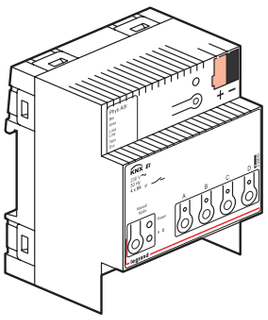
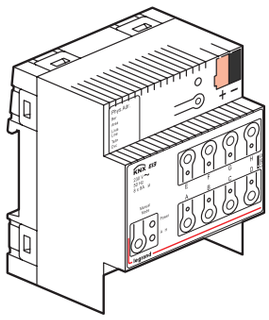
KNX 4 and 8 contacts actuator

Catalogue number(s): 0 026 61/62



0 026 61



0 026 62

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1. USE

• 0 026 61

The KNX controller Cat. No. 0 026 61 is a modular device with 4 outputs. It can manage 4 different groups of electrical loads independently.
The main functions are:
- Instant switching ON/OFF
- Switching ON/OFF with time delay
- ON with time delay
- Selection of operating mode (time switch mode or normal mode)
- Definition of an ON period during night mode
- Configuration of the switching status after restoration of the mains supply
- Assignment of scenarios to each output. Each output can be part of up to 8 scenarios
- Configuration of AND/OR logic operations on each output
- Configuration of a warning before switch-off in night mode or in time switch mode

This controller has a 230 VAC internal power supply. If there is a fault on the BUS/KNX, the load can be managed manually by the outputs via the pushbuttons on the front panel of the product.

• 0 026 62

The KNX controller Cat. No. 0 026 62 is a modular device with 8 outputs. It can manage 8 different groups of electrical loads independently.
The main functions are:
- Instant switching ON/OFF
- Switching ON/OFF with time delay
- ON with time delay
- Selection of operating mode (time switch mode or normal mode)
- Definition of an ON period during night mode
- Configuration of the switching status after restoration of the mains supply
- Assignment of scenarios to each output. Each output can be part of up to 8 scenarios
- Configuration of AND/OR logic operations on each output
- Configuration of a warning before switch-off in night mode or in time switch mode

This controller has a 230 VAC internal power supply. If there is a fault on the BUS/KNX, the load can be managed manually by the outputs via the pushbuttons on the front panel of the product.

2. TECHNICAL FEATURES

2.1 Permissible loads

	①		②		③		④		⑤		⑥		⑦	
230 V~	2000 W	8 A	500 VA	2,1 A	500 VA	2,1 A	500 VA	2,1 A	350 VA	1,5 A	500 VA	2,1 A	500 VA	2,1 A

1 - Tungsten halogen bulbs
2 - ELV halogen, compact fluorescent and fluorescent bulbs with separate electronic ballast
3 - ELV halogen, compact fluorescent and fluorescent bulbs with separate ferromagnetic ballast
4 - Fluorescent tubes
5 - Compact fluorescent bulbs with built-in electronic ballast
6 - Compact fluorescent bulbs with built-in ferromagnetic ballast
7 - LED bulbs

2.2 Climatic features

- Climatic resistance capacity: EN 50090-2-2
- Ambient operating temperature: - 5 to + 45°C
- Storage temperature: - 25 to + 70°C
- Relative humidity (non-condensing): 5 to 93%

2.3 Electrical features

- BUS voltage: 29 V=
- Current consumption on the BUS: 5 mA
- Built-in power supply 230 VA, + 10%/- 15%, 50 Hz
- Power consumption: 1.1 W max.

2.4 Mechanical features

- Protection class (in accordance with standard EN 60529): IP 20

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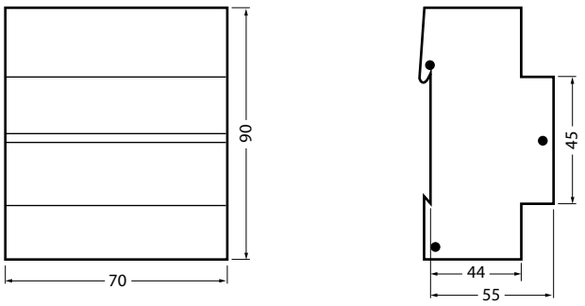
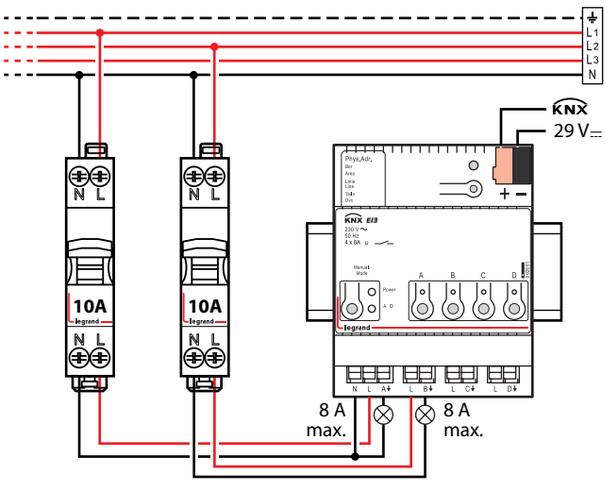
3. DIMENSIONS



4. CONNECTION

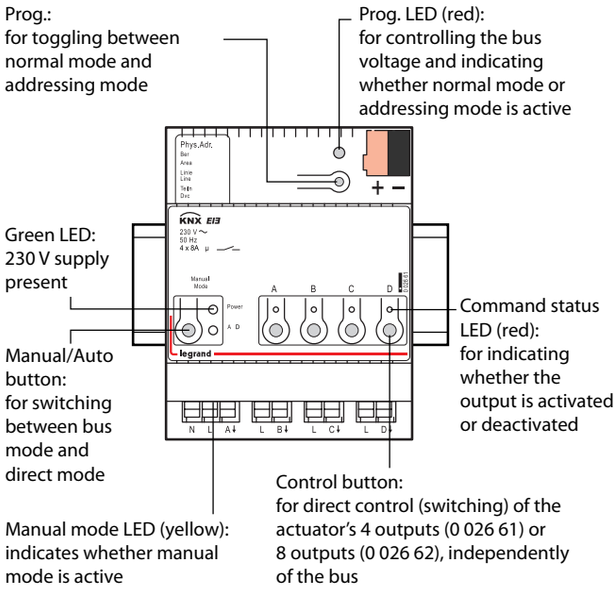


	4 x (Ø 0.6 < 8 mm < Ø 0.8)
	1 x 2.5 mm²

• Connection of mains supply and inputs:
Plug-in terminals, insulation strip between 9 and 10 mm long
The following conductor cross-sections are permitted:
- 0.5 to 2.5 mm², single-core
- 0.5 to 2.5 mm², finely braided, with connector sleeve
- 1.5 mm², finely braided, without treatment (max. current 6 A)

Each L conductor connected to the actuator must be protected by a circuit breaker for a max. nominal current of 10 A.

5. OPERATION



• Application program
The program distinguishes between BUS mode and direct mode (manual control). In BUS mode, each channel can have a communication object used for switching, for checking the status and for a logic operation. In addition, it is possible for each channel to switch from permanent activation to temporary activation (for example, for the cleaning service) using a night mode communication object.
If necessary, it is possible to activate an 8-bit scene control function, integrated in the application program, and to integrate each channel in up to 8 scenes. You can also choose to configure all the channels together, and therefore identically, or each channel separately and differently. The following configurations are possible for each channel:
• Operating mode (normal/time switch mode)
• Logic operation (AND, OR)
• Activation time delay (ON with time delay)
• Switch-off time delay (OFF with time delay)
• Temporarily in night mode with time delay
• Warning before switch-off by several OFF/ON operations (flashes) in the case of temporary operation in night mode or in time switch mode with time delay
• Switching status after restart on restoration of mains supply

• BUS mode/direct mode
The controller can be used for direct switching of its channels even when there is no BUS voltage. However the controller must be activated using the ETS software.

Direct mode can only be activated via a pushbutton located in the lower left-hand corner of the upper part of the actuator. When this pushbutton is pressed for the first time, the yellow LED lights and stays on with a fixed light to indicate that direct mode is active.
• In direct mode, each channel can be activated by a switching function using the corresponding pushbutton located on the top of the actuator:
- Press the pushbutton once to activate the channel
- Press again to stop it
The switching status of the channel is indicated by a red LED built into the pushbutton.
A parameter can be used to define whether direct mode can be activated permanently or temporarily. By default, activation of direct mode is limited to a period of 15 minutes.

5. OPERATION (CONTINUED)

Each time you press the pushbutton in direct mode, the timer limiting the activation period is reset to the configured activation period. If the activation period expires without the pushbutton being pressed again, direct mode stops automatically and BUS mode is reactivated (BUS communication is possible). Otherwise, direct mode can be stopped at any time by pressing the direct mode pushbutton again. The yellow LED indicating that direct mode is active then goes off and the actuator returns to BUS mode.

• In BUS mode, nothing happens if you press the direct activation or deactivation pushbuttons for a channel, located on the top of the actuator. The switching and scene call-up commands received via the BUS when direct mode is active are stored in the memory and executed automatically when the system returns to BUS mode.

• Behaviour when there is a break/restoration of the power supply
All the channels of the actuator maintain their switching status if there is a break in the power supply. However, it is possible to select the switching status to be adopted for each channel when the power supply is restored: status active at the time of the break, ON or OFF.

6. STANDARDS AND APPROVALS

Electrical safety
- Degree of pollution (in accordance with standard IEC 60664-1): 2
- Type of protection (in accordance with standard EN 60529): IP 20
- Overvoltage class (in accordance with standard IEC 60664-1): III
- BUS: safety extra low voltage (SELV) 24 VDC
- Conforms to standards: EN 50090-2-2 and EN 60669-2-1
- EMC requirements: conforms to standards EN 50090-2-2 and EN 60669-2-1

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

8.1 Parameters

■ 8.1.1 "Functions, Objects"

In the supplied state, the communication object "Status direct mode" is available as well as the object "Switching On/Off" which is available for each channel. The commissioning engineer can set via the parameter page "Functions, Objects" which functions and objects he would like to use in addition to the default objects.

Configuration: This parameter is used to set whether to allow identical (i.e. the same) or individual (i.e. different) parameterization for all channels. If you select "identical for all channels", only one parameter page for the joint parameterization of all channels appears; if you select "individual for each channel", one parameter page per channel is shown.

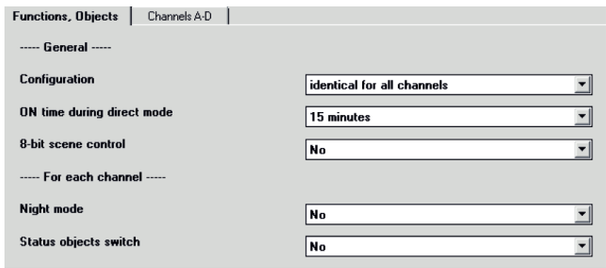
8. COMMUNICATION OBJECTS (CONTINUED)

On-time during direct mode: This parameter is used to set whether to permit permanent or time-limited activation of direct mode; if time-limited direct mode is selected you can then also set after how much time the time-limited mode is to be reset to BUS mode.

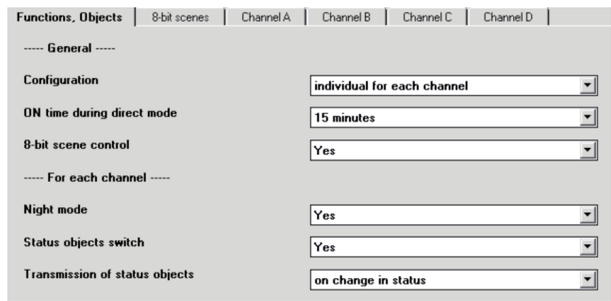
8-bit scene control: You can select whether a communication object is to be added to the 8-bit scene control and whether an additional parameter page for assignment of the 8-bit scenes per channel is to be shown. Each actuator channel can be integrated in up to 8 scenes.

Night mode: You can select whether a "Night mode, On/Off" object and the corresponding function are to be added per channel. When night mode is activated, a channel can no longer be switched on permanently but only for a limited period (e.g. for cleaning light). The desired On period in night mode can then be set with another parameter.

Status switch: You can select whether a communication object "Status switch" is to be added per channel and, if so, when this object is to be sent ("using read request only" or "on change of status").



If individual parameterization per channel is desired and parameters for more functions and objects set to "Yes", then an additional parameter will be shown on this parameter page and more parameter pages added (see the following graphic).



Parameters	Settings
Configuration	**Identical for all channels** Individual for each channel
This parameter is used to set whether only one parameter page for joint and identical parameterization of the switching channels A...D appears or one parameter page per channel for individual parameterization of each switching channel is shown.	
ON time during direct mode	5 minutes, 10 minutes, **15 minutes**, 20 minutes, 30 minutes, 45 minutes, 60 minutes, unlimited
This parameter is used to set whether direct mode is to be permanently switched on using the pushbutton for operating mode selection and has to be switched off again by repressing the pushbutton ("unlimited"), or whether it is switched on for a limited period and automatically switched off again after expiration of the set On period.	

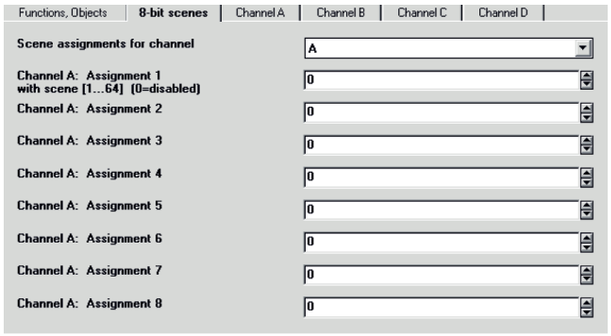
8. COMMUNICATION OBJECTS (CONTINUED)

The time-limited switching on of the direct mode ensures that the BUS mode cannot be permanently blocked by the direct mode. Each time the pushbutton for switching the channels in direct mode is actuated, direct mode is prolonged by the parameterized On period.

8-bit scene control	**No** Yes
This parameter is used to set whether the actuator is to be integrated in an 8-bit scene control. If it is, the corresponding communication object and the parameter page "Scenes" for allocating up to 8 scene numbers per switching channel will appear.	
Night mode	**No** Yes
This parameter is used to set whether an additional "Night mode" communication object is to be made available per switching channel. If it is, the following parameter "On period in night mode" will appear for setting the desired operating interval jointly for all actuator channels.	
Status objects switch	**No** Yes
This parameter is used to set whether a communication object "Status object switch" is to be made available per switching channel. The status objects can be used, for example, to indicate the current switching state of the channels on a display or a PC. If status objects are desired, then the following parameter "Transmission of status objects" appears.	
Transmission of status objects	**On change of status** Only upon read request
Depending on the parameterization, the status objects are automatically sent each time the status changes or only when there is a read request.	

■ 8.1.1 "Functions, Objects" (continued)

• Parameter page "8-bit scenes"



Parameters	Settings
Scene assignments for channel	**A** B C D
This parameter is used to set for which channel the scene assignments are to be shown so that they can be assigned or altered.	
Channel A: Assignment 1 with scene [1...64] (0=disabled)	0-64, **0**
This parameter can be used to link channel A to a scene number in the range from 1 to 64. 0 means "No scene assigned" (link unused). Note: If a scene is recalled before a switching state was programmed for it, the channel in question will be switched off.	
Channel A: Assignment 2	0-64, **0**
This parameter can be used to link channel A to another scene number in the range from 1 to 64. 0 means "No scene assigned" (link unused). Note: If a scene is recalled before a switching state was programmed for it, the channel in question will be switched off.	

and so on until

Channel A: Assignment 8	0-64, **0**
This parameter can be used to link channel A to another scene number in the range from 1 to 64. 0 means "No scene assigned" (link unused). Note: If a scene is recalled before a switching state was programmed for it, the channel in question will be switched off.	

■ 8.1.2 "Channel A-D (Cat. No. 0 026 61) Channel A-H (Cat. No. 0 026 62)"

Depending on whether the setting permits identical (i.e. the same) or individual (i.e. different) configuration of all channels, only one parameter page appears for the joint parameterization of all channels or one parameter page per channel is shown.

Operating mode: This parameter is used to set whether the channel is to work in "Normal mode" as a "normal switch" or whether it is to work as a "Time switch" that is activated by means of a switching or scene calling command and automatically switched off after the parameterized On period expires.

If "Time switch" is selected, the parameter "On time" will also be shown. If another switching or scene calling command is received during time switch operation and an active On period, the timer will be reset to its initial value and the operating interval extended accordingly. Before expiration of the set On period, if the warning function was activated (via the parameter "Warning before Off"), then the switching channel will not be permanently switched off right away; it will first be switched off for only 1 s and then switched on again for 10 s. This is repeated another two times before the channel is then permanently switched off. If the channel is used for lighting control, a user is thus given advance warning and can switch the lighting back on again.

Logic operation: This parameter can be used if required to permit the channel to be switched using a logic operation (AND or OR) of the switching object with an additionally inserted object "Logic operation, Channel x". The logic object is not governed by any time delay, i.e. the logic operation always takes immediate effect.

On delay: This parameter can be used to set an ON delay in the range of 0.5 seconds to 90 minutes. It has no effect on the logic objects.

Off delay: This parameter can be used to set an OFF delay in the range of 0.5 seconds to 90 minutes. It has no effect on the logic objects.

Initial value of switch and logic object on mains voltage recovery: This parameter is used, when a logic operation is activated, to specify the initial value of the switch and logic object upon recovery of the mains voltage. If no logic operation is activated, the parameter "Output state at mains voltage recovery" is shown instead.

On-time during night mode: This parameter is used to select for how long a channel can be switched on when the "Night mode" object is activated.
If another switching On command is received during an active On period, then the timer will be reset to its initial value and the operating interval extended accordingly.

Warning before Off: This parameter is used to set whether, during night or time switch operation, a channel signals by multiple switching off and on again prior to expiration of the On period that the channel will be permanently switched off 30 s after it is temporarily switched off for the first time.

• Parameter page "8-bit scenes"

With 8-bit scene control the saving and recalling of a scene is triggered by a telegram with an 8-bit object. The most significant bit 7 specifies whether the scene is to be saved or recalled. Bit 6 has no meaning at present. Bit 0 to bit 5 contain (in binary coded form) the number of the desired scene as a decimal number in the range from 1 to 64 (where scene number 1 is the binary number 0, scene number 2 is the binary number 1, etc.).

8. COMMUNICATION OBJECTS (CONTINUED)

Each actuator channel can be integrated in up to 8 scenes.
Scene assignments for channel: This parameter is used to set for which channel the scene assignments are to be shown so that new one can be assigned and existing one altered.

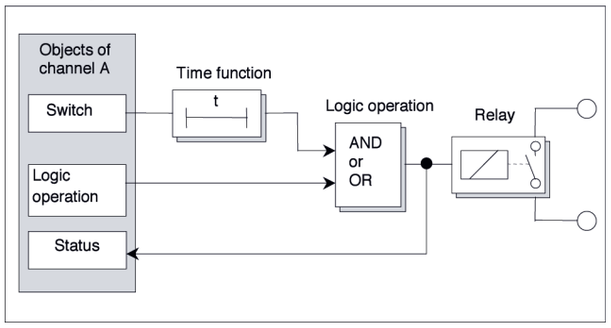
Channel A: Assignment 1 with Scene [1...64] (0=disabled): This parameter can be used to link channel A to a scene number in the range from 1 to 64. "0" means "no scene assigned" (scene control disabled).

Note:
If a scene is called before a switching state was saved for it, the corresponding channel will be switched off.

The assignments 2 to 8 for channel A and the assignments for the other channels are made in similar manner to as-signment 1 for channel A.

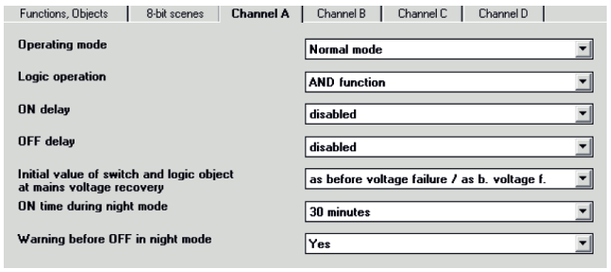
Maximum number of group addresses: 100
Maximum number of associations: 100

Block diagram of a channel



■ **8.1.2 "Channel A-D (Cat. No. 0 026 61) Channel A-H (Cat. No. 0 026 62)" (continued)**

• Parameter page "Channel A-D" or "Channel X"
Depending on the setting of the parameter "Configuration" , a parameter page for the joint and identical parameterization of all channels or one page per channel for individual parameterization of each channel is shown.



Parameters	Settings
Operating mode	**Normal mode** Time switch
This parameter is used to set whether the channel is to work as a "normal switch" that can be governed by a switching On and/or Off delay and a logic operation, or whether it is to work as a pure time switch that is switched on only via an ON command and automatically switched off again upon expiration of the parameterized On period.	
Logic operation	**no logic operation** AND function OR function
This parameter can be used if required to switch the channel by means of a logic operation of the switching object with an additionally inserted "Logic object, channel x". The logic operation object is not subject to any time delay, i.e. the logic operation always takes immediate effect.	
ON delay	**disabled,** 0.5 s, 1 s, 2 s, 3 s, 4 s, 5 s, 8 s, 10 s, 12 s, 15 s, 20 s, 25 s, 30 s, 45 s, 60 s, 1.5 min., 2 min., 3 min., 5 min., 8 min., 10 min., 15 min., 20 min., 30 min., 45 min., 60 min., 90 minutes
This parameter is used to set the desired ON delay. The presetting "disabled" means that switching on commands are performed immediately. A set ON delay is effective only on the object "Switch channel x" and not on any corresponding logic object that may exist.	
OFF delay	**disabled,** 0.5 s, 1 s, 2 s, 3 s, 4 s, 5 s, 8 s, 10 s, 12 s, 15 s, 20 s, 25 s, 30 s, 45 s, 60 s, 1.5 min., 2 min., 3 min., 5 min., 8 min., 10 min., 15 min., 20 min., 30 min., 45 min., 60 min., 90 minutes
This parameter is used to set the desired OFF delay. The presetting "disabled" means that switching off commands are performed immediately. A set OFF delay is effective only on the object "Switch channel x" and not on any corresponding logic object that may exist.	
Output state at mains voltage recovery	**as before voltage failure** Off On
If there is a mains voltage failure, all actuator channels will be forced to switch off after their current switching state is saved. The actuator electronics is powered by the mains, i.e. the actuator cannot switch if there is no mains voltage. This parameter is used to set the desired switching state of the channel after mains voltage recovery when no logic operation is activated.	

Parameters	Settings
Initial value of switch and logic object at mains voltage recovery	**as before voltage failure / as before voltage failure,** as before voltage failure / Off, as before voltage failure / On, Off / as before voltage failure, Off / Off, Off / On, On / as before voltage failure, On / Off, On / On
The parameter for setting the initial value for the switch and logic object after mains voltage recovery appears instead of the parameter "switching state after mains voltage recovery" when a logic operation is activated.	
ON time during night mode	5 minutes, 10 minutes, 15 minutes, 20 minutes, **30 minutes,** 45 minutes, 60 minutes
This parameter is used to select for how long a channel can be switched on when the "Night mode" object is activated. If another switching on command is received during an active On period, then the timer will be reset to its initial value and the operating interval extended accordingly.	
Warning before OFF in night mode	**Yes** No
This parameter can be used to activate a warning before OFF. Exactly 30 s before expiration of the set On period, the switching channel is switched off for the first time for 1 s and then back on again for 10 s. This is repeated another two times before the output is then permanently switched off. If the channel is used for lighting control, a user is thus given advance warning and can switch the lighting back on again.	

8. COMMUNICATION OBJECTS (CONTINUED)

8.2 Group objects

Note:
The view of the objects can be arranged individually i.e. this view can vary.

■ 8.2.1 Group objects (default setting)

The following communication objects are shown for the 4-fold switch actuator Cat. No. 0 026 61 in the as-delivered state.

0	Status direct mode	On / Off		1 bit
1	8-bit scene	recall / program		1 Byte
3	Switch, Channel A	On / Off		1 bit
7	Switch, Channel B	On / Off		1 bit
11	Switch, Channel C	On / Off		1 bit
15	Switch, Channel D	On / Off		1 bit

The following communication objects are shown for the 8-fold switch actuator Cat. No. 0 026 62 in the as-delivered state..

0	Status direct mode	On / Off	1/1/1	1 bit
3	Switch, Channel A	On / Off		1 bit
7	Switch, Channel B	On / Off		1 bit
11	Switch, Channel C	On / Off		1 bit
15	Switch, Channel D	On / Off		1 bit
19	Switch, Channel E	On / Off		1 bit
23	Switch, Channel F	On / Off		1 bit
27	Switch, Channel G	On / Off		1 bit
31	Switch, Channel H	On / Off		1 bit

■ 8.2.2 Group objects (when all additionnal functions were activated)

The following communication objects are shown for the 4-fold switch actuator Cat. No. 0 026 61 when all additional functions are activated.

1	8-bit scene	recall / program		1 Byte
2	Night mode, Channel A	On / Off		1 bit
6	Night mode, Channel B	On / Off		1 bit
10	Night mode, Channel C	On / Off		1 bit
14	Night mode, Channel D	On / Off		1 bit
0	Status direct mode	On / Off		1 bit
5	Status switch, Channel A	On / Off		1 bit
9	Status switch, Channel B	On / Off		1 bit
13	Status switch, Channel C	On / Off		1 bit
17	Status switch, Channel D	On / Off		1 bit
3	Switch, Channel A	On / Off		1 bit
7	Switch, Channel B	On / Off		1 bit
11	Switch, Channel C	On / Off		1 bit
15	Switch, Channel D	On / Off		1 bit

The following communication objects are shown for the 8-fold switch actuator Cat. No. 0 026 62 when all additional functions are activated.

4	Logic operation, Channel	On / Off		1 bit
8	Logic operation, Channel	On / Off		1 bit
12	Logic operation, Channel	On / Off		1 bit
16	Logic operation, Channel	On / Off		1 bit
20	Logic operation, Channel	On / Off		1 bit
24	Logic operation, Channel	On / Off		1 bit
28	Logic operation, Channel	On / Off		1 bit
32	Logic operation, Channel	On / Off		1 bit
0	Status direct mode	On / Off	1/1/1	1 bit
3	Switch, Channel A	On / Off		1 bit
7	Switch, Channel B	On / Off		1 bit
11	Switch, Channel C	On / Off		1 bit
15	Switch, Channel D	On / Off		1 bit
19	Switch, Channel E	On / Off		1 bit
23	Switch, Channel F	On / Off		1 bit
27	Switch, Channel G	On / Off		1 bit
31	Switch, Channel H	On / Off		1 bit

Obj	Object name	Function	Type	Flags
0	Status direct mode	On / Off	1 bit	CRT
This object is used to signal that the actuator was switched to direct mode (direct mode = On) by the "direct mode" pushbutton on its lower left side or that it was switched back from direct mode to BUS mode (direct mode = Off). If direct mode is activated (the corresponding yellow LED on the lower left side of the actuator shines), then direct switching of the actuator channels by means of a toggling function using the corresponding pushbuttons on the lower left side of the actuator is enabled. The actuator does not perform the switching of scene commands received via the BUS but stores them as the desired state. After returning to BUS mode (the yellow LED for indicating direct mode on the lower left side of the actuator is switched off) the actuator compares the actual states of the channels with the stored states and automatically eliminates any deviations of the actual states from the stored desired states. The direct mode status is automatically transmitted after a mains voltage recovery.				
1	8-bit scene	recall / program	1 byte	CRWT
This object is used to recall the 8-bit scene with the number x or to program it. Bits 0...5 hold the scene number. If bit 7 = log. 1, then the scene is programmed; if bit 7 = log. 0, then the scene is recalled. Bit 6 has no meaning at present and must be set to logical 0.				

Obj	Object name	Function	Type	Flags
2	Night mode, Channel A	On / Off	1 bit	CRWT
This object can be used to activate or deactivate "Night mode" for channel A via the BUS. The object can be sent, for example, from a pushbutton, a time switch or a building automation system. If a logic 1 is received, then the channel will switch over to night mode. In "Night mode", a channel can no longer be switched on permanently but only for a limited period (cleaning light for e.g. 30 minutes). If the parameter "Warning before Off" is set to "Yes" (see the parameter page "Channel X"), then multiple switching off and on again of the lighting prior to expiration of the parameterized On period during night or time switch operation will signal that the channel will be permanently switched off 30 s after it is temporarily switched off for the first time. The end of the operating interval can thus be recognized and the lighting switched on again, e.g. for another 30 minutes, by pressing again the light switch. If the object "Night mode" is not used for a channel, then the channel can be permanently switched on at any time.				
3	Switch, Channel A	On / Off	1 bit	CRWT
This object is used to receive the switching telegrams that are transferred to the relay channel via the timer function where applicable. If a logic operation is parameterized, then the result of the timer function forms the 1st value of the logic operation for the channel.				
4	Logic operation, Channel A	On / Off	1 bit	CRWT
This object is used to receive the switching data for the 2nd input of the logic operation of the channel in question. With the parameter setting "no logic operation", this object has no function and is not shown.				
5	Status switch, Channel A	On / Off	1 bit	CRT
The current switching state of the channel is saved in the status object and can be queried with a read request or, after suitable parameterization, be automatically sent each time the object value changes.				