legrand®

KNX 8 contacts input interface   **Cat. No(s): 0 026 55**

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1. USE

KNX input module Cat. No. 0 026 55 is a modular rail-mounting device with eight inputs (volt-free contact), which can be used to perform the following functions:
- Recording the switching status (open/closed) and changes of status (opening/closing) of the various contacts
- Monitoring the switching status and the contact operating status (connected status of devices, alarms, etc)
- Recording contacts and counting switching occurences (with a minimum interval between contact activation of 70 ms and up to 5 pulses per second) and comparison with reference thresholds
LED on the front indicates the status of each of the inputs.
This product is 230V a.c. powered.

2. TECHNICAL CHARACTERISTICS

2.1 Climatic characteristics
• Resistance to climate change: EN 50090-2-2
• Ambient operating temperature: -5 to +45°C
• Storage temperature: -25 to +70°C
• Relative humidity (non-condensing): 5 to 93%

2.2 Electrical characteristics
• BUS voltage: 29 V⎓
• Current consumption on the KNX/BUS: 5 mA
• Built-in 230 V∿ power supply, + 10%/- 15%, 50/60 Hz
• Mains connection: 2 poles (N, L)
• Maximum power consumption: 1.6 W

2.3 Mechanical characteristics
• Protection class (in accordance with standard EN 60529): IP 20
• Weight 280g

3. DIMENSIONS

4. CONNECTION

− +	4 x (Ø 0.6 < ⊏══ 8 mm ══⊐ < Ø 0.8)
	1 x 2.5 mm²

• **Mains and input connections:**
- Removable terminals, insulating tape between 9 and 10 mm long.
Note: Twisted pair cables should be used to connect volt-free contacts to the actuator inputs.
The following conductor cross-sections are permitted:
- 0.5 to 2.5 mm², single-core
- 0.5 to 2.5 mm², finely braided with plug-in connector, connection via sealed crimp
- 0.5 to 1.5 mm², finely braided, with connector sheath
- 1.0 and 1.5 mm², finely braided, without treatment

5. OPERATION

Prog: used to switch between normal mode/addressing mode

Green LED: used to display the 230 V operating voltage

Prog. LED (red) is used to monitor the BUS voltage and indicate whether the active mode is the normal/addressing mode

Input status LED (red): indicator on = contact closed

5. OPERATION (CONTINUED)

• Inputs
• 8 volt-free inputs (with basic 250 V isolation in relation to one another, and in relation to the KNX bus)
• Detection of the switching status of a floating contact connected to an input via voltage pulses generated by the module:
  - impulse voltage when the contact is open: typ. 15 V
  - impulse current when the contact is closed: typ. 0.45 A
• Input signal delayed until transmission of the first bus telegram:
  - after contact closing: 100 ms
  - after contact opening: 100 ms
• Closed contact delay: min. 100 ms
• Open contact delay: min. 100 ms
• Max. detectable switching frequency: 5 Hz
• Input function: to be defined in the configuration list
• Max. length of twisted pair connection cable: 100 m

• Application program
The application program can be downloaded on the product using the ETS software.
It runs a multitude of applications and can be used to assign one of the following functions to each input:
- Status transmission
- Switching between rising edge/falling edge
- Switching between short press/long press
- Dimmer control unit with 1 input
- Roller blind control unit with 1 input
- Multi-action control unit, sends up to 3 on/off commands
- 1-bit scene control
- 8-bit scene control
- Send 8-bit value on rising edge/falling edge
- Send 8-bit value on short press/long press
- Send 16-bit floating value on rising edge/falling edge
- Send 16-bit floating value on short press/long press
- Send 8-bit incremented commands without threshold monitoring
- Send 8-bit incremented commands with threshold monitoring
- Send 16-bit incremented commands without threshold monitoring
- Send 16-bit incremented commands with threshold monitoring
- Send 32-bit incremented commands without threshold monitoring
- Send 32-bit incremented commands with threshold monitoring

The ETS application program can be used to assign one of the following functions to a pair of inputs, in other words 2 adjacent inputs:
- 2-press dimmer control unit with off command
- 2-press roller blind control unit

• Channel pre-adjustment
With the binary input devices the desired function can be assigned to two channels (inputs) per parameter window at a time. Whereas most of the functions occupy only one input and therefore another function can be assigned to each input where necessary, the 2-button functions "dimming with stop telegram" and "solar protection control" occupy two inputs each. A pre-setting should therefore first be made per input pair, via the "Channel pre-adjustment A – H" parameter window, as a function is assignable to the inputs separately or jointly.

• Blocking / releasing of inputs
An input may be blocked via an object if required and subsequently released again. If an input is blocked (blocking object = 1), then neither signal changes are transmitted at this input, nor is the signal status sent cyclically. This function can be used, for example, to stop switching and dimming via a defined button or pair of buttons.
Using the "Blocking objects channel A-H" parameter windows, a blocking object can be supplemented at each channel (input) or channel pair (input pair), except at inputs to which the "pulse counting" function has been assigned.

• Cyclical sending
As far as possible, only status or value modifications should be transmitted, since cyclical sending, especially with a short cycle time, leads to heavy telegram interchange that may delay the sending of events. If cyclical sending is required, then this should be done with an

5. OPERATION (CONTINUED)

as long as possible cycle time.
An additional cyclical sending can only be configured if the "Send switching status, Binary value" function has been assigned to an input. In this connection, an adjustment can be made as to whether and when the input value is cyclically: only when there is an ON signal, only when an OFF signal, or always. The cycle time applying jointly for all channels with the "Send switching status, Binary value" function can also be set on the "General" parameter window.

• Debounce time
A fixed debounce time of 20 ms is taken into account at all inputs so that the user does not have to parametrize debounce times.

• Behaviour at mains voltage failure / recovery
Since the electronics are supplied from the mains, a mains voltage failure leads to functional failure of the device. An adjustment can therefore be made at an input with the "Send switching status, binary value" function in the event of mains voltage recovery as to whether the voltage level should first be queried and sent to the input. No action is taken in the event of mains voltage recovery at inputs to which another function is assigned.

• Delivery status
In the delivery status, the "Send switching status, binary value" function is assigned to all channels (inputs) with he following pre-adjustement parameter:
- Reaction to rising edge: send "On"
- Reaction to falling edge: send "Off"

6. STANDARDS AND APPROVALS

Electrical safety
• Degree of pollution (in accordance with standard IEC 60664-1): 2
• Overvoltage class (in accordance with standard IEC 60664-1): III
• BUS: safety extra low voltage (SELV) 24 VDC
• Conforming to standards: EN 50090-2-2
• EMC requirements: conforming to standards EN 50090-2-2 and EN 61000-6-2

Marking
• KNX EIB, CE

Note: All technical information is available at
www.legrandoc.com

7. MAINTENANCE

Clean the surface with a cloth.
Do not use acetone, tar-removing cleaning agents or trichloroethylene.

Caution: Always test before using other special cleaning products.

8. COMMUNICATION OBJECTS

Note:
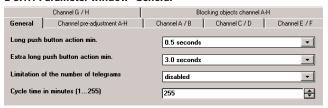Which objects are visible and linkable to group addresses is defined via the functions assigned to the inputs. The following view is an example only. It shows the objects in the delivery state. The objects are therefore not explained in the following, but only in conjunction with the explanation of the functions that can be assigned to an input.

Maximum number of group addresses: 97.
Maximum number of assignments: 97.

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8. COMMUNICATION OBJECTS (CONTINUED)

8.1 Parameters

■ 8.1.1 Parameter window "General"

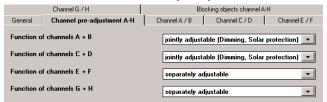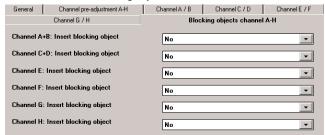| Parameter	Settings
Long push button action min.	0.3; 0.5; 0.6; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter establishes the time limit for distinguishing between short and long push. If a push button is held down for longer than the default time, the software will recognize this as a long push.	
Extra long push button action min.	1.0; 2.0; 3.0; 4.0; 5.0; 6.0; 7.0 seconds
This parameter establishes the time limit for recognizing extra long push. This extra long push button action is required in order to initiate the saving of a scene. Extra long push button action is designed to avoid immediate saving of the scene assigned to the in the event of unintentional longer push button action than a "short push".	
Limitation of the number of telegrams	disabled enabled
The number of telegrams sent per time unit can be restricted in order to ensure, for example, that switching telegrams are not continually generated by a defective switching contact. "disabled": The number of telegrams per time unit is not restricted. "enabled": The number of sent telegrams per time unit is restricted. The parameter window changes and the "Max. number of telegrams in 17 s" parameter appears, via which the number of telegrams within 17 s can be adjusted.	
Max. number of telegrams in 17 s	30, 60, 100, 127
Depending on the setting, a maximum of 30, 60, 100 or 127 telegrams can be sent within 17 seconds.	
Cycle time in minutes (1...255)	255
Here, the cycle time in minutes according to which the current input status is sent to the bus, is adjusted jointly for all channels on which cyclical transmission is enabled. Note: The cycle time should be chosen as high as possible in order to keep bus load due to the cyclical transmission as low as possible.	

■ 8.1.2 Parameter window "Channel pre-adjustment A-H"

Parameter	Settings
Function of channels A + B	separately adjustable jointly adjustable (Dimming, Solar protection)
An adjustment is made via this parameter as to whether the two adjacent inputs (channels) are to be "separately adjustable", so that another function can be assigned to each input if necessary, or whether both inputs are to be "jointly adjustable" since the push buttons attached to them belong together functionally and are intended either for switching and dimming the lighting or for sun protection control.	

Note:
Function pre-adjustment for all other channels takes place as for channels A + B.

Parameter window "Blocking objects channel A-H".

Parameter	Settings
Channel A + B: Insert blocking object	No Yes
An adjustment is made via this parameter as to whether the channel or the two functionally corresponding channels can be blocked via an additional blocking object or not. If a channel (or two functionally corresponding channels) become blocked (blocking object=1), then status changes at this input (these inputs) are no longer transmitted. In the event that cyclical sending of the input status has been enabled this, too, will not be effected as long as the input (inputs) remain(s) blocked.	

Note:
The insertion of blocking objects is effected at all other channels on this window as described above.
Inputs to which the "Pulse counting" function has been assigned cannot have blocking objects assigned to them.

■ 8.1.3 Parameter windows "Channel A / B"... "Channel G / H"
Parameter windows Channel A / B to Channel G / H are used to assign their respective function and the corresponding communication objects to the channels (inputs) as well as to adjust the corresponding parameters, where necessary. The two functions that are jointly assigned to two inputs are explained first in the following.

8.1.3.1 Dimming with two push buttons with stop telegram.

Using the push button pair attached to the two channel inputs, the light can be switched on or off by a short push, while a long push brightens or dims. An adjustment can be made as to which push button (or channel) switches off and darkens and which one switches on and brightens. "Dimming with two push buttons with stop telegram" is used to send a "100% brighter" or "100% darker" dimming telegram as soon as a long push has been recognized, while releasing the push button sends a stop telegram.

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8. COMMUNICATION OBJECTS (CONTINUED)

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x / y, Switching	On / Off / Toggle	1 Bit	CWT

ON or OFF switching telegrams are sent via the group address linked with this object. Adjustment via the "Channel assignment x / y" parameter defines which of the two channels the ON or OFF function is assigned to upon short push, or whether the TOGGLE function is assigned to both.

Obj	Object name	Function	Type	Flags
n	Channel x / y, Dimming	Brighter / Darker	4 Bit	CT

Dimming telegrams are sent via the group address linked with this object. Together with the assignment for switching on and off, adjustment via the "Channel assignment x / y" parameter defines which of the two channels generates a telegram for brighter/darker dimming on long push.

Parameter	Settings
Channel assignment x / y	Off, darker / On, brighter On, brighter / Off, darker Toggle, darker / Toggle, brighter Toggle, brighter / Toggle, darker

Adjustment via this parameter defines which push button / channel is to be used to switch off and darken and which is to be used to switch on and brighten, or whether switching on both channels is to take place via a TOGGLE function.

Parameter	Settings
Contact type	normally open contact normally closed contact

The contact type of the two push buttons attached to the channel is adjusted here.
"normally open contact": the contact for push buttons used is closed when activated, open when not activated.
"normally closed contact": the contact for push buttons used is open when activated, closed when not activated.

8.1.3.2 Solar protection control with two push buttons.

Using one push button pair, the solar protection can be lowered or raised to the respective final position with a long push, while a short push ends the movement or adjusts the slats by one step. An adjustment can be made to define which push button (or channel) is used to lower the solar protection and close the slats by one step, and which is used to raise the solar protection and open the slats by one step.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x / y, Solar protection	Up / Down	1 Bit	CT

The movement commands Up / Down are sent via the group address linked with this object in order to raise / lower the solar protection. Adjustment via the "Channel assignment x / y" parameter defines which of the two channels generates an Up or Down telegram on long push button action.

Obj	Object name	Function	Type	Flags
n	Channel x / y, Slats	Stop / Open / Close	1 Bit	CT

The commands "Stop" or "Slats open / close" are sent via the group address linked with this object. A short push button action always produces a command to stop the movement or to adjust the slats by one step. Together with the assignment for lowering and raising the solar protection, adjustment via the "Channel assignment x / y" parameter defines which of the two channels generates an Open or Close telegram on short push button action.

Parameter	Settings
Channel assignment x / y	Blind down, Slats close / Blind up, Slats open Blind up, Slats open / Blind down, Slats close

Adjustment via this parameter defines which channel is used to lower the solar protection and close the slats and which channel is used to raise the solar protection and open the slats.

Parameter	Settings
Contact type	normally open contact normally closed contact

The contact type of the two push buttons attached to the channel is adjusted here.
"normally open contact": the contact for push buttons used is closed when activated, open when not activated.
"normally closed contact": the contact for push buttons used is open when activated, closed when not activated.

■ 8.1.4 Parameter windows "Channel A / B"... "Channel G / H" (separately)

The following functions are assigned to only one input in each case and may therefore differ from input to input.

8.1.4.1 Switch Edge.

(Illustration: see previous parameter window)

This function is used, for binary inputs to which a switch or a push button is attached, to send a switching telegram (ON, OFF or TOGGLE) as a reaction to a rising and / or falling signal edge at this input (i.e. a telegram is sent each time the push button is pressed and / or released).

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, Switching	On / Off / Toggle	1 Bit	CWT

Switching telegrams are sent via the group address linked with this object.

Parameter	Settings
Reaction on rising edge	no reaction On Off Toggle

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after a rising edge of the signal status at the channel (input). The rising edge corresponds to a change in the signal status at the input from logical "0" to "1".
"no reaction": An edge change at the input does not change the object value and also does not lead to the sending of a telegram.
"On": In the event of a rising edge the switching value "ON" (binary value "1") is transferred into the communication object and sent.
"Off": In the event of a rising edge the switching value "OFF" (binary value "0") is transferred into the communication object and sent.
"Toggle": In the event of a rising edge, the switching value stored in the communication object is inverted and the new value is sent.

8. COMMUNICATION OBJECTS (CONTINUED)

Parameter	Settings
Reaction on falling edge	no reaction On Off Toggle

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after a falling edge in the signal status of the channel (input). The falling edge corresponds to a change in the signal status at the input from logical "1" to "0".
"no reaction": An edge change at the input does not change the object value and also does not lead to the sending of a telegram.
"On": In the event of a falling edge the switching value "ON" (binary value "1") is transferred into the communication object and sent.
"Off": In the event of a falling edge the switching value "OFF" (binary value "0") is transferred into the communication object and sent.
"Toggle": In the event of a rising edge, the switching value stored in the communication object is inverted and the new value is sent.

8.1.4.2 Send switching status, Binary value.

This function is used, for example, to query and transmit the switching status of a signalling contact or the voltage level present at a channel input. Adjustment via this parameter defines which binary value is to be sent after a status change, whether the switching status / binary value is to be sent cyclically in addition and whether the current switching status / binary value is to be sent automatically even after bus or mains voltage recovery.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, Switching status / Binary value	On / Off	1 Bit	CRT

The switching status / binary value is sent via the group address linked with this object.

Parameter	Settings
Reaction on rising edge	no reaction On Off

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after a rising edge of the signal status at the channel (input). The rising edge corresponds to a change in the signal status of the input from logical "0" to "1".
"no reaction": An edge changing at the input does not change the object value and also does not lead to the sending of a telegram.
"On": In the event of a rising edge the switching value "ON" (binary value "1") is transferred into the communication object and sent.
"Off": In the event of a rising edge the switching value "OFF" (binary value "0") is transferred into the communication object and sent.

Parameter	Settings
Reaction on falling edge	no reaction On Off

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after a falling edge of the signal status at the channel (input). The falling edge corresponds to a change in the signal status of the input from logical "1" to "0".
"no reaction": An edge changing at the input does not change the object value and also does not lead to the sending of a telegram.
"On": In the event of a falling edge the switching value "ON" (binary value "1") is transferred into the communication object and sent.
"Off": In the event of a falling edge the switching value "OFF" (binary value "0") is transferred into the communication object and sent.

Send cyclically if	disabled On level at input Off level at input On and Off level at input

Adjustment via this parameter defines whether the communication object corresponding to the channel is not to be sent cyclically (disabled) or whether, in addition to spontaneous sending in the event of a status change, it is to be sent cyclically provided that an On level (Uin > 9 V = log. 1) is present at the input, provided that an Off signal (Uin < 2 V = log. 0) is present at the input – or whether it is always to be sent cyclically.

Send actual binary value after mains / bus voltage recovery	No Yes

Here an adjustment is made to define whether the current contact or binary value status is to be sent or not following mains / bus voltage recovery.

8.1.4.3 Switch Short / Long.

This function is used, for binary inputs to which a switch or a push button is attached, to send a switching telegram (ON, OFF or TOGGLE) as a reaction to a short or long push.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, Switching	On / Off / Toggle	1 Bit	CWT

Switching telegrams are sent via the group address linked with this object.

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8. COMMUNICATION OBJECTS (CONTINUED)

Parameter	Settings
Reaction on short pressing	no reaction On Off Toggle

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after short pressing of the push button attached to the channel (input).
"no reaction": A short push does not change the object value and also does not lead to the sending of a telegram.
"On": After a short push, the switching value
"ON" is transferred into the communication object and sent.
"Off": After a short push, the switching value
"OFF" is transferred into the communication object and sent.
"Toggle": After a short action, the switching value stored in the communication object is inverted and the new value is sent.

Reaction on long pressing	no reaction On Off Toggle

Here an adjustment is made to define which switching value is written into the storage cell of the communication object and sent after long pressing of the push button attached to the channel (input). The "General" parameter window can be used to adjust the definition of "long" push button action.
"no reaction": A long push does not change the object value and also does not lead to the sending of a telegram.
"On": After a long push, the switching value
"ON" is transferred into the communication object and sent.
"Off": After a long push, the switching value
"OFF" is transferred into the communication object and sent.
"Toggle": After a long push, the switching value stored in the communication object is inverted and the new value is sent.

Contact type	normally open contact normally closed contact

The contact type of the push button attached to the channel is adjusted here.
"normally open contact": the contact of the push button used is closed when activated, open when not activated.
"normally closed contact": the contact of the push button used is open when activated, closed when not activated.

8.1.4.4 Dimming with one push button.
(Illustration: see previous parameter window)

The channel can be used for 1-button dimming. A distinction is made between short and long push. - TOGGLE switching (short push)
When the push button is pressed briefly the value currently stored in the switching object (TOGGLE switching) is inverted and then sent. An ON or OFF telegram is only generated when the push button is released (= falling edge).
- Dim brighter / darker (long push)
With the long push (the duration can be adjusted via the "General" parameter window), the light becomes brighter or darker depending on the object value and the last controlled dimming direction. If the dimming actuator had been switched off, then a long push switches it on and brightens. If the dimming actuator was switched on by a short push, then it is dimmed darker by the first long push. If the dimming actuator is at a dimming value between 0 and 100%, the dimming direction last activated is inverted and then dimmed in the new direction. A long push sends the command "100 % dimming" via the dimming object, while releasing the push button (= falling edge) sends the command "Stop". If a stop command is received before the 100% value is reached, the dimming process is finished and maintained at the brightness obtained.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, Switching	Toggle	1 Bit	CWT

Switching telegrams are sent to the dimming actuator via the group address linked with this object. In the process, a short push produces an ON or OFF telegram, while the last controlled switching direction is reversed respectively

m	Channel x, Dimming	Brighter / Darker	4 Bit	CWT

The dimming telegrams are sent to the dimming actuator via the group address linked with this object. In the process, a long push produces a "100 % dimming" telegram. A stop command is sent when the push button is released. Since the last controlled dimming direction is reversed in the process, dimming in the opposite direction is effected on the next long push.
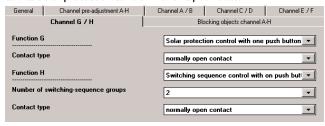
Parameter	Settings
Contact type	normally open contact normally closed contact

The contact type of the push button attached to the channel is adjusted here.
"normally open contact": the contact of the push button used is closed when activated, open when not activated.
"normally closed contact": the contact of the push button used is open when activated, closed when not activated.

8.1.4.5 Solar protection control with one push button.

The channel can be used for 1-button solar protection control. A distinction is made between short and long push.
- Solar protection Up / Down (long push)
Depending on the last movement direction stored in the "Solar protection Open / Close" object, using the long push (the duration can be adjusted via the "General" parameter window) this direction is inverted and the solar protection lowered or raised until the respective final position has been reached and the drive is disconnected via the limit switch.
If a stop command is received before a final position is reached and the limit switch is activated, the movement is terminated immediately, the position arrived at is maintained and the last movement direction is stored.
- Stop or Slats Open / Close (short push)
A short push button action sends a telegram that stops the drive when the solar protection is in motion; when the solar protection is not in motion the telegram leads to a brief movement in the opposite direction to the previous one stored in the movement object. In closed Venetian blinds, for example, this would lead to the slats opening by one step. The STOP or Slats OPEN or CLOSE telegram is only generated when the push button is released (= falling edge). Each further push button action sends another "Slats Open / Close" telegram, while the direction of movement remains unchanged. The software of the solar protection actuator defines whether and how a number of successive "Slats Open / Close" telegrams are interpreted and executed.

8. COMMUNICATION OBJECTS (CONTINUED)

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, Solar protection	Up / Down	1 Bit	CWT
The movement commands Up / Down are sent via the group address linked with this object in order to raise / lower the solar protection. In the process, a long push always produces a movement command in the direction opposing the last direction of movement.				
n	Channel x, Slats	Stop / Open / Close	1 Bit	CWT
The commands "Stop" or "Slats Open / Close" are sent via the group address linked with this object. In the process, a short push always produces a command to stop the movement or adjust the slats by one step in the direction opposing the last direction of movement.				

Parameter	Settings
Contact type	normally open contact normally closed contact
The contact type of the push button attached to the channel is adjusted here. "normally open contact": the contact of the push button used is closed when activated, open when not activated. "normally closed contact": the contact of the push button used is open when activated, closed when not activated.	

8.1.4.6 8-bit Pulse counting without threshold check.

For binary inputs, this function enables the counting and saving of pulses as 8-bit counter value. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. Adjustments can be made via parameters as to whether the counter status should be incremented on rising or falling signal edge, and which value the counter must have changed by in order for the new counter value status to be sent automatically.
In the event of power supply failure to the electronics (power outage) the counter value is permanently stored in a memory protected against data loss in the event of voltage failure. The counter value is transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 8-bit Counter value	Pulse counting	1 Byte	CRT
The telegrams with the counter value status are sent via the group address linked with this object.				
n	Channel x, Counter value reset	Reset	1 Bit	CWT
If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.				

Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set here.	

8.1.4.7 8-bit Pulse counting with threshold check.
(Illustration: see previous parameter window)

This function enables the counting and saving on binary inputs of pulses as 8-bit counter value with threshold check. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. In addition, a check can be made on whether the counter status has already reached or exceeded a threshold value. If the threshold is exceeded, a logical 1 is sent immediately via the "Channel x, Upper limit violation" communication object. The threshold can either be set as a parameter or queried and modified via a communication object by telegram. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. If the threshold is again fallen short of due to the changed threshold or a counter reset, then a logical 0 is sent immediately via the "Channel x, Upper limit violation" communication object. Adjustments can be made via parameters as to whether the counter value status should be increased on rising or falling signal edge and which value the counter must have changed by in order for the new counter value status to be sent automatically. It can also be defined whether the threshold is a value that is adjustable as a parameter, or whether it can be queried and modified via the bus.
In the event of power supply failure to the electronics (power outage) both the counter value and the threshold (if this can be changed via a communication object) are permanently stored in a memory protected against data loss in the event of voltage failure. They are transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

8. COMMUNICATION OBJECTS (CONTINUED)

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 8-bit Counter value	Pulse counting	1 Byte	CRT
	The telegrams with the counter value status are sent via the group address linked with this object.			
n	Channel x, Counter value reset	Reset	1 Bit	CWT
	If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.			
o	Channel x, Upper limit violation	Report	1 Bit	CRT
	Upper limit violation = On is sent if - the counter value is > threshold, - a modified counter value is sent and there is a threshold overrun, - a threshold set is < counter value. Upper limit violation = Off is sent if - the counter value is reset, - after bus or mains voltage recovery together with the first sending of a counter value, if there is then no threshold overrun, - a threshold set is > counter value. In the event of counter overrun with persistent threshold overrun, "Threshold overrun = ON" will continue to be sent together with the counter value which is now below threshold until the counter is either reset to "0" or a new threshold that is bigger than the current counter value is set.			
p	Channel x, 8-bit Threshold	Read / Write	1 Byte	CRWT
	The current threshold can be queried or overwritten by a new threshold via the group address linked with this object.			

Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set here.	
Threshold	to be set by parameter adjustable via object
Using this parameter, an adjustment is made as to whether the threshold is predetermined as a parameter or is queried and modifiable via a communication object. The data type of the threshold always corresponds to that of the counter value. "to be set by parameter": The threshold is set as a parameter. "adjustable via object": A communication object via which the threshold can be queried and modified is supplemented.	
Threshold (1...255)	255
The threshold is adjusted via this parameter.	

8.1.4.8 16-bit Pulse counting without threshold check.

For binary inputs, this function enables the counting and saving of pulses as 16-bit counter value. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. Adjustments can be made via parameters as to whether the counter status should be incremented on rising or falling signal edge, and which value the counter must have changed by in order for the new counter value status to be sent automatically.
In the event of power supply failure to the electronics (power outage) the counter value is permanently stored in a memory protected against data loss in the event of voltage failure. The counter value is transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 16-bit Counter value	Pulse counting	2 Byte	CRT
	The telegrams with the counter value status are sent via the group address linked with this object.			
n	Channel x, Counter value reset	Reset	1 Bit	CWT
	If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.			

Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order for it to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set here.	

8. COMMUNICATION OBJECTS (CONTINUED)

8.1.4.9 16-bit Pulse counting with threshold check.
(Illustration: see previous parameter window)

This function enables the counting and saving on binary inputs of pulses as 16-bit counter value with threshold check. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. In addition, a check can be made on whether the counter status has already reached or exceeded a threshold value. If the threshold is exceeded, a logical 1 is sent immediately via the "Channel x, Upper limit violation" communication object. The threshold can either be set as a parameter or queried and modified via a communication object by telegram. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. If the threshold is again fallen short due to the changed threshold or a counter reset, then a logical 0 is sent immediately via the "Channel x, Upper limit violation" communication object. Adjustments can be made via parameters as to whether the counter value status should be increased on rising or falling signal edge and which value the counter must have changed by in order for the new counter value status to be sent automatically. It can also be defined whether the threshold is a value that is adjustable as a parameter, or whether it can be queried and modified via the bus.
In the event of power supply failure to the electronics (power outage) both the counter value and the threshold (if this can be changed via a communication object) are permanently stored in a memory protected against data loss in the event of voltage failure. They are transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 16-bit Counter value	Pulse counting	2 Byte	CRT
The telegrams with the counter value status are sent via the group address linked with this object.				
n	Channel x, Counter value reset	Reset	1 Bit	CWT
If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.				
o	Channel x, Upper limit violation	Report	1 Bit	CRT
Upper limit violation = On is sent if - the counter value is > threshold, - a modified counter value is sent and there is a threshold overrun, - a threshold set is < counter value. Upper limit violation = Off is sent if - the counter value is reset, - after bus or mains voltage recovery together with the first sending of a counter value, if there is then no threshold overrun, - a threshold set is > counter value. In the event of counter overrun with persistent threshold overrun, "Threshold overrun = ON" will continue to be sent together with the counter value which is now below threshold until the counter is either reset to "0" or a new threshold that is bigger than the current counter value is set.				
p	Channel x, 16-bit Threshold	Read / Write	2 Byte	CRWT
The current threshold can be queried or overwritten by a new threshold via the group address linked with this object.				

Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set here.	
Threshold	to be set by parameter adjustable via object
Using this parameter, an adjustment is made as to whether the threshold is predetermined as a parameter or is queried and modifiable via a communication object. The data type of the threshold always corresponds to that of the counter value. "to be set by parameter": The threshold is set as a parameter. "adjustable via object": A communication object via which the threshold can be queried and modified is supplemented.	
Threshold (1...65.535)	65535
The threshold is adjusted via this parameter.	

8.1.4.10 32-bit Pulse counting without threshold check.

For binary inputs, this function enables the counting and saving of pulses as 32-bit counter value. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. Adjustments can be made via parameters as to whether the counter status should be incremented on rising or falling signal edge, and which value the counter must have changed by in order for the new counter value status to be sent automatically.
In the event of power supply failure to the electronics (power outage) the counter value is permanently stored in a memory protected against data loss in the event of voltage failure. The counter value is transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

8. COMMUNICATION OBJECTS (CONTINUED)

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 32-bit Counter value	Pulse counting	4 Byte	CRT
The telegrams with the counter value status are sent via the group address linked with this object.				
n	Channel x, Counter value reset	Reset	1 Bit	CWT
If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.				

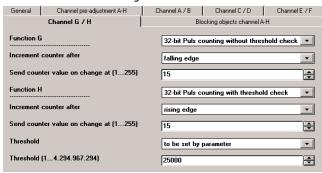| Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set her	

8.1.4.11 32-bit Pulse counting with threshold check.
(Illustration: see previous parameter window)

This function enables the counting and saving on binary inputs of pulses as 32-bit counter value with threshold check. The counter value stored in the counter value object can be sent on request and after modification by a configurable differential value. In addition, a check can be made on whether the counter status has already reached or exceeded a threshold value. If the threshold is exceeded, a logical 1 is sent immediately via the "Channel x, Upper limit violation" communication object. The threshold can either be set as a parameter or queried and modified via a communication object by telegram. Where required, the counter value can be reset to value 0 by telegram via an additional 1-bit communication object. If the threshold is again fallen short of due to the changed threshold or a counter reset, then a logical 0 is sent immediately via the "Channel x, Upper limit violation" communication object. Adjustments can be made via parameters as to whether the counter value status should be increased on rising or falling signal edge and which value the counter must have changed by in order for the new counter value status to be sent automatically. It can also be defined whether the threshold is a value that is adjustable as a parameter, or whether it can be queried and modified via the bus.
In the event of power supply failure to the electronics (power outage) both the counter value and the threshold (if this can be changed via a communication object) are permanently stored in a memory protected against data loss in the event of voltage failure. They are transferred from this memory into the working memory on mains voltage recovery. Counting continues in the event of bus voltage failure for as long as the device is supplied with mains voltage. Counting is only resumed after mains voltage recovery when the bus voltage is also present.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 32-bit Counter value	Pulse counting	4 Byte	CRT
The telegrams with the counter value status are sent via the group address linked with this object.				
n	Channel x, Counter value reset	Reset	1 Bit	CWT
If a telegram linked with this object is received, then the counter value is reset to value 0. The binary value (0 or 1) transmitted with the telegram is irrelevant for the reset function.				
o	Channel x, Upper limit violation	Report	1 Bit	CRT
Upper limit violation = On is sent if - the counter value is > threshold, - a modified counter value is sent and there is a threshold overrun, - a threshold set is < counter value. Upper limit violation = Off is sent if - the counter value is reset, - after bus or mains voltage recovery together with the first sending of a counter value, if there is then no threshold overrun, - a threshold set is > counter value. In the event of counter overrun with persistent threshold overrun, "Threshold overrun = ON" will continue to be sent together with the counter value which is now below threshold until the counter is either reset to "0" or a new threshold that is bigger than the current counter value is set.				
p	Channel x, 32-bit Threshold	Read / Write	4 Byte	CRWT
The current threshold can be queried or overwritten by a new threshold via the group address linked with this object.				

Parameter	Settings
Increment counter after	rising edge falling edge
Here an adjustment is made as to whether the counter status is to be increased by value 1 in the event of a rising or falling signal edge. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1". The falling edge corresponds to a change in the signal status at the input from logical "1" to "0". "rising edge": The counter status is increased by 1 after a rising edge. "falling edge": The counter status is increased by 1 after a falling edge.	
Send counter value on change by (1...255)	255
An adjustment is made via this parameter to define which value the counter value must have changed by in order for it to be sent automatically. The counter status can be queried at any time via the bus, regardless of the value set here.	
Threshold	to be set by parameter adjustable via object
Using this parameter, an adjustment is made as to whether the threshold is predetermined as a parameter or is queried and modifiable via a communication object. The data type of the threshold always corresponds to that of the counter value. "to be set by parameter": The threshold is set as a parameter. "adjustable via object": A communication object via which the threshold can be queried and modified is supplemented.	
Threshold **(1...4.296.067.294)** (Insert value)	4296067294
The threshold is adjusted via this parameter.	

8. COMMUNICATION OBJECTS (CONTINUED)

8.1.4.12 8-bit Value Edge.

General	Channel pre-adjustment A-H		Channel A / B	Channel C / D	Channel E / F
	Channel G / H			Blocking objects channel A-H	

Function G — 8-bit Value Edge

Value on rising edge — send

Value on rising edge (0…255) — 40

Value on falling edge — send

Value on falling edge (0…255) — 0

Function H — 8-bit Value Short / Long

Value on short pressing — send

Value on short pressing (0…255) — 100

Value on long pressing — send

Value on long pressing (0…255) — 150

This function is used to send 8-bit integer values (EIS 6) ranging from 0…255. An adjustment can be made as to whether a value telegram is sent as a reaction to a rising and / or falling signal edge on the channel (input) (i.e. on pressing and / or releasing a button, for example). Using this function, for example, a dimming value can be assigned to a button in order to dim the corresponding lights to the configured value with one push; or different values can be assigned to several buttons, for example, in order to be able control the revolutions of a fan.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, 8-bit Value	Send value	8 Bit	CT

The configured 8-bit integer value (EIS 6) is sent via the group address linked with this object.

Parameter	Settings
Value on rising edge	no sending send
Here an adjustment is made as to whether or not the configured 8–bit value is to be written into the storage cell of the communication object and sent after a rising edge in the signal status at the input. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1".	
Value on rising edge (0…255)	0
Here an adjustment is made to define which value (0…255) is written into the storage cell of the communication object and sent after a rising edge in the signal status at the input. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1".	
Value on falling edge	no sending send
Here an adjustment is made as to whether or not the 8–bit value is to be written into the storage cell of the communication object and sent after a falling edge in the signal status at the input. The falling edge corresponds to a change in the signal status at the input from logical "1" to "0".	
Value on falling edge (0…255)	0
Here an adjustment is made to define which value (0…255) is written into the storage cell of the communication object and sent after a falling edge in the signal status at the input. The falling edge corresponds to a change in the signal status at the input from logical "1" to "0".	

8.1.4.13 8-bit Value Short / Long.
(Illustration: see previous parameter window)

This function is used to send 8-bit integer values (EIS 6) ranging from 0…255. An adjustment can be made as to whether a value telegram is sent as a reaction to short and / or long push button action.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, 8-bit Value	Send value	8 Bit	CT

The configured 8-bit integer value (EIS 6) is sent via the group address linked with this object.

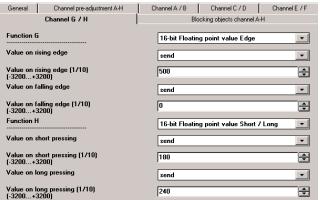| Parameter	Settings
Value on short pressing	no sending send
Here an adjustment is made as to whether or not the configured 8–bit value is to be written into the storage cell of the communication object and sent after short pressing of the push button related to the input.	
Value on short pressing (0…255)	0
Here an adjustment is made to define which value (0…255) is written into the storage cell of the communication object and sent after short pressing of the push button related to the input.	
Value on long pressing	no sending send
Here an adjustment is made as to whether or not the configured 8–bit value is to be written into the storage cell of the communication object and sent after long pressing of the push button related to the input.	
Value on long pressing (0…255)	0
Here an adjustment is made to define which value (0…255) is written into the storage cell of the communication object and sent after long pressing of the push button related to the input.	

8.1.4.14 16-bit Floating point value Edge.

General	Channel pre-adjustment A-H		Channel A / B	Channel C / D	Channel E / F
	Channel G / H			Blocking objects channel A-H	

Function G — 16-bit Floating point value Edge

Value on rising edge — send

Value on rising edge (1/10) (-3200…+3200) — 500

Value on falling edge — send

Value on falling edge (1/10) (-3200…+3200) — 0

Function H — 16-bit Floating point value Short / Long

Value on short pressing — send

Value on short pressing (1/10) (-3200…+3200) — 180

Value on long pressing — send

Value on long pressing (1/10) (-3200…+3200) — 240

The function is used to send 16-bit floating point values (FP values as EIS 5) ranging from -320.0…+320.0, with one decimal place. In the process, the exponent of the 16-bit floating point value is fixed at the value "4". An adjustment can be made as to whether a value telegram is to be sent as a reaction to a rising and / or falling signal edge on the channel input (i.e. when a push button is pressed and / or released). Using this function it is possible, for example, to switch between a day and a night setpoint for room temperature control via one switch.

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8. COMMUNICATION OBJECTS (CONTINUED)

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, 16-bit FP-Value	Send value	16 Bit	CT

The configured 16-bit floating point value (EIS 5) is sent via the group address linked with this object.

Parameter	Settings
Value on rising edge	no sending send

Here an adjustment is made as to whether the configured 16– bit FP value is to be written into the storage cell of the communication object and sent after a rising edge in the signal status at the input. The rising edge corresponds to a change in the signal status at the input from logical "0" to "1".

Parameter	Settings
Value on rising edge (1/10) (-3200...+3200)	0

Here an adjustment is made to define which FP value (-320.0...+320.0) is written into the storage cell of the communication object and sent after a rising edge in the signal status at the input. The FP value to be sent should be entered (where necessary with a plus/minus sign) as tenfold the desired FP value (i.e. including decimal place, but excluding point). The rising edge corresponds to a change in the signal status at the input from logical "0" to "1".

Parameter	Settings
Value on falling edge	no sending send

Here an adjustment is made as to whether the configured 16– bit FP value is to be written into the storage cell of the communication object and sent after a falling edge in the signal status at the input. The falling edge corresponds to a change in the signal status at the input from logical "1" to "0".

Parameter	Settings
Value on falling edge (1/10) (-3200...+3200)	0

Here an adjustment is made to define which FP value (-320.0...+320.0) is written into the storage cell of the communication object and sent after a falling edge in the signal status at the input. The FP value to be sent should be entered (where necessary with a plus/minus sign) as tenfold the desired FP value (i.e. including decimal place, but excluding point). The falling edge corresponds to a change in the signal status at the input from logical "1" to "0".

8.1.4.15 16-bit Floating point value Short / Long.
(Illustration: see previous parameter window)

The function is used to send 16-bit floating point values (FP values as EIS 5) ranging from -320.0...+320.0, with one decimal place. In the process, the exponent of the 16-bit FP value is fixed at the value "4". An adjustment can be made as to whether a value telegram is to be sent as a reaction to short and / or long push.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
n	Channel x, 16-bit FP-Value	Send value	16 Bit	CT

The configured 16-bit FP value (EIS 5) is sent via the group address linked with this object.

Parameter	Settings
Value on short pressing	no sending send

Here an adjustment is made as to whether or not the configured 16–bit FP value is to be written into the storage cell of the communication object and sent after short pressing of the push button related to the input.

Parameter	Settings
Value on short pressing (1/10) (-3200...+3200)	0

Here an adjustment is made to define which FP value (-320.0..+320.0) is written into the storage cell of the communication object and sent after short pressing of the push button related to the input. The FP value to be sent should be entered (where necessary with a plus/minus sign) as tenfold the desired FP value (i.e. including decimal place, but excluding point).

Parameter	Settings
Value on long pressing	no sending send

Here an adjustment is made as to whether or not the configured 16–bit FP value is to be written into the storage cell of the communication object and sent after long pressing of the push button related to the input.

Parameter	Settings
Value on long pressing (1/10) (-3200...+3200)	0

Here an adjustment is made to define which FP value (-320.0..+320.0) is written into the storage cell of the communication object and sent after long pressing the push button related to the input. The FP value to be sent should be entered (where necessary with a plus/minus sign) as tenfold the desired FP value (i.e. including decimal place, but excluding point).

8.1.4.16 Switching sequence control with one push button.
(Illustration: see previous parameter window)

The "Switching sequence control with one push button" function enables, for example, the bulbs of one luminary with two or three groups of bulbs to be switched on and off sequentially, as a group, by pressing a single push button several times. The number of groups that can be switched is adjusted via a parameter. The switching sequence is predetermined and cannot be modified by the user. If these groups are controlled by several push buttons with switching sequence control, then this occurs from every push button independently from the other push buttons.

The following objects are inserted automatically if 3 switching sequence groups are chosen (for 2 switching sequence groups only the first two objects are inserted):

Obj	Object name	Function	Type	Flags
m	Switching sequence group 1	On / Off	1 Bit	CT
n	Switching sequence group 2	On / Off	1 Bit	CT
o	Switching sequence group 3	On / Off	1 Bit	CT

Switching telegrams are sent via the group addresses linked with these objects.

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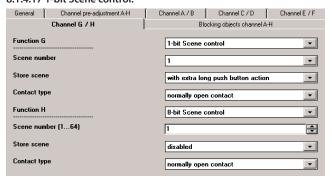| Parameter	Settings
Number of switchingsequence groups	2 3
The number of groups that can be switched is adjusted via this parameter. "2": 2 groups are controlled via 2 switching command telegrams per push button activation in such a way that the following switching sequence can be seen (0= group switched off, 1= group switched on): 00-01-11-10-00 "3": 3 groups are controlled via 3 switching command telegrams per push button activation in such a way that the following switching sequence can be seen (0= group switched off, 1= group switched on): 000-001-010-011-111-110-101-100-000	
Contact type	normally open contact normally closed contact
The contact type of the push button attached to the channel is adjusted here. "normally open contact": the contact of the push button used is closed when activated, open when not activated. "normally closed contact": the contact of the push button used is open when activated, closed when not activated.	

8.1.4.17 1-bit Scene control.

Using the "1-bit Scene control" function it is possible for the user, without changing the project planning using the ETS, to reprogram a scene component for 1-bit scene control, i.e. to assign different brightness values or switching statuses to the individual groups of the respective scene. Using one button, a short push recalls a scene and a long push stores a scene, while one communication object is used to store the scene and a second one is used to recall a stored scene. In this connection it can be configured whether a telegram with the value "0" is used to store or recall Scene 1 and a telegram with the value "1" is used to store or recall Scene 2.

Before a scene is stored the actuators concerned must be adjusted to the desired brightness values or switching statuses using the push buttons / sensors provided for the purpose. When a "Store" telegram is received, the addressed scene controllers are prompted to query the currently set values and statuses with the actuators integrated into the scene and store them in the corresponding scene.

Moreover it can be configured whether the push button is only to be used to recall a scene (storage disabled) or whether it is also possible to initiate the storage of a scene via the push button. In order not to inadvertently initiate scene storage by pressing the push button only a little "longer" than a short push button action, scene storage can only be initiated by an "extra long" push.

The following objects are inserted automatically:

Obj	Object name	Function	Type	Flags
m	m Channel x, Scene 1/2	Recall	1 Bit	CT
The telegrams to recall Scene 1 or Scene 2 are sent via the group address linked with this object. When the telegram is received, the scene controller for 1-bit scene control sends, for example, the stored switching statuses and brightness values of Scene 1 or Scene 2, respectively, via the group objects to the addressed switching / dimming actuators.				
n	Channel x, Scene 1/2	Store	1 Bit	CT
The telegrams to store Scene 1 or Scene 2, respectively, are sent via the group address linked with this object to the corresponding scene controller with 1-bit scene control.				

Parameter	Settings
Scene number	1 2
This parameter determines which scene is to be stored / recalled. "1": On short push, Scene 1 is recalled from the addressed scene controllers via a telegram with the value "0". On long push, the addressed scene controllers are prompted to query the currently set values and statuses with the actuators integrated into the scene and store them under the scene with the number 1. "2": Scene 2 is stored and recalled on this setting.	
Store scene	disabled with extra long push button action
This parameter determines whether a scene can only be recalled or can also be stored. "disabled": Pressing the button means that the scene can be recalled only. "with extra long push button action" Storage of a scene can also be initiated via an extra long push. The duration required for this is adjusted on the "General" parameter window.	
Contact type	normally open contact normally closed contact
The contact type of the push button attached to the channel is adjusted here. "normally open contact": the contact of the push button used is closed when activated, open when not activated. "normally closed contact": the contact of the push button used is open when activated, closed when not activated.	

8.1.4.18 8-bit Scene control.
(Illustration: see previous parameter window)

Using the 8-bit Scene control it is possible for the user himself, without changing the project planning using the ETS, to reprogram scene controllers for 8-bit scene control or actuators with integrated 8-bit scene control, i.e. to assign current values or switching statuses to the respective scene. Using one button, the scene with the configured number (1...64) can be recalled via a short push button action, while a long push button action stores the scene. At the same time, both the command to store a scene and the command to recall a stored scene, together with the number of the desired scene, are transmitted via a single communication object.

8. COMMUNICATION OBJECTS (CONTINUED)

Before a scene is stored, the actuators integrated into the scene must be adjusted to the desired values or statuses using the push buttons / sensors provided for the purpose. When a telegram is received, the addressed scene controllers / actuators with integrated scene control are prompted to query the currently set values and statuses with the actuators integrated into the scene and to store them in the corresponding scene.
Moreover it can be configured whether the push button is only to be used to recall a scene (storage disabled) or whether it is also possible to initiate the storage of a scene via the push button. In order not to inadvertently initiate scene storage by pressing the push button only a little "longer" than a short push button action, scene storage can only be initiated by an "extra long" push.

The following object is inserted automatically:

Obj	Object name	Function	Type	Flags
m	Channel x, 8-bit Scene	Recall / Store	8 Bit	CT
The telegrams to recall and store the scene with the configured number (1...64) are sent via the group address linked with this object.				

Parameter	Settings
Scene number (1...64)	1
This parameter determines which scene (1...64) is to be stored or recalled.	
Store scene	disabled with extra long push button action
This parameter determines whether a scene can only be recalled or can also be stored. "disabled": Pressing the button means that the scene can be recalled only. "with extra long push button action" Storage of a scene can also be initiated via an extra long push. The duration required for this is adjusted on the "General" parameter window.	
Contact type	normally open contact normally closed contact
The contact type of the push button attached to the channel is adjusted here. "normally open contact": the contact of the push button used is closed when activated, open when not activated. "normally closed contact": the contact of the push button used is open when activated, closed when not activated.	