

11 CO AND-8/2 720101

Devices Employing the Program

Product family:	Controller
Product type:	Controller
Manufacturer:	Siemens
Namo	Logio modulo N201

Name: Logic module N301 Order-no.: 5WG1 301-1AB01

Application Description

This application allows you to combine up to 8 inputs via a logic AND operation and an OR operation. The results are passed on to separate outputs (AND, OR).



Furthermore, the inputs and outputs of the AND and OR gates can be inverted individually.

The outputs can be assigned sending conditions (output filters) that rule the sending of telegrams via that output. By inverting all inputs and the output, the OR gate can be converted to an AND gate and vice versa. Thus, it is possible to realize 2 separate AND or OR gate with 4 inputs each with a single logic module.

Communication Objects

Product	t	Program	Order number
no. F	unction	Object name	Туре
· 및 Logic mo	odule N 301	11 CO AND-8/2 720101	5VVG1 301-1AB01
⊡k– 0 Ir	nputs	A	1 Bit
1 Ir	nputs	в	1 Bit
+ 2 Ir	nputs	с	1 Bit
+ 3 Ir	nputs	D	1 Bit
<u>⊒</u> ⊷ 4 Ir	nputs	E	1 Bit
+ 5 Ir	nputs	F	1 Bit
<u>⊒</u> + 6 Ir	nputs	G	1 Bit
7 Ir	nputs	н	1 Bit
+ 8 C	Dutputs	AND	1 Bit
+9 c	Dutputs	OR	1 Bit

Note:

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

Obj	Function	Object name	Туре	Flag		
0	Inputs	A	1-Bit	CWTU		
Via t	his object's group	addresses input A	's switch	ing tele-		
gran	ns are received. T	he logic operation	that is to	be used on		
this	nput can be selec	ted in the paramet	er list. I f	ne input also		
1	De useu to Dotin ga		1 Dit	CWTU		
1	inputs	D	I-DIL	CWIO		
Via t	his object's group	addresses input B	s switch	ing tele-		
gran this	is are received. I	ted in the paramet	inal is lo or list Th	be used on		
can	be used to both a	ates or none at all.	CI 1131. 11			
2	Inputs	С	1-Bit	CWTU		
		-	-			
Via t	his object's group	addresses input C	's switch	ing tele-		
gran	ns are received. T	he logic operation	that is to	be used on		
this	input can be selec	ted in the paramet	er list. Th	ne input also		
can	be used to both ga	ates or none at all.	4 DH			
3	Inputs	ם	1-BI	CWIU		
Via t	his object's group	addresses input D	's switch	ing tele-		
gran	ns are received. T	he logic operation	that is to	be used on		
this	input can be selec	ted in the paramet	er list. Tr	ie input also		
Can	be used to both ga		1 Dit	CWTU		
4	inputs	E	Ι-ΒΙ	CWIU		
Via t	his object's group	addresses input E	's switch	ing tele-		
gran	ns are received. I	he logic operation	that is to	be used on		
can	this input can be selected in the parameter list. The input also					
5	Inputs	F	1-Bit	CWTU		
Ŭ	inputo	•	1 Dit	00010		
Via t	his object's group	addresses input F	's switch	ing tele-		
gran	ns are received. T	he logic operation	that is to	be used on		
this i	nput can be selec	ted in the paramet	er list. Th	ne input also		
can	be used to both ga	ates or none at all.	4 DH			
ø	Inputs	0	1-BI	CWIU		
Via t	his object's group	addresses input G	's switch	ing tele-		
gran	ns are received. T	he logic operation	that is to	be used on		
this i	this input can be selected in the parameter list. The input also					
can	be used to both ga	ates or none at all.	4 DH			
1	Inputs	н	1-BI	CWIU		
Via t	his object's group	addresses input H	l's switch	ing tele-		
gran	grams are received. The logic operation that is to be used on					
this input can be selected in the parameter list. The input also						
0 0	Outpute		1 Dit	CRTU		
0	Outputs	AND	I-DIL	UKIU		
Via t	his object's group	address the result	of the lo	gic AND		
oper	ation are sent. A	parameter is provid	led to rul	ing whether		
teleg	grams are sent on	ly on an object stat	e of logic	: "1", logic		
"U" C	"0" or both.					

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9 Outputs OR 1-Bit CRT				
	J			
Via this object's group address the result of the logic AND operation are sent. A parameter is provided to ruling whether telegrams are sent only on an object state of logic "1", logic "0" or both.				

Maximum	number of group addresses:	12
Maximum	number of assignments:	15

Parameters

AND Inputs

AND inputs	AND output	OR Inputs	OR Output	Outputs	
Input A			not	connected	•
Input B			not	connected	_
Input C			not	connected	•
Input D			not	connected	<u> </u>
Input E			not	connected	•
Input F			not	connected	_
Input G			not	connected	_
Input H			not	connected	T

Parameters	Settings
Input A	not connected direct inverted
Input B	not connected direct inverted
Input C	not connected direct inverted
Input D	not connected direct inverted
Input E	not connected direct inverted
Input F	not connected direct inverted
Input G	not connected direct inverted
Input H	not connected direct inverted
Each of these parameter rules output object is to be used to th "not connected": The respectiv AND operation. "direct": The respective input o	whether the corresponding ne AND gate. e input object is not used to the bject is used to the AND opera-

tion and the input is not inverted by the logic gate. A "1" telegram is forwarded as a logic "1"to the respective logic input of the AND gate and a "0" telegram is forwarded as a logic "0" "inverted": The respective input object is used to the AND operation and the input of the logic gate is inverted. A "1" telegram is forwarded as a logic "0"to the respective logic input of the AND gate and a "0" telegram is forwarded as a logic "1"

AND Output:

AND inputs AND output OR Inputs	OR Output	Outputs	
Invert AND output	No		-

Parameters	Settings
Invert AND output	No Yes
This parameter rules whether the operation is inverted before for AND". "No": The result of the AND operation is on to the output object. A AND gate is sent as a "1" telege send condition and a logical "0" "Yes": The result of the AND operation of the AND operation of the and the output object. A loging the other output object. A loging the is sent as a "0" telegram a condition and a logical "0" as a	he result of the logical AND warding it to object "Output eration is not inverted to pass- logic "1" at the output of the ram according to the specified ' as a "0" telegram peration is inverted to passing c "1" at the output of the AND iccording to the specified send "1" telegram

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OR inputs:

AND inputs AND output OR Inputs	OR Output Outputs
Input A	not connected
Input B	not connected
Input C	not connected
Input D	not connected
Input E	not connected
Input F	not connected
Input G	not connected
Input H	not connected

Parameters	Settings
Input A	not connected direct inverted
Input B	not connected direct inverted
Input C	not connected direct inverted
Input D	not connected direct inverted
Input E	not connected direct inverted
Input F	not connected direct inverted
Input G	not connected direct inverted
Input H	not connected direct inverted

Each of these parameter rules whether the corresponding output object is to be used to the OR gate.

"not connected": The respective input object is not used to the OR operation.

"direct": The respective input object is used to the OR operation and the input is not inverted by the logic gate. A "1" telegram is forwarded as a logic "1"to the respective logic input of the OR gate and a "0" telegram is forwarded as a logic "0" "inverted": The respective input object is used to the OR operation and the input of the logic gate is inverted. A "1" telegram is forwarded as a logic "0"to the respective logic input of the AND gate and a "0" telegram is forwarded as a logic "1"

OR Output:

AND inputs	AND output	OR Inputs	OR Output	Outputs	
Invert OR o	utput		No		<u> </u>

Parameters	Settings
Invert OR output	No Yes
This parameter rules whether the operation is inverted before forw "No": The result of the OR oper it on to the output object. A loging the is sent as a "1" telegram a condition and a logical "0" as a "Yes": The result of the OR oper on to the output object. A logic gate is sent as a "0" telegram a condition and a logical "0" as a "O" telegram a condition and a logical "0" as a sent as a "0" telegram a condition and a logical "0" as a sent as a "0" telegram a condition and a logical "0" as a sent as a "0" telegram a condition and a logical "0" as a sent as a "0" telegram a condition and a logical "0" as a sent as a sent as a "0" telegram a condition and a logical "0" as a sent as a sent as a sent as a "0" telegram a condition and a logical "0" as a sent as	he result of the logical OR varding it to object "Output OR". ation is not inverted to passing c "1" at the output of the OR iccording to the specified send "0" telegram eration is inverted to passing it "1" at the output of the AND iccording to the specified send "1" telegram

Outputs:

AND inputs AND output OR Inputs OR (Output Outputs
Used outputs	AND and OR
Send condition for both outputs	only on changes at output
Send condition for AND output	none
Send condition for OR output	none

Parameters	Settings	
Used outputs	AND and OR	
	only AND	
A logic exertion that is not use	only OR	
A logic operation that is not used must be disabled. The com-		
address. Otherwise the logic module might malfunction		
"AND and OR ". Both logic operations are used and therefore		
hoth output objects must be assigned a group address		
"only AND ". Only the AND operation is used. The parameter		
settings to the OR operation are ignored. It is not necessary to		
assign group addresses to "Outputs OR".		
"only OR ": Only the OR operation is used. The parameter		
settings to the AND operation are ignored. It is not necessary		
to assign group addresses to "	Outputs AND".	
Send condition for both	only on changes at output	
outputs	on each reception	
This parameter rules when the results of logic operations is to		
be sent.	a used outputs only send when	
the result of the AND or OP is	changed by receiving a new	
input edge either from "0" to "1	" or from "1" to "0" and the	
send condition is not set otherwise		
"on each reception ". The used outputs send every time an		
input is received provided the send condition is not set other-		
wise. Here it does not matter whether the input object is used		
with the logic operation of this output. This setting must not be		
chosen when assigning a group address to the output of a		
logic operation that points to an input as the sending of an		
output would be immediately received at that input which		
would in turn produce another t	elegram and so on, resulting in	
a continuous circle of telegrams	a continuous circle of telegrams at maximum frequency.	

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Parameters	Settings	
Send condition for AND	none	
output	only on 1 at output	
	only on 0 at output	
This parameter defines the state of the AND output object		
required to sending telegrams:		
"none": According to the "sending conditions to both outputs"		
parameter the object "AND output" sends telegrams to every		
result of the logic operation.		
both outputs" parameter the object "AND outputs" conditions to		
grams only when the result of the logic operation is "1"		
"only on 0 at output ": according	a to the "sending conditions to	
both outputs" parameter the ob	ject "AND output" sends tele-	
grams only when the result of t	he logic operation is "0".	
Send condition for OR	none	
output	only by 1 on output	
	only by 0 on output	
	only by 0 on output	
This parameter defines the sta	e of the OR output object	
This parameter defines the star required to sending telegrams:	e of the OR output object	
This parameter defines the star required to sending telegrams: "none": According to the "send	e of the OR output object ng conditions to both outputs"	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the legic parential	e of the OR output object ng conditions to both outputs" ut" sends telegrams to every	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": coperation.	e of the OR output object ng conditions to both outputs" ut" sends telegrams to every	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": according both outputs" parameter the object	e of the OR output object ng conditions to both outputs" ut" sends telegrams to every to the "sending conditions to inst "OR output" sonds tole	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": according both outputs" parameter the ob grams only when the result of t	e of the OR output object ng conditions to both outputs" ut" sends telegrams to every to the "sending conditions to ject "OR output" sends tele- he logic operation is a "1"	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": according both outputs" parameter the ob grams only when the result of t "only on 0 at output": according	te of the OR output object ng conditions to both outputs" ut" sends telegrams to every to the "sending conditions to ject "OR output" sends tele- he logic operation is a "1". to the "sending conditions to	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": according both outputs" parameter the ob grams only when the result of t "only on 0 at output": according both outputs" parameter the ob	te of the OR output object ng conditions to both outputs" ut" sends telegrams to every to the "sending conditions to ject "OR output" sends tele- he logic operation is a "1". to the "sending conditions to ject "OR output" sends tele-	
This parameter defines the sta required to sending telegrams: "none": According to the "send parameter the object "OR outp result of the logic operation. "only on 1 at output": according both outputs" parameter the ob grams only when the result of t "only on 0 at output": according both outputs" parameter the ob grams only when the result of t	te of the OR output object ng conditions to both outputs" ut" sends telegrams to every to the "sending conditions to ject "OR output" sends tele- he logic operation is a "1". to the "sending conditions to ject "OR output" sends tele- he logic operation is a "0".	

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