Emergency Lighting

Central Power Systems
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Central power systems

Options

Operation and monitoring modules

Monitoring and switching modules
Central power systems

The NZBVA and NZBVE central battery systems and the NGBVA and NGBVE group battery systems enable the installation of emergency lighting systems in medium and large-scale facilities. Both ranges are based on identical components. They only differ in the design of the cabinets:

- NZBVA and NGBVA: Control cabinets with a large inspection pane and detachable frame to accommodate 19" rack inserts.
- NZBVE und NGBVE: Control cabinets with a small inspection pane and fixed frame to accommodate 19" rack inserts.
- NZBVA and NZBVE: Use of a 216V battery with a lifetime expectation of 10+ years.
- NGBVA and NGBVE: Use of a 24V battery with a lifetime expectation of 5+ years.

Special features:
- Control and monitoring by the SlepLOGICA- or AutoLOGICA-system
- Luminaire operation in:
  - Maintained mode
  - Non maintained mode
  - Non maintained mode with selective switching to maintained mode via external light switches
  - Non maintained mode with selective switching in case of partial mains incidents/switching via external mains monitoring modules
- Combination of all options in a single circuit
- Permanent check of the general lighting switches or of the mains monitoring modules via control inputs within the luminaire or system
- Allocation of control information to different luminaires and circuits without limitation
- No manual addressing of the luminaire number at the control and monitoring module within the luminaire required
- No manual coding of the control input at the control and monitoring module within the luminaire required
- Automatic allocation of the required circuits and detection of luminaires
- Individual monitoring of 32 luminaires in a circuit with or without selective irregularity report
- Automatic triggering of function and duration tests
- Automatic reporting to a test journal
- Centralised input and output of all parameters and data
- Operates luminaires with:
  - Incandescent lamps
  - Fluorescent tubes with electronic or magnetic ballast
  - HID lamps with electronic or magnetic ballast

Monitoring of emergency luminaires

The automatic test equipment of NGBVA, NGBVE, NZBVA and NZBVE systems monitors all exit signs and emergency luminaires. There are 2 options available:

- Individual monitoring with selective irregularity report enables immediate identification of a defective luminaire. The switching and monitoring modules Slep or ALOG check during the functional test lamps and ballasts and report the result to the central station. An eventual defect is being indicated and printed by giving details which circuit and which luminaire is not working properly. The modules Slep and ALOG are also available with integrated HF-ballast. The operation and monitoring modules to be used are AK...EU type.
- Individual monitoring without selective irregularity report does not enable immediate identification of a defective luminaire. There is just a comparison between the rated power of a circuit and the measured power during the functional test. An eventual defect is being indicated and printed by giving details which circuit is not working properly.

The operation and monitoring modules to be used are AK...SU type.

Individual monitoring with selective irregularity report in a circuit with luminaires with different operation modes
SlebLOGICA and AutoLOGICA enable all NGBVA, NGBVE, NZBVA and NZBVE emergency lighting systems to operate luminaires in one single circuit in different operation modes:

- Maintained mode.
- Non maintained mode.
- Switching from non maintained to maintained mode depending on the on/off position of the light switches. Either via SlebLOGICA or AutoLOGICA modules in the emergency luminaires or via a centrally placed LSSA module.
- Automatically switching on of all or of selected emergency luminaires in non maintained mode in case of partial mains failures. Either via SlebLOGICA or AutoLOGICA modules in the emergency luminaires or via a centrally placed LSSA module.
- Automatically switching off of all or of selected emergency luminaires in non maintained mode in case of return of mains voltage. Either with or without time delay.
- Manually switching off of all or of selected emergency luminaires in non maintained mode in case of return of mains voltage. Either via SlebLOGICA or AutoLOGICA modules in the emergency luminaires or via a centrally placed LSSA module.
- On/off switching of emergency luminaires in maintained mode either manually or via time switch.
- Allocation of operating modes to circuits and luminaires without limitation.
- Allocation of commands of control modules to circuits and luminaires without limitation.
- No manual coding of the control input at the modules in the luminaire is required.
- AutoLOGICA system offers the automatic identification of the luminaire address, no manual operation is required.

**Advantages:**

- Reduction of the number of circuits and wiring.
- Smaller dimensions of the control cabinets.
- Reduction of the quantity of inflammable items.
- Reduction of installation cost.
- Simplification of the design.
- Increased flexibility during installation.
- Increased flexibility in case of changes.

SlebLOGICA and AutoLOGICA systems offer control and switching but also monitoring of the function of emergency luminaires. All these actions can be triggered from the central cabinet.

SlebLOGICA and AutoLOGICA modules are either available as single modules that switch and monitor the lamp and ballast of the luminaire (type Sleb or ALOG) or combined with a HF-ballast (type ECSL or ECAL).

**Additional advantages of the AutoLOGICA system**

- Every module and every luminaire is equipped with an identification code. There is no manual addressing required.
- The AutoLOGICA system does not request wrong or double addressing. Consequently there is no time consuming troubleshooting necessary.
- The unconditional colour of the cabinets set a new trend in the industry.

All modules of the AutoLOGICA range are fitted with a self adhesive label showing the identification code.
Control and monitoring system
KOMBI CONTROL

KOMBI CONTROL controls and coordinates all group and central battery systems. It is also an automatic test device according to EN 50171 and EN 50172. Four control buttons, a display, multimedia card (MMC) and a printer port are available for data input and output as well as for operating the module.

KOMBI CONTROL controls and monitors following key system functions:

• Battery charging with automatic switching between short time battery charging and maintaining battery charging. Display of charge and discharge current/voltage, check of the battery balance.
• Manual enabling/disabling of emergency mode suppression with push button or control input.
• Monitoring of mains supply on the main distribution board by an internal mains monitoring module.
• Automatic switching from mains to battery mode in the case of mains supply incidents/failures.
• Automatic cut-off of battery mode when the deep discharge protection is activated.
• Monitoring of mains supply on the sub distribution boards of general lighting by external mains monitoring modules (optional).
• Automatic switching on of non-maintained luminaires in all or selected luminaire circuits in case of mains supply incidents/failures via optional mains switch dependent control module LSSA.
• Automatic switching off – immediately or delayed – of non-maintained luminaires when mains supply is recovered. The delay can be programmed for all or selected luminaire circuits.
• Manual switching of non-maintained luminaires when mains supply is recovered – for all circuits via control push button or for selected circuits via optional mains switch dependent control module LSSA.
• Manual switching of maintained luminaires via push buttons or control input with or without time control. Time control to be programmed for all or selected luminaire circuits (2-week and 1-year control programme).
• Time controlled switching of emergency lighting and general lighting via push buttons from the general lighting system and via optional control module TSZ.
• Allocation of all luminaire circuits to maintained and non-maintained mode or to an optional control module LSSA or TSZ.
• Automatic charge monitoring in cycles < 5 minutes.
• Automatic function tests with configuration of test parameters according to local/national requirements.
• Automatic duration tests with configuration of test parameters according to local/national requirements.
• Automatic storage of all test results for 2 years (integrated test journal).
• Automatic allocation of luminaire circuits and luminaire detection (EVG/KCE/Sleb).
• Automatic insulation test selective for the central station or for each luminaire circuit (central battery systems only).

Control push buttons and control inputs:

• Emergency mode suppression ON/OFF
• Maintained mode ON/OFF
• Switching from maintained to non-maintained mode
• Function test triggering
• Insulation test triggering

Status indicators:

• Emergency mode suppression ON/OFF
• Mains mode
• Battery mode
• Maintained mode ON/OFF
• Mains failure main distribution board (phases L1, L2, and L3)
• Mains failure sub distribution board
• Switching from maintained to non-maintained mode

Fault indicators:

• Group alarm (detailed information via display or printer)
• Charge fault
• Battery fault
• Luminaire fault
• Bus fault
• Deep discharge
• Insulation fault
• Ventilator fault

Signal outputs:

• Emergency mode suppression
• Mains mode
• Battery mode
• Group fault
Monitoring software
LOGICA-Visual

Software for centralised monitoring and controlling of emergency lighting systems of the series NZBVE, NZB-VA, NGBVE and NGBVA.

Connection of the PC with the central unit:
• Interface USB/RS485
• TCP/IP – Ethernet adaptor
• GSM Interface via the telecommunication network

Input/output of monitoring and control data:
• Numerical and graphical allocation of emergency lighting luminaires to the location in the building plans or in the luminaire list.
• Import of building plans as dxf or dwg data.
• Programming of emergency lighting duration for every single luminaire or every circuit.
• Programming of emergency lighting mode for every single luminaire or every circuit.
• Programming of data for the functional tests and duration tests.
• Programming of the parameters of the LSSA inputs.
• Automatic printing of protocols for the configuration of the system and for failures.
• Clear visualisation of the test results.
• Manual triggering of functional and duration tests.
• Manual suppression of the emergency operation.

Visualisation during online mode:
• Numerical and graphical visualisation of the status of all emergency luminaires and allocation to the building plans (dxf or dwg format) and the luminaire list.
• Status of the luminaires.
• Mode of emergency operation.
• Stand by modus.
• Irregularities within the system.
• Tests and results.

Hardware requirements (recommendation):
IBM compatible PC with Pentium 4 processor 2 GHz, 512 MB-RAM, 3 GB free store capacity.

Software requirements (recommendation):
Windows 98 or any Windows of a later edition.
## System spreadsheet NZBVA and NZBVE

<table>
<thead>
<tr>
<th>Type</th>
<th>NZBVA-Z 230/.../6</th>
<th>NZBVA-Z 230/.../14</th>
<th>NZBVA-Z 230/.../22</th>
<th>NZBVA-Z 230/.../30</th>
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<tbody>
<tr>
<td>Charging unit L230/2</td>
<td>6 max.</td>
<td>6 max.</td>
<td>6 max.</td>
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<tr>
<td>Batteries with a lifetime expectation of 10 years</td>
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<td>33 Ah to 200 Ah</td>
<td>33 Ah to 200 Ah</td>
<td>33 Ah to 96 Ah</td>
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<td>Control and monitoring unit KOMBI CONTROL</td>
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<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
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<tr>
<td>Built-in printer ED</td>
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<td>optional</td>
<td>optional</td>
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<td>Rack compartments (6 max.)</td>
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<td>Floor standing cabinets (electronics and battery)</td>
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<td>AK 32 SÜ</td>
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<td>AK 3 x 32 SÜ</td>
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<td>AK 32-SÜ-AC</td>
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<tr>
<td>Design</td>
<td>Floor standing cabinet</td>
<td>Floor standing cabinet</td>
<td>Wall-mounted cabinet</td>
<td>Wall-mounted cabinet</td>
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<td>Dimensions (HxWxD)</td>
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<td>2000 x 800 x 600 mm</td>
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</table>
System spreadsheet NZBVA and NZBVE

Main-distribution board
"Emergency lighting supply"

Sub distribution board
Mains supply 1

Three phase mains monitoring

Up to 120 emergency circuits with maximal 32 emergency luminaries per circuit.

Emergency luminaries in non-maintained mode

Emergency luminaries in maintained mode

Emergency luminaries in maintained mode

Emergency luminaries in maintained mode

Connected to mains switches

Emergency luminaries may be switched with the light switch by using the LSSA mains switch control module.

Three phase mains monitoring

Mains and battery supply

Bus line

Central station

Data transmission and operating panels

Monitoring system with LOGICA VISUAL

TCP/IP interface

GSM interface

USB/RS485 interface

LON interface

Monitoring system with LOGICA VISUAL

Central station

Up to 120 emergency circuits with maximal 32 emergency luminaries per circuit.
Emergency luminaries may be switched with the light switch by using the LSSA mains switch control module.

The mains switch control module LSSA 230/24 transfers the status of the mains switches to any emergency lighting circuit or to any emergency luminaire.

Sub distribution board
Mains supply 2

Sub distribution board
L2
L1
L3
P E
N

Mains and battery supply

Emergency luminaries in non-maintained mode
Emergency luminaries in maintained mode
Emergency luminaries in maintained mode connected to mains switches

Emergency luminaries in maintained mode connected to mains switches

Sub distribution board

Emergency luminaries in maintained mode
Emergency luminaries in maintained mode

Three phase mains monitoring

The mains switch control module LSSA 230/24 transfers the status of the mains switches to any emergency lighting circuit or to any emergency luminaire.

Emergency luminaries in non-maintained mode
Emergency luminaries in maintained mode

Emergency luminaries may be switched with the light switch by using the LSSA mains switch control module.

Sub distribution board

Emergency luminaries in non-maintained mode
Emergency luminaries in maintained mode
Emergency luminaries in maintained mode connected to mains switches

Emergency luminaries in maintained mode connected to mains switches

The mains switch control module LSSA 230/24 transfers the status of the mains switches to any emergency lighting circuit or to any emergency luminaire.
Central station for NZBVA

Central station NZBVA-Z acc. to EN 50171 with:
- Control and monitoring system KOMBI CONTROL
- 6 rack compartments for charging unit L230/2
- Switching device to maintained mode
- Switching device to non-maintained mode
- Internal mains monitoring device for maintained mode
- Control input for external mains monitoring devices for non-maintained mode
- 6, 14, 22, or 30 rack compartments for operation and monitoring modules

Control cabinet including a lockable door with inspection pane and detachable frame. Modules for 19" rack technology. Battery cabinet with lockable door and ventilating apertures.

Technical data

| Mains supply: | 1 ~ N PE 50/60 Hz |
| U : 230 V (+6%/-10) |
| 3 ~ N PE 50/60 Hz |
| U : 400 V (+6%/-10) |
| Battery supply: | U= 216 V |
| Cable entry: | from bottom |
| Cabinet: | Steel sheet |
| Mounting: | Floor standing |
| Degree of protection: | IP54 |
| Electrical class: | I |
| Rated ambient temperature: | -5°C to + 35°C |

Fuses and terminal blocks according to technical specification

SiebLOGICA system:
- Cabinet colour: light grey RAL 7035
- Colour of modules: black/red

AutoLOGICA system:
- Cabinet colour: brilliant blue RAL 5007
- Colour of modules: grey/blue

Central station for NZBVE KOMBI

Central station NZBVE KOMBI acc. to EN 50171 with:
- Control and monitoring system KOMBI CONTROL
- 6 rack compartments for charging unit L230/2
- Switching device to maintained mode
- Switching device to non-maintained mode
- Internal mains monitoring device for maintained mode
- Control input for external mains monitoring devices for non-maintained mode
- 6, 14, 22, or 30 rack compartments for operation and monitoring modules (with separate control cabinet)

Control cabinet with lockable door and inspection pane. Modules for 19" rack technology. Battery cabinet with lockable door and ventilating apertures.

Technical data

| Mains supply: | 1 ~ N PE 50/60 Hz |
| U : 230 V (+6%/-10) |
| 3 ~ N PE 50/60 Hz |
| U : 400 V (+6%/-10) |
| Battery supply: | U= 216 V |
| Cable entry: | from top |
| Cabinet: | Steel sheet |
| Mounting: | Floor standing |
| Degree of protection: | IP21 |
| Electrical class: | I |
| Rated ambient temperature: | -5°C to + 35°C |

Fuses and terminal blocks according to technical specification

SiebLOGICA system:
- Cabinet colour: light grey RAL 7035
- Colour of modules: black/red

AutoLOGICA system:
- Cabinet colour: brilliant blue RAL 5007
- Colour of modules: grey/blue
Central station for NZBVE

Central station NZBVE-Z acc. to EN 50171 with:
- Control and monitoring system KOMBI CONTROL
- 6 rack compartments for charging unit L230/2
- Switching device to maintained mode
- Switching device to non-maintained mode
- Internal mains monitoring device for maintained mode
- Control input for external mains monitoring devices for non-maintained mode
- 6 or 14 rack compartments for operation and monitoring modules (with combined control and battery cabinet)
- 6, 14, 22, or 30 rack compartments for operation and monitoring modules (with separate control cabinet)

Control cabinet with lockable door and inspection pane. Modules for 19" rack technology. Battery cabinet with lockable door and ventilating apertures.

Technical data

Mains supply: 1 ~ N PE 50/60 Hz
U : 230 V (+6 %/−10)
3 ~ N PE 50/60 Hz
U : 400 V (+6 %/−10)
Battery supply: U= 216 V
Cable entry: from top
Cabinet: Steel sheet
Mounting: Floor standing
Degree of protection: IP54
Rated ambient temperature: −5°C to + 35°C

Fuses and terminal blocks according to technical specification

SlebLOGICA system:
- Cabinet colour: light grey RAL 7035
- Colour of modules: black/red
AutoLOGICA system:
- Cabinet colour: brilliant blue RAL 5007
- Colour of modules: grey/blue

Charging unit for NZBVA and NZBVE

Charging unit L230/2

Temperature-controlled charging based on IU characteristic with charging mode-dependent switching from charging to maintaining battery charging (float charging). When multiple charging units are used, each of them is independent from the other.

Technical data

Charge voltage: 244 V
Charge current: 2 A
Design: 19" rack insert
(1 rack compartment)
Type: L230/2
Order code: G32893-SL
Colour of modules: black/red
Order code: G32893-AL
Colour of modules: grey/blue

Batteries for NZBVA and NZBVE

Batteries

Sealed lead-acid battery with a lifetime expectation of 10+ years at an ambient temperature of 20°C acc. to EN 50171.
Battery capacity 7 Ah up to 760 Ah.

Further information about battery details available on request.
Sub-station for NZBVA (floor standing)

Sub-station NZBVA-U/S acc. to EN 50171 with:
• Control and monitoring system KOMBI CONTROL
• Switching device to maintained mode
• Switching device to non-maintained mode
• Control input for external mains monitoring devices for non-maintained mode
• 6, 14, 22, or 30 rack compartments for operation and monitoring modules

Cabinet with lockable door, inspection pane and detachable frame. Modules for 19" rack technology.

Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains supply</td>
<td>1 – N PE 50/60Hz</td>
</tr>
<tr>
<td></td>
<td>U : 230 V (+6%/-10)</td>
</tr>
<tr>
<td></td>
<td>3 – N PE 50/60Hz</td>
</tr>
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<td></td>
<td>U : 400 V (+6%/-10)</td>
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<td>Battery supply</td>
<td>U= 216 V</td>
</tr>
<tr>
<td>Cabinet entry</td>
<td>from bottom</td>
</tr>
<tr>
<td>Cabinet</td>
<td>Steel sheet</td>
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<tr>
<td>Mounting</td>
<td>Floor standing</td>
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<td>Degree of protection</td>
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<td>Electrical class</td>
<td>I</td>
</tr>
<tr>
<td>Rated ambient temperature</td>
<td>-5°C to + 35°C</td>
</tr>
<tr>
<td>Fuses and terminal blocks</td>
<td>according to technical specification</td>
</tr>
<tr>
<td>SiebLOGICA system</td>
<td>AutoLOGICA system:</td>
</tr>
<tr>
<td>Cabinet colour</td>
<td>light grey RAL 7035</td>
</tr>
<tr>
<td>Colour of modules</td>
<td>black/red</td>
</tr>
<tr>
<td>AutoLOGICA system:</td>
<td>Cabinet colour: brilliant blue RAL 5007</td>
</tr>
<tr>
<td>Colour of modules:</td>
<td>or light grey RAL 7035 grey/blue</td>
</tr>
</tbody>
</table>

Sub-station for NZBVE (floor standing)

Sub-station NZBVE-U/S acc. to EN 50171 with:
• Control and monitoring system KOMBI CONTROL
• Switching device to maintained mode
• Switching device to non-maintained mode
• Control input for external mains monitoring devices for non-maintained mode
• 6, 14, 22, or 30 rack compartments for operation and monitoring modules (system with separate control cabinet)

Cabinet with lockable door and inspection pane. Modules for 19" rack technology.

Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains supply</td>
<td>1 – N PE 50/60Hz</td>
</tr>
<tr>
<td></td>
<td>U : 230 V (+6%/-10)</td>
</tr>
<tr>
<td></td>
<td>3 – N PE 50/60Hz</td>
</tr>
<tr>
<td></td>
<td>U : 400 V (+6%/-10)</td>
</tr>
<tr>
<td>Battery supply</td>
<td>U= 216 V</td>
</tr>
<tr>
<td>Cabinet entry</td>
<td>from bottom</td>
</tr>
<tr>
<td>Cabinet</td>
<td>Steel sheet</td>
</tr>
<tr>
<td>Mounting</td>
<td>Floor standing</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP54</td>
</tr>
<tr>
<td>Electrical class</td>
<td>I</td>
</tr>
<tr>
<td>Rated ambient temperature</td>
<td>-5°C to + 35°C</td>
</tr>
<tr>
<td>Fuses and terminal blocks</td>
<td>according to technical specification</td>
</tr>
<tr>
<td>SiebLOGICA system</td>
<td>AutoLOGICA system:</td>
</tr>
<tr>
<td>Cabinet colour</td>
<td>light grey RAL 7035</td>
</tr>
<tr>
<td>Colour of modules</td>
<td>black/red</td>
</tr>
<tr>
<td>AutoLOGICA system:</td>
<td>Cabinet colour: brilliant blue RAL 5007</td>
</tr>
<tr>
<td>Colour of modules:</td>
<td>or light grey RAL 7035 grey/blue</td>
</tr>
</tbody>
</table>
Sub-station for NZBVA and NZBVE (wall mounting)

Sub-station NZBVA-U/A or NZBVE-U/A acc. to EN 50171 with:
• Control and monitoring system KOMBI CONTROL
• Switching device to maintained mode
• Switching device to non-maintained mode
• Control input for external mains monitoring devices for non-maintained mode
• 6 or 14 rack compartments for operation and monitoring modules
Cabinet with lockable door and inspection pane. Modules for 19” rack technology.

Technical data

<table>
<thead>
<tr>
<th>Mains supply:</th>
<th>1 ~ N PE 50/60 Hz</th>
<th>Cable entry:</th>
<th>from top</th>
</tr>
</thead>
<tbody>
<tr>
<td>U: 230 V (+6%/-10)</td>
<td>Cabinet: Steel sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 ~ N PE 50/60 Hz</td>
<td>Mounting: Wall mounting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U: 400 V (+6%/-10)</td>
<td>Degree of protection: IP54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery supply:</td>
<td>U= 216 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical class: I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated ambient temperature: -5°C to + 35°C</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fuses and terminal blocks according to technical specification

SlebLOGICA system:
Cabinet colour: light grey RAL 7035
Colour of modules: black/red

AutoLOGICA system:
Cabinet colour: brilliant blue RAL 5007
Colour of modules: grey/blue

Sub-station with 30 minutes rated fire protection for NZBVA and NZBVE (wall mounting)

Sub-station NZBVA-U/A-30 or NZBVE-U/A-30 acc. to EN 50171 with:
• Control and monitoring system KOMBI CONTROL
• Switching device to maintained mode
• Switching device to non-maintained mode
• Control input for external mains monitoring devices for non-maintained mode
• 6 or 14 rack compartments for operation and monitoring modules
Cabinet with maintaining fire protection of 30 minutes following DIN 4102-2 with lockable door. Modules for 19” rack technology.

Technical data

<table>
<thead>
<tr>
<th>Terminals:</th>
<th>1 ~ N PE 50/60 Hz</th>
<th>Body:</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Mains:</td>
<td>230 V (+6%/-10)</td>
<td>Highly compressed fire protection panels</td>
</tr>
<tr>
<td>3 ~ N PE 50/60 Hz</td>
<td>Surface coating: Sprela, grey</td>
<td></td>
</tr>
<tr>
<td>U: 400 V (+6%/-10)</td>
<td>(similar to RAL 7035)</td>
<td></td>
</tr>
<tr>
<td>– Battery:</td>
<td>U= 216 V</td>
<td>Mounting: Wall mounting</td>
</tr>
<tr>
<td>Cable entry:</td>
<td>From top via a fitted cable entry to which a fire protected cable duct can be tightly connected.</td>
<td></td>
</tr>
<tr>
<td>Degree of protection:</td>
<td>IP54</td>
<td></td>
</tr>
<tr>
<td>Electrical class:</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Rated ambient temperature:</td>
<td>-5°C to + 35°C</td>
<td></td>
</tr>
</tbody>
</table>

Fuses and terminal blocks according to technical specification
Design and configuration of NZBVA and NZBVE

The central battery systems NZBVA and NZBVE can be designed according to the instructions below:

1. Determine from the customer’s specifications:
   - Quantity and technical details of the exit sign and emergency luminaires to be supplied (lamp type, lamp power, ballast lumen factor and gear)
   - Quantity and technical details of the circuits (maintained mode, non-maintained mode, selectively switchable non-maintained mode, selectively switching-on non-maintained mode)
   - Type of luminaire monitoring
2. Power consumption in mains and battery mode (lamp and gear manufacturer data)\(^1\)
3. Charging unit
4. Battery
5. Operation and monitoring modules for the central station (system spreadsheet)
6. Options for the central station (system spreadsheet)
7. Output(s) to sub-station(s) if required
8. Central station (system spreadsheet)
   Type: Identification of the central station:

NZBVA-Z

230/___/__/___/___

NZBVE-Z

Rack compartment MULTI CONTROL-I
\(0 = \text{no}, 1 = \text{yes}\)
Duration (h) (1=1h/3=3h/8=8h)
Rack compartments needed for operation and monitoring modules
Battery capacity (Ah)
Charge current (A)

9. Operation and monitoring modules for the sub-station(s) (system spreadsheet)
10. Options for the sub-station(s) (system spreadsheet)
11. Sub-station(s) (system spreadsheet)
   Type: Identification of the sub-station:

NZBVA-UV

/___/___/

NZBVE-UV

Maintaining fire protection 30 min.(-30)
Rack compartments needed for operation and monitoring modules
Mounting (S = floor standing /W = wall mounting)

\(^1\) Power consumption of the ECSL, ECKC and EC modules on request.
## System spreadsheet NGBVA and NGBVE

<table>
<thead>
<tr>
<th>Type</th>
<th>NGBVA 24/6/.1/3</th>
<th>NGBVA 24/6/.3/9</th>
<th>NGBVE 24/6/.1/3</th>
<th>NGBVE 24/6/.3/9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charging unit L24/6</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
</tr>
<tr>
<td>Batteries with a lifetime expectation of 5 years</td>
<td>10 Ah to 115 Ah</td>
<td>10 Ah to 115 Ah</td>
<td>10 Ah to 115 Ah</td>
<td>10 Ah to 115 Ah</td>
</tr>
<tr>
<td>Transformers WLG</td>
<td>max. 1 x WLG 400 or 1 x WLG 750</td>
<td>max. 1 x WLG 750 + 2 x WLG 400 or 3 x WLG 400</td>
<td>max. 1 x WLG 400 or 1 x WLG 750</td>
<td>max. 3 x WLG 400 or 1 x WLG 750</td>
</tr>
<tr>
<td>Control and monitoring unit KOMBI CONTROL</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
</tr>
<tr>
<td>Built-in printer ED</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>LON-BUS interface</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Monitoring system LOGICA-Visual</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>USB interface</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>TCP/IP interface</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>GSM interface</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Mains switch/contactor dependent control module LSSA 230</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Mains switch/contactor dependent control module LSSA 24</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Staircase mains-/emergency lighting control module TSZ 230</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Operation and monitoring modules</td>
<td>Rack compartments (max. 3)</td>
<td>Rack compartments (max. 9)</td>
<td>Rack compartments (max. 3)</td>
<td>Rack compartments (max. 9)</td>
</tr>
<tr>
<td>AK 1 x 32 EÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>AK 2 x 32 EÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>AK 4 x 32 EÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Operation and monitoring modules</td>
<td>Rack compartments (max. 3)</td>
<td>Rack compartments (max. 9)</td>
<td>Rack compartments (max. 3)</td>
<td>Rack compartments (max. 9)</td>
</tr>
<tr>
<td>AK 1 x 32 SÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>AK 2 x 32 SÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>AK 4 x 32 SÜ</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Operation and monitoring module AK 32-SÜ-AC</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
<td>optional (max. 1)</td>
</tr>
<tr>
<td>Design</td>
<td>Wall-mounted combined cabinet (electronics and battery)</td>
<td>Wall-mounted combined cabinet (electronics and battery)</td>
<td>Wall-mounted combined cabinet (electronics and battery)</td>
<td>Wall-mounted combined cabinet (electronics and battery)</td>
</tr>
<tr>
<td>Dimensions (HxWxD)</td>
<td>1140 x 600 x 350 mm</td>
<td>1140 x 600 x 350 mm</td>
<td>1140 x 600 x 350 mm</td>
<td>1140 x 600 x 350 mm</td>
</tr>
</tbody>
</table>
System spreadsheet NGBVA and NGBVE

Main distribution board
"Emergency lighting supply"

Mains supply 1

Sub distribution board

Mains supply 2

"Emergency lighting supply"

Up to 36 emergency circuits with maximal 32 emergency luminaries per circuit.

Emergency luminaries in non-maintained mode
Emergency luminaries in maintained mode
Emergency luminaries in maintained mode

Connected to mains switches

Monitoringsystem with LOGICA VISUAL

TCP/IP interface

USB/RS485 interface

GSM interface

LON interface

Three phase mains monitoring

Central station

Data transmission and operating panels

Light switch/contactor

Light switch/contactor

Three phase mains monitoring

Light switch/contactor

The mains switch control module LSSA 230/24 transfers the status of the mains switches to any emergency lighting circuit or to any emergency luminaire.

Emergency luminaries may be switched with the light switch by using the LSSA mains switch control module.

Three phase mains monitoring

Light switch/contactor

Light switch/contactor

Light switch/contactor

Light switch/contactor
Up to 36 emergency circuits with maximal 32 emergency luminaries per circuit.

Emergency luminaries in non-maintained mode

Emergency luminaries in maintained mode

Emergency luminaries in maintained mode connected to mains switches

Sub distribution board
Mains supply 1

Sub distribution board
Mains supply 2

The mains switch control module LSSA 230/24 transfers the status of the mains switches to any emergency lighting circuit or to any emergency luminaire.

Emergency luminaries may be switched with the light switch by using the LSSA mains switch control module.
Group battery system NGBVA
Group battery system NGBVA acc. to EN 50171 with:
- Control and monitoring system KOMBI CONTROL
- Charging unit L24/6
- Switching device to maintained mode
- Switching device to non-maintained mode
- Internal mains monitoring device for maintained mode
- Control input for external mains monitoring devices for non-maintained mode
- 1 or 3 rack compartments for transformers
- 3 or 9 rack compartments for operation and monitoring modules

Control cabinet including a lockable door with inspection pane and detachable frame. Modules for 19" rack technology. Battery cabinet with lockable door and ventilating apertures.

Technical data
- Mains supply: 1 ~ N PE 50/60 Hz
  - U : 230 V (+ 6 %/−10)
  - 3 ~ N PE 50/60 Hz
  - U : 400 V (+ 6 %/−10)
- Fuse: 25 A, 3-pole
- Terminals: 25 mm²
- Cable entry: from top
- Mounting: Wall mounting
- Degree of protection: IP54/IP32
- Battery supply: U= 24 V
- Fuse: max. 80 A, 2-pole
- Rated ambient temperature: 20°C

SlebLOGICA system:
- Cabinet colour: light grey RAL 7035
- Colour of modules: black/red

AutoLOGICA system:
- Cabinet colour: brilliant blue RAL 5007
- Colour of modules: grey/blue

Group battery system NGBVE
Group battery system NGBVE acc. to EN 50171 with:
- Control and monitoring system KOMBI CONTROL
- Charging unit L24/6
- Switching device to maintained mode
- Switching device to non-maintained mode
- Internal mains monitoring device for maintained mode
- Control input for external mains monitoring devices for non-maintained mode
- 1 or 3 rack compartments for transformers
- 3 or 9 rack compartments for operation and monitoring modules

Control cabinet with lockable door and inspection pane. Modules for 19" rack technology. Battery cabinet with lockable door and ventilating apertures.

Technical data
- Mains supply: 1 ~ N PE 50/60 Hz
  - U : 230 V (+ 6 %/−10)
  - 3 ~ N PE 50/60 Hz
  - U : 400 V (+ 6 %/−10)
- Fuse: 25 A, 3-pole
- Terminals: 25 mm²
- Cable entry: from top
- Mounting: Wall mounting
- Degree of protection: IP54/IP32
- Battery supply: U= 24 V
- Fuse: max. 80 A, 2-pole
- Rated ambient temperature: 20°C

SlebLOGICA system:
- Cabinet colour: light grey RAL 7035
- Colour of modules: black/red

AutoLOGICA system:
- Cabinet colour: brilliant blue RAL 5007
- Colour of modules: grey/blue
Charging unit for NGBVA and NGBVE
Charging unit L24/6
Temperature-controlled charging based on IU characteristic with charging mode-dependent switching from charging to maintaining battery charging (float charging).

Technical data
- Charge voltage: 27 V
- Charge current: 5 A
- Design: 19" rack insert
  (1 rack compartment)
- Type: L24/6
- Order code: G32547
- Colour of modules: black/red

Batteries for NGBVA and NGBVE
Sealed lead-acid battery with a lifetime expectation of 5+ years at an ambient temperature of 20°C acc. to EN 50171.

Technical data:

<table>
<thead>
<tr>
<th>Battery capacity (Ah)</th>
<th>24</th>
<th>40</th>
<th>65</th>
<th>85</th>
<th>115</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery voltage (V)</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery current (A) 1 h</td>
<td>14.8</td>
<td>23.7</td>
<td>35.5</td>
<td>50.3</td>
<td>62.5</td>
</tr>
<tr>
<td>Maximum load (W)</td>
<td>355</td>
<td>568</td>
<td>852</td>
<td>1207</td>
<td>1500</td>
</tr>
<tr>
<td>Battery current (A) 3 h</td>
<td>5.7</td>
<td>9.1</td>
<td>13.6</td>
<td>19.5</td>
<td>29.8</td>
</tr>
<tr>
<td>Maximum load (W)</td>
<td>136</td>
<td>218</td>
<td>327</td>
<td>468</td>
<td>500</td>
</tr>
</tbody>
</table>

Transformer modules for NGBVA and NGBVE
 Transformers WLG
Unit for the conversion of 24V input D.C. voltage (battery) to 230V output D.C. voltage. One transformer supplies up to three operation and monitoring modules in battery mode.

Technical data
- Power: 350 W
  750 W
- Design: 19" rack insert
  (1 rack compartment)
  (2 rack compartments)
- Type: WLG 400
  WLG 750
- Order code: G32812
  G32811
- Colour of modules: black/red
  black/red

System equipment:
NGBVA/NGBVE 24/6/___/1/3: 1 x WLG 400 or 1 x WLG 750
NGBVA/NGBVE 24/6/___/3/9: 2 x WLG 400 + 1 x WLG 750 or 3 x WLG 400
Design and configuration of NGBVA and NGBVE

The group battery systems NGBVA and NGBVE can be designed according to the instructions below:

1. Determine from the customer's specifications:
   • Quantity and technical details of the exit sign and emergency luminaires to be supplied (lamp type, lamp power, ballast lumen factor and gear)
   • Quantity and technical details of the circuits (maintained mode, non-maintained mode, selectively switchable non-maintained mode, selectively switching-on non-maintained mode)
   • Type of luminaire monitoring
2. Power consumption in mains and battery mode (lamp and gear manufacturer data)\(^1\)
3. Charging unit
4. Battery
5. Transformer(s) (system spreadsheet)
6. Operation and monitoring module (system spreadsheet)
7. Options (system spreadsheet)

   Type: Defining the group battery system:

NGBVA
\[\underline{24/6/}\underline{__/__/}/\]
NGBVE

   Duration (h) (1=1 h/3=3 h)
   Rack compartments needed for operation and monitoring modules
   Rack compartments needed for transformers
   Battery capacity (Ah) (see above)
   Charge current (A)

\(^1\) Power consumption of the ECSL, ECKC and EC modules on request.
Compact emergency lighting systems NGBVE-K

The compact emergency lighting systems NGBVE-K offer a combination of decentralised power supply and centralised monitoring. Taking advantage from both self-contained and central battery systems these installations provide safety at its highest level. Depending on national regulations, these include:

- Decentralised supply of exit sign and emergency luminaires per building, section or fire protection zone
- Centralised monitoring of the complete emergency lighting installation
- Lower number of cables and distribution boards
- Minimised fire load in corridors and staircases
- Simplified battery replacement

Special features:
- Control and monitoring by the SuperLOGICA system
- Luminaire operation in:
  - Maintained mode
  - Non-maintained mode
  - Non-maintained mode with selective switching to maintained mode via external general lighting switches
  - Non-maintained mode with selective switching in case of partial mains incidents/failures via external mains monitoring modules
- Combination of all options in a single circuit
- Permanent check of the general lighting switches or of the mains monitoring modules via control inputs within the luminaire or system
- Allocation of control information to different luminaires and circuits without limitation
- No manual addressing of the luminaire number at the control and monitoring module within the luminaire required
- No manual coding of the control input at the control and monitoring module within the luminaire required
- Automatic allocation of the required circuits and detection of luminaires
- Individual monitoring of 20 luminaires in a circuit with or without selective irregularity report
- Automatic triggering of function and duration tests
- Automatic reporting to a test journal
- Centralised input and output of all parameters and data
- Operates luminaires with:
  - Incandescent lamps
  - Fluorescent tubes with electronic ballast
## System spreadsheet NGBVE-K

<table>
<thead>
<tr>
<th>Type</th>
<th>NGBVE-K 24/3/_/1/1-3</th>
<th>NGBVE-K 24/3/_/2/1-3</th>
<th>NGBVE-K 24/3/_/1/1-3</th>
<th>NGBVE-K 24/3/_/2/1-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charging unit L24/3</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
</tr>
<tr>
<td>Batteries with a lifetime expectation of 5 years</td>
<td>24 Ah to 65 Ah</td>
<td>24 Ah to 65 Ah</td>
<td>24 Ah to 65 Ah</td>
<td>24 Ah to 65 Ah</td>
</tr>
<tr>
<td>Transformers WLG 400</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
</tr>
<tr>
<td>Control and monitoring unit KOMBI CONTROL</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
<td>integrated</td>
</tr>
<tr>
<td>Signalling and switching module MSM</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Monitoring software LOGICA-Visual</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>USB interface</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSM interface</td>
<td>Choice of 1 only</td>
<td>Choice of 1 only</td>
<td>Choice of 1 only</td>
<td>Choice of 1 only</td>
</tr>
<tr>
<td>TCP/IP interface</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mains monitoring module DS 3 UV</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Mains switch/contactor dependend control module LSSA 230</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
</tr>
<tr>
<td>Mains switch/contactor dependend control module LSSA 24</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
<td>integrated (4)</td>
</tr>
<tr>
<td>Operation and monitoring modules AK 4 x 12 EU</td>
<td>Rack compartment (1)</td>
<td>Rack compartment (2)</td>
<td>Rack compartment (1)</td>
<td>Rack compartment (2)</td>
</tr>
<tr>
<td>Operation and monitoring modules AK 4 x 12 SÜ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (HxWxD)</td>
<td>600x420x250 mm</td>
<td>600x420x250 mm</td>
<td>950x480x250 mm</td>
<td>950x480x250 mm</td>
</tr>
</tbody>
</table>
Compact emergency lighting system NGBVE-K

Compact emergency lighting system NGBVE-K acc. to EN 50171 with:
• Control and monitoring system KOMBI CONTROL
• Charging unit L24/3
• Switching device to maintained mode
• Switching device to non-maintained mode
• Internal mains monitoring device for maintained mode
• Control input for external mains monitoring devices for non-maintained mode
• 4 or 8 luminaire circuits
  • for individual monitoring without selective irregularity report
  • for individual monitoring with selective irregularity report
• 4 control inputs to switch selectively emergency lighting luminaire circuits from non-maintained to maintained mode depending on the general lighting. (control: 230V AC or DC)
• 4 control inputs switch individual emergency lighting luminaire circuits from non-maintained to maintained mode depending on partial incidents or failures of the general lighting. (control: isolated contact)
• Cabinet with separate electronics and battery compartments, lockable door with inspection pane and ventilation apertures in the battery compartment

Technical data

| Mains supply: | 1 – N PE 50/60 Hz  |
| U : 230 V (+ 6%/-10) | |
| 3 – N PE 50/60 Hz  |
| U : 400 V (+ 6%/-10) | |

| Fuse: | 20 A, 3-pole |
| Terminals: | 6 mm² |
| Battery supply: | U= 24 V |
| Fuse: | max. 50 A, 2-pole |

SeleLOGICA system:  
Cabinet colour: light grey RAL 7035  
Colour of modules: black/red

AutoLOGICA system:  
Cabinet colour: brilliant blue RAL 5007  
Colour of modules: grey/blue

Batteries for NGBVE-K

Sealed lead-acid battery with a lifetime expectation of 5+ years at an ambient temperature of 20°C acc. to EN 50171.

Technical data

<table>
<thead>
<tr>
<th>Battery capacity (Ah)</th>
<th>24</th>
<th>40</th>
<th>65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum load (W) 1h</td>
<td>355</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum load (W) 3h</td>
<td>136</td>
<td>218</td>
<td>327</td>
</tr>
</tbody>
</table>
Design and configuration of NGBVE-K

The compact emergency lighting systems NGBVE-K can be designed according to the instructions below:

1. Determine the following from the customer’s specifications:
   - Quantity and technical details of the exit sign and emergency luminaires to be supplied (lamp type, lamp power, ballast lumen factor and gear)
   - Quantity and technical details of the circuits (maintained mode, non-maintained mode, selectively switchable non-maintained mode, selectively switching-on non-maintained mode)
   - Type of luminaire monitoring
2. Power consumption in battery mode (lamp and gear manufacturer data)
3. Battery (table 1)
4. Operation and monitoring module (system spreadsheet)
5. Options (system spreadsheet)

Type: NGBVE-K 24/3/__/__/1-3

<table>
<thead>
<tr>
<th>Charge voltage</th>
<th>Charge current</th>
<th>Battery capacity</th>
<th>Operation and monitoring modules</th>
<th>Operation duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>40</td>
<td>65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Power consumption of the ECSL, ECKC and EC modules on request.

<table>
<thead>
<tr>
<th>Battery capacity (Ah)</th>
<th>24</th>
<th>40</th>
<th>65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum load (W)</td>
<td>1h</td>
<td>355</td>
<td>-</td>
</tr>
<tr>
<td>Maximum load (W)</td>
<td>3h</td>
<td>136</td>
<td>218</td>
</tr>
</tbody>
</table>

Table 1: Battery

Note:
When using modules from the Sleb and KCE range consider a power consumption of 1W per module.
Consider 10W power consumption for every transformer.
Monitoring system LOGICA-Visual

Panel PC
Processor: Pentium IV, 1,0 GHz
15" touch screen
80 GB hard disk
512 MB-RAM
WinXP and LOGICA-Visual pre-installed

Technical data
Design: 19" rack insert
Type: LOGICA-Visual
Order code: F90210

Interface modules for LOGICA-Visual

USB 2.0/RS485 interface
Module used to interface a group or central battery system with a PC running the monitoring software LOGICA-Visual.

Technical data
Design: Module for DIN rail
Body: Metal
Type: USB 2.0/RS485-NGZ
Order code: FB16319

GSM interface
Module used to interface a group or central battery system with a PC running the monitoring software LOGICA-Visual via the GSM network.

Technical data
Design: Module for DIN rail
Body: Plastic
Type: GSM interface
Order code: FB16306-NZ

TCP/IP interface
Module used to interface a group or central battery system with a PC running the monitoring software LOGICA-Visual via Ethernet.

Technical data
Design: Module for DIN rail
Body: Metal
Type: TCP/IP-NGZ
Order code: G31209
LON bus interface for NGBVA, NGBVE, NZBVA and NZBVE

LON bus interface LON-NGZ

Module for communication with a building management system via LON bus.

Control of:
- Maintained mode ON/OFF, function test and insulation test triggering

Signalling of:
- Emergency mode suppression ON/OFF, mains mode, battery mode, mains failure on main distribution board (phase L1, L2, and L3), mains failure on sub distribution board, group fault, charge fault, battery fault, luminaire fault, bus fault, deep discharge

Signalling and switching module for NGBVA, NGBVE, NZBVA and NZBVE

Signalling and switching module MSM

Display of:
- Emergency mode suppression
- Operating mode
- Group fault

Control of:
- Maintained mode ON/OFF

Technical data

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Wall mounting</th>
<th>Electrical class:</th>
<th>Type:</th>
<th>Order code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body:</td>
<td>Plastic</td>
<td>II</td>
<td>MSM</td>
<td>G31015</td>
</tr>
<tr>
<td>Dimensions (HxWxD):</td>
<td>160x80x60 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of protection:</td>
<td>IP 65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signalling and switching module MSM

Display of:
- Emergency mode suppression
- Operating mode
- Group fault

Control of:
- Maintained mode ON/OFF

Technical data

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Recessed wall mounting</th>
<th>Electrical class:</th>
<th>Type:</th>
<th>Order code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body:</td>
<td>Metal</td>
<td>I</td>
<td>MSM</td>
<td>G31045</td>
</tr>
<tr>
<td>Dimensions (HxWxD):</td>
<td>86x86x53 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of protection:</td>
<td>IP 20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signalling and switching module MSM

Display of:
- Emergency mode suppression
- Operating mode
- Group fault

Control of:
- Maintained mode ON/OFF
- Stand by operation ON/OFF
- Stand by operation with reduced light output (e.g. for cinemas)

Technical data

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Wall mounting</th>
<th>Electrical class:</th>
<th>Type:</th>
<th>Order code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body:</td>
<td>Plastic</td>
<td>II</td>
<td>MSM</td>
<td>G31044</td>
</tr>
<tr>
<td>Dimensions (HxWxD):</td>
<td>185x245x107 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of protection:</td>
<td>IP 65</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mains monitoring module for NGBVA, NGBVE, NZBVA and NZBVE

Mains monitoring module DS 3 UV
Module used in sub distribution boards to monitor the mains supply for general lighting.

Mains input: 3-phase
Control output: 2 change-over contacts, isolated (230V/3A)

Technical data
Mounting: DIN rail
Body: Plastic
Dimensions (HxWxD): 95 x 48 x 42 mm
Degree of protection: IP 20
Type: DS 3 UV
Order code: G31020A

Switching modules for NGBVA, NGBVE, NZBVA and NZBVE

Mains switch/contactor dependent control module LSSA 230
Module for selective switching of individual emergency lighting luminaire circuits from non-maintained to maintained mode depending on the general lighting. Allocation of control channels to the luminaire circuits without limitation.

Technical data
Control channels: 8
Control: 230 V AC or DC
Mounting: DIN rail
Version for mounting in central or sub station
Order code: G31204
Version for mounting in distributor (max. 15 pieces)
Order code: G31214

Mains switch/contactor dependent control module LSSA 24
Module used to selectively switch individual emergency lighting luminaire circuits from non-maintained to maintained mode depending on partial incidents or failures of the general lighting. Allocation of control channels to the luminaire circuits without limitation.

Technical data
Control channels: 8
Control: switching contact, isolated
Mounting: DIN rail
Version for mounting in central or sub station
Order code: G31207
Version for mounting in distributor (max. 15 pieces)
Order code: G31215

Staircase general/emergency lighting control module TSZ 230
Module used to time-dependent control individual luminaire circuits of emergency and general lighting via push buttons of the general lighting system acc. to DIN VDE 0108-4, section 6.2 and DIN VDE 0108-5, section 6.2. Allocation of control channels to the luminaire circuits without limitation.

Technical data
Control channels: 4
Control: Push button
Mounting: DIN rail
Order code: G31198

Printer for NGBVA, NGBVE, NZBVA and NZBVE

Printer ED

Technical data
Paper type: Thermal paper
Paper width: 80 mm
Design: 19" rack insert
Type: ED
Order code: M10053A
Order code (Printer paper): H14146
Operation and monitoring module for NGBVA, NGBVE, NZBVA and NZBVE

**Operation and monitoring module AK 1 x 32 EÜ**
Modules for one luminaire circuit to operate 1 x 32 luminaires with:
- Incandescent lamps
- Halogen lamps + electronic transformer
- Fluorescent tubes + electronic ballast
Monitoring:
- Individual monitoring with selective irregularity report

**Technical data**
- Maximum load: 1 x 1296 W
- Inrush current load: 1 x 42500 W
- Type: AK 1 x 32 EÜ
- Colour of modules: black/red
- Order code: G32754-SL

**Operation and monitoring module AK 2 x 32 EÜ**
Modules for 2 luminaire circuits to operate 2 x 32 luminaires with:
- Incandescent lamps
- Halogen lamps + electronic transformer
- Fluorescent tubes + electronic ballast
Monitoring:
- Individual monitoring with selective irregularity report

**Technical data**
- Maximum load: 2 x 648 W
- Inrush current load: 2 x 35000 W
- Type: AK 2 x 32 EÜ
- Colour of modules: black/red
- Order code: G32818-SL

**Operation and monitoring module AK 4 x 32 EÜ**
Modules for 4 luminaire circuits to operate 4 x 32 luminaires with:
- Incandescent lamps
- Halogen lamps + electronic transformer
- Fluorescent tubes + electronic ballast
Monitoring:
- Individual monitoring with selective irregularity report

**Technical data**
- Maximum load: 4 x 324 W
- Inrush current load: 4 x 27500 W
- Type: AK 4 x 32 EÜ
- Colour of modules: black/red
- Order code: G32824-SL

**Operation and monitoring module AK 1 x 12 SÜ-HL**
Modules for 1 luminaire circuit to operate 1 luminaire with:
- High pressure lamp + electronic ballast
Monitoring:
- Individual monitoring with selective irregularity report

**Technical data**
- Maximum load: 1 x 250 W
- Type: AK 1 x 12 SÜ-HL
- Colour of modules: black/red
- Order code: G32813

---

1 Max. power for 1 ms
2 The AK 1 x 12 SÜ-HL needs an additional capacitor module. One capacitor module (1 rack compartment) supplies two AK 1 x 12 SÜ-HL. In one 19" rack it is possible to insert maximum four AK 1 x 12 SÜ-HL and two capacitor modules.
Operation and monitoring module for NGBVA, NGBVE, NZBVA and NZBVE

Operation and monitoring module AK 1 x 32 SÜ
Modules for one luminaire circuit to operate 1 x 32 luminaires with:
• Incandescent lamps
• Halogen lamps + electronic transformer
• Fluorescent tubes + electronic ballast
Monitoring:
• Individual monitoring without selective irregularity report

Technical data
Maximum load: 1 x 1296 W
Inrush current load: 1 x 42500 W
Type: AK 1 x 32 SÜ
Colour of modules: black/red
Order code: G32797

Operation and monitoring module AK 2 x 32 SÜ
Modules for 2 luminaire circuits to operate 2 x 32 luminaires with:
• Incandescent lamps
• Halogen lamps + electronic transformer
• Fluorescent tubes + electronic ballast
Monitoring:
• Individual monitoring without selective irregularity report

Technical data
Maximum load: 2 x 648 W
Inrush current load: 2 x 35000 W
Type: AK 2 x 32 SÜ
Colour of modules: black/red
Order code: G32815

Operation and monitoring module AK 4 x 32 SÜ
Modules for 4 luminaire circuits to operate 4 x 32 luminaires with:
• Incandescent lamps
• Halogen lamps + electronic transformer
• Fluorescent tubes + electronic ballast
Monitoring:
• Individual monitoring without selective irregularity report

Technical data
Maximum load: 4 x 324 W
Inrush current load: 4 x 27500 W
Type: AK 4 x 32 EÜ
Colour of modules: black/red
Order code: G32820

Operation and monitoring module AK 1 x 12 SÜ-AC
Modules for one luminaire circuit to operate 1 x 12 luminaires with:
• Halogen lamps + magnetic transformer
• Fluorescent tubes + magnetic ballast (LPF circuit, non-compensated)
Monitoring:
• Individual monitoring without selective irregularity report

Technical data
Maximum load: 575 VA / 400 W
Rated frequency: 50 Hz (square wave)
Type: AK 1 x 12 SÜ-AC
Colour of modules: black/red
Order code: G32857
Monitoring and switching module

ALOG

Module in SuperLOGICA technology with following functions:

• Luminaire monitoring (lamp + gear) with selective irregularity report
• Luminaire allocation to modes:
  • Non-maintained mode/maintained mode/non-maintained mode, selectively switchable via internal LSSA control input or external LSSA control module
  • Transmission of the control information from an internal LSSA control input to further luminaires within the same or other luminaire circuits
• No need to manually encode the luminaire address at the module
• No need for the manual coding of the LSSA control input at the module

Every module and every luminaire is equipped with an identification code. There is no manual addressing required.

Technical data

| Lamp or system power: | 5 W to 120 W |
| Mounting: | to be installed in luminaires |
| Mains voltage: | 198 V to 254 V |
| Body: | Metal |
| Mains frequency: | 50 Hz |
| Degree of protection: | IP 20 |
| Battery voltage: | 176 V to 254 V |
| Electrical class: | I |
| Rated ambient temperature: | -10 °C to +50 °C |
| Type: | ALOG |
| Order code: | G31351 |

Monitoring and switching module

ALOG-DALI

Module with the same functions as the module ALOG, but with DALI control input to connect with luminaires featuring a DALI control unit.

Technical data

| Type: | ALOG-DALI |
| Order code: | G31354 |

Monitoring and switching module with HF-ballast

Module is a combination of a HF-ballast type EC and the ALOG monitoring and switching unit.

• HF-ballast available with fixed or variable ballast lumen factor

Technical data

<table>
<thead>
<tr>
<th>Order code</th>
<th>Lamp</th>
<th>Ballast lumen factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>G31352</td>
<td>T16-Lp 4 - 13 W</td>
<td>75%</td>
</tr>
<tr>
<td>TC-Lp 5 - 11 W</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>T16-Lp 14 - 21 W</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>G31353</td>
<td>T26-Lp 18 W</td>
<td>75%</td>
</tr>
<tr>
<td>TC-Lp 13 - 26 W</td>
<td>75%</td>
<td></td>
</tr>
</tbody>
</table>
Monitoring and switching module with LED ballast

Module is a combination of an operation unit for LEDs and the ALOG monitoring and switching unit.

Technical data

<table>
<thead>
<tr>
<th>Output voltage: 15 - 22.5V to operate</th>
<th>Order code</th>
<th>Lamp</th>
<th>Ballast lumen factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5 Power LEDs (serial connection)</td>
<td>G31355</td>
<td>2-4 PowerLEDs</td>
<td>100%</td>
</tr>
<tr>
<td>LED current: 400 mA</td>
<td>G31353</td>
<td>3-5 PowerLEDs</td>
<td>100%</td>
</tr>
</tbody>
</table>

Monitoring and switching module Sleb

Module in SuperLOGICA technology with following functions:
• Luminaire monitoring (lamp + gear) with selective irregularity report
• Luminaire allocation to modes:
  • Non-maintained mode/maintained mode/non-maintained mode, selectively switchable via internal LSSA control input or external LSSA control module
  • Transmission of the control information from an internal LSSA control input to further luminaires within the same or other luminaire circuits
  • No need to manually encode the luminaire address at the module
  • No need for the manual coding of the LSSA control input at the module

Every module and every luminaire is equipped with an identification code. There is no manual addressing required.

Technical data

<table>
<thead>
<tr>
<th>Lamp or system power: 5W to 120 W</th>
<th>Mounting: to be installed in luminaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains voltage: 198V to 254V</td>
<td>Body: Metal</td>
</tr>
<tr>
<td>Mains frequency: 50 Hz</td>
<td>Degree of protection: IP 20</td>
</tr>
<tr>
<td>Battery voltage: 176V to 254V</td>
<td>Electrical class: I</td>
</tr>
<tr>
<td>Rated ambient temperature: -10°C to +50°C</td>
<td>Type: Sleb</td>
</tr>
</tbody>
</table>

Monitoring and switching module Sleb-DALI

Module with the same functions as the module Sleb, but with DALI control input to connect with luminaires featuring a DALI control unit.

Technical data

| Type: Sleb-DALI | Order code: G31372 |

Note:
As on the market a lot of DALI ballasts or converters with different functions it is necessary to check the combination of Sleb-DALI and DALI ballast or DALI converter before.
Monitoring and switching module with HF-ballast

Module is a combination of a HF-ballast type EC and the Sleb monitoring and switching unit.

- HF-ballast available with fixed or variable ballast lumen factor

**Technical data**

- Mains voltage: 198 V to 254 V
- Battery voltage: 176 V to 254 V
- Mains frequency: 50 Hz
- Ambient temperature: -10 °C to + 50 °C
- Mounting: to be installed in luminaires
- Body: Metal
- Degree of protection: IP 20
- Electrical class: I

<table>
<thead>
<tr>
<th>Order code</th>
<th>Lamp</th>
<th>Ballast lumen factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>G31373</td>
<td>T16-Lp 4 - 13 W</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>T16-Lp 5 - 11 W</td>
<td>75%</td>
</tr>
<tr>
<td>G31374</td>
<td>T26-Lp 18 W</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>TC-Lp 13 - 26 W</td>
<td>75%</td>
</tr>
</tbody>
</table>

Monitoring and switching module with LED ballast

Module is a combination of an operation unit for LEDs and the Sleb monitoring and switching unit.

**Technical data**

- Output voltage: 15 - 22.5 V to operate 2-5 Power LEDs (serial connection)
- LED current: 400 mA

<table>
<thead>
<tr>
<th>Order code</th>
<th>Lamp</th>
<th>Ballast lumen factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>G31360</td>
<td>2 - 4 PowerLEDs</td>
<td>100%</td>
</tr>
<tr>
<td>G31361</td>
<td>3 - 5 PowerLEDs</td>
<td>100%</td>
</tr>
</tbody>
</table>