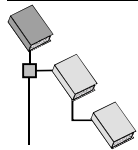




The switch actuator receives telegrams via the EIB and switches groups of electrical equipment with its six potential-free independent relay contacts. Various external conductors can be connected. The application enables switching with revertive signal (feedback), logic operation and timer function.

Database structure:



Gebr. Berker



- Output
- Binary output 6gang
- Switch actuator 6gang 6A RMD

Application summary:

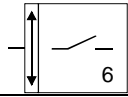
- Switching RS, LO, TF 206101

Technical Data

Measurements:	Width: 4 TE; 72 mm Height: 90 mm Depth: 64 mm																			
Protection class:	IP 20																			
Test symbol:	EIB																			
Operating temperature range:	-5 °C to +45 °C																			
Fixing method:	Snap onto DIN rail (excl. Data rail)																			
instabus EIB supply																				
Voltage:	24 V DC (+6 V / -4 V)																			
Power consumption:	150 mW typically																			
Connection:	instabus connection and branch off terminal																			
External supply	---																			
Response following voltage failure:	Software dependent																			
Response following restart:	Software dependent																			
Output																				
Relay manufacturer:	Matsushita																			
Relay type:	DE relay																			
Number:	6																			
Switch type:	Closer, potential-free relay contacts (μ-contact)																			
Switch voltage:	230 V AC																			
Max. switching current:	6 A / AC-1																			
Switching capacity:	<table border="0" style="width: 100%;"> <tr> <td>Filament bulbs:</td> <td>1000 W</td> </tr> <tr> <td>Fluorescent tubes, uncompensated, cosφ = 0,5:</td> <td>500 W</td> </tr> <tr> <td>Fluorescent tubes, parallel compensation, cosφ = 1:</td> <td>2 x 58 W / 14 μF</td> </tr> <tr> <td></td> <td>3 x 36 W / 14 μF</td> </tr> <tr> <td></td> <td>6 x 18 W / 14 μF</td> </tr> <tr> <td>Fluorescent Duo, cosφ = 1:</td> <td>2 x 500 W</td> </tr> <tr> <td>Siemens ballast for 58 W fluorescent tubes:</td> <td>10 pieces</td> </tr> <tr> <td>Siemens ballast for 36 W fluorescent tubes:</td> <td>15 pieces</td> </tr> <tr> <td>Siemens ballast for 18 W fluorescent tubes:</td> <td>15 pieces</td> </tr> </table>		Filament bulbs:	1000 W	Fluorescent tubes, uncompensated, cosφ = 0,5:	500 W	Fluorescent tubes, parallel compensation, cosφ = 1:	2 x 58 W / 14 μF		3 x 36 W / 14 μF		6 x 18 W / 14 μF	Fluorescent Duo, cosφ = 1:	2 x 500 W	Siemens ballast for 58 W fluorescent tubes:	10 pieces	Siemens ballast for 36 W fluorescent tubes:	15 pieces	Siemens ballast for 18 W fluorescent tubes:	15 pieces
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	0,5 – 2,5 mm ²	fine wire with end cap sleeve																		

Comments on hardware:

- The relays in a device never switch at the sametime, but always at staggered intervals. At higher switching frequencies, this time interval always becomes longer.
 Example:
 If all the channels are parameterised to the same group address (all the relays are to switch at the same) and if several switching telegrams are received, then the switching interval increases to a max of 0.1 sec. In such a case, the time between two telegrams must not be less than 0.6 sec in order that all the relays react to the status change.
- Various external conductors can be connected. A contact configuration of 230 V AC and a ballast device at the various outputs is not permitted!

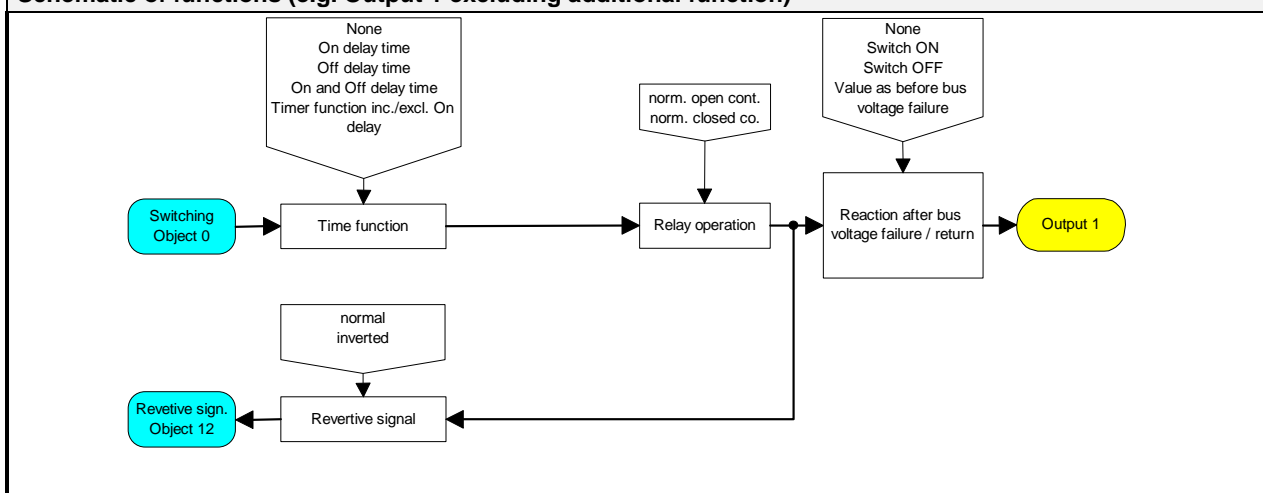
Software description			
ETS search path:			ETS symbol:
Output / Binary output 6gang / Switch actuator 6gang 6A RMD			
AST Type	11 _{Hex}	17 _{Dez}	Programmable I/O
Applications:			
No.	Brief description:	Name:	Version:
1	Switching with revertive signal (feedback), logic operation and time function	Switching RS, LO, TF 206101	1

Description of application:		Switching RS, LO, TF 206101		
Executable as of mask version:		1.1		
Number of addresses (max):		32		Dynamic table management Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Number of assignments (max):		32		Max. Table length 64
Communications objects:		16		
Object	Name	Function	Type	Flag
<input type="checkbox"/> 0	Switching	Output 1	1 Bit	C, W
<input type="checkbox"/> 1	Switching	Output 2	1 Bit	C, W
<input type="checkbox"/> 2	Switching	Output 3	1 Bit	C, W
<input type="checkbox"/> 3	Switching	Output 4	1 Bit	C, W
<input type="checkbox"/> 4	Switching	Output 5	1 Bit	C, W
<input type="checkbox"/> 5	Switching	Output 6	1 Bit	C, W
Assigned to Channels 1-4 of the additional function "Logic operation object":				
<input type="checkbox"/> 8	Logic operation	Output 1*	1 Bit	C, W
<input type="checkbox"/> 9	Logic operation	Output 2*	1 Bit	C, W
<input type="checkbox"/> 10	Logic operation	Output 3*	1 Bit	C, W
<input type="checkbox"/> 11	Logic operation	Output 4*	1 Bit	C, W
Assigned to Channels 1-4 of the additional function "Blocking object":				
<input type="checkbox"/> 8	Blocking	Output 1*	1 Bit	C, W
<input type="checkbox"/> 9	Blocking	Output 2*	1 Bit	C, W
<input type="checkbox"/> 10	Blocking	Output 3*	1 Bit	C, W
<input type="checkbox"/> 11	Blocking	Output 4*	1 Bit	C, W
Assigned to Channels 1-4 of the additional function "Forced guidance object":				
<input type="checkbox"/> 8	Forced guidance	Output 1*	2 Bit	C, W
<input type="checkbox"/> 9	Forced guidance	Output 2*	2 Bit	C, W
<input type="checkbox"/> 10	Forced guidance	Output 3*	2 Bit	C, W
<input type="checkbox"/> 11	Forced guidance	Output 4*	2 Bit	C, W
Revertive signal (feedback) objects:				
<input type="checkbox"/> 12	Revertive signal	Output 1	1 Bit	C, T
<input type="checkbox"/> 13	Revertive signal	Output 2	1 Bit	C, T
<input type="checkbox"/> 14	Revertive signal	Output 3	1 Bit	C, T
<input type="checkbox"/> 15	Revertive signal	Output 4	1 Bit	C, T
<input type="checkbox"/> 16	Revertive signal	Output 5	1 Bit	C, T
<input type="checkbox"/> 17	Revertive signal	Output 6	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)				
<ul style="list-style-type: none"> • Object 0-5 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 12-17 Revertive signal: 1 Bit object to send out switching status. Adjusting the relays using the slide switch is not recognised! 				

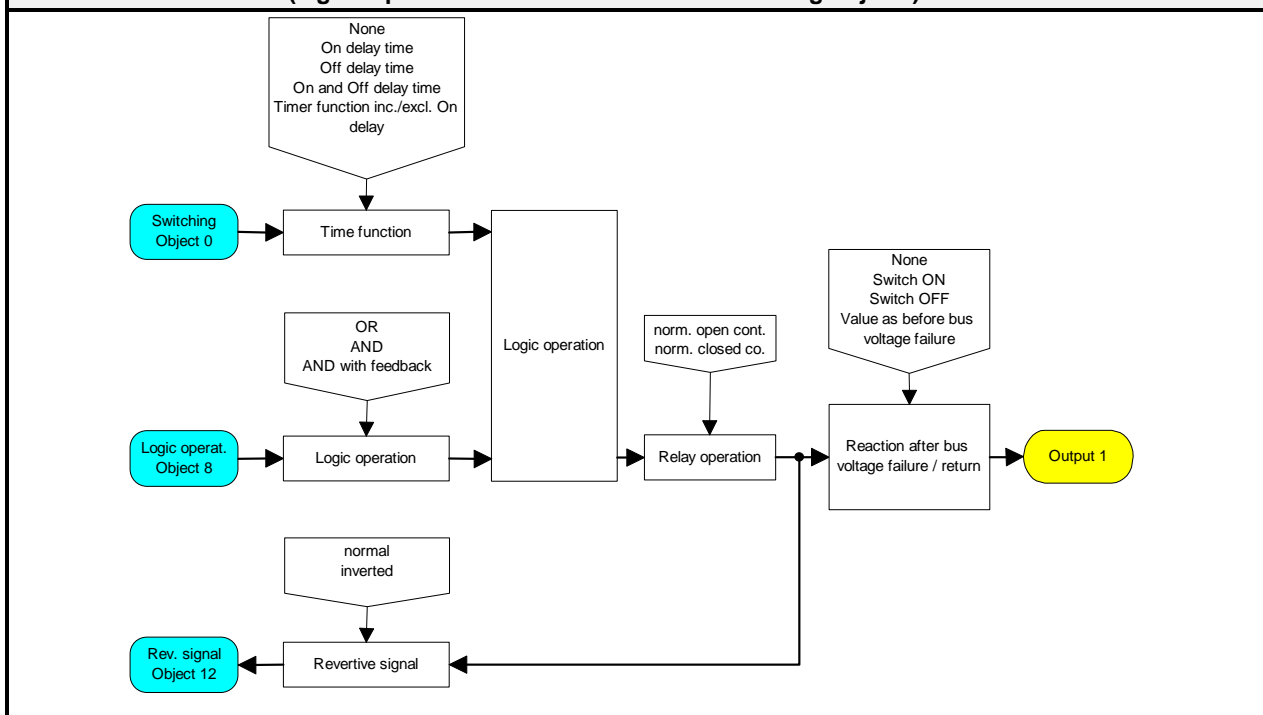
Functional scope

- Independent switching of 6 channels
- Outputs can be parameterised as normally open or normally closed contacts
- Preferred position can be set in case of bus voltage failure or restoration
- 4 adjustable outputs with 3 objects available: switching, revertive signal and additional function
- 2 further outputs with 2 objects available: switching, revertive signal
- 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

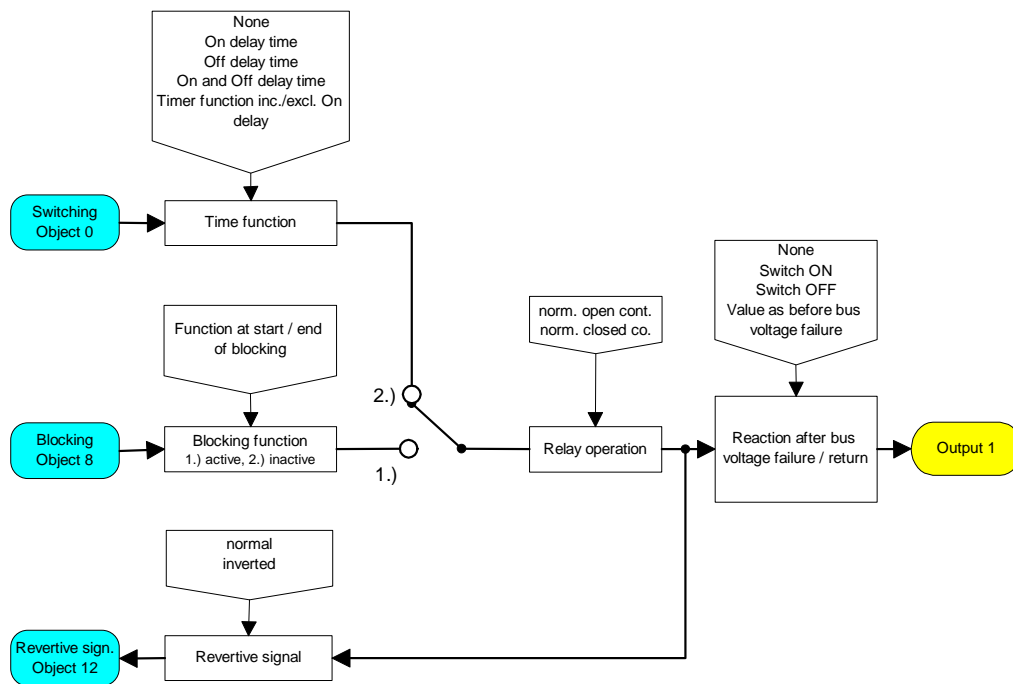
Schematic of functions (e.g. Output 1 excluding additional function)



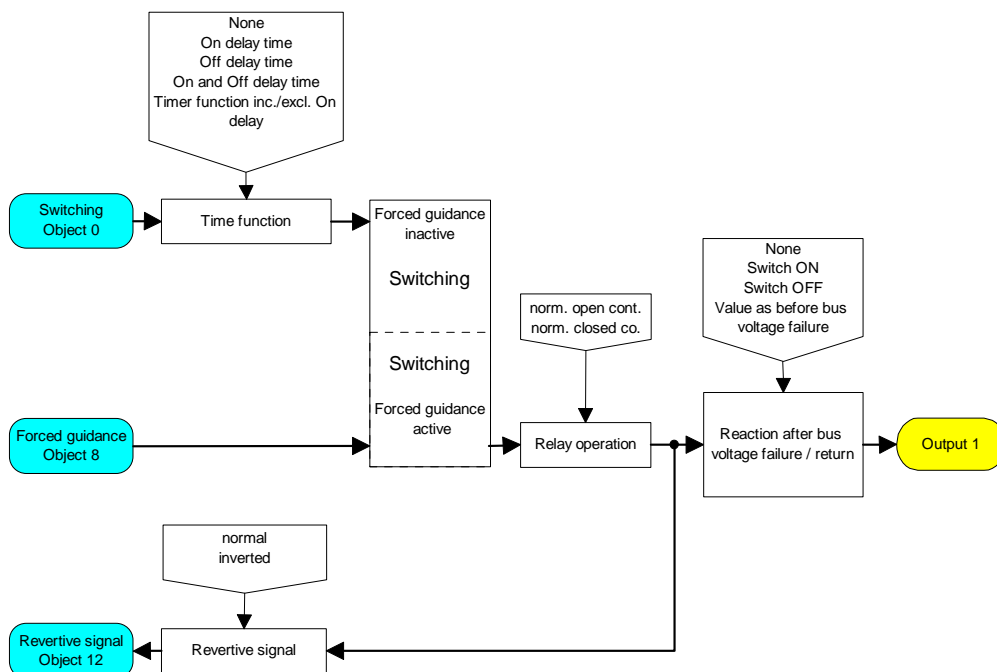
Schematic of functions (e.g. Output 1 with additional function “Linking object”)






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")



Parameters		
Description:	Values:	Comments:
 Output 1-6		
Reaction after bus voltage failure	NO 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 Open contact	Defines the response of the switch actuator after the bus voltage is restored.
Time function	NO 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)	0 to 127, 10	Defines the time factor that applies for the switch ON delay. Time = Base x Factor
Switch ON delay, base	130 ; 260; 520 msec 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)	0 to 127, 10	Defines the time factor that applies for the switch OFF delay. Time = Base x Factor
Switch OFF delay, base	130 ; 260; 520 msec 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	130 ; 260; 520 msec 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	Switch OFF 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 do not invert invert	Defines whether and how revertive signal (feedback) concerning the feedback object occurs.
Relay operation	Normally open contact Normally closed contact	Defines relay operation. The relay works with a normally open contact. The relay works with a normally closed contact.

Parameters		
Description-:	Values:	Comments:
 Allocation of the additional functions		
Additional function 1	OFF ON	Defines whether additional function 1 is switched on or off.
Allocation	Output 1 Output 2 Output 3 Output 4 Output 5 Output 6	Defines the allocation of additional function 1 to an output port. Note: Only one additional function can be assigned to an output port!
Additional function 2	OFF ON	Defines whether additional function 2 is switched on or off.
Allocation	Output 1 Output 2 Output 3 Output 4 Output 5 Output 6	Defines the allocation of additional function 2 to an output port. Note: Only one additional function can be assigned to an output port!
Additional function 3	OFF ON	Defines whether additional function 3 is switched on or off.
Allocation	Output 1 Output 2 Output 3 Output 4 Output 5 Output 6	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	OFF ON	Defines whether additional function 4 is switched on or off.
Allocation	Output 1 Output 2 Output 3 Output 4 Output 5 Output 6	Defines the allocation 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 object" (e.g. assigned to Output 1-)		
Link	none OR AND AND with feedback	Defines the logical link. In case of "AND with feedback" the switching object is reset if linking object = 0.

Parameter																	
Description:	Values:	Comments:															
Additional function 1 parameterised as a "Blocking object" (e.g. assigned to Output 1)																	
Function at start of blocking	No change Switch OFF 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	No change 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	released = 0, locked = 1 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!																	
Additional function 2, see Additional function 1!																	
 Additional functions 3 and 4																	
See Additional functions 1 and 2																	
Comments on software <ul style="list-style-type: none"> • Forced guidance object <p>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:</p> <p>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.</p> <table border="1" data-bbox="794 1153 1385 1355"> <thead> <tr> <th>Bit 1</th> <th>Bit 0</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>x</td> <td>Inactive priority ⇒ 'Switching' object</td> </tr> <tr> <td>0</td> <td>x</td> <td>Inactive priority ⇒ 'Switching' object</td> </tr> <tr> <td>1</td> <td>0</td> <td>Active priority: switch off</td> </tr> <tr> <td>1</td> <td>1</td> <td>Active priority: switch on</td> </tr> </tbody> </table> <p>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.</p>			Bit 1	Bit 0	Function	0	x	Inactive priority ⇒ 'Switching' object	0	x	Inactive priority ⇒ 'Switching' object	1	0	Active priority: switch off	1	1	Active priority: switch on
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