

gesis KNX RM

Installation System for European Installation Bus

Manual

Product and Object Description

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Content

1	About This Manual	1.2
	General Information	1.2
	Identifying Safety Notices.....	1.2
	Prescribed Application	1.3
	Selecting Personnel and Personnel Qualifications	1.4
	Tests and Repairs.....	1.4
	Hazards due to Electrical Energy.....	1.4
2	The EIB/KNX Bus System	2.1
	Technology	2.1
	Topology	2.1
	Addressing.....	2.1
	Software	2.2
3	geis KNX: System Overview	3.1
	Overview of geis KNX RM Module Descriptions	3.1
	– Overview according to type.....	3.1
	– Overview according to order number.....	3.2
4.1	geis KNX RM2-BAS (83.020.0400.3/4).....	4.1.1
	Product Description	4.1.1
	Functional Description	4.1.1
	Dimensions, Connections and Function Elements	4.1.2
	Terminal Assignment.....	4.1.3
	Technical Data	4.1.3
	Installation	4.1.4
	– Assembly (83.020.0400.3)	4.1.4
	– Disassembly (83.020.0400.3).....	4.1.4
	– Replacing modules (83.020.0400.4)	4.1.4
	Accessories.....	4.1.5
	Application Program	4.1.6
	Functional Description	4.1.6
	Description of the General Objects for Each Module Block	4.1.6
	Description of the General Parameterisation for Each Module Block	4.1.6
4.2	geis RM-PS (83.020.0401.0/1)	4.2.1
	Product Description	4.2.1
	Functional Description	4.2.1
	Dimensions, Connections and Function Elements	4.2.2
	Terminal Assignment.....	4.2.2
	Technical Data	4.2.3
	Installation	4.2.3
	– Assembly (83.020.0401.0)	4.2.3
	– Disassembly (83.020.0401.0).....	4.2.4
	– Replacing modules (83.020.0401.1)	4.2.4
4.3	geis RM-PS 12/5 (83.020.0421.0/1)	4.3.1
	Product Description	4.3.1
	Functional Description	4.3.1
	Dimensions, Connections and Function Elements	4.3.2
	Terminal Assignment:.....	4.3.2
	Technical Data	4.3.3
	– Assembly (83.020.0421.0)	4.3.3
	– Disassembly (83.020.0421.0).....	4.3.4
	– Replacing modules (83.020.0421.1)	4.3.4
4.4	geis RM-8/0 12 (83.020.0402.0/1).....	4.4.1
	Product Description	4.4.1
	Functional Description	4.4.1

Dimensions, Connections and Function Elements	4.4.2
Terminal Assignment	4.4.2
Technical Data	4.4.3
Installation	4.4.3
– Assembly (83.020.0402.0)	4.4.3
– Disassembly (83.020.0402.0)	4.4.4
– Replacing modules (83.020.0402.1)	4.4.4
Application Program	4.4.5
Communication Objects	4.4.5
Parameterisation	4.4.7
– I/O: Input A/B, input C/D, input E/F, input G/H	4.4.7
4.5 gesis RM-0/4 (83.020.0403.0/1)	4.5.1
Product Description	4.5.1
Functional Description	4.5.1
Dimensions, Connections and Function Elements	4.5.2
Terminal Assignment:	4.5.2
Technical Data	4.5.3
Installation	4.5.3
– Assembly (83.020.0403.0)	4.5.3
– Disassembly (83.020.0403.0)	4.5.3
– Replacing modules (83.020.0403.1)	4.5.4
Application Program	4.5.5
Communication Objects	4.5.5
Parameterisation	4.5.6
– Parameters within the operating modes	4.5.7
4.6 gesis RM-0/2W SI (83.020.0404.0/1)	4.6.1
Product Description	4.6.1
Functional Description	4.6.1
Dimensions, Connections and Function Elements	4.6.2
Terminal Assignment:	4.6.2
Technical Data	4.6.3
Installation	4.6.4
– Assembly (83.020.0404.0)	4.6.4
– Disassembly (83.020.0404.0)	4.6.4
– Replacing modules (83.020.0404.1)	4.6.4
Application Program	4.6.6
Communication Objects	4.6.6
Parameterisation	4.6.8
– I/O: Shutt. outp. A	4.6.8
– Parameters within the operating modes	4.6.8
– I/O: Shutter A	4.6.10
– Parameters within "Travel time detection"	4.6.10
– I/O: Louvre A	4.6.11
4.7 gesis RM-0/2SD (83.020.0405.0/1)	4.7.1
Product Description	4.7.1
Functional Description	4.7.1
Dimensions, Connections and Function Elements	4.7.2
Terminal Assignment:	4.7.2
Technical Data	4.7.3
Installation	4.7.3
– Assembly (83.020.0405.0)	4.7.3
– Disassembly (83.020.0405.0)	4.7.4
– Replacing modules (83.020.0405.1)	4.7.4
Application Program	4.7.5
Communication Objects	4.7.5
Parameterisation	4.7.6
– I/O: Dimming output A, dimming output B	4.7.6
– I/O: Scene 1/2, Scene 3/4	4.7.8

4.8 gesis RM-0/4HL (83.020.0406.0/1)	4.8.1
Product Description	4.8.1
Functional Description	4.8.1
Dimensions, Connections and Function Elements	4.8.2
Terminal Assignment:	4.8.2
– Connection example	4.8.3
Technical Data	4.8.3
Installation	4.8.4
– Assembly (83.020.0406.0)	4.8.4
– Disassembly (83.020.0406.0)	4.8.4
– Replacing modules (83.020.0406.1)	4.8.4
Application Program	4.8.5
Communication Objects	4.8.5
Parameterisation	4.8.6
– Parameters within the operating modes	4.8.7
4.9 gesis RM-0/2W DC (83.020.0407.0/1)	4.9.1
Product Description	4.9.1
Functional Description	4.9.1
Dimensions, Connections and Function Elements	4.9.2
Terminal Assignment:	4.9.2
Technical Data	4.9.3
Installation	4.9.3
– Assembly (83.020.0407.0)	4.9.3
– Disassembly (83.020.0407.0)	4.9.4
– Replacing modules (83.020.0407.1)	4.9.4
Application Program	4.9.5
Communication Objects	4.9.5
Parameterisation	4.9.7
– I/O: Shutt. outp. A	4.9.7
– Parameters within the operating modes	4.9.7
– I/O: Shutter A	4.9.9
– Parameters within "Travel time detection"	4.9.9
– I/O: Louvre A	4.9.10
4.10 gesis RM-16/0 (RC) (83.020.0408.0/1)	4.10.1
Product Description	4.10.1
Functional Description	4.10.1
Dimensions, Connections and Function Elements	4.10.2
Learning and Deleting Radio Transmitters	4.10.2
– Learning	4.10.2
– Clearing radio transmitters (IDs) from all assignments	4.10.2
– Clearing all radio transmitters (IDs) for an input (A to H, X1/X2)	4.10.2
– Clearing all radio transmitters (IDs) (as-delivered state)	4.10.3
– Test function	4.10.3
Technical Data	4.10.3
Installation	4.10.4
– Assembly (83.020.0408.0)	4.10.4
– Disassembly (83.020.0408.0)	4.10.4
– Replacing modules (83.020.0408.1)	4.10.4
Application Program	4.10.6
Communication Objects	4.10.6
Parameterisation	4.10.8
– I/O: Input A/B, input C/D, input E/F, input G/H	4.10.8
4.11 gesis RM-0/2D (83.020.0409.0/1)	4.11.1
Product Description	4.11.1
Functional Description	4.11.1
Dimensions, Connections and Function Elements	4.11.2
Terminal Assignment:	4.11.2
Technical Data	4.11.2
Installation	4.11.3

– Assembly (83.020.0409.0)	4.11.4
– Disassembly (83.020.0409.0)	4.11.4
– Replacing modules (83.020.0409.1)	4.11.4
Application Program	4.11.5
Communication Objects	4.11.5
Parameterisation	4.11.6
– I/O: Dimming output A, dimming output B	4.11.6
– I/O: Scene 1/2, Scene 3/4	4.11.8
4.12 gesis RM-0/2DA (83.020.0410.0/1)	4.12.1
Product Description	4.12.1
Functional Description	4.12.1
Dimensions and Connections	4.12.2
Function Elements	4.12.2
– Operating elements	4.12.2
– Indicators:	4.12.2
Terminal Assignment:	4.12.3
Technical Data	4.12.3
Installation	4.12.4
– Assembly (83.020.0410.0)	4.12.4
– Disassembly (83.020.0410.0)	4.12.4
– Replacing modules (83.020.0410.1)	4.12.4
Application Program	4.12.6
Communication Objects	4.12.6
Parameterisation	4.12.7
– I/O: DALI A, DALI B	4.12.7
– I/O: Status A, Status B	4.12.9
– I/O: Scene 1/2, Scene 3/4	4.12.10
4.13 gesis RM-0/4HL AC (83.020.0411.0/1)	4.13.1
Product Description	4.13.1
Functional Description	4.13.1
Dimensions, Connections and Function Elements	4.13.2
Terminal Assignment:	4.13.2
Technical Data	4.13.3
Installation	4.13.3
– Assembly (83.020.0411.0)	4.13.3
– Disassembly (83.020.0411.0)	4.13.4
– Replacing modules (83.020.0411.1)	4.13.4
Application Program	4.13.5
Communication Objects	4.13.5
Parameterisation	4.13.6
– Parameters within the operating modes	4.13.7
4.14 gesis RM-0/4HL DC (83.020.0412.0/1)	4.14.1
Product Description	4.14.1
Functional Description	4.14.1
Dimensions, Connections and Function Elements	4.14.2
Terminal Assignment:	4.14.2
Technical Data	4.14.2
Installation	4.14.3
– Assembly (83.020.0412.0)	4.14.3
– Disassembly (83.020.0412.0)	4.14.3
– Replacing modules (83.020.0412.1)	4.14.4
Application Program	4.14.5
Communication Objects	4.14.5
Parameterisation	4.14.6
– Parameters within the operating modes	4.14.7

Dear customer,

Congratulations on purchasing your new components for the gesis KNX RM building installation system. You are now the owner of a product with EIB/KNX technology, which provides you with a user-friendly method of dealing with a host of building control tasks.

Please make yourself familiar with the descriptions in this manual. It will provide you with all the information and assistance required for faultless operation of your gesis system. Should you have additional questions, or require assistance, please contact our team of specialists using the contact information below and they will be happy to help you.

Wieland Electric GmbH
Brennerstrasse 10-14
96052 Bamberg, Germany

Technical customer service hotline (for technical issues concerning accessories, functions, product features and possible applications):

Tel.: +49 (0) 9 51 / 93 24-9 96

Fax: +49 (0) 9 51 / 93 26-9 96

E-mail: BIT.TS@wieland-electric.com

Sales hotline (for information about availability, lead times and prices):

Tel.: +49 (0) 9 51 / 93 24-9 90

E-mail: BIT.info@wieland-electric.com

1 About This Manual

General Information

This operating manual will provide you with support for installing and parameterising gesis KNX-RM modules. In it, you will find information on how devices are programmed, configured and parameterised.

This operating manual contains the information required for proper usage of the products it describes. It describes the gesis EIM RM components, their technical features, conditions of use, boundary conditions and parameterisation. Installation and connection with the gesis CON connector system are described in the document entitled "System Handling Information" (item no. 0060.2), which is available separately.

gesis systems must only be installed by trained personnel and the applicable regulations observed while doing so. For this reason, the gesis KNX RM system manual addresses:

- Persons responsible for configuring, parameterising and activating EIB/KNX systems
- System integrators
- Electricians

Specific prerequisites are:

- Basic knowledge of EIB/KNX bus technology
- Basic knowledge of building installation systems
- Knowledge of EIB Tool Software

Identifying Safety Notices

This operating manual uses various safety notices that are assigned according to the severity of a potential hazard:



DANGER

"Danger" indicates an imminently hazardous situation or state which, if not avoided, will result in death or serious injury. The use of "Danger" is limited to the most extreme situations.



WARNING

"Warning" indicates a potentially hazardous situation or state which, if not avoided, could result in death or serious injury.



CAUTION

"Caution" indicates a potentially hazardous situation or state which, if not avoided, could result in minor or moderate injuries. "Caution" is also used to warn against unsafe practices or obvious misuse. "Caution" is also used for situations which may result in material damage or personal injury.

NOTICE

"Notice" indicates information that is directly or indirectly related to the safety of personnel or property. It is not directly associated with hazards or hazardous situations.



"Danger" or "Warning" are strictly used for cases which present a risk to life or limb. Damage to property only falls into these categories if there is also a risk of personal injury that corresponds to these levels.

Prescribed Application**WARNING**

- Electrical installations, activation and maintenance work, as well as configuring and programming work, must only be performed by qualified electrical technicians with relevant accident prevention training, and in compliance with the applicable regulations.
- Safety precautions and safety devices must comply with the applicable regulations.
- Compliance with the required regulations is achieved when the devices are correctly processed in order to create an end product.
- Damaged products must neither be installed nor put into operation.

**NOTICE**

- On account of the class and degree of protection, all devices must be installed in a gesis distribution box (gesis RAN) or similar housing.
- Due to their holding equipment, devices without locking feet may only be installed in a gesis RAN housing provided by Wieland Electric.
- A voltage supply from the gesis RM series of devices is required for operating the basic module. If a different voltage supply from the gesis product intended for this purpose is used, Wieland Electric GmbH cannot guarantee that faultless operation will take place.
- The extension modules can only be used in conjunction with the basic module from the gesis RM series of devices.
- When looping through the voltages, the maximum current of 16A must not be exceeded.



The control system must only be used when in proper working condition, as well as according to its prescribed usage, with due regard given to safety, awareness of any hazards and following the operating manual. Reliable and safe handling assumes proper shipping, storage and installation, as well as careful operation. In particular, safety-related faults must be rectified immediately by a professional.

The control systems are exclusively intended for controlling building equipment. Other applications, or use beyond this scope, is considered to be improper. The manufacturer assumes no responsibility for any damage resulting from usage of this nature.

In order to use the control systems as prescribed, the instructions outlined in this operating manual must be followed for mechanical and electrical installation procedures, as well as for activation and operation of the systems.

Selecting Personnel and Personnel Qualifications



WARNING

- Electrical installations, activation and maintenance work, as well as configuring and programming work, must only be performed by qualified electrical technicians with relevant accident prevention training, and in compliance with the applicable regulations.
- Configuring and programming personnel must be familiar with the safety concepts involved in building installation technology.
- The operating personnel must be trained in handling the control system and familiar with the operating instructions.
- The installation, activation and maintenance personnel must have a training background which authorises them to carry out work on the control system.

Tests and Repairs

When measurement or testing procedures are being performed on the active device, the specifications and implementation guidelines of the relevant accident prevention regulations must be observed. Only suitable tools may be used for this.

Repairs to control components may only be carried out by the manufacturer.



CAUTION

Unauthorised opening and improper intervention or repairs can result in material damage or bodily harm.

In the event of a fault, send devices back to:

Wieland Electric GmbH
Abteilung (Department) TQM 3
Brennerstrasse 10-14
D-96052 Bamberg, Germany

Hazards due to Electrical Energy

The user must ensure that unauthorised and improper intervention is prevented. Personnel must have knowledge of all sources of hazards and measures for activating the equipment. This includes not only data in the gesis "System Handling Information" document (item no. 0060.2) and device packaging inserts, but also the relevant content from this manual.

2 The EIB/KNX Bus System

Technology

EIB systems are based on an "installation bus": this refers to the cable which links all the devices that are connected and transfers signals between all the bus nodes.

EIBs are concerned with a remote bus system. A central unit is not required since each node (bus device) has its own intelligence. The ETS software is used to download all the required parameters to the individual devices via the bus. Different transfer media are available within the EIB.

All Wieland EIB devices use twisted pair (TP) 2-wire bus technology. This uses a separate cable which is laid at the same time as the standard electrical installation takes place, and supplies the nodes with both power for the electronic components and information (telegrams) such as status messages or switching commands. In larger EIB systems, the lines are electrically isolated from one another using line couplers, which means that each line requires its own power supply. The line couplers ensure that the telegram load on the coupled lines does not become too great. They prevent telegrams that are only required in particular areas from entering other areas, thereby reducing the bus load. The EIB is an event-controlled bus system, which means that telegrams are only created when they are actually needed.

Topology

Each bus connection represents a node, regardless of whether this is concerned with a straightforward button or complex visualisation.

The nodes in each system are divided into sensors (e.g. buttons, temperature sensors), actuators (e.g. switching outputs, shutter outputs) and system devices (e.g. line couplers, voltage supplies).

The smallest unit in the EIB system is a line. A line can link up to 64 nodes. Line couplers enable up to 15 lines to be coupled with a single area. Where complex installations are concerned, it is possible to interconnect a maximum of 15 areas to form a bus world, which then allows for over 13,000 nodes. However, if one bus world is not sufficient, it is possible to couple several bus worlds together.

Addressing

"Addresses" are used for identifying and addressing specific bus nodes, and hence cannot be mixed up. The EIB system uses two address types:

- **Physical address**

During activation, the physical address is assigned to each node. It unambiguously defines each bus node. Since this address is based on the line and area structure, the bus system itself is continually clear, right up to the final extension stage. In addition, the option of physical addressing ensures that the activation engineer has enough leeway to take building structures into account as well. Each device can be addressed in such a way that it can easily be assigned to existing building structures (e.g. "west building, 1st floor, north side").

-

- **Group address**

The group address is used for communication between the nodes and is independent from the physical address.

Group addresses are assigned to all bus nodes that are to evaluate telegram information using this group address. For example, the "central off" group address causes all the nodes in this address group to be switched off when the command for this (e.g. pressing a particular switch) is incorporated at a particular position in the bus system. This telegram has no effect on any of the other nodes.

Software

The multivendor ETS software (EIB Tool Software) is the planning, activation and documentation software for the EIB. Physical addresses, the group address, building topology, etc. can be defined and changed for not only each device, but also the system as a whole.

The manufacturers provide the specific data for the devices used in the system free of charge, in the form of product databases, and input it into the ETS. This standard software can be used to activate EIB devices, regardless of their manufacturer. This prevents special charges from being incurred, as well as compatibility and parameterisation problems.

3 gesis KNX: System Overview

The gesis EIB series of devices arose from combining EIBs with the gesis CON connector system. As a manufacturer of compact connectors for electrical installation, Wieland developed EIB switching devices with pluggable connections which can be connected to gesis connectors. There are currently three different device series available:

- gesis EIB V Has a flat structure, can be directly connected to the 7-pin gesis flat cable and is therefore particularly suitable for low installation areas (such as hollow floors).
- gesis EIB M2 A modular device series. Different extension modules can be added to the basic module, which means that the gesis EIB M2 series can be adapted very well to the different requirements presented by electrical installations.
- gesis KNX RM/RM2 Also a modular device series. The basic and power supply modules are adapted to the building control task at hand using up to four extension modules. The differences between this and the EIB M2 series are the lower installation height (50 mm) and the fact that the parts are prefabricated at the factory (installed in a distribution box, wired and checked). When the distribution box then reaches the site of installation, it only needs to be connected using gesis connectors.

All of the gesis devices series are compatible with all EIB devices from other manufacturers and can be used in an extensive range of applications. The gesis EIB V, gesis EIB M2 and gesis KNX RM/RM2 series enable remote installation and place inputs and outputs directly at the consumer. This results in shorter cables, a reduction in thermal loads, smaller cable channels and more space in the distribution box. The pluggable connections and prefabricated gesis components also enable faster assembly and help to prevent installation errors.

Overview of gesis KNX RM Module Descriptions

Overview according to type

Chap.	Type	Order no.	Page	Techn. data	Installation/ Accessories	Param.
4.1	gesis KNX RM2-BAS gesis KNX RM2-BAS B	83.020.0400.3 83.020.0400.4	4.1.1	4.1.3	4.1.4	4.1.6
4.2	gesis RM-PS gesis RM-PS B	83.020.0401.0 83.020.0401.1	4.2.1	4.2.3	4.2.3	–
4.3	gesis RM-PS 12/5 gesis RM-PS 12/5 B	83.020.0421.0 83.020.0421.1	4.3.1	4.3.3	4.3.3	–
4.4	gesis RM-0/8 12 gesis RM-0/8 12 B	83.020.0402.0 83.020.0402.1	4.4.1	4.4.3	4.4.3	4.4.5
4.5	gesis RM-0/4 gesis RM-0/4 B	83.020.0403.0 83.020.0403.1	4.5.1	4.5.3	4.5.3	4.5.5
4.6	gesis RM-0/2W SI gesis RM-0/2W SI B	83.020.0404.0 83.020.0404.1	4.6.1	4.6.3	4.6.4	4.6.6
4.7	gesis RM-0/2SD gesis RM-0/2SD B	83.020.0405.0 83.020.0405.1	4.7.1	4.7.3	4.7.3	4.7.5
4.8	gesis RM-0/4HL gesis RM-0/4HL B	83.020.0406.0 83.020.0406.1	4.8.1	4.8.3	4.8.4	4.8.6

Chap.	Type	Order no.	Page	Techn. data	Installation/ Accessories	Param.
4.9	gesis RM-0/2W DC gesis RM-0/2W DC B	83.020.0407.0 83.020.0407.1	4.9.1	4.9.2	4.9.3	4.9.5
4.10	gesis RM-16/0 (RC) gesis RM-16/0 (RC) B	83.020.0408.0 83.020.0408.1	4.10.1	4.10.3	4.10.4	4.10.6
4.11	gesis RM-0/2D gesis RM-0/2D B	83.020.0409.0 83.020.0409.1	4.11.1	4.11.2	4.11.3	4.11.5
4.12	gesis RM-0/2DA gesis RM-0/2DA B	83.020.0410.0 83.020.0410.1	4.12.1	4.12.3	4.12.4	4.12.6
4.13	gesis RM-0/4HL AC gesis RM-0/4HL AC B	83.020.0411.0 83.020.0411.1	4.13.1	4.13.3	4.13.3	4.13.5
4.14	gesis RM-0/4HL DC gesis RM-0/4HL DC B	83.020.0412.0 83.020.0412.1	4.14.1	4.14.2	4.14.3	4.14.5

Overview according to order number

Chap.	Order no.	Type	Page	Techn. data	Installation/ Accessories	Param.
4.1	83.020.0400.3 83.020.0400.4	gesis KNX RM2-BAS gesis KNX RM2-BAS B	4.1.1	4.1.3	4.1.4	4.1.6
4.2	83.020.0401.0 83.020.0401.1	gesis RM-PS gesis RM-PS B	4.2.1	4.2.3	4.2.3	–
4.3	83.020.0421.0 83.020.0421.1	gesis RM-PS 12/5 gesis RM-PS 12/5 B	4.3.1	4.3.3	4.3.3	–
4.4	83.020.0402.0 83.020.0402.1	gesis RM-0/8 12 gesis RM-0/8 12 B	4.4.1	4.4.3	4.4.3	4.4.5
4.5	83.020.0403.0 83.020.0403.1	gesis RM-0/4 gesis RM-0/4 B	4.5.1	4.5.3	4.5.3	4.5.5
4.6	83.020.0404.0 83.020.0404.1	gesis RM-0/2W SI gesis RM-0/2W SI B	4.6.1	4.6.3	4.6.4	4.6.6
4.7	83.020.0405.0 83.020.0405.1	gesis RM-0/2SD gesis RM-0/2SD B	4.7.1	4.7.3	4.7.3	4.7.5
4.8	83.020.0406.0 83.020.0406.1	gesis RM-0/4HL gesis RM-0/4HL B	4.8.1	4.8.3	4.8.4	4.8.6
4.9	83.020.0407.0 83.020.0407.1	gesis RM-0/2W DC gesis RM-0/2W DC B	4.9.1	4.9.2	4.9.3	4.9.5
4.10	83.020.0408.0 83.020.0408.1	gesis RM-16/0 (RC) gesis RM-16/0 (RC) B	4.10.1	4.10.3	4.10.4	4.10.6
4.11	83.020.0409.0 83.020.0409.1	gesis RM-0/2D gesis RM-0/2D B	4.11.1	4.11.2	4.11.3	4.11.5
4.12	83.020.0410.0 83.020.0410.1	gesis RM-0/2DA gesis RM-0/2DA B	4.12.1	4.12.3	4.12.4	4.12.6
4.13	83.020.0411.0 83.020.0411.1	gesis RM-0/4HL AC gesis RM-0/4HL AC B	4.13.1	4.13.3	4.13.3	4.13.5
4.14	83.020.0412.0 83.020.0412.1	gesis RM-0/4HL DC gesis RM-0/4HL DC B	4.14.1	4.14.2	4.14.3	4.14.5

4.1 gesis KNX RM2-BAS (83.020.0400.3/4)

Product Description



- Designation Basic module, KNX coupling
- Type/model no. gesis KNX RM2-BAS 83.020.0400.3
gesis KNX RM2-BAS B 83.020.0400.4
- Device type EIB bus coupling
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS application program gesis EIB RM2-BAS 1.0

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The basic module acts as the interface between the gesis RM extension modules and the EIB. It receives and sends telegrams via the EIB bus, and manages the extension modules that are connected.

A maximum of four extension modules from the gesis RM series of devices may be connected. A power supply that conforms to the type of system is required for operating a basic module with extension modules connected.

Since the extension modules can be freely selected from the range of gesis RM devices, and there are no restrictions other than that a maximum of four extension modules may be connected, the arrangement of the modules can easily be adapted to the requirements presented by different systems. Binary inputs for both floating contacts and radio telegrams conforming to the EnOcean Standard are available as inputs. A wide range of extension modules is available for light controllers (switching and dimming), shutter controllers and ventilation controllers.

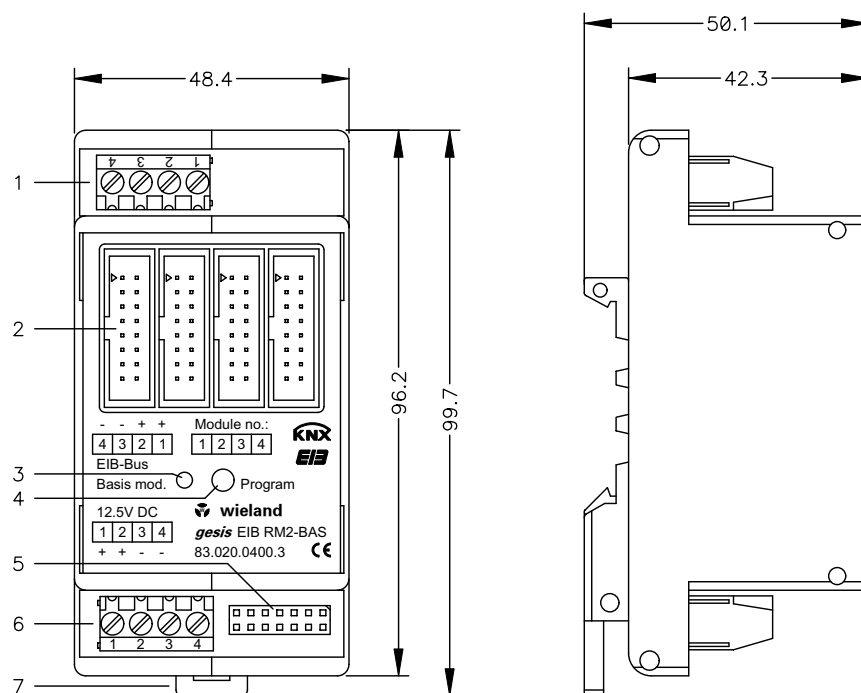
Although there is a maximum limit for extending the modules (e.g. 32 inputs), and the module block is flexible on account of its freely selectable configuration, the entire arrangement of modules only occupies one physical address within the EIB. The fact that only one application program is required presents another advantage. When selected on the start screen, the extension modules are displayed along with their corresponding parameters and objects.

The entire arrangement is installed in a pluggable gesis distribution box. This box is fully equipped with connectors from the gesis CON series. This reduces the amount of assembly work at the place of installation, so that all that is required is to attach the box and plug in the connections. If gesis CON connectors are used throughout the installation, not only will a vast amount of time be saved, but the system will also be installed with virtually no

errors. Since the distribution boxes are designed in consultation with our customers, there is also the option of having neat and accurate labels attached to the inputs and outputs.

The functionality of the extension modules is defined by means of the parameter settings in the basic module. Each parameter set covers a wide scope, so that virtually any requirement can be accommodated. For example, all shutter outputs feature an option for positioning the shutters and setting the louvre angle. There is no need to create any function groups for this; each output has its own complete parameter set, whose settings can be made separately from all the others. With a maximum of 115 group addresses and arrangements, it also takes a lot to reach the limits of the system in this respect.

Dimensions, Connections and Function Elements



- | | |
|-----------------------|--|
| 1– X1 | Terminal strip for connecting the KNX bus (for details please refer to "Terminal Assignment") |
| 2– Slots | For connecting the extension modules (16-pin ribbon cable header). Please make a note of which module addresses are assigned to which slots (by providing a label with "Module no.:"). |
| 3– Red LED | Device is in programming mode |
| 4– Programming button | For activating and deactivating programming mode in order to set the physical address |
| 5– Programming port | For service purposes (servicing to be performed by Wieland Electric GmbH only) |
| 6– X2 | Terminal strip for connecting the operating voltage (for details please refer to "Terminal Assignment") |
| 7– Locking slide | With 83.020.0400.3 only |

Terminal Assignment

X1: Connection and routing of the KNX bus; terminals 1/2 and 3/4 are bridged internally

- 1– KNX bus +
- 2– KNX bus +
- 3– KNX bus –
- 4– KNX bus –

X2: Connection and routing of the operating voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Operating voltage: 12.5 V DC SELV +
- 2– Operating voltage: 12.5 V DC SELV +
- 3– Operating voltage: 12.5 V DC SELV –
- 4– Operating voltage: 12.5 V DC SELV –

Technical Data

Operating voltage	12.5V DC
Rated current	160mA
Current consumption KNX	Approx. 5mW
Rated insulation voltage	250V
Electrical isolation	4kV AC/6kV pulse
KNX bus/Supply voltage	
Bus connection	KNX (TP1, twisted pair)
Connection to extension modules	Pluggable flat cable
Interfaces	Four extension modules from the gesis RM series of devices
Connection type	Screw clamp terminals 0.14 to 4mm ² , solid 0.14 to 2.5mm ² , stranded 6.5mm stripped in each case
Physical address	One (independent of number of extension modules)
Product software	As of ETS 2 version 1.3
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
EMC requirements	Conforms to EN 61000-6-2/-6-3 and EN 50090-2-2
Operating conditions	
Field of application	For fixed installation in interior and dry areas
Temperature ranges	
– Operating environment	–5°C to +45°C
– Storage	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Climate resistance	Acc. to EN 50090-2-2
General data	
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 115g
Dimensions	Refer to "Dimensions, Connections and Function Elements"

Approvals
CE certification

EIB/KNX-certified
In acc. with EMC Low
Voltage Directive (residential and functional buildings)

Installation



CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0400.3)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

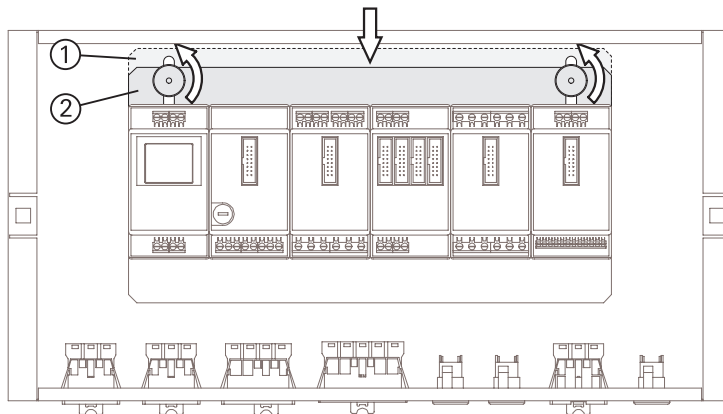
Disassembly (83.020.0400.3)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0400.4)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.

4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown
("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Accessories

• Power supply gesis RM-PS	83.020.0401.0
• Power supply gesis RM-PS B	83.020.0401.1
• Product database on data carrier	00.000.0066.1

Application Program

- | | |
|-----------------------|---|
| • Program name | gesis EIB RM2-BAS 1 |
| • Program version | 1.0 |
| • Product allocation | gesis RM2-BAS 83.020.0400.3/4 |
| • Product description | KNX basic module for gesis RM modular device series |
| • Manufacturer | Wieland Electric GmbH |

Functional Description

The application program manages all general settings, as well as all settings for the extension modules that have been added to a basic module. The application program appears exclusively in the basic module. All modules in the gesis RM series can be added in the ETS, but the parameter settings must only be made in the software for the basic module. In the ETS, it is not possible to assign a physical address to the extension modules. Since the basic module has a bus coupling on account of its status as an individual module within a module block, it also receives the physical address.

In the application software, the parameters for the required extension modules must be set on the first parameter screen. On delivery, all of the module addresses are declared as not used. The function selected for a module address must match the actual configuration of the module block.

When a function is selected for a module address on the first parameter screen ("SELECTION OF MODULES"), the relevant parameter screens and assigned objects appear automatically. The actual parameterisation of the extension modules is carried out on the corresponding parameter screens ("Module x", etc.).

Once parameterisation is complete, the application will be downloaded to the extension module via the EIB. It is not possible to check whether the settings match the actual configuration on the basis of a checkback signal.

Description of the General Objects for Each Module Block

On delivery, all objects are shown as not used. The objects are managed dynamically and are only shown once parameterisation of the module addresses and parameters has taken place. A total of 114 group addresses and 114 associations are available.

Description of the General Parameterisation for Each Module Block

Only the parameters that are shown on delivery are described below. You can find the description of the parameters assigned to the extension modules in the descriptions for the relevant modules.

► **Default settings appear in bold.**

Parameter screen: Selection of modules	
Module 1	not used 4 binary outputs 2 shutter outputs 2 dimming outputs 2 DALI outputs 8 binary outputs
Module 2	Parameter identical to module 1
Module 3	Parameter identical to module 1
Module 4	Parameter identical to module 1

These parameters are used to define which extension module is assigned to which slot on the basic module.

When an extension module is selected, the relevant parameter screens are displayed and the objects are enabled.

If the software setting does not match the actual module configuration, there will be an error in the functions.

4.2 gesis RM-PS (83.020.0401.0/1)

Product Description



- Designation
 - Type, model no.
 - Device type
 - Construction
- | | |
|--|---------------|
| Power supply | |
| gesis RM-PS | 83.020.0401.0 |
| gesis RM-PS B | 83.020.0401.1 |
| Power supply | |
| Device with screw clamp terminals for installation in a gesis RAN distribution box | |

NOTICE

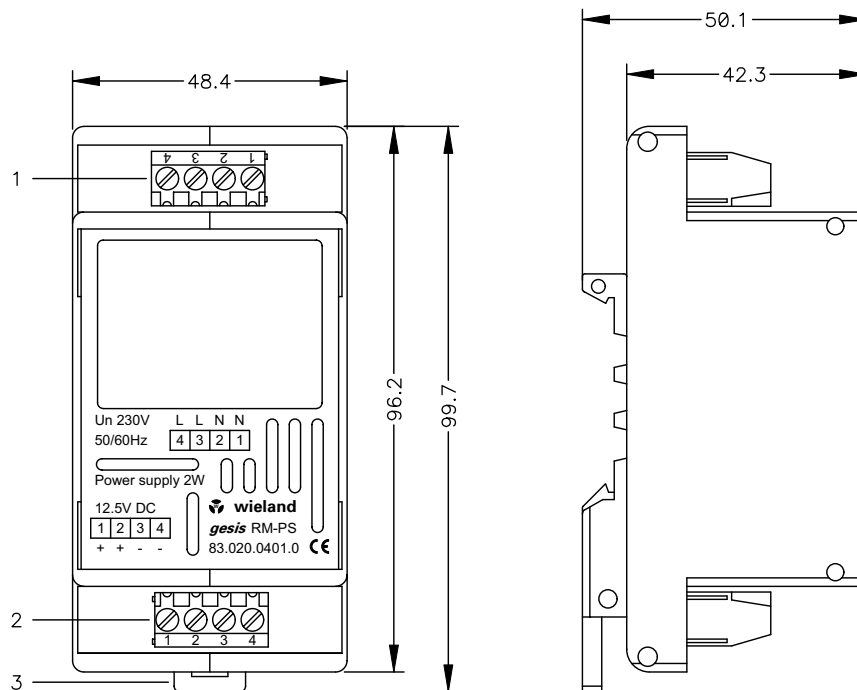
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The power supply provides the power that is used to operate the basic module. The extension modules connected to the basic module using the flat cable also receive the current required for switching the relays from this power supply. The output voltage is a 12 V DC safety extra-low voltage (SELV).

Dimensions, Connections and Function Elements



- | | |
|------------------|---|
| 1– X1 | Terminal strip for connecting the operating voltage (for details please refer to "Terminal Assignment") |
| 2– X2 | Terminal strip for connecting the output voltage (for details please refer to "Terminal Assignment") |
| 3– Locking slide | With 83.020.0401.0 only |

Terminal Assignment

X1: Connection and routing of the operating voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Operating voltage 230 V AC N
- 2– Operating voltage 230 V AC N
- 3– Operating voltage 230 V AC L
- 4– Operating voltage 230 V AC L

X2: Connection and routing of the output voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Output voltage: 12.5 V DC SELV +
- 2– Output voltage: 12.5 V DC SELV +
- 3– Output voltage: 12.5 V DC SELV –
- 4– Output voltage: 12.5 V DC SELV –

Technical Data

Operating elements	None
Indicators	None
Inputs/outputs	
Connection type	Screw clamp terminals
Connection cross-section	0.14 – 4 mm ² , solid 0.14 – 2.5 mm ² , stranded
Input	
Operating voltage	230 V AC, +6% / -10%, 50/60 Hz
Output (connection to basic module)	
Rated voltage	12 V DC SELV
Rated current	160 mA
Maximum number of extension modules	The voltage supply can provide a basic module and four extension modules with power. Any peak loads occurring with central commands are buffered.
Electrical safety	
Protection class	None (depends on subsequent work)
Degree of protection	IP00, min. IP20 following installation of module in gesis® RAN distribution box
Degree of soiling	2
Surge voltage category	III
Rated insulation voltage	250 V external conductor to N or PE
Operating conditions	
Field of application	For fixed installation (installation in gesis RAN distribution boxes) in interior and dry areas
Ambient operating temperature	-5 to +45°C
Storage temperature	-25 to +70°C
Relative humidity	5 to 93%
Moisture condensation	None
EMC requirements	Conforms to EN 61000-6-2, EN 61000-6-3 and EN 50090-2-2
Climate resistance	Acc. to EN 50090-2-2
Housing material	Plastic, halogen and phosphorous-free; colour: black
Behaviour in fire (housing)	Conforms to UL 94 V-2
Weight	Approx. 240 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

Assembly (83.020.0401.0)

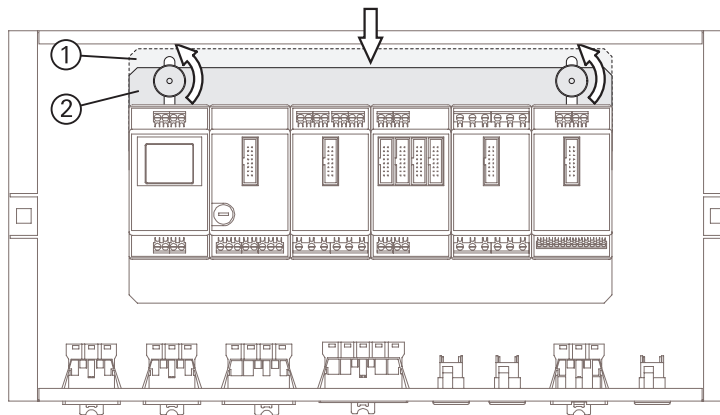
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied.
Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0401.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0401.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

4.3 gesis RM-PS 12/5 (83.020.0421.0/1)

Product Description



- | | | |
|-------------------|--|---------------|
| • Designation | Power supply | |
| • Type, model no. | gesis RM-PS 12/5 | 83.020.0421.0 |
| | gesis RM-PS 12/5 B | 83.020.0421.1 |
| • Device type | Power supply | |
| • Construction | Device with screw clamp terminals for installation in a gesis RAN distribution box | |

NOTICE

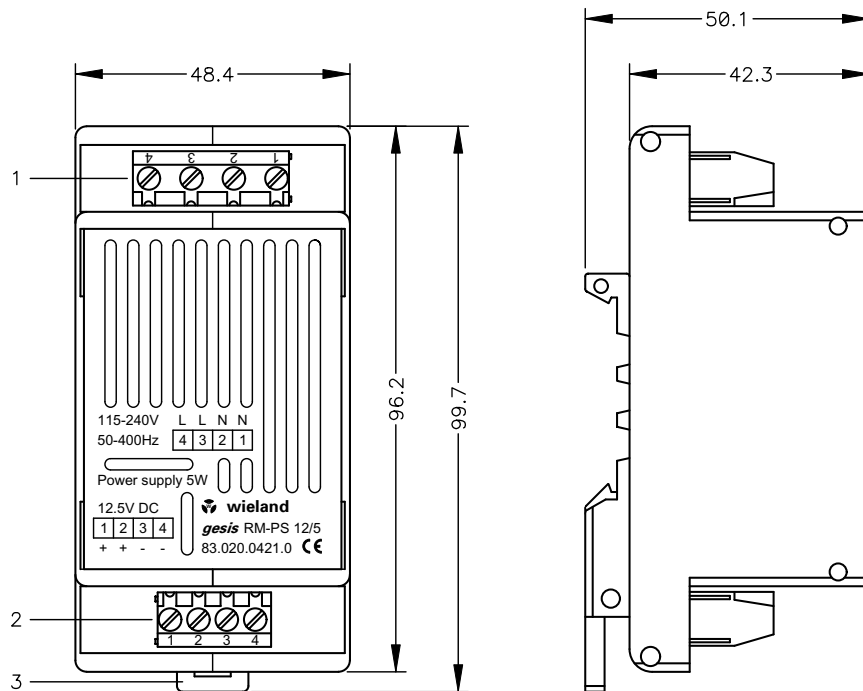
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The voltage supply is suitable for operating up to two basic modules, including the extension modules that are connected to them, from the gesis RM series of devices. It has a wide-range input and is suitable for both DC and AC voltage networks. The output (12.5V DC/5W) is protected against short circuits, overload and overtemperature.

Dimensions, Connections and Function Elements



- | | |
|------------------|---|
| 1– X1 | 4-pin connection terminal strip for connecting the mains voltage (for details see "Terminal Assignment") |
| 2– X2 | 4-pin connection terminal strip for connecting the output voltage (for details see "Terminal Assignment") |
| 3– Locking slide | With 83.020.0421.0 only |

Terminal Assignment:

X1: Connection and routing of the mains voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Connection for neutral conductor of the mains voltage (N or -)
- 2– Connection for neutral conductor of the mains voltage (N or -)
- 3– Connection for phase/external conductor of the mains voltage (L or +)
- 4– Connection for phase/external conductor of the mains voltage (L or +)

X2: Connection and routing of the output voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Connection for output voltage, 12.5V DC +
- 2– Connection for output voltage, 12.5V DC +
- 3– Connection for output voltage, 12.5V DC –
- 4– Connection for output voltage, 12.5V DC –

Technical Data

Power input (connection X1)	85 to 264V AC (at 85V AC with 80% power, from 115V AC with 100%) 120 to 370V DC
Frequency range	47 to 440 Hz
Efficiency	Typ. 73%
AC current consumption	Typ. 0.12 A/115V AC Typ. 0.08 A/230V AC
Output (connection X2)	
Rated voltage	12.5V DC SELV (I/O isolation in acc. with EN 60601-1)
Rated current	400 mA
Rated power	5 W
Short circuit withstand capability	Yes
Overload protection	Yes
Overtemperature protection	Yes
Connection type (X1 and X2)	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Operating conditions	
Protection class	None
Degree of protection	IP20
Degree of soiling	2
Surge voltage category	III
Temperature ranges	
Operating environment	–5°C to +45°C
Storage	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
General data	
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 110 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Height inc. TH 35-7.5 mounting rail	52 mm
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)
Mounting	On TH35 mounting rail

Installation

Assembly (83.020.0421.0)

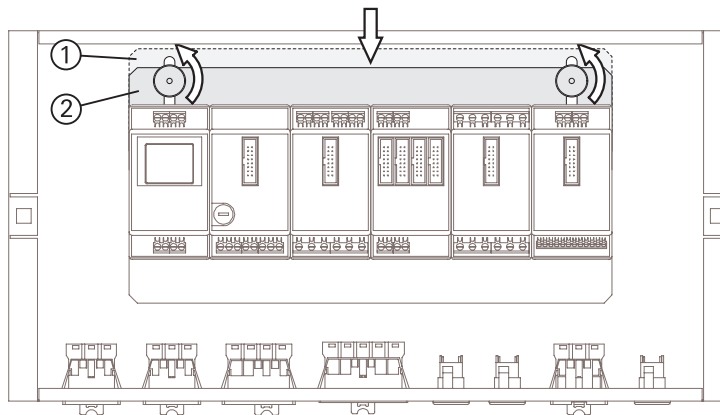
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0421.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0421.1)

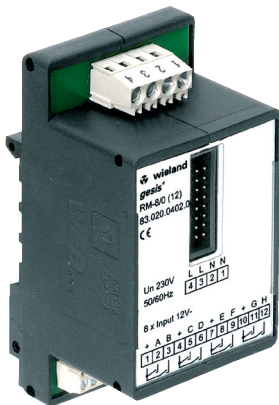
1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

4.4 gesis RM-8/0 12 (83.020.0402.0/1)

Product Description



- Designation Extension module with 8 binary inputs
- Type/model no. gesis RM-8/0 12 83.020.0402.0
gesis RM-8/0 12 B 83.020.0402.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application program gesis RM2-BAS 1.0

NOTICE

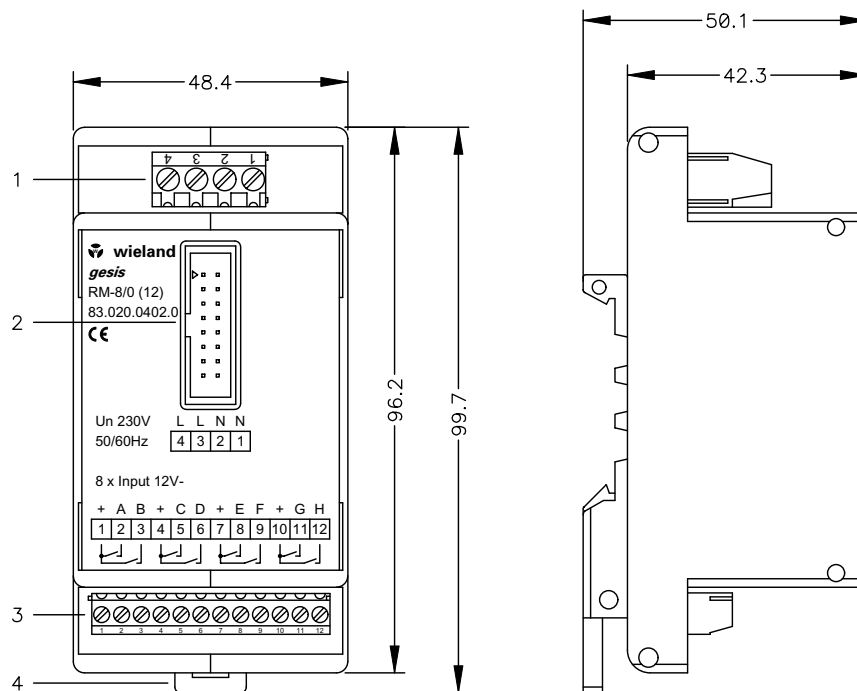
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

gesis RM-8/0 12 is an input module with eight floating contacts. All of the corresponding configurations and software settings must be made via the basic module; the extension module does not have its own intelligence. The inputs can be used for light (switching/dimming), shutter and scene control, evaluated separately from one another, and transferred to the network as stand-alone output variables.

Dimensions, Connections and Function Elements



- | | |
|------------------|---|
| 1– X1 | Terminal strip for the operating voltage, in order to generate the sampling voltage (for details please refer to "Terminal Assignment") |
| 2– Slot | Connection to the basic module (16-pin ribbon cable header) |
| 3– X2 | Connection terminal strip for the external floating contacts (for details please refer to "Terminal Assignment") |
| 4– Locking slide | With 83.020.0402.1 only |

Terminal Assignment

X1: Connection for the operating voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Operating voltage 230V AC N
- 2– Operating voltage 230V AC N
- 3– Operating voltage 230V AC L
- 4– Operating voltage 230V AC L

X2: Connection for the external floating contacts; terminals 1/4/7/9 are bridged internally and on the "+" potential of the sampling voltage

- 1– Sampling voltage SELV +
- 2– Input A connection of the external contact
- 3– Input B connection of the external contact
- 4– Sampling voltage SELV +
- 5– Input C connection of the external contact
- 6– Input D connection of the external contact
- 7– Sampling voltage SELV +
- 8– Input E connection of the external contact
- 9– Input F connection of the external contact
- 10– Sampling voltage SELV +
- 11– Input G connection of the external contact
- 12– Input H connection of the external contact

Technical Data

Operating voltage	230 V AC +10% / -15%; 50/60 Hz
Connection to basic module	Pluggable flat cable
Inputs (connection for external floating contacts)	
– Number	Eight
– Voltage range	10 to 25 V DC SELV (load-dependent)
– Contact detection	Open > 70 kΩ
	Closed < 300 Ω
Cable length	Max. 100 m (distance between module and contact)
Connection type	
– X1 (operating voltage)	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
– X2 (external contacts)	Screw clamp terminals 0.14 to 1.5 mm ² , solid 0.14 to 1 mm ² , stranded 5 mm stripped in each case
Software	Covered by the basic module
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Field of application	For fixed installation in interior and dry areas
Ambient temperature	–5°C to +45°C (during operation)
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 145 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0402.0)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied.
Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with

"Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.

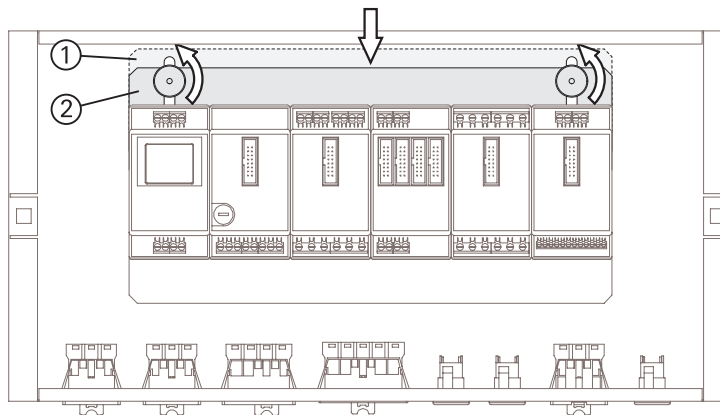
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0402.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0402.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

- Program name gesis EIB RM2-BAS 1
- Program version 1.0
- Product allocation gesis RM-8/0 12 /...12 B 83.020.0402.0/1
- Manufacturer Wieland Electric GmbH

Communication Objects

The operating mode is set in the parameters.

Operating mode:							
Push button evaluation (contact = norm. open)							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	On/Off/Toggle	1 bit	C, W, T, U
2	16	30	44	Input B	On/Off/Toggle	1 bit	C, W, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Shutter sensor (contact = normally open)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A/B	Up/Down	1 bit	C, T, U
2	16	30	44	Input A/B	Louvres/Stop	1 bit	C, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Dimming sensor (contact = normally open)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A/B	On/Off	1 bit	C, T, U
2	16	30	44	Input A/B	Dimming	1 bit	C, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U

7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Send value (contact = normally open)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	Value 8 bit	1 byte	C, T, U
2	16	30	44	Input B	Value 8 bit	1 byte	C, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Evaluation of pulse edge (not with radio)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	On/Off/Toggle	1 bit	C, W, T, U
2	16	30	44	Input B	On/Off/Toggle	1 bit	C, W, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U

On/Off/Toggle

Depending on the parameters that are set, short-circuiting the appropriate input terminals will send their respective input objects to the bus.

Lock

The lock relates to the relevant pair of inputs. If "1" is received here, both inputs will be locked. The input objects will no longer be sent and any cyclical processes that are set will be suspended. "0" will cancel the lock function.

Parameterisation

The individual parameters are shown dynamically, depending on the function parameterised. Each parameter screen enables a pair of inputs to be set. The function of the individual input is displayed in the parameter menus.

► **Default settings appear in bold.**

I/O: Input A/B, input C/D, input E/F, input G/H

Parameter	Setting options
Function of the binary inputs (configured for..)	Push button evaluation (*) Shutter sensor Dimming sensor Send value Evaluation of pulse edge (not with radio)

(*) The shutter sensor is preset for input A/B.

Push button evaluation

The pair of inputs is interpreted as a button. A distinction is drawn between pushing the button for a long and short period of time (see other parameters).

Shutter sensor

The pair of inputs is interpreted as a shutter sensor (EIS 7). The "On" and "Off" functions are assigned to inputs A and B.

Dimming sensor

The pair of inputs is interpreted as a dimming sensor. The "On/Brighter" and "Off/Darker" functions are assigned to inputs A and B. If the button is pushed for a short period of time, an on/off telegram (EIS 1) is sent. If the button is pushed for a long period of time, the dimming command "Change by 100%" (EIS 2) is output; a stop telegram is output when the button is released.

Send value

The pair of inputs can be used to send 8-bit values. One value per input is sent via an 8-bit object whenever the button is pushed for a short or long period of time.

Evaluation of pulse edge

The pair of inputs is interpreted as a button. The pulse edges are evaluated as rising/falling. This function may not be used for radio inputs (gesis RM 16/0 (RC)), since the edge detection function is not clear.

Parameters within the operating modes	
Long push button action min.	0.3 s ... 0.5 s ... 2.5 s

If the button is pushed for longer than the set time, this is interpreted as a long push button action.

Available in: "Push button evaluation", "Shutter sensor", "Dimming sensor", "Send value"

Push button operation mode for Input A
Push button operation mode for Input B

Toggle
short = On, long = Off
short = Off, long = On
On | Off | no function

▼ **Toggle**

Each time the button is pushed, the current input object is inverted.

short = On, long = Off

Pushing the button for a short period of time sets the input object to "1"; pushing it for a long period of time sets it to "0".

short = Off, long = On

Pushing the button for a long period of time sets the input object to "1"; pushing it for a long period of time sets it to "0".

On

Pushing the button for a long or short period of time sets the input object to "1".

Off

Pushing the button for a long or short period of time sets the input object to "0".

no function

Pushing the button has no effect.

Available in: Push button evaluation

Terminal assignment

according to terminal markings
reversed

▼ **according to terminal markings**

The functions of inputs A and B correspond to the actuator label.

reversed

The functions of inputs A and B have been reversed.

Available in all operating modes.

Value for short keypress of Input A (0..255)
Value for short keypress of Input B (0..255)

255

Value for long keypress of Input A (0..255)
Value for long keypress of Input B (0..255)

1

▼
The set value is sent to the bus via the input object when the button at the relevant input is pushed for a short (or long) period of time.

Available in Send value operating mode.

Edge evaluation of Input A	rising = On, falling = Off
Edge evaluation of Input B	rising = On, falling = Off
	rising = Off, falling = On
	rising = On
	falling = On
	rising = Off
	falling = Off
	rising = Toggle
	falling = Toggle
	rising = Toggle, falling = Toggle
	no evaluation
	rising = On, falling = On
	rising = Off, falling = Off
	rising = Toggle, falling = On
	rising = On, falling = Toggle
	rising = Off, falling = Toggle
	rising = Toggle, falling = Off

rising = On, falling = Off

A rising edge at the input sets the input object to "1 (On)", while a falling edge sets it to "0 (Off)". "Toggle" inverts the current input object. Any combination is possible.

Available in: Evaluation of pulse edge.

Send behaviour for obj. value of Input A	no sending
Send behaviour for obj. value of Input B	On once, Off once
	On once, Off cyclical
	On cyclical, Off once
	On cyclical, Off cyclical

no sending

Sending of the input object is disabled when a change is made. However, reading is possible.

once

The input object is sent once when On/Off (1/0) is changed.

cyclical

The input object is sent on a cyclical basis when On/Off (1/0) is changed.

Available in: Evaluation of pulse edge.

Send initial value of Input A	no yes
Send initial value of Input B	

yes

On recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), the current status (On/Off) of the input is determined and sent to the bus once, depending on the parameters. The object sends with a delay time of approx. 10s. If the input status changes during this time, the new value is sent immediately and there is no 10s delay.

Available in: Evaluation of pulse edge.

"Factor (1..255) for cyclical sending (timebase = 10 seconds)"	30
--	----

Determines the time interval for cyclical sending.

Available in: Evaluation of pulse edge.

4.5 gesis RM-0/4 (83.020.0403.0/1)

Product Description



- Designation Extension module with 4 switching actuators
- Type/model no. gesis RM-0/4 83.020.0403.0
gesis RM-0/4 B 83.020.0403.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application program gesis RM2-BAS 1.0

NOTICE

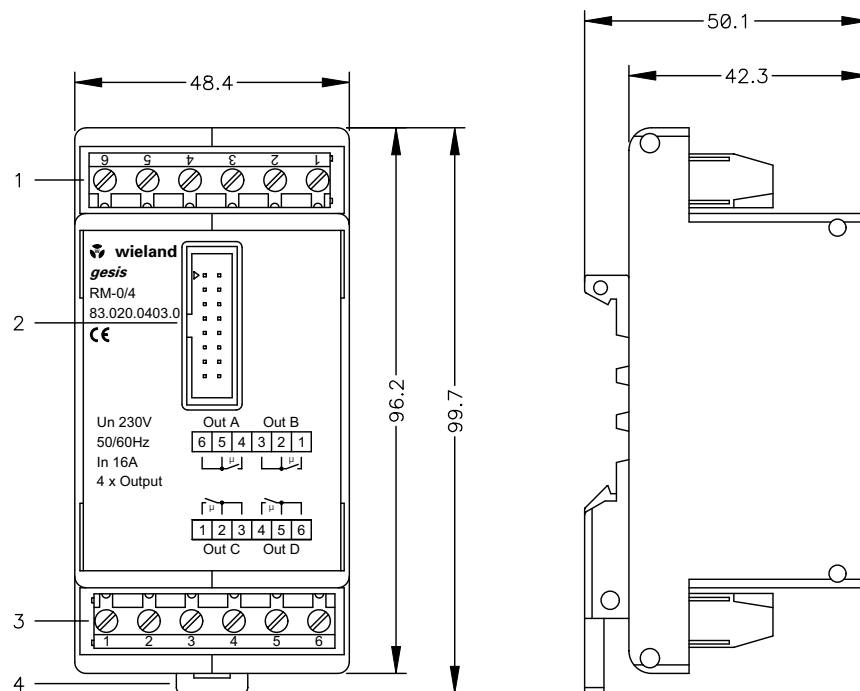
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The gesis RM-0/4 has four controllable and floating outputs that are separate from one another. Communication with the bus takes place via the basic module. For this, switching commands are accepted and status values provided. The connection to the basic module is established using a flat cable that is provided as part of the scope of supply.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– X1 | 4-pin connection terminal strip for outputs A and B
(for details please refer to "Terminal Assignment") |
| 2– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 3– X2 | 4-pin connection terminal strip for outputs C and D
(for details please refer to "Terminal Assignment") |
| 4– Locking slide | With 83.020.0403.1 only |

Terminal Assignment:

X1: Connection and routing of the switching voltage, and connection of outputs A and B (terminals 2/3 and 5/6 are bridged internally)

- 1– Connection for output B
- 2– Connection/routing of the switching voltage for output B
- 3– Connection/routing of the switching voltage for output B
- 4– Connection for output A
- 5– Connection/routing of the switching voltage for output A
- 6– Connection/routing of the switching voltage for output A

X2: Connection and routing of the switching voltage, and connection of outputs C and D (terminals 2/3 and 5/6 are bridged internally)

- 1– Connection for output C
- 2– Connection/routing of the switching voltage for output C
- 3– Connection/routing of the switching voltage for output C
- 4– Connection for output D
- 5– Connection/routing of the switching voltage for output D
- 6– Connection/routing of the switching voltage for output D

Technical Data

Connection to basic module	Pluggable flat cable
Outputs	
– Number	Four
– Rated voltage	230 V AC, 50 to 60 Hz (per output)
– Rated current	16 A (ohmic load)
– Connection type	Screw clamp terminals
	0.14 to 4 mm ² , solid
	0.14 to 2.5 mm ² , stranded
	6.5 mm stripped in each case
Software	Covered by the basic module
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Field of application	For fixed installation in interior and dry areas
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 160 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0403.0)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied.
Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

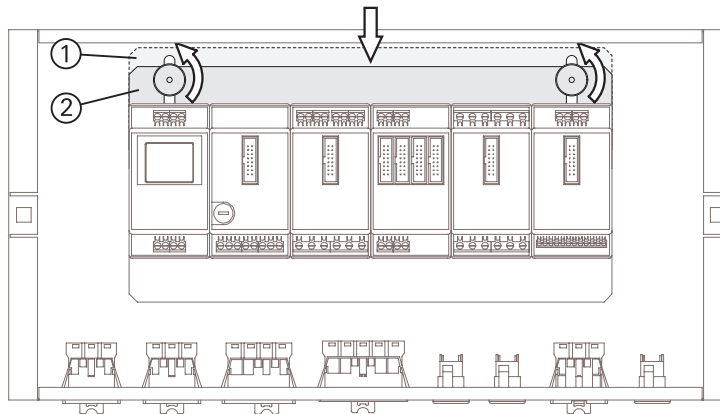
Disassembly (83.020.0403.0)

1. Disconnect the power supply from the module.

2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0403.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

- Program name gesis RM 1
- Program version 1.0
- Product allocation gesis RM-0/4 /... B 83.020.0403.0/1
- Manufacturer Wieland Electric GmbH

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Output A	Switch	1 bit	C, W, T, U
1	15	29	43	Output A	Status	1 bit	C, R, T, U
2	16	30	44	Output B	Switch	1 bit	C, W, T, U
3	17	31	45	Output B	Status	1 bit	C, R, T, U
4	18	32	46	Output C	Switch	1 bit	C, W, T, U
5	19	33	47	Output C	Status	1 bit	C, R, T, U
6	20	34	48	Output D	Switch	1 bit	C, W, T, U
7	21	35	49	Output D	Status	1 bit	C, R, T, U
8	22	36	50	Output A to D	Lock	1 bit	C, W, T, U

Parameterisation

The following parameters are available separately for each output.
Outputs A, B, C and D are all the same.

► **Default settings appear in bold.**

Parameter	Setting options
Behaviour on bus voltage recovery	no action switch on switch off set old value (value before failure)

This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

set old value

The output is set to the value prior to the bus voltage failure, and not to the value that is set by the bus voltage failure parameter. When the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), both the status is set and the "old value" is switched to "Off" (value = 0).

Behaviour on bus voltage failure	no action switch on switch off
----------------------------------	---

The behaviour of the actuator upon failure of the bus voltage can be set here. Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately. Status objects are no longer sent to the bus.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

Operating mode	Normal On/Off delay time switch
----------------	--

Normal

The switching object value is executed immediately.

On/Off delay

Switching on and switching off processes are carried out with a delay. The parameters required for this purpose (time base/factor) are displayed dynamically. Factor "0" causes switching to occur immediately. If a switching object is received during a delay, the active timer is restarted.

time switch (stairway light)

Switching on takes place immediately (switching object = 1) and, depending on how the operating time (which is displayed dynamically) has been parameterised, switching off takes place with a delay. If the object value = 0, switching off takes place immediately. If switching on occurs again (switching object = 1) while the operating time has not yet elapsed, the timer is restarted. This will extend the total operating time.

Parameters within the operating modes

Parameter	Setting options
Base for On delay Base for Off delay	10 ms ... 1 s ... 1 h
Factor (0..255)	10

On (Off) delay = base x factor

Available in On/Off delay operating mode.

Base for operating time	10 ms ... 1 s ... 1 h
Factor (0..255)	10

Operating (Off) time = base x factor

Available in time switch operating mode.

Relay mode	normal inverted
------------	--------------------------

normal Object value 0/1 = contact open/closed (normally open)
inverted Object value 0/1 = contact closed/open (normally closed)

Available in all operating modes.

Lock	no yes
------	-----------------

yes

The lock for this output is activated. If "1" is received at the lock, the output enters an inactive status. Switching object events are ignored (locked). Delay times that have already started will continue to be executed. If the lock receives "0", the lock will be cancelled.

Available in all operating modes.

Status object Bus voltage recovery/Operation	no action/read only send/read only no action/send on change send/send on change
---	---

The function of the status object on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), can be set on a separate basis from normal mode.

no action

The object is not sent on recovery of the bus voltage.

send

The object is sent on recovery of the bus voltage.

read only

The object value can only be read during operation.

send on change

The object value is actively sent to the bus when a change occurs during operation.

Available in all operating modes.

4.6 gesis RM-0/2W SI (83.020.0404.0/1)

Product Description



- Designation Extension module with 2 shutter actuators (230 V AC)
- Type/model no. gesis RM-0/2W SI 83.020.0404.0
gesis RM-0/2W SI B 83.020.0404.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

gesis RM-0/2W SI is an output module with floating relay outputs that are designed for 230V switching. All of the corresponding configurations and software settings must be made via the basic module; the extension module does not have its own intelligence. The outputs can be controlled separately from one another. The consumers are connected by means of screw clamp terminals.

A shutter with louvres for controlling the amount of light that is let in can be used with the aid of shutter outputs. It is possible to move the shutter UP and DOWN or adjust the louvres. It is also possible to move the shutter and louvres into the required position by means of direct commands. Each adjustment is factored into the position (on an incremental or decremental basis), enabling the control system to recognise the positions of both the shutter and louvres at any time. Position commands that are received will be interpreted accordingly, and the new position will be calculated and approached immediately without the need to control a reference position.

Since deviations may arise over time when calculating the current position, the travel time (which is used to determine the position) is adjusted whenever either of the two limit switches is reached.

In the case of mechanical limit switches, scanning takes place automatically and the corresponding travel time is accepted on an individual basis by means of a reference movement following commissioning. In this case, only the louvre turning time needs to be calculated manually (using a stopwatch). As for the travel time itself, an extremely long default value is entered, which the module will then correct of its own accord using mechanical end switches at the first available opportunity (for example, when the user moves the shutter all the way down). A reference movement (for determining the travel time) can also be triggered by means of a special telegram.

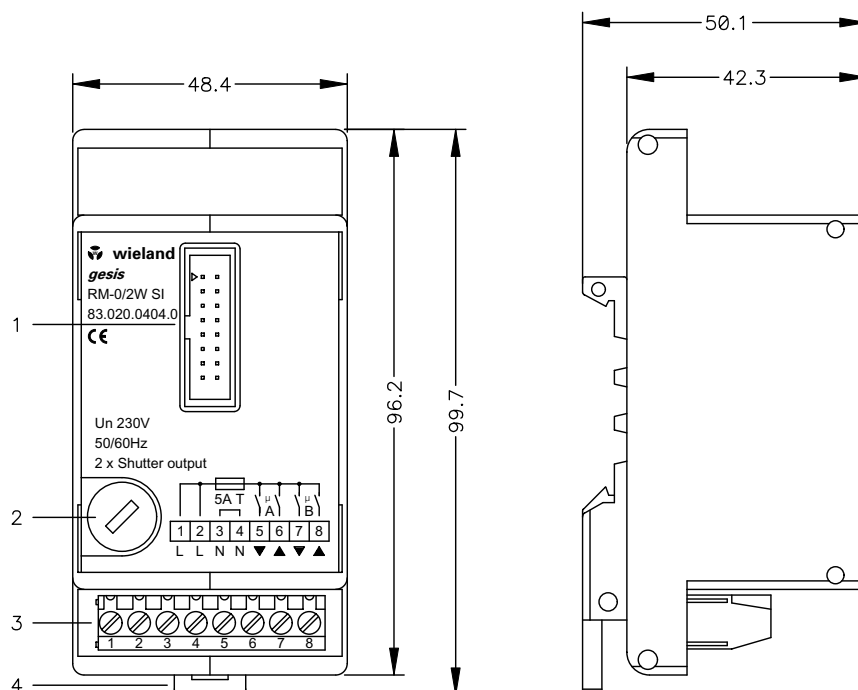
As a basic principle, a synchronisation procedure is initiated prior to the first travel command being triggered after a restart or recovery of the supply voltage. This means that, following the first travel command, the shutter moves into the upper limit position before the required position is approached. The only exception to this is when a direct command is made for travelling to the lower limit position: this is executed without a synchronisation procedure being initiated first.

In the case of electronic limit switches or shutters that move in parallel, the time for moving upwards or downwards must be measured using a stopwatch, and the controller informed of this by means of the application program or corresponding plug-in.

2 shutter actuator objects (in accordance with LonMark Profile #6110, p. 1.2) and 2 shutter controller objects (in accordance with LonMark Profile #6110, p. 1.13) are available in the extension module. Their communication and parameterisation interface is described below.

A centralised weather sensor object is implemented in the application for the purpose of processing weather information.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 2– Fine fuse | 5 A, slow-acting |
| 3– X1 | Terminal strip for the switching voltage and outputs A and B (for details please refer to "Terminal Assignment") |
| 4– Locking slide | With 83.020.0404.1 only |

Terminal Assignment:

X1: Connection and routing of the switching voltage, and connection of outputs A and B; (terminals 1/2 and 3/4 are bridged internally)

- 1– Connection/routing of L
- 2– Connection/routing of L
- 3– Connection/routing of N
- 4– Connection/routing of N
- 5– Connection for output A, down
- 6– Connection for output A, up
- 7– Connection for output B, down
- 8– Connection for output B, up

Technical Data

Basic module connection	Pluggable flat cable										
Outputs											
– Number	Two, can be controlled separately										
– Rated voltage (switching voltage)	230 V AC, 50 to 60 Hz (the same for outputs)										
– Rated current	5 A (ohmic load) as total current for outputs										
– Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case										
– Device protection	Fine fuse, 5 A, slow-acting (internal, can be replaced) Time/current characteristic at 25°C ambient temperature:										
	<table> <tr> <th>x times I_N</th><th>Tripping time</th></tr> <tr> <td>1.5</td><td>> 1 h</td></tr> <tr> <td>2.1</td><td>< 30 min.</td></tr> <tr> <td>4</td><td>150 ms to 5 s</td></tr> <tr> <td>10</td><td>20 ms to 100 ms</td></tr> </table>	x times I_N	Tripping time	1.5	> 1 h	2.1	< 30 min.	4	150 ms to 5 s	10	20 ms to 100 ms
x times I_N	Tripping time										
1.5	> 1 h										
2.1	< 30 min.										
4	150 ms to 5 s										
10	20 ms to 100 ms										
Permissible reverse voltage of connected motors	Max. 300 V AC, min. 140 V AC for automatic detection of shutter operating time										
Operating time for drives											
– With reverse voltage	50% with max. 10 min. cycle time										
– Without reverse voltage	100%										
Software	Covered by the basic module										
Protection class	None										
Degree of protection	IP00										
Degree of soiling	2										
Surge voltage category	III										
Field of application	For fixed installation in interior and dry areas										
Ambient temperature	–5°C to +45°C										
Storage temperature	–25°C to +70°C										
Relative humidity	5% to 93%										
Moisture condensation	Not permitted										
Housing material	Plastic, halogen-free										
Housing colour	Black										
Behaviour in fire	V2 acc. to UL (housing)										
Weight	Approx. 140 g										
Dimensions	Refer to "Dimensions, Connections and Function Elements"										
Approvals	EIB/KNX-certified										
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)										

Installation



CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0404.0)

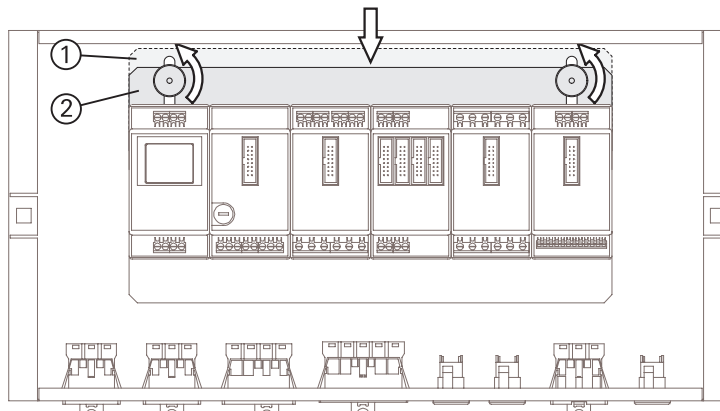
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0404.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0404.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.

6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis RM 1	
• Program version	1.0	
• Product allocation	gesis RM-0/4 W SI /...SI B	83.020.0404.0/1
• Manufacturer	Wieland Electric GmbH	

Communication Objects

The operating mode is set in the parameters.

Operating mode: continuous operation							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Stop	1 bit	C, W, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Stop	1 bit	C, W, T, U
12	26	40	54	Shutter output B	Safety/Alarm	1 byte	C, W, T, U
13	27	41	55	Shutter output B	Lock	1 byte	C, W, T, U
Operating mode: roller blind							
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Stop	1 bit	C, W, T, U
2	16	30	44	Shutter output A	Position shutter	1 byte	C, W, T, U
4	18	32	46	Shutter output A	State shutter position	1 byte	C, R, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Louvres/Stop	1 bit	C, W, T, U
8	22	36	50	Shutter output B	Position shutter	1 byte	C, W, T, U
9	23	37	51	Shutter output B	Position louvre	1 byte	C, W, T, U
10	24	38	52	Shutter output B	State shutter position	1 byte	C, R, T, U
11	25	39	53	Shutter output B	State louvre position	1 byte	C, R, T, U
12	26	40	54	Shutter output A/B	Safety/Alarm	1 bit	C, W, T, U
13	27	41	55	Shutter output A/B	Lock	1 bit	C, W, T, U
Operating mode: shutter							
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Louvres/Stop	1 bit	C, W, T, U
2	16	30	44	Shutter output A	Position shutter	1 byte	C, W, T, U
3	17	31	45	Shutter output A	Position louvre	1 byte	C, W, T, U
4	18	32	46	Shutter output A	State shutter position	1 byte	C, R, T, U
5	19	33	47	Shutter output A	State louvre position	1 byte	C, R, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Louvres/Stop	1 bit	C, W, T, U
8	22	36	50	Shutter output B	Position shutter	1 byte	C, W, T, U
9	23	37	51	Shutter output B	Position louvre	1 byte	C, W, T, U
10	24	38	52	Shutter output B	State shutter position	1 byte	C, R, T, U

11	25	39	53	Shutter output B	State louvre position	1 byte	C, R, T, U
12	26	40	54	Shutter output A/B	Safety/Alarm	1 bit	C, W, T, U
13	27	41	55	Shutter output A/B	Lock	1 bit	C, W, T, U

Up/Down

When a "0" telegram is received, an upward movement is initiated, while a "1" telegram initiates a downward movement. The effectiveness and behaviour depend on the operating mode and other parameters selected.

Louvres/Stop

This object triggers the louvre to move one step. With "0/1", the louvre tilts up/down.

During an upward or downward movement, or in roller blind/continuous operation modes, both telegrams cause the relay to switch off (stop).

Position shutter, Position louvre

If "shutter" or "roller blind" operating mode is selected, and the setting "automatically" has been made for determining the travel time, a homing procedure (max. 200% of the max. travel time) will be performed when positioning (shutter) occurs for the first time. Before this reference movement begins, a limit position (at the very top/bottom) is approached. This movement automatically determines the duration for travelling upwards/downwards. When the limit position is reached, the end of the movement is measured with the aid of the inactive relay reverse voltage. The current position is known for subsequent positioning movements with the shutter or louvre and it is possible to approach the required position immediately.

If the "per stopwatch" setting is selected for determining the travel time, the following applies: Before a position (shutter) is approached for the first time, the limit position nearest the target position is approached (at 110% of the max. travel time). This extended travel ensures that the relevant limit position is reached. Following this synchronisation process, the required position is approached. If a limit position has already been reached (with 110% of travel time, i.e. the current position is known), the required target position is approached immediately.

In order to approach a position (louvre), the current louvre position must be known. This applies after a reference movement is carried out, when a limit position is reached, or following an upward/downward movement that lasts longer than the total louvre adjustment time. Whenever this is not the case, louvre positioning is not carried out.

As a basic principle, "Position shutter" takes priority over "Position louvre" in terms of positioning. This means that, if a "Position shutter" function is initiated during a "Position louvre" function, the louvre positioning function is interrupted and the required shutter position is approached. The current setting for "Position louvre" is then made. When positioning the shutter, the previous louvre angle can be reset by means of parameterisation. The settings for the shutter/louvre is quantified using values 0 to 255 or 1 to 255. If parameterisation takes place within the 1 to 255 range, "0" is ignored as a value. "0" or "1" means that the shutter has finished moving upwards and the louvre is open (horizontal). "255" means that the shutter has finished moving downwards and the louvre is closed.

The louvre angles between "close (up)" and "open" can only be approached using louvre step movements, and not using the position objects.

State shutter position, State louvre position

These objects enable the current absolute position of the shutter or louvre to be read out or actively sent on a change.

Range 0 to 255 (0 = fully open; 255 = fully closed)

Range 1 to 255 (0 = invalid/position unknown, 1 = fully open; 255 = fully closed)

Safety/Alarm

If a "1" telegram is received, or the alarm time elapses without a "0" telegram having been received, the alarm is triggered. A "0" telegram cancels this alarm and re-enables operation. How the actuator behaves when the alarm is on and off can be parameterised for each of the inputs. However, the object remains the same for both of them. When the bus voltage fails/recovers, or the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), the alarm function is ignored.

Lock

Receiving a "1" telegram can lock different objects, while receiving a "0" telegram will re-enable them. The objects that are locked can be set for each actuator on a separate basis

using the "Lock" parameter. The object itself is the same for both outputs. In the case of "Safety/Alarm", when the bus voltage fails/recovers, or when the microcontroller is down-loaded or reset (the voltage supply of the basic module is applied), the lock function is ignored.

Parameterisation

The parameters enable two shutter outputs to be set independently of one another, both with and without limit switch detection, roller blind control and continuous operation. Depending on which operating mode is selected, the corresponding parameter screens are displayed and the required objects generated.

► **Default settings appear in bold.**

I/O: Shutt. outp. A

Parameter	Setting options
Operating mode	continuous operation roller blind shutter

continuous operation

The "continuous operation" mode enables open/close and up/down movements to be easily controlled without an automatic or time-limited limit end position switchoff. The output can only be switched off by means of a stop command. The parameters for the louvre/shutter and travel times are hidden. Only the objects "Up/Down" and "Stop" are available. Positioning is not possible.

roller blind

The "roller blind" operating mode parameterises a shutter or louvre (roller blind). The settings for the louvre, as well as the "Position louvre" and "State louvre position" objects, are hidden.

shutter

The "shutter" operating mode enables parameterisation of a shutter with louvres. Parameters and objects are displayed dynamically.

Parameters within the operating modes	
Behaviour in event of alarm	no action move upwards move downwards stop

no action

When an alarm occurs, the actions selected are executed immediately. If "no action" is set, the alarm object is not evaluated.

Available in all operating modes.

Base for monitoring time for alarm evaluation	1 s 2 s ... 5 min.
Factor (10..255)	150

The time set here (base x factor) determines the actuator alarm time. If this time elapses without a "0" telegram (alarm object) having been received, the "Behaviour in event of alarm" is activated.

Available in all operating modes.

After end of alarm	no action drive to previous position
--------------------	--

no action

No actions are executed when the alarm ends.

drive to previous position

When the alarm ends, driving to the most recently set position (shutter/louvre) is carried out.

Available in: "roller blind" and "shutter".

Direction of rotation	normal inverted
-----------------------	--------------------------

Setting this parameter enables motors that have been incorrectly connected (Up/Down swapped round) to be brought into the correct direction of rotation.

inverted

The parameter only swaps the relays; i.e. the settings and objects are still assigned correctly.

normal

Corresponds to the assignments described.

Available in all operating modes.

Behaviour on bus voltage recovery	no action move upwards move downwards stop
-----------------------------------	--

This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). The behaviour selected is executed immediately. "no action" means that no switching operations are triggered.

Available in all operating modes.

Behaviour on bus voltage failure	no action move upwards move downwards stop
----------------------------------	--

If a bus voltage failure is detected, the set actions are executed. "no action" means that no relay switching processes are triggered.

Available in all operating modes.

Base for pause on reverse	10 ms ... 100 ms ... 2 s
Factor (1..255)	9

The pause on reverse is calculated from the base x the factor.

When the motors change direction (higher currents occur), a pause on reverse is maintained. The duration of this pause depends on the load connected.

Available in all operating modes.

Lock	disable affects move affects stop affects all
------	--

▼
The lock is equally valid for both outputs. If a "1" telegram is received at this object, the objects selected here are locked and changes to these objects are revoked. Processes that have already begun are ended. A "0" telegram cancels the lock. The lock does not affect the alarm function.

Available in: "continuous operation"

I/O: Shutter A

Parameter	Setting options
Travel time detection	automatically (mechanical limit switches) per stopwatch (electronic drive, DC drive)

▼
Depending on whether "automatically" or "per stopwatch" is set, the parameter shows the travel times "Base for maximum travel time" or "Base for measured travel time".

automatically

If the shutter has mechanical limit switches (reverse voltage is present), the travel time can be determined automatically. See the "Position shutter/louvre" object description for this purpose.

per stopwatch

With electronic limit switch, cut-off relay or DC drives (no reverse voltage). The travel time must be measured and entered in the "Base for measured travel time" parameter.

Parameters within "Travel time detection"	
Base for maximum travel time	100 ms ... 2 s ... 1min.
Factor (10..255)	150

▼
The travel time is calculated from the base x the factor.

Available in: "automatically".

Base for measured travel time	100 ms ... 1 s ... 1 min.
Factor (10..255)	60

▼
The travel time is calculated from the base x the factor.

Available in: Travel time detection "per stopwatch"

"Range of values for position"	0...255 1...255
--------------------------------	---------------------------

▼
This parameter determines the value range for the positioning objects. The actuator can thus be adapted to certain controllers. If settings are made in the 1 to 255 range, "0" is ignored as a positioning value.

Available in all operating modes.

Lock	disable affects move affects step/stop affects position affects all
------	--

The lock is equally valid for both outputs. If a "1" telegram is received at this object, the objects selected here are locked and changes to these objects are revoked. Processes that have already begun are ended. A "0" telegram cancels the lock. The lock does not affect the alarm function.

Available in all operating modes.

Send status shutter position	on read request on change on change and voltage recovery
------------------------------	--

This parameter determines the conditions required for sending the shutter position status. Status changes only occur when the shutter stops.

For on change and voltage recovery, the status is sent on voltage recovery and when a download or a reset occurs. No changes are made in this case either.

The status is defined depending on the set range of values.

Range of values: 0 to 255 (0 = fully open; 255 = fully closed)

Range of values: 1 to 255 (0 = invalid; 1 = fully open; 255 = fully closed)

Available in all operating modes.

I/O: Louvre A

Parameter	Setting options
"Number of steps (1-20) from louvre close (down) and louvre open (horizontal)"	5

This parameter determines how many individual louvre steps are required in order to turn it from "close (down)" to "open". The "Louvres/Stop" object causes a single step (up/down) to be carried out. The greater the number, the finer the louvre steps.

"Base for louvre adjustment from close (down) to open (horizontal)"	10 ms ... 2 s
Factor (10..255)	50

This parameter is used to inform the output of the time measured for adjusting the louvre from "close (down)" to "open (horizontal)". This time is used for positioning and time calculation of the louvre angle.

"Base for louvre adjustment total time from close (down) to close (up)"	10 ms ... 2 s
Factor (10..255)	100

The total louvre adjustment time is calculated from the base x the factor.

This time determines the duration for adjusting the louvre from "close (down)" to "close (up)". This corresponds to a full rotation. In the case of shutters that travel upwards with open louvres, this time must be set so that it is equal to the time under "Base for louvre adjustment".

Base for fanning out in lower position	10 ms ... 100 ms ... 2 s
Factor (0..255)	0

By setting the time here, you are telling the shutter when to move back up once it reaches the lower limit position. This behaviour only takes place when the downwards movement is executed by the "Up/Down" object.

"Adjustment of old louvre angle after positioning"	no yes
--	-----------------

no

Where this setting applies, the louvre angle is not adjusted after the shutter has been positioned.

yes

The louvre angle set prior to positioning the shutter is set again.

Send status louvre position	on read request on change on change and voltage recovery
-----------------------------	---

This parameter determines the conditions required for sending the louvre position status. Status changes only occur when the shutter stops.

For on change and voltage recovery, the status is sent on voltage recovery and when a download or reset occurs. No changes are made in this case either.

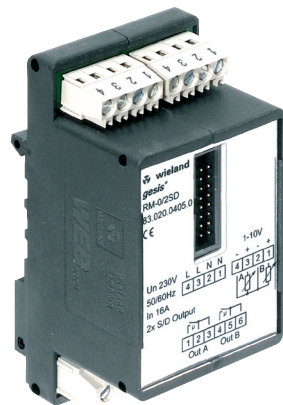
The status is defined depending on the set range of values.

Range of values: 0 to 255 (0 = fully open; 255 = fully closed)

Range of values: 1 to 255 (0 = invalid; 1 = fully open; 255 = fully closed)

4.7 gesis RM-0/2SD (83.020.0405.0/1)

Product Description



- Designation Extension module with 2 switching/dimming actuators
- Type/model no. gesis RM-0/2SD 83.020.0405.0
gesis RM-0/2SD B 83.020.0405.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.

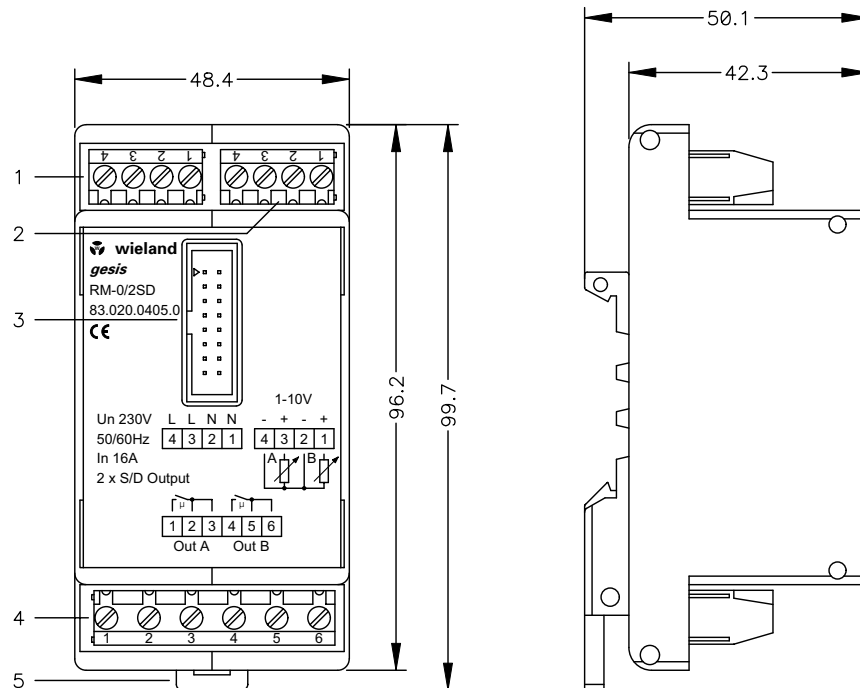


Functional Description

The gesis RM-0/2SD is a module with 2 switching/dimming outputs. It can switch two relays that are independent from one another and operate two assigned 1 to 10 V control outputs. The extension module receives the switching/dimming commands from the basic module, and the possible status messages of the outputs are sent by the basic module to the bus. The floating contacts of the relay are designed for 230 V/16 A and can be wired using separate external conductors (which can also be of different types).

The 1 to 10 V control outputs are used to control lighting applications with a 1 to 10 V control input (such as dimmable electronic ballasts). The consumers are connected by means of screw clamp terminals. Different functions can be assigned to the outputs by means of parameterisation, which must only be performed in the basic module. In this regard, all time lapses within the device can be parameterised, and it is possible to activate a lock using an external binding. The setting options are available separately for every pair of outputs.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– X1 | Connection for the operating voltage |
| 2– X2 | 1 to 10 V terminal strip for outputs A and B (for details please refer to "Terminal Assignment") |
| 3– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 4– X3 | Connection of switching outputs A and B |
| 5– Locking slide | With 83.020.0405.1 only |

Terminal Assignment:

X1: Connection and routing of the operating voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Connection/routing of N
- 2– Connection/routing of N
- 3– Connection/routing of L
- 4– Connection/routing of L

X2: Connection of control outputs A and B; terminals 2/4 are bridged internally

- 1– +1 to 10V, output B
- 2– –1 to 10V, output B
- 3– +1 to 10V, output A
- 4– –1 to 10V, output A

X3: Connection of switching outputs A and B; terminals 2/3 and 5/6 are bridged internally

- 1– Output A
- 2– Connection/routing of switching voltage A
- 3– Connection/routing of switching voltage A
- 4– Output B
- 5– Connection/routing of switching voltage B
- 6– Connection/routing of switching voltage B

Technical Data

Operating voltage	230V AC +10% / –15%, 50 to 60 Hz
Connection to basic module	Pluggable flat cable
Switching outputs	
– Number	Two, can be controlled separately
– Rated voltage	230V AC, 50 to 60 Hz
– Rated current	16A (ohmic load)
– Switching capacity	25 x electronic ballasts, dynamic, for 18W fluorescent lamps 17 x electronic ballasts, dynamic, for 36W fluorescent lamps 15 x electronic ballasts, dynamic, for 58W fluorescent lamps
Control outputs	
– Number	Two
– Rated voltage	1 to 10V, passive, adjusted for dynamic electronic ballasts
– Rated current	50mA
Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Software	Covered by the basic module
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Field of application	For fixed installation in interior and dry areas
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 180 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0405.0)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied.
Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with

"Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.

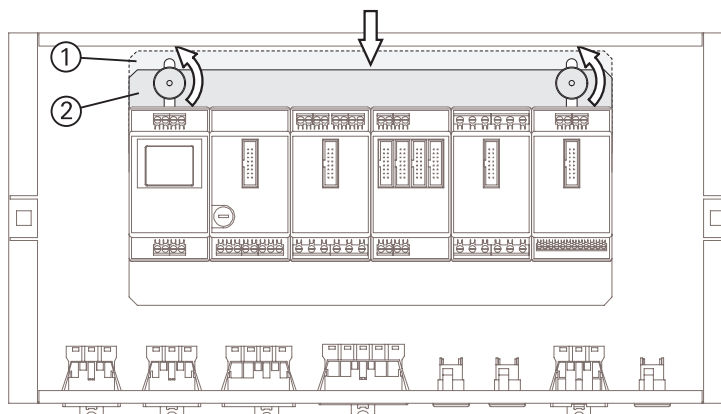
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0405.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0405.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis EIB RM2-BAS 1	
• Program version	1.0	
• Product allocation	gesis RM-0/4SD /...SD B	83.020.0405.0/1
• Manufacturer	Wieland Electric GmbH	

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Dimming output A	Lock	1 bit	C, W, T, U
1	15	29	43	Dimming output A	Switch, status	1 bit	C, W, U
2	16	30	44	Dimming output A	Dimming	4 bit	C, W, T, U
3	17	31	45	Dimming output A	Set value	1 byte	C, W, T, U
4	18	32	46	Dimming output A	Status (value)	1 byte	C, R, T, U
5	19	33	47	Dimming output B	Lock	1 bit	C, W, T, U
6	20	34	48	Dimming output B	Switch, status	1 bit	C, W, U
7	21	35	49	Dimming output B	Dimming	4 bits	C, W, T, U
8	22	36	50	Dimming output B	Set value	1 byte	C, W, T, U
9	23	37	51	Dimming output B	Status (value)	1 byte	C, R, T, U
10	24	38	52	Dimming output A/B	Scene 1/2	1 bit	C, W, T, U
11	25	39	53	Dimming output A/B	Scene 3/4	1 bit	C, W, T, U

Switch/Status

A "1" at this object switches the output on. The brightness value that applies when it is switched on depends on the parameter setting. A "0" switches the output off. In addition, the object reflects the current switching state of the output. "1" means that the output is switched on, while "0" means that it is switched off. If you also set the "Transmit" communication flag, the status value is actively sent on a change.

Dimming

Depending on the value received, the dimming output alters the dimming function so that it becomes brighter or darker, or so that dimming stops altogether. The set dimming time is taken into account for dimming. Depending on the parameterisation, the dimming output must be switched on for this purpose, or it may be able to be switched on and off by means of dimming.

Set value

When a value is received (0 to 255), the corresponding brightness value is set at the output. The value "1" corresponds to the minimum level of brightness, while "255" corresponds to the maximum level. If the object value is "0", the output is switched off.

Status (value)

This object provides the current brightness value of the output ("0" = switched off; "1" = minimum brightness; "255" = maximum brightness). The value can be called via the bus at any time (read only). If "send on change" has been parameterised, the new value is actively sent via the status object following a change. On bus voltage recovery, the current value can be sent to the bus once.

Lock

If the lock is activated (object value = 1), the corresponding output is deactivated. The current static status is frozen. Object updates for this output are ignored (reset). Dimming procedures that are already under way continue to be carried out. The "Lock" object is

not taken into account in the event of a bus voltage failure or on bus voltage recovery. "0" cancels the lock function.

Scene 1/2

This object can be used to switch both outputs at the same time with a 1-bit command (scene control). The behaviour of both outputs at this point can be parameterised for each scene (value and dimming time). Object value "0" calls scene 1, while object value "1" calls scene 2.

Scene 3/4

As with "Scene 1/2". Object value "0" calls scene 3, while object value "1" calls scene 4.

Parameterisation

The following parameters are available separately for each output.
Shutter outputs A and B, shutters A and B, and louvres A and B are the same.

► **Default settings appear in bold.**

I/O: Dimming output A, dimming output B

Parameter	Setting options
Used Module	Switch-/dimming actuator 1-10 V Universal dimmer AC

This parameter only acts as an auxiliary parameter. Depending on the setting, different texts and setting options are displayed when the dimming area is restricted.

Behaviour on bus voltage recovery	do not change set old value (value before failure) switch off minimum brightness 10% [...] 100%
-----------------------------------	--

do not change

Both the status of the output relay and the brightness value remain unchanged.

set old value

The status prior to the bus voltage failure is output.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Behaviour on bus voltage failure	do not change switch off minimum brightness 10% ... 100%
----------------------------------	--

do not change

Both the status of the output relay and the brightness value remain unchanged.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Starting value	last value minimum brightness 10% ... 100%
----------------	--

The parameter determines the dimming actuator's starting level of brightness when it is switched on using the Switch/Status object.

last value

The last value for the output in a switch-on status is set. If this value is unknown (i.e. when switching on is performed for the first time), a brightness value of 100% is output (value = 255).

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected brightness value (e.g. 50% corresponds to the value 128).

Switch on/off on dimming	On = yes/Off = yes On = yes/Off = no On = no/Off = yes On = no/Off = no
--------------------------	---

This parameter regulates the dimmer's switching on and switching off behaviour during control by means of the Dimming object.

Switch on: "yes"

It is possible to switch on the output using the Dimming object.

"no": Switching on is not possible.

Switch off: "yes"

It is possible to switch off the output using the Dimming object.

"no": Switching off is not possible.

Base for dimming time	0.5 s 1 s ... 1 h
Factor for dimming time (2..255)	6

The dimming time of the output is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the control voltage range, from the minimum to the maximum brightness (0 to 100%).

Dimming value	Set value dim to value set value (only in ON state) dim to value (only in ON state)
---------------	---

This parameter determines the behaviour of the output when a dimming value is received.

Set value

Switch an output on/off, depending on the value. Output the brightness level immediately, depending on the dimming value.

dim to value

Switch an output on/off, depending on the value. Dim to a certain brightness level, depending on the dimming value and the parameterised dimming time.

set value/dim to value (only in ON state)

Same behaviour as described above, but only when the output is already switched on.

"Status object (value) Bus voltage recovery/Operation"	no action/read only send/read only no action/send on change send/send on change
---	---

read only

The "Status (value)" object can be read out via the bus at any time. The value reflects the current brightness of the control output (0 to 255). "0" indicates that the actuator is switched off, while "255" indicates that the actuator is switched on at maximum brightness.

send on change

As described above, but including active sending of this object when a value changes. During dimming, only the end value is sent.

send

The status object is sent once on recovery of the bus voltage.

Control voltage range	1 to 10 V
-----------------------	------------------

This parameter determines the upper/lower limit of the control voltage. This setting only relates to the control voltage: therefore, in cases where 2 to 6V are set, 6V will correspond to 100% brightness (value = 255) and 2V will correspond to the minimum brightness level (value = 1).

Available in: "Switch-/dimming actuator 1-10 V"

"Upper limit dimming range (Hardware adaption top)"	100% (no limit) 90% 80% 70% 60%
--	---

This parameter determines the upper limit of the maximum phase angle. The 8-bit brightness values 1 to 255 apply for this limited range.

Available in "Universal dimmer AC".

I/O: Scene 1/2, Scene 3/4

Parameter	Setting options
-----------	-----------------

Scene 1: Output A Scene 1: Output B	do not change switch off minimum brightness 10% ... 100%
--	--

do not change

Both the status of the output and the brightness value remain unchanged.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Base for dimming time	0.5 s 1 s ... 1 h
(0..255) Factor A	6
(0..255) Factor B	6

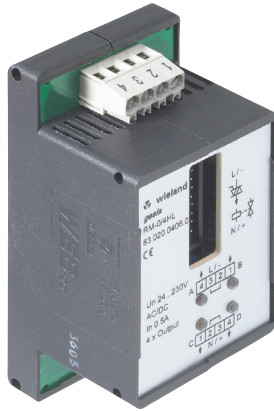
The dimming time of the actuator for calling a scene is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the control voltage range, from the minimum to the maximum brightness (0 to 100%). The time base applies equally for both dimming outputs. The factors can be parameterised separately for scene outputs A and B. The dimming times can therefore be set to different values.

Scene 2: Output A Scene 2: Output B	
--	--

The parameters and default settings are identical to those of scene 1.

4.8 gesis RM-0/4HL (83.020.0406.0/1)

Product Description



- Designation Extension module with 4 switching actuators
- Type/model no. gesis RM-0/4HL 83.020.0406.0
gesis RM-0/4HL B 83.020.0406.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application program gesis RM2-BAS 1.0

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



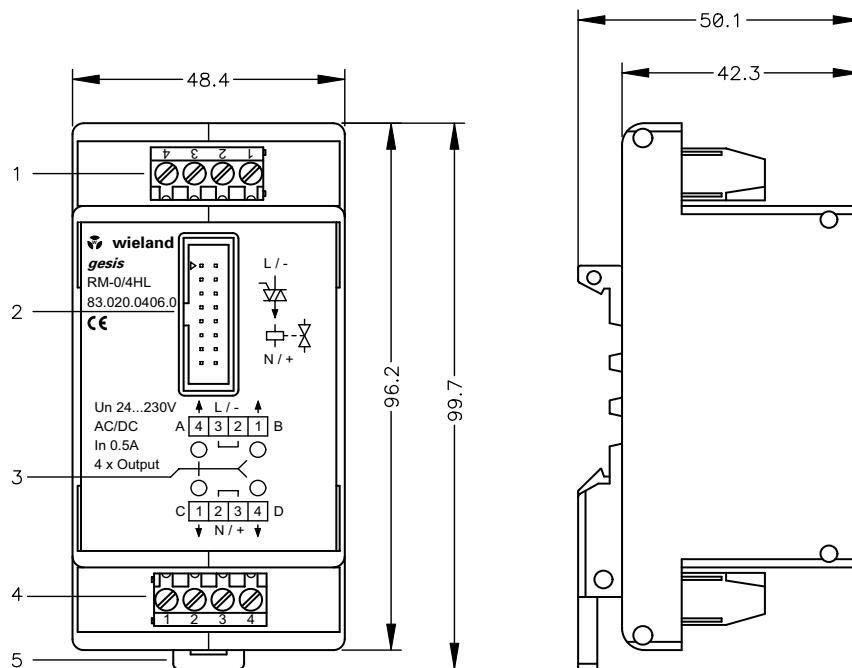
Functional Description

The gesis RM-0/4HL can switch four outputs that are independent from one another. The extension module receives the switching commands from the basic module, and the possible status messages of the outputs are sent by the basic module to the bus.

The 4 semiconductor outputs are used to control thermodynamic drives, but can also be used to switch other electrical consumers independently from one another. The wide-range semiconductor enables switching of AC and DC voltages in the 24 to 230 V_{eff} range. The same switching voltage supplies all four outputs. The outputs are electronically protected against short circuits and overloading. The consumers are connected by means of screw clamp terminals.

Different functions can be assigned to the outputs by means of parameterisation, which must only be performed in the basic module. In this regard, all time lapses within the device can be parameterised, and it is possible to activate a lock using an external binding. The setting options are available separately for every group of four outputs.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– X1 | 4-pin connection terminal strip for switching voltage and outputs A and B (for details please refer to "Terminal Assignment") |
| 2– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 3– Red LED (4x) | Display for controlling the outputs |
| 4– X2 | 4-pin connection terminal strip for outputs C and D and reference potential of switching voltage (for details please refer to "Terminal Assignment") |
| 5– Locking slide | With 83.020.0406.1 only |

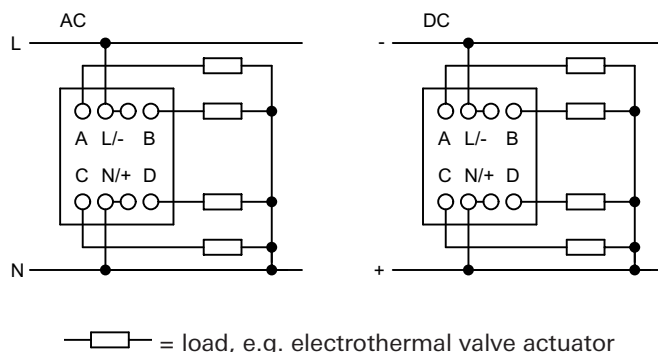
Terminal Assignment:

X1: Connection and routing of the switching voltage, and connection of outputs A and B (terminals 2/3 are bridged internally)

- 1– Connection for output A
- 2– Connection/routing of the switching voltage (L or –) for outputs A to D
- 3– Connection/routing of the switching voltage (L or –) for outputs A to D
- 4– Connection for output B

X2: Connection and routing of the reference potential, and connection of outputs C and D (terminals 2/3 are bridged internally)

- 1– Connection for output C
- 2– Connection/routing of the switching voltage reference potential (N or –) for outputs A to D
- 3– Connection/routing of the switching voltage reference potential (N or –) for outputs A to D
- 4– Connection for output D

Connection example**Technical Data**

Connection to basic module	Pluggable flat cable
Internal current consumption	Max. 1.5 mA per output (from switching voltage)
Outputs	
– Number	Four (outputs switch the same voltage)
– Rated voltage	24 to 230 V AC, 50 to 60 Hz (–15% / +10%) or 24 to 230 V DC (–15% / +10%)
– Rated current	0.5 A ohmic load, 100% operating time 0.6 A ohmic load, 50% / 10 min. operating time
– Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
– Overcurrent trip	From approx. 0.65 A
– Short circuit withstand capability	Yes
– Minimum switching current	200 µA
– Switching capacity at 230 V AC	115 VA, cos φ = 1 (ohmic load)
– Restarting	Cyclic at overcurrent/short circuit, approx. every 800 ms
Software	Covered by the basic module
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Field of application	For fixed installation in interior and dry areas
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 90 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Height inc. TH 35–7.5 mounting rail	52 mm
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation



CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0406.0)

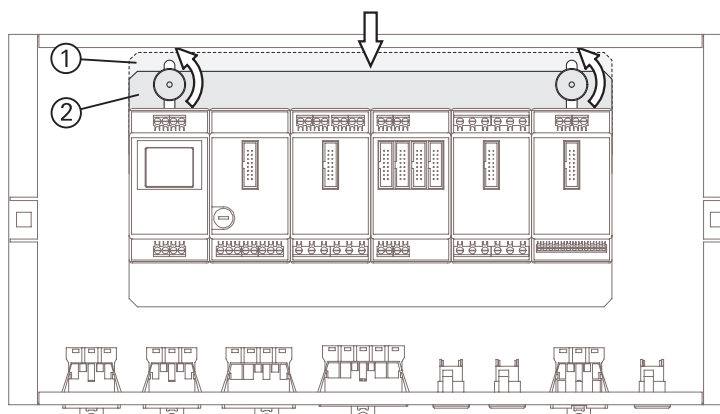
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0406.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0406.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

- Program name gesis EIB RM-BAS 1
- Program version 1.0
- Product allocation gesis RM-0/4HL /...HL B 83.020.0406.0/1
- Manufacturer Wieland Electric GmbH

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Output A	Switch	1 bit	C, W, T, U
1	15	29	43	Output A	Status	1 bit	C, R, T, U
2	16	30	44	Output B	Switch	1 bit	C, W, T, U
3	17	31	45	Output B	Status	1 bit	C, R, T, U
4	18	32	46	Output C	Switch	1 bit	C, W, T, U
5	19	33	47	Output C	Status	1 bit	C, R, T, U
6	20	34	48	Output D	Switch	1 bit	C, W, T, U
7	21	35	49	Output D	Status	1 bit	C, R, T, U
8	22	36	50	Output A to D	Lock	1 bit	C, W, T, U

Parameterisation

The following parameters are available separately for each output.
Outputs A, B, C and D are all the same.

► **Default settings appear in bold.**

Parameter	Setting options
Behaviour on bus voltage recovery	no action switch on switch off set old value (value before failure)

This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

set old value

The output is set to the value prior to the bus voltage failure, and not to the value that is set by the bus voltage failure parameter. When the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), both the status is set and the "old value" is switched to "Off" (value = 0).

Behaviour on bus voltage failure	no action switch on switch off
----------------------------------	---

The behaviour of the actuator upon failure of the bus voltage can be set here. Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately. Status objects are no longer sent to the bus.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

Operating mode	Normal On/Off delay time switch
----------------	--

Normal

The switching object value is executed immediately.

On/Off delay

Switching on and switching off processes are carried out with a delay. The parameters required for this purpose (time base/factor) are displayed dynamically. Factor "0" causes switching to occur immediately. If a switching object is received during a delay, the active timer is restarted.

time switch (stairway light)

Switching on takes place immediately (switching object = 1) and, depending on how the operating time (which is displayed dynamically) has been parameterised, switching off takes place with a delay. If the object value = 0, switching off takes place immediately. If switching on occurs again (switching object = 1) while the operating time has not yet elapsed, the timer is restarted. This will extend the total operating time.

Parameters within the operating modes

Parameter	Setting options
Base for On delay Base for Off delay	10 ms ... 1 s ... 1 h
Factor (0..255)	10

On (Off) delay = base x factor

Available in On/Off delay operating mode.

Base for operating time	10 ms ... 1 s ... 1 h
Factor (0..255)	10

Operating (Off) time = base x factor

Available in time switch operating mode.

Relay mode	normal inverted
------------	--------------------------

normal Object value 0/1 = contact open/closed (normally open)
inverted Object value 0/1 = contact closed/open (normally closed)

Available in all operating modes.

Lock	no yes
------	-----------------

yes

The lock for this output is activated. If "1" is received at the lock, the output enters an inactive status. Switching object events are ignored (locked). Delay times that have already started will continue to be executed. If the lock receives "0", the lock will be cancelled.

Available in all operating modes.

Status object Bus voltage recovery/Operation	no action/read only send/read only no action/send on change send/send on change
---	---

The function of the status object on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), can be set on a separate basis from normal mode.

no action

The object is not sent on recovery of the bus voltage.

send

The object is sent on recovery of the bus voltage.

read only

The object value can only be read during operation.

send on change

The object value is actively sent to the bus when a change occurs during operation.

Available in all operating modes.

4.9 gesis RM-0/2W DC (83.020.0407.0/1)

Product Description



- Designation Extension module with 2 shutter actuators (230 V AC)
- Type/model no. gesis RM-0/2W DC 83.020.0407.0
gesis RM-0/2W DC B 83.020.0407.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The gesis RM-0/2W DC is an output module with floating relay outputs that are designed for 230 V DC switching. All of the corresponding configurations and software settings must be made via the basic module; the extension module does not have its own intelligence. The outputs can be controlled separately from one another. The consumers are connected by means of screw clamp terminals.

A shutter with louvres for controlling the amount of light that is let in can be used with the aid of shutter outputs. It is possible to move the shutter UP and DOWN or adjust the louvres. It is also possible to move the shutter and louvres into the required position by means of direct commands. Each adjustment is factored into the position (on an incremental or decremental basis), enabling the control system to recognise the positions of both the shutter and louvres at any time. Position commands that are received will be interpreted accordingly, and the new position will be calculated and approached immediately.

Since deviations may arise over time when calculating the current position, the travel time (which is used to determine the position) is adjusted upwards or downward to align with the relevant limit value whenever the parameterised travel time is exceeded.

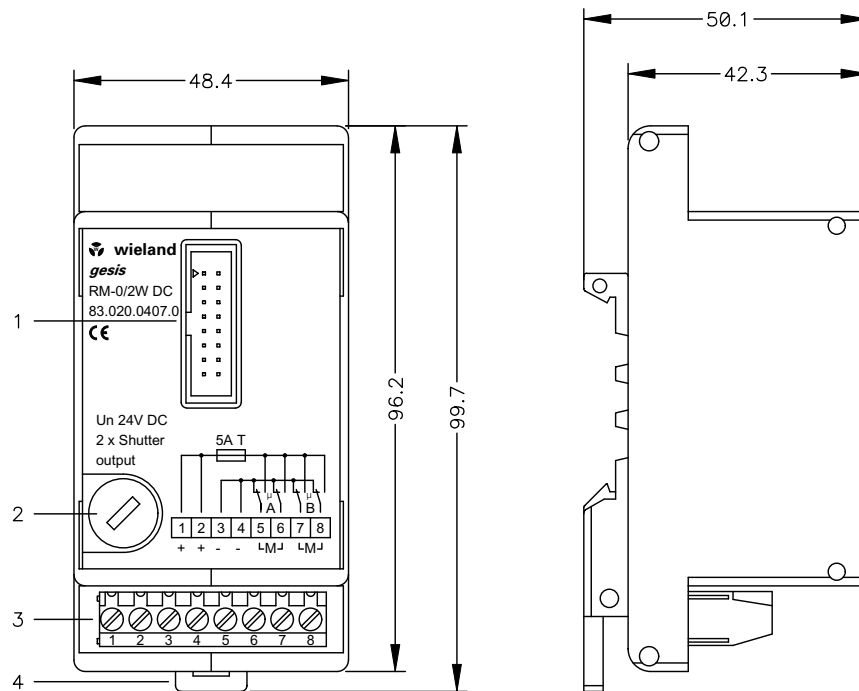
The travel time and the louvre turning time must be determined manually (using a stopwatch) and set using the plug-in. As precise a value as possible should be specified for the travel time. A "reference movement" (for reaching the upper limit position safely) can also be triggered by means of a separate telegram.

As a basic principle, a synchronisation procedure is initiated prior to the first travel command being triggered after a restart or recovery of the supply voltage. This means that, following the first travel command, the shutter moves into the upper limit position before the required position is approached. The only exception to this is when a direct command

is made for travelling to the lower limit position: this is executed without a synchronisation procedure being initiated first.

A centralised weather sensor object is implemented in the application for the purpose of processing weather information.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 2– Fine fuse | 5 A, slow-acting |
| 3– X1 | Terminal strip for the switching voltage and motors A and B
(for details please refer to "Terminal Assignment") |
| 4– Locking slide | With 83.020.0407.1 only |

Terminal Assignment:

X1: Connection and routing of the switching voltage and connection of motors A and B.
Terminals 1/2 and 3/4 are bridged internally

- 1– Connection/routing of switching voltage +
- 2– Connection/routing of switching voltage +
- 3– Connection/routing of switching voltage –
- 4– Connection/routing of switching voltage –
- 5– Connection for motor A
- 6– Connection for motor A
- 7– Connection for motor B
- 8– Connection for motor B

Technical Data

Connection to basic module	Pluggable flat cable										
Outputs											
Number	Two, can be controlled separately										
Rated voltage (switching voltage)	6 to 24 V DC										
Rated current	5 A (ohmic load) as total current for outputs										
Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case										
Device protection	Fine fuse, 5 A, slow-acting (internal, can be replaced) Time/current characteristic at 25°C ambient temperature: <table> <tr> <td>x times I_N</td><td>Tripping time</td></tr> <tr> <td>1.5</td><td>> 1 h</td></tr> <tr> <td>2.1</td><td>< 30 min.</td></tr> <tr> <td>4</td><td>150 ms to 5 s</td></tr> <tr> <td>10</td><td>20 ms to 100 ms</td></tr> </table>	x times I _N	Tripping time	1.5	> 1 h	2.1	< 30 min.	4	150 ms to 5 s	10	20 ms to 100 ms
x times I _N	Tripping time										
1.5	> 1 h										
2.1	< 30 min.										
4	150 ms to 5 s										
10	20 ms to 100 ms										
Software	Covered by the basic module										
Protection class	None										
Degree of protection	IP00										
Degree of soiling	2										
Surge voltage category	III										
Field of application	For fixed installation in interior and dry areas										
Ambient temperature	–5°C to +45°C										
Storage temperature	–25°C to +70°C										
Relative humidity	5% to 93%										
Moisture condensation	Not permitted										
Housing material	Plastic, halogen-free										
Housing colour	Black										
Behaviour in fire	V2 acc. to UL (housing)										
Weight	Approx. 130 g										
Dimensions	Refer to "Dimensions, Connections and Function Elements"										
Height inc. TH 35–7.5 mounting rail	52 mm										
Approvals	EIB/KNX-certified										
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)										

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0407.0)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied.
Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module

addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.

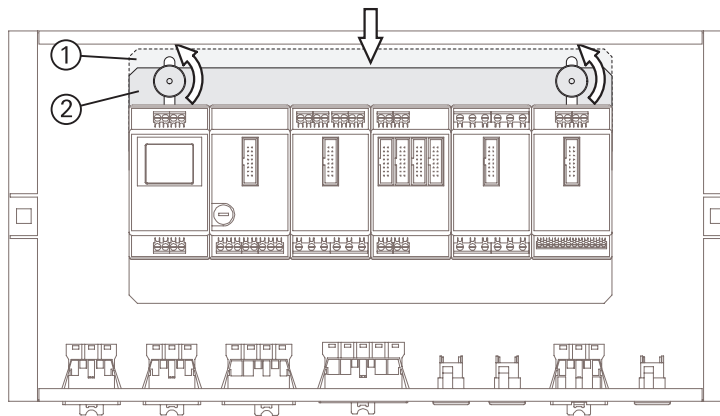
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0407.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0407.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis EIB RM-BAS 1	
• Program version	1.0	
• Product allocation	gesis RM-0/4 W SI /...SI B	83.020.0407.0/1
• Manufacturer	Wieland Electric GmbH	

Communication Objects

The operating mode is set in the parameters.

Operating mode: continuous operation							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Stop	1 bit	C, W, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Stop	1 bit	C, W, T, U
12	26	40	54	Shutter output B	Safety/Alarm	1 byte	C, W, T, U
13	27	41	55	Shutter output B	Lock	1 byte	C, W, T, U
Operating mode: roller blind							
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Stop	1 bit	C, W, T, U
2	16	30	44	Shutter output A	Position shutter	1 byte	C, W, T, U
4	18	32	46	Shutter output A	State shutter position	1 byte	C, R, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Louvres/Stop	1 bit	C, W, T, U
8	22	36	50	Shutter output B	Position shutter	1 byte	C, W, T, U
9	23	37	51	Shutter output B	Position louvre	1 byte	C, W, T, U
10	24	38	52	Shutter output B	State shutter position	1 byte	C, R, T, U
11	25	39	53	Shutter output B	State louvre position	1 byte	C, R, T, U
12	26	40	54	Shutter output A/B	Safety/Alarm	1 bit	C, W, T, U
13	27	41	55	Shutter output A/B	Lock	1 bit	C, W, T, U
Operating mode: shutter							
1	2	3	4				
0	14	28	42	Shutter output A	Up/Down	1 bit	C, W, T, U
1	15	29	43	Shutter output A	Louvres/Stop	1 bit	C, W, T, U
2	16	30	44	Shutter output A	Position shutter	1 byte	C, W, T, U
3	17	31	45	Shutter output A	Position louvre	1 byte	C, W, T, U
4	18	32	46	Shutter output A	State shutter position	1 byte	C, R, T, U
5	19	33	47	Shutter output A	State louvre position	1 byte	C, R, T, U
6	20	34	48	Shutter output B	Up/Down	1 bit	C, W, T, U
7	21	35	49	Shutter output B	Louvres/Stop	1 bit	C, W, T, U
8	22	36	50	Shutter output B	Position shutter	1 byte	C, W, T, U
9	23	37	51	Shutter output B	Position louvre	1 byte	C, W, T, U
10	24	38	52	Shutter output B	State shutter position	1 byte	C, R, T, U

11	25	39	53	Shutter output B	State louver position	1 byte	C, R, T, U
12	26	40	54	Shutter output A/B	Safety/Alarm	1 bit	C, W, T, U
13	27	41	55	Shutter output A/B	Lock	1 bit	C, W, T, U

Up/Down

When a "0" telegram is received, an upward movement is initiated, while a "1" telegram initiates a downward movement. The effectiveness and behaviour depend on the operating mode and other parameters selected.

Louvres/Stop

This object triggers the louver to move one step. With "0/1", the louver tilts up/down. During an upward or downward movement, or in roller blind/continuous operation modes, both telegrams cause the relay to switch off (stop).

Position shutter, Position louver

If "shutter" or "roller blind" operating mode is selected, and the setting "automatically" has been made for determining the travel time, a homing procedure (max. 200% of the max. travel time) will be performed when positioning (shutter) occurs for the first time. Before this reference movement begins, a limit position (at the very top/bottom) is approached. This movement automatically determines the duration for travelling upwards/downwards. When the limit position is reached, the end of the movement is measured with the aid of the inactive relay reverse voltage. The current position is known for subsequent positioning movements with the shutter or louver and it is possible to approach the required position immediately.

If the "per stopwatch" setting is selected for determining the travel time, the following applies: Before a position (shutter) is approached for the first time, the limit position nearest the target position is approached (at 110% of the max. travel time). This extended travel ensures that the relevant limit position is reached. Following this synchronisation process, the required position is approached. If a limit position has already been reached (with 110% of travel time, i.e. the current position is known), the required target position is approached immediately.

In order to approach a position (louver), the current louver position must be known. This applies after a reference movement is carried out, when a limit position is reached, or following an upward/downward movement that lasts longer than the total louver adjustment time. Whenever this is not the case, louver positioning is not carried out.

As a basic principle, "Position shutter" takes priority over "Position louver" in terms of positioning. This means that, if a "Position shutter" function is initiated during a "Position louver" function, the louver positioning function is interrupted and the required shutter position is approached. The current setting for "Position louver" is then made. When positioning the shutter, the previous louver angle can be reset by means of parameterisation. The settings for the shutter/louver is quantified using values 0 to 255 or 1 to 255. If parameterisation takes place within the 1 to 255 range, "0" is ignored as a value. "0" or "1" means that the shutter has finished moving upwards and the louver is open (horizontal). "255" means that the shutter has finished moving downwards and the louver is closed.

The louver angles between "close (up)" and "open" can only be approached using louver step movements, and not using the position objects.

State shutter position, State louver position

These objects enable the current absolute position of the shutter or louver to be read out or actively sent on a change.

Range 0 to 255 (0 = fully open; 255 = fully closed)

Range 1 to 255 (0 = invalid/position unknown, 1 = fully open; 255 = fully closed)

Safety/Alarm

If a "1" telegram is received, or the alarm time elapses without a "0" telegram having been received, the alarm is triggered. A "0" telegram cancels this alarm and re-enables operation. How the actuator behaves when the alarm is on and off can be parameterised for each of the inputs. However, the object remains the same for both of them. When the bus voltage fails/recovers, or the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), the alarm function is ignored.

Lock

Receiving a "1" telegram can lock different objects, while receiving a "0" telegram will re-enable them. The objects that are locked can be set for each actuator on a separate basis

using the "Lock" parameter. The object itself is the same for both outputs. In the case of "Safety/Alarm", when the bus voltage fails/recovers, or when the microcontroller is down-loaded or reset (the voltage supply of the basic module is applied), the lock function is ignored.

Parameterisation

The parameters enable two shutter outputs to be set independently of one another, both with and without limit switch detection, roller blind control and continuous operation. Depending on which operating mode is selected, the corresponding parameter screens are displayed and the required objects generated.

► **Default settings appear in bold.**

I/O: Shutt. outp. A

Parameter	Setting options
Operating mode	continuous operation roller blind shutter

continuous operation

The "continuous operation" mode enables open/close and up/down movements to be easily controlled without an automatic or time-limited end position switchoff. The output can only be switched off by means of a stop command. The parameters for the louvre/shutter and travel times are hidden. Only the objects "Up/Down" and "Stop" are available. Positioning is not possible.

roller blind

The "roller blind" operating mode parameterises a shutter or louvre (roller blind). The settings for the louvre, as well as the "Position louvre" and "State louvre position" objects, are hidden.

shutter

The "shutter" operating mode enables parameterisation of a shutter with louvres. Parameters and objects are displayed dynamically.

Parameters within the operating modes	
Behaviour in event of alarm	no action move upwards move downwards stop

no action

When an alarm occurs, the actions selected are executed immediately. If "no action" is set, the alarm object is not evaluated.

Available in all operating modes.

Base for monitoring time for alarm evaluation	1 s 2 s ... 5 min.
Factor (10..255)	150

The time set here (base x factor) determines the actuator alarm time. If this time elapses without a "0" telegram (alarm object) having been received, the "Behaviour in event of alarm" is activated.

Available in all operating modes.

After end of alarm	no action drive to previous position
--------------------	--

▼
no action

No actions are executed when the alarm ends.

drive to previous position

When the alarm ends, driving to the most recently set position (shutter/louvre) is carried out.

Available in: "roller blind" and "shutter".

Direction of rotation	normal inverted
-----------------------	--------------------------

▼
Setting this parameter enables motors that have been incorrectly connected (Up/Down swapped round) to be brought into the correct direction of rotation.

inverted

The parameter only swaps the relays; i.e. the settings and objects are still assigned correctly.

normal

Corresponds to the assignments described.

Available in all operating modes.

Behaviour on bus voltage recovery	no action move upwards move downwards stop
-----------------------------------	--

▼
This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). The behaviour selected is executed immediately. "no action" means that no switching operations are triggered.

Available in all operating modes.

Behaviour on bus voltage failure	no action move upwards move downwards stop
----------------------------------	--

▼
If a bus voltage failure is detected, the set actions are executed. "no action" means that no relay switching processes are triggered.

Available in all operating modes.

Base for pause on reverse	10 ms ... 100 ms ... 2 s
Factor (1..255)	9

▼
The pause on reverse is calculated from the base x the factor.

When the motors change direction (higher currents occur), a pause on reverse is maintained. The duration of this pause depends on the load connected.

Available in all operating modes.

Lock	disable affects move affects stop affects all
------	--

The lock is equally valid for both outputs. If a "1" telegram is received at this object, the objects selected here are locked and changes to these objects are revoked. Processes that have already begun are ended. A "0" telegram cancels the lock. The lock does not affect the alarm function.

Available in: "continuous operation"

I/O: Shutter A

Parameter	Setting options
Travel time detection	automatically (mechanical limit switches) per stopwatch (electronic drive, DC drive)

Depending on whether "automatically" or "per stopwatch" is set, the parameter shows the travel times "Base for maximum travel time" or "Base for measured travel time".

automatically

If the shutter has mechanical limit switches (reverse voltage is present), the travel time can be determined automatically. See the "Position shutter/louvre" object description for this purpose.

per stopwatch

With electronic limit switch, cut-off relay or DC drives (no reverse voltage). The travel time must be measured and entered in the "Base for measured travel time" parameter.

Parameters within "Travel time detection"	
Base for maximum travel time	100 ms ... 2 s ... 1 min.
Factor (10..255)	150

The travel time is calculated from the base x the factor.

Available in: "automatically".

Base for measured travel time	100 ms ... 1 s ... 1 min.
Factor (10..255)	60

The travel time is calculated from the base x the factor.

Available in: Travel time detection "per stopwatch"

"Range of values for position"	0...255 1...255
--------------------------------	---------------------------

This parameter determines the value range for the positioning objects. The actuator can thus be adapted to certain controllers. If settings are made in the 1 to 255 range, "0" is ignored as a positioning value.

Available in all operating modes.

Lock	disable affects move affects step/stop affects position affects all
------	--

The lock is equally valid for both outputs. If a "1" telegram is received at this object, the objects selected here are locked and changes to these objects are revoked. Processes that have already begun are ended. A "0" telegram cancels the lock. The lock does not affect the alarm function.

Available in all operating modes.

Send status shutter position	on read request on change on change and voltage recovery
------------------------------	--

This parameter determines the conditions required for sending the shutter position status. Status changes only occur when the shutter stops.

For on change and voltage recovery, the status is sent on voltage recovery and when a download or a reset occurs. No changes are made in this case either.

The status is defined depending on the set range of values.

Range of values: 0 to 255 (0 = fully open; 255 = fully closed)

Range of values: 1 to 255 (0 = invalid; 1 = fully open; 255 = fully closed)

Available in all operating modes.

I/O: Louvre A

Parameter	Setting options
"Number of steps (1-20) from louvre close (down) and louvre open (horizontal)"	5

This parameter determines how many individual louvre steps are required in order to turn it from "close (down)" to "open". The "Louvres/Stop" object causes a single step (up/down) to be carried out. The greater the number, the finer the louvre steps.

"Base for louvre adjustment from close (down) to open (horizontal)"	10 ms ... 2 s
Factor (10..255)	50

This parameter is used to inform the output of the time measured for adjusting the louvre from "close (down)" to "open (horizontal)". This time is used for positioning and time calculation of the louvre angle.

"Base for louvre adjustment total time from close (down) to close (up)"	10 ms ... 2 s
Factor (10..255)	100

The total louvre adjustment time is calculated from the base x the factor.

This time determines the duration for adjusting the louvre from "close (down)" to "close (up)". This corresponds to a full rotation. In the case of shutters that travel upwards with open louvres, this time must be set so that it is equal to the time under "Base for louvre adjustment".

Base for fanning out in lower position	10 ms ... 100 ms ... 2 s
Factor (0..255)	0

By setting the time here, you are telling the shutter when to move back up once it reaches the lower limit position. This behaviour only takes place when the downwards movement is executed by the "Up/Down" object.

"Adjustment of old louvre angle after positioning"	no yes
--	-----------------

no

Where this setting applies, the louvre angle is not adjusted after the shutter has been positioned.

yes

The louvre angle set prior to positioning the shutter is set again.

Send status louvre position	on read request on change on change and voltage recovery
-----------------------------	---

This parameter determines the conditions required for sending the louvre position status. Status changes only occur when the shutter stops.

For on change and voltage recovery, the status is sent on voltage recovery and when a download or reset occurs. No changes are made in this case either.

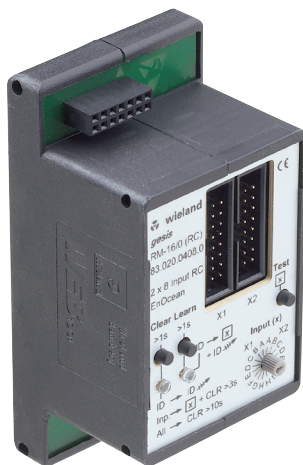
The status is defined depending on the set range of values.

Range of values: 0 to 255 (0 = fully open; 255 = fully closed)

Range of values: 1 to 255 (0 = invalid; 1 = fully open; 255 = fully closed)

4.10 gesis RM-16/0 (RC) (83.020.0408.0/1)

Product Description



- Designation EnOcean extension module with 16 radio inputs
- Type/model no. gesis RM-16/0 (RC) 83.020.0408.0
gesis RM-16/0 (RC) B 83.020.0408.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The gesis RM-16/0 (RC) is an input module with 16 radio inputs that is based on the EnOcean radio protocol.

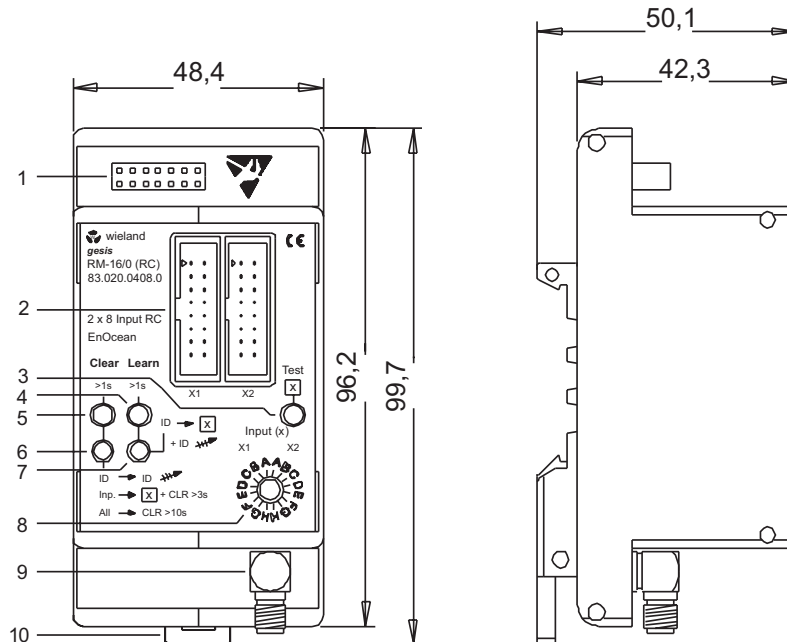
All of the corresponding configurations and software settings must be made via the basic module; the extension module does not have its own intelligence. The inputs can be used for light (switching/dimming), shutter and scene control, evaluated separately from one another, and transferred to the network as stand-alone output variables (nvoRCswiSet).

The RM-16/0 (RC) occupies two slots on the basic module and must therefore be connected to this using two flat cables.

There is also the option of using only one of the two slots. Either the first or the second group of eight radio inputs can be used in such cases, along with the corresponding scene and presence objects.

Due to the limitations placed on the system by the Neuron Chips used, a maximum of 62 network variables are available. As a result of this, when the RM-16/0 (RC) (radio input) extension module described here is used on its own, or when a combined system containing this module and the RM-8/0 (12) extension module is used, only a maximum of 3 slots on the basic module can be occupied for the functionality described here. If 4 slots is required, please contact the Wieland Hotline before proceeding.

Dimensions, Connections and Function Elements



- 1– JTAG programming port (for service purposes only)
- 2– X1, X2: Slots for connection to the basic module
- 3– "Test" button
- 4– "Learn" button
- 5– "Clear" button
- 6– Red "Clear" LED
- 7– Green "Learn" LED
- 8– Selector switch for input channels
- 9– SMA antenna socket
- 10– Locking slide (with 83.020.0408.1 only)

Learning and Deleting Radio Transmitters

Learning

- Set the required input, A to H (X1/X2), using the selector switch.
- Press and hold the "Learn" button for more than a second. The green LED will flash.
- Enable transmitters to be learned to transmit three times within two seconds (e.g. press the button three times in succession).
- Following learning, the green LED will go out and the actuator will automatically exit programming mode.
- Test whether the required function is correct.

Clearing radio transmitters (IDs) from all assignments.

- Press and hold the "Clear" button for more than a second. The red LED will flash.
- Transmitting an ID three times (e.g. using the button) will delete it from module X1 and X2.
- The red LED will go out and clearing mode will be exited.

Clearing all radio transmitters (IDs) for an input (A to H, X1/X2)

- Use the selector switch to set the input to be cleared.

2. Press and hold the "Clear" button for more than a second. The red LED will flash.
3. Press the "Clear" button again (for > 3 s) until the red LED flashes quickly.
Release the button.
4. The red LED will go out and clearing mode will be exited.

Clearing all radio transmitters (IDs) (as-delivered state)

1. Press and hold the "Clear" button for more than a second. The red LED will flash.
2. Press the "Clear" button again (for > 10 s) until the red LED goes out. Release the button.
3. Clearing mode will be exited.

Test function

1. The "Test" button enables you to check the parameterised network assignments for the basic module.
2. Select the input to be checked using the selector switch.
3. Press/release the "Test" button. The parameterised function will be cleared.

Technical Data

Interface with basic module	Two pluggable flat cables
Inputs	2 x 8 EnOcean radio inputs via antenna
Software	Covered by the basic module
Protection class/Degree of protection	None/IP00
Degree of soiling	2
Surge voltage category	III
Field of application	For fixed installation in interior and dry areas
Range in buildings (with external antenna):	
Line-of-sight:	Typically 30 m in corridors; up to 100 m in halls
Plasterboard/dry wood walls:	Typically 30 m through max. 5 walls
Brick/aerated concrete walls:	Typically 20 m through max. 3 walls
Reinforced concrete walls/ceilings:	Typically 10 m through max. 1 ceiling
Materials that may limit the range:	Insulation wool on metal foil, intermediate ceilings and floors made from metal or carbon fibre, ESD floorboards, lead glass or glass with metal coating, steel furniture, antennae or transmitters mounted on metal walls. Fire protection walls, lift shafts, stairways and supply areas should be sealed off. The angle at which the radio signals meet a wall also has a role to play. The effective wall thickness and, therefore, the signal attenuation will vary depending on the angle. Where possible, signals should meet a wall at a slight angle. Wall alcoves should be avoided.
Radio protocol	EnOcean
Frequency	868.3 MHz
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity/moisture condensation	5% to 93% / not permitted
Housing material/colour	Plastic, halogen-free/black
Behaviour in fire (housing)	V2 acc. to UL
Weight	Approx. 98 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Height with TH35–7.5 mounting rail	52 mm

Approvals
CE certification

EIB/KNX-certified
In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation



CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0408.0)

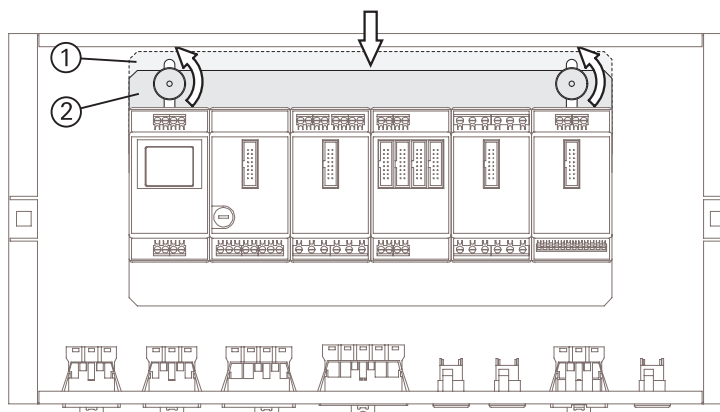
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0408.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0408.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown
("1": slide closed; "2": slide open).

Note: This will release all the modules.

6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis RM 1
• Program version	1.0
• Product allocation	gesis RM-0/8 12 /...12 B 83.020.0408.0/1
• Product Description	
• ETS search path	
• Manufacturer	Wieland Electric GmbH
• Product series	bongo
• Product type	bongo

Communication Objects

The operating mode is set in the parameters.

Operating mode:							
Push button evaluation (contact = norm. open)							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	On/Off/Toggle	1 bit	C, W, T, U
2	16	30	44	Input B	On/Off/Toggle	1 bit	C, W, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Shutter sensor (contact = normally open)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A/B	Up/Down	1 bit	C, T, U
2	16	30	44	Input A/B	Louvres/Stop	1 bit	C, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U
Operating mode:							
Dimming sensor (contact = normally open)							
0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A/B	On/Off	1 bit	C, T, U
2	16	30	44	Input A/B	Dimming	1 bit	C, T, U

3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U

Operating mode:

Send value (contact = normally open)

0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	Value 8 bit	1 byte	C, T, U
2	16	30	44	Input B	Value 8 bit	1 byte	C, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U

Operating mode:

Evaluation of pulse edge (not with radio)

0	14	28	42	Input A/B	Lock	1 bit	C, W, T, U
1	15	29	43	Input A	On/Off/Toggle	1 bit	C, W, T, U
2	16	30	44	Input B	On/Off/Toggle	1 bit	C, W, T, U
3	17	31	45	Input C/D	Lock	1 bit	C, W, T, U
4	18	32	46	Input C	On/Off/Toggle	1 bit	C, W, T, U
5	19	33	47	Input D	On/Off/Toggle	1 bit	C, W, T, U
6	20	34	48	Input E/F	Lock	1 bit	C, W, T, U
7	21	35	49	Input E	On/Off/Toggle	1 bit	C, W, T, U
8	22	36	50	Input F	On/Off/Toggle	1 bit	C, W, T, U
9	23	37	51	Input G/H	Lock	1 bit	C, W, T, U
10	24	38	52	Input G	On/Off/Toggle	1 bit	C, W, T, U
11	25	39	53	Input H	On/Off/Toggle	1 bit	C, W, T, U

On/Off/Toggle

Depending on the parameters that are set, short-circuiting the appropriate input terminals will send their respective input objects to the bus.

Lock

The lock relates to the relevant pair of inputs. If "1" is received here, both inputs will be locked. The input objects will no longer be sent and any cyclical processes that are set will be suspended. "0" will cancel the lock function.

Parameterisation

The individual parameters are shown dynamically, depending on the function parameterised. Each parameter screen enables a pair of inputs to be set. The function of the individual input is displayed in the parameter menus.

► **Default settings appear in bold.**

I/O: Input A/B, input C/D, input E/F, input G/H

Parameter	Setting options
Function of the binary inputs (configured for..)	Push button evaluation (*) Shutter sensor Dimming sensor Send value Evaluation of pulse edge (not with radio)

(*) The shutter sensor is preset for input A/B.

Push button evaluation

The pair of inputs is interpreted as a button. A distinction is drawn between pushing the button for a long and short period of time (see other parameters).

Shutter sensor

The pair of inputs is interpreted as a shutter sensor (EIS 7). The "On" and "Off" functions are assigned to inputs A and B.

Dimming sensor

The pair of inputs is interpreted as a dimming sensor. The "On/Brighter" and "Off/Darker" functions are assigned to inputs A and B. If the button is pushed for a short period of time, an on/off telegram (EIS 1) is sent. If the button is pushed for a long period of time, the dimming command "Change by 100%" (EIS 2) is output; a stop telegram is output when the button is released.

Send value

The pair of inputs can be used to send 8-bit values. One value per input is sent via an 8-bit object whenever the button is pushed for a short or long period of time.

Evaluation of pulse edge

The pair of inputs is interpreted as a button. The pulse edges are evaluated as rising/falling. This function may not be used for radio inputs (gesis RM 16/0 (RC)), since the edge detection function is not clear.

Parameters within the operating modes	
Long push button action min.	0.3 s ... 0.5 s ... 2.5 s

If the button is pushed for longer than the set time, this is interpreted as a long push button action.

Available in: "Push button evaluation", "Shutter sensor", "Dimming sensor", "Send value"

Push button operation mode for Input A Push button operation mode for Input B	Toggle short = On, long = Off short = Off, long = On On Off no function
--	---

Toggle

Each time the button is pushed, the current input object is inverted.

short = On, long = Off

Pushing the button for a short period of time sets the input object to "1"; pushing it for a long period of time sets it to "0".

short = Off, long = On

Pushing the button for a long period of time sets the input object to "1"; pushing it for a long period of time sets it to "0".

On

Pushing the button for a long or short period of time sets the input object to "1".

Off

Pushing the button for a long or short period of time sets the input object to "0".

no function

Pushing the button has no effect.

Available in: Push button evaluation

Terminal assignment	according to terminal markings reversed
---------------------	---

according to terminal markings

The functions of inputs A and B correspond to the actuator label.

reversed

The functions of inputs A and B have been reversed.

Available in all operating modes.

Value for short keypress of Input A (0..255) Value for short keypress of Input B (0..255)	255
Value for long keypress of Input A (0..255) Value for long keypress of Input B (0..255)	1

The set value is sent to the bus via the input object when the button at the relevant input is pushed for a short (or long) period of time.

Available in Send value operating mode.

Edge evaluation of Input A
Edge evaluation of Input B

rising = On, falling = Off
 rising = On, falling = Off
 rising = Off, falling = On
 rising = On
 falling = On
 rising = Off
 falling = Off
 rising = Toggle
 falling = Toggle
 rising = Toggle, falling = Toggle
 no evaluation
 rising = On, falling = On
 rising = Off, falling = Off
 rising = Toggle, falling = On
 rising = On, falling = Toggle
 rising = Off, falling = Toggle
 rising = Toggle, falling = Off

rising = On, falling = Off

A rising edge at the input sets the input object to "1 (On)", while a falling edge sets it to "0 (Off)". "Toggle" inverts the current input object. Any combination is possible.

Available in: Evaluation of pulse edge.

Send behaviour for obj. value of Input A
Send behaviour for obj. value of Input B

no sending
On once, Off once
 On once, Off cyclical
 On cyclical, Off once
 On cyclical, Off cyclical

no sending

Sending of the input object is disabled when a change is made. However, reading is possible.

once

The input object is sent once when On/Off (1/0) is changed.

cyclical

The input object is sent on a cyclical basis when On/Off (1/0) is changed.

Available in: Evaluation of pulse edge.

Send initial value of Input A
Send initial value of Input B

no | yes

yes

On recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), the current status (On/Off) of the input is determined and sent to the bus once, depending on the parameters. The object sends with a delay time of approx. 10s. If the input status changes during this time, the new value is sent immediately and there is no 10s delay.

Available in: Evaluation of pulse edge.

"Factor (1..255) for cyclical sending
(timebase = 10 seconds)"

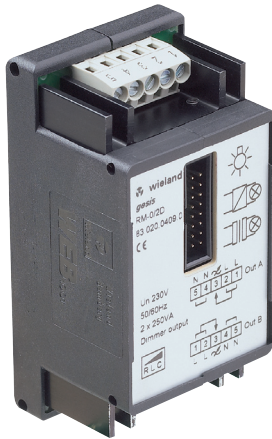
30

Determines the time interval for cyclical sending.

Available in: Evaluation of pulse edge.

4.11 gesis RM-0/2D (83.020.0409.0/1)

Product Description



- Designation Extension module with 2 universal dimmers, 230V AC
- Type/model no. gesis RM-0/2D 83.020.0409.0
gesis RM-0/2D B 83.020.0409.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application program gesis RM2-BAS 1.0

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



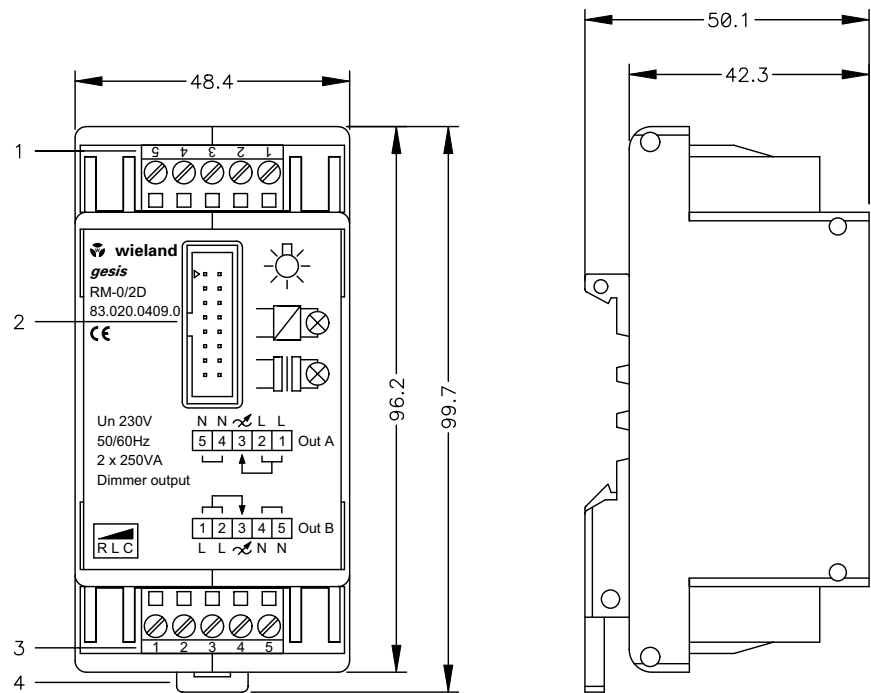
Functional Description

The 230 V AC gesis RM-0/2D module with 2 universal dimmers switches or dims two groups of consumers that are independent of one another. The extension module receives the switching/dimming commands from the basic module, and the possible status messages of the outputs are sent by the basic module to the bus.

Lamps with incandescent light bulbs, high-voltage halogen lamps and low-voltage halogen lamps with an upstream transformer (either conventional or electronic) are all suitable for connection. (For dimming low-voltage halogen lamps, we recommend using our electronic transformers).

The consumers are connected by means of screw clamp terminals. Different functions can be assigned to the outputs by means of parameterisation, which must only be performed in the basic module. In this regard, all time lapses within the device can be parameterised, and it is possible to activate a lock using an external binding. The setting options are available separately for each pair of outputs.

Dimensions, Connections and Function Elements



- 1– X1

5-pin connection terminal strip for output A (for details please refer to "Terminal Assignment")
- 2– Slot

For connection to the basic module (16-pin ribbon cable header)
- 3– X2

5-pin connection terminal strip for output B (for details please refer to "Terminal Assignment")
- 4– Locking slide

With 83.020.0409.1 only

Terminal Assignment:

X1: Terminals 1/2 and 4/5 are bridged internally

- 1– Connection or routing of the mains voltage (potential L)
- 2– Connection or routing of the mains voltage (potential L)
- 3– Connection for output A
- 4– Connection or routing of the mains voltage (potential N)
- 5– Connection or routing of the mains voltage (potential N)

X2: Terminals 1/2 and 4/5 are bridged internally.

- 1– Connection or routing of the mains voltage (potential L)
- 2– Connection or routing of the mains voltage (potential L)
- 3– Connection for output B
- 4– Connection or routing of the mains voltage (potential N)
- 5– Connection or routing of the mains voltage (potential N)

Technical Data

Connection to basic module	16-pin pluggable flat cable (conforming to EN 60603-13, without interlocking)
Mains connection/outputs	
Dimming outputs	Two, independent of one another

Connected load	Max. 250 VA per output
Rated voltage	230 V AC –15% / +10%, 50 to 60 Hz
Minimum load	30 VA
Automatic load detection	Yes
Dimming process	leading edge or trailing edge phase, depending on the type of load
Overload protection	Yes
Short circuit protection	Yes
Overtemperature protection	Yes
No-load power consumption	Approx. 0.7 W per channel
Power loss	pprox. 2 W per channel at 250 W incandescent bulb load
Connection type	Screw clamp terminal 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Electrical safety	
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Environmental conditions	
Field of application	Fixed installation in interior and dry areas
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 135 g
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- Only transformers that are permitted for dimming operation may be used.
- Conventional transformers may only be used if they are VDE-approved and have a thermal fuse.
- No-load operation of conventional, dimmable transformers is not permitted.
- Combined operation, involving both inductive loads (e.g. conventional transformers) and capacitive loads (e.g. electronic transformers), is not permitted.
- The device features varistor protection. Neutral conductor interruption, over-voltage and conventional transformers operating under no-load conditions may lead to damage and failure.
- It should be ensured that the place of installation offers sufficient capacity for heat dissipation.





CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0409.0)

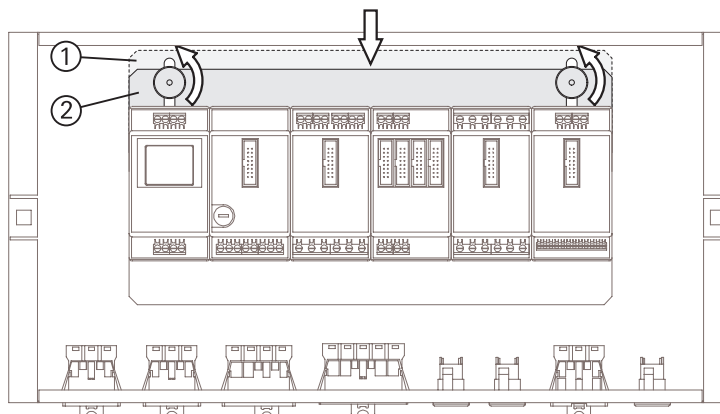
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0409.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0409.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis RM 1	
• Program version	1.0	
• Product allocation	gesis RM-0/2D /...D B	83.020.0409.0/1
• Manufacturer	Wieland Electric GmbH	

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Dimming output A	Lock	1 bit	C, W, T, U
1	15	29	43	Dimming output A	Switch, status	1 bit	C, W, U
2	16	30	44	Dimming output A	Dimming	4 bit	C, W, T, U
3	17	31	45	Dimming output A	Set value	1 byte	C, W, T, U
4	18	32	46	Dimming output A	Status (value)	1 byte	C, R, T, U
5	19	33	47	Dimming output B	Lock	1 bit	C, W, T, U
6	20	34	48	Dimming output B	Switch, status	1 bit	C, W, U
7	21	35	49	Dimming output B	Dimming	4 bit	C, W, T, U
8	22	36	50	Dimming output B	Set value	1 byte	C, W, T, U
9	23	37	51	Dimming output B	Status (value)	1 byte	C, R, T, U
10	24	38	52	Dimming output A/B	Scene 1/2	1 bit	C, W, T, U
11	25	39	53	Dimming output A/B	Scene 3/4	1 bit	C, W, T, U

Switch/Status

A "1" at this object switches the output on. The brightness value that applies when it is switched on depends on the parameter setting. A "0" switches the output off. In addition, the object reflects the current switching state of the output. "1" means that the output is switched on, while "0" means that it is switched off. If you also set the "Transmit" communication flag, the status value is actively sent on a change.

Dimming

Depending on the value received, the dimming output alters the dimming function so that it becomes brighter or darker, or so that dimming stops altogether. The set dimming time is taken into account for dimming. Depending on the parameterisation, the dimming output must be switched on for this purpose, or it may be able to be switched on and off by means of dimming.

Set value

When a value is received (0 to 255), the corresponding brightness value is set at the output. The value "1" corresponds to the minimum level of brightness, while "255" corresponds to the maximum level. If the object value is "0", the output is switched off.

Status (value)

This object provides the current brightness value of the output ("0" = switched off; "1" = minimum brightness; "255" = maximum brightness). The value can be called via the bus at any time (read only). If "send on change" has been parameterised, the new value is actively sent via the status object following a change. On bus voltage recovery, the current value can be sent to the bus once.

Lock

If the lock is activated (object value = 1), the corresponding output is deactivated. The current static status is frozen. Object updates for this output are ignored (reset). Dimming procedures that are already under way continue to be carried out. The "Lock" object is

not taken into account in the event of a bus voltage failure or on bus voltage recovery. "0" cancels the lock function.

Scene 1/2

This object can be used to switch both outputs at the same time with a 1-bit command (scene control). The behaviour of both outputs at this point can be parameterised for each scene (value and dimming time). Object value "0" calls scene 1, while object value "1" calls scene 2.

Scene 3/4

As with "Scene 1/2". Object value "0" calls scene 3, while object value "1" calls scene 4.

Parameterisation

The following parameters are available separately for each output.
Shutter outputs A and B, shutters A and B, and louvres A and B are the same.

► **Default settings appear in bold.**

I/O: Dimming output A, dimming output B

Parameter	Setting options
Used Module	Switch-/dimming actuator 1-10 V Universal dimmer AC

This parameter only acts as an auxiliary parameter. Depending on the setting, different texts and setting options are displayed when the dimming area is restricted.

Behaviour on bus voltage recovery	do not change set old value (value before failure) switch off minimum brightness 10% [...] 100%
-----------------------------------	--

do not change

Both the status of the output relay and the brightness value remain unchanged.

set old value

The status prior to the bus voltage failure is output.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Behaviour on bus voltage failure	do not change switch off minimum brightness 10% ... 100%
----------------------------------	--

do not change

Both the status of the output relay and the brightness value remain unchanged.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Starting value	last value minimum brightness 10% ... 100%
----------------	--

The parameter determines the dimming actuator's starting level of brightness when it is switched on using the Switch/Status object.

last value

The last value for the output in a switch-on status is set. If this value is unknown (i.e. when switching on is performed for the first time), a brightness value of 100% is output (value = 255).

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected brightness value (e.g. 50% corresponds to the value 128).

Switch on/off on dimming	On = yes/Off = yes On = yes/Off = no On = no/Off = yes On = no/Off = no
--------------------------	---

This parameter regulates the dimmer's switching on and switching off behaviour during control by means of the Dimming object.

Switch on: "yes"

It is possible to switch on the output using the Dimming object.

"no": Switching on is not possible.

Switch off: "yes"

It is possible to switch off the output using the Dimming object.

"no": Switching off is not possible.

Base for dimming time	0.5 s 1 s ... 1 h
Factor for dimming time (2..255)	6

The dimming time of the output is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the control voltage range, from the minimum to the maximum brightness (0 to 100%).

Dimming value	Set value dim to value set value (only in ON state) dim to value (only in ON state)
---------------	---

▼ This parameter determines the behaviour of the output when a dimming value is received.

Set value

Switch an output on/off, depending on the value. Output the brightness level immediately, depending on the dimming value.

dim to value

Switch an output on/off, depending on the value. Dim to a certain brightness level, depending on the dimming value and the parameterised dimming time.

set value/dim to value (only in ON state)

Same behaviour as described above, but only when the output is already switched on.

"Status object (value) Bus voltage recovery/Operation"	no action/read only send/read only no action/send on change send/send on change
---	---

▼ **read only**

The "Status (value)" object can be read out via the bus at any time. The value reflects the current brightness of the control output (0 to 255). "0" indicates that the actuator is switched off, while "255" indicates that the actuator is switched on at maximum brightness.

send on change

As described above, but including active sending of this object when a value changes. During dimming, only the end value is sent.

send

The status object is sent once on recovery of the bus voltage.

Control voltage range	1 to 10 V
-----------------------	------------------

▼ This parameter determines the upper/lower limit of the control voltage. This setting only relates to the control voltage: therefore, in cases where 2 to 6V are set, 6V will correspond to 100% brightness (value = 255) and 2V will correspond to the minimum brightness level (value = 1).

Available in: "Switch-/dimming actuator 1-10 V"

"Upper limit dimming range (Hardware adaption top)"	100% (no limit) 90% 80% 70% 60%
--	---

▼ This parameter determines the upper limit of the maximum phase angle. The 8-bit brightness values 1 to 255 apply for this limited range.

Available in "Universal dimmer AC".

I/O: Scene 1/2, Scene 3/4

Parameter	Setting options
-----------	-----------------

Scene 1: Output A Scene 1: Output B	do not change switch off minimum brightness 10% ... 100%
--	--

do not change

Both the status of the output and the brightness value remain unchanged.

switch off

The output is switched off.

minimum brightness

The output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Base for dimming time	0.5 s 1 s ... 1 h
(0..255) Factor A	6
(0..255) Factor B	6

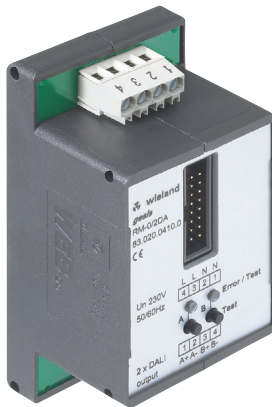
The dimming time of the actuator for calling a scene is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the control voltage range, from the minimum to the maximum brightness (0 to 100%). The time base applies equally for both dimming outputs. The factors can be parameterised separately for scene outputs A and B. The dimming times can therefore be set to different values.

Scene 2: Output A Scene 2: Output B	
--	--

The parameters and default settings are identical to those of scene 1.

4.12 gesis RM-0/2DA (83.020.0410.0/1)

Product Description



- Designation Extension module with 2 switching/dimming actuators
- Type/model no. gesis RM-0/2DA 83.020.0410.0
gesis RM-0/2DA B 83.020.0410.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application program gesis RM2-BAS 1.0

NOTICE

Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

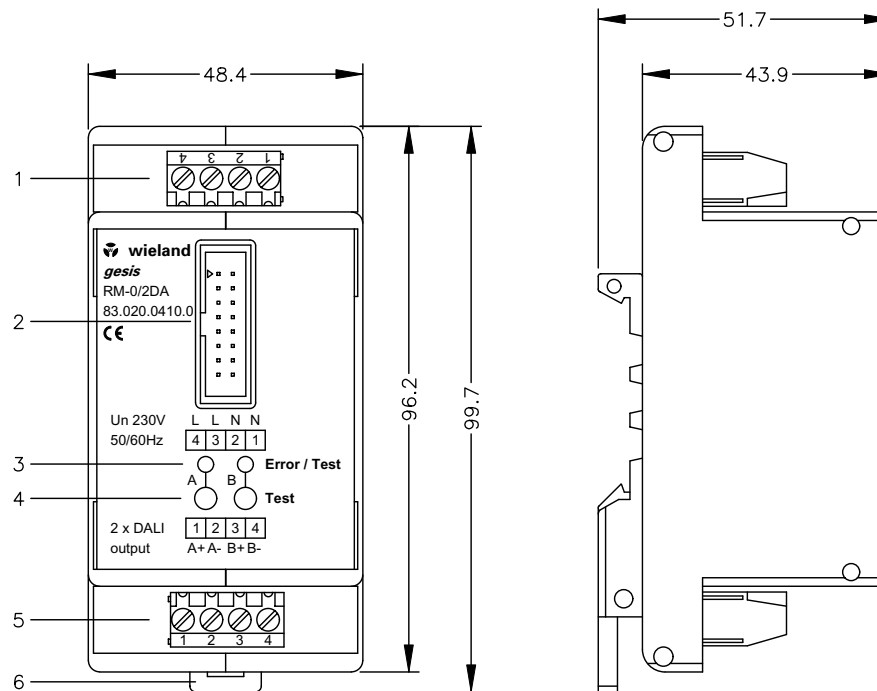
The extension module with 2 DALI actuators is part of the gesis RM series of devices. It has two DALI channels that can be controlled separately from one another.

The maximum of eight DALI electronic ballasts that can be connected to each channel work in parallel (broadcast transmission). Messages from DALI electronic ballasts which are sent via the basic module to the bus system connected are gathered as group messages for each DALI channel. It is not necessary to learn the DALI electronic ballasts. The front of the module features a button and a status LED for the respective purposes of manual operation and displaying the status for each DALI channel.

Communication with the bus takes place via the basic module. For this, switching commands are accepted and status values provided. The connection to the basic module is established using the flat cable supplied.

The consumers are connected by means of screw clamp terminals. Different functions can be assigned to the output channels by means of parameterisation, which must only be performed in the basic module. In this regard, all time lapses within the device can be parameterised, and it is possible to activate a lock using an external binding. The setting options are available separately for every pair of output channels.

Dimensions and Connections



- | | |
|------------------|---|
| 1– X1 | Connection for the operating voltage |
| 2– Slot | Connection to the basic module |
| 3– LEDs | H1 (left), H2 (right); for displaying the status and errors of DALI channel A/B |
| 4– Buttons | S1 (left), S2 (right); for DALI channel A/B test mode |
| 5– X2 | For connecting DALI channels A and B |
| 6– Locking slide | With 83.020.0410.1 only |

Function Elements

Operating elements

Pressing button S1 or S2 activates the test mode for DALI channel A or B. In test mode, LED H1 or H2 lights up.

Button S1/S2:

Pressing button for a short time: Switching channel A/B on or off

Pressing button for a long time: Bright/dark dimming for A/B on or off

If neither of the buttons are pressed again, the device will wait for 10 seconds before automatically switching back to normal mode, and the value transferred by the basic module will be set.

Indicators:

LED H1/H2

Off Normal mode, channel A/B, no errors

Lit up Test mode, channel A/B

Flashing Lamp error or communication error on channel A/B

Terminal Assignment:

X1: Connection and routing of the mains voltage; terminals 1/2 and 3/4 are bridged internally

- 1– Connection/routing of N
- 2– Connection/routing of N
- 3– Connection/routing of L
- 4– Connection/routing of L

X2: Connection of the DALI control outputs

- 1– DALI channel A +
- 2– DALI channel A –
- 3– DALI channel B +
- 4– DALI channel B –

Technical Data

Operating voltage	230 V AC +10%/ –15%, 50 to 60 Hz
Connection to basic module	Pluggable flat cable
Outputs	
Number	Two, DALI channels
DALI bus voltage	Approx. 16 V
Load capacity	Eight DALI electronic ballasts per channel acc. to EN 60929 (input impedance per electronic ballast $\geq 8 \text{ k}\Omega$)
Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Software	Covered by the basic module
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Operating conditions	
Field of application	For fixed installation in interior and dry areas
Temperature ranges	
– Operating environment	–5°C to +45°C
– Storage	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
General data	
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 190 g
Dimensions	See "Dimensions and Connections"
– Height with TH 35–7.5 mounting rail	52 mm
Approvals	KNX/EIB-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation



CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.

Assembly (83.020.0410.0)

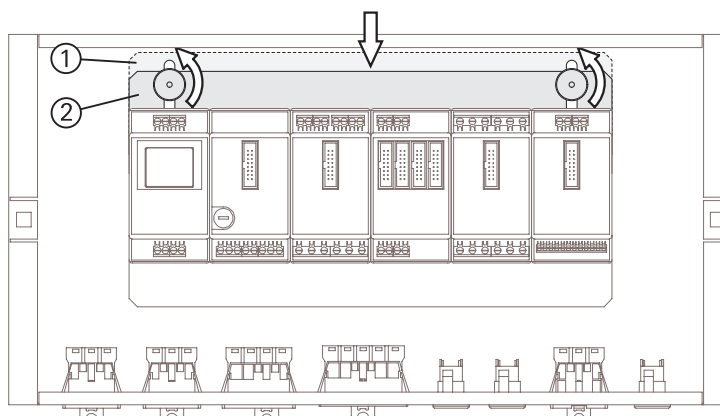
1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0410.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0410.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

• Program name	gesis RM2-BAS 1	
• Program version	1.0	
• Product allocation	gesis RM-0/2DA /...DA B	83.020.0410.0/1
• Manufacturer	Wieland Electric GmbH	

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	DALI output A	Lock	1 bit	C, W, T, U
1	15	29	43	DALI output A	Switch, status	1 bit	C, W, U
2	16	30	44	DALI output A	Dimming	4 bit	C, W, T, U
3	17	31	45	DALI output A	Set value	1 byte	C, W, T, U
4	18	32	46	DALI output B	Status (Brightness value)	1 byte	C, R, T, U
5	19	33	47	DALI output B	Lock	1 bit	C, W, T, U
6	20	34	48	DALI output B	Switch, status	1 bit	C, W, U
7	21	35	49	DALI output B	Dimming	4 bits	C, W, T, U
8	22	36	50	DALI output B	Set value	1 byte	C, W, T, U
9	23	37	51	DALI output B	Status (Brightness value)	1 byte	C, R, T, U
10	24	38	52	DALI output A/B	Scene 1/2	1 bit	C, W, T, U
11	25	39	53	DALI output A/B	Scene 3/4	1 bit	C, W, T, U
12	26	40	54	DALI output A	Status (DALI failure)	1 bit	C, R, T, U
13	27	41	55	DALI output B	Status (DALI failure)	1 bit	C, R, T, U

Switch/Status

A "1" at this object switches the DALI output on. The brightness value that applies when it is switched on depends on the parameter setting. A "0" switches the output off. In addition, the object reflects the current switching state of the DALI output. "1" means that the output is switched on, while "0" means that it is switched off. If you also set the "Transmit" communication flag, the status value is actively sent on a change.

Dimming

Depending on the value received, the DALI output alters the dimming function so that it becomes brighter or darker, or so that dimming stops altogether. The set dimming time is taken into account for dimming. Depending on the parameterisation, the output must be switched on for this purpose, or it may be able to be switched on and off by means of dimming.

Set value

When a value is received (0 to 255), the corresponding brightness value is set at the output. The value "1" corresponds to the minimum level of brightness, while "255" corresponds to the maximum level. If the object value is "0", the output is switched off.

Status (value)

This object provides the current brightness value of the DALI output ("0" = switched off; "1" = minimum brightness; "255" = maximum brightness). The value can be called via the bus at any time (read only). If "send on change" has been parameterised, the new value is actively sent via the status object following a change. On bus voltage recovery, the current value can be sent to the bus once.

Lock

If the lock is activated (object value = 1), the corresponding output is deactivated. The current static status is frozen. Object updates for this output are ignored (reset). Dimming procedures that are already under way continue to be carried out. The "Lock" object is not taken into account in the event of a bus voltage failure or on bus voltage recovery. "0" cancels the lock function.

Status (Lamp failure)

This object returns the DALI failure status as a 1-bit/8-bit value. The meaning of the individual bits can be parameterised (see parameter description). The status can be called via the bus at any time (read only). If "send on change" has been parameterised, the new value is actively sent via the status object following a change. On bus voltage recovery, the current value can be sent to the bus once.

Scene 1/2

This object can be used to switch both outputs at the same time with a 1-bit command (scene control). The behaviour of both outputs at this point can be parameterised for each scene (value and dimming time). Object value "0" calls scene 1, while object value "1" calls scene 2.

Scene 3/4

As with "Scene 1/2". Object value "0" calls scene 3, while object value "1" calls scene 4.

Parameterisation

The following parameters are available separately for each output.
Shutter outputs A and B, shutters A and B, and louvres A and B are the same.

► **Default settings appear in bold.**

I/O: DALI A, DALI B

Parameter	Setting options
Behaviour on bus voltage recovery	do not change set old value (value before failure) switch off minimum brightness 10% [...] 100%

do not change

The status of the DALI output remains unchanged.

set old value

The status prior to the bus voltage failure is output.

switch off

The DALI output is switched off.

minimum brightness

The DALI output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The DALI output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Behaviour on bus voltage failure	do not change switch off minimum brightness 10% ... 100%
----------------------------------	--

do not change

The status of the DALI output remains unchanged.

switch off

The DALI output is switched off.

minimum brightness

The DALI output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The DALI output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Starting value	last value minimum brightness 10% ... 100%
----------------	--

The parameter determines the starting level of brightness when switching on with the "Switch/Status" object takes place.

last value

The last value for the DALI output in a switch-on status is set. If this value is unknown (i.e. when switching on is performed for the first time), a brightness value of 100% is output (value = 255).

minimum brightness

The DALI output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The DALI output is switched on with the selected brightness value (e.g. 50% corresponds to the value 128).

Switch on/off on dimming	On = yes/Off = yes On = yes/Off = no On = no/Off = yes On = no/Off = no
--------------------------	---

This parameter regulates the DALI output's switching on and switching off behaviour during control by means of the "Dimming" object.

Switch on: "yes"

It is possible to switch on the output using the Dimming object. "no": Switching on is not possible.

Switch off: "yes"

It is possible to switch off the output using the Dimming object. "no": Switching off is not possible.

Base for dimming time	0.5 s 1 s ... 1 h
Factor for dimming time (2..255)	6

The dimming time of the output is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the brightness range, from the minimum to the maximum brightness (0 to 100%).

Available in both dimming modules.

Dimming value	Set value dim to value set value (only in ON state) dim to value (only in ON state)
---------------	---

▼ This parameter determines the behaviour of the output when a dimming value is received.

Set value

Switch an output on/off, depending on the value. Output the brightness level immediately, depending on the dimming value.

dim to value

Switch an output on/off, depending on the value. Dim to a certain brightness level, depending on the dimming value and the parameterised dimming time.

set value/dim to value (only in ON state)

Same behaviour as described above, but only when the output is already switched on.

"Lower limit dimming range (Hardware adaption button)"	0.5% (no limit) 10% 20% 30%
---	---

▼ This parameter determines the lower limit of the brightness level. The 8-bit brightness values 1 to 255 apply for this limited range.

"Upper limit dimming range (Hardware adaption top)"	100% (no limit) 90% 80% 70% 60%
--	---

▼ This parameter determines the upper limit of the brightness level. The 8-bit brightness values 1 to 255 apply for this limited range.

I/O: Status A, Status B

Parameter	Setting options
"Status object brightness value Bus voltage recovery/Operation"	no action/read only send/read only no action/send on change send/send on change

▼ **read only**

The "Status (Brightness)" object can be read out via the bus at any time. The value reflects the brightness set at the DALI output (0 to 255). "0" means that the output is switched off; "1" means that it is switched on at the minimum level of brightness, while "255" means that it is switched on at the maximum level of brightness.

send on change

As with "read only", but including active sending of this object when a value changes. During dimming, only the end value is sent.

send

The "Status (Brightness)" object is sent once on bus voltage recovery.

Status object DALI failure	Lamp failure 1-Bit Communication failure 1-Bit Lamp- or Communication failure 1-Bit Lamp- or Communication failure 8-Bit
----------------------------	--

Lamp failure 1-Bit

The object indicates a lamp failure at the DALI output. Failures of one or more lighting appliances are displayed. "1" = failure.

Communication failure 1-Bit

The object indicates a communication failure at the DALI output. "0" means that no failures have occurred; "1" means that a failure has occurred. Communication to one or more of the DALI electronic ballasts connected to the output has failed. This may be caused by a short circuit or voltage failure in the bus cable, an electronic ballast failure, or a missing electronic ballast.

Lamp- or Communication failure 1-Bit

The object indicates a lamp or communication failure at the DALI output as a 1-bit-value. "1" indicates that a failure has occurred.

Lamp- or Communication failure 8-Bit

Both failures can be indicated at the same time via this object. Bit "0" contains the lamp failure, while bit "1" contains the communication failure.

If there is a communication failure, lamp failures can no longer be detected.

"Status object DALI failure Bus voltage recovery/Operation"	no action/read only send/read only no action/send on change send/send on change
--	---

read only

The "Status (DALI failure)" object can be read out via the bus at any time.

send on change

As with "read only", but including active sending of this object when a value changes.

send

The "Status (DALI failure)" object is sent once on bus voltage recovery.

I/O: Scene 1/2, Scene 3/4

Parameter	Setting options
Scene 1: Output A Scene 1: Output B	do not change switch off minimum brightness 10% ... 100%

do not change

The status of the DALI output remains unchanged.

switch off

The DALI output is switched off.

minimum brightness

The DALI output is switched on with the minimum level of brightness (value = 1).

10% to 100%

The DALI output is switched on with the selected value (e.g. 50% corresponds to the value 128).

Base for dimming time	0.5 s 1 s ... 1 h
(0..255) Factor A	6
(0..255) Factor B	6

▼

The dimming time of the output for calling a scene is calculated from the base for dimming time x the factor for dimming time. The dimming time denotes the time required by the output to pass through the brightness range, from the minimum to the maximum brightness (0 to 100%). The time base applies equally for both DALI outputs. The factors of each scene output can be parameterised separately. The dimming times can therefore be set to different values.

Factor "0" sets the selected dimming values immediately. Values that are not equal to 0 result in dimming to the parameterised value.

Scene 2: Output A	
Scene 2: Output B	

▼

The parameters and default settings are identical to those of scene 1.

4.13 gesis RM-0/4HL AC (83.020.0411.0/1)

Product Description



- Designation Extension module with 4 switching actuators
- Type/model no. gesis RM-0/4 HL AC 83.020.0411.0
gesis RM-0/4HL AC B 83.020.0411.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

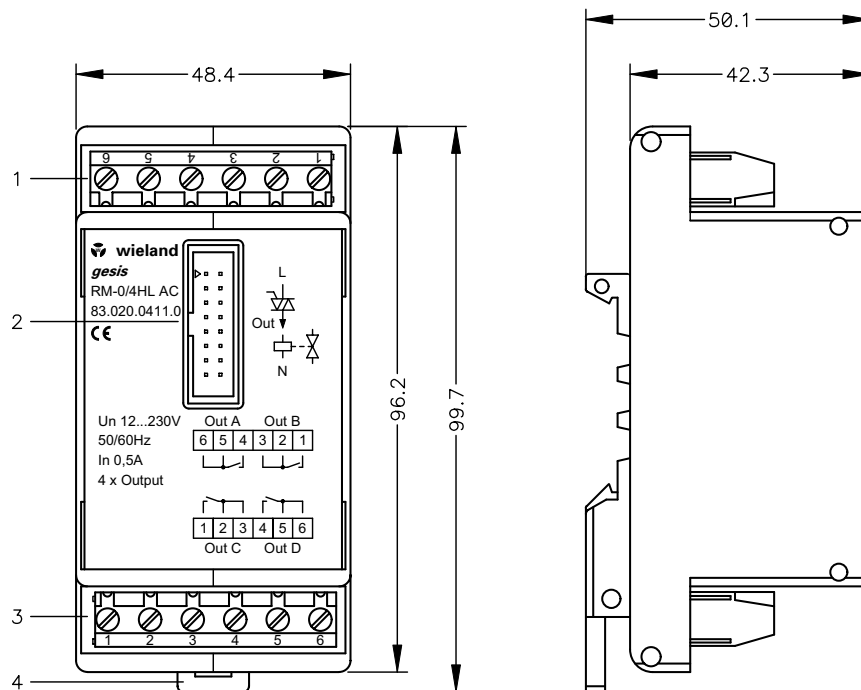
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

The gesis RM-0/4HL AC has four separate, controllable semiconductor switching outputs for switching a 230V AC voltage; these outputs are floating. It is possible to switch different external conductors. Communication with the bus takes place via the basic module. For this, switching commands are accepted and status values provided. The connection to the basic module is established using a flat cable that is provided as part of the scope of supply.

Dimensions, Connections and Function Elements



- | | |
|------------------|--|
| 1– X1 | 6-pin connection terminal strip for outputs A and B
(for details please refer to "Terminal Assignment") |
| 2– Slot | For connection to the basic module (16-pin ribbon cable header) |
| 3– X2 | 6-pin connection terminal strip for outputs C and D
(for details please refer to "Terminal Assignment") |
| 4– Locking slide | With 83.020.0411.1 only |

Terminal Assignment:

X1: Connection and routing of the switching voltage, and connection of outputs A and B. Terminals 2/3 and 5/6 are bridged internally.

- 1– Connection for output B
- 2– Connection/routing of the switching voltage for output B
- 3– Connection/routing of the switching voltage for output B
- 4– Connection for output A
- 5– Connection/routing of the switching voltage for output A
- 6– Connection/routing of the switching voltage for output A

X2: Connection and routing of the switching voltage, and connection of outputs C and D. Terminals 2/3 and 5/6 are bridged internally.

- 1– Connection for output C
- 2– Connection/routing of the switching voltage for output C
- 3– Connection/routing of the switching voltage for output C
- 4– Connection for output D
- 5– Connection/routing of the switching voltage for output D
- 6– Connection/routing of the switching voltage for output D

Technical Data

Connection to basic module	Pluggable flat cable
Outputs	
Number	Four
Rated voltage	230 V (min. 12 V, max. 253 V)
Rated frequency	50 to 60 Hz
Rated current	0.5 A
Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Short circuit protection	No
Internal fuse	No (the use of an external back-up fuse is recommended for the purpose of protecting the output)
I ² t value (10 ms)	144 A ² s
Leakage current in off status	Typ. 10 mA at 12 V AC/50 Hz Typ. 250 mA at 230 V AC/50 Hz
Voltage drop in on status	Typ. 1.1 V at 12 V AC/0.15 A Typ. 0.9 V at 230 V AC/0.5 A
Recommended minimum load	2 W (allow for leakage current and voltage drop)
Operating conditions	
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Temperature ranges	
Operating environment	–5°C to +45°C
Storage	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
General data	
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 110 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Height inc. TH 35-7.5 mounting rail	52 mm
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0411.0)

1. Latch the module onto the DIN rail.

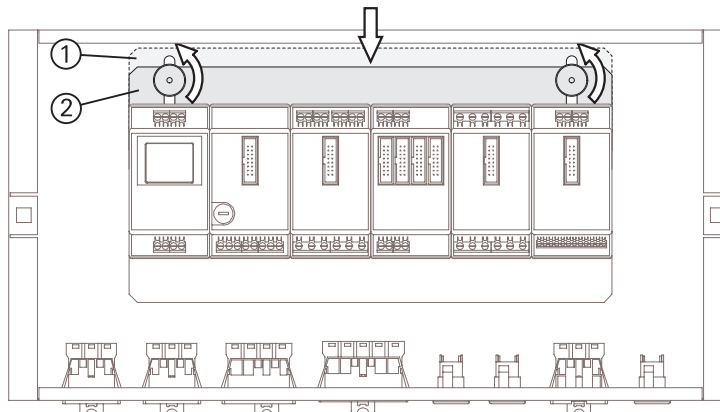
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

Disassembly (83.020.0411.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0411.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

- Program name gesis RM 1
- Program version 1.0
- Product allocation gesis RM-0/4HL AC /...HL AC B 83.020.0411.0/1
- Product description
- ETS search path
- Manufacturer Wieland Electric GmbH
- Product series bongo
- Product type bongo

Communication Objects

The operating mode is set in the parameters.

Operating mode:							
All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Output A	Switch	1 bit	C, W, T, U
1	15	29	43	Output A	Status	1 bit	C, R, T, U
2	16	30	44	Output B	Switch	1 bit	C, W, T, U
3	17	31	45	Output B	Status	1 bit	C, R, T, U
4	18	32	46	Output C	Switch	1 bit	C, W, T, U
5	19	33	47	Output C	Status	1 bit	C, R, T, U
6	20	34	48	Output D	Switch	1 bit	C, W, T, U
7	21	35	49	Output D	Status	1 bit	C, R, T, U
8	22	36	50	Output A to D	Lock	1 bit	C, W, T, U

Parameterisation

The following parameters are available separately for each output.
Outputs A, B, C and D are all the same.

► **Default settings appear in bold.**

Parameter	Setting options
Behaviour on bus voltage recovery	no action switch on switch off set old value (value before failure)

This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

set old value

The output is set to the value prior to the bus voltage failure, and not to the value that is set by the bus voltage failure parameter. When the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), both the status is set and the "old value" is switched to "Off" (value = 0).

Behaviour on bus voltage failure	no action switch on switch off
----------------------------------	---

The behaviour of the actuator upon failure of the bus voltage can be set here. Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately. Status objects are no longer sent to the bus.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

Operating mode	Normal On/Off delay time switch
----------------	--

Normal

The switching object value is executed immediately.

On/Off delay

Switching on and switching off processes are carried out with a delay. The parameters required for this purpose (time base/factor) are displayed dynamically. Factor "0" causes switching to occur immediately. If a switching object is received during a delay, the active timer is restarted.

time switch (stairway light)

Switching on takes place immediately (switching object = 1) and, depending on how the operating time (which is displayed dynamically) has been parameterised, switching off takes place with a delay. If the object value = 0, switching off takes place immediately. If switching on occurs again (switching object = 1) while the operating time has not yet elapsed, the timer is restarted. This will extend the total operating time.

Parameters within the operating modes

Parameter	Setting options
Base for On delay Base for Off delay	10 ms ... 1 s ... 1 h
Factor (0..255)	10

On (Off) delay = base x factor

Available in On/Off delay operating mode.

Base for operating time	10 ms ... 1 s ... 1 h
Factor (0..255)	10

Operating (Off) time = base x factor

Available in time switch operating mode.

Relay mode	normal inverted
------------	--------------------------

normal Object value 0/1 = contact open/closed (normally open)
inverted Object value 0/1 = contact closed/open (normally closed)

Available in all operating modes.

Lock	no yes
------	-----------------

yes

The lock for this output is activated. If "1" is received at the lock, the output enters an inactive status. Switching object events are ignored (locked). Delay times that have already started will continue to be executed. If the lock receives "0", the lock will be cancelled.

Available in all operating modes.

Status object Bus voltage recovery/Operation	no action/read only send/read only no action/send on change send/send on change
---	---

The function of the status object on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), can be set on a separate basis from normal mode.

no action

The object is not sent on recovery of the bus voltage.

send

The object is sent on recovery of the bus voltage.

read only

The object value can only be read during operation.

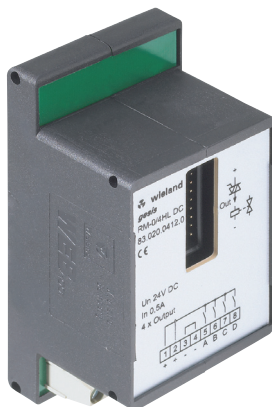
send on change

The object value is actively sent to the bus when a change occurs during operation.

Available in all operating modes.

4.14 gesis RM-0/4HL DC (83.020.0412.0/1)

Product Description



- Designation Extension module with 4 switching actuators
- Type/model no. gesis RM-0/4HL DC 83.020.0412.0
gesis RM-0/4HL DC B 83.020.0412.1
- Device type Extension module
- Design type Device with screw clamp terminals for installation in a gesis RAN distribution box
- ETS2 application gesis RM2-BAS 1.0 program

NOTICE

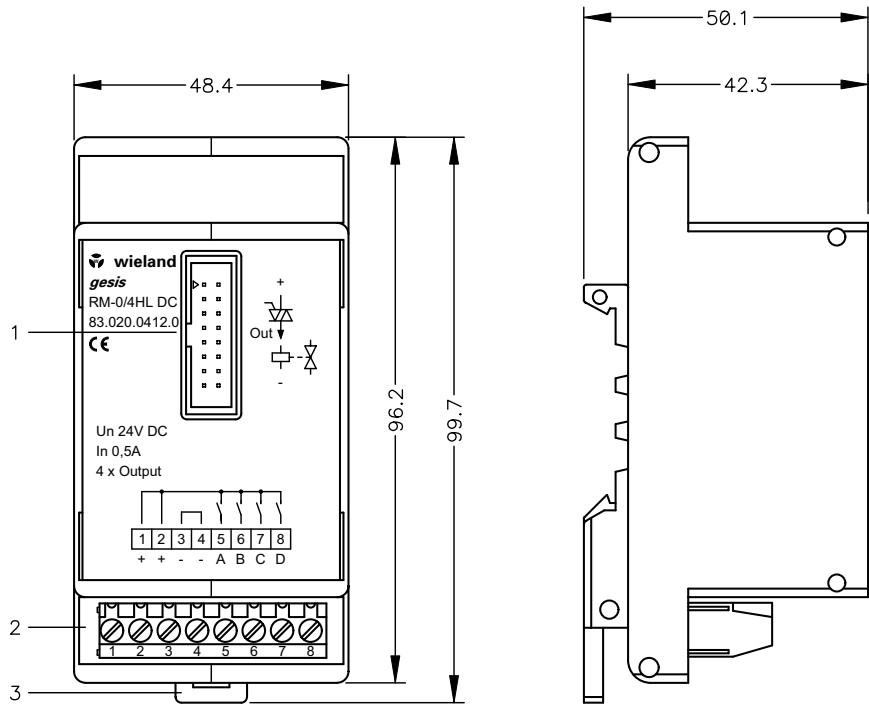
Please ensure that you pay attention to the warnings and notes in the sections entitled "Prescribed Application" and "Selecting Personnel and Personnel Qualifications" in Chapter 1.



Functional Description

This extension module features four separate, controllable semiconductor switching outputs for switching a 24V DC voltage. The outputs must receive the same switching voltage from an external supply. The outputs switch silently and are electronically protected against short circuits and overloading. Communication with the bus takes place via the basic module. For this, switching commands are accepted and status values provided. The connection to the basic module is established using a flat cable that is provided as part of the scope of supply.

Dimensions, Connections and Function Elements



- | | |
|-------------------|---|
| 1– X1 | For connection to the basic module (16-pin ribbon cable header) |
| 2– Terminal strip | 8-pin, for connection of switching voltage and outputs A to D (for details please refer to "Terminal Assignment") |
| 3– Locking slide | With 83.020.0412.1 only |

Terminal Assignment:

Terminals 1/2 and 3/4 are bridged internally.

- 1– Connection/routing of the switching voltage (+) for outputs A to D
- 2– Connection/routing of the switching voltage (+) for outputs A to D
- 3– Connection/routing of the switching voltage (–) for outputs A to D
- 4– Connection/routing of the switching voltage (–) for outputs A to D
- 5– Connection for output A
- 6– Connection for output B
- 7– Connection for output C
- 8– Connection for output D

Technical Data

Connection to basic module	Pluggable flat cable
Outputs	
Number	Four
Internal current consumption	Max. 1.6 mA per output (from switching voltage)
Rated voltage	24V DC (min. 12V, max. 45V)
Rated current	0.5A

Connection type	Screw clamp terminals 0.14 to 4 mm ² , solid 0.14 to 2.5 mm ² , stranded 6.5 mm stripped in each case
Short circuit withstand capability	Yes (not with reverse polarity)
Short circuit detection	0.7 to 2.5 A (typ. 1.4 A)
Leakage current	Max. 10 µA (typ. 3.5 µA)
Operating conditions	
Protection class	None
Degree of protection	IP00
Degree of soiling	2
Surge voltage category	III
Ambient temperature	–5°C to +45°C
Storage temperature	–25°C to +70°C
Relative humidity	5% to 93%
Moisture condensation	Not permitted
General data	
Housing material	Plastic, halogen-free
Housing colour	Black
Behaviour in fire	V2 acc. to UL (housing)
Weight	Approx. 90 g
Dimensions	Refer to "Dimensions, Connections and Function Elements"
Height inc. TH 35-7.5 mounting rail	52 mm
Approvals	EIB/KNX-certified
CE certification	In acc. with EMC Low Voltage Directive (residential and functional buildings)

Installation

CAUTION

- The flat cable may only be connected or disconnected when the power is off.
- When connecting and disconnecting the flat cable, you must ensure that no power is being supplied to the basic module.
- The maximum length of the flat cable (120 mm) must not be exceeded.



Assembly (83.020.0412.0)

1. Latch the module onto the DIN rail.
2. Connect the extension modules to the basic module using the flat cables supplied. Ensure that, for each pair of extension modules, there is one on the right-hand and one on the left-hand side of the basic module. Please make a note of which module addresses are assigned to which slots on the basic module (by providing a label with "Module no.:"; see diagram under C.). Place the voltage supply externally on the left-hand or right hand side, next to the extension modules.
3. Establish the connections to both the voltage supply and EIB using the appropriate terminal strips.

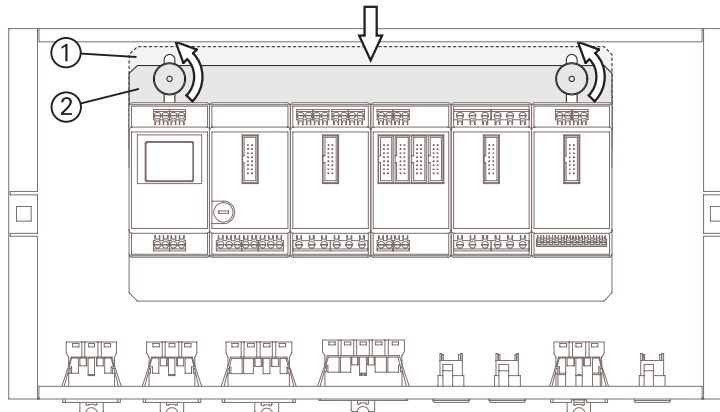
Disassembly (83.020.0412.0)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.

3. Release the connections on the terminal strips.
4. Insert a screwdriver into the locking slide and release the module from the rail.

Replacing modules (83.020.0412.1)

1. Disconnect the power supply from the module.
2. Remove the flat cable from the front of the device.
3. Release the connections on the terminal strips.
4. Slacken the knurled-head screws in the gesis RAN housing (see Fig.).



5. Push the slide towards the modules as shown ("1": slide closed; "2": slide open).
Note: This will release all the modules.
6. Replace the relevant module.
7. Reattach the modules by following steps 1 to 5 in reverse order.

Application Program

- Program name gesis RM 1
- Program version 1.0
- Product allocation gesis RM-0/4HL DC /...HL DC B 83.020.0412.0/1
- Manufacturer Wieland Electric GmbH

Communication Objects

The operating mode is set in the parameters.

Operating mode: All							
Obj. no. Module				Object name	Function	Type	Flags
1	2	3	4				
0	14	28	42	Output A	Switch	1 bit	C, W, T, U
1	15	29	43	Output A	Status	1 bit	C, R, T, U
2	16	30	44	Output B	Switch	1 bit	C, W, T, U
3	17	31	45	Output B	Status	1 bit	C, R, T, U
4	18	32	46	Output C	Switch	1 bit	C, W, T, U
5	19	33	47	Output C	Status	1 bit	C, R, T, U
6	20	34	48	Output D	Switch	1 bit	C, W, T, U
7	21	35	49	Output D	Status	1 bit	C, R, T, U
8	22	36	50	Output A to D	Lock	1 bit	C, W, T, U

Parameterisation

The following parameters are available separately for each output.
Outputs A, B, C and D are all the same.

► **Default settings appear in bold.**

Parameter	Setting options
Behaviour on bus voltage recovery	no action switch on switch off set old value (value before failure)

This parameter determines the behaviour of the output on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied). Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

set old value

The output is set to the value prior to the bus voltage failure, and not to the value that is set by the bus voltage failure parameter. When the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), both the status is set and the "old value" is switched to "Off" (value = 0).

Behaviour on bus voltage failure	no action switch on switch off
----------------------------------	---

The behaviour of the actuator upon failure of the bus voltage can be set here. Switching on and off takes place independently of any set delay times or lock; in other words, it happens immediately. Status objects are no longer sent to the bus.

no action

Relay is not switched.

switch on

Relay is switched on; it is switched off in inverted relay mode.

switch off

Relay is switched off; it is switched on in inverted relay mode.

Operating mode	Normal On/Off delay time switch
----------------	--

Normal

The switching object value is executed immediately.

On/Off delay

Switching on and switching off processes are carried out with a delay. The parameters required for this purpose (time base/factor) are displayed dynamically. Factor "0" causes switching to occur immediately. If a switching object is received during a delay, the active timer is restarted.

time switch (stairway light)

Switching on takes place immediately (switching object = 1) and, depending on how the operating time (which is displayed dynamically) has been parameterised, switching off takes place with a delay. If the object value = 0, switching off takes place immediately. If switching on occurs again (switching object = 1) while the operating time has not yet elapsed, the timer is restarted. This will extend the total operating time.

Parameters within the operating modes

Parameter	Setting options
Base for On delay Base for Off delay	10 ms ... 1 s ... 1 h
Factor (0..255)	10

On (Off) delay = base x factor

Available in On/Off delay operating mode.

Base for operating time	10 ms ... 1 s ... 1 h
Factor (0..255)	10

Operating (Off) time = base x factor

Available in time switch operating mode.

Relay mode	normal inverted
------------	--------------------------

normal Object value 0/1 = contact open/closed (normally open)
inverted Object value 0/1 = contact closed/open (normally closed)

Available in all operating modes.

Lock	no yes
------	-----------------

yes

The lock for this output is activated. If "1" is received at the lock, the output enters an inactive status. Switching object events are ignored (locked). Delay times that have already started will continue to be executed. If the lock receives "0", the lock will be cancelled.

Available in all operating modes.

Status object Bus voltage recovery/Operation	no action/read only send/read only no action/send on change send/send on change
---	---

The function of the status object on recovery of the bus voltage, or when the microcontroller is downloaded or reset (the voltage supply of the basic module is applied), can be set on a separate basis from normal mode.

no action

The object is not sent on recovery of the bus voltage.

send

The object is sent on recovery of the bus voltage.

read only

The object value can only be read during operation.

send on change

The object value is actively sent to the bus when a change occurs during operation.

Available in all operating modes.



wieland

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