

## gesis EIB V-56/4 (RC)

### Product

• Designation	Gateway EnOcean – KNX
• Type	gesis EIB V-56/4 (RC)
• Order number	83.020.0220.0
• Device type	Gateway
• Design	Device with plug-in connections for surface mounting in enclosed rooms
• ETS2 application program	gesis EIB V-56/4 (RC) 1.0

### Function

The gateway receives EnOcean telegrams and converts them into KNX telegrams. In addition to the gateway function, the device has four switch outputs which can be controlled independently. The switch outputs are addressed via the KNX and can also be linked with the radio inputs. After the parameterisation, the links between the radio inputs and switch outputs remain fully functional in the event of a bus voltage failure.

The configuration of the inputs and outputs is carried out exclusively by ETS as regards the parameter settings and links on the KNX side. The assignment of the radio-controlled sensors to the gateway is carried out using the learning/deletion mode without requiring further software. The corresponding operating and monitoring elements are located on the front of the gateway.

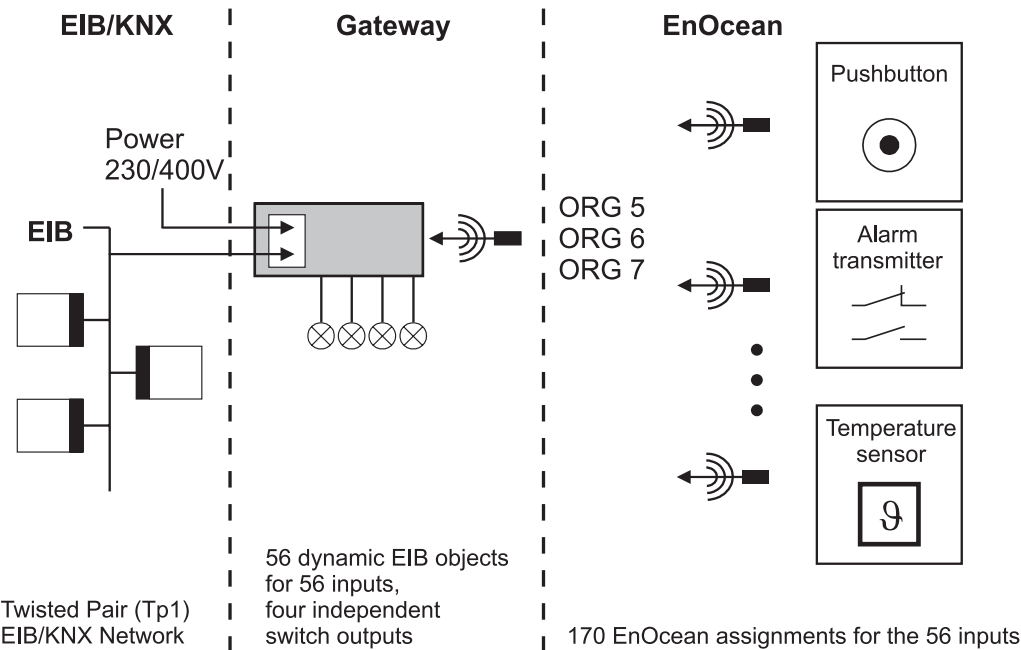
The EnOcean telegrams of types ORG5 (RPS type 1), ORG6 (1BS) and ORG7 (4BS) must be converted in the KNX. These can be EnOcean push buttons, sensors (e.g. the Wieland alarm transmitter), the EnOcean window contact and similar devices.

On the EnOcean side, up to 170 of these types of links can be stored and distributed among the 56 KNX objects. All the inputs are oriented in pairs i.e. rocker pairs of EnOcean push buttons are always taught in as the upper and lower contact. It is therefore possible to configure the push buttons in toggle mode for dimming applications, for shutter control or for sending values.

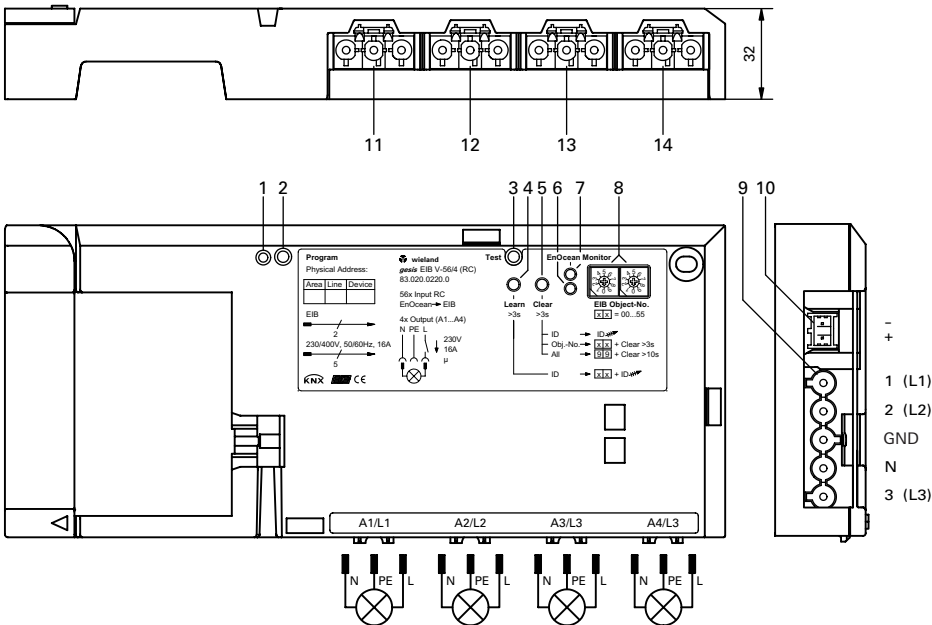
Using the high-performance software, the outputs can be controlled with all the usual functions such as time response, behaviour on bus voltage failure and recovery, inverted relay mode and disable function. The status of the relay outputs can be queried or sent automatically.

Application example

EnOcean radio-controlled sensors, integrated in the KNX/KNX using the gateway.



Operating and display elements



- 1 "Program" LED" (red)
- 2 "Program" button
- 3 "Test" button (learning aid)
- 4 "Learn" button
- 5 "Clear" button

See below for precise description  
See below for precise description  
See below for precise description  
See below for precise description  
See below for precise description

- 6 EnOcean Monitor, green "Learn" LED See below for precise description
- 7 EnOcean Monitor, red "Clear" LED See below for precise description
- 8 Channel selection switch "KNX Obj. No." for selecting KNX objects  
See below for precise description
- 9 Mains input 230/400VAC
- 10 KNX input
- 11 Switch output 1
- 12 Switch output 2
- 13 Switch output 3
- 14 Switch output 4

#### 1-"Program" LED (red)

Indication of the programming status for the physical address, the operational status as well as fault display.

OFF	The device is in the operating state when the bus and mains voltage is applied. If the LED remains switched off after pressing the programming button, the mains voltage is not present.
ON	If the LED is permanently lit, the device is in programming mode for the physical address.
Flashing	If the red LED flashes, either an incorrect or faulty application program may have been loaded or the flashing has been triggered by the ETS program in order to test the physical address.

#### Note

After pressing the programming button, the LED lights up when the mains voltage is applied, even if no bus voltage is present.

#### 2-"Program" button

KNX programming button

Pressing the programming button switches the mode for downloading the physical address on and off.

### 3-“Test” button

The learning aid enables the set object numbers (coding switch) to be checked and thus triggers the appropriate reaction in the KNX network by sending the linked KNX group addresses.

If the parameterisation and linking of the radio-controlled inputs with the KNX objects and switching objects has been concluded and the download of the application from the ETS program to the gateway has been carried out, the function can be tested with this button. The corresponding KNX object is selected with the channel selection switch and the parameterised KNX group address is sent with the “Test” button. It is therefore possible to check whether the correct output is being addressed before teaching in EnOcean sensors.

The “Test” button initiates the sending of telegrams or it switches the outputs.

#### **Test function of the inputs, objects 0 to 55:**

After each push button action and depending on the parameterisation of the channel or channel pair to be tested, the following telegrams are sent.

For switching objects: ON – OFF – ON -- ...

For dimming objects:

ON – dim darker – dim brighter – OFF – ON -- ...

For shutter objects: UP – stop – DOWN – stop -- UP -- ...

For value objects: 0 – 1 – 128 – 255 – 0 -- ..

The disable object 56 for KNX objects 0-55 has no test function.

#### **Test function of the switch outputs, KNX objects 57 to 65:**

The switch outputs can likewise be tested. The selected output is switched on and off in toggle mode.

If the channel selection switch is at

57, Output 1 can be tested

59, Output 2 can be tested

61, Output 3 can be tested

63, Output 4 can be tested.

If “Automatic sending” has been parameterised for the status, the modified status is sent.

The disable object 65 for outputs 1-4 has no test function.

This auxiliary function is always available if existing EnOcean sensors have already been taught into the channel.

### 4-“Learn” button

EnOcean telegrams can be assigned to the KNX objects in learning mode.

For a detailed description of the learning procedure, please refer to p. 4.8.8, „Brief instructions for commissioning the radio inputs“.

### 5-“Clear” button

EnOcean telegrams can be deleted from the gateway with the “Clear” button.

For a detailed description of the deleting procedure, please refer to p. 4.8.9, „Brief instructions for deleting radio inputs“.

### 6 and 7-EnOcean Monitor

This function, represented by a red and a green LED, is used as a commissioning aid. On receipt of an EnOcean telegram, one of the LEDs lights up briefly. It is therefore possible to test whether a transmitter still lies within the range of the gateway.

<b>6-LED (green)</b>	
Lights up	If the gateway is not in learning mode, this LED lights up to indicate the receipt of a taught-in EnOcean ID which has been taught into one or several channels. If e.g. only a pair of rockers has been taught into a 4-channel push button, the LED also lights up when the other rockers which have not been taught in are pressed.
Flashes	If the gateway has been set to the learning mode by pressing the "Learn" button, the green LED flashes.
Switches off	The LED is switched off by pressing the "Learn" button again, by carrying out a learning process or after 60 s without any further operations. The learning mode is then ended.
<b>7-LED (red)</b>	
Lights up	If the gateway is not in the delete mode, this LED lights up to indicate the receipt of an unknown EnOcean ID on the gateway.
Flashes	If the gateway is set to the delete mode by pressing the "Clear" button, the red LED flashes.
Flashes rapidly	If the gateway is already in the delete mode, the channel selection switches are set to 99 and the "Clear" button is pressed again continuously, the rapid flashing of the LED indicates a warning before all the associations are deleted.
Switches off	The LED is switched off by pressing the "Clear" button again, by carrying out a deletion process or after 60 s without any further operations. The delete mode is then ended.
<b>8-Channel selection switches</b>	

The channels for the EnOcean programming or a test function are set with these two rotary switches which can be set between 0 and 9. The left rotary switch indicates the decimal values and the right switch indicates the unit values.

Meaning of the setting:

00 – 55 Input channels, Channel 0 to Channel 55

Setting for commissioning (learning, deletion) and for test purposes. See also description of the "Test" button

57, 59, 61, 63 Outputs 1-4, for test purposes

See also description of the "Test" button

99 Setting for the function "Delete all assignments" Other

In the normal operating state, the channel selection switch can be set to any position.

## Technical data

<b>Radio technology</b>	
Technology	Use of the EnOcean protocol
Radio frequency	868.3 MHz
Band width	280 kHz

Output power	10mW maximum, only during the transmission period of telegrams
Telegram Compatibility	Patented transmission procedure Compatible with manufacturer products which use EnOcean technology and the ORG 5, ORG 6 and ORG 7 telegrams supported by the gateway
Range	300 m nominal range in free field Further information can be found under "Range planning"

#### Range planning

The EnOcean radio transmitters (e.g. the push buttons) send telegrams to the gateway dependent on events. The gateway checks the incoming telegrams and converts them into KNX telegrams. Misinterpretations as regards the radio technology are avoided due to the patented transmission procedure. Each EnOcean transmitter has a unique ID which enables the transmitted telegram to be clearly identified. For this reason, the EnOcean radio system is not restricted to a limited number of channels and no maloperations can arise due to the existence of identical channels.

The field strength of the radio signals decreases as the distance from the transmitter increases. If the transmitter is too far away from the gateway, it can no longer receive the telegrams. Material obstacles in the direction of the transmission, particularly those that conduct electricity, also reduce the range.

This means that the building materials used in the building have a considerable influence on the radio signal range.

Below are some guidelines for assessing the range.

<b>In buildings:</b>	
Visual connections	Typically 30 m range in corridors, 100 m in halls
Plaster walls/dry wood	Typically 30 m range, through max. 5 walls
Brick walls/porous concrete	Typically 20 m range, through max. 3 walls
Reinforced concrete walls/ ceilings	Typically 10 m range, through max. 1 ceiling

#### Generally:

Electrically conductive building materials such as aluminium, metal, metal foils, carbon fibres etc. considerably impair the ranges. Fire barriers, lift shafts, staircases and amenities should be viewed as impermeable for radio signals.

Further materials between the transmitter and receiver which reduce the range:

Wool insulation on metal foil; leaded glass or glass with metal coating; steel furniture; suspended metal ceilings (when inserting the receiver in suspended ceilings); antistatic floors or floor slabs with aluminium coating (when inserting the receiver in elevated floors)

<b>Bus connection</b>	
Type of connection	BST 14i2L male connector, 2 pole, green (KNX coding), (1+/2-)
Bus voltage	24V DC (-4V/+6V)
Medium	Twisted Pair TP1
Power input	approx. 5mA
Power consumption	typically 120mW
<b>Mains connection</b>	
Type of connection	GST 18i5 male connector, 5 pole, black, (1/2/PE/N/3)
Rated voltage	230/400V AC (-15% / +10%)
Rated frequency	50-60Hz
Rated current	16A
Power consumption	Dependent on the connected loads
Recommended protection	3-pole circuit-breaker B16A

**Note:**

The device can also be connected to an external conductor which is linked with pins 1, 2 and 3 of the incoming connector.

<b>Switch outputs</b>	
Number	4 switch outputs (A1-A4)
Type of connection	GST 18i3 female connector, 3 pole, black, (N/PE/L)
Rated voltage	230V AC
	Output 1 switches external conductor L1
	Output 2 switches external conductor L2
	Output 3 switches external conductor L3
	Output 4 switches external conductor L3
Rated current	16A (resistive load)
Short-circuit withstand capability	not short-circuit-proof
Minimum load	2.5VA
Maximum switching currents	for 20ms 165A (e.g. incandescent lamps) for 200µs 800A (e.g. fluorescent lamps with capacitive load)
Switching capacity	3000W incandescent lamps = 10000 switching operations
Capacitive load	max. 140µF at 230V AC = 20000 switching operations

**Note about the loads**

The contact of the used relay is specifically optimised for switching lamp loads with high inrush currents. The switching of purely resistive loads at a maximum current of 16A is not recommended as the service life of the contact is reduced to approx. 5000 switching operations. The service life is considerably increased with the reduction in the load.

<b>Electrical safety</b>	
Protection class	I
Protection type	IP20 (in accordance with EN 60529)
Degree of pollution	2
Overvoltage category	III
Rated insulation voltage	250V
KNX bus protection measure	SELV (24V DC)
Contact opening of relay	µ contact
<b>Operating conditions</b>	
Area of application	For permanent surface-mounted installations, in dry interior rooms
Ambient operating temp.	-5...+45°C
Storage temperature	-25...+70°C
Relative humidity	5% ... 93%
Moisture condensation	Not permitted
EMC requirements	EN 50090-2-2, EN 61000-6-2, EN 61000-6-3, ETS300682
Climatic withstand capability	EN 50090-2-2
Housing material	Plastic, halogen- and phosphorous-free, light grey RAL 7035
Fire behaviour (housing)	V-2 in accordance with UL 94
Fire load	approx. 3 kWh
Weight	approx. 480 g
Dimensions	see drawing on p. 4.8.11
Approval	EIB/KNX certified
CE mark	in accordance with EMC guideline (residential and functional buildings), low-voltage guideline

## Brief instructions for commissioning the radio inputs

- First create a function table in which you define which EnOcean sensors should be taught into which channels (KNX objects) and with which functions. You can find a suggestion for this table below.
- Start the ETS program, create the gateway in the KNX structure as with any other KNX device and assign the physical address. You should use the description field in the device view for clearer documentation purposes.
- Using the table you have created, set all the necessary parameters in ETS.
- Establish the necessary group address links to the inputs and outputs. When using the toggle function with push buttons, take into account any group or central commands.
- Establish the mains and KNX connection on the device.
- Start the download of the physical address and the application via the KNX network to the gateway.
- You should provide all the push buttons and sensors with a unique identifier which you take from the function table or enter in the table.
- Now start teaching the EnOcean sensors into the corresponding channels.
  - Set the required KNX object number with the channel selection switch
  - The assigned reaction on the KNX side can be tested with the “Test” button (see description above)
  - Press the “Learn” button for longer than three seconds and the green EnOcean Monitor LED flashes
  - The transmitter that is to be taught in should transmit three times in two seconds (e.g. press the push button three times in succession)
  - If the telegram corresponds to the parameterised type, it is taught into the set channel
  - After the teaching-in process is completed, the green LED is extinguished and the gateway automatically exits the programming mode
  - After teaching in sensors, the required function is checked to ensure it is correct.

### Important

Create a function table in which all the necessary settings are documented. It is particularly important to retain which EnOcean sensors are taught into which channels.

Suggestion for a function table for documenting the radio inputs:

KNX					Channel no.	Radio/EnOcean		
Transmit (t) Receive (r)	Group address			Identification		EIS	Transmitter type	Name/transmitter ID/ID
t	1	2	2	Element 1.24 Lighting window side 1/0	EIS 1 1 Bit (switch)	0	ORG 5/pushbutton	T1.24-1 / Room 1.24 door upper pushbutton / left rocker
r	1	1	1	Central Off Lighting building 1 hallway 1				T1.24-3 / room 1.24 left desk
								T1.20-29-Z / Central pushbutton hallway 1.2 room 1.20-1.29
t	1	2	2	Element 1.24 Lighting window side 1/0	EIS 1 1 Bit (switch)	1	ORG 5/pushbutton	T1.24-1 / Room 1.24 door upper pushbutton / left rocker
r	1	1	1	Central Off Lighting building 1 hallway 1				T1.24-3 / room 1.24 left desk
								T1.20-29-Z / Central pushbutton hallway 1.2 room 1.20-1.29



## Brief instructions for deleting radio inputs

There are three types of deletion:

1. Deletion of an individual ID from the gateway
2. Deletion of all IDs from a channel
3. Deletion of all IDs from all channels, establishing the supplied state

### Explanations about the individual variants:

#### 1. Delete IDs

- Ensure that the mains connection on the device has been established.
- Press the "Clear" button for longer than three seconds and the red EnOcean Monitor LED flashes.
- The ID is deleted from all channels by sending the ID three times.
- The red LED is extinguished and the gateway automatically exits the delete mode.
- Enter any changes in the function table.

#### 2. Delete all IDs from a channel

- Ensure that the mains connection is established on the device.
- Press the "Clear" button for longer than three seconds and the red EnOcean Monitor LED flashes.
- Set the channel that is to be deleted using the channel selection switch.
- Delete all the IDs from the channel by pressing the "Clear" button again for longer than three seconds.
- The red LED is extinguished and the gateway automatically exits the delete mode.
- Enter any changes in the function table.

#### 3. Delete all IDs from the gateway

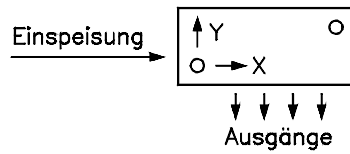
- Ensure that the mains connection is established on the device.
- Press the "Clear" button for longer than three seconds and the red EnOcean Monitor LED lights up.
- Set the channel selection switch to 99.
- Delete all the IDs from the channel by pressing the "Clear" button again for longer than ten seconds.  
Before the deletion process is carried out, the red LED starts to flash rapidly as a warning signal.
- The red LED is extinguished and the gateway automatically exits the delete mode.
- Enter any changes in the function table.

### Note:

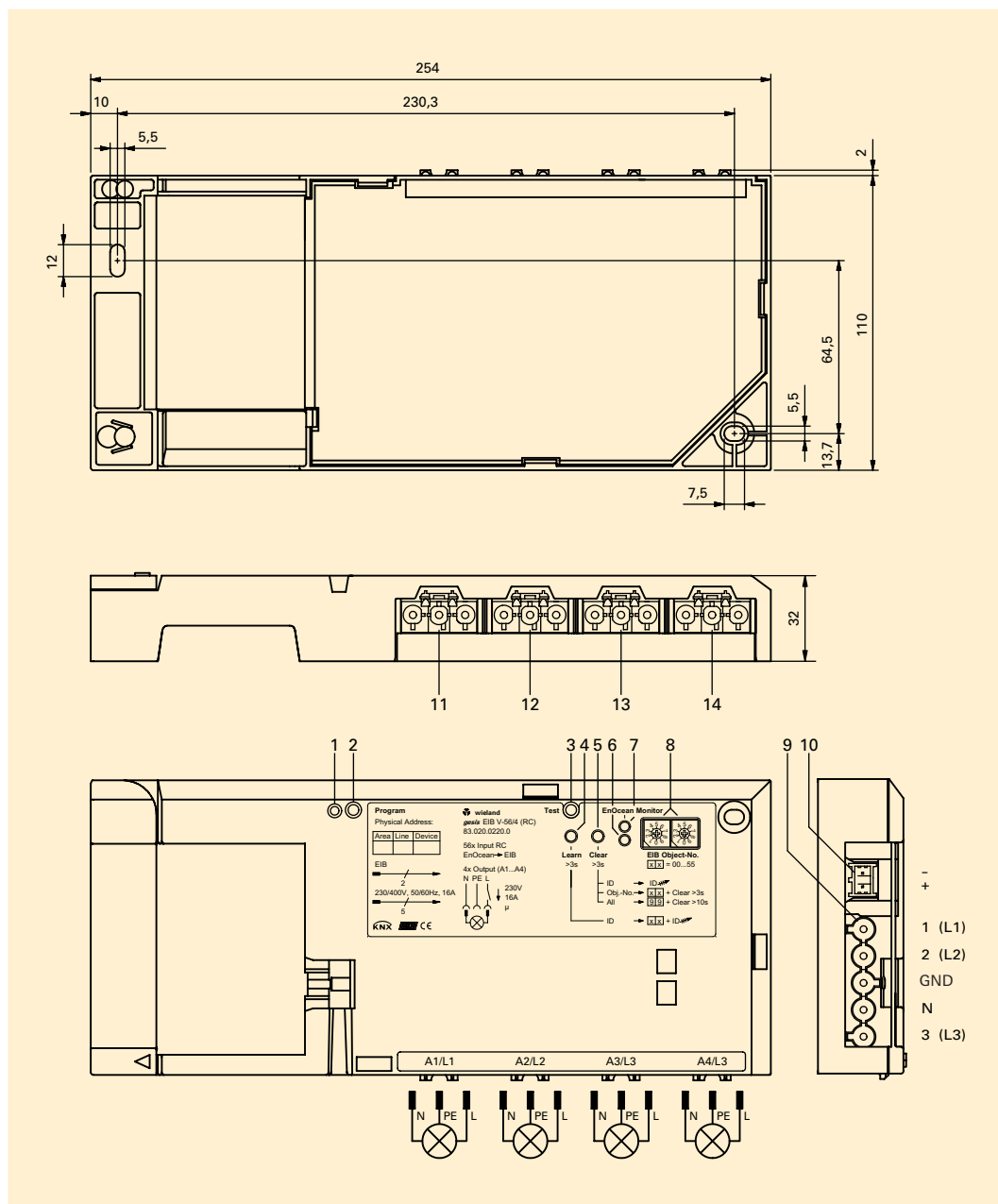
All deletion processes only affect the radio-related assignments. Any device parameterisation carried out by ETS remains unchanged.

## Installation

- Type of installation Fixing with two screws
- Recommended screws 4.5 mm x 40 mm when using 6 mm plugs
- Distance between bore holes X = 230 mm / Y = 64.5 mm



gesis EIB V-56/4 (RC)



## Accessories

### Transmitter

- Sensors which send ORG 5, ORG 6 or ORG 7 EnOcean telegrams.  
These include for example:
- Wieland alarm transmitter 83.020.0502.0
- Push buttons from the gesis RC range

### Incoming supply when using the 7-pole flat cable system

- Flat cable 7-pole 00.702.0323.9
- KNX adapter 93.421.0853.0
- Mains adapter 92.051.0353.1
- Interlocking device 05.587.3156.1

### Incoming supply via combi connector (EST 2i5)

- Combi distribution block 93.550.0053.1
- Combi connector, female 93.551.0553.1
- Combi connection cable, female – free end 94.553.x003.7 (x = Length in metres)
- Combi extension cable, female – male 94.553.x000.7 (x = Length in metres)
- Interlocking device 05.587.3156.1

### Separate incoming supply for mains (GST 18i5) and KNX (BST 14i2)

- Mains, female, screw connection 92.953.3053.1
- Mains, connection cable, female – free end 92.258.x003.1 (x = Length in metres)
- Mains, extension cable, female – male 92.258.x000.1 (x = Length in metres)
- Interlocking device 05.587.3156.1
- KNX, female, spring-loaded connection 93.421.0553.1
- KNX, connection cable, female – free end 94.425.x003.7 (x = Length in metres)
- KNX, extension cable, female – male 94.425.x000.7 (x = Length in metres)

### KNX branch (BST 14i2) when using the combi distribution block

- KNX, male, spring-loaded connection 93.422.0553.1
- KNX, connection cable, male – free end 94.425.x004.7 (x = Length in metres)
- KNX, extension cable, female – male 94.425.x000.7 (x = Length in metres)

### Switch outputs (GST 18i3)

- Male, spring-loaded connection 93.934.0053.1
- Connection cable, male - free end 92.232.x004.1 (x = Length in metres)
- Extension cable, female – male 92.232.x000.1 (x = Length in metres)

### Product database for import into ETS2 from version 1.2 as well as into ETS3 V1.0 Professional

- gesis homepage [www.gesis.com](http://www.gesis.com)
- Data carrier 00.000.0066.1

### Application program

• Program name	gesis EIB V-56/4 (RC) 1.0
• Program version	1.0
• Product assignment	gesis EIB V-56/4 (RC)
• Product description	Gateway for integrating EnOcean sensors into the KNX
• ETS search path	
• Manufacturer	Wieland Electric
• Product family	gesis EIB V
• Product type	Gateway

The application program manages the 56 EnOcean inputs as well as the four switch outputs.

The inputs are created in pairs. Depending on the selection of the sensor type and the functionality, the inputs are evaluated separately (e.g. for push buttons in toggle mode) or used in pairs (e.g. push buttons as shutter push buttons). The received telegrams are transferred to the KNX objects and sent according to the set parameters.

A common disable object is available for all the inputs and can be activated via a parameter for the respective pair of push buttons.

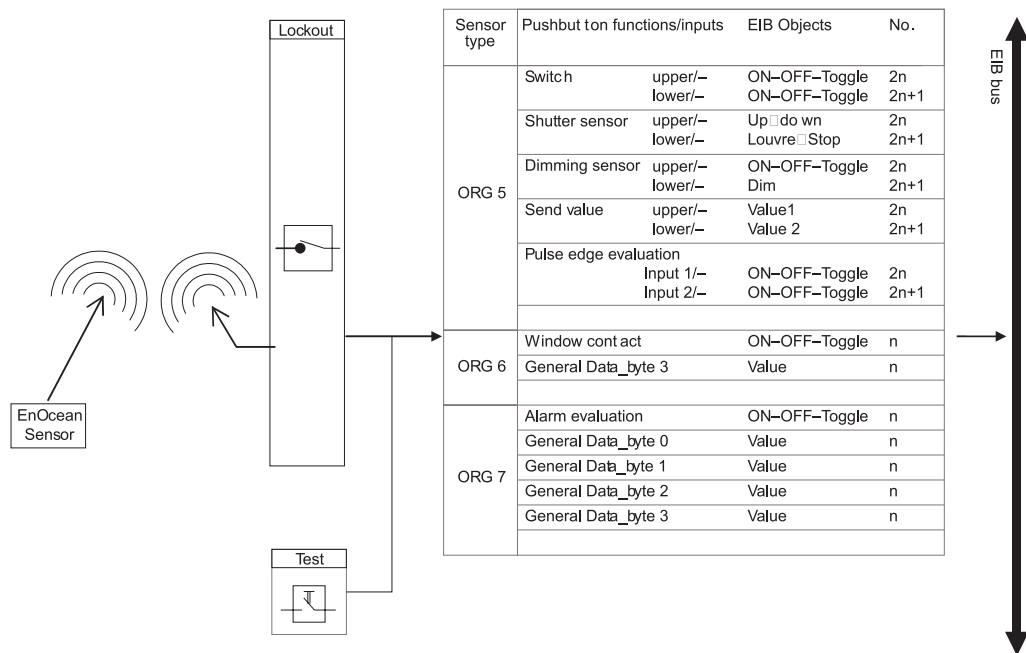
Using the powerful software, the outputs can be controlled with all the usual parameters such as time response, behaviour on bus voltage failure and recovery, inverted relay mode and a disable function. The disable object is the same for all the outputs but can be evaluated separately for each individual output. The status of the relay outputs can be queried or sent automatically.

When uploading the application in the gateway, the application is checked that it is correct. If an incorrect or faulty application is loaded, the red programming LED flashes.

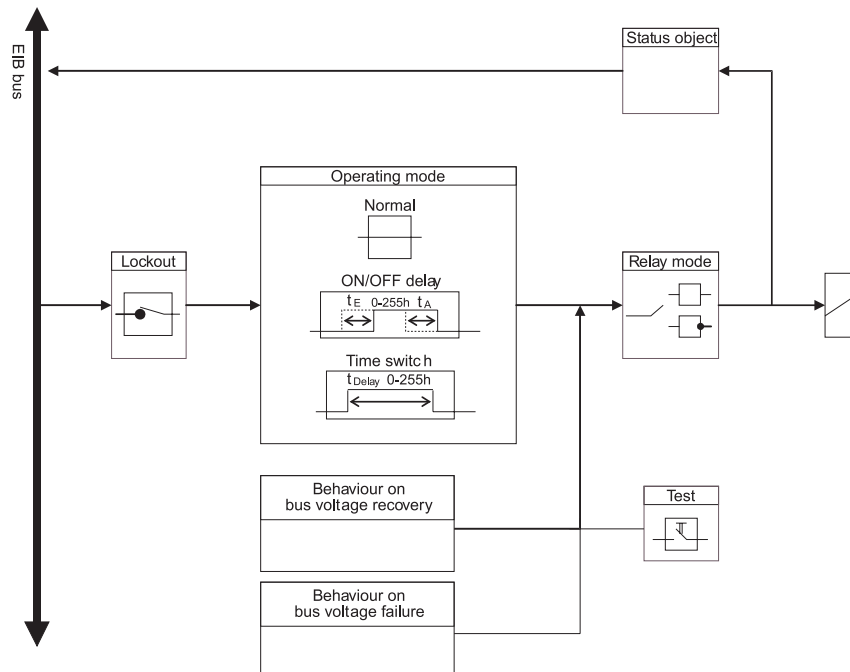
If the bus voltage falls below the permitted voltage value, the parameterised behaviour of the outputs is triggered. If the bus voltage rises again to its specified value, the parameterised initialisation of the outputs is carried out. This initialisation is also executed by the ETS program on mains voltage recovery and after an upload.

## Radio inputs

## Flow diagram



## Switch outputs



## Objects description

### Description of the objects

The objects of the inputs are managed dynamically. For this reason, they appear in the supplied state as "Name – Channel x, not used" or "Function – not used".

After defining the sensor type and the function of the inputs, the object name, the object function, the length of the useful information and the necessary flags are shown.

The objects of the switch outputs are static and are already created in the supplied state. The maximum number of group addresses and associations is 234.

The maximum number of EnOcean assignments is 170. They can be distributed as required among the inputs.

As regards the inputs, the objects are described in the following section for one pair only. As all 28 pairs can be parameterised separately, all the combinations of the described objects are possible.

Two objects are assigned to each channel pair. The object numbers are

0/1 for the first pair,  
2/3 for the second pair,  
...  
54/55 for the 28th pair

### 56 EnOcean inputs

Obj no.	Parameterised function	Object name	Object function	Type	EIS	Flags	Sensor type
0	Push button ORG 5 Switch	Ch. 0, Push button pair 1	Upper contact, ON/OFF/Toggle	1 bit	EIS 1	C, W, T, U	ORG 5 (push button)
1	Push button ORG 5 Switch	Ch. 1, Push button pair 1	Lower contact, ON/OFF/Toggle	1 bit	EIS 1	C, W, T, U	ORG 5 (push button)

On receipt of a valid and taught-in EnOcean ORG 5 telegram, the parameterised switching command, ON or OFF, is sent via the linked sending group address. Further group addresses that are linked with this object are used for synchronisation if the channel is operating in toggle mode.

0	Push button ORG 5 Shutter sensor	Ch. 0, Push button pair 1	UP/DOWN	1 bit	EIS 7	C, T, U	ORG 5 (push button)
1	Push button ORG 5 Shutter sensor	Ch. 1, Push button pair 1	Louvres/Stop	1 bit	EIS 7	C, T, U	ORG 5 (push button)

On receipt of a valid and taught-in EnOcean ORG 5 telegram, the parameterised shutter command is sent to the linked sending group address.

0	Push button ORG 5 Dimming sensor	Ch. 0, Push button pair 1	ON/OFF/Toggle	1 bit	EIS 2	C, W, T, U	ORG 5 (push button)
1	Push button ORG 5 Dimming sensor	Ch. 1, Push button pair 1	Dim	4 bit	EIS 2	C, T, U	ORG 5 (push button)

On receipt of a valid and taught-in EnOcean ORG 5 telegram, the parameterised switching or dimming command is sent to the linked sending group address.

0	Push button ORG 5 Send value	Ch. 0, Push button pair 1	Upper contact, 8-bit value	1 byte	EIS 6	C, T, U	ORG 5 (push button)
1	Push button ORG 5 Send value	Ch. 1, Push button pair 1	Lower contact, 8-bit value	1 byte	EIS 6	C, T, U	ORG 5 (push button)

On receipt of a valid and taught-in EnOcean ORG 5 telegram, the parameterised value between 0 and 255 is sent to the linked sending group address.

0	Push button ORG 5 Pulse edge evaluation	Ch. 0, Push button pair 1	Input 1, ON/OFF/ Toggle	1 bit	EIS 1	C, W, T, U	ORG 5 (push button)
1	Push button ORG 5 Pulse edge evaluation	Ch. 1, Push button pair 1	Input 2, ON/OFF/ Toggle	1 bit	EIS 1	C, W, T, U	ORG 5 (push button)

On receipt of a valid and taught-in EnOcean ORG 5 telegram, the parameterised switching command, ON or OFF, is sent to the linked sending group address. Further group addresses that are linked with this object are used for synchronisation if the channel is operating in toggle mode.

#### Caution

This function is only unambiguous when using the binary inputs of the Wieland alarm transmitter. With other transmitters, the falling pulse edge cannot be clearly assigned within a transmitter ID in most cases.

0/1	ORG 6 1 byte Window contact	Ch. 0/1, 1-byte sensor	Window contact, ON/OFF	1 bit	EIS 1	C, T, U	ORG 6 (1 byte)
0/1	ORG 6 1 byte General Data_ byte 3.	Ch. 0/1, 1-byte sensor	General, Data_ byte 3	1 byte	EIS 6	C, T, U	ORG 6 (1 byte)

#### Window contact:

On receipt of an EnOcean ORG 6 telegram, the DATA-BYTE3 BIT0 is evaluated. In this case, a "0" means that the reed contact is open while a "1" indicates that it is closed. The object is set and sent according to the parameterisation.

#### General data byte 3:

On receipt of an EnOcean ORG 6 telegram, the DATA-BYTE3 (8-bit) is taken as the object value. A further interpretation of the value is not carried out.

0/1	ORG 7 4 byte Alarm evalua- tion	Ch. 0/1, 4-byte sensor	Alarm, ON/OFF	1 bit	EIS 1	C, T, U	ORG 6 (1 byte)
0/1	ORG 7 4 byte General Data_ byte 0	Ch. 0/1, 4-byte sensor	General, Data_byte 0	1 byte	EIS 6	C, T, U	ORG 6 (1 byte)
0/1	ORG 7 4 byte General Data_ byte 1	Ch. 0/1, 4-byte sensor	General, Data_ byte 1	1 byte	EIS 6	C, T, U	ORG 6 (1 byte)

0/1	ORG 7 4 byte General Data_ byte 2	Ch. 0/1, 4-byte sensor	General, Data_ byte 2	1 byte	EIS 6	C, T, U	ORG 6 (1 byte)
0/1	ORG 7 4 byte General Data_ byte 3	Ch. 0/1, 4-byte sensor	General, Data_ byte 3	1 byte	EIS 6	C, T, U	ORG 6 (1 byte)

#### Alarm evaluation:

On receipt of an EnOcean ORG 7 telegram, the DATA-BYTE1 is evaluated.

DATA-BYTE1: <128 = no alarm; >=128 = alarm.

#### Caution

This function is only unambiguous when using the alarm inputs of the Wieland alarm transmitter.

#### General data byte 0 to 3:

On receipt of an EnOcean ORG 7 telegram, the DATA-BYTE 0 or 1; 2; 3 (8-bit) is taken as the object value. A further interpretation of the value is not carried out.

56		Ch. 0-55	Disable	1 bit	EIS 1	C, W, T, U	
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The disable object refers to all input pairs. If a "1" is received here, all the input pairs are disabled when the evaluation of the lockout is enabled. The input objects are no longer sent. A "0" cancels the lockout. The test button is not influenced by the lockout.

#### Four switch outputs

Obj.	Function	Object name	Type	Flags
57	Switch	Output 1	1 bit	C, W, T, U

On receipt of an KNX telegram, the output is set according to the parameterisation (operating mode, relay mode, lockout, ...). If the default setting is retained, a "1" telegram switches the output 1 while a "0" telegram switches the output off.

58	Status	Output 1	1 bit	C, R, T, U
----	--------	----------	-------	------------

The status of the output can be retrieved via this object ("read only"). If "send on change" is parameterised, the new value is actively sent via the status object after a change in the output. On bus voltage recovery, the current value is issued once. Object value "0"/"1" = contact opened/closed. The status value is a purely a software indicator and can be incorrect e.g. if the relay is stuck together due to a short circuit.

59	Switch	Output 2	1 bit	C, W, T, U
----	--------	----------	-------	------------

This object behaves in the same way as object 57 and controls output 2.

60	Status	Output 2	1 bit	C, R, T, U
----	--------	----------	-------	------------

This object behaves in the same way as object 58 and issues the status of output 2.

61	Switch	Output 3	1 bit	C, W, T, U
----	--------	----------	-------	------------

This object behaves in the same way as object 57 and controls output 3.

62	Status	Output 3	1 bit	C, R, T, U
----	--------	----------	-------	------------

This object behaves in the same way as object 58 and issues the status of output 3.

63	Switch	Output 4	1 bit	C, W, T, U
----	--------	----------	-------	------------

This object behaves in the same way as object 57 and controls output 4.

64	Status	Output 4	1 bit	C, R, T, U
----	--------	----------	-------	------------



▼ This object behaves in the same way as object 58 and issues the status of output 4.

65	Lockout	Output 1...4	1 bit	C, W, T, U
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▼ The disable object applies to all four outputs. The disable function can be parameterised separately for each output. If the lockout is activated in an output, the receipt of a "1" at this object prevents the output from carrying out further operations while a "0" cancels the lockout. The test button is not influenced by the lockout.

In the supplied state, a parameter page has been created for each input pair. Further parameters are displayed after selecting the sensor type. The parameters of a pair of inputs are described in the following section. The parameter sets are identical for all 28 input pairs.

#### Description of the parameters

Parameter	Settings
Sensor type	Not used Push button (ORG 5) 1-byte sensor (ORG 6) 4-byte sensor (ORG 7)

#### Channel 0/1 (supplied state)

▼ This parameter defines which EnOcean sensor type is used.

**"Not used"** = The input pair is not used. It cannot be taught in.

**Push button (ORG 5)** = A sensor (PTMxxx) with ORG 5 protocol can be taught into the input pair.

**1-byte sensor (ORG 6)** = Two sensors with ORG 6 protocol can be taught into the input pair.

**4-byte sensor (ORG 7)** = Two bytes with ORG 7 protocol can be taught into the input pair.

Further parameters are shown depending on the selection of the sensor type.

Evaluate disable object	no yes
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#### Sensor type "Push button (ORG 5)"

▼ The evaluation of the disable object (object no. 56) is defined for the push button pair.

**"no"** = Value of the disable object is not considered

**"yes"** = Activates the evaluation of the disable object.

If a "1" is received at the disable object, no telegrams are sent to the objects assigned to this push button pair. The objects are updated both by EnOcean telegrams and by any possible KNX telegrams.

After cancelling the lockout with a ,0' telegram at the disable object, the object value will be sent only after another update by an EnOcean telegram.

Long push button action from	0.4 sec <b>0.5 sec</b> 0.6 sec 0.7 sec 0.8 sec 1.0 sec 1.5 sec 2.5 sec
------------------------------	---

▼ The dividing line between a short and long push button action is defined in this parameter. This distinction is necessary if a blind should be moved e.g. with a long push button action and the blind should be stopped or the louvres adjusted with a short push button action.

Function of the push buttons/ inputs	<b>Switch</b> Shutter sensor Dimming sensor Send value Pulse edge evaluation (only Wieland transmitters)
--------------------------------------	---

When selecting the required function, further function-specific parameters and the necessary objects are shown. Together with the following parameters, it is finally defined which KNX telegrams are generated after teaching in an EnOcean sensor.

Upper contact (only visible if "Switch" has been selected for "Function of the push buttons/inputs")	<b>ON</b> <b>OFF</b> <b>TOGGLE</b> short = ON, long = OFF short = OFF, long = ON no function
Lower contact (only visible if "Switch" has been selected for "Function of the push buttons/inputs")	<b>ON</b> <b>OFF</b> <b>TOGGLE</b> short = ON, long = OFF short = OFF, long = ON no function

- "ON"** A push button action sets the input object to "1"
- "OFF"** A push button action sets the input object to "0"
- "TOGGLE"** The current input object is inverted with each push button action.
- "short = ON, long = OFF"**  
A short push button action sets the input object to "1" while a long pushbutton action sets the input to "0"
- "short = OFF, long = ON"**  
A long push button action sets the input object to "1" while a short pushbutton action sets the input object to "0"
- "no function"** A push button action has no effect

Upper/lower contact (only visible if "Shutter sensor" has been selected for "Function of the push buttons/inputs")	<b>UP/DOWN</b> <b>DOWN/UP</b>
---	----------------------------------

This parameter defines which of the rocker contacts triggers the UP or DOWN telegram. This applies both to the assigned object "UP/DOWN" and the object "Louvres/Stop".

Upper/lower contact (only visible if "Dimming sensor" has been selected for "Function of the push buttons/inputs")	<b>ON, brighter / OFF, darker</b> OFF, darker / ON, brighter <b>TOGGLE, brighter / TOGGLE, darker</b> TOGGLE, darker / TOGGLE, brighter
---	--

- "ON, brighter / OFF, darker"**  
An ON/OFF telegram is sent to the assigned object "ON/OFF/Toggle" after a short push button action. After a long push button action, the dimming command "Dim brighter/darker by 100%" is issued while a stop telegram is generated when the push button is released.
- "TOGGLE, brighter / TOGGLE, darker"**  
After a short push button action, the device toggles ON/OFF. After a long push button action, the dimming command "Dim brighter/darker by 100%" is issued while a stop telegram is generated when the push button is released. The parameter can also interchange the push button functions.

Value of upper contact (0 - 255) (only visible if "Send value" has been selected for "Function of the push buttons/ inputs")	<b>0</b>
Value of lower contact (0 - 255) (only visible if "Send value" has been selected for "Function of the push buttons/ inputs")	<b>0</b>

Each input can send a fixed value (0 – 255) on the KNX.

Input 1 (only visible if "Pulse edge evaluation (only Wieland transmitters)" has been selected for "Function of the push buttons/inputs")	<b>rising = ON, falling = OFF</b> rising = OFF, falling = ON rising = ON falling = ON rising = OFF falling = ON 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
Input 2 (only visible if "Pulse edge evaluation (only Wieland transmitters)" has been selected for "Function of the push buttons/inputs")	(see Input 1)

This function is only unambiguous on receipt of telegrams from the Wieland alarm transmitter. Other transmitters generate telegrams which cannot always be used for the clear evaluation of the falling pulse edge.

**"rising = ON"**                      A rising pulse edge at the input sets the input object to "1" (ON).  
**"falling = OFF"**                    A falling pulse edge sets the input object to "0" (OFF).  
**"rising = TOGGLE"**                A rising pulse edge inverts the current input object.

All the combinations of falling and rising pulse edge with the reactions ON, OFF or TOGGLE are possible.

Evaluate disable object	no yes
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**Sensor type**  
**"1-byte sensor**  
**(ORG 6)"**

The evaluation of the disable object (object no. 56) is defined for the input pair.

**"no"** = Value of the disable object is not taken into account  
**"yes"** = Activates the evaluation of the disable object

If a "1" is received at the disable object, no telegrams are sent to the object that has been assigned to this input pair. The objects are updated both by EnOcean telegrams and by any possible KNX telegrams. The value is however only sent once the lockout has been cancelled with a "0" telegram at the disable object as well as after another update by an EnOcean telegram.

Device type of Channel 0 (only visible if "1-byte sensor (ORG 6) has been selected as "Sensor type")	Window contact General (Data_byte 3) <b>Not used</b>
--	--

▼  
This parameter defines which device type should be used to send the ORG 6 telegram. When the required device type has been selected, further function-specific parameters are shown as well as the required objects. Together with the following parameters, it is finally defined which KNX telegrams are generated after teaching in an EnOcean sensor.

**"Window contact"**

This setting enables the connection of an EnOcean module STM250 (window contact) to the KNX. Only the information "contact open" or "contact closed" is evaluated.

**"General (Data\_byte 3)"**

Data-byte 3 of the ORG 6 EnOcean telegram is routed unchanged via the gateway and without being evaluated.

**"Not used"**      This input is not used.

Contact open/closed (only visible if "Window contact" has been selected for "Device type of Channel 0")	<b>0/1</b> 1/0
---	-------------------

▼  
The state of the window contact – "open" or "closed" – can be sent on the KNX if required as a "1" or "0" telegram.

Device type of Channel 1	See "Device type of Channel 0"
Contact open/closed	See "Contact open/closed" for Channel 0

**Sensor type  
"4-byte sensor  
(ORG 7)"**

Evaluate disable object	no yes
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▼  
The evaluation of the disable object (object no. 56) is defined for the input pair.

**"no"** = Value of the disable object is not taken into account

**"yes"** = Activates the evaluation of the disable object

If a "1" is received at the disable object, no telegrams are sent to the object that has been assigned to this input pair. The objects are updated both by EnOcean telegrams and by any possible KNX telegrams. The value is however only sent once the lockout has been cancelled with a "0" telegram at the disable object as well as after another update by an EnOcean telegram.

Device type of Channel 0 (only visible if "4-byte sensor (ORG 7)" has been selected for "Sensor type")	Alarm evaluation (only Wieland transmitters) General (Data_byte 0) General (Data_byte 1) General (Data_byte 2) General (Data_byte 3) <b>Not used</b>
--	---

This parameter defines which device type should be used to send the ORG 6 telegram. When the required device type has been selected, further function-specific parameters are shown as well as the required objects. Together with the following parameters, it is finally defined which KNX telegrams are generated after teaching in an EnOcean sensor.

**"Alarm evaluation (only Wieland transmitters)"**

The parameter enables the connection of the Wieland gesis RC alarm transmitter to the KNX.

**"General (Data\_byte 0)"**

Data-byte 0 of the four data bytes of the ORG 7 EnOcean telegram is sent to the KNX. An interpretation of the data byte by the gateway is not carried out!

**"General (Data\_byte 1)":** As for data byte 0 only for data byte 1

**"General (Data\_byte 2)":** As for data byte 0 only for data byte 2

**"General (Data\_byte 3)":** As for data byte 0 only for data byte 3

**"Not used"** This input is not used.

Alarm on/off (only visible if "Alarm evaluation (only Wieland transmitters)" has been selected for "Device type of Channel 0")	<b>0/1</b> 1/0
---	-------------------

The information about the whether the alarm is off or on can be sent as a "0" or "1" on the KNX.

Device type of Channel 1	See "Device type of Channel 0"
Alarm on/off	See "Alarm on/off" for Channel 0

**Switch outputs** Each of the four outputs has a separate parameter page. As all the four outputs have exactly the same parameters, only those of Output 1 are explained in the following section.

Parameter page: Output 1	
Behaviour on bus voltage recovery	<b>no action</b> switch on switch off set old value (value prior to failure)

This parameter determines the behaviour of the output on bus voltage recovery, after an application download or a reset of the microcontroller (the power supply is applied). The switching on and off of the output is not dependent on any delay periods which may have been set or influenced by the lockout. The output is switched immediately.

- "no action"**

The relay is not switched, the contact remains in position.
- "switch on"**

If the relay mode is not inverted, the relay is switched on and the output contact is closed.  
If the relay mode is inverted, the relay is switched off and the output contact is opened.
- "switch off"**

If the relay mode is not inverted, the relay is switched off and the output contact is opened.  
If the relay mode is inverted, the relay is switched on and the output contact is closed.
- "set old value"**

The output is set to the value prior to bus voltage failure.

After a download or reset of the microcontroller (the power supply is applied), both the status and the "old" value are set by default to "OFF" (value = 0).

Behaviour on bus voltage failure	<b>no action</b> switch on switch off
----------------------------------	---

This parameter determines the behaviour of the output on bus voltage failure. The switching on and off of the output is not dependent on any delay periods which may have been set or influenced by the lockout. The output is switched immediately.

- "no action"**

The relay is not switched, the contact remains in position.
- "switch on"**

If the relay mode is not inverted, the relay is switched on and the output contact is closed.  
If the relay mode is not inverted, the relay is switched off and the output contact is opened.
- "switch off"**

If the relay mode is not inverted, the relay is switched off and the output contact is opened.  
If the relay mode is inverted, the relay is switched on and the output contact is closed.

Status objects are no longer sent on the bus.

Operating mode	<b>Normal</b> ON/OFF delay Time switch
----------------	--

▼  
The time response of the output on receipt of a telegram is determined with this parameter.

**"Normal"** The output is switched without a time delay, taking the other parameters into account.

**"ON/OFF delay"** The output is switched on and off with a delay. The parameters required for setting the times (Time base/Factor) are displayed dynamically. The factor "0" causes the output to be switched immediately. If a switching object is received during an active delay, the period is restarted.

**Time switch** (Staircase lighting) The output is switched on immediately (switching object = 1) taking further parameters into account and then switched off with a delay depending on the parameterisation of the operating time (displayed dynamically). If the object value = 0, the output is switched off immediately. If the output is switched on again (switching object = 1) during the operating time, the period is restarted. The total operating time is extended as a result.

Base for ON delay (only visible if "ON/OFF delay" has been selected as the operating mode)	50ms, 100ms, 200ms, 500ms, <b>1sec</b> , 2sec, 5sec, 10sec, 1min, 2min, 5min, 10min, 1h
Factor for ON delay (0 .. 255) (only visible if "ON/OFF delay" has been selected as the operating mode)	10

▼  
ON delay = Base x Factor

See "Operating mode" parameter for explanation

Base for OFF delay (only visible if "ON/OFF delay" has been selected as the operating mode)	50ms, 100ms, 200ms, 500ms, <b>1sec</b> , 2sec, 5sec, 10sec, 1min, 2min, 5min, 10min, 1h
Factor for OFF delay (0 .. 255) (only visible if "ON/OFF delay" has been selected as the operating mode)	10

▼  
OFF delay = Base x Factor

See "Operating mode" parameter for explanation

Base for operating time (only visible if "Time switch" has been selected as the operating mode)	50ms, 100ms, 200ms, 500ms, <b>1sec</b> , 2sec, 5sec, 10sec, 1min, 2min, 5min, 10min, 1h
Factor for operating time (0 .. 255) (only visible if "Time switch" has been selected as the operating mode)	10

▼  
Operating time = Base x Factor

See "Operating mode" parameter for explanation

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

▼  
The parameter defines whether the relay operates as a normally open or normally closed relay. This function intervenes directly in front of the relay. All the time settings are executed beforehand.

Disable object influences output	<b>no</b> yes
----------------------------------	------------------

▼  
This parameter defines whether the disable object (object 65) which is valid for all four outputs should be evaluated for this output or not.  
  
If "yes" is selected, the evaluation of the disable object is activated for this output. On receipt of a "1" at the disable object, the output is set to an inactive state. Events of the switching object are ignored (blocked). Any time sequences that have already started are executed. If the disable object receives a "0", the lockout is cancelled.

Status object on bus voltage recovery / during operation	<b>no action / read only</b> send / read only no action / send on change send / send on change
---	---

▼  
The behaviour of the status object on bus voltage recovery or after a download or rest of the microcontroller (the power supply is applied) can be set separately to normal operation.  
  
**"no action"**                      The status is not sent on bus voltage recovery.  
**"send"**                              The status is sent on bus voltage recovery.  
**"read only"**                      The status can only be read during operation.  
**"send on change"**              The status is actively sent on the bus during operation after a change.

Parameter page: Output 2 This is identical to that of Output 1.
Parameter page: Output 3 This is identical to that of Output 1.
Parameter page: Output 4 This is identical to that of Output 1.