mains operation [VA]*	Inrush current [A]
GuideLed	10011 ... 10026 CG-S	1.9	4.0	1.5
	10021 ... 10026 CG-S	2.9	5.5	
	11011 ... 11026 CG-S	2.6	5.0	
	11021 ... 11026 CG-S	4.1	7.1	
	13011 ... 13022 CG-S SL	5.0	8.5	
	10011 ... 10013 CG-S FSL	4.0	7.2	
Style LED	22011 LED CG-S	4.4	7.6	
	22021 LED CG-S	5.8	9.5	
	51011, 51021 LED CG-S	5.8	9.5	
Spirit LED	Spirit LED 16	1.7	3.8	
	Spirit LED 28	3.7	6.6	
Brillant LED	1503 ... 1803 LED CG-S	2.9	5.5	
	1504 ... 1804 LED CG-S	4.1	7.1	
	1903 LED CG-S	3.0	5.5	
Aluminium housing	70011 LED CG-S	2.0	4.36	
	70021 LED CG-S	3.1	5.8	
	71011 LED CG-S	3.1	5.8	
	71021 LED CG-S	5.8	9.5	
Escape luminaires	3503.1 LED CG-S	4.4	7.6	
	3604.1 LED CG-S	5.8	9.5	
Atlantic	Atlantic LED S CG-S	5.0	8.5	
	Atlantic LED D CG-S	5.0	8.5	
	Atlantic LED R/O/Wand CG-S	5.0	8.5	

* Power consumption of the luminaires during battery or mains operation in case of an ambient temperature of +20 °C.

Connection cable/W for the luminaires with:

International term	Lamp cap	EVG Type EVG ...	Lamp load in [W]	Battery operation P [W] at a luminous flux $\Phi_E/\Phi_{Rated} = 75\%$	Mains operation S [VA]	Inrush current [A]
T 16 	G5	13.3 ...	4	4.4	8	3
		13.3 ...	6	5.5	12	3
		13.3 ...	8	6.6	16	3
		13.3 ...	13	11.0	23	3
TC-SEL 	2G7	13.3 ...	5	4.4	10	3
		13.3 ...	7	5.5	13	3
		13.3 ...	9	6.6	16	3
		13.3 ...	11	8.8	18	3
TC-DEL 	G24q-1	13.3 ...	10	7.7	16	3
		13.3 ...	13	11.0	23	3
TC-TEL 	GX24q-1	13.3 ...	13	11.0	23	3
T 26 	G13	18 ...	18	15.4	30	8
		18 ...	18	15.4	30	8
		18 ...	18	15.4	30	8
		18 ...	18	15.4	30	8
TC-F 	2G10	18 ...	18	15.4	30	8
TC-L 	2G11	18 ...	18	15.4	30	8
TC-DEL 	G24q-2	18C ...	18	15.4	30	8
TC-TEL 	GX24q-2	18C ...	18	15.4	30	8

Continuous output = start output

N-EVG 54 W V-CG-S



Rated value N-EVG ... V-CG-S in case of mains and battery operation

Term	T5	T5	T5	T5	T5	T5
Lamp cap	G5	G5	G5	G5	G5	G5
Type N-EVG ... V-CG-S	14 / 21 / 28 / 35 W	14 / 21 / 28 / 35 W	14 / 21 / 28 / 35 W	14 / 21 / 28 / 35 W	24 / 39 W	24 / 39 W
Lamp load [W]	14	21	28	35	24	39
Battery operation, incl. converter efficiency [W] in switch position (luminous flux Φ_E/Φ_{Rated} in %)						
100 %	18	24	33	40	29	42
90 %	15	22	29	35	26	37
80 %	14	20	26	31	22	33
70 %	13	18	24	29	20	29
60 %	11	15	22	24	18	26
50 %	10	14	20	22	15	24
40 %	9	12	18	20	15	22
30 %	8	11	15	18	13	20
Power consumption [VA]	18	25	32	39	28	41
Inrush current [A]	10	10	10	10	10	10
System power lamp + EVG acc. EN 50294 [W]	16	23	30	37	25	41

LP-STAR emergency lighting power supply in a compact design

Technical Data

N-EVG 58 W V-CG-S



Term	T5	T5	T5	T8	T8
Lamp cap	G5	G5	G5	G13	G13
Type N-EVG ... V-CG-S	49W	54W	80W	36W	58W
Lamp load [W]	49	54	80	36	58
Power consumption [A] at 220 V battery operation in switch position (luminous flux Φ_E/Φ_{Rated} in %)					
100 %	53	57	84	37	55
90 %	46	51	75	33	48
80 %	42	46	66	31	44
70 %	37	40	59	26	40
60 %	33	35	53	24	35
50 %	31	33	46	22	31
40 %	26	29	42	20	29
30 %	24	26	37	18	24
Power consumption [VA]	55	58	85	37	55
Inrush current [A]	10	10	12	10	10
System power lamp + EVG acc. EN 50294 [W]	52	57	84	34	53

The required battery current is determined based on luminous flux conditions (30% ... 100%).

Dim mode 30% only down to 10°C, 60% only down to 0°C allowed.

When used outdoors, the 100% setting should only be used.

Calculation example

The following luminaires should be connected to one power circuit:

8 pieces of GuideLed 10011 CG-S RZ

4 pieces of 35 W/T5 with N-EVG 54 W V-CG-S, luminous flux 40 %

2 pieces of GuideLed 13011 CG-S SL

There are the following conditions:

Battery operation:

max. cont. output: 330 W

Mains operation:

max. 345 VA apparent power
max. inrush current 250 A

max. output:

10011 CG-S: 8 x 1.9 W = 15.2 W

35 W/T5: 4 x 40 W (100 %) = 160.0 W

13011 CG-S: 2 x 5 W = 10 W

Total = 185.2 W **< 330 W --> OK**

max. inrush current:

10011 CG-S: 8 x 1.5 A = 12.0 A

35 W/T5: 4 x 10 A = 40.0 A

13011 CG-S: 2 x 1.5 A = 3.0 A

Total = 55.0 A **< 250 A --> OK**

max. mains power:

10011 CG-S: 8 x 4 VA = 32.0 VA

35 W/T5: 4 x 39 VA = 156.0 VA

13011 CG-S: 2 x 8.5 VA = 17.0 VA

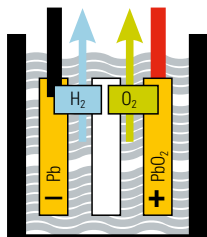
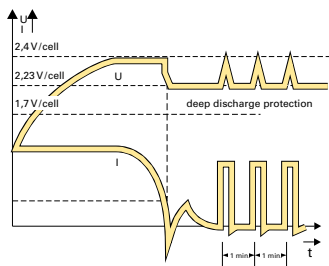
Total = 205.0 VA **< 345 VA --> OK**

Attention!

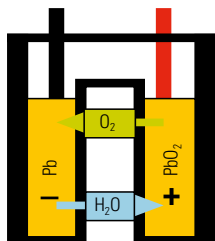
The connected load of all circuits in total may not exceed **540 W** and **1080 VA** per LP-STAR device.

LP-STAR emergency lighting power supply in a compact design

Components and options



In conventional lead-acid batteries with free electrolyte, water is broken down into oxygen at the positive plate and hydrogen at the negative plate in case of overcharging the battery. To protect the battery from drying, this loss of water must be compensated for at regular intervals.



The extremely low gas emission absorption cells are designed to ensure that the positive plate is charged completely before the negative plate and consequently the released oxygen diffuses to the negative plate. On the negative plate it reacts with the lead to form lead-oxide which in turn reacts with the sulphuric acid electrolyte and forms lead-sulphate and water to prevent any loss of water.

CM 4-24

The completely sealed lead batteries are charged gradually based on an IU0U charging curve in function of temperature. Boost charge is activated in function of the battery charge level to ensure that the batteries are charged without exceeding the gassings voltage.

The charge monitoring procedure verifies the charging process continuously and it reports any faults immediately, including interruption of the battery circuit, faulty charging unit or a high impedance battery cell.

End-of-charge voltage boost charge at +20 °C	28.8 V
End-of-charge voltage trickle charge at +20 °C	27.6 V
Deep discharge protection [1.6 V/Z]	20.4 V
Maximum charging current	4 A
Maximum rated power at boost charge	130 VA
Maximum rated power at trickle charge	10- 120 VA

Max. battery discharge power [W] ¹⁾

Rated operating time	P-Batt min 12 Ah	P-Batt min 24 Ah	P-Batt min 36 Ah	P-Batt min 48 Ah
1.0 h	133 W (7.6 A)	303 W (15.2 A)	468 W (22.8 A)	540 W (27.1 A)
2.0 h	50 W (3.9 A)	142 W (7.8 A)	232 W (11.7 A)	320 W (15.6 A)
3.0 h	24 W (2.7 A)	86 W (5.3 A)	149 W (8.0 A)	212 W (10.7 A)
8.0 h	-	16 W (2.2 A)	38 W (3.3 A)	66 W (4.4 A)

¹⁾ Values incl. converter efficiency

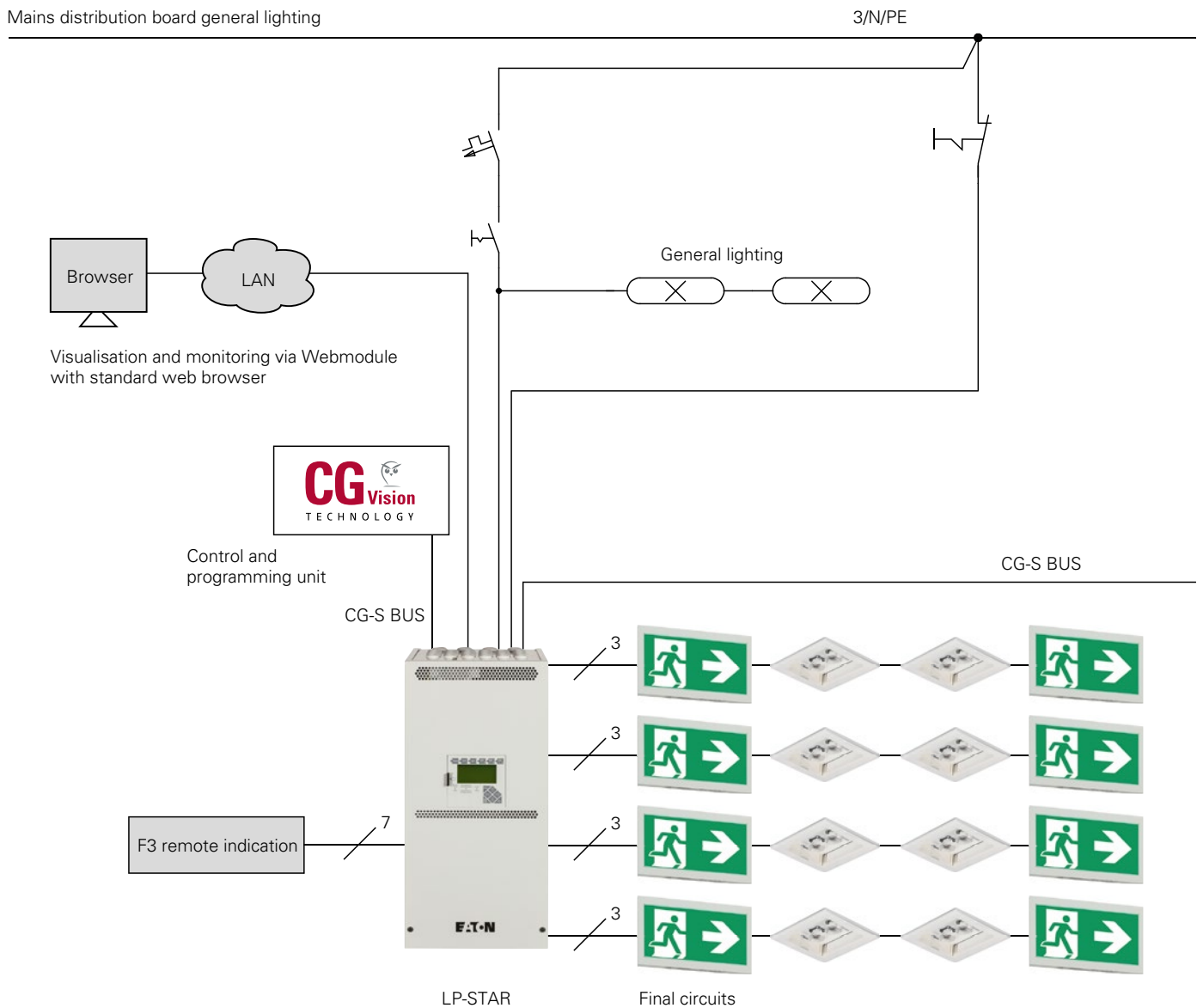
() = Discharge current

Important note: The aging provision for batteries (25 %) is included.

Evaluation of aeration and deaeration of electrical service rooms according to DIN EN 50272-2

Capacity	12	24	36	48
Air volume flow required for the aeration of the location room [l/h], calculated for boost charge*	57.6	115.2	172.8	230.4
Vent cross-section of the air inlets and outlets of the place of installation [cm²], calculated for boost charge*	1.6	3.2	4.8	6.5
Air volume flow required for the aeration of the location room [l/h], calculated for trickle charge*	7.2	14.4	21.6	28.8
Vent cross-section of the air inlets and outlets of the place of installation room [cm²], calculated for trickle charge*	0.2	0.4	0.6	0.81

* If boost charge is not frequently used (for example once a month), the air flow rate can be calculated based on the trickle charge current.



LP-STAR emergency lighting power supply in a compact design

Description

LP-STAR



LP-STAR emergency lighting power supply in a compact design

Low Power System according to EN 50171 and BGV A3 for the power supply of escape luminaires and exit sign luminaires 230V / 216V AC/DC. It is suitable for emergency lighting systems according to DIN VDE 0100-718, DIN EN 50172 and V DIN V VDE 0108-100. With an automatic test device and monitoring and displaying the state and name of individual luminaires connected to system-specific EVG/LED supply module including a monitoring component without an additional data cable.

The switching operation of each escape luminaire and exit sign luminaire with system-specific EVG/LED supply module or monitoring component is programmed freely in the control module without an additional control cable to the luminaires.

The CEAG STAR technology results in a severe reduction of end circuits, because the mixed operation including maintained light, switched maintained light and non-maintained light is implemented in a single circuit.

The control module assigns the different operating modes without any modification of the luminaire installation. The operating modes: non-

maintained light or maintained light cannot be selected at the monitoring module or EVG/LED supply module using slide switches, coding switches or jumpers respectively. The additional costs incurred due to the use of parts made by other manufacturers or additional components on the installation lines cannot be claimed.

Simple connection technology using plug-in, back of hand proof clamp connections.

Bus technologies

CG-S bus technology based on LONWorks® technology

For data communication a 2-pole, bidirectional CG-S data bus, is integrated optimally in the control module of LP-STAR.

Using the optionally available CG-S Bus Interface, any building control systems based on the LONWorks® technology can communicate with the system on the CG-S bus.

Alternatively, any OPC compatible building control system can be connected to the optionally available OPC server and the Interface-Box using the CG-S bus.

Thus extensive status messages and commands can be queried through the CG-S bus.

The following data can thus be directly communicated:

- Status messages such as device disabled, deep discharge protection, battery interruption, battery voltage, current and temperature, insulation error, charging unit fault, bus communication error, mains failure, circuit faults etc.
- Input commands such as Start function test, Start and cancel duration test, Manual reset, Disable and release system.

16 virtual switching inputs can be used to directly and independently switch circuits or even individual luminaires via external LON sensors.

Interconnection of all LP-STAR distribution boards also possible via various media such as fibre

optic cables, Ethernet and LAN using optional components.

Status and error messages can be retrieved for each individual luminaire.

Communication with system-oriented luminaires takes place only through the connected power line.

Using the search function, the luminaires connected to the system addressed during installation are automatically detected.

Control module

A freely programmable control module with a non-volatile program memory and alphanumeric graphic display monitors and controls the LP-STAR system. All functions such as loading, mains/emergency switch-over and deep discharge protection of devices and the connected emergency luminaires are automatically inspected. Errors arising will be reported immediately.

An interface provides a connection to a central monitoring device.

In case of a short circuit or interruption of control current loops, differential monitoring leads to the system immediately switching on (maintained light) or to the system being put in standby.

Graphical display: 128 x 64 pixels, back-lit, program-adjustable contrast and brightness.

Display values: battery voltage, battery charge current (+), battery charge current in test mode or in case of fault (-), charge fault, luminaire fault with location information in plain text, deep discharge protection, manual reset, delayed emergency light (remaining time in minutes), test mode, date/time, insulation fault, UV-AV fault, fault information, programming information, test log book.

LED displays: System readiness, supply from the source for safety services, failure.

Sealed keypad:

- individual buttons for device test, function test and duration test.
- 3 freely programmable function keys for example: Lock/unlock device, manual reset, turn on/off maintained light, display fault list, turn on/off continuity lighting, simulation mains failure UV.
- 7 control buttons for user-friendly navigation in query and programming mode.

Programming options:

Individual luminaire monitoring, circuit monitoring, individual name (20 characters) per device, circuit, luminaire, device address, selective manual reset, delayed emergency light (1-15 min.), LON switch, timer function, automatic function and duration test, selection of menu language, automatic daylight savings time setting, password protection.

Connection for disable switch: Control loop for disabling the system during operating downtimes with differential loop monitoring for short circuit and wire breakage detection.

Differential monitoring: Short circuit or interruption lead to the system going into standby.

Connection for phase monitor: 24V current loop for emergency light requirement with differential loop monitoring for short circuit and wire breakage detection.

Differential monitoring: Short circuit or interruption lead to the system switching on (maintained light) immediately.

Connection for potential-free indicator contacts, buzzer: 4 potential-free indicator contacts with a separate root. Every potential-free contact can have one or more of the 11 different alerts assigned to it. Freely programmable, DIN VDE specification retrievable at any time as default setting.

Connection for 230 V digital inputs without phase monitor function: 8 freely assignable inputs 230V, programmable as inverted and non-inverted for example for start/stop function test, start/stop duration test,

manual reset, turn on/off maintained light, turn on emergency lighting as continuity lighting.

Memory card:

Memory card for archiving the device configuration and the mandatory inspection log book information over a minimum of 4 years.

Storing:

- 360.000 inspection log book entries
- Luminaire target location texts (20 characters per luminaire)
- Circuit names (20 characters per circuit)
- Device name (20 characters)

Using The device can be programmed offline on a PC using the optional CEAG software.

Charging technology

The sealed maintenance-free lead batteries are charged gradually based on an microprocessor-controlled IU charging curve in function of temperature. Force charge is activated in function of the battery charge level to ensure that the batteries are charged without exceeding the gas development voltage. The charge monitoring procedure verifies the charging process continuously and it reports any faults immediately, including interruption of the battery circuit, faulty charging unit or a high impedance battery cell.

- with ISO test device according to DIN VDE0100 Part 410
- LED displays for charging unit on, boost charge on, insulation fault, charge fault, mains available
- potential-free contacts charge fault, boost charge, insulation fault
- Temperature sensor built into the battery compartment

Circuit components

The circuit switch-over supplies and monitors emergency luminaires with electronic ballasts for DC operation. The

CEWA GUARD monitoring checks the operation of the connected luminaires.

- Monitoring of up to 20 luminaires per circuit with individual status display
- Mixed operation of continuous lighting, switched maintained light and non-maintained light within a single circuit. (an additional data line to the luminaires is not required)
- Output voltage in battery operation: 220 V DC
- Typical switch-over time mains/battery: 450 ms
- freely programmable for maintained light, switched maintained light or maintained mode
- fuses easily accessible on the front part of the component
- permanent monitoring of fuses
- automatic luminaire search function

Webmodule

Webmodule for visualising and monitoring a LP-STAR device on the local Ethernet (LAN) or Internet (WWW) with a regular WEB browser. Access to the webmodule via internet (WWW) must be appropriately administered and set up on site by a competent IT department.

Integrated email program for convenient, event-related error notification via email, for up to 5 email recipients.

- Simple menu navigation
- Complete visualisation and monitoring of an LP-STAR through the local Ethernet (LAN) with a regular WEB browser
- Retrieving and indicating all current operating states
- Localised fault indicators for every emergency luminaire circuit and luminaires with target location information in plain text connected to a function test
- Continuous up-to-date information on charging device and battery

- Parallel access from various PC workstations to a web-module possible (max. 8)
- Integrated email program for a convenient error notification via email
- Adjustable email dispatch acc. to type of error or function test
- Up to 5 email recipients programmable
- Adjustable update cycle for web browser via the webmodule
- Authenticated access via administrator account with password protection
- Configurable guest account for restricted access with password protection
- Static or dynamic (DHCP) IP addressing possible
- Any number of webmodules operable in parallel
- Overview of all active web-modules on the Intranet with status display and hyperlink function

Supply voltage: 24V DC
power consumption: < 1.5W
Connection: RJ45

Housing made of polycarbonate for installation on DIN rail, 2TE

Dimensions (L x W x H): 90 mm x 35 mm x 58 mm Weight: ca. 100 g Protection rating: IP20

24V OGiV block battery

Only closed and non-spillable OGiV batteries are used. Rated operating time 1, 3 and 8 hours respectively

- extremely low gas emissions
- Period of use: 10 years at 20°C
- low self-discharge
- Design according to IEC60896-21/-22
- electrolyte and air oxygen sealed terminals

CEAG is a member of the "Stiftung Gemeinsames Rücknahmesystem Batterien [joint battery recycling programme] (GRS)".

In this manner batteries undergo a controlled and

complete recycling cycle. This means that possible polluting materials are recovered and reused for new products.

Specifications have been quoted based on CEAG products. Specifications can be compared based on this product. The tenderer can submit a tender based on a variant solution including an equivalent product (proof by the tenderer). Detailed product descriptions must be attached to the offer for the evaluation of equivalence:

References

CEAG Notlichtsysteme GmbH
Senator-Schwartz-Ring 26
D-59494 Soest/Germany
Telephone +49 (0) 2921/69-870
Fax +49 (0) 2921/69-617
Internet www.ceag.de
Email info-n@ceag.de

A DIN EN ISO 9001:4500 certification must be further provided as proof.

Manufacturers without the DIN EN ISO 9001:4500 certification are not permitted.

LONWorks®: Registered trademark of the Echelon Corporation