

TECHNICAL DOCUMENTATION

Example_21.1

Project	Example_21.1
Designer	
Application	example_21_1.stu
Software Version	ControlExpert V15.0-SP1
Creation Date	6/16/2023 2:30:31 PM
Last Modification Date	6/16/2023 2:31:48 PM
Target PLC	BMX P34 1000 02.00CPU 340-10 Modbus

Derived Data Types

Name	Type	Comment
Motor_Type	<Struct>	
Run_Status	BOOL	Motor running status
Any_Fail	BOOL	On when any motor failure
Aux_Fail	BOOL	On when aux fails to turn on after motor starts
OL_Fail	BOOL	On when motor overload
HOA_Fail	BOOL	On when HOA switch not in proper position
Seq_Start	BOOL	Sequence start request
Seq_Stop	BOOL	Sequence stop request
Para_PIDFF	<Struct>	Parameter Block for PIDFF
id	UINT	Reserved for autotuning
pv_inf	REAL	Lower limit of the process value range
pv_sup	REAL	Upper limit of the process value range
out_inf	REAL	Lower limit of the output value range
out_sup	REAL	Upper limit of the output value range
rev_dir	BOOL	Parameter Block for PIDFF 0:opposite action of the PID controller 1: direct action of the PID controller
mix_par	BOOL	1: PID controller with parallel structure 0: PID controller with mixed structure"
aw_type	BOOL	1: Anti-windup halt is filtered
en_rcpy	BOOL	1: the RCPY input is used
kp	REAL	Proportional action coefficient (gain)
ti	TIME	Integral time
td	TIME	Derivative time
kd	REAL	Differential gain
pv_dev	BOOL	Type of differential contribution: 1: Differential contribution in relation to system deviation 0:Differential contribution in relation to regulating variable (process value)
bump	BOOL	1: Transition to automatic mode with bump 0: Bumpless transition to automatic mode
dband	REAL	Dead zone on deviation
gain_kp	REAL	Reducing the proportional contribution within the dead zone dband
ovs_att	REAL	Reducing the overrun
outbias	REAL	Manual compensation for the static deviation
out_min	REAL	Lower limit of the output
out_max	REAL	Upper limit of the output
outrate	REAL	Limit for output modification in units per second (= 0)
ff_inf	REAL	Lower limit of the FF range
ff_sup	REAL	Upper limit of the FF range
otff_inf	REAL	Lower limit of the out_ff range
otff_sup	REAL	Upper limit of the out_ff range

MOTOR

Properties:

Version:1.1.1

Descriptive file:

<inputs>:

Name	Type	Value	Comment
Aux	BOOL	FALSE	Auxiliary contact from motor; when on motor has started
Hoa	BOOL	FALSE	Hand-Off-Auto indication; On when in auto
Ovrl	BOOL	TRUE	Overload indication; On when motor trip due to overload
Alarm_Reset	BOOL	FALSE	Reset alarms
Man_Mode	BOOL	TRUE	Area maintenance indication for group of equipment
Man_Start	BOOL	FALSE	Area start request
Man_Stop	BOOL	FALSE	Area stop request

<outputs>:

Name	Type	Value	Comment
Starter	BOOL		To motor starter

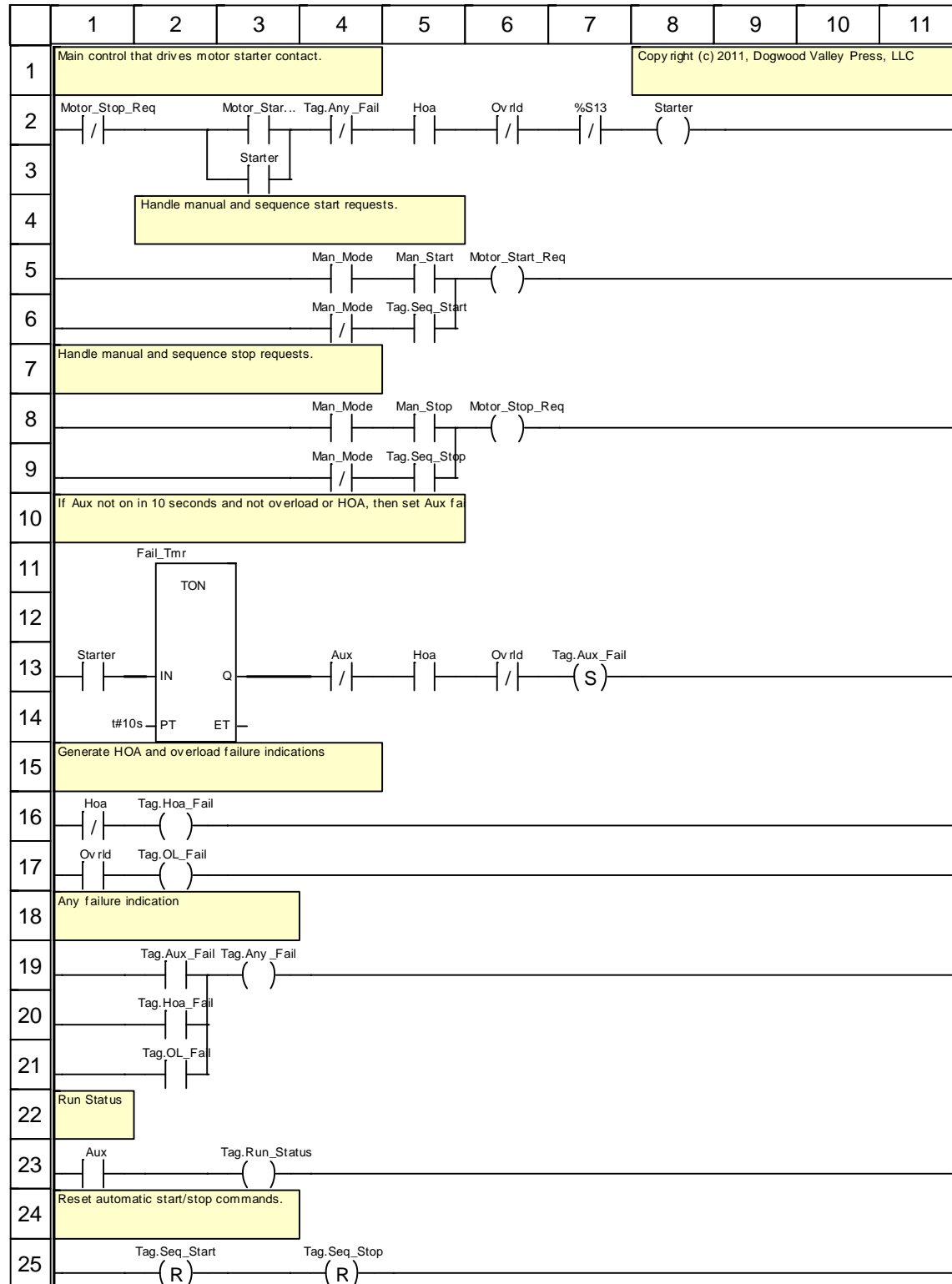
<inputs/outputs>:

Name	Type	Value	Comment
Tag	Motor_Type		
Run_Status	BOOL		Motor running status
Any_Fail	BOOL		On when any motor failure
Aux_Fail	BOOL		On when aux fails to turn on after motor starts
OL_Fail	BOOL		On when motor overload
HOA_Fail	BOOL		On when HOA switch not in proper position
Seq_Start	BOOL		Sequence start request
Seq_Stop	BOOL		Sequence stop request

<public>:

None

MainLD <DFB> : [MOTOR]



	1	2	3	4	5	6	7	8	9	10	11
26	Reset alarm indications										
27	Alarm_Re... Tag.Aux_Fail (R)										

Truncated labels:

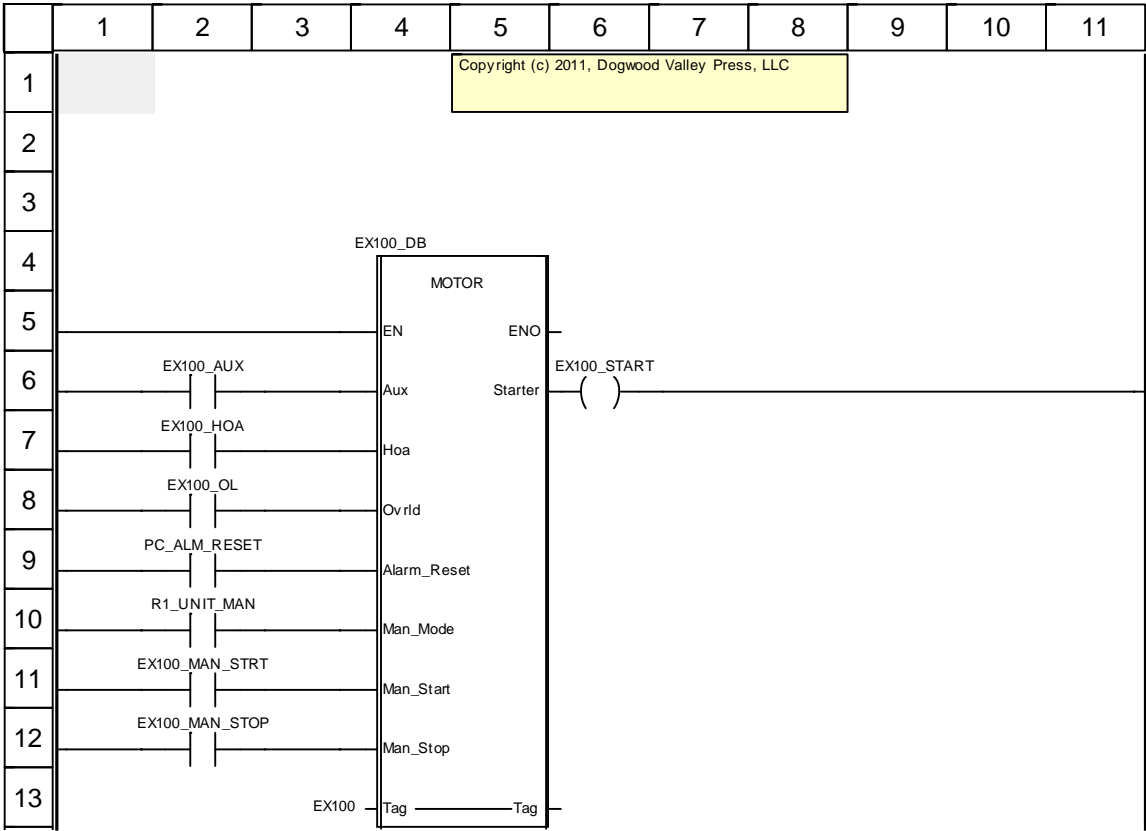
Label	Position(s)
Alarm_Reset	(1, 27)
Motor_Start_Req	(3, 2)

MAST

Specific properties

Configuration	Cyclic
Task period configuration	0
Watchdog time configuration	250

MainLD : [MAST]



FAST

Specific properties

Configuration	Periodic
Task period configuration	5
Watchdog time configuration	100

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Cross References

Application:

Variables or FB instances

Object	Referred into	Location	Usage
EX100	MainLD : [MAST]	(l 4, c: 4)	R/W
EX100_AUX	MainLD : [MAST]	(l 6, c: 2)	R
EX100_DB	MainLD : [MAST]	(l 4, c: 4)	FC
EX100_HOA	MainLD : [MAST]	(l 7, c: 2)	R
EX100_MAN_STOP	MainLD : [MAST]	(l 12, c: 2)	R
EX100_MAN_STRT	MainLD : [MAST]	(l 11, c: 2)	R
EX100_OL	MainLD : [MAST]	(l 8, c: 2)	R
EX100_START	MainLD : [MAST]	(l 6, c: 6)	W
PC_ALM_RESET	MainLD : [MAST]	(l 9, c: 2)	R
R1_UNIT_MAN	MainLD : [MAST]	(l 10, c: 2)	R

Cross References

MOTOR:

Addresses

Object	Referred into	Location	Usage
%S13	MainLD <DFB> : [MOTOR]	(I 2, c: 7)	R

Variables or FB instances

Object	Referred into	Location	Usage
Alarm_Reset	MainLD <DFB> : [MOTOR]	(I 27, c: 1)	R
Aux	MainLD <DFB> : [MOTOR]	(I 13, c: 4)	R
		(I 23, c: 1)	R
Fail_Tmr	MainLD <DFB> : [MOTOR]	(I 11, c: 2)	FC
Hoa	MainLD <DFB> : [MOTOR]	(I 2, c: 5)	R
		(I 13, c: 5)	R
		(I 16, c: 1)	R
Man_Mode	MainLD <DFB> : [MOTOR]	(I 5, c: 4)	R
		(I 6, c: 4)	R
		(I 8, c: 4)	R
		(I 9, c: 4)	R
Man_Start	MainLD <DFB> : [MOTOR]	(I 5, c: 5)	R
Man_Stop	MainLD <DFB> : [MOTOR]	(I 8, c: 5)	R
Motor_Start_Req	MainLD <DFB> : [MOTOR]	(I 2, c: 3)	R
		(I 5, c: 6)	W
Motor_Stop_Req	MainLD <DFB> : [MOTOR]	(I 2, c: 1)	R
		(I 8, c: 6)	W
Ovrld	MainLD <DFB> : [MOTOR]	(I 2, c: 6)	R
		(I 13, c: 6)	R
		(I 17, c: 1)	R
Starter	MainLD <DFB> : [MOTOR]	(I 2, c: 8)	W
		(I 3, c: 3)	R
		(I 13, c: 1)	R
Tag	MainLD <DFB> : [MOTOR]	(I 2, c: 4)	R
		(I 6, c: 5)	R
		(I 9, c: 5)	R
		(I 13, c: 7)	W
		(I 16, c: 2)	W
		(I 17, c: 2)	W
		(I 19, c: 2)	R
		(I 19, c: 3)	W
		(I 20, c: 2)	R
		(I 21, c: 2)	R
		(I 23, c: 3)	W
		(I 25, c: 2)	W
		(I 25, c: 4)	W
		(I 27, c: 2)	W

Cross References

New_DFB:

Variables or FB instances

Object	Referred into	Location	Usage
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