Sub-distributor for Central Power Supply System with Central Battery and Microprocessor-Based Function Control System

multiControl *plus* Sub-distributor

*

Illustration

RP-Technik Notstromsysteme

Customer order No.:

Manufacturer No.:

Commissioning / Object:

Device No:

version: 1.0, date: 15.06.2018-steven.schmidt

*similar to illustration

Contents

multiControl *plus* Sub-distributor

Setup & Commissioning

1 General

This instruction manual is aimed at electrically skilled people according to DIN VDE 0105 or authorised technical staff and explains the safe and professional handling of the central battery system. The general safety regulations and the local accident prevention regulations which are valid for the area of use as well as safety instructions have to be observed. The instruction manual, especially the chapter safety, has to be read completely prior to any works on the system.

1.1 Further applicable documents

Components from other manufacturers are mounted in the systems. The manufacturers of these components carried out a hazard assessment and declared their compliance with existing European and national regulations.

1.2 Liability and warranty

This instruction manual was created considering existing standards. It has to be kept near the system and easily accessible for all staff working on and with the system.
Additionally, all laws, standards and regulations of the country, in which the system is mounted and operated, have to be observed.
The manufacturer does not assume liability or warranty for damages or consequential damages occurring through:

- non-intended use
- non-authorised or non-professional changes of the connections, settings or programming of the system
- non-observance of rules and regulations for safe operation
- Operation of unauthorised or unsuitable devices on the Low Power System

1.3 Copyright protection

1.4 Spare parts

Only original spare parts of the manufacturer must be used. Wrong or defective spare parts can lead to damages, malfunctions or total failure of the system. Furthermore, the use of unauthorised spare parts voids all guarantee, warranty, service, compensation, and liability claims.

1.5 Disposal

Packaging materials are no waste but reusable materials which have to be recycled.

Batteries and electronic components contain materials which can lead to damages to health and the environment when inappropriately disposed. National rules and regulations for the appropriate disposal of used batteries and electronic components have to be observed!

2 Safety

The sub-distributor is safe to operate and complies with valid and recognised rules of engineering at the time of its development and production. There is, however, the risk of danger when the system is used by non-professional staff or when it is used in a non-professional or non-intended way.
The system and the connected parts must only be operated in perfect condition. The following have to be observed:

- safety instructions and hazard notes in the instruction manual
- specified work and safety instructions of the operator

Errors which influence the function or safety of the system have to be reported to the responsible person and cleared immediately.

2.1 Content of the instruction manual

Each person working on or with the system has to read and understand the instruction manual completely prior to any work on the system or battery, even when this person has already worked with this system or a similar one or has been trained by the manufacturer.

2.2 Changes and modifications of the system

Any changes or extensions to the system, which are not authorised by the manufacturer, are prohibited in order to avoid hazards and to guarantee an optimal performance of the system. Extensions, modifications or maintainance works, which are not described in the instruction manual, have to be carried out by trained service personnel only!

2.3 Responsibility of the operator

As described in point 1.2, this instruction manual has to be kept near the system and easily accessible for all staff working on and with the system.
The system must only be operated in technically perfect and operationally reliable condition. Additionally, prior to its commissioning, the system has to be checked for intactness.

2.4 Staff requirements

Only skilled technicians or authorised qualified personnel are permitted to work on or with the system after being briefed about possible hazards.
Staff are considered qualified if they are able to judge the work to be done and recognise possible hazards based on their training, expertise and experiences as well as their knowledge of the respective regulations.

If the staff lacks the necessary knowledge, they need to get a professional instruction. You also have to make sure that the tasks are clearly defined and understood and the works are carried out under supervision of skilled technicians.

2.5 Safety at work

Observance of safety notes and instructions is the basis of safe working and thus damage to persons and property while working on and with the system can be avoided.

The following organisational measures have to be defined in writing and observed:

- safety measures during the work e.g. disconnecting the power supply and securing it against reconnection, standby lighting
- protection and safety devices against hazards from neighbouring parts of the system
- protection and safety devices for personnel working on the system
- obligation to inform and report on beginning, duration and ending of the works

Observe ESD-protection while working on the system!

2.6 Personal protection equipment

Always wear protection gear while working on and with the system:

protective clothing (tight-fitting, low tensile strength, no wide sleeves, no rings or other jewellery)
safety shoes (ESD-shoes according to standard EN 345)

3 Preface

Thank you very much for buying an "multiControl *plus* Sub-distributor". This system complies with the standards DIN EN 50171, DIN EN 50172, DIN VDE 0100-560, DIN VDE 0108-100 as well as DIN VDE 0100-718 (versions relevant on delivery) and guarantees the correct functioning of your emergency lighting system by means of a state-of-the-art micro-processor-controlled function control system. This documentation has been created for you to quickly commission and operate the system in an uncomplicated way.

We recommend the following course of action:

1. Observe the relevant danger signs and safety instructions (chapter 4)
2. Make yourself familiar with the design of the MC system (chapter 6)
3. Commission the system (chapter 8)

The exact circuit diagram along with other information on your system can be found in the attachment of this document.

Note: For maintenance works and modifications the system has to be de-energised by a specialist. The necessary steps are described in chapter 9.

3.1 Installation location and environmental conditions

The system and the battery system can be operated at an altitude of up to 2000m above standard elevation zero, without any power reduction, and must be placed in an appropriate room satisfying the following environmental condition:

- Air temperature: 0°C to 35 °C
- Humidity: up to 85% max. (non-condensing, refer to DIN EN 50171)

When selecting the operation room, make sure that sufficient ventilation according to DIN VDE 0510; EN 50272-2 and EltBauVO is assured. Also, please make sure that the room fulfills the conditions corresponding to the protection class of the system (see DIN EN 60529 and 60598).
The LAR of the respective federal states is used for distributors of the safety lighting! The EltBauVO only applies in connection with battery systems and associated power supply systems and the construction of electrical rooms.

Note: The system must be located in the building such that the allowed cable lengths allowed for emergency lighting circuits will not be exceeded.

4 Danger and information signs

Please strongly obey the safety instructions when installing and using your multiControl *plus* Sub-distributor system.

	• Observe instructions and keep them located near the battery system for future reference! • Work on the battery system should only be carried out by qualified personnel! • No guaranty in cases of non-observance of instruction manual, repair using non-original parts or unauthorised intervention!
	• Do not smoke! Do not use any naked flame or other sources of ignition. There is the danger of explosion and fire hazards!
	• While working on batteries wear protective eye-glasses and clothing! • Observe the accident prevention rules as well as DIN VDE 0510, VDE 0105 part 1 (version relevant on delivery)!
	• Any acid splashes on the skin or in the eyes must be flushed with plenty of water immediately. Then seek medical assistance. Spillages on clothing should be rinsed out with water!
	• Explosion and fire hazard, avoid short circuits! Caution! Metal parts of the battery are always energised; therefore do not place items or tools on the battery!
	• Electrolyte is strongly corrosive and acidic. In normal working conditions the contact with electrolyte is nearly impossible; electrolyte may leak from the vent valves in case of overcharging the battery or in case of mechanical damage to the container. In case of any contact with electrolyte please flush with water abundantly and seek medical assistance.
	Batteries / cells are heavy! Ensure adequate mounting security and always use adequate handling equipment for transportation.
	Disposal of batteries Batteries marked with the recycling symbol should be processed via a recognised recycling agency. By agreement, they might be returned to the manufacturer. Batteries must not be mixed with domestic or industrial waste.

5 Scope of delivery

Included in the delivery of the multiControl *plus* Sub-distributor system are:

- 1x system multiControl *plus* Sub-distributor in floor standing cabinet / cabinet
- 1x brief instruction (this document)

Other tools and materials necessary for installation (brought by the installer):

- measuring device for voltage measurements of up to 500VAC or 300VDC
- slotted screw driver width 5.5mm
- hexagon socket wrench SW13 or slotted screw driver 10mm
- Phillips screw driver PZ2
- ¼“-tool with torque variable between 0 and 22Nm

6 System overview

Illustration

Figure 1: Front view

1	Fuse DC-Voltage / connection DC-Voltage
2	Fuse mains F1 / connection AC-Voltage
3	Connection consumer
4	Connection data (RS422)
5	UV-Controller
6	Circuit modules
7	Connection fan*
8	Connection DC-Voltage*
9	RS485-Bus*

*Terminals can be omitted depending on the mechanical design

Illustration

Figure 2: Inside view

7 Mounting and installation of the sub-distributor

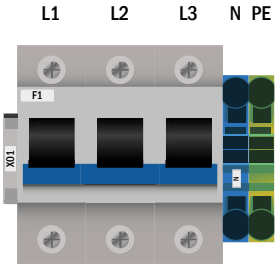
7.1 Connection of the power supply

7.1.1 Mains connection (terminal X01)

Make sure that the mains power line is de-energised and dimensioned according to the maximum connected load. Connect the mains line to the mains terminals (Figure 2; Number 2) for which you have to remove the mains fuses.

Caution: The mains power line gets energised at a later time (see chapter 8).

System type	L1	L2	L3	type
multiControl *plus* Sub-distributor				



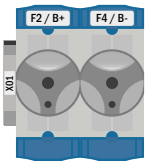
switch-disconnector

Figure 3: Mains connection (F1)

7.1.2 Fuse DC-Voltage F2 (B+) / F4 (B-)

The following table shows the type of the battery fuse (D02 Innozed) for the systems multiControl *plus* Sub-distributor in Ampere.

System type	B+	B-	type
multiControl *plus* Sub-distributor			



D02 Innozed fuse

Figure 4: Fuse DC-Voltage

7.1.3 Battery connection (terminal X21)

Connect appropriately labelled cables to the two contacts (B+, B-) of the battery connection as shown in Figure 5, which are then led to the battery system.

Note: Depending on the mechanical design, these terminals can be omitted.

Figure 5: Connection DC Voltage

7.1.4 RS422 Interface (Terminal X02)

The terminal X02 serves for the data connection between Central battery system and sub-distributor. Only use a 6-pole shielded BUS-cable (p.e. J-Y(St)-Y).

NYM-cables are not allowed!

Notice: Max. cable length 300m.

Notice: For any installation work on the RS422 bus, the device must be completely switched off.

Terminal assignment - see documentation Main system section "Outgoing sub-distribution - ABUV"	
1 – Main system clamp 1	4 – Main system clamp 4
2 – Main system clamp 2	5 – Main system clamp 5 (GND)
3 – Main system clamp 3	6 – Main system clamp 6 (+12V)

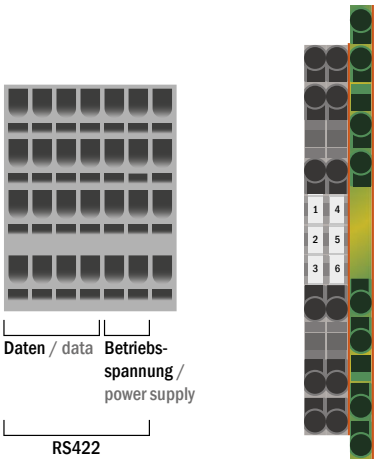


Figure 6: Connection RS422 bus

7.1.5 Output circuits (terminal block X30)

Figure 7 shows the terminal block X30 to which the consumer circuits (luminaires) can be connected. Pay attention to the correct polarity and use mains-compatible cables; comply with the standards MLAR, EltBauVo as well as DIN VDE 0100.

Note: The circuits to be connected have to be checked for installation errors such as short circuit and earth fault prior to connection.

Note: L = Phase; N = neutral conductor

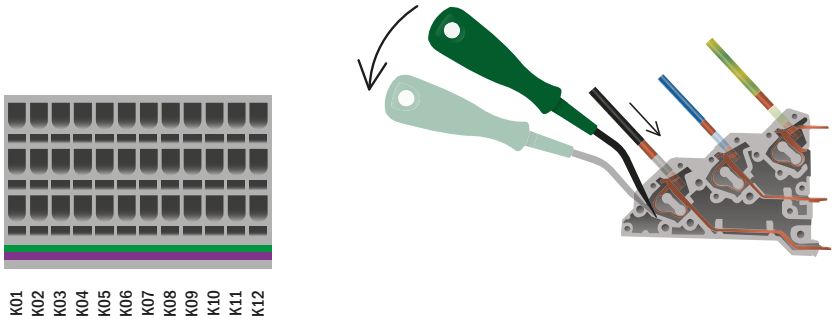


Figure 7: Connection electric – Terminal X30

8 Commissioning of the sub-distributor

Open the housing for commissioning the system. Figure 2 schematically shows the view of an open system cabinet. Continue as follows:

1. **Disconnect main system from voltage.** Disconnect the main system from voltage by using the documentation of the main system.

2. **Prepare mains and battery power supply.** Insert the fuses outgoing sub-dustributor at the main system.

3. **Mains and battery power supply.** Put the power supply cable between main system and sub-distributor under voltage, to putting the main system into operation. Check the correct connection for the mains supply at F1, as well as the battery power supply at F2/F4 or X21 by the following measurements. If there is a connection error, abort the commissioning immediately:

Voltage between L1 and N
Voltage between L2 and N
Voltage between L3 and N
Voltage between L1 and PE
Voltage between L2 and PE
Voltage between L3 and PE
Voltage between PE and N

} This voltages should be lay between 220V to 240V (provided mains supply)
If not, there is a connection error.

Voltage between B+ and B- at the sub-distributor: until about 240V DC

4. **Switch on the sub-distributor.** Switch on the mains fuse F1 (Figure 2, Point 2) and put the fuses F2/F4 (Figure 2, Point 1) in.

By putting in the fuses F2 and F4 the sub-distributor will start automatically.

9 De-energising the power supply

9.1 De-energising the sub-distributor at the sub-distributor

Before conducting maintenance works or making changes to the system, it has to be de-energised by a specialist. For this the following instructions have to be observed:

1. Operation mode switch to charging mode. Turn the operation mode switch on your main system to charging mode (position “0”).

2. Disconnect mains fuses. Take out the mains fuses.

3. Disconnect battery fuses. Take out the battery fuses.

Note: The supply cable for mains and battery keeps energised.

9.2 De-energising the sub-distributor at the main system

Before conducting maintenance works or making changes to the system, it has to be de-energised by a specialist. For this the following instructions have to be observed:

1. **Operation mode switch to charging mode.** Turn the operation mode switch on your main system to charging mode (position “0”).

2. **De-energising the supply cable between main system and sub-distributor.** Remove all fuses from the “Outgoing UV” at the main system. The sub-distributor is now de-energised and switched off.

Note: The supply cable for mains and battery to the sub-distributor is now de-energised.

10 Servicing and inspections

Once a year you should also check (visual inspection):

- check naked screw joints (earthing, mains supply, battery cables) for tightness
- ventilation

10.1 First inspection

The first inspection has to be carried out according to E DIN EN 50171 (VDE 0558-508):2013-07 by the installation technician when commissioning the system.
First inspections have to be carried out in compliance with the local, national regulations and comprise the following points:

- check the correct selection of modules. Observe the selectivity of the distribution network of the emergency power supply
- check the correct selection and setting of the automatic transfer and switching device (ATSD)
- visual check of the settings of the protection devices
- check the function by disconnecting from mains
- check the mounting rooms in terms of fire protection, equipment and facilities.

Inspections must only be carried out by electrically skilled technicians, who are trained and qualified.

10.2 Repeating inspection

The repeating inspection has to be carried out in compliance with the local/national regulations. If there are no local/national regulations, the following intervals are recommended:

automatic transfer and switching device (ATSD):

- function test with load transfer: **weekly**
  An automatic function test must be programmed by the installation technician/operator upon installation/commissioning (see documentation of the main system)
- test through imitation of a mains failure: **half-yearly**
  disconnection from mains supply through disconnecting the pre-fuse of the system or pushing the mains switch (chapter 7.1.1 (Figure 3)). The switch has to be switched on again after the function test.

protection devices:

- visual inspection of the settings: **yearly**
  1. check the battery voltage as well as the symmetry voltage with a measuring device (see chapter 5)
  2. check the battery current by imitating a mains failure (see "testing through imitation of a mains failure") with a measuring device (see chapter 5) or a suitable and calibrated clamp-on ammeter

protection against electric shock

- measured at mains input: every 3 years
- in output circuits with residual current-operated protective device (RCD) through function test, proof of triggering with rated residual operating current: **half-yearly**
  Only with installed service socket (SSD)

10.3 Inspection before commissioning

After mounting the central power supply system, the installation technician must carry out the inspections according to HD 60364-6 chapter 61.

Part of them is the visual inspection of the stationary electrical system before the central emergency power supply system is commissioned as well as testing and measuring, preferably in this order:

- conductivity of the cables
- insulation resistance of the electrical system
- protection through SELV, PELV or protective separation
- protection through automatic switch-off of the power supply
- additional protection
- voltage polarity
- phase sequence of the external conductors
- function and operation test
- voltage drop

If an error is detected during the testing and measuring, this and each previous test, which might have been influenced by this error, have to be repeated after clearing the error.

If the installation technician of the central emergency power supply system is not the installation technician of the stationary electrical system, he must be provided with the test log of the first inspection of the stationary electrical system, which the emergency power supply system is meant for, before he can carry out the first inspection of the emergency power supply system.

The observance of the requirements as defined in the instruction manual of the manufacturer has to be proven and confirmed prior to testing and measuring by visual inspection. Particularly the following has to be inspected:

- the condition of the mounting location, marking and equipment according to standards (operating devices, means of body protection, tools, utilities)
- protection against intrusion of solid foreign objects and liquids
- protection against external mechanical impact
- observance of the surrounding temperature (lower and upper limit)
- observance of the maximal humidity
- ensuring the necessary ventilation
- EMV-environment (A or B)
- checking if special operating conditions can disturb the operational safety and functionality of the central emergency power supply system such as vibrations, extraordinary shocks, corrosive atmosphere, strong electric or magnetic fields, explosion hazard
- the existence of necessary operation and maintenance areas for the central emergency power supply system
- the correct selection of modules of the emergency power supply system and check if the requirements of the user according to 5.2 have been met by the manufacturer
- checking the settings of the protection devices

If a system fails an inspection according to E DIN EN 50171 (VDE 0558-508):2013-07 paragraph 8.2.4 sub-paragraph g) [6], it **must not** be commissioned!

[6] checking the battery concerning sufficient capacity, the emergency power supply system must be operated during the battery discharge with the rated output current over the rated operating time. Systems, which do fail this test, have to be tested again. If the requirements are not met in this test either, the system must not be commissioned.

10.4 Procedure in case of failure

If you notice malfunctions of the battery set or the charger unit, call the customer service immediately. A service contract with your dealer enables an early recognition of failures.

11 General information on your system

System type: multiControl *plus* Sub-distributor	
Mounted by:	Date:
Commissioned by:	Date:
Safety signs fixed by:	Date:

12 Technical data

device type	MCUV12	
mains supply	230V AC / 400V AC +/-10%	
power supply frequency	50/60 Hz +/- 4%	
consumer connection power (DC) in W	3h	
consumer connection power (AC) in VA		
battery voltage	216V	
deep discharge 1	1.71V / Cell	
deep discharge 2	1.53V / Cell	
working mode	maintained or mode non-maintained connecting in switchmode	
power supply monitoring	3 phases again N and critical circuits cc MB for switched and unswitched maintained lightload with voltage supply of UV	
initiation	≤ 85% Unenn	
function test capacity test	by main system	
noise suppression	N at VDE 0875	
ambient temperature	0-35°C	
dimension in mm HxWxD	500 x 400 x 250	
potection class	I/IP20	
wire come in	von oben	
max. number of circuits	12	
number of circuits / DCM's	0 /	
number of SAM-modules		
number of switch inputs		
fuse mains F1 (L1, L2, L3)		
fuse battery (F2 (B+), F3 (SYM), F4 (B-)) in A		
circuit modules DCM12E L(+) and N(-)	fuse ceramics 6,3x32mm 5AF	
circuit modules DCM32 L(+) and N(-)	fuse ceramics 6,3x32mm 5AF	
circuit modules DCM42 L(+) and N(-)	fuse ceramics 6,3x32mm 6,3AF	
circuit modules DCM62 L(+) and N(-)	fuse ceramics 5x20mm 10AFF	
Conductor cross-section		
power supply wire	0,5-16mm² rigid	
battery-cable	2,5-35mm² rigid	(for MC-UV12 until 16mm²)
final circuit	0,25-4mm² rigid	(for MC-UV12 until 2,5mm²)
data cable	0,25-4mm² rigid	(for MC-UV12 until 2,5mm²)
fan	0,75mm²	

13 Module descriptions

Several modules which are integrated in your system or optionally available are briefly described in the following paragraphs. These data can also be downloaded from your dealer's homepage.

13.1 Electric circuit module DCM

Characteristics at a glance:

- 216V DC output voltage in battery operation
- 2 electric circuits per module
- 2x3A, 2x4A, 2x6A output current per module
- mixed mode in the circuit
- single luminaire or circuit monitoring in the circuit
- final circuit fuses:
  - DCM32 6,3x32mm, 5AF
  - DCM42 6,3x32mm, 6,3AF
  - DCM62 6,3x32mm, 10AFF

Figure 8: DCM

The electric circuits of this system are slot-in cards (DCM) in the Euro card format (100x160mm). These cards can contain up to two electric circuits at the same time. When the general power supply fails, they realise the automatic transfer-switching so that the emergency power supply is switched to the electric circuit(s) of the emergency lighting or the power supply of the consumers is switched from general to battery supply. The number of electric circuits depends on the number of circuit cards. 12 circuits can be integrated. Each circuit works separately in changeover mode and can be switched separately. The electric circuits can be programmed either for maintained or non-maintained lighting. A combination of both switching modes in one circuit is also possible. Each circuit has and integrated monitoring unit for monitoring earth fault, overload, electric circuits and single luminaires. These circuits have, depending on the module type, a double pole overcurrent protection device (system protection fuses), which are also monitored in operation. By pressing the INFO-pushbutton the LC-display of the central control and monitoring unit. shows the state of the two electric circuits (A/B) of the module. By means of this display in combination with the direction, enter and function keys you can program operation mode, follow-up time, luminaire monitoring and supply time for each electric circuit.

13.2 Electric circuit module DCM12E

Characteristics at a glance:

- 216V DC output voltage in mains backup operation
- 2 circuits per module
- per module 2x1A output current
- mixed mode operation in the end circuit, integrated single light switchability
- single light and circuit control in the end circuit
- Just in case with luminaires on ELS capable stand (MLED, MU05 (V25.x.4), IL (V57.3.4), KM (V38.5.2, V57.3.4, V84.5.2), RLED100 (V88.1.1))
- final circuit fuse: 6,3x32mm, 5AF

Figure 9: DCM12E

The electric circuit module DCM12E is an end circuit component for emergency lighting systems of the types multiControl *plus* Sub-distributor,
midiControl *plus*, miniControl-XL *plus*, miniControl *plus* and microControl *plus*.
The electric circuit module is equipped with two electric circuits each ("circuit A" and "circuit B"), where each circuit is designed for a maximum output current of 1A(250W). Each electric circuit module can realise a single light scanning as well as a self-calibrating circuit control. Furthermore, each circuit has an earth connection monitoring, which signalizes a possible earth fault 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.
The configuration of the lighting switching mode and the single light switchability via powerline requires a PC/Laptop.

13.3 Controller for Sub-distribution – UV-C

Characteristics at a glance:

- microprocessor-controlled function control unit
- monitoring and control of up to 96 circuits
- monitoring of mains and battery voltage of an MC-UV even if communication with main system is broken
- own, self-acting deep discharge protection
- service-friendly 19 inch module format

Figure 10: UV-C

The UV controller type UV-C III is an extension component for MultiControl central battery systems and was especially developed for the application in subdistributions of these emergency lighting systems. The CanBus interface, integrated in the subdistribution, crosslinks all system components via backplane which can be monitored and controlled by the UV controller. Via RS422 switch commands, coming from the main system, are transmitted to the UV-C III interface and further to the DCM module. This means, switch commands from switch query modules (SAM) as well as from bus capable 3-phase voltage monitors (MC-LM) are received by the main system via UV-C III and transmitted to the circuit modules.
The addressing of the UV controller is carried out by means of a turn coding switch which is located at the UV-C front. Addresses from 1 to 8 can be set.
The remaining backplane addresses are blocked because they are reserved for the components of the main system.
The address of the UV controller can be derived from the rack number. One rack contains 2 backplanes with 12 circuits each which is the same with the main system. For the UV controllers the backplane addresses 15 and 16 are used. This enables the application of up to 12 8 UV controllers. With backplane address 1 the address of the first slot of rack 15 is allocated to the UV controller.
A blinking of the LED “malfunction” (red) indicates that a blocked address was allocated when the UV controller was switched on.

If the UV controller is connected correctly and initiated together with the main system, the LEDs “mains OK“ and “battery OK“ will light up. The LED “communication OK“ will light up as soon as the communication between main system and UV controller has been established.
In normal operation the UV controller monitors the incoming supply voltage and the battery voltage as well as the communication with the main system.
A loss of communication (cable break or melting) is not only reported to the main system by the UV controller but also switches the subdistribution to safe operation (“modified non-maintained lighting“) and the LED “communication“ starts blinking.
If the mains input voltage of the subdistribution breaks down, the circuits are switched to battery mode and the mains malfunction is indicated by the LED “Mains OK” on the UV-C going out it is reported to the central unit. A query of the DCMs in the UV from the main station is not possible in this state.
This also affects the info buttons of the DCMs, plug & play, the configuration, the test and the SAM commands.

The Emergency BAS (NOT-BAS) on the UV controller only functions if the communication is interrupted.

Caution!
A possible emergency lighting blockage of the main system is automatically cancelled if the communication of the MC sub-distribution is interrupted, so that the circuits operate in “modified non-maintained mode” with a voltage of 230V/50Hz.
Before working on the output circuits of the MC-UV, they have to be de-energised!
For this please follow the instructions:

1. switch the operation mode switch on the main system to “charging mode” (0)
2. disconnect multiControl sub-distributor from mains battery voltage
3. carry out repairs and start operating the system again in reverse sequence

DCMs remain switched off via Emergency BAS (NOT-BAS) of the MC-UV as long as communication is interrupted.
After restoring communication, the DCMs automatically work in the same switch mode as before the interruption.

In normal battery mode of the system the battery voltage and its deep discharge level are monitored by the main station. However, the UV controller (UV-C) has its own independent deep discharge protection, which protects the battery from deep discharge and switches off itself as well as the load circuits separately in case of emergency. If the communication between main station and UV is interrupted in battery operation, the UV controller switches off the circuits when the deep discharge level is reached.
Reaching the deep discharge level of the UV controller is indicated by a blinking of the LED “Battery OK“.
If mains voltage is restored before reaching deep discharge level, the UV controller automatically switches back to mains voltage.

14 Revision history

multiControl *plus* Sub-distributor – Setup & Commissioning		
version	date of issue	most important changes compared to previous version
1.0	02.08.2017	-

15 Circuit table

Circuit	Location	P(VA)	Number of luminaires
1			
2			
3			
4			
5			
6			
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