SIEMENS

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 <i>pl</i>
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							
<u>no.</u>	Function	Object name	Туре				
ursi 01.01.0	29 11 A2 Binary	520801					
⊡ ⊷ 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	Flag						
0	Channel A	Logic operation	1-bit	CWU					
This ing to chan tion"	This object's group addresses are used to receive the switch- ing telegrams to the first input of the logic combination at channel A. When the parameter "Non delayed logic opera- tion" is set to "no logic operation" this object is not used								
1 Channel A Switch 1-bit CWU									
This swite logic logic	object's group ad ching telegrams to combination the combination at c	dresses are used t the relay channel timer's result is the hannel A.	o receive A. When second	e the timer's using a input of the					
2	Channel A	Status	1-bit	CRU					
chan teleg of th is no close objec read	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 swite	object's group ad ching telegrams to	dresses are used t the relay channel	o receive B.	e the timer's					
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 speci- fied response to bus voltage recovery but is not affected by the parameter "Relay mode: normally closed contact/ nor- mally open contact". On changing the object status no tele- gram 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:

Channel A Channel B							
Logic operation							
Starting value of logic operation							
on bus voltage recovery Rehaviour on bus voltage failure /							
on bus voltage recovery	no action / no action						
Kelay mode	normally open contact						
	0 ///						
Parameters	Settings						
Logic operation	OR function						
	AND function						
This parameter defines the logi	c combination between the						
switching object [1] and the logi	c object [0]. The first input of the						
logic combination receives the	telegrams from the logic object.						
The second input uses the state	us of the switching object.						
"no logic operation" (combination	on): Telegrams from the switch-						
ing object are forwarded to the	relays directly subject to the						
selected "On" and "Off" delays,	ignoring the logic object.						
"OR function" (combination): Sv	witching 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	no action						
operation on bus voltage	logic 1 (On)						
recovery	logic 0 (Off)						
This parameter defines the stat	us of the logic object on bus						
voltage recovery.							
"no action" On bus voltage reco	overy the logic object returns to						
the status before bus voltage ta	allure. I.e. an OR combination						
of the logic object was "1" prior	to the hue voltage foilure. This						
of the logic object was 1 phot	to the bus voltage failure. This						
ure/on bus voltage recovery" is	set to "relay drops off" With						
an AND combination the relay r	picks up only when the logic						
object's status is "On" on bus v	oltage failure and the parame-						
ter "Behaviour on bus voltage fa	ailure/on bus voltage recovery"						
is set to "relay picks up".							
"logic 1 (On)": On bus voltage r	ecovery the logic combination						
is set to "On". Thus, an OR con	nbination always produces						
"On" telegrams on bus voltage	recovery, while an AND com-						
bination 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 r	ecovery the logic combination						
is set to "Off". Thus, an AND co	is set to "Off". Thus, an AND combination never produces						
"On" telegrams on bus voltage recovery, while an OR combi-							
nation only produces on telegra	ims when the parameter "						
Benaviour on bus voltage failur	e/on bus voltage recovery " is						
set to "relay picks up".							

Parameters	Settings
Behaviour on bus voltage	no action / no action
failure /	no action / relay picks up
on bus voltage recovery	no change / relay drops off
	relay picks up / picks up
	relay picks up / drops off
	relay drops off / picks up
This is a second second second second second	relay drops on / drops on
voltage failure and recovery.	contact's response to bus
switching tolograms. The rolay	contact status is invorted with
the parameter "Pelay mode: no	rmally closed contact"
"no action". On hus voltage fail	ure the relay contact maintains
its current switching status. The	e response to bus voltage
recovery is ruled by the parame	eters "Logic operation" and
"Starting value of logic operatio	n on bus voltage recovery".
When using no logic combination	on, the response to bus volt-
age 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 us	sing "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 voltag	e recovery". When using no
logic combination, the response	e to bus voltage recovery is the
same as to bus voltage failure.	bus voltage foilure the relay
contact drops out in the setting	"Bolov modo: normally open
contact utops out in the setting	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	e recovery" When using no
logic combination, the response	e to bus voltage recovery is the
same as to bus voltage failure.	,
Relay mode	normally open contact
	normally closed contact
This parameter defines the cha	racteristic 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:

Channel A Channel B							
Behaviour on bus voltage failure /	no action / no action						
Relay mode	normally open contact						
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 recov- ery 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 re- covery 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.							
"on"	telegram = relay drops off.						

Timing Diagrams: Examples to Channel A

1. Switching without logic combination

switching		on	off	on	on	off	on	off	off
telegram		∳	∳	∳	♦	∳	∳	∳	∳
contact assembly	on off								

2. Switching with AND gate



3. Switching with OR gate

logic operation telegrams	ı	on 		off ∳		on ∳	off ∳		on ∳	off ∳
switching telegrams		on ▲	off ∳		on ▲	off ∳		on ∳	of t	if /
OR gate input 1	1 0									
OR gate input 2	1 0									
contact assembly	on off									

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Notes:

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