

**Room Controller,
Basis Device for 8 Modules
RC/A 8.1**

Intelligent Installation Systems



This manual describes the function of the Room Controller,
Base Unit for 8 Modules.

Subject to changes and errors excepted.

Exclusion of liability:

Despite checking that the contents of this document match the hardware
and software, deviations cannot be completely excluded. We therefore
cannot accept any liability for this. Any necessary corrections will be inserted
in new versions of the manual.

Please inform us of any suggested improvements.

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1 General

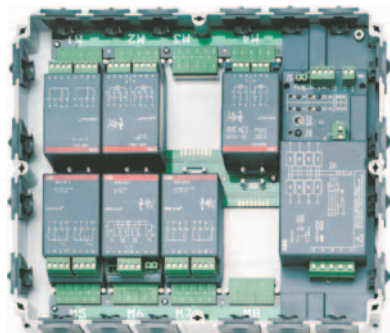


Fig. 1: Open device

1.1 Product and functional overview

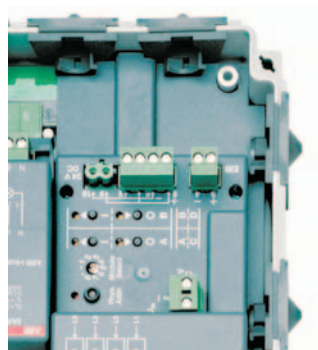


Fig. 2: Manual operation

A modern building installation enables a high degree of functionality and meets increased security requirements. Due to the structured installation of the components, it is possible to carry out rapid planning, installation and commissioning as well as achieve cost benefits during operation.

The modular design of the Room Controller is flexibly adapted to the required functionality. The distributed installation concept makes the functionality directly available in the room and ensures short installation and commissioning times. Fire loads are reduced due to shorter cable routes.

This manual provides detailed information about the device, its installation and programming. The last section contains application examples for effective implementation on site.

The description of the module function can be found in the relevant product manuals.

The Room Controller consists of a Basis Device in which up to 8 modules can be inserted. The Basis Device controls the module function and communicates via the ABB i-bus® EIB / KNX. Any module type can be plugged into each module slot. The inserted module is detected automatically and linked with the mains supply and the internal supply voltage. An overview of the available module types can be found in section 5.

Normally only the 230 V incoming supply and the bus connection are required for the device connection. The mains supply can be 1-, 2- or 3-phase. The device uses this to generate the internal supply voltage¹. A module can be assigned to a specific phase of the mains supply via the module slots M1...M8.

The flat design of the Room Controller enables its use under floors or in false ceilings. The manual mode enables the module function and the wiring to be checked immediately after connecting the voltage to the supply – even in the unprogrammed state.

If required, the device can safeguard its internal supply in addition to the mains supply via a 12 V DC auxiliary supply. As a result, the device can continue to function even when there is a total failure of the mains supply.

On bus voltage failure, the internal device functions are retained so that limited operation is guaranteed.

For modules with an incoming supply of 24 V DC (e.g. 24 V DC shutter actuators), the device makes a plug-in terminal device available to make the direct wiring of the mains supply to the modules easier.

¹ In 115 V networks, at least 2 phases are required so that the device can generate its internal supply voltage.

1.2 Design of the Basis Device

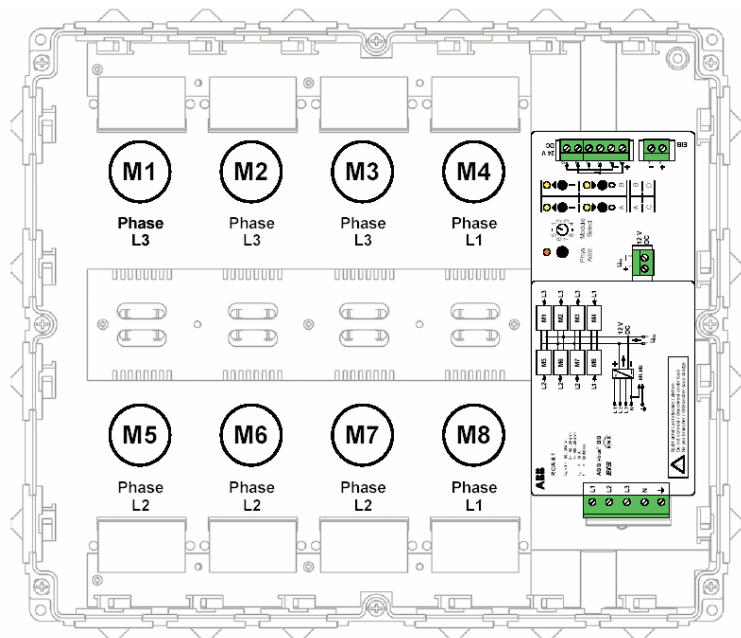


The Basis Device has a robust design with protection class IP 54 (splashproof protection). The housing is halogen-free. It can be opened quickly and easily via 8 quick-release bayonet locks. Cable can be inserted in the housing via 18 freely accessible cable entries. Open cable entries are supplied with the modules.

With an overall height of 50 mm, the Room Controller is suitable for under-floor installation. All the connections inside the device are carried out via screw terminals with a plug-in connection.

Overview of the module slots

The device has eight module slots M1...M8 into which the modules are inserted and then linked with the mains supply. A module is permanently assigned to a phase via the module slot (see diagram).

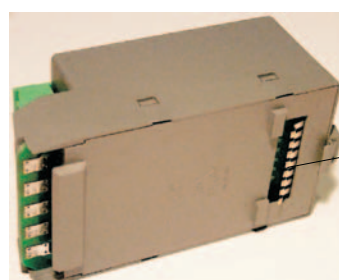


1.3 Modular structure



Connecting terminals (screw terminals with plug-in connection)

Mains supply



Control cable contacts

1.4 Special features

The Room Controller is one of the latest generation of EIB or KNX devices and has some special characteristics. Here are the important features of the product at a glance:

Flexibility and extendibility

The modular concept enables the rapid adaptation of the device function to changes both during planning and operation. Each Room Controller is only a single bus device.

The Room Controller is compatible with mains voltages of 100 V AC to 240 V AC and frequencies of 50 and 60 Hz. When using the 12 V DC auxiliary supply, the device can even be implemented in DC networks.

Security against voltage failure

The device remains operational provided that one phase is still active in a 230 V network. If there is a total failure of the mains voltage, the function can be maintained by an additional 12 V DC auxiliary supply.

On bus voltage failure, the internal functions are likewise retained. It is therefore possible e.g. for a push button that is connected to a Binary Input Module to continue switching the lighting on and off.

Manual operation and LED display

The manual operation facility is an important element of the installation concept: After switching on the voltage, a test can immediately be performed to determine whether the wiring is functioning correctly. The manual mode also functions without bus voltage and without the device being programmed beforehand.

Superior functionality

Each individual module type has an extensive functional scope. Every function can be activated individually. The parameterisation in ETS remains clear and comprehensible.

Complete range

The comprehensive selection of modules enables a universal concept and simplifies the planning stage.

Robust technology

The enclosed and mechanically strong housing (IP 54) offers protection against dirt and splashing water.

Flat design

With a height of 50 mm, the device is ideally suited to installation underfloor and in false ceilings.

Quick and simple installation

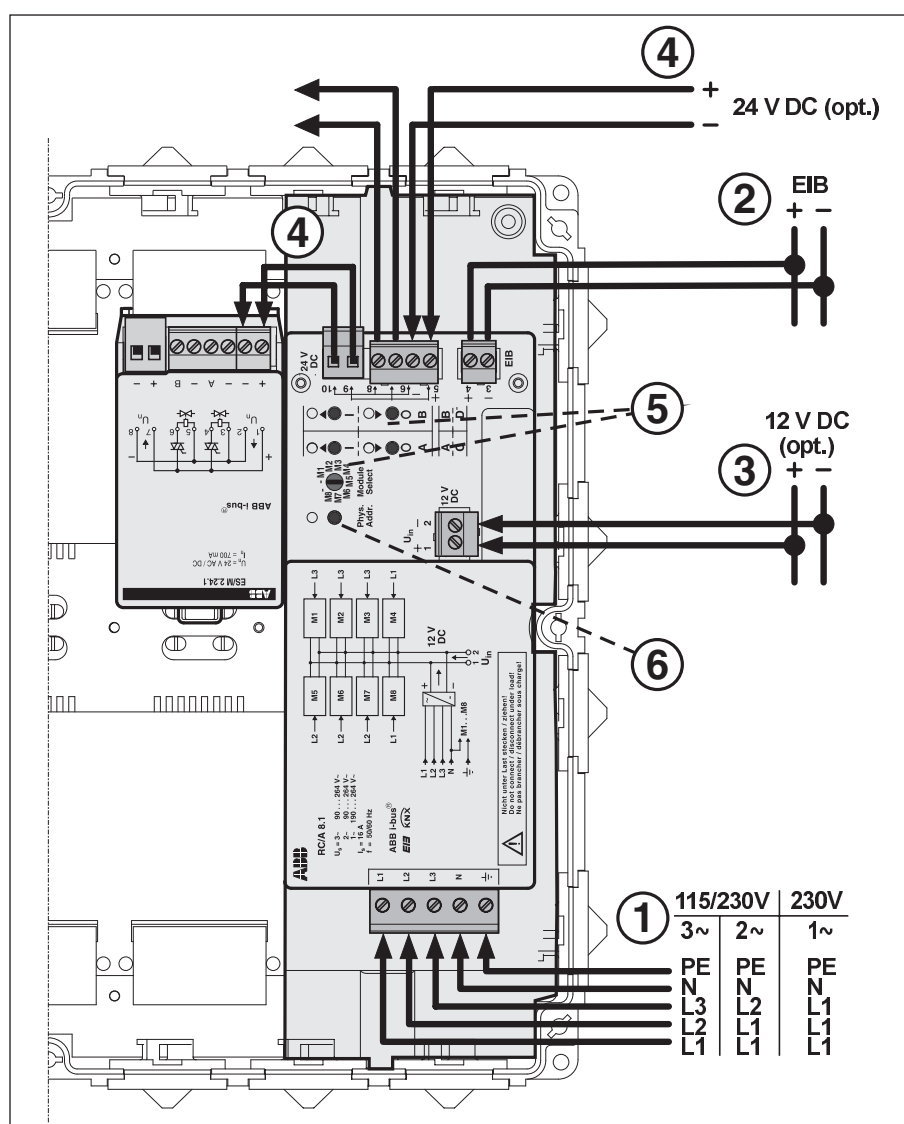
The modules are inserted quickly and without using tools. The device connection via high-quality plug-in terminals with screw connection makes installation simple.

2 Device technology

2.1 Technical data

Supply voltage / mains supply:	– For 3-phase connection	90...264 V AC, 50/60 Hz
	– For 2-phase connection	90...264 V AC, 50/60 Hz
	– For 1-phase connection	190...264 V AC, 50/60 Hz
	– Additional incoming supply	24 V DC, for wiring the direct supply to the 24 V DC modules
	– Optional auxiliary supply	10...28 V DC, as a backup supply or for mains-independent operation
		For power consumption see section 6.1
	– Internal power consumption	max. 4 W (without modules)
Bus connection:	– ABB i-bus® EIB / KNX	
	– Bus power consumption	< 10 mA
Module slots:	– Number	8 (M1...M8) for locating module types as required
Operating and display elements:	– Red LED and push button	For assigning the physical address
	– 4 yellow LEDs and push buttons	For status display and manual operation of the module function
	– 1 rotary selector switch	For selecting the module slot to be operated
Connections:	– Supply voltage / mains supply	5-pole screw terminal with plug-in connection
	– EIB	2-pole screw terminal with plug-in connection
	– Additional incoming supply	1x4-pole screw terminal with plug-in connection
	– Optional auxiliary supply	2-pole screw terminal with plug-in connection
	– Wire ranges	Supply voltage / Incoming supply: 0.5...4.0 mm ²
		Remainder: 0.2...2.5 mm ² finely stranded 0.2...4.0 mm ² single-core
Type of protection:	– IP 54	In accordance with EN 60529
Ambient temperature range:	– Operation	– 5 °C ... 45 °C
	– Storage	– 25 °C ... 55 °C
	– Transport	– 25 °C ... 70 °C
Environmental conditions:	– Max. humidity	93 %, no moisture condensation permitted
	– Operation only in enclosed rooms	
Design:	– Type of installation	Surface-mounted device, screw fixing
	– Housing, colour	Plastic housing, grey, halogen-free
	– Housing dimensions (HxWxD)	270 x 316 x 50 mm
	– Weight	1.4 kg
Certification:	– EIB- and KNX-certified	
CE norm:	– in accordance with the EMC guideline and low voltage guideline	

2.2 Device connection



- (1) **Incoming supply and power supply**
The mains supply can be 1-, 2- or 3-phase (50/60 Hz). The internal power supply for the device and the inserted modules is generated from the mains supply. It is then routed to the modules. Every phase must be connected only once. The multiple connection of the same phase (e.g. 3 x 16 A) is not allowed. In networks with a mains voltage of less than 190 V AC, the 12 V DC auxiliary supply (3) is necessary when a 1-phase incoming supply is used. For further information about the connection of the device see section 3.2.
- (2) **Connection of ABB i-bus® EIB / KNX**
- (3) **Optional auxiliary supply**
If required, it is also possible to connect 12 V DC to ensure the internal power supply for the device. The device function is fully retained on failure of the 115/230 V AC mains voltage. The wiring has to be carried out with the same insulation as mains voltage.
- (4) **Additional incoming supply**
Some modules (e.g. 24 V DC shutter actuator) require a special incoming supply which is connected directly to the modules. To make the wiring simpler, it is possible to connect a 24 V DC supply here (terminal 5/6) which is then led directly along connecting cables to the modules via terminals 9/10. Terminals 7/8 are used for looping through the 24 V DC supply. The connecting cable is supplied with the modules. The terminals can carry a maximum continuous current of 8 A.

(5) **Manual operation and LED display**

To operate the module functions manually, the module must first be selected via the rotary selector switch ("Module Select"). The module can then be operated via push buttons and the status is displayed via LEDs (see section 3.3 for further information).

(6) **Programming button and LED**

Please note that the programming button and LED only function if the supply voltage is connected.

Reason: To ensure that the power consumption of the bus remains low, the device is not supplied by the bus.

2.3 Assembly and installation

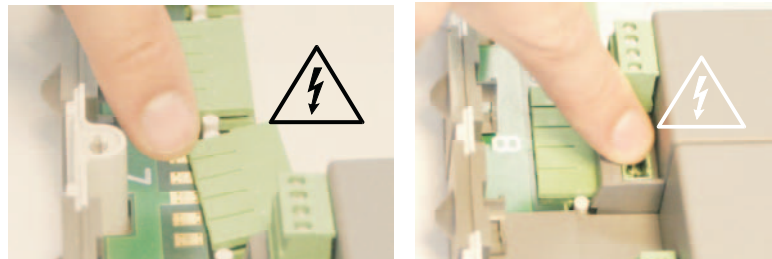
The Room Controller is designed for fixed installation. The device is suitable for surface mounting in any position. It is fixed to an even surface via four screws (supplied). The drill template supplied defines the dimensions of the drill holes.

If the surface is uneven, it must be levelled out e.g. using washers.

The accessibility of the device for operation, testing, inspection, maintenance and repair must be ensured (in accordance with DIN VDE 0100-520).

2.3.1 Warning notes

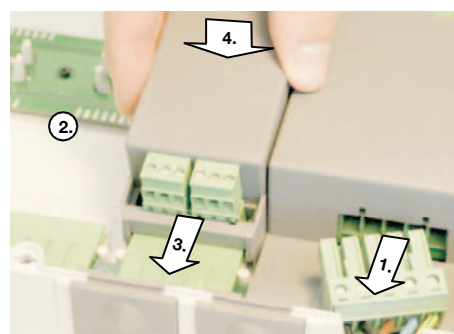
Note: Danger!
All the plug-in terminals must be clipped on correctly before connecting the voltage to the Room Controller Basis Device.



The installation and assembly may only be carried out by qualified electrical installers. The Room Controller Basis Device must be disconnected from the supply during any installation work, in particular

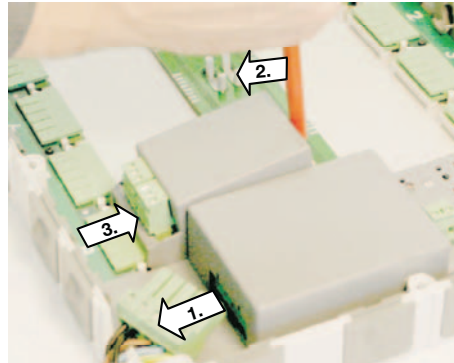
- when installing or removing modules from the Room Controller Basis Device
- before removing the plug-in terminals
- when connecting the outputs

2.3.2 Installing the modules



1. Disconnect the Room Controller Basis Device from the supply
2. Remove the protective film from the contact surfaces of the control cable
3. Plug in the module
4. Snap into place

2.3.3 Removing the modules



1. Disconnect the Room Controller Basis Device from the supply
2. Unclip the module with a screwdriver
3. Lift the device slightly and remove by sliding in the direction of the mains supply contact

2.3.4 Installation steps

1. Mount the Basis Device and plug in the modules
2. Connect the end devices
3. Connect the voltage and test the function in manual mode
4. Program the device

Note: The device can only be programmed if the supply voltage is applied. For this purpose the 12 V DC auxiliary supply can be used.

3 Application and planning

This section contains information about the planning and application of the Room Controller.

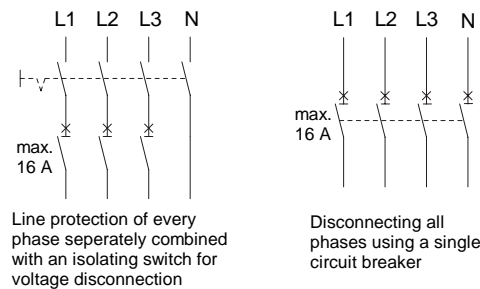
3.1 Fusing and line protection

The guidelines and requirements of DIN VDE 0100 apply to the Room Controller – as for all other EIB devices. Line protection is stipulated in this standard amongst other safety arrangements.

Line protection

The mains supply of the Room Controller must be fused with max. 16 A. For a 3-phase mains supply, this can be carried out e.g. via a 4-pole circuit-breaker (see diagram on the left). Alternatively, the phases can be fused individually. In applications in which the defined isolation of the voltage is stipulated, this can be carried out by an additional isolating switch (see diagram on the right).

The following examples explain line protection when using 3-phase mains supply:

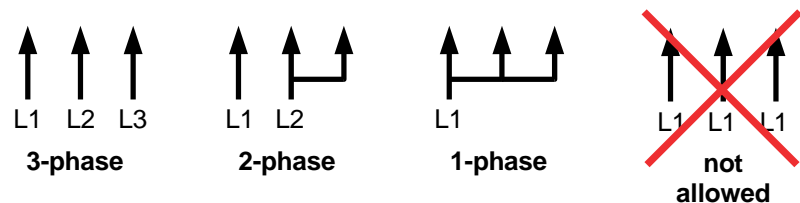


Fault current protection

Fault current protection is carried out in the Room Controller via an all-pole RCCB which disconnects the complete device from the supply in the event of an fault.

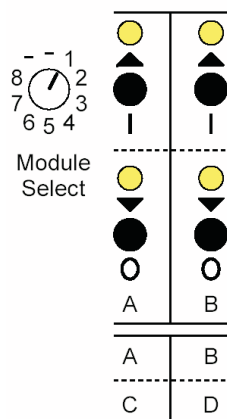
3.2 Mains supply

The mains supply can be provided by 1, 2 or 3 active phases.



The same phase must not be connected more than once (e.g. 3xL1). Otherwise the current of the neutral conductor would exceed the rated current.

3.3 Manual operation and LED display



The manual operation of the module function is carried out via a rotary selector switch ("Module Select"), 4 push buttons and 4 LEDs (yellow).

1. Selection of the module slot (M1...M8) via the rotary selector switch. The current status of the module is indicated by the LEDs.

2. Operation via the push buttons.

In the case of 2-channel modules, the two left-hand push buttons/LEDs are assigned to Channel A while the other two are assigned to Channel B. With 4-channel modules, the two upper push buttons/LEDs are assigned to Channels A and B while the two lower push buttons/LEDs are assigned to Channels C and D.

A distinction is made in some modules between a short (< 0.5 s) and long (> 0.5 s) push button action. It is therefore possible e.g. to switch or dim the lighting.

Manual operation is not possible

If all 4 LEDs flash when a module slot has been selected, this indicates that the module has not been recognised. Possible reasons for this are:

Cause	Possible solution
1. Wrong module type in the parameters	The Room Controller has already been programmed and in the parameters was set another module type than the inserted one. Reprogram the Room Controller with the correct parameters.
2. Communication to the module is disrupted	Remove the blue protective cover from the control cable contacts in the Basis Device before inserting the module.
3. The module is unknown	The software in the Room Controller does not recognise the module type. Update the software in the Room Controller with the latest version (programming with ETS).
4. The module is faulty	This is unlikely but cannot be ruled out. Replace the module by another one of the same type (same order number). If this functions, it must be assumed that the module is faulty.

If the LEDs do not display anything at all, it is possible that the supply voltage has failed. You can check this by pressing the programming button: If the programming LED does not light up, the supply to the device is interrupted. Remember to switch the programming LED off again.

Once the Room Controller has been programmed, the manual operation function can be influenced by the parameters of the module (e.g. travel times of the blinds).

A manual operation can change object values, e.g. status objects. This may cause communication on the bus.

Activating manual operation:

The manual operation and display are active once the rotary selector switch "Module Select" has been moved. After switching on the supply voltage, the rotary switch must be moved once.

Deactivating manual operation:

Set the rotary selector switch "Module Select" to the position "-".

Test for "Bus voltage present"

Set the rotary switch to the position "-" and press any button:

LEDs permanently on → Bus voltage is OK

LEDs flash → No bus voltage

3.4 Behaviour on bus voltage failure and recovery**Behaviour on bus voltage failure**

The behaviour of the modules on bus voltage failure can be parameterised. The function of the Basis Device is retained provided that the supply voltage (115 / 230 V AC or 12 V DC auxiliary supply) is present.

If it has been set accordingly in the parameters, the Room Controller can continue to function normally after bus voltage failure and the functions in the room are retained.

Example: Conventional push buttons are connected to a Room Controller via binary input modules. The Room Controller also regulates the lighting in the room. After bus voltage failure, the lighting can still be operated since the Room Controller is not supplied by the bus.

Behaviour on bus voltage recovery

The behaviour of the modules can be parameterised. The status telegrams of the Room Controller are sent if a signal is present.

Behaviour on failure of the supply voltage

The supply voltage has failed if there is a failure of both the 115/230 V AC supply and the 12 V DC auxiliary supply.

On failure of the supply voltage, the Room Controller cannot function. The output state of most of the modules is parameterisable so that a defined state can be created in each case.

Further information can be found in the product manual of the respective module.

Note: On failure of the supply voltage, some of the stored operating states of the modules may get lost (e.g. count values, stored scene values or the current position). They are automatically reset during normal operation or overwritten by the parameterised values.

Behaviour on recovery of the supply voltage

The behaviour is identical to the behaviour on bus voltage recovery. It can thus be configured for each module.

3.5 Behaviour after programming

After programming, the device behaves as after bus voltage recovery (parameterisable).

4Project design and programming

The central functions of the Room Controller are described in this section. The functions of the modules can be found in separate product manuals.

When calling up the parameters in ETS, a plug-in is started which is used to carry out both the parameter settings and the object assignments.

4.1Overview of the functions

The Room Controller has a single application program “Room Controller modular, 8f/1” which is used to set to the device function. The EIB Tool Software ETS2 V1.3a or higher is required for programming.

Note: Please note that the programming of the device is only possible when the supply voltage is available.

Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations
Room Controller modular, 8f/1	246	254	255

4.2The interface

The Room Controller is one of the latest generation of devices and has a variety of options. The ETS functionality has been extended to simplify operation.

RoomController parameters - General

Select module slot

General

Module slots

M1: BE/M 4.230.1: Binary Input 4-fold 230V

M2: SA/M 2.6.1: Switch Actuator 2-fold

M3: JA/M 2.230.1: Shutter Actuator 2-fold AC

M4: SD/M 2.6.1: Switch Dim Actuator 2-fold

M5: not used

M6: not used

M7: not used

M8: not used

Exchange

Copy

Communication objects

Object	Name	Function	Group addresses
241	General	Status (general)	
242	General	First module function	
243	General	Module allocation request	
244	General	Status modul allocation	

Modify

Link

OK

Cancel

Default

Info

High access

Help

Initialization

Security

Initialization time after recovery of bus voltage or mains [0...255s]

0

0

(mins)

During initialization the outputs remain unchanged

<--- NOTE

Transmission delay after initialization [0...255s]

0

0

(mins)

During transmission delay time no telegrams are sent on the bus

<--- NOTE

Module area

Parameter area

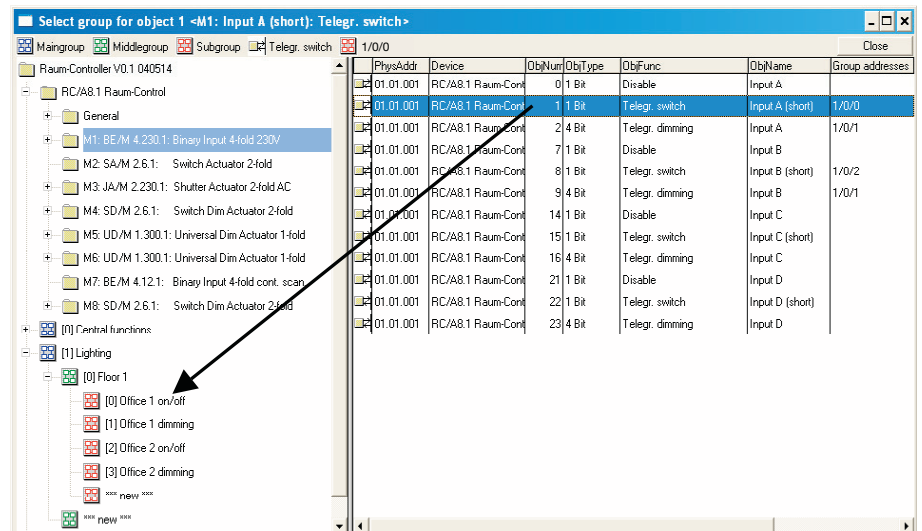
Object area

The **module area** provides a quick overview of the module slots. The associated **parameter area** is displayed by clicking on a module slot. It corresponds to the usual ETS interface. The general parameters of the device are located under the “General” entry (see below).

The **object area** provides an overview of the objects and group addresses of the selected module slot. The object properties and group address assignments can be edited with the “Modify” and “Link” buttons at the bottom (alternative: right mouse button).

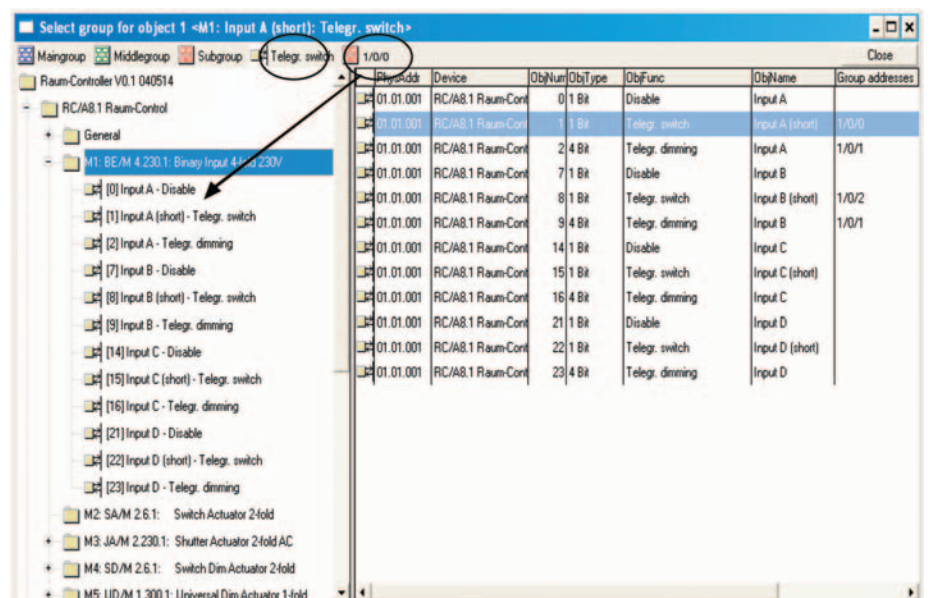
4.2.1 Assigning group addresses The “Group address assignment” window opens after clicking on the “Link” button (alternative ...). This window is used for linking an object with a group address and for inserting new group addresses.

Linking with “drag&drop”



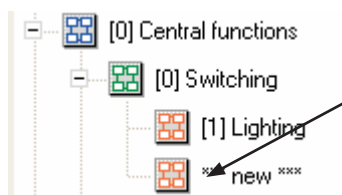
1. Select a module from the top left-hand corner. Its objects appear on the right-hand side.
2. Display the group addresses which you wish to link to the object via the “+” symbols.
3. Drag the object onto the group address.

Clipboard in the toolbar



By double clicking on an object or a group address, it can be stored in the toolbar (above). From there, they can be dragged onto group addresses or objects. This process is recommended if the same group address should be assigned to several objects (e.g. for central functions).

Inserting a new group address



New group addresses can be inserted e.g. by double clicking on the element “*** New ***”. Alternatively, they can be dragged from the toolbar as usual using drag&drop as in the ETS program.

Editing a group address

The name and description of a group address can be modified. To do so, select the “Edit” context menu (right mouse button).

4.2.2 Modifying group addresses

Object 1 <M1_Object_1>

Name: Input A (short) Priority: Low

Function: Telegr. switch

Length: 1 Bit

Flags:

- ☒ Communication
- ☐ Read
- ☒ Write
- ☒ Transmit
- ☐ Update

Associated group addresses

Address	Send	Maingroup	Middlegroup	Subgroup
01/00/000	+	Lighting	Floor 1	Office 1 on/off

Buttons: Edit assoc, Delete assoc, Set sending, OK, Cancel, Default, Info, Help

The associations and properties of an object can be modified with the “Modify” button or by double clicking on the object. The window is familiar from the ETS2 program.

Tip: The easiest way to modify the assignment is to double click on an assigned group address.

4.3 “Initialization” parameter window

Initialization	Security
Initialization time after recovery of bus voltage or mains [0...255s]	<input type="text" value="0"/> : <input type="text" value="0"/> (min:s)
During initialization the outputs remain unchanged	<--- NOTE
Transmission delay after initialisation [0...255s]	<input type="text" value="0"/> : <input type="text" value="0"/> (min:s)
During transmission delay time no telegrams are sent on the bus	<--- NOTE

Parameter:**“Initialization time after recovery of bus voltage or mains”**

This parameter sets how the device behaves directly after recovery of the bus voltage or supply voltage. Unwanted switching operations can thus be prevented on voltage recovery.

No communication is possible via the bus during a failure of the bus voltage or supply voltage. The initialization period starts after bus voltage recovery or following recovery of the internal supply voltage (directly in connection with the processor initialization).

Telegrams are only received and evaluated internally within the initialization period. No telegrams are sent and no switching operations are carried out.

Parameter: “Transmission delay after initialization”

An excessive communication load on the bus can be prevented via this parameter e.g. after a voltage recovery.

The transmission delay starts in connection with the initialization period. During the transmission delay, no telegrams are sent on the bus. Telegrams are received and evaluated as normal and the outputs are modified.

Status signals are sent on the bus once the transmission delay has elapsed.

4.4 “Security” parameter window

Parameter	Value
Limit number of telegrams	yes
Max. Number of transmitted telegrams within a period	20
Period	50min
Error report, if mains supply (110/230 V AC) fails	no
Error report, if auxiliary supply (12 V DC) fails	no
Transmit object "Error report" cyclically	yes
Transmission cycle time	0 : 1 : 0 (h:min:s)

Parameter: “Limit number of telegrams”

This parameter is used to limit the bus load that is generated by the device.

It can be set how many telegrams (**“Max. number of transmitted telegrams within a period”**) can be sent within an adjustable period (**“Period”**). If the number is reached, no more telegrams are sent until the end of the observation period.

Parameter:

“Error report, if mains supply (110/230 V AC) fails”

It can be set via this parameter whether an error report is sent if the 115/230 V AC mains supply fails.

If “yes” is selected, the object “Error report” is set to “1” during the mains voltage failure.

Note: The option “yes” is only advisable if the optional 12 V DC auxiliary supply is connected.

Parameter:

“Error report, if auxiliary supply (12 V DC) fails”

It can be set via this parameter whether an error report is sent if the 12 V DC auxiliary supply fails.

If “yes” is selected, the object “Error report” is set to “1” during the auxiliary voltage failure. This is only advisable if the 12 V DC supply is used.

Parameter: “Transmit object ‘Error report’ cyclically”

The device can be monitored for presence on the bus by the cyclical sending of the object “Error report” to a central monitoring module.

If “yes” is selected, the object is sent cyclically on the bus at an adjustable interval (**“Transmission cycle time”**).

4.5 Overview of the objects

The following objects are available for each Room Controller:

No	Function	Object name	Data type	Flags
240	Error report	General	1 Bit (EIS 1)	CRT
Sends a general error message "1" on the bus. Once the error has been rectified, it is automatically reset ("0").				
241	Status (general)	General	1 Byte (non-EIS)	CRT
Gives detailed information about the status of the device: status of the supply voltage, excess internal temperature, error in the module assignment. See the table of possible values in section 6.2.				
242	Error module function	General	1 Byte (non-EIS)	CRT
Object reports an error at a module slot. Bit 0 = 1 → Error at module slot M1 ... Bit 7 = 1 → Error at module slot M8 See section 4.6 for the possible causes of the error. See the table of possible values in section 6.3				
243	Module allocation request	General	1 Byte (EIS 14)	CW
Used to query the module components via the object "Status module allocation". Value "0" : Request module allocation code Value "1-8": Request module allocation text of the corresponding module slot M1...M8				
244	Status Modulzuordnung	General	14 Bytes (EIS 15)	CT
Reports the configuration of the inserted modules. On request, it sends the module allocation code or module allocation text on the bus via the object "Module allocation request" (see above). For further information about the structure of the module allocation code and text, refer to the detailed description of the objects.				

4.6 Detailed description of the objects

Object: "Error report": 1 Bit (EIS 1)

The device sends a general error message on the bus via this object. The following errors can lead to an error report:

- Failure of the 115/230 V mains voltage (parameterisable)
- Failure of the 12 V auxiliary voltage (parameterisable)
- Excess internal temperature
- Error in the module assignment

In the event of an error, the object value is "1". The object can be sent cyclically. This telegram can thus be used by a monitoring function to indicate the existence of the device.

Once all the errors have been rectified, the object value is automatically reset to "0" and sent on the bus.

Object: “Status (general)”: 1 Byte (non-EIS)

This object provides detailed information about the state of the device.

Bit 0	Mains supply (115/230 V AC) is not present
Bit 1	12 V supply (optional auxiliary supply) is not present
Bit 2	Excess internal temperature
Bit 3	Error in the module assignment (Cause: see object “Error module function”)
Bit 4	Manual operation is active / not active

The object is sent on the bus after a change. It is also sent automatically if the “Error report” object is modified.

Object: “Error module function”: 1 Byte (non-EIS)

This object reports an error with a module slot.

Bit 0 → Module slot M1

...

Bit 7 → Module slot M8

A bit is set (value = “1”) if the function of a module on the corresponding module slot is incorrect or if the communication to the module is disrupted. Possible causes are as follows:

- There is a different module in the module slot than stated in the parameters.
- A module slot is empty although a module has been indicated in the parameters.
Possible cause: Please ensure that the protective film over the control cables (base of the module) has been removed.
- A module does not respond or the communication to the module is disrupted.

The object value can be undefined for a short time directly after bus voltage recovery or programming.

Object: “Module allocation request”: 1 Byte (EIS 14)

This object is used to request the configuration of the inserted modules via the bus. Module allocation codes or module allocation text can be requested via the object “Status module allocation”.

Value “0”: Request module allocation code (module ID)

Value “1-8”: Request module allocation text (type code) of the respective module slot M1...M8

See below for further information about the structure of the module allocation code and module allocation text.

On receipt of a different value, the object “Status module allocation” responds with the value “error”.

Object: “Status module allocation”: 14 Bytes (EIS 15)

This object represents the configuration of the inserted modules.

On request, it sends the module allocation code (module ID) or module allocation text (type code) on the bus via the object “Module allocation request”.

See the table below for further information about the structure of the module allocation code and module allocation text.

The **module allocation code** has the following structure:

8 bytes in the sequence “<Module ID1> ... <Module ID8>“

The **module allocation text** has the following structure:

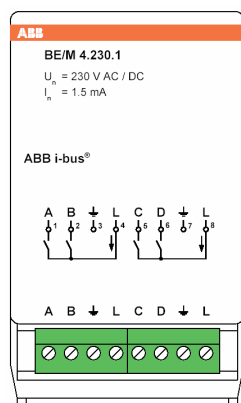
”x:<Type code>”, whereby “x” is the number of the module slot.

Module designation	Module type	Module ID	Type code
Binary Input, 4-fold, 230 V	BE/M4.230.1	03h (3)	BE 4f 230V
Binary Input, 4-fold, 24 V	BE/M4.24.1	02h (2)	BE 4f 24V
Binary Input, 4-fold, contact scanning	BE/M4.12.1	0Bh (11)	BE 4f scan
Switch Actuator, 2-fold, 6 A	SA/M2.6.1	01h (1)	SA 2f 6A
Shutter Actuator, 2-fold, 230 V	JA/M2.230.1	05h (5)	JA 2f 230V
Shutter Actuator, 2-fold, 24 V DC	JA/M2.24.1	06h (6)	JA 2f 24V
Light Controller, 1-fold, 6 A	LR/M1.6.1	09h (9)	LR 1f 6A
Switch/Dim Actuator, 2-fold, 6 A	SD/M2.6.1	04h (4)	SD 2f 6A
Dim Actuator, 1-fold, 300 VA	UD/M1.300.1	0Ah (10)	UD 1f 300VA
Electronic Switch Actuator, 2-fold, 230 V AC	ES/M2.230.1	07h (7)	ES 2f 230V
Electronic Switch Actuator, 2-fold, 24 V DC	ES/M2.24.1	08h (8)	ES 2f 24V
No module		00h oder FFh	no module

5 Overview of the modules and accessories

5.1 Binary inputs

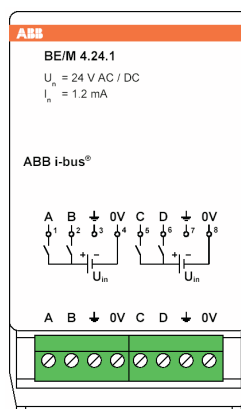
The binary input modules are used for the connection of switches or push buttons or for reading out technical contacts.



Binary Input Module, 4-fold, 230 V AC/DC

Used for detecting 230 V signals (AC or DC). The mains voltage is made available at two terminals and can be used as scanning voltage. The switching threshold is approx. 80 V.

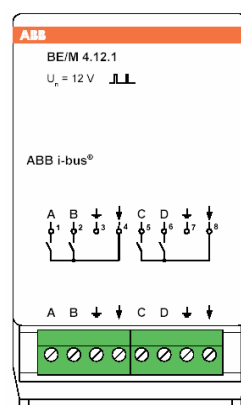
2 cable entries included with supply.



Binary Input Module, 4-fold, 24 V AC/DC

Used for detecting 24 V signals (AC or DC) which are made available via an external power source. The switching threshold is approx. 9 V.

2 cable entries included with supply.

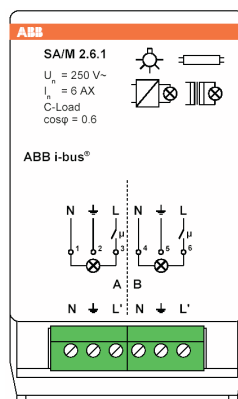


Binary Input Module, 4-fold, contact scanning

Used for reading out floating contacts. The scanning voltage is made available by the device.

2 cable entries included with supply.

5.2 Switch actuator

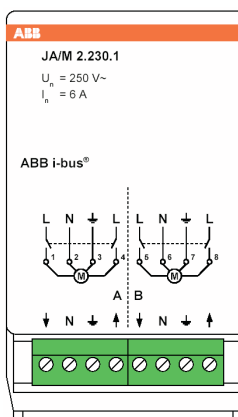


Switch Actuator Module, 2-fold, 6 A

Switches two loads with max. 6 A continuous current. Has a special relay available for high inrush currents and is therefore also suitable for switching capacitive loads.

2 cable entries included with supply.

5.3 Shutter actuators

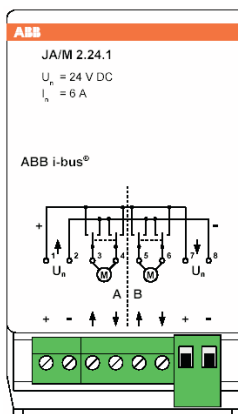


Shutter Actuator Module, 2-fold, 230 V AC

For controlling 2 independent blind or shutter drives with 230 V AC.

Special functions such as movement into position and automatic sun protection (shutter control module).

2 cable entries included with supply.



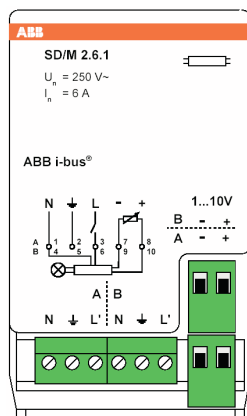
Shutter Actuator Module, 2-fold, 24 V DC

For controlling 2 independent blind or shutter drives with 24 V DC.

Special functions such as movement into position, automatic sun protection (shutter control module).

2 cable entries included with supply.

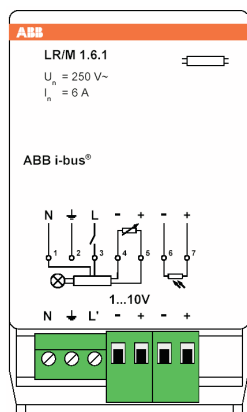
5.4 Dim actuators and light controller



Switch/Dim Actuator Module, 2-fold, 6 A

For switching and dimming two groups of luminaires in connection with electronic ballasts via a 1...10 V control output.

2 cable entries included with supply.

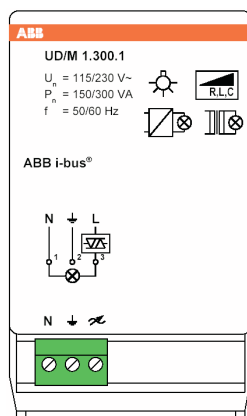


Light Control Module, 1-fold, 6 A

For switching and dimming one group of luminaires in connection with electronic ballasts via a 1...10 V control output.

Can be used for constant lighting control in connection with a light sensor LF/U 1.1.

2 cable entries included with supply.



Universal Dim Actuator Module, 1-fold, 300 VA

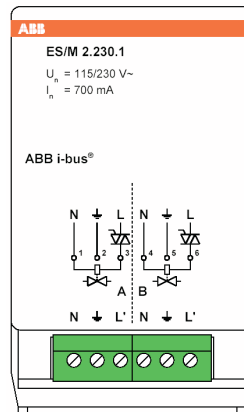
For switching and dimming incandescent lamps, 230 V halogen lamps or low voltage halogen lamps on wound or electronic transformers (automatic load detection). Integrated fault detection. Can be integrated in a constant lighting control function with a light controller ("slave mode").

The output capacity is 300 VA at 230 V AC or 150 VA at 115 V AC.

The system frequency is 50 or 60 Hz.

1 cable entry included with supply.

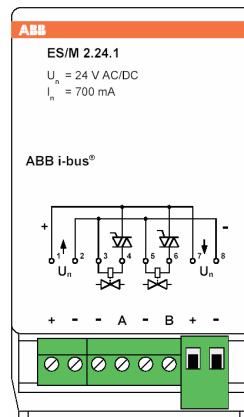
5.5 Electronic switch actuators



Electronic Switch Actuator Module, 2-fold, 230 V AC

Has two overload-proof outputs for controlling heating systems and cooling ceilings via electrothermal valve drives. The device can be operated with a voltage of 115/230 V AC.

2 cable entries included with supply.



Electronic Switch Actuator Module, 2-fold, 24 V DC

Has two overload-proof outputs for controlling heating systems and cooling ceilings via electrothermal valve drives. The device is supplied directly with a voltage of 24 V DC.

2 cable entries included with supply.

6 Appendix

6.1 Power consumption of auxiliary supply (12 V DC)

The 12 V DC auxiliary supply of the Room Controller can ensure the operation of the device even when there is a total failure of the mains supply. The power consumption is dependent on the inserted modules. The following table describes the maximum power consumption during operation:

Module designation	Type	Power consumption
Room Controller, Basis Device	RC/A 8.1	15 mA
Binary Input, 4-fold, 230V	BE/M4.230.1	4 mA
Binary Input, 4-fold, 24V	BE/M4.24.1	4 mA
Binary Input, 4-fold, contact scanning	BE/M4.12.1	7 mA
Switch Actuator, 2-fold, 6A	SA/M2.6.1	5 mA
Shutter Actuator, 2-fold, 230 V	JA/M2.230.1	4 mA
Shutter Actuator, 2-fold, 24 V DC	JA/M2.24.1	4 mA
Light Controller, 1-fold, 6 A	LR/M1.6.1	12 mA
Switch/Dim Actuator, 2-fold, 6 A	SD/M2.6.1	15 mA
Universal Dim Actuator, 1-fold, 300 VA	UD/M1.300.1	12 mA
Electronic Switch Actuator, 2-fold, 230 V AC	ES/M2.230.1	21 mA
Electronic Switch Actuator, 2-fold, 24 V DC	ES/M2.24.1	21 mA

The total power consumption is the sum of the single values.

6.2 Value table for the object “status (general)”

Status value	Manual operation is active	Error in module assignment	Excess internal temperature	Auxiliary supply (12 V DC) is not connected	Mains supply (115/230 V AC) is not connected
0 00					
1 01					■
2 02				■	
3 03				■	■
4 04			■		
5 05			■		
6 06			■	■	
7 07			■	■	■
8 08	■				
9 09	■				■
10 0A	■			■	
11 0B	■			■	■
12 0C	■	■			
13 0D	■	■	■		■
14 0E	■	■	■	■	
15 0F	■	■	■	■	■

Status value	Manual operation is active	Error in module assignment	Excess internal temperature	Auxiliary supply (12 V DC) is not connected	Mains supply (115/230 V AC) is not connected
16 10	■				
17 11	■				■
18 12	■			■	
19 13	■			■	■
20 14	■		■		
21 15	■		■		■
22 16	■		■	■	
23 17	■		■	■	■
24 18	■	■			
25 19	■	■			■
26 1A	■	■		■	
27 1B	■	■		■	■
28 1C	■	■	■		
29 1D	■	■	■	■	■
30 1E	■	■	■	■	
31 1F	■	■	■	■	■

6.3 Value table for the object “Error module function”

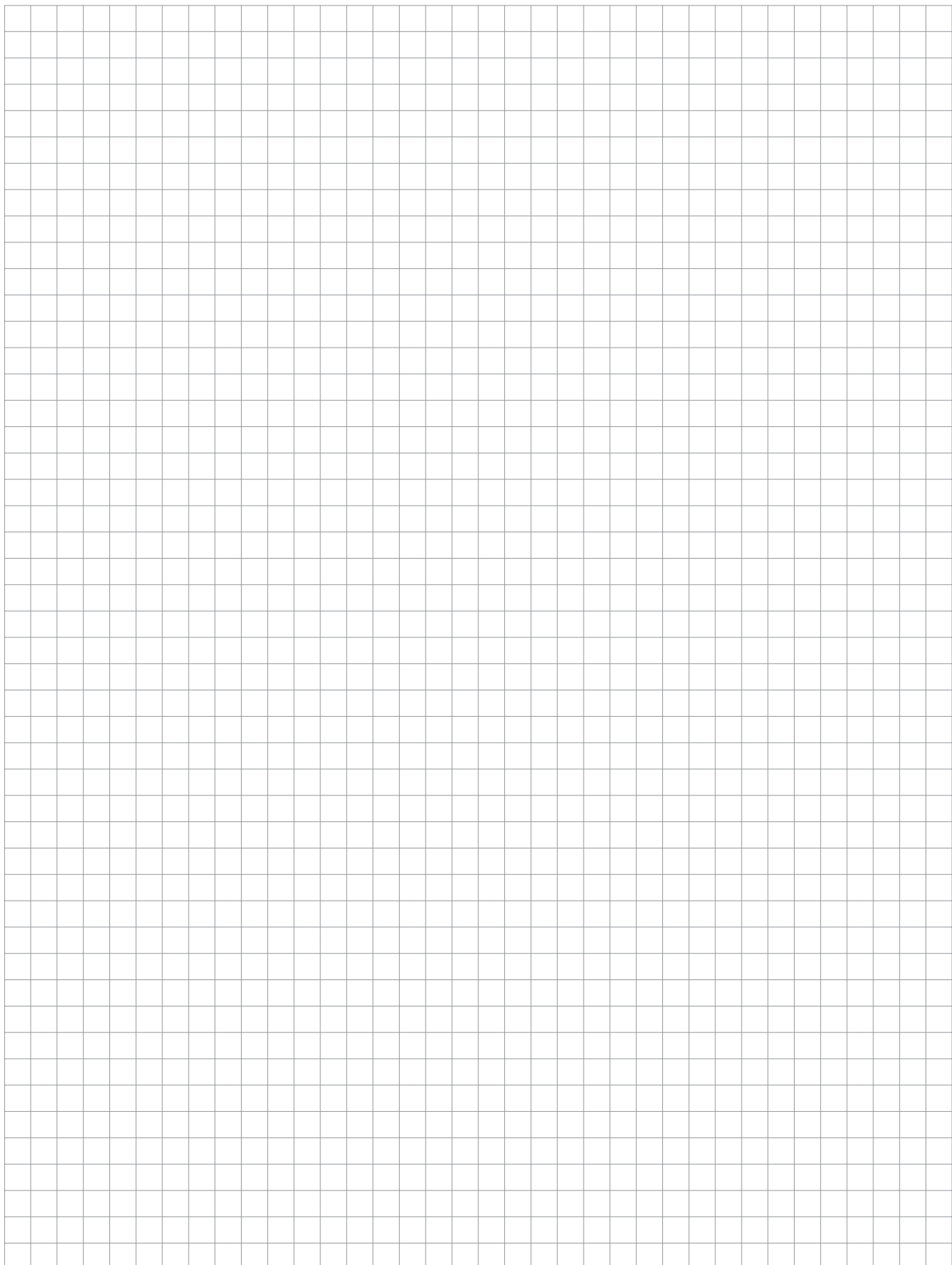
Error code value		Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
0 00									
1 01									■
2 02								■	
3 03								■	■
4 04							■		
5 05							■		■
6 06							■	■	
7 07							■	■	■
8 08						■			
9 09						■			■
10 0A						■		■	
11 0B						■		■	■
12 0C						■	■		
13 0D						■	■		■
14 0E						■	■	■	
15 0F						■	■	■	■
16 10				■					
17 11				■					■
18 12				■				■	
19 13				■				■	■
20 14				■			■		
21 15				■			■		■
22 16				■			■	■	
23 17				■			■	■	■
24 18				■		■			
25 19				■		■			■
26 1A				■		■		■	
27 1B				■		■		■	■
28 1C				■		■	■		
29 1D				■		■			■
30 1E				■		■	■	■	
31 1F				■		■	■	■	■
32 20				■					
33 21				■					■
34 22				■				■	
35 23				■				■	■
36 24				■			■		
37 25				■			■		■
38 26				■			■	■	
39 27				■			■	■	■
40 28				■		■			
41 29				■		■			■
42 2A				■		■		■	
43 2B				■		■		■	■
44 2C				■		■	■		
45 2D				■		■	■		■
46 2E				■		■	■	■	
47 2F				■		■	■	■	■
48 30				■	■				
49 31				■	■				■
50 32				■	■			■	
51 33				■	■			■	■
52 34				■	■		■		
53 35				■	■		■		■
54 36				■	■			■	
55 37				■	■		■	■	■
56 38				■	■	■			
57 39				■	■	■			■
58 3A				■	■	■		■	
59 3B				■	■	■		■	■
60 3C				■	■	■	■		
61 3D				■	■	■	■		■
62 3E				■	■	■	■	■	
63 3F				■	■	■	■	■	■
64 40			■						
65 41			■						■
66 42			■					■	
67 43			■					■	■
68 44			■				■		
69 45			■				■		■
70 46			■					■	
71 47			■				■	■	■

Error code value		Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
86	56		■		■		■	■	
87	57		■		■		■	■	■
88	58		■		■	■			
89	59		■		■	■			■
90	5A		■		■				
91	5B		■		■	■		■	■
92	5C				■	■	■		
93	5D		■		■	■			■
94	5E		■		■	■	■	■	
95	5F		■		■	■	■	■	■
96	60		■	■					
97	61			■					■
98	62		■	■				■	
99	63		■					■	■
100	64		■	■			■		
101	65		■	■			■		■
102	66			■				■	
103	67		■	■			■	■	■
104	68			■		■			
105	69		■	■					■
106	6A		■			■		■	
107	6B		■	■				■	■
108	6C		■	■		■	■		
109	6D		■	■					■
110	6E		■	■		■	■	■	
111	6F					■		■	■
112	70		■	■	■				
113	71		■	■	■				■
114	72		■	■	■			■	
115	73		■	■	■			■	■
116	74		■	■	■				
117	75		■	■	■		■		■
118	76		■	■	■			■	
119	77		■	■	■		■	■	■
120	78		■	■	■	■			
121	79		■	■	■	■			■
122	7A		■	■	■	■		■	
123	7B		■	■	■			■	■
124	7C		■	■	■	■	■		
125	7D		■	■	■	■	■		■
126	7E		■	■	■	■	■	■	
127	7F		■	■			■	■	■
128	80	■							
129	81	■							■
130	82	■						■	
131	83	■						■	■
132	84	■					■		
133	85	■							■
134	86						■	■	
135	87						■	■	■
136	88	■				■			
137	89					■			■
138	8A	■						■	
139	8B					■		■	■
140	8C	■					■		
141	8D	■				■	■		■
142	8E	■						■	
143	8F					■	■	■	■
144	90				■				
145	91	■			■				■
146	92	■			■			■	
147	93	■		■	■			■	■
148	94	■			■		■		
149	95				■		■		■
150	96	■			■			■	
151	97	■			■		■	■	■
152	98				■	■			
153	99	■			■	■			■
154	9A	■			■	■		■	
155	9B	■			■			■	■
156	9C	■			■		■		
157	9D	■			■	■	■		■
158	9E	■			■	■	■	■	
159	9F	■			■	■	■	■	■
160	A0	■		■					
161	A1	■		■					■
162	A2	■		■				■	
163	A3			■				■	■
164	A4	■		■			■		
165	A5			■					■
166	A6	■		■			■	■	
167	A7	■		■			■	■	■
168	A8					■			
169	A9	■		■					■
170	AA			■		■		■	
171	AR	■		■				■	■

Error code value		Module slot 8	Module slot 7	Module slot 6	Module slot 5	Module slot 4	Module slot 3	Module slot 2	Module slot 1
172	AC	■		■		■	■		
173	AD	■		■			■		■
174	AE	■		■		■		■	
175	AF	■				■	■	■	■
176	B0	■		■					
177	B1	■		■	■				■
178	B2	■		■	■			■	
179	B3	■		■	■			■	■
180	B4	■		■	■		■		
181	B5	■				■			■
182	B6	■		■	■		■	■	
183	B7	■		■	■		■	■	■
184	B8	■		■		■			
185	B9	■		■	■	■			■
186	BA	■		■	■	■		■	
187	BB	■				■		■	■
188	BC	■		■	■	■	■		
189	BD	■		■	■	■	■		■
190	BE	■		■	■	■		■	
191	BF	■		■	■	■	■		■
192	C0	■	■						
193	C1	■	■						■
194	C2	■	■					■	
195	C3	■	■					■	■
196	C4	■	■				■		
197	C5	■					■		■
198	C6	■	■					■	
199	C7	■					■	■	■
200	C8	■	■			■			
201	C9	■	■			■			■
202	CA	■				■			
203	CB	■	■			■		■	■
204	CC	■	■			■	■		
205	CD	■	■			■			■
206	CE	■				■	■	■	
207	CF	■	■			■	■	■	■
208	D0	■	■		■				
209	D1	■			■				■
210	D2	■	■					■	
211	D3	■	■		■			■	■
212	D4	■	■		■		■		
213	D5	■	■		■		■		■
214	D6	■	■		■		■	■	
215	D7	■	■		■			■	■
216	D8	■	■		■	■			
217	D9	■	■		■	■			■
218	DA	■			■	■		■	
219	DB	■	■		■	■		■	■
220	DC	■	■		■	■	■		
221	DD	■	■		■	■	■		■
222	DE	■			■	■		■	
223	DF	■	■		■	■	■	■	■
224	E0	■	■	■					
225	E1	■	■	■					■
226	E2	■	■	■				■	
227	E3	■	■	■				■	■
228	E4	■	■	■			■		
229	E5	■	■	■			■		■
230	E6	■	■	■			■	■	
231	E7	■	■	■			■	■	■
232	E8	■	■	■		■			
233	E9	■	■	■		■			■
234	EA	■	■	■				■	
235	EB	■	■	■				■	■
236	EC	■	■	■		■	■		
237	ED	■	■	■		■	■		■
238	EE	■	■	■		■		■	
239	EF	■	■	■		■	■	■	■
240	F0	■			■				
241	F1	■	■	■	■				■
242	F2	■	■	■	■			■	
243	F3	■	■	■	■				■
244	F4	■	■	■	■		■		
245	F5	■	■	■	■		■		■
246	F6	■	■	■	■		■	■	
247	F7	■					■	■	■
248	F8	■	■	■	■	■			
249	F9	■	■	■	■	■			■
250	FA	■	■	■	■	■		■	
251	FB	■	■	■	■	■		■	■
252	FC	■	■	■	■	■	■		
253	FD	■	■	■	■	■			■
254	FE	■	■	■	■	■		■	
255	FF	■	■	■	■	■	■	■	■

6.4 Ordering information

Description	Type	Order no.	bbn 40 16779 EAN	Price group	Unit weight [kg]	Pack unit [pc.]
Room Controller, Basis Device for 8 Modules, SM	RC/A 8.1	2CDG 110 001 R0011	58213 1	26		1
Binary Input Module, 4-fold, 230 V AC/DC	BE/M 4.230.1	2CDG 110 005 R0011	58311 4	26		1
Binary Input Module, 4-fold, 24 V AC/DC	BE/M 4.24.1	2CDG 110 006 R0011	58312 1	26		1
Binary Input Module, 4-fold, contact scanning	BE/M 4.12.1	2CDG 110 007 R0011	58313 8	26		1
Switch Actuator Module, 2-fold, 6A	SA/M 2.6.1	2CDG 110 002 R0011	58314 5	26		1
Shutter Actuator Module, 2-fold, 230 V AC	JA/M 2.230.1	2CDG 110 003 R0011	58315 2	26		1
Shutter Actuator Module, 2-fold, 24 V DC	JA/M 2.24.1	2CDG 110 004 R0011	58316 9	26		1
Switch/Dim Actuator Module, 2-fold, 6 A	SD/M 2.6.1	2CDG 110 010 R0011	58356 5	26		1
Light Controller Module, 1-fold, 6A	LR/M 1.6.1	2CDG 110 011 R0011	58357 2	26		1
Universal Dim Actuator Module, 1-fold, 300 VA	UD/M 1.300.1	2CDG 110 012 R0011	58360 2	26		1
Electronic Switch Actuator Module, 2-fold, 230 V	ES/M 2.230.1	2CDG 110 013 R0011	58361 9	26		1
Electronic Switch Actuator Module, 2-fold, 24 V	ES/M 2.24.1	2CDG 110 014 R0011	58362 6	26		1







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