

11 S4 BinVal 240A01

Devices Employing the Program

Product family: Input
Product type: Binary Input 4-fold
Manufacturer: Siemens

Name: Binary Input N 260
Order-no.: 5WG1 260-1AB01

Name: Binary Input N 260 *p/*
Order-no.: 5WG1 260-1PB01

Name: Binary Input GE 260
Order-no.: 5WG1 260-4AB02

Name: Binary Input N 261
Order-no.: 5WG1 261-1AB01

Name: Binary Input GE 261
Order-no.: 5WG1 261-4AB02

Name: Binary Input GE 262
Order-no.: 5WG1 262-4AB02

Application Description

This application program allows you to generate 1 byte telegrams with any binary input 4-fold for realizing a light intensity control from 0 to 100% via switching/dimming actuators.

When evaluating the leading and trailing edges of a push button or the conventional brightness controller each input produces up to two different values. Thus, up to four light sensors with different switching thresholds can be combined to a five level light intensity control. A parameter is provided to adjusting the delay to sending a telegram until the input state on an edge change stabilizes.

An interlocking object is provided to locking and releasing the sending of telegrams. Additionally, the value generated by the input with the last edge change can be repeated cyclically.

Communication Objects

Phys. Addr.		Program	
no.	Function	Object name	Type
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0	8-bit Value	Input A	1 Byte
1	8-bit Value	Input B	1 Byte
2	8-bit Value	Input C	1 Byte
3	8-bit Value	Input D	1 Byte
4	Interlocking	Inputs A-D	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	8-Bit Value	Input A	1-Byte	CTU
This object holds the group address to sending the value telegrams of input A. Individual 1 bit values can be specified to leading and trailing edges at the input.				
1	8-Bit Value	Input B	1-Byte	CTU
This object holds the group address to sending the value telegrams of input B. Individual 1 bit values can be specified to leading and trailing edges at the input.				
2	8-Bit Value	Input C	1-Byte	CTU
This object holds the group address to sending the value telegrams of input C. Individual 1 bit values can be specified to leading and trailing edges at the input.				
3	8-Bit Value	Input D	1-Byte	CTU
This object holds the group address to sending the value telegrams of input D. Individual 1 bit values can be specified to leading and trailing edges at the input.				
4	Interlocking	Inputs A-D	1-Byte	CWU
This object holds the group addresses to locking and releasing the inputs. On receiving a "0" telegram no value telegram from the four inputs can be sent. The sending can be released again with a "1" telegram. On commissioning the binary input and on bus voltage restoration the sending is released automatically allowing to use the binary input without having to evaluate the interlocking object.				

Maximum number of group addresses: 8
Maximum number of assignments: 9

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Parameters

Inputs A-D:

Inputs A-D	
Base for delay time	Time base 4,2 sec
Factor for delay time (2-127)	127
Base for cyclical sending	Time base 8,4 sec
Factor for cyclical sending (2-127)	127
Limit number of telegrams	disabled
Limit number of telegrams	127 telegrams per 17 sec

Parameters	Settings
Base for delay time	Time base 4,2 sec. Time base 130 ms Time base 260 ms Time base 520 ms Time base 1,0 sec. Time base 2,1 sec. Time base 8,4 sec. Time base 17 sec. Time base 34 sec. Time base 1,1 min Time base 2,2 min Time base 4,5 min Time base 9 min Time base 18 min Time base 35 min Time base 1,2 hr
Factor for Delay time (2-127)	127
This parameter defines the delay to generating a telegram at the input on change of the signal state. The telegram is cancelled by each signal change at any input during the delay period. Once cancelled a telegram is not sent. The delay can be enabled separately to each input. The delay period is generated by multiplying the specified base with the selected factor. Note: As the specified base equals the maximum timing error, the smallest possible base should be used to establish the desired frequency.	
Base for cyclical sending	Time base 4,2 sec. Time base 130 ms Time base 260 ms Time base 520 ms Time base 1,0 sec. Time base 2,1 sec. Time base 8,4 sec. Time base 17 sec. Time base 34 sec. Time base 1,1 min Time base 2,2 min Time base 4,5 min Time base 9 min Time base 18 min Time base 35 min Time base 1,2 hr

Parameters	Settings
Factor for cyclical sending (2-127)	127
This parameter defines the frequency to repeating telegrams. The frequency is generated by multiplying the specified base with the selected factor. Cyclic sending can be enabled to each input separately. Only the object state from the input with the last edge change is sent cyclically. Note: As the specified base equals the maximum timing error, the smallest possible base should be used to establish the desired frequency.	
Limit number of telegrams	disabled
Limit number of telegrams	enabled
Limit number of telegrams	127 telegrams per 17 sec. 30 telegrams per 17 sec. 60 telegrams per 17 sec. 100 telegrams per 17 sec.
This parameter allows you to limit the number of telegrams that can be sent in a given period of time to avoid bus overload caused by excess telegrams from malfunctioning push buttons. Telegram rate limit "disabled": There is no limit to sending telegrams. Telegram rate limit "enabled": A maximum of either 30, 60, 100 or 127 telegrams can be sent per 17 second period.	

Input A:

Inputs A-D	
Delay time	disabled
Cyclical sending	disabled
Evaluate falling edge	enabled
Evaluate rising edge	enabled
Value on rising edge (0-255)	200
Value on falling edge (0-255)	255

The parameters of the inputs B to D can be set accordingly.

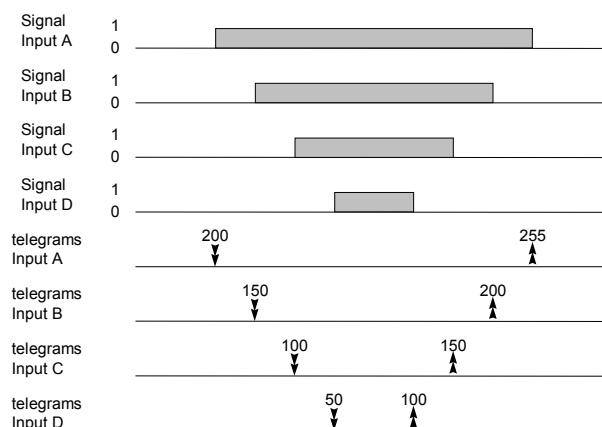
Parameters	Settings
Delay time	disabled
	enabled
This parameter rules whether the delay set in the "Inputs A-D" parameter window is to be enabled to the input A. "disabled": The delay is ignored and telegrams are sent immediately on edge changes at the input. "enabled": On edge change at the input the telegrams are not sent until the delay period has passed. When the signal edge returns to its previous state during the delay period no telegram is sent.	

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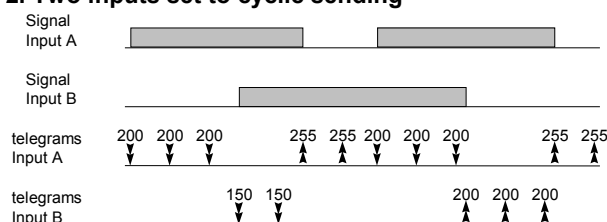
Parameters	Settings
Cyclic sending	disabled enabled
<p>This parameter rules whether telegrams from input A are sent cyclically as specified in the "Inputs A-D" parameter window.</p> <p>"disabled": The cyclic send settings are ignored and telegrams are sent on edge change exclusively.</p> <p>"enabled": On edge changes at the input telegrams are repeatedly sent according to the cyclic send frequency until the next edge change at any of the four inputs. If the corresponding "Cyclic send" parameter is set to "enabled", cyclic sending is resumed via this input's object, otherwise no further telegrams are sent.</p>	
Evaluate falling edge	enabled disabled
<p>This parameter rules whether a telegram is to be produced on a trailing edge at input A. The trailing edge is a change of the signal state at the input from logical "1" to "0".</p> <p>"enabled": Trailing edges are evaluated and produce telegrams with the value specified in the "Trailing pulse edge value" parameter.</p> <p>"disabled": Trailing edges are not evaluated. A change of the signal state at the input from logical "1" to "0" is ignored and no telegrams are sent.</p>	
Evaluate rising edge	enabled disabled
<p>This parameter rules whether a telegram is to be produced on a leading edge at input A. The leading edge is a change of the signal state at the input from logical "0" to "1".</p> <p>"enabled": Leading edges are evaluated and produce telegrams with the value specified in the "Leading pulse edge value" parameter.</p> <p>"disabled": leading edges are not evaluated. A change of the signal state at the input from logical "0" to "1" is ignored and no telegrams are sent.</p>	
Value on rising edge (0-255)	200
<p>This parameter defines the value that is sent on a rising edge at input A. The value can range from 0 (off) to 255 (100%). The value is sent only if the "Evaluate rising edge" parameter is set to "enabled".</p>	
Value on falling edge (0-255)	255
<p>This parameter defines the value that is sent on a falling edge at input A. The value can range from 0 (off) to 255 (100%). The value is sent only if the "Evaluate falling edge" parameter is set to "enabled".</p>	

Timing Diagrams: Input Examples

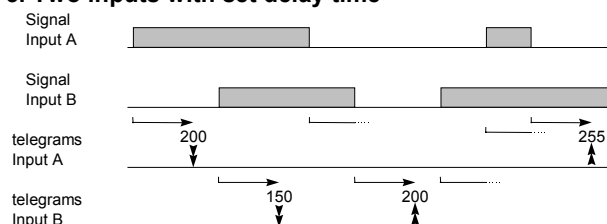
1. All inputs at default settings



2. Two inputs set to cyclic sending



3. Two inputs with set delay time



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Notes: