11 A2 Binary 520B01

Devices Employing the Program

Product family: Output
Product type: Binary output 2-fold
Manufacturer: Siemens

Name: Load Switch GE 510
Order-no.: 5WG1 510-4AB01

Name: Binary output N 562
Order-no.: 5WG1 562-1AB01

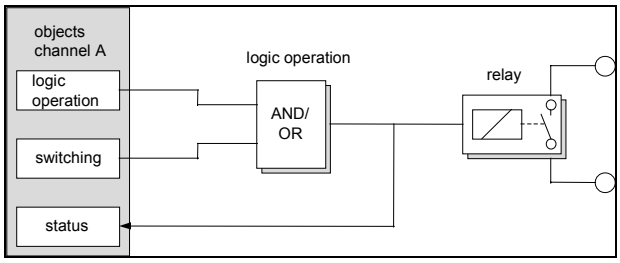
Name: Binary output N 562 *pl*
Order-no.: 5WG1 562-1PB01

Name: Binary output GE 563
Order-no.: 5WG1 563-4AB01

Application Description

This application program allows you to use both outputs of a binary output 2-fold for pure switching tasks. Additionally, a logic object is provided to logical operations at channel A. Furthermore, the switching status of the outputs can be read via the bus and parameters are provided to specify the response to bus voltage failure and recovery, and the relay's contact type.

Block diagram of binary output A



Communication Objects

Phys.Addr.	Program		
no.	Function	Object name	Type
01.01.029	11 A2 Binary	520B01	
0	Channel A	Logic operation	1 Bit
1	Channel A	Switch	1 Bit
2	Channel A	Status	1 Bit
3	Channel B	Switch	1 Bit
4	Channel B	Status	1 Bit

Note:

The order of the entries may vary from the above due to individual customization of the table.

Obj	Function	Object name	Type	Flag
0	Channel A	Logic operation	1-bit	CWU
This object's group addresses are used to receive the switching telegrams to the first input of the logic combination at channel A. When the parameter "Non delayed logic operation" is set to "no logic operation" this object is not used.				
1	Channel A	Switch	1-bit	CWU
This object's group addresses are used to receive the timer's switching telegrams to the relay channel A. When using a logic combination the timer's result is the second input of the logic combination at channel A.				
2	Channel A	Status	1-bit	CRU
This object holds the actual switching status of the relay channel A. The status is changed according to the switching telegrams received at the switching object [1] and the status of the logic object [0] if a logic combination was specified but is not affected by the parameter "Relay mode: normally closed contact/ normally open contact". On changing the object status no telegram is sent. The switching status can be read with the ETS or a visualization unit.				
3	Channel B	Switch	1-bit	CWU
This object's group addresses are used to receive the timer's switching telegrams to the relay channel B.				
4	Channel B	Status	1-bit	CRU
This object holds the actual switching status of the relay channel B. The status is changed according to the switching telegrams received at the switching object [3] and the specified response to bus voltage recovery but is not affected by the parameter "Relay mode: normally closed contact/ normally open contact". On changing the object status no telegram is sent. The switching status can be read with the ETS or a visualization unit				

Maximum number of group addresses: 17
Maximum number of assignments: 17

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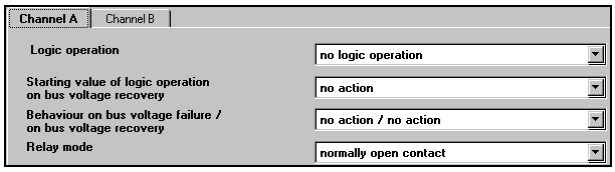
Parameters

Note:

The sequence of the parameters in the de-scription is the same as in the ETS screen shots. To have a more precise description, the terms used are partly different to the ETS screen shots.

Channel A:



Parameters	Settings
Logic operation	**no logic operation** OR function AND function
This parameter defines the logic combination between the switching object [1] and the logic object [0]. The first input of the logic combination receives the telegrams from the logic object. The second input uses the status of the switching object. "no logic operation" (combination): Telegrams from the switching object are forwarded to the relays directly subject to the selected "On" and "Off" delays, ignoring the logic object. "OR function" (combination): Switching and logic objects are combined with a logical OR "AND function" (combination): Switching and logic objects are combined with a logical AND.	
Starting value of logic operation on bus voltage recovery	**no action** logic 1 (On) logic 0 (Off)
This parameter defines the status of the logic object on bus voltage recovery. "no action" On bus voltage recovery the logic object returns to the status before bus voltage failure. I.e. an OR combination produces "On" telegrams on bus voltage recovery if the status of the logic object was "1" prior to the bus voltage failure. This also applies if the parameter "Behaviour on bus voltage failure/on bus voltage recovery" is set to "relay drops off". With an AND combination the relay picks up only when the logic object's status is "On" on bus voltage failure and the parameter "Behaviour on bus voltage failure/on bus voltage recovery" is set to "relay picks up". "logic 1 (On)": On bus voltage recovery the logic combination is set to "On". Thus, an OR combination always produces "On" telegrams on bus voltage recovery, while an AND combination only produces on telegrams when the parameter "Behaviour on bus voltage failure/on bus voltage recovery " is set to "relay picks up". "logic 0 (Off)": On bus voltage recovery the logic combination is set to "Off". Thus, an AND combination never produces "On" telegrams on bus voltage recovery, while an OR combination only produces on telegrams when the parameter " Behaviour on bus voltage failure/on bus voltage recovery " is set to "relay picks up".	

Parameters	Settings
Behaviour on bus voltage failure / on bus voltage recovery	**no action / no action** no action / relay picks up no change / relay drops off relay picks up / picks up relay picks up / drops off relay drops off / picks up relay drops off / drops off
This parameter rules the relay contact's response to bus voltage failure and recovery. The settings only affect the switching telegrams. The relay contact status is inverted with the parameter "Relay mode: normally closed contact". "no action": On bus voltage failure the relay contact maintains its current switching status. The response to bus voltage recovery is ruled by the parameters "Logic operation" and "Starting value of logic operation on bus voltage recovery". When using no logic combination, the response to bus voltage recovery is the same as to bus voltage failure. "relay picks up" (switch on): On bus voltage failure the relay contact picks up in the setting "Relay mode: normally open contact" and drops out when using "Relay mode: normally closed contact". The response to bus voltage recovery is ruled by the parameters "Logic operation" and "Starting value of logic operation on bus voltage recovery". When using no logic combination, the response to bus voltage recovery is the same as to bus voltage failure. "relay drops off" (switch off): On bus voltage failure the relay contact drops out in the setting "Relay mode: normally open contact" and picks up when using "Relay mode: normally closed contact". The response to bus voltage recovery is ruled by the parameters "Logic operation" and "Starting value of logic operation on bus voltage recovery". When using no logic combination, the response to bus voltage recovery is the same as to bus voltage failure.	
Relay mode	**normally open contact** normally closed contact
This parameter defines the characteristic of the output. "normally open contact": "off" telegram = relay drops off, "on" telegram = relay picks up. "normally closed contact": "off" telegram = relay picks up, "on" telegram = relay drops off.	

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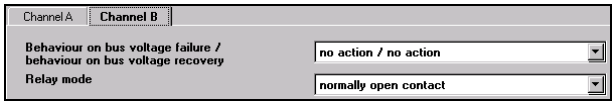
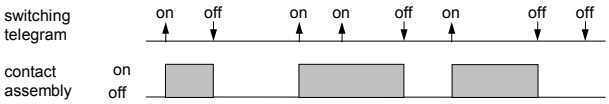
Channel B:



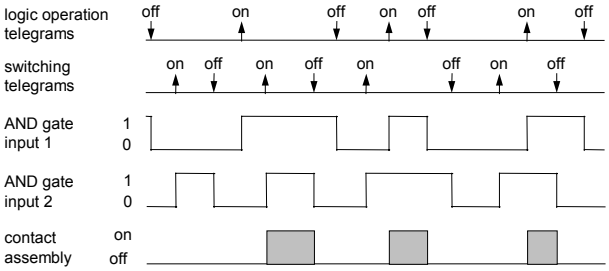
Parameters	Settings
Behaviour on bus voltage failure / recovery	**no action / no action** no action / relay picks up no action / relay drops off relay picks up / picks up relay picks up / drops off relay drops off / picks up relay drops off / drops off
This parameter rules the relay contact's response to bus voltage failure and recovery. The settings only affect the switching telegrams. The relay contact status is inverted with the parameter "Relay mode: normally closed contact". "no action": On bus voltage failure and recovery the relay contact maintains its current switching status. "relay picks up" (switch on): On bus voltage failure and recovery the relay contact picks up in the setting "Relay mode: normally open contact" and drops out when using "Relay mode: normally closed contact". "relay drops off" (switch off): On bus voltage failure and recovery the relay contact drops out in the setting "Relay mode: normally open contact" and picks up when using "Relay mode: normally closed contact".	
Relay mode	**normally open contact** normally closed contact
This parameter defines the characteristic of the output. "normally open contact": "off" telegram = relay drops off, "on" telegram = relay picks up. "normally closed contact": "off" telegram = relay picks up, "on" telegram = relay drops off.	

Timing Diagrams: Examples to Channel A

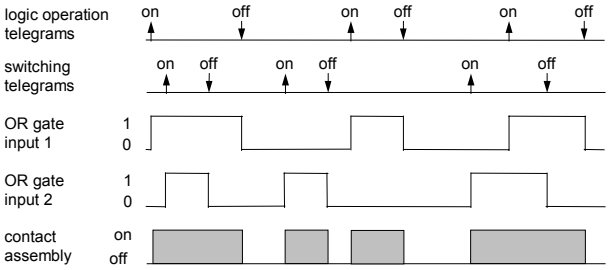
1. Switching without logic combination



2. Switching with AND gate



3. Switching with OR gate



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Notes: