manual Central Power Supply System

MultiControl



Central Power Supply System with Central Battery and micro-processor-controlled Function Control System

> MultiControl G



Installation Instructions

All work on the system such as installation, commissioning and maintenance has to be carried out by authorised personnel only (see also DIN VDE 0105 part1 and BGV A2)!

1. Unpacking and placement

Unpack the unit, check for possible shipping damages and complete accessories and then place at the installation location. The supplied batteries have to be charged within 6 months after delivery as they are only shock-loaded before delivered. Caution! The unit can be top-heavy with the door open.

2. <u>Battery hook-up, battery lines and symmetry lines</u>

Install battery only with fuses (F1, F2, F4) removed!

This equipment requires DC 216V i.e. the batteries must be connected in series! See connection example and installation sketch.

Keep battery fuses removed until final commissioning!

Caution!

- use the supplied terminal covers and cell connectors or short-circuit secure wiring
- check for correct polarity (wrong polarity is indicated by an acoustic signal)
- Connect blocks (18 blocks at 12V or 36 blocks at 6V) in series
- connect symmetry line for charge circuit monitoring to the respective battery block (block 09 (-) or block 10 (+)) → center voltage (F3)
- measure battery voltage at fuses F2/F3/F4 (battery side)
- > connected voltage between F2-F4 ca. 230 V DC i.e. F2-F3 and F3-F4 ca. 115 V DC

3. Connecting consumers

Check the final circuits for insulation faults and connect with correct polarity to the intended terminals (see connection plan). Check consumers for "**DC**" applicability (except BGV, ZAC and ES5000).

4. <u>Connection of additional mains monitors and a mimic panel</u>

When using additional external mains monitors, e.g. Power Control, pay attention to the following:

- the contacts of the mains monitor must be potential free
- remove the bridge between F7-F8 and connect the contacts of the mains monitor

More information on connecting a critical circuit (quiescent current loop) to the emergency lighting system can be found in the electrical drawings or connection examples in the termination schedule.

Caution! The quiescent current loop has a potential of 15V AC when using a monitored quiescent current loop with a CCIF module with 24V DC.

Input of external voltage can lead to system destruction!

When using a mimic panel, e.g. BMT24, connect SIBE and mimic panel According to the connection example (**termination plan BMT24**).

The operation voltage for the mimic panel is 24V DC.

5. Mains connection

Hook up the system while disconnected from the power source and with fuse F1 removed (3-pole fuse disconnector switch).

Caution! A three-phase power supply with incorrectly connected zero line can lead to system destruction as most of the internal consumers work at 230 V 50 Hz.

6. Activating the system

Check all screw joints and clamped joints for correct contact and tightness. The system can be switched on after all connections (points 2-5) have been verified again.

- F2 and F4 stay removed

- switch the mode selection switch (MSS) – above the electronic cabinet door – to position **0** (charging mode)

- connect mains by means of F1 (fuse disconnector switch) \rightarrow charger unit and computer boot

Possible messages (system failure / collective fault / deep discharge) result from the yet missing

Battery fuses. The green LED (mains operation) must be illuminated in any case.

7. Battery activation and establishing readiness for operation

- insert and fasten battery fuses F2 and F4
- clear error messages via "reset errors" in the menu
- mode selection switch (MSS) to position 1 (ready for operation)
- depending on the system type daily test, number of circuits and number of luminaires can now be programmed.

Now the system is ready to operate.

8. System switch-off (RESET)

Please follow this sequence when shutting down the system.

- switch the MSS to **0** (charging mode) – prerequisite: the MSS is set to "BAS/BMT-controlled in the menu item "operation mode

- switch off mains switch F1 - only the LED message "mains failure" must be displayed

- remove battery fuses F2 and F4

Wait at least 10 seconds before rebooting the system.

Rebooting the system is carried out in reverse sequence.

Non-observance of this sequence may lead to system damage.

9. <u>Re-establishing the protection level</u>

After finishing work on the cable entries and exits, the protection level of the system has to be re-established. This means all cable entries and exits have to be sealed professionally so that the system meets the required protection level (see type plate).

10. Troubleshooting and help

In case of problems see help list at the end of the system documentation for troubleshooting. You may also contact your dealer. A telephone number can be found in the documentation as well as in the service address (in the main menu).

Battery settings (40 Ah 2x grounds)



connection example mains supply



main supply

connecting example network / messages / BUS / CCIF



connection example battery



connecting example circuits 01-36







Terminal Diagram BMT 24 (7 wire cable)



(on the mounting board in the emergency lighting device)

Terminal Diagram BMT 24 (11 wire cable)

	for the connection between Sibe and BMT 24 please use cables in compliance with VDE 0815
	Image: constrained bit in the bit in the bit is constrained bit.

Connection panel Sibe system (on the mounting board in the emergency lighting device)

Settings of SAM inputs Einstellungen der SAM-Eingänge



Case	Circuit	SAM input	Contact	Maintained	Non Maintained	Comment
				lamps	lamps	
Fall	Stromkreis	SAM Eingang	Kontakt	Dauer-	Bereitschafts-	Bemerkung
				leuchten	leuchten	
1	continuous	DS	OPEN	OFF	OFF	maintained lamps are switched
			CLOSED	ON	OFF	non maintained lamps stay off
	dauernd	DS	OFFEN	AUS	AUS	Dauerlicht wird geschalten
			GESCHLOSSEN	AN	AUS	Bereitschaftslicht bleibt aus
2	continuous	s-MB	OPEN	ON	OFF	maintained lamps stay switched on
			CLOSED	ON	ON	non Maintained lamps are switched
	dauernd	g-MB	OFFEN	AN	AUS	Dauerlicht bleibt eingeschalten
			GESCHLOSSEN	AN	AN	Bereitschaftslicht wird geschalten
3	stand by	MB	OPEN	ON	ON	like line monitor but only for 1 circuit
			CLOSED	OFF	OFF	time delay activ
	in Bereitschaft	MB	OFFEN	AN	AN	wie bei Phasenüberwachung
			GESCHLOSSEN	AUS	AUS	Nachlaufzeit aktiviert
4	stand by	s-MB	OPEN	OFF	OFF	maintained and non maintained lamps are
			CLOSED	ON	ON	switched together
	in Berietschaft	g-MB	OFFEN	AUS	AUS	Dauerlicht und Bereitschaftslicht werden
			GESCHLOSSEN	AN	AN	zusammen aus- und eingeschalten
5	stand by	DS				Forbidden -> no raction
	in Bereitschaft	DS				nicht zulässig -> keine Reaktion

Emergency lighting system MULTICONTROL

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1. Preface

The central battery system MULTICONTROL is a central power supply system according to the central battery principle and is used for independent power supply of necessary safety devices during mains failures in compliance with existing European standards EN 50171, EN 50172, EN 50272-2 and E8002.

The central battery system MULTICONTROL is a power supply system with easy to handle 19"- draw-out units and features the qualities of a reliable, economical and environment-friendly emergency lighting system. This central battery system is operated in changeover mode according to EN 50171 and supplies the connected consumers directly from the general power supply system. In case of a mains failure, the voltage monitor of the automatic mains changeover device switches to the installed battery voltage supply.

Through its trend-setting characteristics and the individual modules this emergency lighting system can meet the manifold customer demands. The integration of decentralised sub-stations and sub-distributors guarantees high flexibility, reliability and ease of use. The systems can each be equipped with a self-contained battery, or they can be supplied by a central battery if this is more favourable for the installation. This reduces the installation effort of the system in buildings and complexes of buildings to a minimum.

The standard characteristics such as the monitoring of self-contained luminaires and electric circuits without additional data link as well as the asynchronous balance mode of different switching types in a final circuit are trend-setting in the field of emergency lighting. Further characteristics of these emergency lighting systems are the large UVV-compatible connector panel as well as the top and bottom entries for cables which are connected to touch proof 3-line through terminals. The use of BUS plug systems for all component groups, where each slot is already pre-wired, makes this central battery system easy to maintain and furthermore enables extension of the system without any difficulties. The system can be adapted to the demands of the emergency lighting and building illumination architecture via various peripheral modules. These peripheral modules are linked to the device via bus systems, which keeps the installation effort low. They are robust and resistant to malfunctions and faulty installation.

A maximum battery lifetime as well as a completely modular construction can be achieved by using intelligent charger modules with latest transistor technology and IUTQ curve family. Each charger module generates a charge current of 2.5A which can be increased at any time by parallel operation of several charger stages and thus adapted to any battery size. A simple adjustment of the charging curve via microprocessor-controlled function control system enables the application with different kinds of batteries (Pb, NiCd etc.). The emergency lighting system MULTICONTROL is operated in changeover mode. This means in mains operation the connected mains voltage (3x 230V/50Hz) is used to supply the consumers. In emergency operation the system works with a nominal battery voltage of 216V (DC). Depending on the kind of electric circuit (DCM / ACM) the consumers are supplied with a 216V / DC voltage (DCM) or a 230V / AC voltage.

The battery capacity is defined by the required consumer wattage including the efficiency factor.



Central battery system MULTICONTROL to supply

safety and emergency luminaires 230V/216V AC/DC in compliance with DIN EN 50171, DIN EN 50172, DIN EN 50272-2, BGV A2 (VBG4) with integrated monitoring of self-contained luminaires and electric circuits without additional bus link.

Included in delivery:

- keyboard
- built-in and pre-wired I/O- module

Option (separate order):

- SAM- modules
- additional I/O module
- remote mimic panel

2. Mechanical setup

The emergency lighting system MULTICONTROL can be delivered in different cabinet sizes. This emergency lighting system is delivered in a sheet steel cabinet IP21 by default. A higher protection level e.g. IP54 is also possible.

All cabinet sizes are proprietary developments in compliance with the existing requirements of EN 50171 and IEC 60598-1 as well as EN 50272-2. Electronic components and battery are always housed separately.

At customer's option the emergency lighting system is available in two separate housings (electronics housing and battery housing) as wall or standing cabinet. A combined cabinet which houses the electronic components as well as the battery with internal separation is also possible. The different cabinet sizes depend on required space and battery size. The batteries are arranged on flat panels. Large ventilation openings guarantee the necessary air circulation according to EN 50272-2.

The default finishing is a texture finish of the colour RAL 7035 in a plastic powder coating procedure. Non-standard finishings are also possible on request.

In order to realise an ease of use and service, the electronic components are housed in 19" drawers with a height of 3 HE, in a combination of swing frame and cabinet door, which can optionally be equipped with glass doors. Necessary beams for the 19" components are fixed to the 180°-swivelling door.

The connector panel is inside the cabinet on a mounting plate and is used to connect the system to the existing mains as well as to the consumers. The connector panel is easily accessible even when the door is open.

The cable entries can be realised from the top or bottom alternatively. In order to realise a cable entry from the bottom a stand or cable frame can be ordered additionally (100mm or 200mm height).

3. Electrical setup

The electronic components are 19" units with a height of 3 HE, European standard 100x160mm housed in a combination of swing frame and cabinet door. Necessary beams for the 19" units are fixed to the 180°-swivelling door and connected via bus plates or electrically wired. The wiring of the rear bus plates to the internal connector panel is realised through cable conduits and wiring channels according to EN 50085.

The connector panel is inside the cabinet on a mounting plate and realises the connection via two- or three-level terminal with CAGE CLAMP®COMPACT connection according to EN 60947-7-1.

The emergency lighting system possesses besides the battery the following electronic components, which are connected via internal CAN - Bus and automatically identified and managed through a Plug&Play procedure:

- charger units as 19" units incl. corresponding isolating transformer
- microprocessor-controlled function control system as 19" unit
- printer type BD04 (optional)
- electric circuit type DCM (different versions)
- electric circuit type ACM (different versions)
- opto- / relay interface module type I/O module
- ethernet coupling module

As external (optional) devices are available:

- mimic panel type BMT24(S)* or MCT12(S)*
- light switch scanning module type SAM08
- three-phase mains monitoring type PowerControl PC230
- single-phase mains monitoring type BEPUE, EPU-L
- Iuminaire monitoring units type DCBLU., MU., LMA..
- electronic ballast for compact and linear luminaires type MLU...,MT... (see also respective product information in appendix)
- *) (S) \rightarrow mimic panel version with key switch

4. Description of the components and their function

4.1 Battery

Depending on the requirements Pb or NiCd batteries of closed or locked type with a lifetime of at least 10 years at a surrounding temperature of 20°C are used. They have to be in compliance with the standard for non-portable batteries (EN 60623 and EN 60896-1/-2).

The battery capacity is defined by the required consumer wattage total and the defined buffering time including a 25% ageing reserve

4.2 Charger unit (not applicable with sub-stations)

The clocked charger unit is a compact 19^e unit with 12.5TE or 14TE overall width according to EN 60146-1-1. The connection with the rear circuit board is realised through a rear connector plug.

The primary voltage supply is carried out via single-phase isolating transformer or with higher charging power via three-phase isolating transformer according to EN 61558-2-6.

The battery charging is realised by the central control and monitoring unit via internal CAN-Bus with IUTQ characteristics, which ensures an optimal battery lifetime through consideration of

- current
- voltage
- temperature
- existing battery charge

according to EN 50171 paragraph: 6.2.2, paragraph: 6.2.3, paragraph: 6.2.5 and paragraph: 6.2.6; EN 50272-2 paragraph.: 11.1 and paragraph: 11.2; EN 60146-2 as well as DIN VDE 0558 part1 and DIN VDE 0160.

An adjustment of the charging control to the different battery types is possible without any problems and is carried out via central control and monitoring unit.

One charger unit generates up to 2.5A charging current and can be adjusted to the respective battery capacity through parallel operation of several charger units. A charge extension is thus possible also at a later time without any difficulties as the rear connector plugs were already adapted to the existing bus slots in the development phase.

This means further units can be plugged into the slots for final circuit units, whereas one charger unit requires two free final circuit slots (2x 7TE). The connection to the primary voltage of the respective isolating transformer is carried out via connectors on the rear bus plate. The central control and monitoring unit automatically identifies the charger unit by means of the integrated Plug&Play system. The charger unit can then be queried using the "Info" pushbutton and adjusted to the required battery charge.

Additionally each charger unit possesses an integrated battery voltage monitor which disconnects the charger unit from the mains voltage, if the output voltage is higher than the maximal charging voltage in order to protect the battery from overcharge.

4.3 Central control and monitoring unit

4.3.1 Description of functions

The central control and monitoring unit represents the heart of



this emergency

lighting system. It was developed especially for the application in these emergency lighting systems and realises all switching and monitoring functions. It is an automatic control and test device according to EN 50171, ÖVE EN2 part1 and E8002. It carries out a permanent monitoring of the battery charge in intervals shorter than 5 minutes and a weekly switching test as well as a function test of all connected luminaires. The test results are recorded according to DIN EN 62034; VDE 0711-400:2007-06, ÖVE EN2 part1 paragraph 9.2.8 and E8002. At least 2000 test results are stored which is equivalent to 7 years of registration with one test per week. The tests are managed automatically.

The central control and monitoring unit possesses its own power supply unit and has its operating system in a non-volatile memory. The below mentioned functions are realised by the central control and monitoring unit:

4.3.1.1 Measurements / Monitoring

- battery voltage
- charging and discharging current of the battery
- symmetric voltage of the battery
- mains input voltage of all 3 phases including neutral conductor monitoring
- temperature monitoring of the entire system, especially the batteries or the rooms where they are located (via optional temperature sensors)
- permanent insulation checks of the system according to DIN VDE 0100 T410, if necessary localisation of the insulation defect with specification of the component,

4.3.1.2 Automatic test device

The test device has the following characteristics:

- backlit, 8 line LC graphic display for clear text information on:
 - system status
 - positions of the luminaires, circuits and further components (42 characters each)
 - hierarchically structured, menu-guided programming of the system
 - context-sensitive operation support ("help function")

The system can be operated in German as well as in English. The input

is carried out via ergonomic high-quality key panel consisting of 4 arrow keys and 1 enter key. All keys are sealed according to IP67 and have a lifetime of more than 10⁷ actuations.

- the status is displayed additionally by 5 programmable, multi-coloured LED, preconfigured for:
 - mains operation
 - battery operation
 - charge
 - deep discharge
 - malfunction
- 3 programmable context-sensitive pushbuttons, preconfigured for single key operation of:
 - help function
 - system programming
 - function test
 - acoustic signaller
- front-sided connectors:
 - Centronics interface for connecting an external printer
 - PS/2-keyboard interface for programming all user-specific data
 - Ethernet link for connecting a laptop
 - memory card for saving or transmitting test results and system configuration as well as for easy software update

The memory card can be specified as "Multimedia - Card"; it can be linked directly to PC/Laptop without installation of drivers or software.

- system-sided connectors:
 - serial port (RS232) for connecting a 19" printer module
 - serial decoupled port (RS485/422) for connecting the light switch query modules (SAM)
 - serial decoupled port (RS485/422) for connecting decentralised sub-distributors
 - CAN Bus interface for the communication of the internal system components
 - Ethernet link for visualising or connecting further emergency lighting sub-stations as well as for connecting to the building network
 - interface for connecting a battery temperature sensor
 - parallel port for connecting different installation bus systems (IEB, LON etc.)

4.3.1.3 Visualising, remote maintenance and remote control by means of a PC ("web interface")

- display of the system components with indication of type, image, order number and position in the building
- display of the building floor plan with indication of the position of the individual components
- input of switch mode and position of the system components
- display and printout of the system status
- display and printout of a service plan
- display and printout of the system log
- display and printout of the recorded test results
- assisted online and fax repeat order of system components
- Ethernet link, no hardware installation on PC necessary
- web-based, no software installation on PC necessary, supports Windows, Linux, MacOS.
- operation language can be selected

4.3.2 Menu navigation

The input is carried out via ergonomic high-quality key panel consisting of 4 arrow keys $(\blacktriangle), (\blacktriangledown), (\blacktriangleleft), (\blacktriangleright)$ and 1 centred enter key (enter) as well as 3 programmable context-sensitive pushbuttons. Changes to or programmings of the emergency lighting system can only be conducted by authorised personnel and are password protected. Please contact your dealer for the respective password.

4.3.2.1 Status images

When the emergency lighting system is in operation, the display shows the effective parameters such as time, date, battery voltage, battery charge current as well as the system status and possible malfunctions. The battery charge current is indicated by a plus (+) and the battery discharge current by a minus (-). The status message informs about the current activities of the emergency lighting system and thus shows in clear text, whether the system is in mains or battery operation, and whether it is in charging mode or ready for operation. Additional status information is provided on e.g. malfunctions such as insulation

time:		(11/	08:07 17/09
batter	·y:	/	V
state:	power	cha line	rging mode
help	test		menu

The following part describes the structure and the meaning of the different menus:

4.3.2.2 Main menu

defects etc.

The main menu has 6 sub-menus, which are selected using the arrow keys (\blacktriangle) or (\triangledown) and marked by a coloured bar.

- diagnosistest results
- installation
- configuration
- error reset
 service address

diagnosis > test results > installation > configuration > reset errors > service address > help status

----main menu--

By pushing the buttons (►) or (enter) you access the selected sub-menu and pushing the button (status) takes you back to the status image.

4.3.2.2.1 Diagnosis

This sub-menu provides current information on the following system components:

- battery
- mains
- DCM/LDM/IOM/SAM
- sub-stations
- system information

The selected sub-menu is marked by a coloured bar after pushing the buttons

(\blacktriangle) or (\triangledown). By pushing the buttons (\triangleright) or (enter) you access the selected sub-menu and pushing the button (menu) takes you back to the main menu.

4.3.2.2.1.1 Battery

This sub-menu provides information on the connected battery and its current characteristics such as capacity, voltage, current, battery chamber temperature as well as current symmetric voltage.

Via this menu it is furthermore possible to *manually* trigger the annual capacity test which is compulsory according to EN 50171.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown).

By pushing the buttons (►) or (enter) you access the selected sub-menu and pushing the button (back) takes you back to the diagnosis menu.

4.3.2.2.1.2 Mains

The sub-menu "Mains" shows the connected mains voltage. EN 50171 requires a changeover of the emergency lighting system to battery operation when the mains voltage sinks under 85%. Thus different mains voltages cause different switching points.

This menu shows the currently supplied mains voltage as well as a possible existing neutral voltage when the mains connection is faulty.

The voltage values listed on the right represent the previous minimum and maximum voltage values.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown). By pushing the buttons (\triangleright) or (**enter**) you access the selected sub-menu and pushing the button (**back**) takes you back to the diagnosis menu.

4.3.2.2.1.3 Module Diagnosis DCM/LDM/IOM/SAM

This sub-menu gives status information about integrated or connected external system components such as electric circuit units (DCM), charger unit (LDM), relay/interface module (IOM) or switch query module (SAM).

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown).

4.3.2.2.1.3 Electric circuit units

This sub-menu provides information on the electric circuit units of types DCM or ACM, built in on customer requirements.

Each electric circuit unit has two separately working circuits. This sub-menu provides information on the type of electric circuit unit (DCM32, DCM42 o DCM62), the internal circuit numbering as well as the calibrated and last measured consumer wattages (0W).

Furthermore the current statuses of the circuits are displayed.

module diagno:	sis
circuits	>
charger	>
sam/iom inputs	>
sam/lom inputs	1
heln	meni

	ila ilio	
V(L1):	V	V
V(L2):	V	V
V(L3):	V	V
V(N):	V	V
help		back

diagnosis			
battery	>		
main	>		
DCM/LDM/IOM/SAM	>		
sub-distributon	>		
subsystems	>		
system information	>		
help me	nu		

-batter

cap-test

apacity:

voltage:

current:

symmetry:

help

temperature:

Ah

Δ

C

back

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown). By pushing the buttons (\triangleright) or (**enter**) you access the selected sub-menu and pushing the button (**back**) takes you back to the menu module diagnosis.

4.3.2.2.1.3.2 Charger unit

The records in this sub-menu display the number, the slot as well as the preset parameters of the existing charger units. Each charger unit of type LDM25 can generate a charge current of 2.5A. The charger units work with an IUTQ curve family, which automatically control the charge current depending on the battery voltage and temperature.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown) .

By pushing the buttons (►) or (enter) you access the selected sub-menu and pushing the button (**back**) takes you back to the menu module diagnosis.

4.3.2.2.1.3.3 SAM / IOM inputs

This status display informs about the current statuses

of the voltage inputs of connected external switch query modules

(SAM) and the voltage inputs of connected internal opto- /

relay interface modules (IOM).

Live or active inputs of the modules are indicated by a "1" or "M" and non-active inputs by a "-".

A communication error between the central unit and the respective module is indicated by "**not installed**".

This enables a better diagnosis of peripheral, optional components or their statuses from the central monitoring unit.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (∇).

By pushing the buttons (►) or (enter) you access the selected sub-menu and pushing the button (back) takes you back to the menu module diagnosis.

4.3.2.2.1.4 sub-stations

Each MICROCONTROL power supply system can administer and monitor further power supply systems of the same kind. This requires a connection of the systems via ethernet

(TCP/IP-Address allocation). The menu item "**sub-stations**" shows the status of each connected sub-station. In case of an error message, the menu item "**details**" shows exact causes of the error.









4.3.2.2.1.5 System information

The menu "**system informationen**" diagnoses system data and events. It provides information on key parameters, log (error memory), serial number of the power supply, installed firmware, used hardware as well as information on the MAC address of the processor, which is necessary for the integration in an existing building network.

4.3.2.2.1.5.1 Key parameters

This menu item shows system information such as number of installed circuits, installed battery type, supply time, programmed deep discharge voltage, number of charger modules and programmed rated operation time of the system.

If the circuit and charger modules have already been detected via "detect modules", the number of circuit and charger modules is shown automatically in this menu.

.3.2.2.1.5.2 System log (show log)

Via "**show log**" you can reach a log menu, which records every system event (e.g. mains failure or system malfuction) since the beginning of operation ordered by years.

By pushing (▶) or (Enter) you access the system log file.

The reqired year can be selected using the arrow keys (\blacktriangle) or (\triangledown).

The buttons (\triangleright) or (**enter**) enable access to the selected annual event memory where you can scroll up and down using the buttons (\blacktriangle) or (\triangledown). The first entries are the most recently recorded events.

Pushing the button (**back / end**) takes you back to the diagnosis menu.

4.3.2.2.2 Test results

Existing national and international regulations require visual and function tests in different time intervals. The standards require the following:

daily test:	visual test of the displays for operational read no function test necessary;				diness,	
weekly test:	function te including	st of t the	he power sup connected	oply syste safety	em and	emergenc
	luminaires:					

monthly test: simulation of a general lighting failure of the emergency lighting system, long enough to check the function of all connected safety and emergency luminaires as well as to check them for damages and cleanliness;

annual test: capacity check of the emergency lighting system similar to the monthly test but over the full operating time, as specified by the manufacturer, as well as a subsequent function test of the charger unit after restoring the general mains supply.

The conducted function and capacity tests of the power supply system can be read out by means of the menu item test results. The individual tests are separately shown. This enables a differentiation between automatically and manually conducted weekly tests as well as capacity tests of the system. By selecting the sub-menu "print log" you can print out the test results.

Pushing the button (back) takes you back to the menu "test results".

system information	on-
parameters	>
show log	>
S/N: 214748364	47
firmware: 1.2.0 5	92
hardware: 17	
MAC:00:1f:3e:01:02	:03
help ba	ack

key paramete	rs
circuits:	07
battery:	04.5Ah
supply time:	001h
cut off voltage	:000V
charger:	000
capacity test:	off
help	done

system	log
2009	>
2008	>
2007	>
2006	>
2005	>
2004	>
help	back

test results	
function tests	>
capacity tests	>
manual tests	>
print test log	>
help	menu

4.3.2.2.2.1 Function test

The recorded automatically conducted weekly tests of the system can be diagnosed by means of the sub-menu "function tests". It provides a brief summary of the most recently conducted function test. Using the arrow keys you can scroll to the desired test result and by pushing the button "**Details**" you are provided with the details of the respective test.

Pushing the button (**back**) takes you back to the "test results" menu.

4.3.2.2.2.2 Capacity test

Existing national and international regulations require at least one annual capacity

test of each emergency lighting system. . In the sub-menu "Capacity tests" these

data can be traced back or printed out. A brief summary of the most recently conducted capacity tests is provided on opening this sub-menu. By pushing the button "**details**" you receive detailed information on the conducted capacity test. Pushing the button (**back**) takes you back to the "test results" menu.

4.3.2.2.2.3 Manual test

All manual tests conducted so far are recorded in the sub-menu "**Manual tests**". All these tests are function tests (see also menu "function tests").

It provides a brief summary of the faulty luminaires of the most recently conducted function test.

By pushing the button "**details**" you receive more detailed information on the respective test.

Pushing the button (**back**) takes you back to the "test results" menu.

4.3.2.2.2.4 Print test log

This sub-menu enables the printing of the recorded test log data as well as saving them in a file. This can be carried out via internal 19" printer module (if available) or via Centronics interface on an external printer (see also chapter 4.3.2.2.2.4.1 Selection of printer interface).

4.3.2.2.2.4.1 Selection of test mode and printer interface

print test log	print test log
function tests begin: 01/01/09 end: 12/31/09 printer: file	manual tests begin: 01/01/09 end: 12/31/09 printer: file
help print back	help print back

func date: time:	tion test- 11/ 07:	/11/09 15:19
lamps:	defect 0	ok 0
help	details	back

capacity	test
date: time:	11/11/09 07:32:38
test finish	ed
help deta	ils back

function	test-	
time:	11/	10/09
date:	10:	14:52
de	fect	ok
circuits:	12	24
lamps:	36	24
help deta	ils	back



print test	log
capacit begin: 0 end: 1 printer:	y tests 1/01/09 2/31/09 file
help print	back

By selecting the sub-menu "**print test log**" with the enter key or (\triangleright) you access another menu, where the test mode, the required time interval and the preferred printer interface can be selected.

In the first command line you can choose the kind of test (function tests, manual tests, capacity tests). This command line also enables a test of the connected printer as well as printing the system configuration.

By pushing the buttons $(\blacktriangle) / (\triangledown)$ or (\triangleright) you select the required time interval or the printer interface. At the same time you can save the print the results in a file if no printer is connected. This file is stored in the internal memory of the emergency lighting system and can be downloaded if required.

The print command is sent to the printer by pushing the button "**print**" in the lower menu bar and pushing the button "**back**" takes you back to the previous sub-menu. In order to cancel the printing, push the button "**cancel**" in the lower command line.

4.3.2.2.3 Installation

The installation menu enables a programming of specific data for the individual components of the emergency lighting system.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\blacktriangledown). By pushing the buttons (\triangleright) or (**enter**) you access the selected sub-menu and pushing the button (**back**) takes you back to the main menu.

4.3.2.2.3.1 Programming of electric circuits

Similar to the "Info button" query of the DCM modules you can access the menu circuits. This menu enables specific settings for the individual circuits e.g. an individual follow-up time of "manual reset" up to a maximum of 15 minutes for each circuit in order to cope with the different conditions for emergency lighting systems in compliance with existing national and international regulations.

In this sub-menu you can also set the operation mode like maintained light and non-maintained light as well as deactivate the respective circuit. In the command line "monitoring" you can select the monitoring mode of the consumers connected to this circuit.

The arrow key (\blacktriangleright) takes you to another sub-menu for the monitoring mode, where you can activate the individual luminaire monitoring by indicating the luminaires (01 – 20) or the automatic circuit monitoring by entering the maximum current tolerance 5%, 10%, 20% or 50%. Selecting "off" deactivates the circuit monitoring.

Thus a mixed circuit monitoring of both modes is possible. It is necessary though

to indicate a certain number of individually monitored luminaires and also a current tolerance per circuit. A partial use of single luminaire monitoring modules is required for the selected luminaires. If the command line "measure reference" is activated, the recorded current value is reset and the load current is measured again in the next test.

Positioning the cursor below the menu line "**monitoring**" and pushing the enter key opens an input box for entering the position of the respective circuit. The required circuit can be selected by using the left and right arrow keys (\blacktriangleleft) or (\blacktriangleright) and using the up and down arrow keys (\blacktriangle) or (\blacktriangledown) highlights the selected command line by a coloured bar and you get to the next menu line. Changes in these menu lines can be made by using the left and right arrow keys (\blacktriangleleft) or (\blacktriangleright) .

Basically each circuit can be activated individually in mains operation. This depends on the required switch mode of the circuit. A correct installation of the external switch modules and the correct selection of the circuit switch modes "maintained light" / "non-maitained light" is a prerequisite for a perfect function of the switch query.

The switch commands for the respective circuit are transmitted to the emergency lighting system by means of an external or internal bus-compatible switch query modules (SAM08 or MC-LM).

Up to 16 switch query modules can be connected to a RS485 bus. An unlimited number of circuits can be allocated to one switch command of the respective switch query module. On the other hand, however, only three switch commands can be allocated to one circuit.

installation	
circuits	>
calibrate c-monitor	>
lamps	>
service	>
detect modules	>
operation mode	>
help mer	าน

	circuits	5
circui	t (DCM 🗄	32): 1
stop d	elay:	1 min
standb	y light	
monito	ring (L) >
buildi	ng A	
help	SAM	back

circui stop d	circuits t (DCM 3 elay: v light	2): 1 1 min
monito buildi	ring (L) ng A	>
help	SAM	back

circuit 1 lamp monitoring lamp count:	20
circuit monitoring current window measure reference help ba	5% > ack

circui stop d standb monito buildi	circuits t (DCM 3 elay: y light ring (L, ng A	32): 1 1 min /C) >
help	SAM	back

The selected sub-menu "circuits" shows the button (**SAM**) in the lower lines which opens the menu for the allocation of the external SAM modules for the respective circuit.

The switch modes of the switch query modules are sub-divided into different commands ("**ds**" / "**mb**" / "**gmb**" and "---").

The switch mode "**ds**" stands for the command "maintained light on". This means, if a voltage is connected to this input, and the circuit is programmed as maintained light circuit, the allocated circuit is switch on.

This means a circuit programmed on non-maintained light cannot react to a maintained light command ("**ds**") by the allocated SAM08 switch module. But it can react to a non-maintained light command ("**mb**"). In contrast to that several maintained light and non-maintained light commands ("**ds**" / "**mb**"/ "**gmb**") from different switch query modules (SAM08 / MC-LM) can be allocated to a programmed maintained light circuit.

The function mode "**mb**" stands for the command "non-maitained light on". In contrast to the "**ds**" command a mains voltage of 230V/50Hz has to be supplied. This means an input voltage has to be supplied in order to keep the circuit switched off. In case of a mains failure, the respective circuit would be switched on and in the status line of the display you would read "modified non-maintained light".

On return of the mains voltage the programmed follow-up time becomes active (see also programming of electric circuits - follow-up time -).

It is thus possible in operation mode "**mb**" to monitor a mains voltage monitor or the breakdown of an automatic circuit breaker of the general lighting system by means of an auxiliary contactor.

The third switch command is "**gmb**". It works similar to "**mb**" and switches on the non-maintained lights installed in the circuit. Similar to a "**ds**" command, a mains voltage input of 230V/50Hz to the switch module is necessary in order to activate the non-maintained lights.

The "**gmb**" command, however, does not activate a follow-up time and the non-maintained lights of this circuit are deactivated immediately after switching off the mains voltage from the respective switch module input.

The switch command "---" deactivates the respective inputs of the switch modules so that they cannot trigger any switch commands for the selected circuits.

In the following example three switch commands are allocated to circuit 01, which is programmed as maintained lighting circuit.

Explanations:

	-circuit	S	
circu	it (DCM	32):	1
stop	delay:	15	min
conti	nuous li	ght	
monit	oring (L	./c)	>
cuild	ing A		
help	SAM	b	ack
	circuit:	- 1	
SAM	input	funct	ion
01	E1	ds	
07	E2	mb	
11	E7	s-m	b
help		b	ack

- > follow-up time programmed to 15 minutes
- > circuit 1 in "maintained lighting" operation
- > monitoring of self-contained luminaires and circuits programmed
- > location: main building, hall ground floor programmed
- > mains voltage on SAM01 / input 01 = maintained lights in this circuit active
- voltage breakdown on SAM module 07 / input 02 = non-maintained lights in this circuit active, switched off after 15 minutes (follow-up time)
- mains voltage on SAM11 / input 01 = non-maitained lights in this circuit active, switched back without delay

By means of the arrow keys (\blacktriangle) or (\triangledown) you can navigate through the menu. Using (\blacktriangleleft) or (\triangleright) you can change the different values.

Pushing (End) takes you back to the menu "Installation".

4.3.2.2.3.2 Calibration of electric circuits

In the selected monitoring mode "**circuit monitoring** (S)" the current loads are measured during the first function test of the system. They are then saved and compared in the following tests.

This can lead to error messages of the circuits depending on the progress of installation.

This function resets the saved current values of **all circuits** and after that a new function test is carried out where the new current values are saved again. The installation of the circuit has to be finished before.



In the menu item "lamps" specific characteristics are allocated to the individual

4.3.2.2.3.3 Programming of the luminaires

luminaires in this circuit (e.g.: maintained light, non-maintained light or deactivated light). To position an entered luminaire move the cursor using the key ($\mathbf{\nabla}$) under the last menu item ("maintained light" or "non-maintained light") and a white bar marks the lower part of the display which has to be confirmed by pushing the button (**enter**). Now you are in the input mode where you can enter the position.

The up and down arrow keys (\blacktriangle) and (\triangledown) change the sign or the letter of the individual positions. The left and right arrow keys (\blacktriangleleft and \triangleright) change the positions in the line. Using the provided keyboard is

recommendable.

Afterwards confirm again with (enter) in order to leave the input mode.

Pushing the button (end) takes you back to the menu "installation".

Umlauts must not be used in all clear text inputs as otherwise display cannot be guaranteed!

4.3.2.2.3.4 Customer service

The menu item **"Customer service**" can only be accessed by authorised service personnel using a special password. All submenues can be selected using (▶) or (**Enter**). Under **"Set maintenance**" the date of the next required maintenance is set. From this day on the system displays the message **"Maintenance required"**.





maintainar	ice date
day:	<mark>31</mark>
month:	12
year:	2009
maintenance	required
help	back

Pushing the button (back) takes you back to the menu "Customer service".

The menu item "Calibration" offers the following settings:

- mains voltage,
- battery current,
- battery voltage
- battery center voltage.

These settings can only be carried out by a service technician and they are necessary for adjusting the system tolerance to the existing installation parameters.

This enables an adjustment of the mains voltage values, battery voltage values as well as the battery current values to the local conditions. The systems are already calibrated when delivered so that a calibration is only necessary after repairs or after exchanging the processor unit.

Pushing the button (menu) takes you back to the menu "Customer service".

	a aja a ling ti	
Fi	lesystem	
size: free: used: dirty:	5000000 3530866 1234567 4	bytes bytes bytes %
Defrag	Format	back

The next submenu is the "**File system**" which is used for the defragmentation or a complete formatting of the file system.

By pushing the button "Defrag" you can defragment the file system.

By pushing the button "Format" you completely format the file system and all data are deleted (except file system).

It is therefore recommendable to save all data before formatting.







Pushing the button (back) takes you back to the menu "Customer service".

The menu item "Restart system" initiates a restart of the system and it reboots (RESET).





Pushing the button (menu) takes you back to the menu "Installation".

4.3.2.2.3.5 Module detection

The central control and monitoring unit can monitor internal and external modules only after having detected them. All modules are already detected before the system is delivered. A later detection is only necessary for system extensions such as further circuit modules (DCM) or switch query modules (SAM) and bus compatible mains monitors (MC-LM). The system must be ready-to-operate (BAS = I) in order to detect all components correctly! Select the menu item "**Detect modules**" with the up and down arrow keys (\blacktriangle) or (\triangledown). Confirm with (\triangleright) or (**enter**). Now all possible slots are queried and read out. The display shows which modules are in the different slots (DCM, LDM) or if the slot is empty (empty). Internally connected relay interface modules type IOM as well as externally connected switch query modules type SAM08 are also detected and listed by the system. Pushing the button (**end**) takes you back to the menu "**Installation**".

Possible changes have to be confirmed with (**yes**) or rejected with (**no**). Components which were not detected this way cannot communicate with the central unit and are thus neither monitored nor controlled.

Failing to detect and register these components with the central unit would lead to a "Plug & Play error"! After a successful detection the system automatically switches back to the menu "**Installation**".

4.3.2.2.3.6 Betriebsart wählen

The operation mode selection in combination with the internal or external operation mode selection switch (BAS) prevents an unwanted switch-on of the emergency lighting during shut-down periods according to DIN VDE 0100 part 718. The menu "operation mode" offers 3 options, which can be selected using the left and right arrow keys (\blacktriangleleft) or (\blacktriangleright).

- **BAS / BMT controlled** (control charging / ready-to-operate of the system Via external mimic panel or operation mode selection switch BAS) The connected mimic panel has the priority.
- ready-to-operate (emergency light active, maintained light and non-maintained luminaires active)

• **charging** (emergency light blocked, maintained light and non-maintained luminaires not active)

The selection of the operation mode "charging" or "ready-to-operate" is realised by default via the front-side switch (BAS). The option **BAS / BMT controlled** has to be selected.

If the option "**ready-to-operate**" or "**charging**" is off in this menu, the BAS is deactivated and the operation mode can only be changed in this menu. Pushing the button (**menu**) takes you back to the menu "**Installation**". Pushing the button (**menu**) again takes you back to the main menu.

4.3.2.2.4 Configuration

All basic settings for the system and the access are administered in this submenu.

The selected sub-menu is marked by a coloured bar after pushing the buttons (\blacktriangle) or (\triangledown).By pushing the buttons (\triangleright) or (enter) you access the selected sub-menu and pushing the button (**back**) takes you back to the main menu.



-operation mode---

BAS / BMT controlled

present mode:

help

menu

4.3.2.2.4.1 Administration

In this menu the following points are administered:

- network
- e-mail
- LCD-contrast
- timer
- IOM inputs
- SAM inputs

The required menu can be selected by using the up and down arrow keys (\blacktriangle) or (∇) and pushing the buttons (\triangleright) or **enter**) takes you back to the respective menu.

4.3.2.2.4.1.1 Network

In order to link several power supply systems via network or to enable a visualisation by means of an external PC, an adjustment of the network address is necessary in this submenu.

4.3.2.2.4.1.1.1 IP Addresses

Every system has two network connections (RJ45), however, only one of them can be switched active. The menu item "a**dapter**" shows the active network connection. Here you can choose between "**intern**" (connectiopn inside the cabinet) and **"front**" (at the front of the cabinet).

The internal connection is inside the cabinet on a top hat rail module. If you choose the option **"front**", the front connection of the central unit is active. Using the key ($\mathbf{\nabla}$) you can select the IP address, the network mask,

the gateway and the DNS-Server. If the coloured bar is on the required option,

press (►) or (Enter) and you get to the enter mode of the line.

With the keys (\blacktriangle) and (\triangledown) you can change the values. The left and right arrow keys (\blacktriangleleft and \triangleright) change the positions in the line.

After the correct input press (Enter) and leave the enter mode.

Now you can select another line with the keys (\blacktriangle) and (\triangledown), mark it and, as described, make further settings. After finishing all settings correctly, you can switch back to the previous menu "**network**" by pushing (**Ende**) and you are asked to save the changes with (**yes**) or to cancel with (**no**).

The system has to be restarted in order to save the settings.

4.3.2.2.4.1.1.2 E-mail

Under the menu item "**E-mail**" (selection with (\triangleright) or (**enter**)) an e-mail address and an SMTP server (outgoing mail server) can be entered in order to send a message in case of a malfunction of the system. The input line can be selected by pushing (\blacktriangle) or (\triangledown). For activating the input mode push (\triangleright) or (**enter**). Pushing (\blacktriangle) and (\triangledown) changes the sign or the letter of the different positions. You can jump between the different positions in a line using the left and right arrow keys (\triangleleft) or (\triangleright). If the input is correct, confirm with (**enter**) in order to leave the input mode.

After finishing all inputs, change to the previous menu "administration" by pushing (end).

4.3.2.2.4.1.1.3 Communication

Basically it is possible to link every MICROCONTROL system to other power supply systems of the same kind (also MULTICONTROL).

However, an adjustment of the network address is necessary. In order to query other systems it is necessary to make one of these systems the **Master** system. Further system IP addresses to be monitored are allocated to this master system in the menu item "**Communication**". A correct function of these systems and communication with them is very important. In order to enable the

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administratic	n
network	>
LCD contrast	>
timer	>
IOM inputs	>
SAM inputs	>
help	menu

network-	
ip addresses	>
email	>
communication	>
help	menu

	netw	ork	
adapte	er:	int	ern
ip:	192.1	68.001.	022
mask:	255.2	55.255.	000
gatewa	ay:		
	000.0	00.000.	000
dns:	000.0	00.000.	000
help		(lone

е	mail
email add	ress:
anlagen@n	otstrom.de
SMTP-serv	er:
server.cu	stomer.com
help	done

	K(ommunikation	
Sta	atus	sabfrage:	ein
US	1:	192.168.002	.122
US	2:	192.168.002	.123
US	3:	192.168.002	.124
US	4:	192.168.002	.125
US	5:	192.168.002	.126
Hi	fe		Ende

communication with these systems the status query of **all** connected systems has to be switched to "**on**" by using the arrow keys (\blacktriangle) or (\triangledown). Push (\triangleright) or (**Enter**) to access the enter mode. The up and down arrow keys (\blacktriangle) and (\triangledown)change the sign or the letter of the individual positions. The left and right arrow keys (\triangleleft and \triangleright) change the positions in the line. Afterwards confirm again with (**enter**) in order to leave the input mode. Pushing the button (**end**) takes you back to the menu "**Network**".

Note!

For safety reasons the system should be restarted after each change of IP addresses.

4.3.2.2.4.1.2 LCD contrast

The next menu item under "administration" is "LCD-contrast".

This menu enables an adjustment of the LCD display contrast to the existing lighting conditions at the installation site. It can be selected by pushing (\blacktriangleright) or (**enter**), and by using (\triangleleft) or (\triangleright) a value between 0% and 99% can be set. To save the entered value push (**end**) and confirm with (**yes**).

4.3.2.2.4.1.3 Timer

In the following menu item "timer" up to **32** different time switch programmes for the individual circuits or for coacting circuit units can be programmed These time switch programmes deactivate maintained lighting circuits in shutdown periods (e.g. school holidays, shop closing times etc.). The respective input is selected by pushing (\blacktriangle) or (\triangledown). To access the input mode push (\triangleright) or (enter). First select the timer number (**01** – **32**).



	timer •	
timer d	isable	d 01
circuit	S:	1- 2
on:		01:01
off:		01:05
weekday	s:	MO - FR
date:	01.01	- 31.12
help	on	back

Then select the required circuits. If a timer programme should be allocated to only one circuit, select the setting "**01** – **01**" under "**circuits:**".

With **on:** and **off:** the switch times of the respective timers are defined. The required **weekdays** can be defined in the following line. The last option is a time frame in form of calendar days. Here the customer can define certain calendar periods. To activate the programmed timer push the button "**on**" in the lower command line. The display now shows "**timer active**". In the same way an active timer can be deactivated by pushing the button "**on**" in the lower command line without changing the programming.

Pushing the button (**back**) takes you back to the menu "**administration**". Before this the conducted changes have to be saved.

4.3.2.2.4.1.4 IOM inputs

Each opto- / relay interface module (IOM) has 4 voltage inputs, which signalise external errors by means of low voltages (see also product information on IOM). Generally each Multi – Control system has a built-in I/O module (No. 1), whose inputs and outputs are hard pre-programmed. In the sub-menu **IOM inputs** of the administration menu the inputs of the I/O modules (No. 2 - 16), by which the emergency lighting system was extended, can be programmed and provided with a clear text message. Additionally you can define whether the input is to act in the de-energised or live status. This enables e.g. a programming of clear text messages with or without switched error signalling.

The respective input is selected with the buttons (\blacktriangle) or (\triangledown). To access the input mode push (\triangleright) or (enter). Pushing the button (**back**) takes you back to the menu "administration".







4.3.2.2.4.1.5 SAM inputs

Switch query modules type SAM08 (see also product information SAM08) are necessary to switch maintained light circuits of the Multi - Control system in mains operation on and off together with the general lighting. Up to

16 switch query modules (SAM08) can be connected to each BUS of the Multi – Control system for switching the maintained light and non-maintained light circuits on and off and they can also be controlled by it.

Via the administration menu "SAM inputs" clear text messages can be allocated to all connected SAM08 modules or their inputs.

The respective input is selected by pushing the buttons (\blacktriangle) or (\triangledown).To access the input mode push (\triangleright) or (enter). Pushing the button (back) takes you back to the menu "administration".





SAN	M-inp	outs	
SAM: input:			11 05
failure	UVA	build.	A
help		ba	ack

4.3.2.2.4.2 Language selection

"Language selection" is the next sub-menu of the "Configuration" menu. The menu is selected by pushing (►) or (enter) and then the required menu language can be selected by pushing (▲) or (∇). Confirm the selected language with (►) or (enter) and you are automatically taken back to the "Configuration" menu.

The button "end" also takes you back to the "Configuration" menu without applying any changes.

4.3.2.2.4.3 Password

Before you can change the parameters and settings of the system, you have to log in via **password** menu.

There are different levels of authorisation which allow the user different settings. They can be selected by pushing (\blacktriangleright) or (enter).

Under "authorisation:" the display shows the status of the logged in user.

For logging out or logging in as a different user push (\blacktriangleleft) or (\blacktriangleright) and select the required option.

Pushing (enter) confirms the log in or log out and you access the log in input mode.

Pushing (\blacktriangle) and (\triangledown) changes the sign or the letter of the different positions. By pushing the buttons (\blacktriangleleft or \triangleright) you can jump to the individual positions in the line. After finishing all inputs correctly, confirm with (enter) to leave the input mode. Pushing the button (**back**) takes you back to the menu "**configuration**".

4.3.2.2.4.4 Date / Time

In this menu you enter the current time and date. The menu can be selected by pushing (\blacktriangleright) or (enter). By pushing (\blacktriangle) or (\blacktriangledown) you navigate through the menu to the different parameters which can be changed with (\triangleleft) or (\triangleright). Furthermore the automatic switching between winter and summer time can be activated.

After finishing all inputs correctly, change to the previous menu "configuration" by pushing (**end**) and you are asked to save the changes with (**yes**) or to cancel with (**no**).

The button "end" takes you back to the configuration menu.

4.3.2.2.4.5 Function test time

The next menu item "**function test time**" is selected with (►) or (**enter**). Here you can define the time of the compulsory function test. The test can be programmed:

- off / deactivated
- daily
- every other day
- once a week (MON/TUE/WED/THU/FRI/SAT/SUN)
- every other week (MON/TUE/WED/THU/FRI/SAT/SUN bi-weekly)
- every 3 weeks (MON/TUE/WED/THU/FRI/SAT/SUN every 21 days)
- every 4 weeks (MON/TUE/WED/THU/FRI/SAT/SUN every 28 days)

-langu	lage	sele	ctic	on
	gei	rman		
	eng	glish		
help			C	one



date/ti	me
hours:	16
minutes:	38
day:	30
month:	03
year:	2009
DST:	off
help	done

14d
08
00
on
-
one

and carried out at a certain time. By pushing (\blacktriangle) or (\triangledown) you navigate through the menu to the different parameters which can be changed with (\blacktriangleleft) or (\triangleright). With existing circuit monitoring the point "**preheat**" has to be set to "**on**". After finishing all inputs correctly, change to the previous menu "configuration" by pushing (**end**) and you are asked to save the changes with (**yes**) or to cancel with (**no**).

The button "end" takes you back to the configuration menu.

4.3.2.2.4.6 Capacity test time

An annual capacity test of the system is compulsory. In this test not only the circuits and luminaires are checked but also the status of the battery. To define the time select this menu by pushing (\triangleright) or (**enter**) and set the exact day and time.

By pushing (\blacktriangle) or (\triangledown) you navigate through the menu to the different parameters (duration, date, time) which can be changed with (\blacktriangleleft) or (\triangleright).

After finishing all inputs correctly, change to the previous menu "**configuration**" by pushing (**end**) and you are asked to save the changes with (**yes**) or to cancel with (**no**).

The button "end" takes you back to the main menu.

4.3.2.2.5 Reset errors

When the cursor (white bar) is on **"reset errors**" you can access the menu by pushing (\blacktriangleright) or (enter) and the display shows the question: "clear error messages?". After pushing (**yes**) the computer records the error in the log, which can be viewed under "diagnosis" \rightarrow "system information" \rightarrow "show log". If (no) is pushed, the error messages remain and they are not recorded in the log file. Afterwards you are automatically taken back to the "main menu".

4.3.2.2.6 Service address

In this menu you can find the service address and (if given) the telephone number of the contact person if there are problems with the system. It can be selected by pushing (\triangleright) or (**enter**). This entry can only be changed via web browser with the necessary authorisation. The button (**back**) takes you back to the "**main menu**".

4.4 Printer

With the 19" printer module (BD04), which is optionally available, you can print out the test log and thus log all test results, malfunctions and mains failures. It is furthermore possible to realise the print-out of the log via external standard printer with parallel connection on the front-side interface. The printer has to work in the EPSON mode.

In case of questions, please contact your dealer.

4.5 Electric circuit module DCM (see also product information on DCM)

This circuit unit has 2 independent final circuits, which can be loaded with max. 3A, 4A or 6A (pay attention to the type). The switch mode DS/BS of the circuit can be programmed individually via menu (chapter **4.3.2.2.3.2 Programming of electric circuits**). Each DCM enables a circuit monitoring of the connected consumer loads. The application of luminaire monitoring modules (e.g. DCBLU) enables a single luminaire monitoring for each connected luminaire without additional wiring. Electronic ballasts, recommended by the manufacturer should be used since others would possibly complicate or even prevent the detection of errors.

4.5.1 Maintained lighting

The consumers connected to this switch system are continuously supplied (if intact) by the power supply of the emergency lighting system. The maintained light can be switched externally via programmable control input on the SAM module. In case of mains failure the switch unit cuts the consumers off the mains and supplies them from the battery. If the emergency lighting system is switched to charging mode (operation mode selection switch on 0) or internally programmed to charging mode (see chapter **4.3.2.2.3.6 Operation mode selection**), a maintained lighting operation is not possible.

capacity te	st
test 1 of 4;	
duration:	3h
time (hour):	08
time (min):	00
dav:	22
month:	10
help	done





4.5.3 Modified non-maintained light

Consumer circuits in non-maintained light operation are always switched off with intact mains supply. They are only switched on in case of mains failure. All other switch modes where consumers or circuits are to be active in mains operation (even if only temporary) are no non-maintained light consumers but maintained light consumers. Non-maintained light consumers are switched on if the rated voltage sinks by more than 15% in the monitored area. Monitoring these external areas is realised by specially designed quiescent current loops (critical circuits). If such a quiescent current loop is opened, the non-maintained light circuits are supplied by the emergency lighting system from its own mains voltage and not from the battery.

In order to realise a delayed switch-back to mains supply, a time has to be entered in the menu "installation \rightarrow circuits \rightarrow follow-up time" (see also chapter 4.3.2.2.3.2, Programming of the electric circuits).

If the quiescent current loop is closed again, the non-maintained light circuits remain non-maintained operation, depending on the programming, and switch back after the programmed follow-up time. Depending on the programmed follow-up time the circuits can switch back at different times. This is necessary if you consider the re-ignitibility of the general lighting (non-maintained light – follow-up time).

4.5.4 Manual switch-back

If the follow-up time of the circuits is set to "manual" (manual switch-back in obscured areas), the non-maintained light circuits remain active until the follow-up time is finished by switching the system operation from "ready-to-operate" to "charging operation" and back again, which can be realised via internal or external operation mode selection switch.

4.6 Critical circuit

Existing rules require a monitoring of the sub-distribution of the general lighting by means of voltage monitors. Especially for this monitoring a central superior quiescent current loop was created in the system (critical circuit). A low voltage potential 24V/DC is applied to this quiescent current loop.

(External voltage on these terminals causes destruction of the computer – no case of warranty)

If this quiescent current loop is interrupted, the system switches the non-maintained light circuits on (see 4.5.3 modified non-maintained light). The individual programming of the follow-up times of the circuits enables independent switch versions, adapted to the respective building areas.

Further separated monitoring loops can be realised by means of external switch query modules (SAM08) (see also product information SAM08 or chapter 4.3.2.2.3.2 Programming of the electric circuits).

4.7 PC- Visualising via web browser

The PC central monitoring is carried out via web browser (e.g. Internet Explorer), integrated in the operating system (e.g. Windows XP, Vista). No special software is necessary. A connection of the system with the local network via standard network cable with RJ45 interface is required. It can be an internal or front-side connection. (see "main menu→ configuration→ administration→ network→ adapter")

The IP address of the system is entered in the address bar of the browser (e.g.: <u>http://192.168.10.10</u>). The IP address can be found in the menu "**main menu**-**)** configuration-**)** administration-**)** network". Messages on the status of the system and further information are shown on the screen. Failures and malfunctions are recorded for further examination. The functions of the emergency lighting computer as described in chapter 4.3 can be programmed and triggered via browser for all connected systems. Information for all consumers in all systems can be allocated by which an exact allocation of consumers, system and positions etc. is possible. This information can be processed on the PC and printed out.

5. External devices

5.1 Mimic panel BMT24 or MCT12

These devices display and monitor the operational status and externally generate an acoustic signal in case of failures of the emergency lighting system. They are linked to the system via signalling cable (BMT24(S)) on the one hand or screened 4-wire bus line (MCT12(S)). The attached product information sheets contain more detailed information on the connection and specific characteristics of these mimic panels.

6. Installation of the system

After unwrapping and checking for completeness and external damages the system is installed at the desired destination or mounted to the wall. Afterwards the batteries are positioned according to the battery installation instruction in the respective battery cabinet.

7. Electrical connection

Caution. This system is part of the safety devices of a building or firm.

Connection and installation works on this system must only be carried out by authorised electricians (see also DIN VDE 0105 part1 and BGV A2). Non-professional working on the plant can cause failures of the general or emergency lighting and thus lead to great danger for people, severe damages to machines, parts of the system and failures in the building and finally to enormous costs. Working on the system and laying the connecting cables have to be carried out in compliance with existing rules and regulations of electrical engineering (e.g. series of standards DIN VDE 0100).

Never switch the mains or battery voltage supply under load.

The system is now connected to mains supply in the de-energised state. It is usually a 3-phase connection. In case of a single-phase power supply of the system the terminals which are not connected have to be bridged. The rating of the system as well as the used fuses have to be considered.

If you want to connect e.g. a mimic panel or integrate quiescent current loops, these connections have to be created.

At last, when the battery fuses are removed, the battery is wired using the provided cables and the connection with the electronics cabinet is created. The measurement line for the battery center voltage is connected to the respective battery block. After checking for short-circuit and short-circuit to ground the consumer cables are connected to the internal terminals. Do not exceed the maximal consumer wattage of the respective final circuits and check all consumers for their DC capability. Therewith the electrical connection has been created.

Note: In case of malfunctions of the system which indicate a failure of the charger unit or a permanent discharge of the battery with or without intact charger unit, follow these instructions:

- set BAS (operation mode selection switch) to "0" or switch to charging mode (0) on the mimic panel
- remove mains fuse F1 (fuse load disconnector)
- remove battery fuses F2 and F4
- inform service technician or dealer immediately

8. Beginning of operation

After repeated check for correct wiring and after insertion of the battery fuses the system is connected to the mains. The mains voltage is applied by means of a 3-pole load disconnector (F1). Then the system boots which is indicated by an acoustic signal. After ca. 2 minutes the display shows the status menu. (see chapter 4.3.2 "menu navigation").

After that the display shows the time, date, battery voltage and battery current. At the same time the menu item "state" shows "mains operation" and the operation mode (charging mode/ready-to-operate) is shown in clear text. Furthermore the green LED **"mains"** must glow. This ensures a power supply of the system from the general power supply and indicates a correct wiring.

The green LED "charging" indicates the correct function of the charger unit. The internal voltage supply (+24V, +5V and +12V or -12V) is indicated by the green LEDs of the power supply unit which are located on the side.

The batteries are only partially charged. That is why you should ensure, before initiating a system test, that the charging condition of the batteries is correct (the emergency light computer prevents a system test when the battery capacity is too low).

After finishing the programming of the circuits and luminaires, a manual battery operation can be initiated by pushing the button (**test**), whereon the system simulates a mains failure and supplies the consumers from the battery. All electric circuits are calibrated and the respective current value is recorded. After the test the system automatically switches back to mains operation. No error message should be displayed after an error-free test.

Displayed error messages have to be analysed and errors corrected and if necessary clear the error messages by resetting the error. A new test should be carried out afterwards.

Note! In the operation mode "charging operation" the functioning of the circuits cannot be guaranteed neither in mains operation nor in battery operation. The test function is not affected. In order to check a function of the programmed maintained light and non-maintained light circuits the system has to be set to the operation mode "ready-to-operate". This can be realised by using the operation mode selection switch (0 / I) in the front door or via connected mimic panel, if wired.

9. Maintenance and service

The system itself is maintenance-free; however this does not release the operator from the maintenance and function tests as required by the regulation EN 50272-2. Batteries and their operation conditions have to be checked regularly for correct functioning and safety. In compliance with the manufacturer's requirements the following has to be checked in an inspection:

- function test of the charger unit
- function test of all connected consumers and signalling devices
- voltage of the cells or block batteries
- electrolyte density and electrolyte level (if applicable)
- cleanliness, tightness
- tight connection of the battery connectors, if necessary
- ventilation
- plugs and valves
- battery and system temperature

If no capacity test is conducted, the following test procedures have to be applied:

-	Pb-battery, closed type of construction:	EN 60896-1
-	Pb-battery, locked type of construction:	EN 60896-2
-	NiCd- battery, closed type of construction:	EN 60623

These maintenance jobs are carried out by your manufacturer / dealer annually, if required. In case of malfunctions or failures please contact your dealer immediately.

Subject to technical and editorial changes.

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System requirements

Basically each browser which supports Java script and CSS should work on each platform. The web interface is tested under Windows with Internet Explorer 6 or 7 as well as Firefox 2 and 3.

The used FTP server is officially supported only by Windows FTP clients (command line, Internet Explorer or Windows Explorer) as well as by the Linux FTP client (command line). Browser implementations may not work (such as e.g. the Mozilla Firefox FTP client).

1. General information

At re-boot of the control computer all pages of the system configuration have to be closed. After the rebooting all buffered information is no longer up-to-date and saving leads to unwanted side effects.

2. Troubleshooting

1 It is not recommendable to open several pages of a system at the same time. A parallel configuration of 2 circuits is not possible.

In order to connect to the Multicontrol via FTP it may be necessary to enter the IP address of the client as a gateway in the net work configuration of the Multicontrol [configuration->administration->network].

The higher the number of write accesses to the file system the longer the reaction time of the Multicontrol. A connection via Telnet with the Multicontrol is possible (user: User, password: not) and the command **defrag** initiates a garbage collection which accelerates the file system. The LCD interface provides the file system menu.

3. Administration area

Log-in

A change from the user area to the administration area (via link in the administration bar) requires log-in via browser. The access data are:

user:	user
password:	not

On this page the basic system parameters are configured.

Übersic Anlage	ht > Administration					
Anlage Nr	Anlagenname	Standort	Ansprechpartner/ Telefon	Hauptanlage/ Unterstation		Konfiguration
1	CBS	RP-Technik e.K.	Mr. Ranostaj	Hauptanlage		Stromkreise
	12 Stromkreise	D-63110 Rodgau	+49(0)6106 66028 0	1		Tests
		HStaudinger-Str.10				Pläne
Funkt	ionstest Kapazitätstest ausschalte					Timer
		-				SAM
						IOM
P-Adresse	en der Unterstationen					
1	2			3		
4	5			3	_	
7					_	
10				12	_	

input boxes:

- system name
- location(3 lines)
- contact person
- telephone
- system type [main system, sub-station with battery, or sub-station without battery]
- number of circuits (only displayed as the value results from detecting modules)
- IP addresses of up to 32 sub-stations Caution! Only enter the IP addresses of the sub-stations which are to be displayed in the main overview. The actual IP address has to be configured via LCD display with each sub-station.

The following applies to all input boxes (on all pages):

- All inputs are transmitted to the system for each box separately as soon as you leave the box by pushing the "tab" key or clicking another box.
- All changes are applied to the system configuration after clicking the "save" button.
- A reloading of the page before clicking the "save system" button leads to a loss of all changes.
- Be careful when using special characters and umlauts: the web interface can handle them but the LCD display cannot display them.

The following actions can be deleted:

function test

• A function test is initiated. The progress is indicated by dots. After finishing the test a link appears to a site with the test results.

capacity test

• not yet implemented

switching off

• not yet implemented

save system

• The changes are applied to the system configuration.

There are links to these further administration pages:

- electric circuits
- tests
- plans
- timer
- SAM
- IOM
On this page the operational parameters of one selected circuit at a time as well as its connected luminaires

N	U	L	71-C	0	NTROL®				
Übers	sicht >	Adm	inistratio	<u>on</u> > /	Anlagenname: CBS				
Str	omkreis s	peicher	m	Stron	kreis neu laden				
Stromk	areis	Ana	zahl uchten	P	osition	Betriebsart		Nachlaufzeit	
		5		fi	st floor A	Dauerlicht		1 min	*
				S	tromkreisüberwachung				
				S	tromtoleranz aus 💌	Referenzwe	rt zurücksetzen		
				S	AM	Eingang		Schaltart	
				F				<u> </u>	
				F				<u> </u>	×
				E					
Leucht Nr.	е тур		Leuchtmit	ttel	Position	Katalog Nr.	Betriebsart		Plan
1	DH	•	LED				Dauerlicht	•	ground floor A 💌
2	KC	•	sonstige	•	-		Dauerlicht		ground floor A
3	DL	•	LED				Dauerlicht		ground floor A 💌
4	KI		LED		-		Dauerlicht		ground floor A 💌
5	KD	-	sonstige				Dauerlicht		ground floor A 💌

are configured.

The following has to be observed:

- If a new circuit is selected for configuration, the old one has to be saved as otherwise you will lose the conducted changes.
- If an unconfigured circuit is selected, it first "inherits" the parameters of the last configured circuit. This mechanism can be utilised in order to faster configure similar circuits.
- If the number of luminaires of a circuit is changed, the circuit has to be saved and reloaded first before the changed luminaires can be configured.

input boxes (circuit):

- circuit In this input box the circuit is selected which is to be configured. If the list box is empty, then there are no circuits currently detected.
- number of luminaires
- position
- operation mode [maintained light, modified non-maintained light or deactivated]
- follow-up time [manual reset, 1 min, 2 min, ..., 15 min]

input boxes (circuit monitoring):

- current tolerance [off, 5%, 10%, 20%, 50%]
- reset reference value [button] 3x

- SAM [-, 1,..., 16]
- input [-, 1,..., 8]
- switch mode [-, switched maintained light, modified non-maintained light]

input boxes (lumnaires):

- type
- lamps
- position
- catalogue number
- operation mode [maintained light, modified non-maintained light, deactivated]
- plan [selection of building floor plan, where the luminaire appears; see visualisation!]

actions:

- save circuit
- reload circuit

MULTI-CO	NTROL®	
Übersicht > Administration		
speichern laden		
Funktionstests		
Intervall	Uhrzeit	
deaktiviert	ssimm	
Nächster Test: 27.05.2008, 00:00:00.		
Kapazitätstests		
Datum	Uhrzeit	Testdauer (Stunden)
01.01	ss.mm	deaktiviert •
01.04	ss.mm	deaktiviert 💌
01.07	ss:mm	deaktiviert 💌
01.10	ssimm	deaktiviert -

Configuration of the test interval for the automatic function test. Furthermore the start times of up to 4 capacity tests including test duration can be entered.

input boxes (function test):

- interval [daily, every other day, weekly, every other week, every 3 weeks, every 4 weeks, each with week day]
- time

4x input boxes (capacity test):

- date
- time
- test duration [deactivated, 5 min, 15 min, 30 min, 45 min, 1 h, 75 min, 90 min, 105 min, 2 h, 135 min, 150 min, 165 min, 3 h, 4 h, 5 h, 6 h, 7 h, 8h]

actions:

- save
- load

MU	LTI-COM	ITROL®	
Übersicht >	Administration > Anla	genname:	
Kanen aktu	ansieren		
FTP-Director	Σ.		
<u>m00</u>	ground floor A	_	
<u>m01</u>	ground floor B		
<u>m02</u>	first floor A	_	
<u>m03</u>	first floor B	-	
<u>m04</u>	second floor A	_	
<u>m05</u>	second floor B		
<u>m06</u>	third floor A	_	
<u>m07</u>	third floor B		

Here all building floor plans are shown which have been transmitted to the file system via FTP. The plans have to be in a (space-saving) graphics format which can be displayed by the browser. Especially the free png-format has proved suitable, jpeg or gif, however, are good alternatives.

Up to 99 building floor plans (depending on required memory space) can be stored this way. They have to be named according to the following pattern *m00.xxx*, *m01.xxx*,..., *m99.xxx*. xxx stands for the file extension of the used graphics format (png, gif, jpg). Each detected plan can be named, which then appears in the list box "Plan" in the circuit configuration for each luminaire. If there is a plan named "h.xxx", it appears on the right-hand side e.g. as exterior view of the building.

input boxes:

• Each floor plan, detected in the file system, can be given a name which is automatically saved.

actions:

• By pushing the button "refresh floor plans" the file system can be searched for new floor plans.

links:

• The link "FTP directory" leads to the FTP server of the Multicontrol. Under Windows with Internet Explorer 7 you can find the item "open FTP site in Windows Explorer" in the site menu which enables not only a display of the FTP directory but also an exchange of files with the FTP server via drag&drop. New files, copied into the Multicontrol file system, have to be imported by pushing the button "refresh floor plans" before they can be edited. For each detected floor plan a link to the respective page of the visualisation is created.



Luminaire symbols can be positioned with the mouse via drag&drop on the respective building plan (selection in the circuit configuration).

actions:

- zoom in
- zoom out
- enlarge symbols
- downsize symbols
- save

6. timer



Übersicht > Administration > Anlagenname: CBS

save timer reload timer

Timer	Status	Strom	kreise	Uhrzei	it	Wochen	tag	Datum	
		von	bis	von	bis	von	bis	von	bis
1	inaktiv 💌	2 •	1 💌	00:00	00:00	Montag	Sonntag	01.01	31.12
2	inaktiv 💌	2 •	1 -	00:00	00:00	Montag	Sonntag	01.01	31.12
3	inaktiv 💌	2 💌	1 💌	00:00	00:00	Montag	Sonntag 💌	01.01	31.12
4	inaktiv 💌	2 •	1 •	00:00	00:00	Montag	Sonntag	01.01	31.12
5	inaktiv 💌	2 •	1 -	00:00	00:00	Montag 💌	Sonntag	01.01	31.12
6	inaktiv 💌	2 •	1	00:00	00:00	Montag	Sonntag 💌	01.01	31.12
7	inaktiv 💌	2 •	1 💌	00:00	00:00	Montag 👱	Sonntag 💌	01.01	31.12
8	inaktiv 💌	2 •	1 -	00:00	00:00	Montag	Sonntag -	01.01	31.12
9	inaktiv 💌	2 💌	t •	00:00	00:00	Montag	Sonntag	01.01	31.12
10	inaktiv 💌	2 💌	1 •	00:00	00:00	Montag 👱	Sonntag -	01.01	31.12
11	inaktiv •	2 •	1 •	00:00	00:00	Montag	Sonntag	01.01	31.12
12	inaktiv 💌	2 •	1 -	00:00	00:00	Montag 💌	Sonntag	01.01	31.12

Up to 32 timers can be configured. 32x input boxes [timer]:

- status [active, inactive]
- circuits from [list box circuit]
- circuit to [list box circuit]
- time from
- time to
- week day from [list box week day]
- week day to [list box week day]
- date from
- date to

actions

- save timer
- reload timer



2	sub main error
3	
4	
5	[
6	
7	
8	[

Up to 16 switch query modules (SAM) can be configured:

Input boxes:

- SAM No. [1,...,16] selection of the SAM to be configured
- 8 names for all inputs of each module

actions:

- SAM save configuration
- SAM reload configuration



Up to 5 IO modules can be configured here.

1. homepage / compact overview of the system with sub-stations

http://IP ADRESSE MULTICONTROL

MULT	-CONTROL®		
Übersicht			
[Detaillierte Liste] [Geba	udeplane] [Service Adresse] [Administration]		tt.mm.jjj Historie
Zur detaillierten Anzeige O.K. O nicht verfügt	des Systemstatus klicken sie auf das Leuchter bar • Fehler	nsymbol der Anlage	
Anlage	Anlagenname	Stromkreis	Status
Hauptanlage	CBS	• <u>12 Kreise</u>	Ladebetrieb

The homepage for the web interface. It provides an overview of the system status and all its sub-stations in list form. Therefore it is necessary that the IP addresses of the sub-stations have been entered in the respective configuration site.

By clicking one of the flag symbols in the navigation bar the language can be changed. Currently you can switch to the following languages:

- German
- English
- Norwegian
- Swedish
- Arabic

The language selection only applies to the web interface and not to the menus and options in the LCD display, which can be changed there separately (currently only German and English). The link "detailed list" provides a detailed overview of the system and the sub-stations. The link "compact list" takes you back to the compact overview".

MULTI-CO	ONTROL			
Übersicht				
[Kompakte Liste] [Gebäudepläne] [S	Service Adresse] [Administrati	ion]	tt.mm.jjjj H	istorie
 Zur detaillierten Anzeige des System O.K. O nicht verfügbar Fehl Anlage 1: CBS 	nstatus klicken sie auf das Leu Ier	ichtensymbol der Anlage		
	Uhrzeit:	18:37:54	Uhrzeit.	•
-	Datum:	03.07.2008	Batteriebetrieb:	•
Typ: Multi-Control® (Hauptanlage)	Status:	Notlicht blockiert	Netz gestört:	٠
Standort:	Netzspannung (L1-L2-L3):	11.1 V , 11.0 V , 11.0 V	Batteriebetrieb obwohl Netz:	•
RP-Technik e.K. D-63110 Rodgau	Ladestrom:	—.—A	Erhaltungsladespannung ausser Toleranz:	•
HStaudinger-Str.10	Batteriespannung:	—.—V	Tiefentladung Batterie:	•
Kontakt Person: Mr. Ranostaj	Batteriemittenspannung:	0.5 V	Gerät gestört:	•
Telefon: +49(0)6106 66028 0	Batterietemperatur	30.5° C	Sammelstörung:	•
<u>12 Kreise</u>	Isolationstest	•	Ladeeinrichtung gestört.	•

A detailed overview of the operational parameters.



The displayed test results refer to the current system configuration. Older test results with a different configuration are not displayed correctly if the last circuit has changed (=less).

4. overview of the electric circuits

М	ULTI-CO	NTRO)L®				
Übersic	ht > Anlage1: CBS						
[Vorherige	e Anlage] [Nächste Anlage]					ltt.mm.∭	HISTORE
Zur detailli	ierten Anzeige des Status eine D nicht verfügbar 🔶 Fehler	es Stromkreises kli	cken sie auf d	as Leuchten	symbol des Stromkrei:	S	
Kreis	Status	Leistung (W)		Тур	Betriebsart	Position	
1	● / ● 5 Leuchten		0W(0W)	DCM 32	Dauerlicht	first floor A	

NALL	TICONT			
MOL	JI-CONI	ROL		
Übersicht > Ar	lage 1: CBS > Stromkrei	s 1		
[Vorheriger Strom	kreis] [Nächster Stromkreis]			
Zur detaillierten An	zeige des Status einer Leuchte	e klicken sie auf das Symbol d	ler Leuchte	
O.K. O nicht v	rerfügbar 🗕 Fehler			
SAM	Eingang	Schaltart	Status	
+	+		0	
	-		0	
	-			
Leuchte	Test	Betriebsart	Тур	Position
1	Details	Dauerlicht	DH	
2	Details	Dauerlicht	KC	
3	Details	Dauerlicht	DL	
4	Details	Dauerlicht	Ю	
5	Details	Dauerlicht	KD	

6. display of a luminaire



Funktionstests alle

http://IP_ADRESSE_MULTICONTROL/plan_index.cgi



8. display of a building floor plan with marked luminaires



5. FTP access

ftp://IP_ADRESSE_MULTICONTROL

user:	user
password:	not

Tested FTP clients are currently the Windows command line, Explorer-, and Internet Explorer FTP client as well as the Linux command line FTP client. The FTP client in Mozilla Firefox is not supported.

1. visualisation

Building floor plans can be imported into the system via FTP. The plans have to be in a (space-saving) graphics format which can be displayed by the browser. Especially the png-format has proved suitable. The plans have to be named according to the following pattern *m00.xxx*, *m01.xxx*,..., *m99.xxx*. xxx stands for the file extension of the used graphics format (png, gif, jpg). The plans can be given a name in the administration of the plans in the administration of the circuits each luminaire can be allocated to a plan. In this plan the luminaire appears in the administration of the visualisation and can be positioned.

6. customer service area

1. service address

http://IP ADRESSE MULTICONTROL/admin/service index.cgi



Here the service address can be entered which is linked in the overview.

http://IP_ADRESSE_MULTICONTROL/admin/backup.cgi

Anzahl der Dateien: 28
circuit_01.cfg
circuit_02.cfg
circuit_03.cfg
circuit_04.cfg
circuit_05.cfg
circuit_06.cfg
circuit_07.cfg
circuit_08.cfg
circuit_09.cfg
circuit_10.cfg
circuit_11.cfg
circuit_12.cfg
h.png
iom_sam.cfg
m00.png
m01.png
m02.png
m03.png
m04.png
m05.png
m06.png
m07.png
mtests_000.tst
timer.cfg
ZTPUsrDtls.txt
system_2008.log
maps.cfg
system.cfg

This page shows the content of the flash file system. The different files can be downloaded and saved via these links.

3. information on system configuration

http://IP_ADRESSE_MULTICONTROL/anlage_info.cgi

Datum:	18.07.2008
Uhrzeit:	00:16:23
Hersteller:	Multicontrol
Seriennummer:	1
Hardware-Revision:	65535
Software-Revision:	420
MAC-Adresse:	00-1f-3e-ff-ff-ff
Anlagentyp:	Multi-Control [®]
Anzahl Stromkreise:	12
Aktiver Netzwerkanschluss:	Front
IP Adresse intern:	192.168.10.1
Netzmaske intern:	255.255.255.0
Gateway intern:	192.168.0.163
DNS intern:	192.168.0.200
IP Adresse Front:	192.168.0.221
Netzmaske Front:	255.255.255.0
Gateway Front:	192.168.0.163
DNS Front:	192.168.0.200

The configuration data of the system are shown here. These are currently the following parameters:

- date
- time
- manufacturer
- serial number
- hardware revision
- software revision
- MAC Address
- system type
- number of circuits
- active network connection
- internal IP address
- internal net mask
- internal gateway
- internal DNS
- front IP address
- front net mask
- front gateway
- front DNS
- mains voltage offset

- scale
- battery current offset
- scale
- battery voltage offset
- scale
- battery symmetry offset
- scale
- battery current sensor
- internet configuration bits
- LCD contrast setting in %
- System configuration (hardware version software version)
- Slot 1
- Slot 2
- Slot 3
- ...

1 2	3 4	4 5 6	7 8	9 10 11	12
1 2 1 2 1 2 1 3 45 -X01_F1 1 3 45 -X01_F1 2 4 6 1 12 L3 N PE -X21 -X	3 4	4 5 6		9 10 11	12 L1 /2.8 L3 /2.9 N /2.9 Z2 /2.9 Symetrie /2.9 Batt- /2.9 Batt- /2.9 /2.9 /2.9 Batt- /2.9 /2.9 /2.9 Batt- /2.9 /2.9 /2.9
MultiControl	Edited Gusky Tested Standard		device: G 13182	ONo 235129 KNr. 17064	loc. Sheet no. 1 Sheet/tot 1/5









equipment	labelling / value	function / comment					
-BATT1	BAS40	18x OGIV 12400 RPower	18x OGIV 12400 RPower				
-DCM1	DCM32	electrical circuit modul (i	electrical circuit modul (identification by Infopushbutton)				
-DCM2	DCM32	electrical circuit modul (i	electrical circuit modul (identification by Infopushbutton)				
-DCM3	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM4	DCM32	electrical circuit modul (i	electrical circuit modul (identification by Infogushbutton)				
DCM5	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM6	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM7	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM8	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM9	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
DCM10	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
-DCM11	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
-DCM12	DCM32	electrical circuit modul (i	dentification by Inforushbutton)				
DCM13	DCM32	electrical circuit modul (i	dentification by Inforushbutton)				
-DCM14	DCM32	electrical circuit modul (i	dentification by Inforushbutton)				
-DCM15	DCM32	electrical circuit modul (i	dentification by Infopushbutton)				
-DCM16	DCM32	electrical circuit modul (i	dentification by Inforushbutton)				
-DCM17	DCM32	electrical circuit modul (i	dentification by Inforushbutton)				
DCM18	Erejer Steckplatz DCM						
F2	D02 25AT Innozed	battery+					
-E3	D01 2AT Innozed	symmetry	Dattery+				
-F4	D02 25AT Innozed	battery-	battery				
-F10	G-Sich 0 5AT 5x20mm	fuse control					
-F11	G-Sich 0.5AT 5x20mm	fuse control	fuse control				
-F12	G-Sich 0.5AT 5x20mm	fuse control	fuse control				
-F13	G-Sich 0.5AT 5x20mm	fuse control					
-F15	G-Sich 0.5AT 5x20mm	maine fueo control Bue I	mains fuse central Rus I 1				
-F16	G Sich 0 54T 5x20mm	mains fuse central Bus L	mains fuse central Bus L1				
-F17	G-Sich, 0,5AT 5x20mm	mains fuse central Bus L	mains ruse central Bus L2				
-1 17 -E19	C Sich 2 5AT 5x20mm		mains tuse central Bus L3				
-F10	G-Sich, 0,5AT, 5X20mm		AS and toot much button				
-101	G-Sich. 0,5AT 5X20mm		AS and test push-button				
		abarring madula (idantifi	estion by Informalian (
		charging module (identifi	cation by infopusibutton)				
-KZ		Varistor	DAC				
-31 TD4		operation mode switch	BAS				
-1KI V10	i renntransformator E I I 630	isolating transformer	and a				
-ATU V01 E1		connection ethernet netw	connection ethernet network				
-AUI_FI	Lasttrenner DU2 Linocur 3x20A1	power supply fuse	power supply fuse				
-AU2_F3	G-SICN. U,SAT 5X20mm	GND for BMT	GND for BMT				
-XU2_F6	G-Sich. 0,5A1 5x20mm	-24V tor BMT	-24V for BMT				
-X22_F/	G-Sich. 0,125,AF 5x20mm	current loop	current loop				
-X22_F8	G-Sich. 0,125,AF 5x20mm	current loop					
-XU1		main supply					
			1	1			
	23.01.2013 Date 23.01.2013		device G 13182		plant		
tiControl				ONo235129			
			Part list	KNr 17064			

equipment	labelling / value	function / comment			
-X02		messages IO-module			
-X06		mains distribution			
-X07		connection for next SAM	08-module		
-X11		battery distribution			
-X21		battery connect			
-X30		connection load -circuit			
-X30		connection load -circuit			
	23.01.2013 Date 23.01.2013			1	plant
	enrico ausky Edited enrico ausky		device:G 13182		
IultiControl				ONo235129	

MultiControl

technical data

mains supply power supply frequenc maximum connection power input current (AC) battery voltage battery type charging power conservation charging voltage strong charging voltage charging characteristic curve characteristic curve switching deepdischarge 1 deepdischarge 2 working mode power supply monitoring initiation funktion test capacity test noise suppression ambient temperature dimensions protection class wire come in number of circuits / DCM's number SAM-modules number of switch inputs 230V AC number of outputs subdistr. number of outputs subst.

0

50 / 60 Hz max. without electr. load 3A 216V 2.5A 2.275V / cell 2,35V / cell IUTQ automatic 1.71V / cell 1.53V / cell maintained or mode non-maintained connecting in switchmode 3 phases again N and critical circuits cc MB for switched and unswitched maintained lightload with voltage supply of UV ≤ 85 % Unenn depending on the programming (dayly, weekly) programming yearly N at VDE 0875 0-35° C GS+BS 1900x600x450 I / IP20 from above 0 0 0

230V AC / 400V AC

relevant fuses / conductor cross-section

fuse mains F1 (L1, L2, L3) fuse battery F2, F4 (B+, B-) fuse battery F3 (Sym) * fuse critical circuit F7, F8 fuse connection BMT24 F5, F6

circuitmodules DCM32 / 31 L(+) and N(-) circuitmodules DCM42 / 41 L(+) and N(-) circuitmodules DCM62 / 61 L(+) and N(-) modul ACM L(+) charging module LDM25 Transformer Fprim (F...) Transformer Fsec (F...) Innozed D02 ceramics 20AT, 20AT, 20AT Innozed D02 ceramics 25AT, 25AT Innozed D01 ceramics 2AT fuse ceramics 5x20mm 0,125AF fuse ceramics 5x20mm 0,5AT

fuse ceramics 5x20mm 5AT fuse ceramics 5x20mm 6,3AT fuse ceramics 5x20mm 10AT fuse ceramics 5x20mm 4AT fuse ceramics 3,15AT fuse ceramics 6,3AT fuse ceramic 3,15AT

connection crosscuts	
power sup. wire	1,5-16mm ² rigid
battery-cable NSGAFÖU +/-	1,5-25mm ² rigid
symmetry	0,2-6mm²
final wire	0,25-4mm ²
potential-free messages	0,25-4mm ²

* When using one or more ZSU-modules, here the size of fuse F31, F32 ... is specified.

Product information charger module LDM25

Characteristics	at a	glance:
-----------------	------	---------

- charger unit according to TVE TNORM E 8002, EN 50172, EN 50171
- IUTQ characteristics according to EN 50272-2
- integrated battery voltage monitor
- processor-controlled charging characteristic (no settings necessary)

General information:

The standards TVE TNORM E 8002, EN 50171 as well as EN 50272 part 2 require a charger unit with I/U characterictic in central battery systems, which supplies the battery within 12 hours with 80% of the charge (Ah), necessary for the rated service time, and which ensures a trickle charge of the battery.

The charger module LDM25 is a compact 19"unit (100 x 160mm) according to EN 60146-1-1 with **12,5TE** or **14TE** overall width. It is connected to the rear circuit board via rear connector plug.

The primary voltage supply is carried out by single phase isolating transformer or with higher charging power via three-phase isolating transformer according to EN 61558-2-6.

The battery charging is realised by the central control and monitoring unit via internal CAN-Bus with IUTQ characteristics, which ensures an optimal battery lifetime through consideration of

- current
- voltage
- temperature
- existing battery charge

according to EN 50171 paragraph: 6.2.2, paragraph: 6.2.3, paragraph: 6.2.5 and paragraph: 6.2.6; EN 50272-2 paragraph.: 11.1 and paragraph: 11.2; EN 60146-2 as well as DIN VDE 0558 part1 and DIN VDE 0160. An adjustment of the charging control to the different battery types is possible without any problems and is

carried out via central control and monitoring unit.

One charger unit generates up to 2.5A charging current and can be adjusted to the respective battery capacity through parallel operation of several charger units. A charge extension is thus possible also at a later time without any difficulties as the rear connector plugs were already adapted to the existing bus slots in the development phase.

This means further units can be plugged into the slots for circuit units, whereas one charger unit requires two free circuit slots (2x 7TE). The connection to the primary voltage of the respective isolating transformer is carried out via connectors on the rear bus plate. The central control and monitoring unit automatically identifies the charger unit by means of the integrated plug&play system. The charger unit can then be queried using the "Info" pushbutton and adjusted to the required battery charge.

Additionally each charger unit possesses an integrated battery voltage monitor which disconnects the charger unit from the secondary voltage of the respective isolating transformer, if the output voltage of the charger module is higher than the maximal charging voltage (258V) in order to protect the battery from overcharge. The processor-controlled charging characteristic enables the charger module LDM25 to carry out a charging of the batteries independently without being controlled by the computer. Thus a correct charging of the batteries is guaranteed even in case of a malfunction of the control computer.

image charger module LDM25



image isolating transformer TR630VA



Subject to technical and editorial changes.

Product Information IO-Module

characteristics at a glance:

- analysis of 7 device states
- 7 potential-free status messages
- 4 galvanically isolated inputs
- up to 16 modules can be integrated in the device

ready-to-operate

normal operation

charger OK

The IO-module is designed for the application in emergency lighting systems of the "**MULTI-CONTROL**" series. It has 7 potential-free change-over contacts, which serve for signalling various device states such as e.g. battery operation, malfunction and deep discharge (see input and output configuration).

Furthermore there are 4 galvanically isolated switch inputs in order to integrate control and sensor signals such as external mode selection switches or air flow guards.

However, these inputs have to be supplied with an external voltage (see connections and general facts).

These inputs are already assigned by default to special functions of the device (see input and output configuration). Up to 16 IO-modules can be integrated in one central battery system, if necessary, in order to transfer further states to e.g. central building control system or a comprehensive mimic and control panel. If necessary, please contact your dealer.

connections and general facts:

supply voltage: BUS line (data line): galvanically isolated switch inputs: potential-free relay contacts/switch contacts): turn coding switch: +12V / GND C-H, C-L E1-E4 (18V-250V DC / 184V-276V 50/60Hz AC) K1-K7 (max. 6A / 250V AC1, 6A / 30V DC) address of each IO-module

default input and output configuration:

K1:	emergency lighting blocked	(19-20)
K2:	charger malfunction	(22-23)
K3:	modified non-maintained light	(25-26)
K4:	device malfunction	(28-29)
K5:	battery deep discharge	(31-32)
K6:	ventilation off	(34-35)
K7:	battery operation	(17-18)

device OK	(29-30)
no battery deep discl	narge (32-33)
ventilation on	(35-36)
mains operation	(16-17)
es) voltage on \rightarrow em 0 Volt \rightarrow ready	hergency lighting blo -to-operate

E1: connection of external BAS (mode selection switches)

- E2: connection of temperature measuring input
- E3: connection air flow guard
- E4: connection of external test push-buttons

voltage on \rightarrow emergency lighting blocked 0 Volt \rightarrow ready-to-operate voltage on \rightarrow temperature too high / low 0 Volt \rightarrow temperature OK voltage on \rightarrow ventilation malfunction 0 Volt \rightarrow ventilation OK voltage on \rightarrow test function 0 Volt \rightarrow no test function

(20-21)

(23-24)

(26-27)

dimensions:



image of an IO-module:



Subject to technical and editorial changes.

Product Information Electric Circuit Module DCM32 / DCM42 / DCM62

Characteristics at a glance:

- 216V DC output voltage in mains backup operation
- 2 circuits per module
- per module 2x3A, 2x4A or 2x6A output current
- mixed mode operation in the end circuit
- single light and circuit control in the end circuit

The electric circuit modules DCM32, DCM42 as well as DCM62 are end circuit components for emergency lighting systems of the **MultiControl, Midicontrol, miniControl and microControl** type.

The electric circuit modules are equipped with two electric circuits each ("circuit A" and "circuit B"), where each circuit is designed for a maximum output current of 3A (DCM32), 4A (DCM42) and 6A (DCM62). Each electric circuit modules can realise a single light scanning as well as a self-calibrating circuit control.

Furthermore, each circuit has an earth connection monitoring, which signalises a possible insulation defect in the end circuit by means of a red LED (error). However, this monitoring is only active when the BAS (mode selection switch) is set to charge mode (emergency lighting blocked), i.e. the end circuits are not engaged.

The programming of each control mode of the lights in the end circuit is carried out at the central computer separately for each circuit.

By means of the INFO button, integrated in the front panel, all relevant data of each DCM can be retrieved and are shown on the display of the central computer. Possible errors and states of the components and electric circuits such as consumer control mode, connected consumer rating, end circuit defects etc. are displayed here.

Please find information regarding the programming of the components in the product specification of the emergency lighting device.

Specifications:

connected load:	DCM32 \rightarrow 650VA per end circuit DCM42 \rightarrow 860VA per end circuit DCM62 \rightarrow 1300VA per end circuit	
fuse protection of the end circuits:	DCM32 → per circuit $2x$ T5A 5x20mm 1DCM42 → per circuit $2x$ T6.3A 5x20mm1DCM62 → per circuit $2x$ T10A 5x20mm 1	
function LED "Power" on:	respective end circuit is engaged (battery-operated, DS, DS- switchable SK switched on)	
function LED "Power" blinking (pulse per second):	respective end circuit in modified standby mode (respective standby loop open)	
function LED "Power" blinking (pulse per 0.5 seconds):	respective end circuit in follow-up time after the end of the modified standby mode (standby loop closed)	
function LED "Error":	error in the respective end circuit or insulation defect	

¹) high disconnection capacity (ceramic tube sanded), type: SIBA 179200

control panel of the DCM:



image of a DCM component:



Subject to technical and editorial changes.

Product Information Electric Circuit Module ACM

characteristics at a glance:

- 230V 50Hz output voltage in mains standby operation
 - up to 500VA connected load with integrated overload protection
 - switch mode of the end circuit DS, MB or gMB
 - single light monitoring*) or circuit monitoring in the end circuit

The ACM is an end circuit module for emergency lighting systems of the type: multiControl and midiControl.

The circuit modules are equipped with an electric circuit ("circuit A"), suitable for a maximum output power of 500VA. The ACM works in changeover operation, which means, in normal operation 230V AC 50/60 Hz are connected to the end circuit terminal and in emergency operation a 230V 50Hz square wave voltage.

Each circuit module can realise a single light query as well as a self-calibrating circuit monitoring.

Furthermore, each ACM has an earth leakage monitoring, which signalises a possible earth leakage by a red LED (Fehler / Error). This monitoring is only active, however, if the BAS (mode selection switch) stands on charging mode (emergency light blocked), and thus the end circuits are not connected.

The integrated overload protection guarantees switching the end circuit off as well as an optical signal (LED Fehler / Error) if a too high consumer load is connected in battery operation.

The programming of the respective light monitoring mode in the end circuit is carried out on the central computer separately for each circuit.

The INFO pushbutton, integrated in the front, is used to retrieve all relevant data of the respective ACM and display them on the central computer. Possible errors, module status or circuit status, monitoring mode, connected loads, defects of an end circuit fuse etc. are displayed here.

Information regarding the programming of the modules can be found in the manual of the emergency lighting system (MultiControl or midiControl).

Note: If an existing system is to be equipped with an ACM, please use a neutral disconnect terminal.

A parallel connection of end circuits in order to increase performance as well as any kind of compensation are NOT permitted!

Specifications:

output load:	500VA per end circuit
fuse protection end circuit:	1x T4,0A 5x20mm 1) (L/+) / N disconnect terminal
function LED "operation / power" on:	end circuit is connected (battery operation, DS - SK switched on)
function LED "operation / power" flashing (once per second):	end circuit in modified non-maintained mode (quiescent current loop open)
function LED "operation / power" flashing (twice per second):	respective end circuit in follow-up time after finishing the modified non-maintained mode (quiescent current loop closed)
function LED "Fehler / Error":	error in end circuit
function LED "Fehler / Error" flashing (twice per second):	earth leakage in end circuit

1) high interrupting rating (ceramic tube sanded), type: SIBA 179200

front of ACM:

end circuit fuse ———	Betrieb / Power A
circuit faulty / earth fault	C) Fehler / Error
INFO - push button ———	

image of an ACM module:



Product Information SAM 08 Switch Scanning Module

Characteristics at a glance:

- scanning of up to 8 Light switches
- function as staircase light switch (2 circuits with up to 12 lit push-buttons per circuit and 1000m cable length) → within a short time available -simultaneous function of switch scanning (max.6 switches) and staircase switching (max. 2 circuits)
- no staircase lighting system necessary through additional connection possibilities for general lighting

The Switch Scanning Module 08 is designed for the application with emergency lighting systems of the Multi-, mini-, Midi- and microControl.

It is used for scanning light switches of the general lighting system, the joint switching of emergency lights and the general lighting when mains-operated and as staircase lighting module for switching emergency lights when battery-operated. Normally closed contacts as well as normally open contacts can be used as switches. Normally open contacts can thus be used for monitoring an applied mains voltage, too. The setup or programming is carried out at the emergency lighting device. Switching the module from light switch scanning to staircase lighting is done by means of slide switches (DIP-switches), which are located at the front.

Light switch scanning:

The SAM 08 has 8 separate inputs for the scanning of 230V/AC mains voltages. The switch mode of each input is shown at the front by means of a yellow LED.Should only one switch be scanned, the DIP-switches 3 and 4 have to be set to OFF. Now up to 8 switches can be connected and scanned. The connection to the bus interface as well as the correspondent voltage supply (12V/DC) and its monitoring is carried out through the emergency lighting system (MULTI-CONTROL).

A switching command at the inputs E01 - E08 (impressing a 230V/AC voltage) is transferred via bus line to the emergency lighting device and emergency lights which are connected to the system are switched on or off depending on their programming.

<u>Staircase lighting function TLS:</u> (the TLS-function as well as the corresponding connections have been available since February 2008)

The SAM 08 can be used additionally for operating and scanning lit push-buttons (with glow lamp 230V), such as e.g. in staircases. The module has 2 push-button inputs (push-button T01 and push-button T02) each with one corresponding potential-free relay contact (TLS 1 and TLS 2) for the joint switching of the general lighting system together with the emergency lighting system when mains-operated. The relay function is indicated at the front by means of a yellow LED (TLS1 or TLS2). The other 6 separated inputs (E01 - E06) of the SAM 08 keep functioning as light switch scanners as described above.

In order to activate the staircase lighting function the DIP-switches 3 (TLS 1) and 4 (TLS 2) have to be set to ON.

The connected push-buttons (max.12 push-buttons per connection clamp) are supplied by the emergency lighting system with a safety voltage (Square wave voltage 230V/50Hz). This voltage (ACM/DAC L, N) has to be applied additionally to the module (separate line) besides the bus line and the 12V/DC supply voltage.

The generated gate pulse which is transferred to the emergency lighting device via bus line switches the connected emergency lights on for the programmed staircase lighting time (1-15 min.).

Parallel to this, the relay contact belonging to this circuit is closed in order to switch also lights of the general lighting system if necessary. Thus the additional staircase automat is no longer necessary.

Each relay contact (TLS 1 / TLS 2) can be loaded up to a maximum of 10A/AC1.

30 seconds prior to the end of the programmed turn-on time the glow lamps of the push-buttons start to blink.

The green LED (ok) at the front of the SAM 08 signalises the failure-free operation.

The red LED (failure) indicates a failure.

Connections and general facts:

supply voltage: BUS-line (data line): Square wave voltage 230V/AC (for TLS operation): switch and push-button inputs (230V/AC): Connection for general lighting (during TLS): power per pushbutton (glow lamp)

turn coding switch: DIP-switch 1-4 (functions):

dimensions:



+12V / GND A, B, SC (screen) ACM (L, N) E01-E08 (L, N) TLS 1, TLS 2 (potential-free max. T10A) 40mA (ca.20 pushbutton by glow lamps (2mA)

address of the respective SAM 08 1 – terminating impedance (ON) → last module in the bus 2 – without function 3 – TLS 1 (ON) 4 – TLS 2 (ON) <u>image of a SAM 08:</u>



Please find connection examples and switching variants in the configuration diagram.

Subject to technical and editorial changes.

Product Information MLU300, MT300

Characteristics at a glance:

- electronic series ballasts for 4 13W
- integrated light surveillance
- integrated light manager function (asynchronous balanced mode) → only MT300
- integrated mains monitoring → only MT300

The MLU300 and the MT300 are electronic ballasts with integrated single surveillance for fluorescent lights with a power output of 4-13 W. As light appliances, models L 4, 6, 8 Watt and compact fluorescent lamps 5, 7, 9, 11 and 13 Watt may be used. The (EVG) electronic ballast MLU300/MT300 provides the automatic adjustment to the burning voltage of the particular light appliance. Because of the Softstart characteristics of the electronic ballast, optimal performance and long life time of the light appliance are ensured.

The MLU300/MT300 is suitable for use with emergency light installations of type: **ZDCL**, **BK**, **BX**, **ZX**, **ES7000**, **Multi-, mini-, and microControl** The MT300 in addition has an integrated light manager function and mains monitor function.

The integrated address component of this electronic ballast serves an address allocation of the lights of 1-20.

The numeric coding of the lights for single light scanning is set over a DIP circuit breaker S3 and a rotary encoder switch, which is provided with the markings 1 - 16.

The numeric coding is to be carried out as follows:

- Lights 1-16: DIP circuit breaker S3 OFF and rotary encoder switches 1-16 each to correspond with the number of the light e.g. light 1 → numeric coding 1, ..., light 16 → numeric coding 16.
- Lights 17-20: DIP circuit breaker S3 ON and rotary encoder switches 1-16 each to correspond with the number of the light .e.g. light 17 → numeric coding 1, ..., light 20 → numeric coding 4.

The following function description only applies to MT300

It is furthermore possible with the MT300 to use in a continuous light circuit continuous lights, switched continuous lights and stand-by lights at the same time. A MT300 connected to the emergency light output in stand-by connection will be supplied, in case of modified stand-by with mains AC voltage, by the continuous light circuit. The recognition, whether the function "modified stand-by" should be implemented in the particular circuit, takes place with the evaluation of the quiescent current loops. That means, if an interrupt of a quiescent current loop occurs, the MT300 allocated to these loops will be activated over these current loop groups "SKM_T". For **stand-by operation S2** must be switched to **OFF**. Should the MT300 function in the *un-switched continuous light mode*, then the switch *S2* on the MT300 must be set to *ON*. The quiescent current loop group "SKM_T" must always be set to CL (continuous light) in the front area (see Product-info SKM_T).

It is, thus, possible to determine the type of switching of the MT300 which has been connected, even after installation of the circuit (continuous- or stand-by connection). By a connection input at the MT300, connection switching of the connected emergency lights of the mains operation, together with the general illumination is made possible. To implement this type of connection, first the switch S2 at the MT300 must be set at OFF and secondly a connected voltage L'/ N (230V/50Hz) from the adjacent general illumination to the MT300 must be introduced, with which the connected emergency light can be operated. Should the MT 300 operate in absolute stand-by mode, then the use of the connected voltage L'/ N (230V/50Hz) doesn't apply.

The integrated mains surveillance implements changing the MT300, during failure of the monitored voltage, to the mains AC voltage of the continuous circuit. That means that, should the voltage of the monitored mains of a sub-distribution board fail in a fire area, then the lights on the MT300 will be switched on.

The mains monitoring is deactivated by the DIP switch $S1 \rightarrow ON$.

Attention: If the function of the mains monitoring is not used, then attention must definitely be paid, that S1 is set to ON.

Switch the emergency light installation to battery mode, so that all MT300's, independent of their setting, are used. This occurs in the framework of the installation test or in the emergency mode respectively. For safe function of the MT, the distance between it and the emergency lighting system should not be over 500m and between MT and consumer not over 0,5m.

Installation Instructions:

An asynchronous balanced mode with DCBLÜ1-3, DCBLU4, LMU03, LMU04, MLL200(SMD) and MLU200(SMD) respectively in one circuit is possible.

Too high a load on the capacity of the circuit has a negative effect on the monitoring of the lights and could consequently lead to incorrect monitoring in the circuit. Furthermore, decouple components should be used, when an asynchronous balanced mode with MT300 and electronic ballasts in one circuit is installed, because otherwise a proper function of the single-light monitoring cannot be guaranteed.

Technical Data: Dimensions: Illustration of an MT300: U AC: 230V 50Hz +/-20% 27 U DC: 180-300V ŧ .143 Ta: -10...+40°C max. 500m S SIBE - MT300 : 38 2-part plastic Casing: 132 Connection Example: Subject to technical and editorial changes. 18.01.2008 Connection to the emergency light installation NA/- 0 N/-2 rotary encoder switch LA/+O L/+ 3 for adjusting the light addresses circuit on N L' MLU300 / MT 300 Δ MT300 continuous connection Ν MT300 0 for connecting • L to monitoring mains voltage light appliance 4 - 13 Watt the emergency lights DIP circuit breaker (mains sub-distribution) to the mains operation mains monitoring (MT300) N 230V / AC CL(continuous lighting)/SL (stand-by lighting) function lights numerical coding ⊕ L switching voltage ■ → N (mains sub-distribution)

Product Information MLU400, MT400

Characteristics at a glance:

- electronic series ballasts for 4 14W
- integrated light monitoring
- reverse current protection with optical control display
- only MT400 for common switch mode of maintained light, non-maintained light, switched
- maintained light
- only MT400 integrated mains monitoring

The MLU400/MT400 is suitable for use with emergency light installations of type: **ZDCL**, **BK**, **BX**, **ZX**, **ES7000**, **MultiControl**, **Midicontrol**, **microControl and miniControl**. Both are electronic ballasts with integrated single luminaire monitoring for fluorescent lights with a power output of 4-14 W. Models L 4, 6, 8, 14 Watt and compact fluorescent lamps 5, 7, 9, 11 and 13 Watt may be used as lumionaires. The (EVG) electronic ballast MLU400/MT400 provides the automatic adjustment to the burning voltage of the particular luminaire. The Softstart mode of the electronic ballast guarantees an optimal performance and long life time of the luminaire.

The integrated reverse current display signalises a wrong connection of the module to the emergency lighting system (final circuit) \rightarrow L/+, N/mixed up by a light blinking every 2 seconds. This function is activated in test mode or battery operation (not in mains operation) and displayed also in these operation modes only.

The integrated address component of this electronic ballast allocates addresses to the lights from 1 to 20.

The numeric coding of the lights for single light monitoring is conducted via a DIP switch S3 and a turn coding switch, which is marked by numbers 1 - 16.

The numeric coding is to be carried out as follows:

Lights 1-16: DIP switch S3 – OFF and turn coding switch 1-16 each to correspond with the number of the luminaire e.g.

luminaire 1 \rightarrow numeric coding 1, ..., luminaire 16 \rightarrow numeric coding 16.

Lights 17-20: DIP switch S3 – ON and turn coding switch 1-16 each to correspond with the number of the luminaire e.g.

luminaire 17 \rightarrow numeric coding 1, ..., luminaire 20 \rightarrow numeric coding 4.

The following function description only applies to MT400

The MT400 furthermore enables the use of maintained lights, switched maintained lights and non-maintained lights at the same time in a maintained light circuit. For **non-maintained operation S2** must be switched to **OFF**. Should the MT400 function in the *un-switched maintained light mode*, then the switch **S2** on the MT400 must be set to **ON**. If maintained lights and non-maintained lights are to be operated together in one circuit, the circuit modules SKMT or DCM have to be set to maintained mode (see respective product description) It is thus possible to define the switch mode of the MT400 even after the installation of the final circuit (maintained light or non-maintained light mode). A gate input on the MT400 enables a switching of the connected emergency lights in mains operation together with the general lighting. To realise this switch mode, firstly the switch S2 on the MT400, with which the connected emergency luminaire can be controlled. Should the MT400 operate in absolute non-maintained mode, then the switched voltage L'/ N (230V/50Hz) does not have to be connected.

The integrated mains monitoring realises the switching of the MT400 to the mains AC voltage of the maintained circuit if the monitored voltage fails. This means that, should the voltage of the monitored mains of a sub-distribution fail in a fire area, then the light on the MT400 will be switched on.

The mains monitoring is deactivated by means of the DIP switch $S1 \rightarrow ON$.

<u>Attention:</u> If the function of mains monitoring is not used, S1 has to be set to ON. If the emergency lighting system switches to battery mode, all MT400s are switched on regardless of their setting. This happens in emergency lighting and in test mode.

Installation Instructions:

An asynchronous balanced mode with DCBLÜ1-3, DCBLU4, DCBLU05, LMU03, LMU04, MU04, MLL200(SMD), MLU200(SMD), MLU300 or MT300 in one circuit is possible.

Too high a load on the capacity of the final circuit has a negative effect on the monitoring of the lights and can thus lead to incorrect query in the final circuit. Furthermore, decouple components should be used, when an asynchronous balanced mode with MT400 and alien electronic ballasts in one final circuit is installed, because otherwise a proper function of the single luminaire monitoring cannot be guaranteed.



Produkt Information MLED400

characteristics at a glance:

- switching power supply for LED-Lights up to 5W
- setting of different input voltages (3.3V, 4.2V, 12V, 24V)
- integrated single light surveillance
- integrated light manager function
- integrated mains surveillance
- integrated dimming function (down to 20% or 50% in mains operation)
- integrated cancellation of a dimming function of maintained lights
- integrated flashing function (emergency operation)
- optical reverse current indication

The MLED400 is an electronic switching power supply with integrated single light surveillance, light manager function, mains surveillance, dimming as well as flashing function. All types of LED-lights with a maximum power of 5W can be applied. The MLED400 is suitable for the application in emergency lighting systems of types: **BK**, **BX**, **ZX**, **ZDCL**, **ES7000 Multi-, mini-, Midi-, and microControl**.

The integrated address module of the MLED400 assigns addresses to the lights from 1 to 20. The coding of the lights in single light query mode is carried out via DIP-switch S3 and a turn coding switch labelled 1 - 16.

The coding has to be carried out as follows:

lights 1-16: DIP-switch S3 – OFF and turn coding switch 1-16 according to light number e.g. light 1 \rightarrow coding 1, ..., light 16 \rightarrow coding 16.

lights 17-20: DIP-switch S3 – ON and turn coding switch 1-4 according to light number e.g. light 17 \rightarrow coding 1, ..., light 20 \rightarrow coding 4.

Furthermore, the MLED400 enables a joint operation of maintained lights, switched maintained lights and non-maintained lights in a maintained light circuit. An MLED400 connected to the emergency light output in non-maintained light mode will be supplied with mains AC voltage by the maintained light circuit in the case of modified non-maintained light mode. The recognition, whether the function "modified non-maintained light" should be executed in the respective circuit, takes place through the evaluation of the quiescent current loops. This means, if an interrupt of a quiescent current loop occurs, the MLED400 allocated to these loops will be activated via circuit unit SKM_T or DCM at the Multi-Control. For the non-maintained light mode switch S2 to OFF.

Should the MLED400 be operated in the **unswitched maintained light mode**, **S2** at the MLED400 has to be switched to **ON**. The circuit unit SKM_T always has to be set to DS (maintained light) in the front area (see product info SKM_T). For information on the programming of the DCM circuit unit see the respective product information or the Multi-Control manual.

It is thus possible to determine the type of switching of the connected MLED400 even after the installation of the final circuit (maintained or non-maintained light). A gate input at the MLED400 enables a switching of the connected emergency light in mains operation together with the general lighting. In order to realise this type of switching the switch S2 at the MLED400 has to be set to OFF on the one hand and on the other hand a connected voltage L'/ N (230V/50Hz) has to be transmitted from the adjacent general lighting to the MLED400, which can control the connected emergency light. This phase is not loaded by the luminaires but exclusively serves for evaluation purposes. Should the MLED400 be operated only in non-maintained light mode, the transmission of the connected voltage L'/ N (230V/50Hz) does not apply.

The integrated mains surveillance realises a switching of the MLED400 to the mains AC voltage of the maintained light circuit in case of a failure of the monitored voltage. This means, in case of a voltage failure of the monitored mains of a sub distribution in a fire area, the light at the MLED300 will be switched on.

The mains surveillance is deactivated by the DIP-switch S1 \rightarrow ON.

Attention: If the mains surveillance function is not used, it is absolutely essential that S1 is set to ON.

The MLED400 can dim the lights in mains operation down to 20% or 50% and it can realise a flashing function in emergency operation. These settings are carried out by means of the jumper group A, see connection example or setting of the dimming and flashing function.

A voltage has to be connected to the gate input (L', N) in order to end the dimming of the light in maintained light mode. Thus the luminous flux is raised to 100% within half a second. This applies only to lights which do not realise a flashing function in emergency operation.

If maintained lights with special functions (dimmed, flashing in emergency operation) are connected via mains monitor function, they immediately switch on (without any delay) and execute their emergency lighting function.

If the emergency lighting system switches to battery operation, all MLED400, regardless of their settings, are switched on. This happens during a system test or in emergency operation.

The integrated **reverse current indication** signalises a wrong connection of the module to the emergency lighting system (final circuit), L/+, N/- mixed up, by means of lights flashing in 2-second intervals. This function is executed in testing mode or battery operation (not in mains operation) and indicated only in this operation mode.

setting of the dimming and flashing functions \rightarrow jumper group A:

The setting of the respective function is carried out by jumpers, which are located in the casing. When the device is delivered, neither the dimming nor the flashing function is set, if not ordered otherwise.

setting	Jumper A-B	Jumper B-D	Jumper C-D	Jumper A-C
undimmed, 100% emergency operation	/	/	/	/
dimmed to 50%, 100% emergency operation	/	ON	/	/
dimmed to 20%, 100% emergency operation	ON	/	/	/
dimmed to 50%, flashing in emergency	/	/	ON	/
dimmed to 20%, flashing in emergency	/	/	/	ON

setting of the output voltage and current \rightarrow jumper group B:

The setting of the respective function is carried out by jumpers, which are located in the casing.

The MLED400 will be delivered with a default setting of 12V and 300mA output current if not ordered with a specified output voltage and power rating. The label on the front of the MLED shows the setting (connection LED).

The following table explains the setting of the jumpers for the different output voltages and currents.

setting	Jumper 1	Jumper 2 Jumper 3		Jumper 4	
U out 3.3 V	/	OFF	OFF	ON	
U out 4.2 V	/	OFF	ON	OFF	
U out 12.0 V	/	ON	OFF	OFF	
U out 24.0 V	/	OFF	OFF	OFF	
I out 150mA	OFF	/	/	/	
I out 300mA	ON	/	/	/	

technical data:

U AC:	230V 50Hz +/-20%
U DC:	180-300V
U gate input:	230V 50Hz +/-20%
U mains monitoring:	230V 50Hz +/-20%
threshold value mains	
monitoring:	150-195V AC
P LED:	max. 5W
ta:	-10+40°C
tc:	55°C
SIBE - MLED400 :	max. 500m

dimensions:



illustration of possible LED lights:

:

......

2W LED-Stripe

2W LED-Disc



connection example:

illustration of an MLED400:



Installationshinweise:

An asynchronous balanced mode with DCBLÜ1-3, DCBLU4, LMU03, LMU04, MLL200 (SMD), MLU300, MT300, MLED300 or MLU200 (SMD) is possible in one circuit.

Too high a capacity load in the end circuit has a negative impact on the querying of the lights and can thus lead to an incorrect query of the end circuit. Furthermore, decouple components should be used if an asynchronous balanced mode of MLED400 and external electronic ballasts is installed in one circuit, because otherwise a proper function of the single light surveillance cannot be guaranteed.

Product Information MU 04

Summary of characteristics:

- Lamp manager unit (for mixed operation)
- integrated lamp monitoring
- integrated dimming voltage switch-off during emergency operation

The lamp manager unit with single lamp recognition (LMA04) is intended for use with: **BK, BX, ZX, ZDCL, EURO-SIBE 7000 Multi-, mini-, and microControl** units.

With this unit it is possible to operate switched continuous lamps and standby lights simultaneously in a continuous circuit, as well as single lamp monitoring. The MU04 is compatible and replaces the current units LMU01, LMU02 and LMU03. A lamp output of 0.5 – max 150 Watts is supplied for the emergency light output in case of modified standby with mains AC by the continuous circuit, otherwise the lamp is in standby mode. The decision as to whether the function "modified standby" will be executed in the applicable circuit is made through evaluation of the closed-current loops. I.e.: If a closed-current circuit fails, the MU04 associated with this loop are activated via the current group "**SKM or DCM**".

The current circuits **must operate in continuous light operation**. If the emergency lamp connected to the MU04 is required to operate in unswitched continuous light, the **switch S2** on the MU04 must be switched to **"DS"**. This makes it possible (but inexpedient) to determine the switch type of the connected lamps even after installation of the circuit (continuous or standby mode).

A bypass input at the MU04 enables switching to connected emergency lights during mains operation together with the general lighting. To enable this switching, the switch S2 of the MU04 must be set to "BS", and a switched voltage L/N (230V/50Hz) is drawn from the neighbouring general lighting system, which can switch the connected emergency light. Here, the inserted voltage L'/N' (230V/50Hz) is used only as control voltage. The switches S3 and S4 are used to adjust the type of consumers (different currents).

Switch **S1** and the rotating code switch **are used to encode the single light query (S1 1-16 OFF, 17-20 ON).** If the emergency light system switches to battery mode, the consumers connected to the MU04 are activated as well. This is performed during system test and emergency mode. Through the integration of the monitoring unit into the MU04 it is possible to query the connected emergency light for function. The advantages of the MU04 are monitoring connected consumers without additional wiring and integration of standby light consumers to be inserted into an existing continuous light circuit, without the installation of a separate standby light circuit.

The MU04 has another **potential free contact** (S/S[`]), enabling switching of control voltage of dimmable ballasts (**max. 24V/DC 1A or 120V/AC 0,5A**) in emergency operation (standby or battery) or test operation. The MU04 is designed for a load of 0.5 - 150 A. This is based on mains AC of 230V 50/60Hz and 220V DC +/-10%. Ambient temperature: -10°C - +40°C during operation

Dimensions:

Illustr. of a MU04:





We reserve the right to change technical and editorial contents. 13.05.2008

Product Information MU05

characteristics at a glance:

- light manager function
- integrated light surveillance
- integrated dimming voltage switch-off in emergency operation
- integrated mains monitor function
- galvanically isolated control input

The MU05 unit is designed for application on SIBE devices of types: BK, BX, ZX, ZDCL and Multi-, Midi-, mini-, micro-Control.

This unit enables an joint operation of switched maintained lights and non-maintained lights in a maintained light circuit as well as a single light surveillance. The MU05 is compatible with units LMU01, LMU02, LMU03 and MU04 and displaces them.

Advantage of the MU05 is on the one hand that connected loads can be monitored without additional wiring and on the other hand that non-maintained lights can be integrated in an existing maintained light circuit without installing a separate non-maintained light circuit beforehand.

Lights in non-maintained light mode are activated and supplied via maintained light circuit in case of a general mains supply failure. Activation is carried out through an evaluation of the quiescent current loop of the central battery unit (ZBA). This means if the quiescent current loop fails, the MU05 assigned to this loop get activated via circuit unit SKMT or DCM.

The circuit units have to work in maintained light mode. If the emergency light, connected to the MU05, is to work in unswitched maintained light mode, switch the respective DIP switch to DS on the MU05. It is thus possible but inexpedient to define the switch mode of the connected lights (maintained light or non-maintained light) after installing the end circuit.

The DIP switch settings are listed in the table in paragraph "settings and configuration".

A gate input on the MU05 enables a switching of the connected emergency light in mains operation together with the general lighting. To realise this switch mode the respective DIP switch on the MU05 has to be set to BS on the one hand and a switched voltage L'/ N (230V/50Hz) from the neighbouring general lighting has to be connected to the MU05 on the other hand with which the connected emergency light can be switched. In this case the connected external voltage L'/ N (230V/50Hz) is only used as a control voltage.

The integrated mains monitor function serves the monitoring of the mains voltage of a neighbouring mains sub-distribution in whose area the light is installed. If this mains voltage fails, the downstream emergency light will be switched on automatically and supplied by the mains AC voltage of the SIBE device and it will switch back to normal automatically after mains restoration.

The integrated single light surveillance is coded by means of a combination of turn coding and DIP switch (see settings and configuration).

If the emergency lighting switches to battery operation, the loads connected to the MU05 are switched on, too. This happens during a system test and in emergency operation. The connected emergency light can be queried in terms of function through the integration of a surveillance module in the MU05.

Additionally, the MU05 has a potential-free contact (S/S`), by which the control voltage can be switched off on dimmable electronic ballasts in emergency operation (modified non-maintained lighting, activation of the modified non-maintained lighting function via integrated mains monitor or battery operation) or in test mode.

The settings of the respective consumers can be found in the table in paragraph "settings and configuration".

The application of twin terminals on the SIBE, the switch input and the mains monitor guarantees a problem-free and easy feed-through wiring.

settings and configuration:

function	DIP switch S1	DIP switch S2	DIP switch S3	DIP switch S4	DIP switch S5	Turn coding switch
light surveillance lights 1-16	-	-	-	-	OFF	setting 116
light surveillance lights 17-20	-	-	-	-	ON	setting 14
mains monitoring function active	-	-	OFF	-	-	-
maintained light function	-	-	-	ON	-	-
non-maintained light function	-	-	-	OFF	-	-
load: normal elec. ballast/lamps	OFF	ON	-	-	-	-
load: dimmable elec. ballast/halogen transformer	ON	ON	-	-	-	-
load: LED ballasts	OFF	OFF	-	-	-	-
technical data:

4 - 200 VA
230V 50Hz +/-20%
180-300V
195V AC
-10+55°C
max. 500m
max. 10m
plastics 2 parts
24V/DC 1A, 120V/AC 0.5A

image of an MU05



dimensions:



connection example:



terminals:	S S'	potential-free contact for switching off a dimming voltage (dimmable ballasts)
	LN	mains supply when integrated mains monitor function is used
	L' N	mains supply (switched mains) to switch the consumer in mains operation
	L/+ N/-	connection to SIBE (pay attention to polarity)
	LA/+ NA/-	connection of a consumer (e.g. electronic ballast, lamp,)

Note:

Terminal N, between L and L', is designed for connecting the neutral wire of a switching voltage as well as for connecting the neutral wire of a voltage to be monitored (mains monitor function); this contact is used with both terminals.

Product Information LMA 01

Summary of characteristics: - Lamp manager unit (for mixed operation)

The lamp manager unit (LMA01) is intended for use with: **BK, BX, ZX, ZDCL 220**, **EURO-SIBE 7000, MultiControl, Midicontrol, miniControl and microControl**.

With this unit it is possible to operate continuous lamps and backup lamps at the same time, if SKML are used

A lamp load with a maximal load of 2A connected to the emergency light exit is supplied in case modified readiness with mains AC, otherwise it/they is/are in standby mode.

The power circuit module (SKML) must be set to continuous operation (DS) with the front buttons.

If the emergency light system switches to battery operation, the consumers connected to the lamp managers (LMA01) are activated as well; this is done during system test (emergency operation). Switched or non-switched mains AC can be connected to an additional connection of the lamp manager LMA01. This can be used e.g. from a neighboring general light consumer. If no cases of modified readiness or battery operation are present, the consumers are supplied through the connected voltage. It is also possible but not practical to operate the connected lamps continuously; this would be possible by connecting this input with the hook-up for the emergency light system.

The two advantages of the lamp manager LMA01 are the ability to connect readiness lights without additional wires and that these lights may be inserted into an existing continuous light circuit.

The lamp manager LMA01 is designed for a current load of max 2 A. This is based on mains AC of 230V 50/60Hz and 220V DC +/- 15%.

Ambient temperature: -10°C - +40°C during operation

Dimensions:



Termination example:



Product Information DUO – Control

Summary of characteristics:

Light medium monitor (forced deactivation of the second light medium in case of failure of a light medium)
independent switching of monitored light mediums (circuits)

The DUO Control Module is an electrical control system to switch two equal or different power circuits and their consumers. The control system can be operated with AC or DC in the range of **200-240V**.

The DUO – Control Module is based on failure recognition of individual consumers. In case of failure of a consumer, the other one is switched off automatically. Each circuit can force the interruption of the other circuit. Failure recognition only works with activated power circuits, i.e., if one of the circuits is deactivated, the other circuit is unaffected. The DUO – Control Module differentiates between a circuit being active or defective.

After light medium replacement both circuits can be reactivated again by pressing the RESET button of the DUO Control Module. After a change of light medium, the circuits can be switched on again, if one or more circuits are shorted. This is done during a test.

The unit can be used with purely resistive loads (glow bulbs) or electronic ballasts with a light medium from 4.... 58 W. It is also possible to use various outputs (e.g. 1x18W and 1x58W).

The module is located in a Zinkor housing with tabs for mounting with screws. Ambient temperature: -10°C - +40°C during operation

Dimensions:



Termination example:



Product Information DCBLU05

Characteristics at a glance :

integrated lamp monitoring
 max. connection power 200VA

The lamp monitor unit DCBLU05 is intended for applications with the emergency lighting systems: **BK**, **BX**, **ZX**, **ZDCL 220**, **EURO-SIBE 7000**, **MultiControl**, **MiniControl**, **Midicontrol** and **microControl**.

The monitoring unit DCBLU05 is the improved version of the currently known DCBLU04, which can be used for individual light monitoring for emergency lighting systems (made according to EN50171, DIN VDE 0108 and ÖVE EN2) of the types listed above.

The DCBLU05 cannot be used for dimmable ballasts. For this application the module MU04 / MU05 is suitable.

The DCBLU05 is able to monitor **DC-compatible** ballasts or lamps with output powers ranging from 3 – 200VA.

To set up the DCBLU05 for the respective luminaires, 2 DIP-Switches (S1, S2) are used, whose function is explained in the table below.

The coding of the lamps is still carried out by means of a turn coding switch and the DIP-Switch (S3). (see table)

settings:

function	S1	S2	S3	Turn coding switch
monitoring lamps 1-16	1	/	OFF	numbers 1-16
monitoring lamps 17-20	1	/	ON	numbers 1- 4
luminaire: light bulb/halogen transformer	ON	ON	/	1
luminaire: norm. EVG P<20W	OFF	ON	/	1
luminaire: norm. EVG P>20W	ON	ON	/	1
luminaire: LED-lights	OFF	OFF	/	1

illustr.of a DCBLU05:

dimensions:



connection example:



Installation instructions:

Avoid a too high capacitive load in a circuit with DCBLU05, as otherwise a correct query cannot be guaranteed. Furthermore use decoupling modules when monitored and non-monitored lamps are operated in a circuit. Installing DCBLÜs of old types, MLU200, MLL200, LMU03, MLU300, MT300, together with the DCBLU05 in one circuit does not cause problems.

Summary of	characteristics:
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- Single phase mains monitor
- integrated converter switch
- integrated switch input to switch emergency lights with the general lighting

The BEPUE is mainly a conversion switch with integrated single phase mains monitor on a continuous light circuit for application on security light equipment per DIN VDE 0108 or ÖVE-EN2. Security lights can be switched simultaneously with the general lights through a common light switch. In case the general light system connected fails or the mains voltage drops by 15%, the unit automatically switches over to the connected continuous light circuits of the security lighting system.

The BEPUE can be used for emergency light systems, which work in changeover operation and produce a 220VDC during test or battery operation.

Application of a BEPUE results in savings during installation.

The connected security lights can be designed for continuous or standby mode with a BEPUE, for continuous application the terminal "L" must be connected (refer to example). For use as standby hookup, this terminal remains free. Monitoring of the general light network is done via connection to terminal L and N.

Another advantage of the BEPUE is simultaneous switching of emergency lights and general lights in continuous lighting operation (refer to example).

The emergency lights are connected to terminals LA and NA; 3A current must not be exceeded, and the conditions for the installation of emergency circuits per DIN VDE 0108, EN 50171 or ÖVE - EN2 must be assured.

Supply of the BEPUE with a voltage from the emergency unit is done via terminals L/+ and N/-. This **emergency equipment output** must be designed as a **continuous circuit**.

The BEPUE registers a phase failure (terminals L and N) and switches the voltage supply to emergency operation automatically. When the mains power returns, it switches back to mains supply.

The BEPUE recognises the test operation of the emergency light unit as well, and switches (independent from the switch position) the emergency lights ON to realise a possible single lamp query.

Caution!

Since the BEPUE is designed for switching the emergency lights independently of the general light system, it is not permitted to continuously operate the connected emergency lights with voltage only supplied by the emergency system.

Ambient temperature: -10°C - +40°C during operation

Dimensions:



Termination example:



Product Information EPÜ-L single Phase Mains Monitor

Summary of characteristics:	- Single phase mains monitor
	- integrated converter switch
	 integrated switch input to switch emergency lights
	with the general lighting

The EPÜ-L is mainly a conversion switch with integrated single phase mains monitor on a continuous light circuit for application on security light equipment per DIN VDE 0108 or ÖVE-EN2. Security lights can be switched simultaneously with the general lights through a common light switch. In case the general light system connected fails or the mains voltage drops by 15%, the unit automatically switches over to the connected continuous light circuits of the security lighting system.

The BEPUE can be used for emergency light systems, which work in changeover operation and produce a 220VDC during test or battery operation.

Application of a EPÜ-L results in savings during installation. The connected security lights can be designed for continuous or standby mode with a EPÜ-L, for continuous application the terminal "L" must be connected (refer to example); for use as standby hookup, this terminal remains free.

Monitoring of the general light phase is done via connection to terminals L and N.

Another advantage of the EPÜ-L is simultaneous switching of emergency lights and general lights in continuous lighting operation (refer to example). The emergency lights are connected to terminals LA and NA (emergency light), 3A consumer current must not be exceeded, and the conditions for the installation of emergency circuits per DIN VDE 0108, EN 50171 or ÖVE - EN2 must be assured.

Supply of the EPÜ-L with a voltage from the emergency unit is done via terminals L/+ and N/-(SIBE). This emergency circuit must be designed with a continuous circuit and must be connected with the correct polarity. The EPÜ-L registers a phase failure (terminals L and N) and switches the voltage supply to emergency operation automatically.

. When the mains power returns, it switches back to mains supply.

The EPÜ-L recognises the test operation of the emergency light unit as well, and switches independent from the switch position (terminal "L") the emergency lights ON to realise a possible single lamp query. Fuses for the monitored phase L (F1/ 125 mAT) and the output phase LA (F2/ 3,15AT) are located inside the EPÜ-L housing.

Caution!

Since the EPÜ-L is designed for switching the emergency lights independently of the general light system, it is not permitted to continuously operate the connected emergency lights with voltage only supplied by the emergency system.

Ambient temperature: -10°C - +40°C during operation

Dimensions:



Termination example:



connect

emergency lighting system

<u>CCIF Product Information</u> (Monitoring Module for a Constant Current Circuit)

Features at a glance :	 monitoring of a constant current circuit activation of standby operation on breakage or bunching of the of the constant current circuit conductors use of E30 cable not necessary (cost savings) modular design
The CCIF module (critical circle interface	module) is conceived for use in devices of type BX. ZX. ZDCL. ZAC. ZDC as well

as **ES5000**, **-6000**, **-7000**, **Multicontrol**, **miniControl**, **Midicontrol** and **microControl**. The module guarantees "safe" monitoring of a constant current circuit (voltage alarm circuit) in conjunction with voltage alarm modules, e.g. Power-Control (PC230). It should be noted here that the voltage alarms used must be equipped with a potential-free contact (contact must be closed when the voltage to be monitored is applied). Triggering of the modified standby operation (mod. SO) would result on breakage or bunching (shorting) of the constant current circuit conductors.

Because of its modular design, the CCIF module can be retrofitted into many existing systems employing the security lighting installations listed above. Please contact your dealer for more detailed information in this regard.

The connection of the voltage alarm with the CCIF module can be derived from the connection example. Careful attention must be given that the **terminating resistor** (10k Ohm) **at the output** of the **last voltage alarm** is included before the connection to the CCIF module Connector B is established. The terminating resistor is plugged into terminals A and B on delivery.

Connectors A and B of the CCIF module are provided with a protective circuit and input fuses (soldered fuses 5x20mm F250mA)

Housing: plastic Mounting: Ambient temperature: Distance CCIF → last voltage alarm: Connector cross section:

latchable on TS35 support rails -10 - +40°C max. 500m max. 2.5mm²

Dimensions:





<u>Fig: Connection of</u> the terminating resistor:



Connection example:



Features at a glance :

- can be connected to a air flow monitor (LC013)
- can be connected to a 2-stage fan (TD-250/100) (normal ventilation - strong ventilation) depending on the connection of a 12V DC voltage (see mode of operation)
- 2 pot.-free changeover contact for signalling e.g. for reporting "fan failure"
- RESET button for resetting a malfunction signal
- automatic RESET function

The fan monitoring module (LUW) provides monitoring of fans in conjunction with an air flow monitor (NC configuration). The main area of application of the LUW module is, in conjunction with the LC013 air flow monitor, the control and monitoring of the TD-250/100 2-stage fan. This fan is used for blowing air into and extracting air from E30 cabinets and hence must be monitored in accordance with EN50171, and any malfunctions which may occur must be signalled.

Mode of operation:

Prerequisite for efficient operation is a supply voltage of 230V AC at the mains input (UNetz) - careful attention should be given to the correct polarity here.

As soon as a voltage is applied to UNetz, the output LB is released, i.e. the fan operates at its standard capacity (approximately 50% of maximum capacity). If a voltage is then applied to the 12V DC input (with attention to correct polarity), then the LB phase is switched out and the LA phase switched in, i.e. the fan now operates in strong ventilation mode (100% of maximum capacity).

In order to be able to detect a failure or malfunction of the fan, an air flow monitor is employed in NC configuration. This registers an air flow which is too low or absent, e.g. blockage of the inlet and exhaust vents, and consequently triggers a malfunction signal at the LUW. This malfunction is signalled by means of a red LED and 2 potential-free changeover contacts. (During error-free operation, contacts 2, 3 (or 5, 6) are closed, and in the event of malfunction, contacts 1, 2 (or 4, 5) are closed.)

In the event of malfunction, the module attempts to reset the error automatically at time intervals of about 1 minute. Manual resetting of the error is however also possible using the RESET button on the LUW module.

The LED should, in any case, go out for approximately 10 seconds though.

If the red LED does not go out after resetting the error, then this is an indication of a possible interruption to the fan supply voltage. If no LSW (air flow monitor) is connected, then no errors will be reported.

A suitable exhaust air duct must be provided by the customer or be available.

Housing: Mounting: Supply voltage: Fan voltage: Voltage for stage selection: Potential-free changeover contacts: Ambient temperature: Fuse internal – controller: Fuse internal – fan:

plastic 2-part on TS35 support rails 230V 50Hz AC +/-15% 230V 50Hz AC +/-15% 12V DC max. 8A AC1 250V AC, 6A 30V DC -10°C ... +40°C T100mA 5x20mm T500mA 5x20mm

Dimensions:

Technical data:





(TD-250/100)

Connection example:



Subject to technical alterations and textual amendments

Product Information Power Control (PC230)

Summary of characteristics:

Three-phase mains monitor
2 potential-free converter contacts with a switching output of 2A at 230V AC
variable switch limit adjustment from 195V to 180V

The Power-Control (PC230) mainly serves as voltage monitor in subordinated distributions of the general lighting.

Three phases can be monitored. If fewer than three are monitored, the unused monitoring connections must be bridged with terminated connectors.

The upper limit is at 195V, i.e. set to a 15% lowered main voltage of 230V. Using a potentiometer, this limit can be reduced as required to 180V, e.g. to register dangerous mains fluctuations without endangering the light mediums.

The message can be queried through 2 two-way switches at the module, one is usually switched into the monitoring circuit of the emergency light system.

Important: the NO contact [18-15] or [28-25] is wired.

If the contacts are used for other purposes, the output listing of 2A-30V/DC, 0,3A-110V/DC or maximal 0,5A-230 V/AC/50Hz must be noted.

This module is located in a plastic housing for TS 35 rail assembly.

Ambient temperature: -10°C - +40°C during operation

Dimensions:



Termination example:



characteristics at a glance:

three-phase mains monitor
2 potential-free converter contacts with a switching output of 2A at 230V / AC
switch threshold value 195V

The Power-Control (PC230) mainly serves as voltage monitor in subordinated distributions of the general lighting.

Three phases can be monitored. If fewer than three are monitored, the unused monitoring connections must be bridged with terminated connectors.

The upper switch threshold is at 195 V, i.e. set to a 15% lowered mains voltage of 230V / 50Hz. The message mains OK or mains failure can be queried via 2 converter contacts on the module, 1 of which is usually switched into the monitoring loop of the emergency lighting system. It is important that the NO contact [18-15] or [28-25] is wired.

Technical Data:

supply voltage: terminal cross section: load converter contacts: housing: mounting: surrounding temperature: 3x230V AC / 50Hz to neutral max. 2.5,mm² 2A – 30V/DC, 230V/AC 50Hz; 0.3A – 110V/DC PC-plastics 2 parts red mounting rail TS35 -10 ... +40°C in operation

dimensions:







connection example:



Product Information MC-LM Line Monitor

Characteristics at a glance:

- three-phase mains monitoring
- data transfer via bus system
- designed for connection to devices of Multi-Control series
- safe data protocol: no E30 line necessary
- connectable to up to 16 MC-LM per SIBE device
- display of a programmed text message/positioned on SIBE

The MC-LM (Multi-Control - Line Monitor) mainly serves as a monitor of subdistribution grids (voltage supply of the general lighting). The MC-Line Monitors are voltage alarms to be connected to the Multi-, Midi-, mini-, and microControl emergency lighting system. The MC-LM can monitor three phases, e.g. of a general mains distribution. If less 3 phases are to be monitored, non-used phase inputs with connected terminals have to be bridged on the MC-LM.

The switching threshold for the recognition of a mains failure or jitter lies at 85% of the mains nominal voltage (230V AC), i.e. at ca. 195V AC.The MC-LM modules can be connected in series to the emergency lighting system Therefore the correct MC-LM terminals have to be used and a different address has to be allocated to every single MC-LM.

The setting of the address of each MC-LM is realised by the turn coding switch on the module.

The DIP switch is necessary for activating and deactivating the terminating resistor which has to be activated on the last of the daisv-chained modules (setting - ON).

A control LED reports the current status of the voltage alarm. A constantly glowing LED signals a correct voltage. If the LED does not glow, the voltage of the general distribution is disturbed.

U Nom:	230V / 400V AC 50Hz
U BUS:	12V DC
t u:	-10…+40°C
BUS system:	RS 485
casing / mounting:	plastics (2 parts) / on mounting rail TS35
error triggering:	85% of UNom
S SIBEall MC-LM:	max. 1000m

connections and general info:

name	terminal	connection to	cable cross section	cable type (example)
mains	L1, L2, L3, N	mains voltage	0.52.5mm ²	NYM-J
input (BUS)	SC, GND, +12V, A, B	SIBE	0.51.5mm ²	CAT5 / Y(ST)Y 2x2x0.8
next MC-LM (BUS)	SC, GND, +12V, A, B	further MC-LM	0.51.5mm ²	CAT5 / Y(ST)Y 2x2x0.8

45 60

turn coding switch: address allocation of the individual modules DIP switch: activation (ON) or deactivation (OFF) of the terminating resistor

dimensions:

technical data:





connection example:



Subject to technical and editorial changes.

Product Information BSQ Sequencer

characteristics at a glance:

- fitting into existing installation circuits

- definition of the luminaire type without subsequent wiring

- definition of the luminaire as part of the general or emergency

lighting in maintained or non-maintained light mode

The sequencer is an electronic device universally applicable in emergency lighting systems with 230V/50Hz or 216V/DC system voltage, where the type of luminaire has to be changed after the finished installation (part of general lighting, part of emergency lighting in maintained or non-maintained light mode.

The special advantage can be seen when emergency lighting systems are installed in buildings where new cabling is hardly possible or even impossible (e.g. in historic buildings). Existing cables can be used and the luminaires can be used as required. Furthermore, when emergency lighting systems are installed newly, circuits with sequencers can be applied where the lighting is expected to change (maintained lighting, non-maintained lighting, further emergency luminaires) or where the lighting conditions are not clear yet. The sequencer can also be used in subdistributions where circuits of the general lighting as well as the emergency lighting are controlled by downstream contactors (AC/DC capable), which results in a reduced number of switching devices and installation material.

The sequencer allows to operate a luminaire as part of the general lighting or as part of the emergency lighting in maintained light mode or non-maintained light mode. The function of the luminaire is defined by a switch and through connecting to the respective sequencer terminals, which can be done on-site.

The sequencers is designed for mains operation at 230V +10%/-15% 50Hz and emergency operation at 180-260V AC and DC.

The sequencer has a plastic housing designed for screw-on mounting.

dimensions:



connection example:

The DIP switch (ON/OFF) in combination with the connection versions (L1, N1) or (L2, N2) defines the luminaire type.

setting of the DIP switch:

 $\text{ON} \rightarrow$ emergency luminaire in maintained light mode, $\text{OFF} \rightarrow$ emergency luminaire in non-maintained light mode

 $ON \rightarrow$ general luminaire off (mains as well as emergency operation), OFF \rightarrow general luminaire on but off in emergency operation

operation of emergency luminaires

operation of general luminaires



image of a BSQ:



Installation of an emergency lighting system without changing existing electric circuits through integration of the BSQ

different connection versions of the BSQ lead to

case 1 2 luminaires in maintained and 3 in non-maintained mode (5 luminaires in emergency operation),

case 2 3x general lighting and 2x maintained lighting (2 luminaires in emergency operation)

case 3 general lighting and 2x non-maintained lighting(2 luminaires in emergency operation)

In case 1 & 2 the luminaires in maintained lighting do not need a BSQ

maintained lighting

general lighting

non-maintained lighting

 \langle

The general lighting is of in emergency operation.



In an emergency lighting circuit with 10 luminaires in maintained light mode only 4 ought to be operated further on in maintained light mode. 6 luminaires are equipped with the BSQ and thus continue working in non-maintained light mode.



Product information MCT-12 / MCT-12S (mimic panel)

Characteristics at a glance:

- display of the system statuses in clear text
- optical (LED) and acoustic notification of the system statuses
- remote activation of the test function \rightarrow functions test
- BUS-compatible
- operation mode of the system can be changed
- possibility of switching the maintained light consumers on or off

The remote mimic panels MCT-12 and MCT-12S provide a decentralised status display of emergency lighting systems of the type **Multi-, Midi-, mini-, and microControl**.

The current system status is indicated optically and acoustically. The optical notification is carried out by means of clear text as well as LED. In case of failure an acoustic notification is given additionally. The acoustic notification can be reset by pushing the button "RESET signal sound", which does not affect the optical failure notification.

The following system statuses are displayed:

- system in mains operation
- system in battery operation
- system failure

Additional status notifications are e.g. Modify Standby Light, test operation, mains \rightarrow ok, battery \rightarrow ok, DCM error etc. They are displayed in clear text.

The system operation mode can be switched from charging mode to ready-to-operate mode and vice versa via button or key switch (on / off) on the MCT12.

Protect the MCT12 from access by unauthorised personnel if there is no key switch on the mimic panel (DIN VDE 0108 part 1 paragraph 6.4.3.11).

The test button has to be pushed until the display shows "ready" in order to activate the external function test. This prevents an accidental activation of the test function.

Please find connection options and schemas in the circuit diagram of the emergency lighting system.

Connectors and general information:

supply voltage:12-15 V / DC.control wire / connection wire:min.0.8mm² screened (e.g. J Y (ST) Y 2 x 2 x 0.8mm²)

The dimensions for mounting are show in the diagram below.

Dimensions:



Image of an MCT-12:



Subject to technical and editorial changes.

image of an MCT-12S with key switch:



Product information BMT 24 (Message Station)

Summary of characteristics:

- optical and acoustic display of system status
- system operating mode change possible
- switching continuous light consumers ON and OFF possible

The message level BMT 24 displays the system condition decentralised for emergency light units BGV 200, ZAC 220, ZDC 220, ZDCL 220, BK, BX, ZX, ES 5000, ES 6000, ES 7000 and Multi-, Midi-, mini-, Microcontrol.

The current status if the system is indicated acoustically and optically. An acoustic message is generated in case of faults. Simultaneously the status is displayed with LEDs. The audio signal can be acknowledged with a button; the message itself cannot be affected by this.

The following system conditions can be indicated:

- System in mains operation
- System in battery operation
- System ready to operate
- System faulted
- Continuous light activated

The switch (ON/OFF) at the BMT 24 is used to switch the system from charging to standby and activate continuous light at the same time. If the message station is not equipped with a key switch, it must be ensured that the BMT 24 is protected against unauthorised access for this application. 6.4.3.11). Depending on the hookup, the functions can also be executed individually. The control/supply voltage is 24VDC.

Termination is done through 15-pin termination strip via the control lead with 0.25mm² (e.g. LiYY16x0.25mm²) The dimensions for mounting are contained in the dimensions below.

CAUTION:

If a security lighting system is in mode "Ready" with connected message station, and this is completely switched OFF, (disconnecting from battery and mains), the message station must be switched to "Ready" (switch ON/OFF) after reenergizing the system (priority circuit).

Dimensions:



Illustr. of a BMT 24:



Troubleshooting

The following list will help you to correction of defects. If this isn't possible, then you call your appropriate Electro company.

please note

If you need information of a special modul in the display, then please push the Info-Button on this modul.

error	display	possible reason	troubleshooting
acoustic signal	red LED BSUE-board	battery not right polarity connected	battery right polarity connect (B+ red ; B- blue)
sounded			
device don't start		main not available	checking and changing of fuses
		defective fuses (F1)	checking main supply (X01 / F1)
substation don't		wire betwixt headstation and substation	all cabel betwixt headstation and substation are connect (see manual)
start			
device don't run	Display 'charging mode'	BAS 0 (charging mode)	BAS (mode switch) switched to 1 (power line mode)
emergency operation	Display 'charging mode'	MCT 'charging mode'	MCT switched to 'power line mode'
(batteryoperation)	Display 'deep discharging'	battery voltage to low	battery must be charging
device don't run a test	fast charging' (LDM25)	main failure or test just end	Wait while the device switched in float charging
	Display 'mod. BS'	appropriate input SAM08, PC230	SAM-input reprogramed, checking power control
	Display 'mod. BS'	current loop (F7-F8) open	current loop must be closed, checking power control
	Display 'battery operation'	main failure	checking power supply; clear faults of main failure
no function of circuit	Display 'charging mode'	BAS 0 (charging mode)	BAS (mode switch) switched to 1 (power line mode)
in mains-operation	Display 'charging mode'	MCT auf 'charging mode'	MCT swiched to 'power line mode'
		circuits of DCM -> BS	DCM -> DS (maintained light), to note the manual
		appropriate input SAM08	SAM-input reprogramed
	red LED 'error' (DCM)	defective fuse of DCM (L+ / N-)	changing defective fuses
	red LED blinking 'error' (DCM)	earth-fault	find the earth-fault and clear the fault
		fault setup of lamp-moduls	checking the switch-mode of the lamp-modules and maybe change the mode
		lamp-modules false connected	all lamp-modules must be right polarity connected
		lamps allocated to a false circuit	connect all lamps to the right circuits
no function of circuit	Display 'charging mode'	BAS 0 (charging mode)	BAS (mode-switch) switched to 1 (power line mode)
in battery-operation	Display 'charging mode'	MCT 'charging mode'	MCT switched to 'power line mode'
mode	red LED 'error' (DCM)	defective fuse of DCM(L+ / N-)	changing defective fuses
		all lamps are defect or not DC-compliant	changing all lamps, checking lamp-moduls

no charging of the	red LED 'failure' (LDM)	defect fuse of LDM (charger)	change defect fuse
battery	red LED 'failure' (LDM)	defect fuse of transformer	change defect fuse
	red LED 'failure' (central unit)	battery -blocks defective	to measure the battery-blocks with load and change defective blocks
	red LED 'failure' (central unit)	series connect. of battery broken (disconnnect)	check battconnect., right polarity and change defective battery-connection-cable
Plug & Play	red LED (central unit)	add or remove a DCM	new detecting of modules
mod. nonmaintained	Display 'mod. Nonmaintained'	SAM08- modul disconnect or false coding	checking the BUS-wire and the coding
(mod.BS)although	(mod.BS)		
current loop closed			
and SAM input OK			
device break down if	Display 'fuse battery'	battery defective fuses	check the fuses F2, F4, F10, F11, F12, F13, F14
main failure	red LED BSUE-board		change defective fuses
	red LED 'failure' (central unit)		
	Display 'battery-Symetry'	defective fuse of Symetry	change defective fuse F3
DCM error	red LED 'failure' (cental unit)	change a DCM	first "dedect modules", after it reset errors
	Display 'DCM failure'		
circuit error	red LED 'failure' (cental unit)	circuit-monitoring out of range	change defective lamps and/or to adjust the reference-value
		lamp-error	change the defective lamp