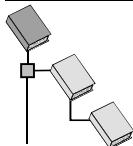


The switch actuator receives telegram via the EIB and switches groups of electrical devices with its eight potential-free, independent relay contacts. Various external conductors can be connected. The application enables switching with revertive signal (feedback), logic operation and timer function. The slide switches can be used to manually activate the 4 relays (outputs 1-4) in parallel with the instabus EIB or to switch them on or off without the instabus EIB.

**Database structure:**



Gebr. Berker

- ☒ Output
- ☒ Binary output 8gang
- ☒ Switch actuator 8gang RMD



**Application summary:**

- Switching RS, LO, TF 206001

**Technical Data**

**Protection class:**

IP 20

**Test symbol:**

EIB

**Operating temperature range:**

-5 °C to +45 °C

**Fixing method:**

Snap onto DIN rail (excluding data rail)

**Measurements:**

Width: 4 TE; 72 mm, Height: 90 mm, Depth: 64 mm

**instabus EIB supply**

**Voltage:** 24 V DC (+6 V / -4 V)

**Power consumption:** typically 150 mW

**Connection:** instabus connection and branch off terminal

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**External supply**

Software dependent

**Response following voltage failure:**

Software dependent

**Output**

**Relay manufacturers:**

Matsushita Outputs 5 - 8

Gruner Outputs 1 - 4

**Relay types:**

DE relay Outputs 5 - 8

707 L: 1A as per DIN VDE 0435 Outputs 1 - 4

**Switch type:**

Normally open contact, potential-free relay contacts (μ-contact)

**Switching voltage:**

230 V AC Outputs 5 - 8

230 V AC; 400 V AC Outputs 1 - 4

**Max. switching current:**

6 A / AC-1, Outputs 5 - 8

16 A / AC-1; 10 A / AC-3 at 230 V AC Outputs 1 - 4

10 A / AC-1; 6 A / AC-3 at 400 V AC Outputs 1 - 4

**Switching capacity:**

Filament bulbs: 2500 W

Outputs 1 - 4

Fluorescent lamps, non-comp.,  $\cos\varphi = 0,5$ : 2500 W

Fluorescent lamps, parallel comp.,  $\cos\varphi = 1$ : 1300 W / 140  $\mu$ F

Fluorescent lamp Duo,  $\cos\varphi = 1$ : 2 x 2500 W

HV Halogen lamps: 2500 W

LV Halogen lamps: 500 VA

**Switching capacity:**

Filament bulbs: 1000 W

Outputs 5 - 8

Fluorescent lamps, non-comp.,  $\cos\varphi = 0,5$ : 500 W

Fluorescent lamps, parallel comp.,  $\cos\varphi = 1$ : 2 x 58 W / 14  $\mu$ F

6 x 18 W / 14  $\mu$ F

Fluorescent lamp Duo,  $\cos\varphi = 1$ : 2 x 500 W

Siemens ballast for 58 W fluorescent tubes: 10 pcs.

Siemens ballast for 36 W fluorescent tubes: 15 pcs.

Siemens ballast for 18 W fluorescent tubes: 15 pcs.

<b>Connection:</b>	Screw-type terminals:	0.2 – 4 mm <sup>2</sup>	one wire
	2 x 0.2 – 2.5 mm <sup>2</sup>		one wire
	0.75 – 4 mm <sup>2</sup>	fine wire without end cap sleeve	
	0.5 – 2.5 mm <sup>2</sup>	fine wire with end cap sleeve	

**Comments on hardware:**

- The relays in a device never switch at the same time, but always at staggered intervals. At higher switching frequencies, this time interval always becomes longer.
- Adjustments in the relay settings using the slide switch are not recognised by the software! However, an output that has been blocked by the bus can be adjusted manually.
- Various external conductors can be connected. A contact configuration of 230 V AC and a ballast device at the various outputs is not permitted!

<b>Software description</b>				
<b>Description of application:</b>	Switching with revertive signal (feedback), logic operation, time function 206001			
<b>Executable as of mask version:</b>	1.1			
<b>Number of addresses (max):</b>	32			
<b>Number of assignments (max):</b>	32			
<b>Communications objects:</b>	64			
<b>Object</b>	<b>Name</b>	<b>Function</b>	<b>Type</b>	<b>Flag</b>
<b>Object</b>	<b>Name</b>	<b>Function</b>	<b>Type</b>	<b>Flag</b>
0	Switching	Output 1	1 Bit	C, W
1	Switching	Output 2	1 Bit	C, W
2	Switching	Output 3	1 Bit	C, W
3	Switching	Output 4	1 Bit	C, W
4	Switching	Output 5	1 Bit	C, W
5	Switching	Output 6	1 Bit	C, W
6	Switching	Output 7	1 Bit	C, W
7	Switching	Output 8	1 Bit	C, W
Outputs 1-4 assigned to the additional function "Logic operation":				
8	Logic operation	Output 1*	1 Bit	C, W
9	Logic operation	Output 2*	1 Bit	C, W
10	Logic operation	Output 3*	1 Bit	C, W
11	Logic operation	Output 4*	1 Bit	C, W
Outputs 1-4 assigned to the additional function "Blocking object":				
8	Blocking	Output 1*	1 Bit	C, W
9	Blocking	Output 2*	1 Bit	C, W
10	Blocking	Output 3*	1 Bit	C, W
11	Blocking	Output 4*	1 Bit	C, W
Channels 1-4 assigned to the additional function "Forced guidance object":				
8	Forced guidance	Output 1*	2 Bit	C, W
9	Forced guidance	Output 2*	2 Bit	C, W
10	Forced guidance	Output 3*	2 Bit	C, W
11	Forced guidance	Output 4*	2 Bit	C, W
Revertive signal (feedback) objects:				
12	Revertive signal	Output 1	1 Bit	C, T
13	Revertive signal	Output 2	1 Bit	C, T
14	Revertive signal	Output 3	1 Bit	C, T
15	Revertive signal	Output 4	1 Bit	C, T
16	Revertive signal	Output 5	1 Bit	C, T
17	Revertive signal	Output 6	1 Bit	C, T
18	Revertive signal	Output 7	1 Bit	C, T
19	Revertive signal	Output 8	1 Bit	C, T
• Objects 8 – 11 can be assigned to any output. One should bear in mind that every output can only be assigned to one additional function!				

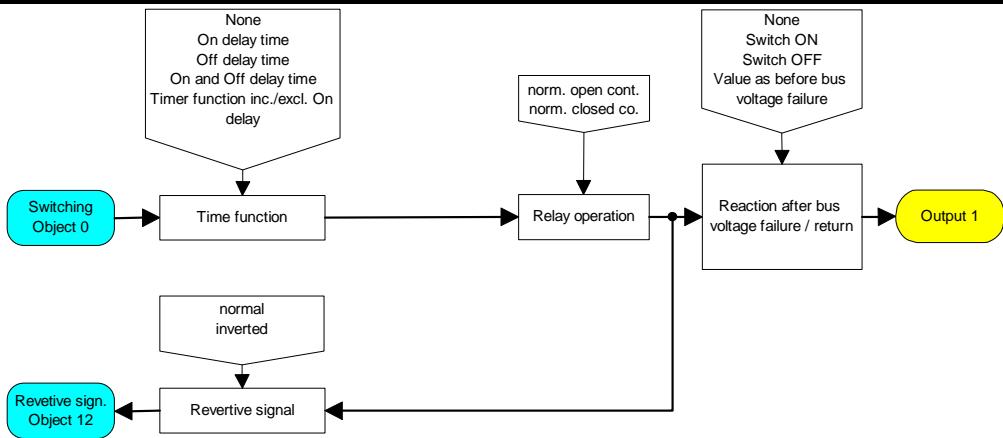
**Object description (dynamic object structure)**

- Object 0-7      Switching:      1 Bit object to switch a load
- Objects 8-11    Logic operation:      1 Bit object for logical link (e.g. AND / OR)
- Objects 8-11    Blocking:      1 Bit object to block corresponding output
- Objects 8-11    Forced guidance:      2 Bit object to positively set the switching channels (priority)
- Objects 12-19    Revertive signal:      1 Bit object to send out switching status. Adjusting the relays using the slide switch is not recognised for outputs 1-4!

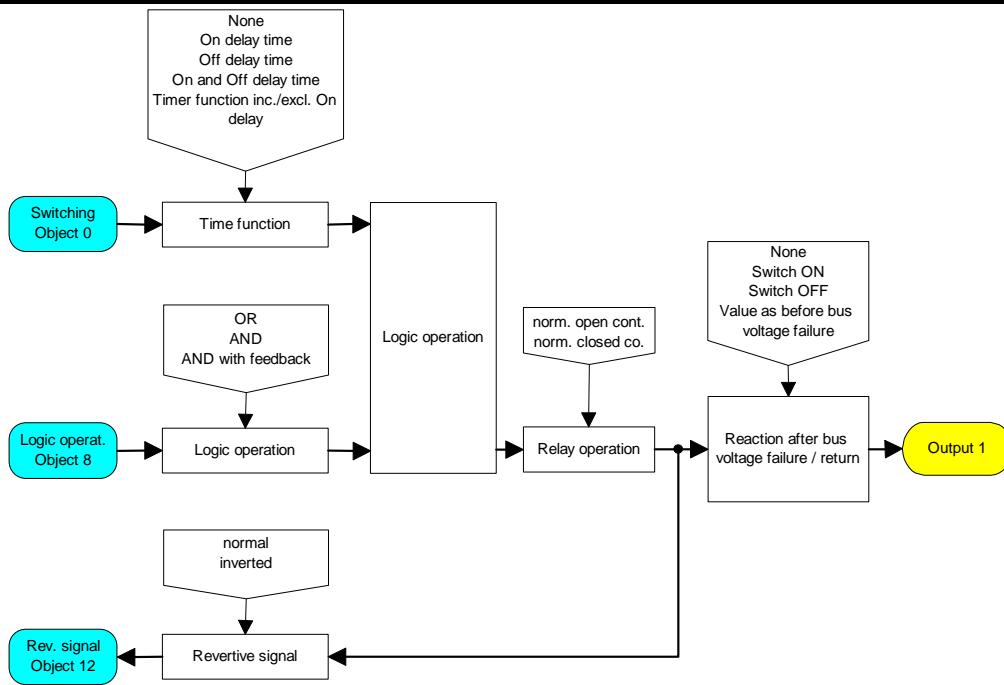
**Functional scope**

- Independent switching of 8 channels
- Manual activation possible for outputs 1 – 4
- Outputs can be parameterised as normally open or normally closed contact
- Preferred position can be set in case of bus voltage failure or return
- 4 adjustable outputs with 3 objects available: switching, revertive signal (feedback) and additional function
- 4 further outputs with 2 objects available: switching, revertive signal (feedback)
- Additional functions can be set:
  - logic operation function with 3 logical parameters
  - blocking function – relay blocking responses can be set
  - forced guidance function to assign priorities for incoming switching telegrams
- Invertible revertive signal (feedback) object
- On/Off delay or timer functions can be set individually for each channel

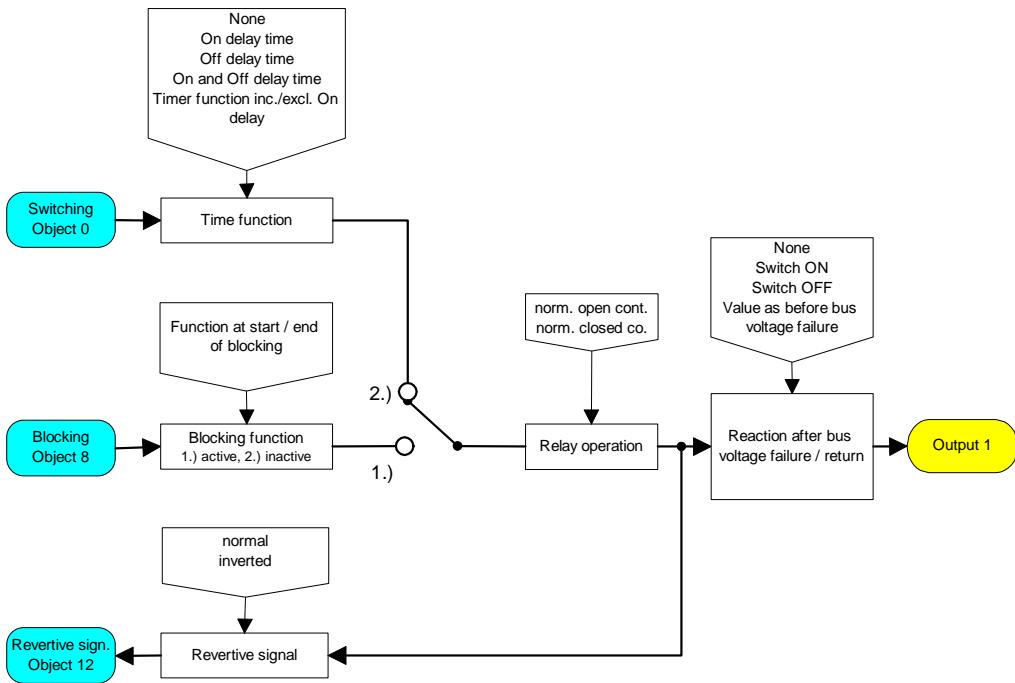
**Schematic of functions (e.g. Output 1 excluding additional function)**



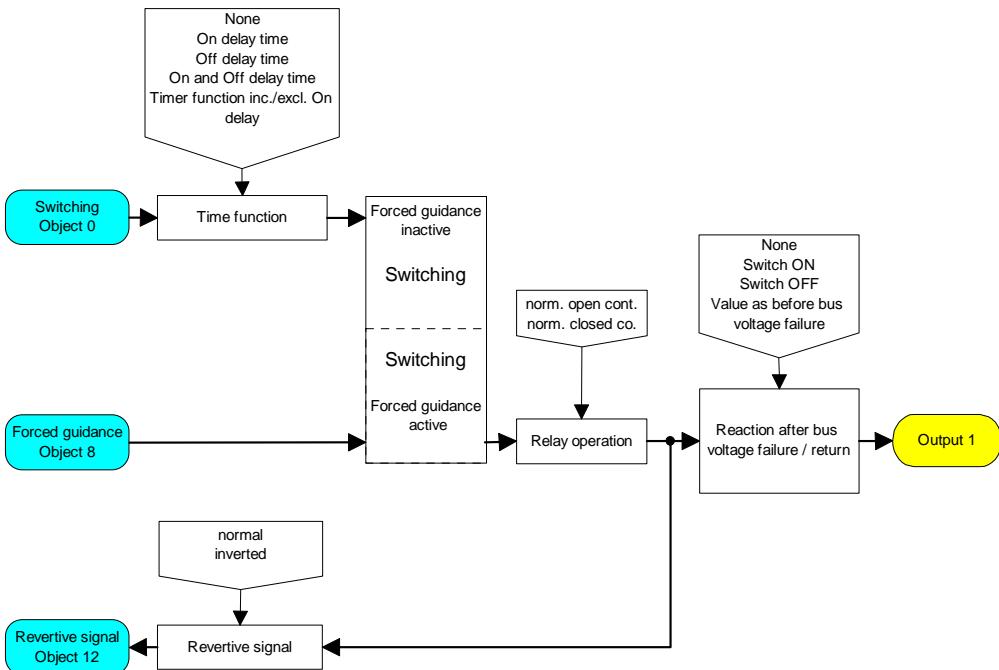
**Schematic of functions (e.g. Output 1 with additional function "Linking object")**



**Schematic of functions (e.g. Output 1 with additional function “Blocking object”)**



**Schematic of functions (e.g. Output 1 with additional function “positively-driven object”)**



<b>Parameters</b>		
<b>Description:</b>	<b>Values:</b>	<b>Comments:</b>
 Output 1-8		
Reaction after bus voltage failure	<b>NO</b> Close contact Open contact	Defines the response of the switch actuator following a bus voltage failure.
Reaction after bus voltage return	Value as before bus voltage failure Close contact <b>Open contact</b>	Defines the response of the switch actuator after the bus voltage is restored.
Time function	<b>NO</b> Switch ON delay Switch OFF delay Switch ON and OFF delay Time switch function (without ON delay) Time switch function (with ON delay)	Sets the required time function
Switch ON delay, factor (0..127)	<b>0 to 127, 10</b>	Defines the time factor that applies for the switch ON delay. Time = Base x Factor
Switch ON delay, base	<b>130; 260; 520 msec</b> 1.0; 2.1; 4.2; 8.4; 17; 34 sec 1.1; 2.2; 4.5; 9; 18; 36 min 1.2 h	Defines the time basis that applies for the switch ON delay. Time = Base x Factor Preliminary setting: 10 x 130 msec = 1.3 sec
Switch OFF delay, factor (0..127)	<b>0 to 127, 10</b>	Defines the time factor that applies for the switch OFF delay. Time = Basis x Factor
Switch OFF delay, base	<b>130; 260; 520 msec</b> 1.0; 2.1; 4.2; 8.4; 17; 34 sec 1.1; 2.2; 4.5; 9; 18; 36 min 1.2 h	Defines the time basis that applies for the switch OFF delay. Time = Base x Factor Preliminary setting: 10 x 130 msec = 1.3 sec
Switch ON and OFF delay, base	<b>130; 260; 520 msec</b> 1.0; 2.1; 4.2; 8.4; 17; 34 sec 1.1; 2.2; 4.5; 9; 18; 36 min 1.2 h	Defines the time basis that applies for the switch ON and OFF delay. Time = Base x Factor Preliminary setting: 10 x 130 msec = 1.3 sec
Reaction on OFF telegram	<b>Switch OFF</b> Ignore the switch OFF telegram	Defines the reaction of the switch actuator when receiving an OFF telegram while timer function is set.
Revertive signal	none <b>do not invert</b> invert	Defines whether and how revertive signal (feedback) concerning the feedback object occurs. Defines relay operation.
Relay operation	<b>Normally open contact</b> Normally closed contact	The relay works with a normally open contact. The relay works with a normally closed contact.

<b>Parameters</b>		
<b>Description:-</b>	<b>Values:</b>	<b>Comments:</b>
 Allocation of the additional functions		
Additional function 1	<b>OFF</b> ON	Defines whether additional function 1 is switched on or off.
Allocation	<b>Output 1</b> Output 2 Output 3 Output 4 Output 5 Output 6 Output 7 Output 8	Defines the assignment of additional function 1 to an output port.  Note: Only one additional function can be assigned to an output port!
Additional function 2	<b>OFF</b> ON	Defines whether additional function 2 is switched on or off.
Allocation	<b>Output 1</b> <b>Output 2</b> Output 3 Output 4 Output 5 Output 6 Output 7 Output 8	Defines the assignment of additional function 2 to an output port.  Note: Only one additional function can be assigned to an output port!
Additional function 3	<b>OFF</b> ON	Defines whether additional function 3 is switched on or off.
Allocation	Output 1 Output 2 <b>Output 3</b> Output 4 Output 5 Output 6 Output 7 Output 8	Defines the assignment of additional function 3 to an output port.  Note: Only one additional function can be assigned to an output port!
Additional function 4	<b>OFF</b> ON	Defines whether additional function 4 is switched on or off.
Allocation	Output 1 Output 2 Output 3 <b>Output 4</b> Output 5 Output 6 Output 7 Output 8	Defines the assignment of additional function 4 to an output port.  Note: Only one additional function can be assigned to an output port!
 Additional functions 1 and 2		
Additional function 1 parameterised as a "Logic operation" (e.g. assigned to Output 1-)		
Logic operation	<b>none</b> OR AND AND with feedback	Defines the logic operation.  In case of "AND with feedback" the switching object is reset if linking object = 0.

Additional function 1 parameterised as a "Blocking object" (e.g. assigned to Output 1)

Function at start of blocking	No change <b>Switch OFF</b> Switch ON	Defines the response of the switch actuator at the beginning of a blocking action via the blocking object.
Function at end of blocking	<b>No change</b> Switch OFF Switch ON	Defines the response of the switch actuator at the end of a blocking action via the blocking object.
Function of the blocking object	<b>released = 0, locked = 1</b> released = 1, locked = 0	Defines whether blocking will occur after receiving an ON or OFF telegram.

Additional function 1 parameterised as "Forced guidance object" (e.g. assigned to Output 1)

No further parameters!		
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Additional function 2, see Additional function 1!

 Additional functions 3 and 4

See Additional functions 1 and 2		
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**Comments on software**

• **Forced guidance object**

The switching channel can be forced separately into a switching position irrespective of the switching object by a 2 Bit telegram via the forced guidance object. The "Relay operation" parameter is also effective here. The value of the 2 Bit telegram must be created according to the following syntax:

The switching status that is being forced is indicated by the first bit (Bit 0) of the forced guidance object. Positive-drive is enabled with the second bit (Bit 1) for the forced guidance object.

Bit 1	Bit 0	Function
0	x	Inactive priority $\Rightarrow$ 'Switching' object
0	x	Inactive priority $\Rightarrow$ 'Switching' object
1	0	Active priority: switch off
1	1	Active priority: switch on

During active forced guidance (priority), incoming switching telegrams continue to be evaluated. If forced guidance (priority) is inactive subsequently then the current internal switching status is set in accordance with the switching object value.