20 CO LOGO! 900E03

Use of the application program

Product family: Controller
Product type: LOGO
Manufacturer: Siemens

Name: CM EIB/KNX

Order no.: 6BK1700-0BA00-0AA2

Functional description

The application program “20 CO LOGO! 900E03” controls the communication between the LOGO! and the EIB/KNX bus via the communication module CM EIB/KNX.
By configuring the application program in ETS (EIB Tool Software), the division of the input and output area of the LOGO! can be defined as a “hardware channel” and as a “virtual channel” on the EIB/KNX bus.
This characteristic also applies for analog processing.

A communication object is assigned to each “virtual channel” of the LOGO! module.
The real-time clock of the LOGO! can be used as a master or slave via the EIB/KNX bus.
The behaviour of the communication objects of the communication module CM EIB/KNX when the status of the EIB/KNX bus changes, can also be parameterised.
A “virtual input channel” can be used as a bus state i.e. a bus voltage failure can be reported.

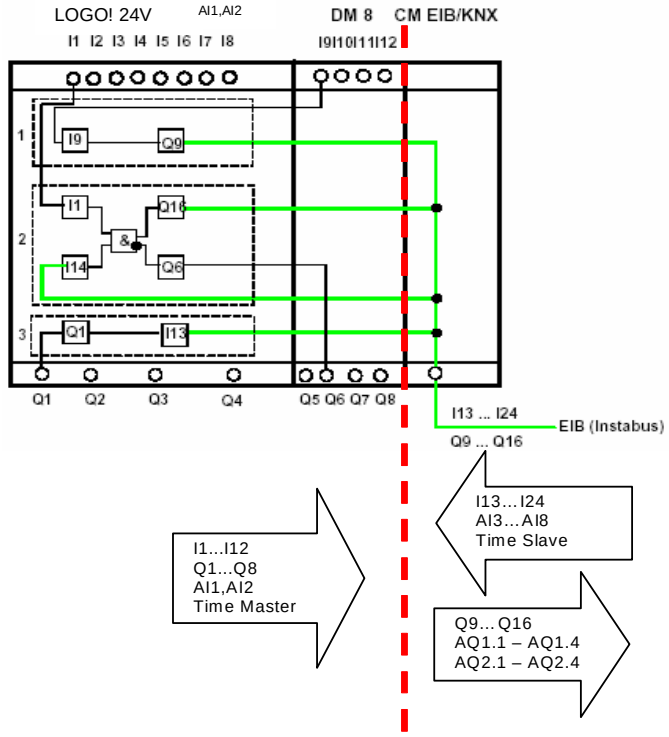
Summary of the functions:

- Specification of the hardware configuration (number of local digital inputs and outputs, analog inputs)
- Selection of time master or slave
- Use of I24 as a bus status signal
- Behaviour on bus voltage failure/recovery
- Input type as monoflop/normal for digital inputs via the EIB/KNX
- Output type as normal/dimmer/edge evaluation for digital outputs via the EIB/KNX
- Data type, adaptation, cyclical sending and sending on change in value for analog outputs via the EIB/KNX and analog inputs on the LOGO!

EIB inputs/outputs

The diagram below shows a possible application.

Example:



Communication objects: General

There are a maximum of 55 communication objects available for the communication of the device via the EIB/KNX bus. Some of the objects are displayed or hidden depending on the set configuration.
The functionality of the corresponding objects changes depending on the parameterisation of the extension modules.
The following table corresponds to the basic setting.

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Maximum number of group addresses: 56
Maximum number of associations: 56

Obj	Object name	Function	Type	Flags
0	Digital In LOGO! (I1)	Output	1 Bit	CRT
1	Digital In LOGO! (I2)	Output	1 Bit	CRT
2	Digital In LOGO! (I3)	Output	1 Bit	CRT
3	Digital In LOGO! (I4)	Output	1 Bit	CRT
4	Digital In LOGO! (I5)	Output	1 Bit	CRT
5	Digital In LOGO! (I6)	Output	1 Bit	CRT
6	Digital In LOGO! (I7)	Output	1 Bit	CRT
7	Digital In LOGO! (I8)	Output	1 Bit	CRT
The digital "hardware" inputs of the LOGO! are parameterised directly as binary inputs on the EIB/KNX bus via these communication objects.				
8	Digital Input EIB (I9)	Input	1 Bit	CWU
9	Digital Input EIB (I10)	Input	1 Bit	CWU
10	Digital Input EIB (I11)	Input	1 Bit	CWU
11	Digital Input EIB (I12)	Input	1 Bit	CWU
12	Digital Input EIB (I13)	Input	1 Bit	CWU
13	Digital Input EIB (I14)	Input	1 Bit	CWU
14	Digital Input EIB (I15)	Input	1 Bit	CWU
15	Digital Input EIB (I16)	Input	1 Bit	CWU
16	Digital Input EIB (I17)	Input	1 Bit	CWU
17	Digital Input EIB (I18)	Input	1 Bit	CWU
18	Digital Input EIB (I19)	Input	1 Bit	CWU
19	Digital Input EIB (I20)	Input	1 Bit	CWU
20	Digital Input EIB (I21)	Input	1 Bit	CWU
21	Digital Input EIB (I22)	Input	1 Bit	CWU
22	Digital Input EIB (I23)	Input	1 Bit	CWU
The binary inputs on the EIB/KNX bus can be parameterised via these communication objects. The inputs can be configured as monoflop if required. A monoflop is a pulse-controlled switching function which reverts to its output position after a specific period. When the read flag is set for the digital inputs, these are read during startup.				

Obj	Object name	Function	Type	Flags
23	Digital Input EIB (I24)	Input	1 Bit	CWU
I24 is used as a "virtual" binary input or to monitor the bus voltage.				
24	Digital Out LOGO! (Q1)	Output	1 Bit	CRT
25	Digital Out LOGO! (Q2)	Output	1 Bit	CRT
26	Digital Out LOGO! (Q3)	Output	1 Bit	CRT
27	Digital Out LOGO! (Q4)	Output	1 Bit	CRT
The digital "hardware" outputs of the LOGO! are assigned as EIB/KNX binary outputs via these communication objects.				
28	Digital Output EIB (Q5)	Output	1 Bit	CRT
29	Digital Output EIB (Q6)	Output	1 Bit	CRT
30	Digital Output EIB (Q7)	Output	1 Bit	CRT
31	Digital Output EIB (Q8)	Output	1 Bit	CRT
32	Digital Output EIB (Q9)	Output	1 Bit	CRT
33	Digital Output EIB (Q10)	Output	1 Bit	CRT
34	Digital Output EIB (Q11)	Output	1 Bit	CRT
35	Digital Output EIB (Q12)	Output	1 Bit	CRT
36	Digital Output EIB (Q13)	Output	1 Bit	CRT
37	Digital Output EIB (Q14)	Output	1 Bit	CRT
38	Digital Output EIB (Q15)	Output	1 Bit	CRT
39	Digital Output EIB (Q16)	Output	1 Bit	CRT
The "virtual" binary outputs on the EIB/KNX can be linked via these communication objects. These objects can either be configured for dimming control or edge evaluation (for controlling blinds). Two binary outputs are combined each time.				
40	Analog Input 1 EIB (AE1)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
41	Analog Input 2 EIB (AE2)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
42	Analog Input 3 EIB (AE3)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
43	Analog Input 4 EIB (AE4)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
44	Analog Input 5 EIB (AE5)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
45	Analog Input 6 EIB (AE6)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
46	Analog Input 7 EIB (AE7)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
47	Analog Input 8 EIB (AE8)	Percent / EIB-Float	1 Byte/ 2 Byte	CRWU
Analog values are transferred from the EIB/KNX side to the LOGO! via these communication objects.				
48	Analog Output EIB 1 (AO1)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(36)	Analog Output EIB 1.1 (AO1) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(37)	Analog Output EIB 1.2 (AO2) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT

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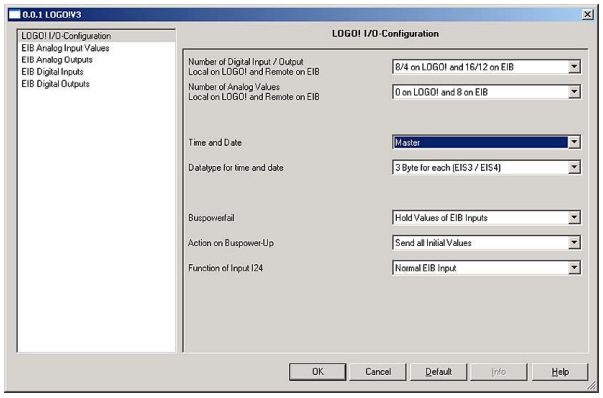
53	Analog Output EIB 1.3 (AO2) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
49	Analog Output EIB 2 (AO2)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(38)	Analog Output EIB 2.1 (AO2) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(39)	Analog Output EIB 2.2 (AO2) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
54	Analog Output EIB 2.3 (AO2) with multiplexer	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
Analog values are transferred from the LOGO! to the EIB/KNX side via these communication objects.				
50	Date	Date	3 Byte	CT/CWU
51	Time	Time	3 Byte	CT/CWU
52	Time and date	Time and date	8 Byte	CT/CWU
The date and time can be synchronised via these objects.				

"LOGO! I/O Configuration"



Parameters	Settings
Number of Digital Input / Output Local on LOGO! and Remote on EIB	**8/4 on LOGO! and 16/12 on EIB** 12/8 on LOGO! and 12/8 on EIB 16/12 on LOGO! and 8/4 on EIB 20/16 on LOGO! and 4/0 on EIB
The digital inputs/outputs can be hidden or displayed in this parameter.	
Number of Analog Values Local on LOGO! and Remote on EIB	**0 on LOGO! and 8 on EIB** 2 on LOGO! and 6 on EIB 4 on LOGO! and 4 on EIB 6 on LOGO! and 2 on EIB 8 on LOGO! and 0 on EIB
The analog inputs can be assigned to the LOGO! or EIB/KNX.	
Time and Date	**inactive** Master Slave
The date and time can be synchronised via the EIB/KNX bus. If "Master" is selected, the LOGO! sends the time and date telegram on the EIB/KNX bus. In the "Slave" setting, the LOGO! is synchronised via the EIB/KNX bus. In this case, the sync function must be set to "on" for the LOGO!	
Data type for Time and Date	**3 byte for each** Combined (8 Byte)
The date type of the time and date communication objects can be selected between two objects of the old data types EIS3/EIS4 or one object with the new combined data type	
Bus Power Fail	**Hold Values of EIB Inputs** Set all EIB Inputs to 0
This parameter defines whether the EIB/KNX values should be stored in the LOGO! on bus voltage failure or all set to "0".	
Action on Bus Power Up	**Send all Initial Values** No Action
This parameter defines whether the values that are stored in the LOGO! should be transferred to the EIB/KNX bus on bus voltage recovery.	
Function of Input I 24	**Normal EIB Input** Bus State (1=OK)
It is defined with this parameter whether I24 should be used as a normal input or for the bus state i.e. if the communication to the EIB/KNX is "OK", it receives the value "1". An error on the EIB/KNX bus is detected as an OFF signal (0) with a delay of approx. 30 seconds.	

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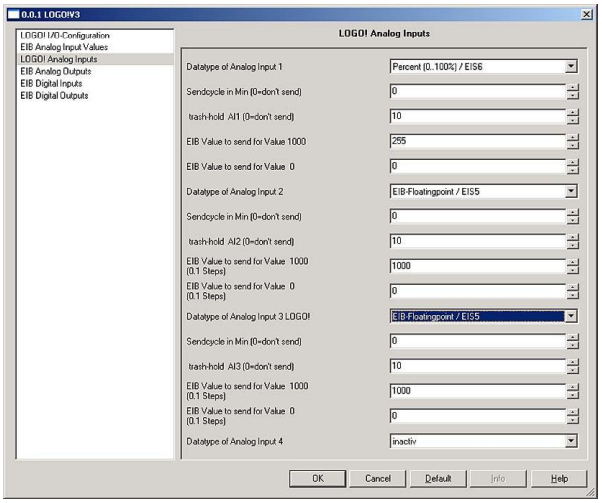
"LOGO! Analog Inputs"

Communication objects

Obj	Object name	Function	Type	Flags
40	Analog Input 1 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
41	Analog Input 2 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
42	Analog Input 3 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
43	Analog Input 4 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
44	Analog Input 5 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
45	Analog Input 6 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
46	Analog Input 7 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
47	Analog Input 8 LOGO!	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte	CRT
The display corresponds to the setting in the LOGO! I/O configuration parameter "8 on LOGO! and 0 on EIB". The analog inputs EIB/KNX can be linked via these communication objects.				

Parameters:

The data types of the analog inputs can switch between percentage values 0-100% and EIB floating point and IEEE-float values.



Parameters	Settings
Data Type of Analog Input x LOGO!	**Value (0...100%) / EIS6** EIB floating point / EIS5 IEEE floating point inactive
It is possible to switch between "Value (0…100%)", "EIB floating point" and IEEE floating point in the parameter "Data Type of Analog Input x".	
Send Cycle in Min (0 = don't send)	**0 ...** 255
The cyclical sending can be set in intervals of 1 minute in this parameter.	
Trash Hold AI1 (0 = don't send)	0 ... **10...** 255
The value change for sending AI1 is set in this parameter.	
Parameters for Value	**Settings**
EIB Value to send for Value 1000	0 ... **255**
The "EIB Value to send for Value 1000" can be set here.	
EIB Value to send for Value 0	**0 ...** 255
The "EIB Value to send for Value 0" can be set here.	
Parameters for EIB floating point/IEEE floating point	**Settings**

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EIB Value to send for Value 1000 (0.1 Steps)	-2000 ... **1000** 2000
The "EIB Value to send for Value 1000" can be set here.	
EIB Value to send for Value 0	**-2000** **0 ...** 2000
The "EIB Value to send for Value 0" can be set here.	

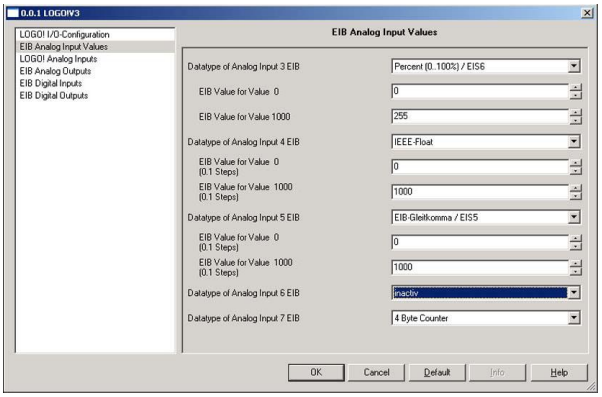
"EIB Analog Input Values"

Communication objects

Obj	Object name	Function	Type	Flags
40	Analog Input 1 EIB	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte/ 4 Byte	CRWTU
41	Analog Input 2 EIB	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte/ 4 Byte	CRWTU
42	Analog Input 3 EIB	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte/ 4 Byte	CRWTU
43	Analog Input 4 EIB	Percent / EIB-Float / IEEE-floating point	1 Byte/ 2 Byte/ 4 Byte	CRWTU
44	Analog Input 5 EIB	Percent / EIB-Float / 4 Byte counted meas.	1 Byte/ 2 Byte/ 4 Byte	CRWTU
45	Analog Input 6 EIB	Percent / EIB-Float	1 Byte/ 2 Byte	CRWTU
46	Analog Input 7 EIB	Percent / EIB-Float / 4 Byte counted meas.	1 Byte/ 2 Byte/ 4 Byte	CRWTU
47	Analog Input 8 EIB	Percent / EIB-Float	1 Byte/ 2 Byte	CRWTU
The display corresponds to the setting in the LOGO! I/O configuration parameter "0 on LOGO! and 8 on EIB".				

Parameters:

The data types of the analog inputs can switch between percentage values 0-100% and EIB floating point values, IEEE floating point rather 4 Byte counted measurand.



Parameters	Settings
Data Type of Analog Input x	**Value (0...100%) / EIS6** EIB Floating Point / EIS5 IEEE floating point (only 1-4) 4 Byte counted measurand (only 5+7) inactive
The data types of the analog inputs can switch between "Value (0…100%)", "EIB floating point", "IEE Floating point" and partly "4 Byte counted measurand".	
Parameters for EIB Percent	**Settings**
EIB value for Value 0	**0** ...255
EIB value for Value 1000	0 ...**255**
Parameters for floating point	**Settings**
EIB value for Value 0 (0.1 Steps)	**0** ...1000
EIB value for Value 1000 (0.1 Steps)	0 ...**1000**
The analog Input values 5(+6) and 7(+8) can be configured as 4 Byte counted measurand. If used as 4 Byte counted measurand the next input will also be occupied.	

"EIB Analog Outputs"

Communication objects

Obj	Object name	Function	Type	Flags
48	Analog Output EIB 1 AO1	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(36)	Analog Output EIB 1.1 (AO1 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT

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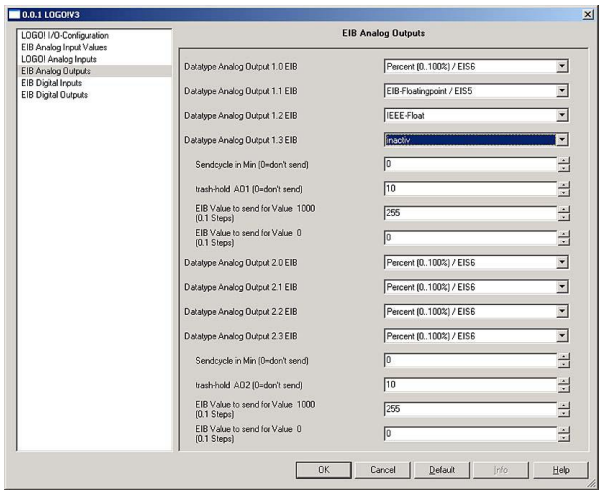
(37)	Analog Output EIB 1.2 (AO1 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
53	Analog Output EIB 1.3 (AO1 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
49	Analog Output EIB 2 (AO2)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(38)	Analog Output EIB 2.1 (AO2 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
(39)	Analog Output EIB 2.2 (AO2 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT
54	Analog Output EIB 2.3 (AO2 with multiplexer)	Percent / EIB-Float	1 Byte/ 2 Byte	CRT

Note:
The objects are not displayed in the setting “inactive”! The setting “EIB Floating Point” is shown in the screenshot. The standard setting is already displayed in the screenshot for the general communication objects. Only if the EIB Digital Output Q13/14 rather Q15/16 is set on Analog Output at the Multiplexer the Analog Outputs 1.1 – 1.3 rather 2.1 – 2.3 will be displayed. One Analog-Multiplexer will be displayed at the LOGO!Application on EIB in this case.

Parameters:

The data types of the analog outputs can switch between percentage values 0-100% and EIB floating point and IEEE floating point values.



Parameters	Settings
Data Type Analog Output ½	**Value (0...100%) / EIS6** EIB Floating Point / EIS5 IEEE floating point inactive
It is possible to switch between “Value (0…100%)” and “EIB Floating Point” in the parameter “Data Type of Analog Output 1”.	
Send Cycle in Min (0 = don’t send)	**0 ...** 255
The cyclical sending can be set in intervals of 1 minute in this parameter.	
Trash Hold AI1 (0 = don’t send)	0 ... **10...** 255
The value change for sending AI1 is set in this parameter.	
Parameters for Value	**Settings**
EIB Value to send for Value 1000	0 ... **255**
The “EIB Value to send for Value 1000” can be set here.	
EIB Value to send for Value 0	**0 ...** 255
The “EIB Value to send for Value 0” can be set here.	
Parameters for EIB Floating Point	**Settings**
EIB Value to send for Value 1000	-2000 ... **1000** 2000
The “EIB Value to send for Value 1000” can be set here.	
EIB Value to send for Value 0	-2000 **0 ...** 2000
The “EIB Value to send for Value 0” can be set here.	

“EIB Digital Inputs”

Communication objects

Obj	Object name	Function	Type	Flags
8	Digital In EIB (I9)	Output	1 Bit	CRT
9	Digital In EIB (I10)	Output	1 Bit	CRT
10	Digital In EIB (I11)	Output	1 Bit	CRT
11	Digital In EIB (I12)	Output	1 Bit	CRT
12	Digital In EIB (I13)	Output	1 Bit	CRT
13	Digital In EIB (I14)	Output	1 Bit	CRT
14	Digital In EIB (I15)	Output	1 Bit	CRT
15	Digital In EIB (I16)	Output	1 Bit	CRT
16	Digital In EIB (I17)	Output	1 Bit	CRT
17	Digital In EIB (I18)	Output	1 Bit	CRT
18	Digital In EIB (I19)	Output	1 Bit	CRT

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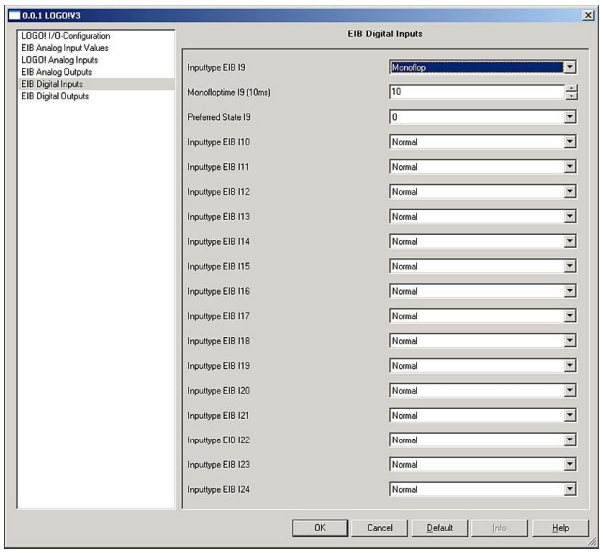
19	Digital In EIB (I20)	Output	1 Bit	CRT
20	Digital In EIB (I21)	Output	1 Bit	CRT
21	Digital In EIB (I22)	Output	1 Bit	CRT
22	Digital In EIB (I23)	Output	1 Bit	CRT
23	Digital In EIB (I24)	Output	1 Bit	CRT
The display corresponds to the setting in the LOGO! I/O configuration “8/4 on LOGO! and 16/12 on EIB”.				

Parameters:

The EIB digital inputs can switch between monoflop or normal.



Parameters	Settings
Input Type EIB I9	**Normal** Monoflop
Input Type EIB I10	**Normal** Monoflop
Input Type EIB I11	**Normal** Monoflop
Input Type EIB I12	**Normal** Monoflop
Input Type EIB I13	**Normal** Monoflop
Input Type EIB I14	**Normal** Monoflop
Input Type EIB I15	**Normal** Monoflop
Input Type EIB I16	**Normal** Monoflop
Input Type EIB I17	**Normal** Monoflop
Input Type EIB I18	**Normal** Monoflop
Input Type EIB I19	**Normal** Monoflop
Input Type EIB I20	**Normal** Monoflop
Input Type EIB I21	**Normal** Monoflop
Input Type EIB I22	**Normal** Monoflop
Input Type EIB I23	**Normal** Monoflop
Input Type EIB I24	**Normal** Monoflop
The setting “Normal” or “Monoflop” can be configured via this parameter. A monoflop is a pulse-controlled switching function which reverts to its output position after a specific period.	
In the “Monoflop” setting, the following additional parameters appear:	
Monoflop Time I(9-24)	3…255 (Default = 10)
The “Monoflop Time I(9-24)” is set in this parameter.	
Preferred State I(9-24)	**0** 1
The “Preferred State I(9-24)” can be set here.	

“EIB Digital Outputs”

Communication objects

Note:

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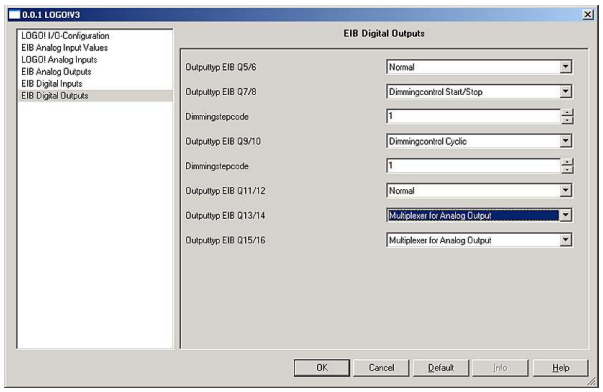
In the example, Q5/6 is parameterised as a dimmer and Q7/8 as edge evaluation. All other outputs are parameterised as normal.

Obj	Object name	Function	Type	Flags
28	Dimming Output EIB (Q5)	Output	4 Bit	CT
The EIB digital outputs can switch between “Dimming Control”, “Blinds Function (Edge-triggered)” and “Normal”.				
30	Digital Output only 1 EIB (Q7)	Output (1 = Down)	1 Bit	CRT
The digital output Q7 is set in this parameter.				
31	Digital Output only 0 EIB (Q8)	Output (0 = Up)	1 Bit	CRT
The digital output Q8 is set in this parameter.				
32	**Digital Output EIB (Q9)**	**Output**	**1 Bit**	**CRT**
33	Digital Output EIB (Q10)	Output	1 Bit	CRT
34	Digital Output EIB (Q11)	Output	1 Bit	CRT
35	Digital Output EIB (Q12)	Output	1 Bit	CRT
36	Digital Output EIB (Q13)	Output	1 Bit	CRT
37	Digital Output EIB (Q14)	Output	1 Bit	CRT
38	Digital Output EIB (Q15)	Output	1 Bit	CRT
39	Digital Output EIB (Q16)	Output	1 Bit	CRT
The display corresponds to the setting in the LOGO! I/O configuration parameter “8/4 on LOGO! and 16/12 on EIB”.				

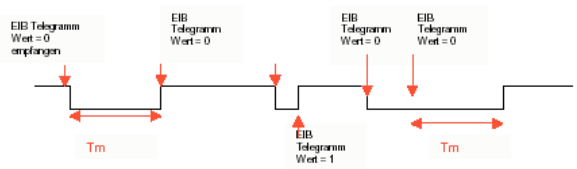
Parameters:

The EIB digital outputs can switch between dimming control, edge evaluation and normal. Additionally can be used Q13/14 and Q15/16 as a Multiplexer for the Analog Outputs on EIB. The communication objects are used as Analog Outputs in this case.



Parameters	Settings
Output EIB Q5/6	**Normal** Dimming Control Start/Stop Dimming Control Cyclic Blinds Function (Edge-triggered)
It is possible to switch between “Dimming Control” Start/stop and Cyclic, “Blinds Function (Edge-triggered)” and “Normal” via this parameter.	
Dimming Step code	**1...**7
The “Dimming Step code” can be set via this parameter.	
Output Type EIB Q7/8	**Normal** Dimming Control (start/stop) Dimming Control (cyclical) Blinds Function (Edge-triggered)
Output Type EIB Q9/10	**Normal** Dimming Control (start/stop) Dimming Control (cyclical) Blinds Function (Edge-triggered)
Output Type EIB Q11/12	**Normal** Dimming Control (start/stop) Dimming Control (cyclical) Blinds Function (Edge-triggered)
Output Type EIB Q13/14	**Normal** Dimming Control Blinds Function (Edge-triggered) Multiplexer for analog
Output Type EIB Q15/16	**Normal** Dimming Control Blinds Function (Edge-triggered) Multiplexer for analog
It is possible to switch between “Dimming Control”, “Blinds Function (Edge-triggered)” and “Normal” via these parameters.	

Input with monoflop, default position = 1



Input with monoflop, default position = 0

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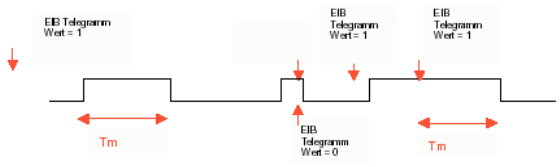

Normal input without default position