

Flow_PIDs [OB34]

Flow_PIDs Properties

General

Name	Flow_PIDs	Number	34	Type	OB
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Language	LAD	Numbering	Manual		
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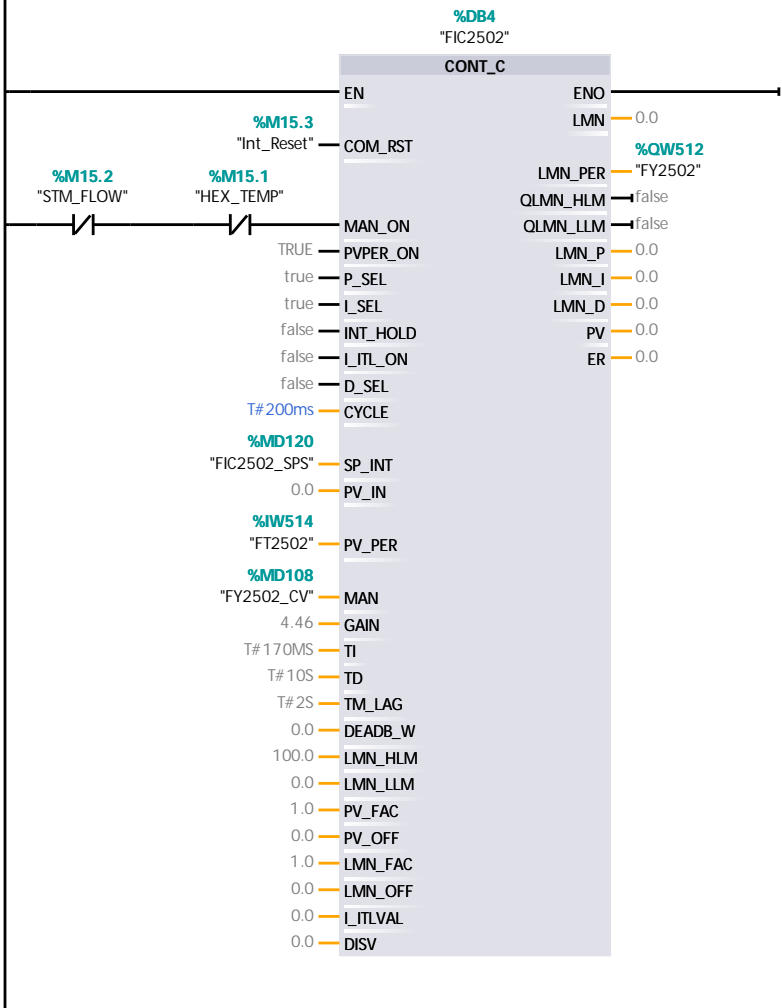
Information

Title	Flow loops	Author		Comment	
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Family		Version	0.1	User-defined ID	
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Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
Event_Count	Int	
Temp		
Constant		

Network 1: FIC 2502 Slave flow loop



Main [OB1]

Main Properties

General

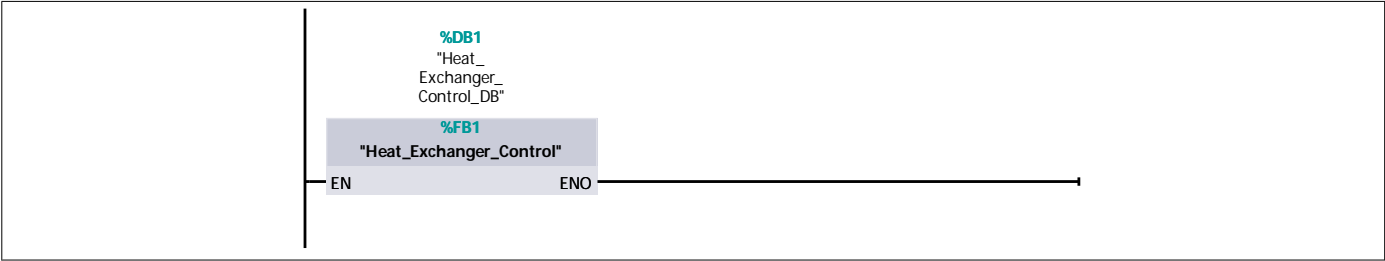
Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Manual		

Information

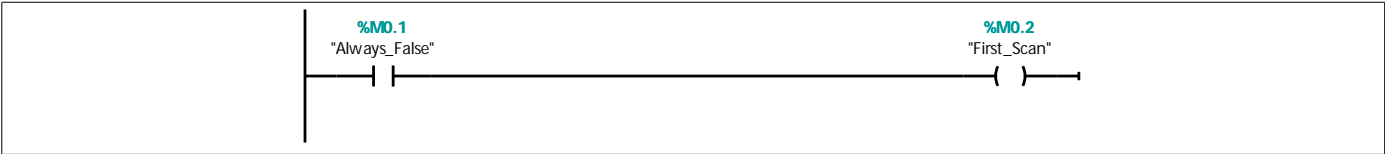
Title	"Main Program Sweep (Cycle)"	Author		Comment	Example 10.9 Cascade with Feedforward Control Copyright (c) 2022 Dogwood Valley Press, LLC
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Temp		
OB1_EV_CLASS	Byte	
OB1_SCAN_1	Byte	
OB1_PRIORITY	Byte	
OB1_OB_NUMBR	Byte	
OB1_RESERVED_1	Byte	
OB1_RESERVED_2	Byte	
OB1_PREV_CYCLE	Int	
OB1_MIN_CYCLE	Int	
OB1_MAX_CYCLE	Int	
OB1_DATE_TIME	Date_And_Time	
Constant		

Network 1: Heat Exchanger control



Network 2: Turn off first scan



Totally Integrated Automation Portal

Startup [OB100]

Startup Properties

General

Name	Startup	Number	100	Type	OB
Language	LAD	Numbering	Manual		

Information

Title	"Complete Restart"	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Temp		
OB100_EV_CLASS	Byte	
OB100_STARTUP	Byte	
OB100_PRIORITY	Byte	
OB100_OB_NUMBR	Byte	
OB100_RESERVED_1	Byte	
OB100_RESERVED_2	Byte	
OB100_STOP	Word	
OB100_STRT_INFO	DWord	
OB100_DATE_TIME	Date_And_Time	
Constant		

Network 1: Always true

%M0.0

"Always_True"

%M0.0

"Always_True"

%M0.0

"Always_True"

Network 2: Always false

%M0.1

"Always_False"

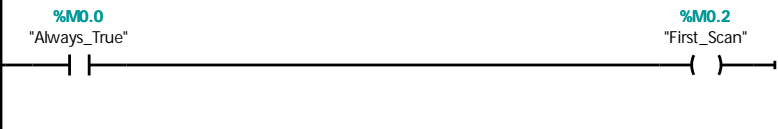
%M0.1

"Always_False"

%M0.1

"Always_False"

Network 3:



Temp_PIDs [OB32]

Temp_PIDs Properties

General

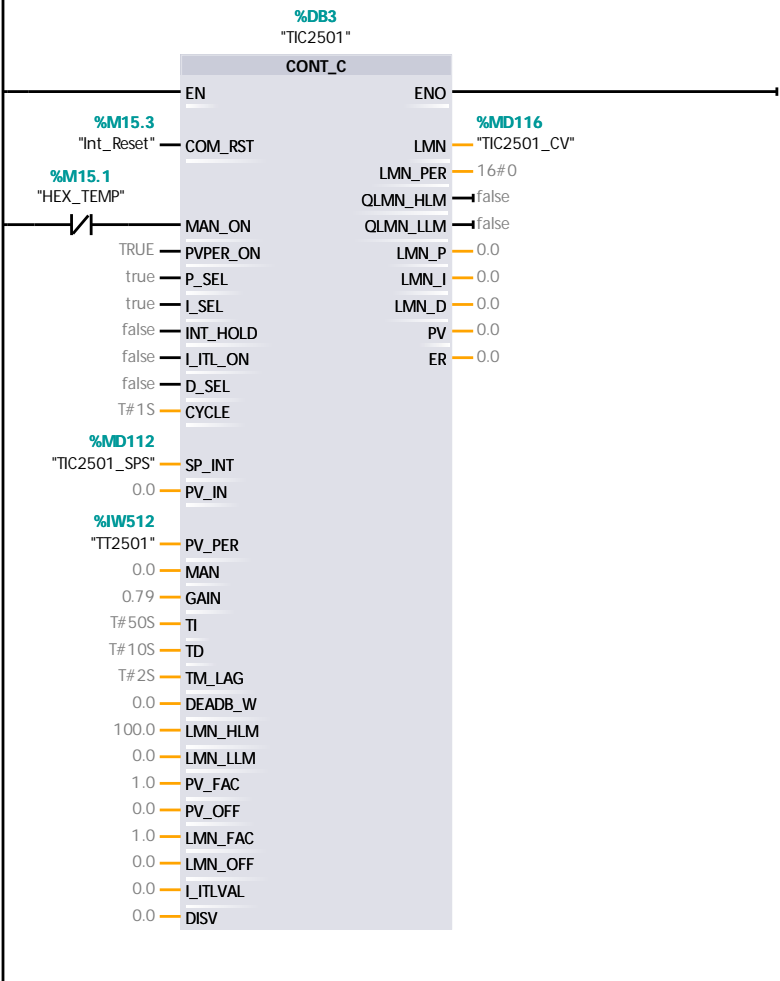
Name	Temp_PIDs	Number	32	Type	OB
Language	LAD	Numbering	Manual		

Information

Title	Temperature loops	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
▼ Input		
Initial_Call	Bool	
Event_Count	Int	
Temp		
Constant		

Network 1: TIC2501 Heat Exchanger temp. master loop



Heat_Exchanger_Control [FB1]

Heat_Exchanger_Control Properties

General

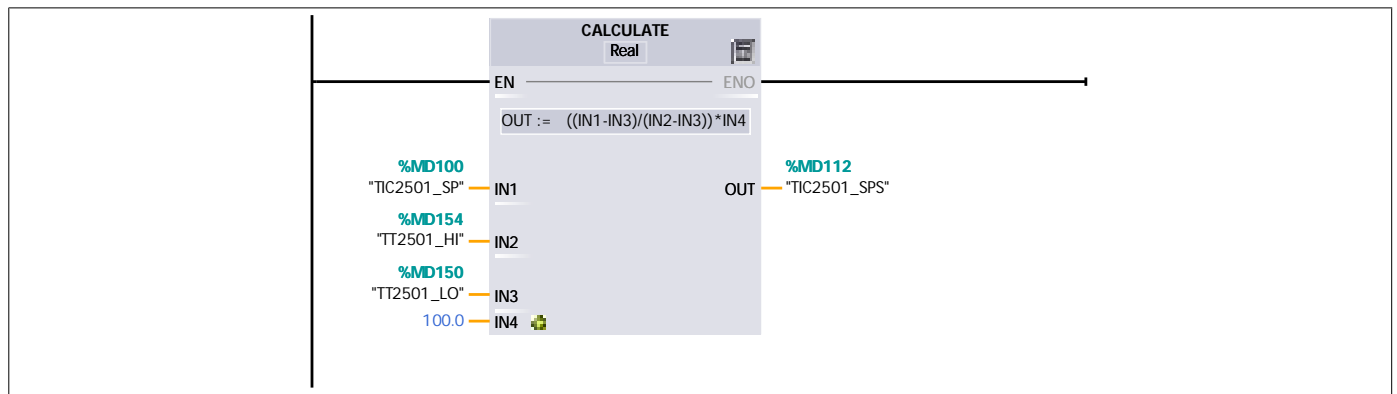
Name	Heat_Exchanger_Control	Number	1	Type	FB
Language	LAD	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

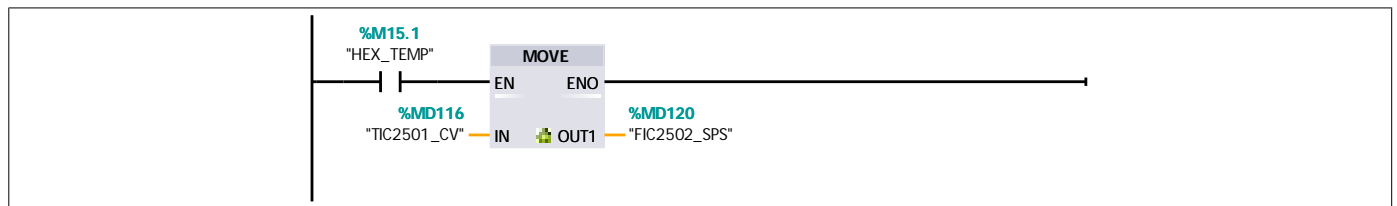
Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Ret_Val	Word	16#0	Non-retain
TmpR	Real	0.0	Non-retain
Temp			
Constant			

Network 1: Scale TIC operator setpoint to 0-100 required by PID



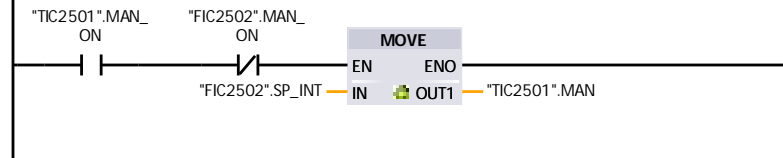
Network 2: Handle both loops auto

When both loops auto, copy TIC out to FIC SP.

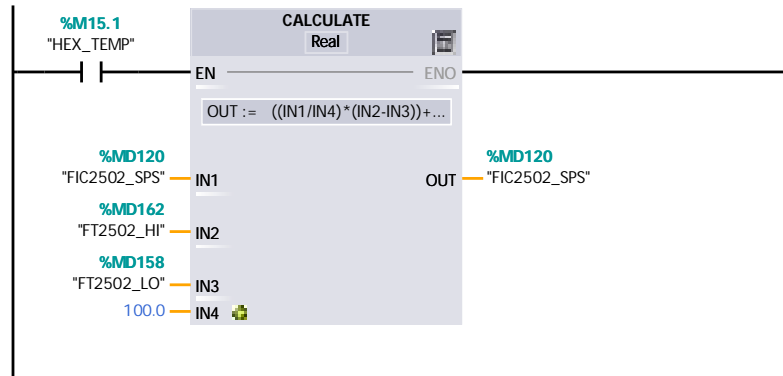


Network 3: Master in manual and slave in auto

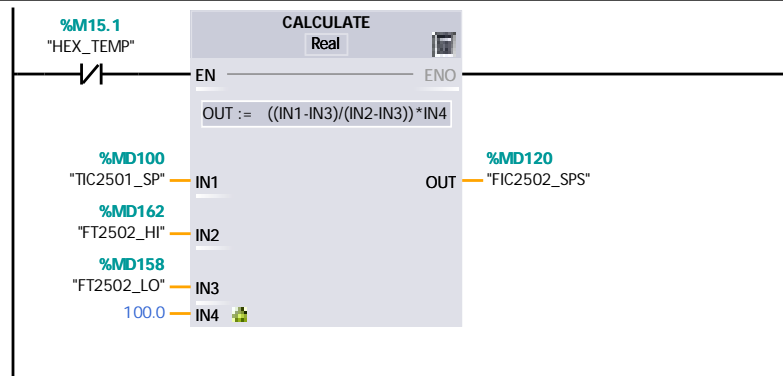
Copy flow SP to TIC manual out.



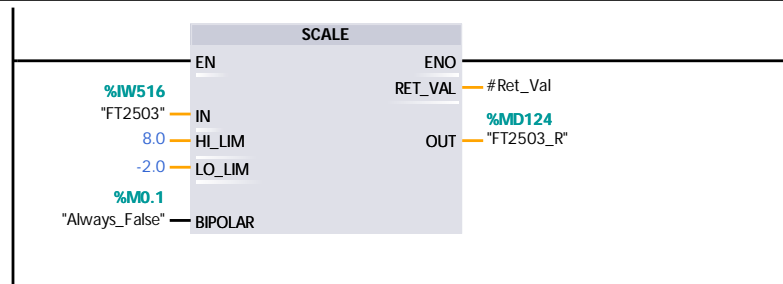
Network 4: If controlling temperature, scale flow SP back to 0-8 gpm fange for operator.



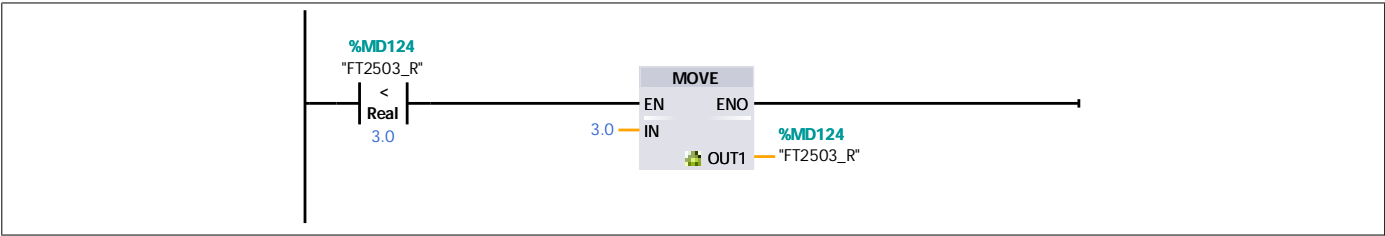
Network 5: If not controlling temperature, scale operator SP to 0-100 for PID.



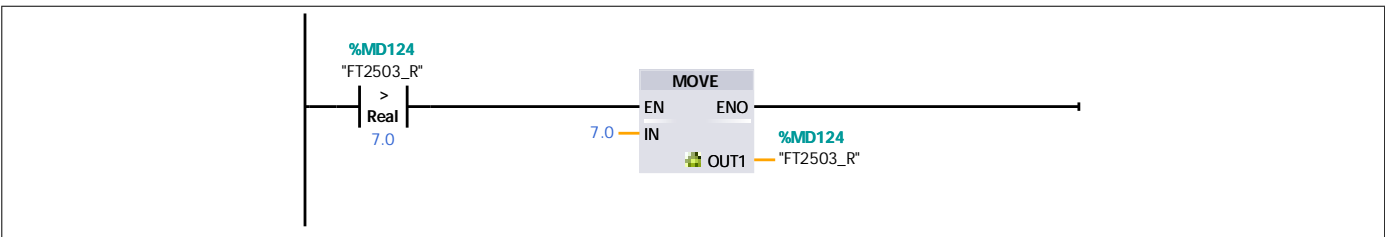
Network 6: Scale feedforward analog input to gpm



Network 7: Limit valid range to 3 to 7 gpm



Network 8:



Network 9: Calculate feedforward correction and move to DISV of TIC2501

