

TECHNICAL DOCUMENTATION

Example 21.3

Project	Example21_3
Designer	
Application	example_21_3.stu
Software Version	ControlExpert V15.0-SP1
Creation Date	6/16/2023 2:42:28 PM
Last Modification Date	6/16/2023 2:42:28 PM
Target PLC	BMX P34 1000 02.00CPU 340-10 Modbus

Derived Data Types

Name	Type	Comment
ADDM_TYPE	ARRAY[0..7] OF INT	Common array for communication EF Mid-Range
Altivar31_Cmds	<Struct>	
Cmd_Word	INT	word 8501
Freq	INT	word 8502
Altivar31_Stat us	<Struct>	
Status_Word	INT	word 3201
Out_Freq	INT	word 3202
Freq_Ref_Before_Ramp	INT	word 3203
Motor_Amps	INT	word 3204
Motor_Torque	INT	word 3205
Ext_Status	INT	word 3206
Ext_Status2	INT	word 3250
Gate_Flop_Type	<Struct>	
Run_Status	BOOL	Gate moving status
Left_Status	BOOL	Left status of gate
Right_Status	BOOL	Right status of gate
Any_Fail	BOOL	Failure alarm
HOA_Fail	BOOL	HOA-switch-not-in-auto alarm
FTL_Fail	BOOL	Fail-to-divert-left alarm
FTR_Fail	BOOL	Fail-to-divert-right alarm
Seq_Left	BOOL	Device left command from sequence
Seq_Right	BOOL	Device right command from sequence
Gate_Slide_Type	<Struct>	
Run_Status	BOOL	Run status
Open_Status	BOOL	Open status of gate
Close_Status	BOOL	Close status of gate
Any_Fail	BOOL	Failure alarm
Aux_Fail	BOOL	Auxiliary fail alarm
OL_Fail	BOOL	Overload alarm
HOA_Fail	BOOL	HOA-switch-not-in-auto alarm
Seq_Open	BOOL	Device open command from sequence
Seq_Close	BOOL	Device close command from sequence
Motor_Conv_Type	<Struct>	
Run_Status	BOOL	Run status
Any_Fail	BOOL	Failure alarm
Aux_Fail	BOOL	Auxiliary fail alarm
SS_Fail	BOOL	Speed switch failure
OL_Fail	BOOL	Overload alarm
HOA_Fail	BOOL	HOA-switch-not-in-auto alarm
Seq_Start	BOOL	Device start command from sequence
Seq_Stop	BOOL	Device stop command from sequence
Motor_Std_Type	<Struct>	
Run_Status	BOOL	Run status
Any_Fail	BOOL	Failure alarm
Aux_Fail	BOOL	Auxiliary fail alarm

Derived Data Types

Name	Type	Comment
OL_Fail	BOOL	Overload alarm
HOA_Fail	BOOL	HOA-switch-not-in-auto alarm
Seq_Start	BOOL	Device start command from sequence
Seq_Stop	BOOL	Device stop command from sequence
Motor_VFD_Type	<Struct>	
Run_Status	BOOL	Run Status (1=running)
At_Speed	BOOL	Drive at speed
Any_Fail	BOOL	Overall Failure Alarm (1=alarm)
Run_Fail	BOOL	Run failure alarm (1=failure)
Drive_Fail	BOOL	Drive failure (1=failure)
Comm_Fail	BOOL	Communication to VFD failure (1=failure)
Seq_Start	BOOL	Motor start initiated from sequence
Seq_Stop	BOOL	Motor stop initiated from sequence
Cmd_Direction	BOOL	Commanded direction 0 - forward, 1 - reverse
Fault_Code	INT	Drive fault code (word 3206)
Fault_Code2	INT	Drive fault code 2 (word 3250)
Cmd_Speed	REAL	Reference motor speed 0-100
Act_Speed	REAL	Actual motor speed 0-100
Act_Current	REAL	Actual motor current, amps
Act_Torque	REAL	Actual motor torque, 0-100
Status_Word_Type	<Struct>	
Ready	BOOL	
Active	BOOL	
Enabled	BOOL	
Drive_Fault	BOOL	
Voltage_Disabled	BOOL	
Quick_Stop	BOOL	
Switch_On_Disabled	BOOL	
Alarm	BOOL	
Reserved1	BOOL	
Local_Mode	BOOL	
At_Reference	BOOL	
LFRD_Ref_Exceeded	BOOL	
Reserved2	BOOL	
Reserved3	BOOL	
Stop_By_Key pad	BOOL	
Direction	BOOL	0-forward, 1 reverse
Unit_Type	<Struct>	
Alm_Reset	BOOL	Alarm reset
Local	BOOL	Local/remote control indication
Maint	BOOL	Maintenance privilege for device control
Man_StartOpen	BOOL	Manual start/open from operator
Man_StopClose	BOOL	Manual stop/close from operator
Man_DevNum	INT	Number of device started/stopped at OI
Msg	INT	Message number for OI
Time_Remaining	DINT	Remaining time in timed steps

Derived Data Types

Name	Type	Comment
Valve_Disc_Type	<Struct>	
Open_Status	BOOL	Open status of valve
Close_Status	BOOL	Closed status of valve
Any_Fail	BOOL	Failure alarm
FTO_Fail	BOOL	Fail-to-open fail alarm
FTC_Fail	BOOL	Fail-to-close fail alarm
Seq_Open	BOOL	Device open command from sequence
Seq_Close	BOOL	Device close command from sequence

Derived FB Types

Name	Version	Date
Valve_Disc	0.06	6/26/2011 5:50:28 PM

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	Dept.:		
	Project: Example21_3		Page: 5/12

Valve_Disc

Properties:

Version:0.06

Descriptive file:

<inputs>:

Name	Type	Value	Comment
Open_LS	BOOL		Valve-open limit switch
Close_LS	BOOL		Valve-closed limit switch
Alarm_Reset	BOOL		Resets alarms
Man_Mode	BOOL		Maintenance privilege
Man_Open	BOOL		Manual open
Man_Close	BOOL		Manual close

<outputs>:

Name	Type	Value	Comment
Sol_Vlv	BOOL		Valve solenoid (1=open, 0=close)

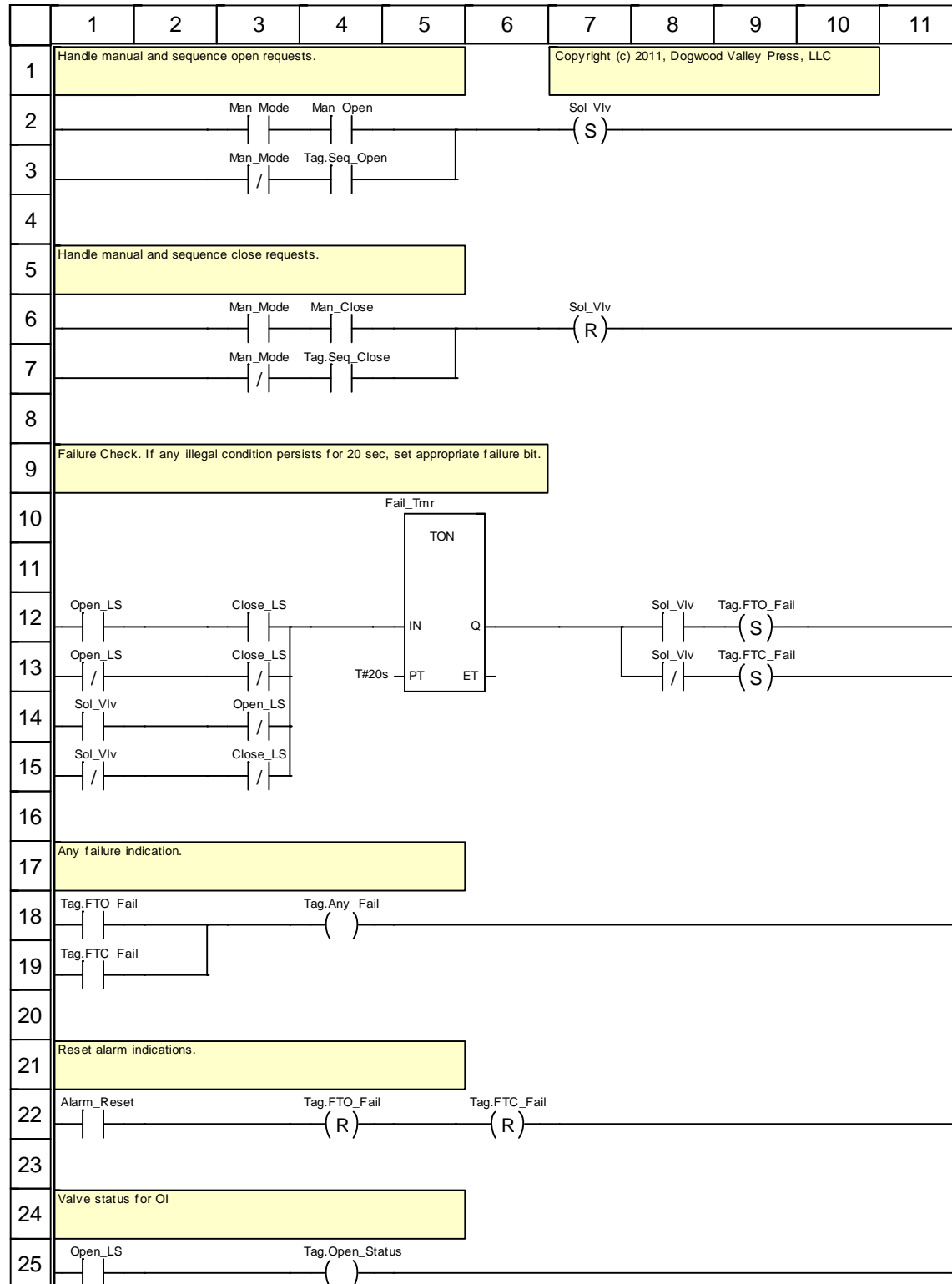
<inputs/outputs>:

Name	Type	Value	Comment
Tag	Valve_Disc_Type		Equipment Tag
Open_Status	BOOL		Open status of valve
Close_Status	BOOL		Closed status of valve
Any_Fail	BOOL		Failure alarm
FTO_Fail	BOOL		Fail-to-open fail alarm
FTC_Fail	BOOL		Fail-to-close fail alarm
Seq_Open	BOOL		Device open command from sequence
Seq_Close	BOOL		Device close command from sequence

<public>:

None

Main <DFB> : [Valve_Disc]

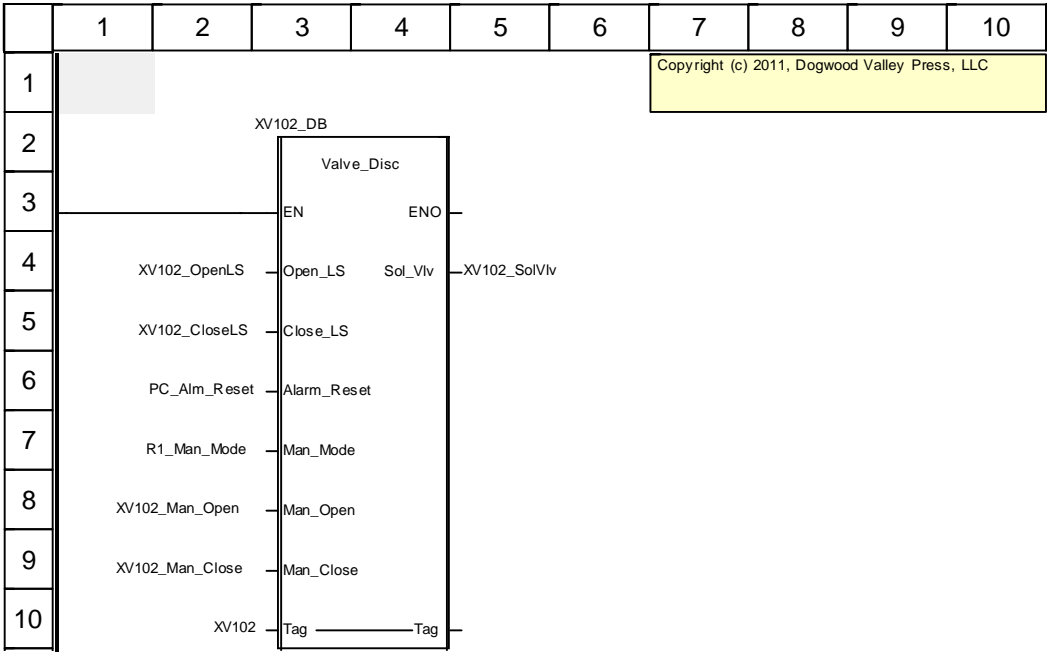


MAST

Specific properties

Configuration	Cyclic
Task period configuration	0
Watchdog time configuration	250

Valves : [MAST]



Cross References

Application:

Addresses

Object	Referred into	Location	Usage
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Variables or FB instances

Object	Referred into	Location	Usage
PC_Alm_Reset	Valves : [MAST]	(I 2, c: 3)	R
R1_Man_Mode	Valves : [MAST]	(I 2, c: 3)	R
XV102	Valves : [MAST]	(I 2, c: 3)	R/W
XV102_CloseLS	Valves : [MAST]	(I 2, c: 3)	R
XV102_DB	Valves : [MAST]	(I 2, c: 3)	FC
XV102_Man_Close	Valves : [MAST]	(I 2, c: 3)	R
XV102_Man_Open	Valves : [MAST]	(I 2, c: 3)	R
XV102_OpenLS	Valves : [MAST]	(I 2, c: 3)	R
XV102_SolVlv	Valves : [MAST]	(I 2, c: 3)	W

Cross References

Valve_Disc:

Variables or FB instances

Object	Referred into	Location	Usage
Alarm_Reset	Main<DFB> : [Valve_Disc]	(I 22, c: 1)	R
Close_LS	Main<DFB> : [Valve_Disc]	(I 12, c: 3)	R
		(I 13, c: 3)	R
		(I 15, c: 3)	R
		(I 26, c: 1)	R
Fail_Tmr	Main<DFB> : [Valve_Disc]	(I 10, c: 5)	FC
Man_Close	Main<DFB> : [Valve_Disc]	(I 6, c: 4)	R
Man_Mode	Main<DFB> : [Valve_Disc]	(I 2, c: 3)	R
		(I 3, c: 3)	R
		(I 6, c: 3)	R
		(I 7, c: 3)	R
Man_Open	Main<DFB> : [Valve_Disc]	(I 2, c: 4)	R
Open_LS	Main<DFB> : [Valve_Disc]	(I 12, c: 1)	R
		(I 13, c: 1)	R
		(I 14, c: 3)	R
		(I 25, c: 1)	R
Sol_Vlv	Main<DFB> : [Valve_Disc]	(I 2, c: 7)	W
		(I 6, c: 7)	W
		(I 12, c: 8)	R
		(I 13, c: 8)	R
		(I 14, c: 1)	R
		(I 15, c: 1)	R
Tag	Main<DFB> : [Valve_Disc]	(I 3, c: 4)	R
		(I 7, c: 4)	R
		(I 12, c: 9)	W
		(I 13, c: 9)	W
		(I 18, c: 1)	R
		(I 18, c: 4)	W
		(I 19, c: 1)	R
		(I 22, c: 4)	W
		(I 22, c: 6)	W
		(I 25, c: 4)	W
		(I 26, c: 4)	W
		(I 29, c: 3)	W
		(I 29, c: 5)	W