

## Main\_Program [OB1]

### Main\_Program Properties

#### General

<b>Name</b>	Main_Program	<b>Number</b>	1	<b>Type</b>	OB
<b>Language</b>	LAD	<b>Numbering</b>	Manual		

#### Information

<b>Title</b>	SP7-10	<b>Author</b>		<b>Comment</b>	
<b>Family</b>		<b>Version</b>	0.1	<b>User-defined ID</b>	

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: SP7-10

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#### SP7-10 Hole Drilling Station Control

Additional internal memory:

Tag Address

Run M5.0 BOOL On while station running

Int\_Reset M5.1 BOOL Internal reset

Step\_1 to Step\_10 M0.1 to M1.2 BOOL Step-in-progress bits

Clamp\_Tmr DB1 TON\_SFB Times clamping

Pause\_Tmr DB3 TON\_SFB Times pause during drilling

Reset\_Tmr DB4 TON\_SFB Times retract of YCYL when reset

TmpDI MD120 DINT Temporary double integer

TmpR MD124 REAL Temporary real

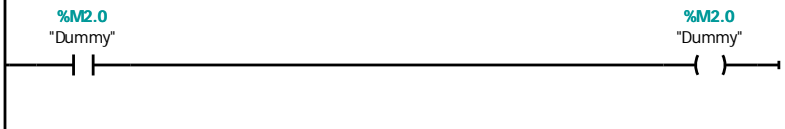
Ret\_Val MW12 WORD Return value from SCALE block

Always\_Off M10.0 BOOL Always off bit for SCALE block

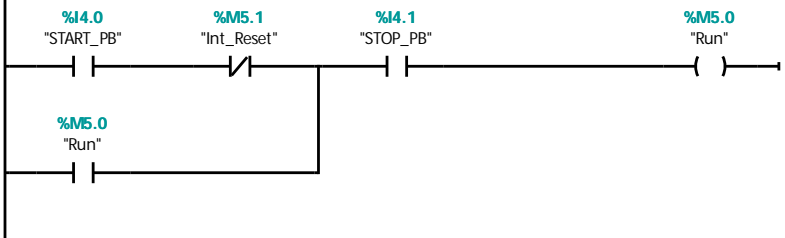
Conversion formulas:

$X\_VAL = (X\_MEAS - 5530) / 22118.0 * (300.0 - 150.0) + 150.0$

$Y\_VAL = (Y\_MEAS - 5530) / 22118.0 * (110.0)$



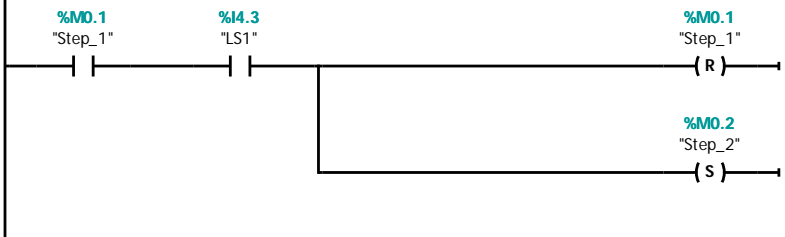
Network 2: Start/stop



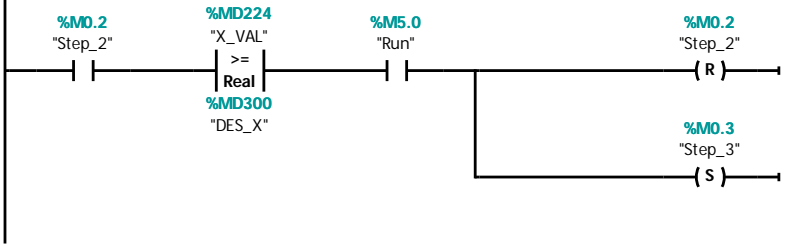
Network 3: Initial Start



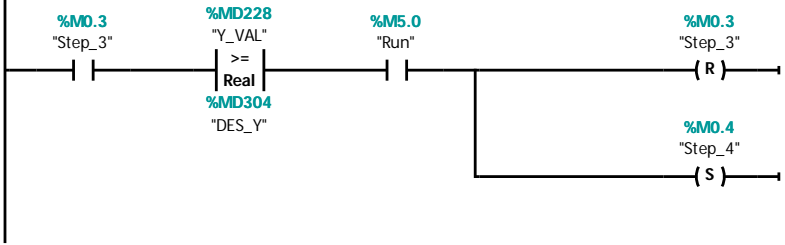
Network 4: Step 1 Wait for piece



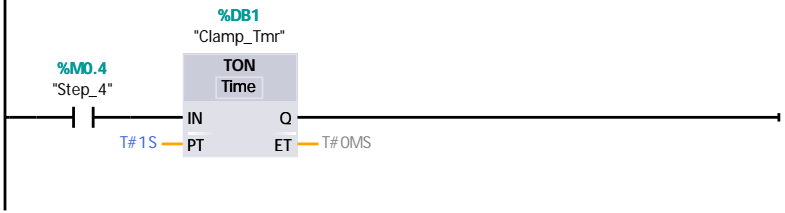
Network 5: Step 2 Push to X position



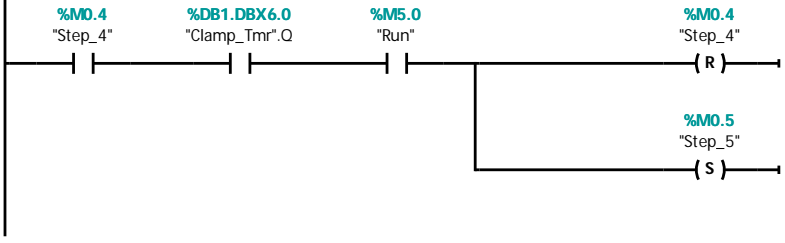
Network 6: Step 3 Push to Y position



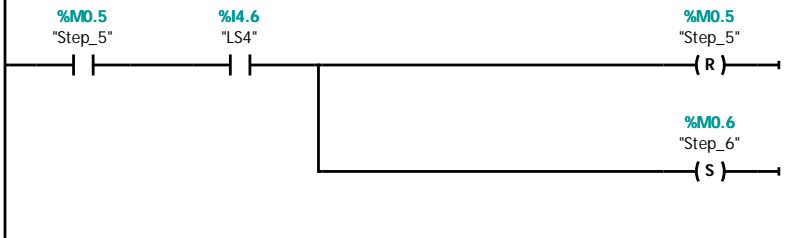
Network 7: Step 4 timer



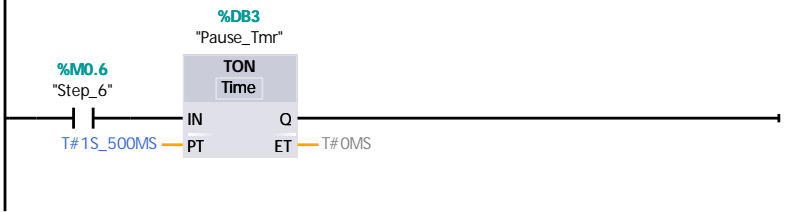
Network 8: Step 4 - Clamp



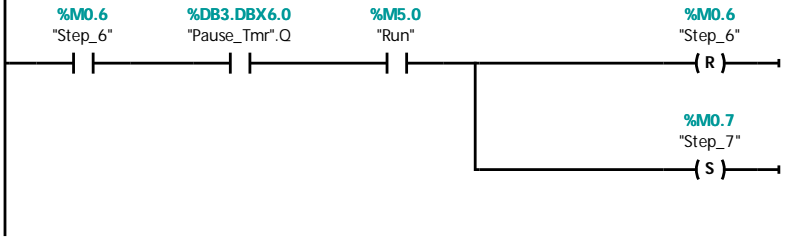
Network 9: Step 5 Drill down



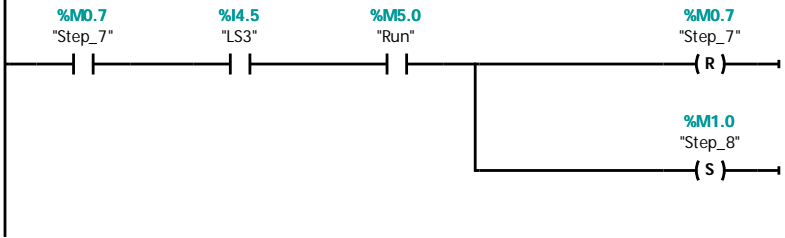
Network 10: Step 6 timer



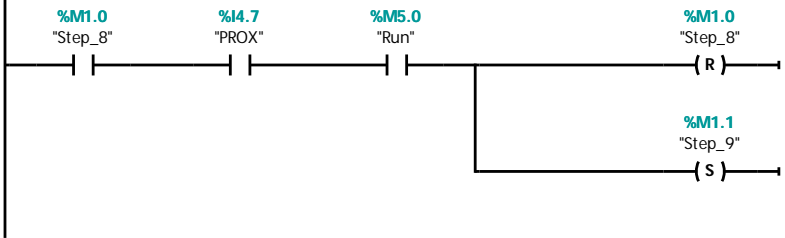
Network 11: Step 6 - Pause



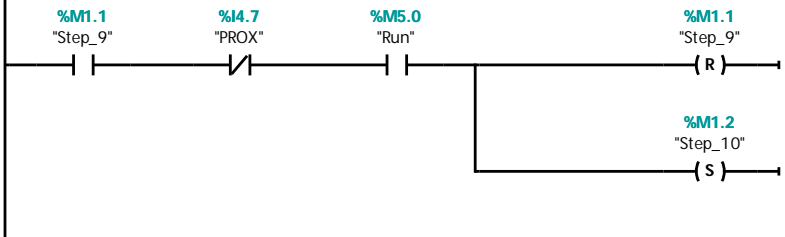
Network 12: Step 7 Drill up



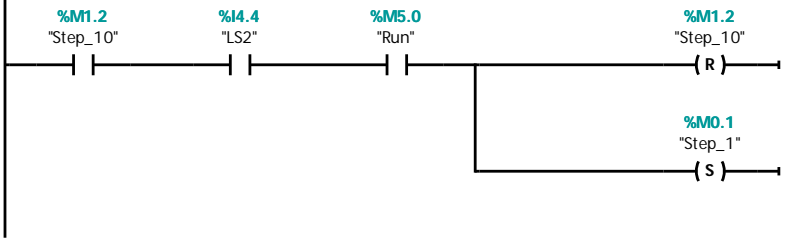
Network 13: Step 8 Push partway out



Network 14: Step 9 Push all way out

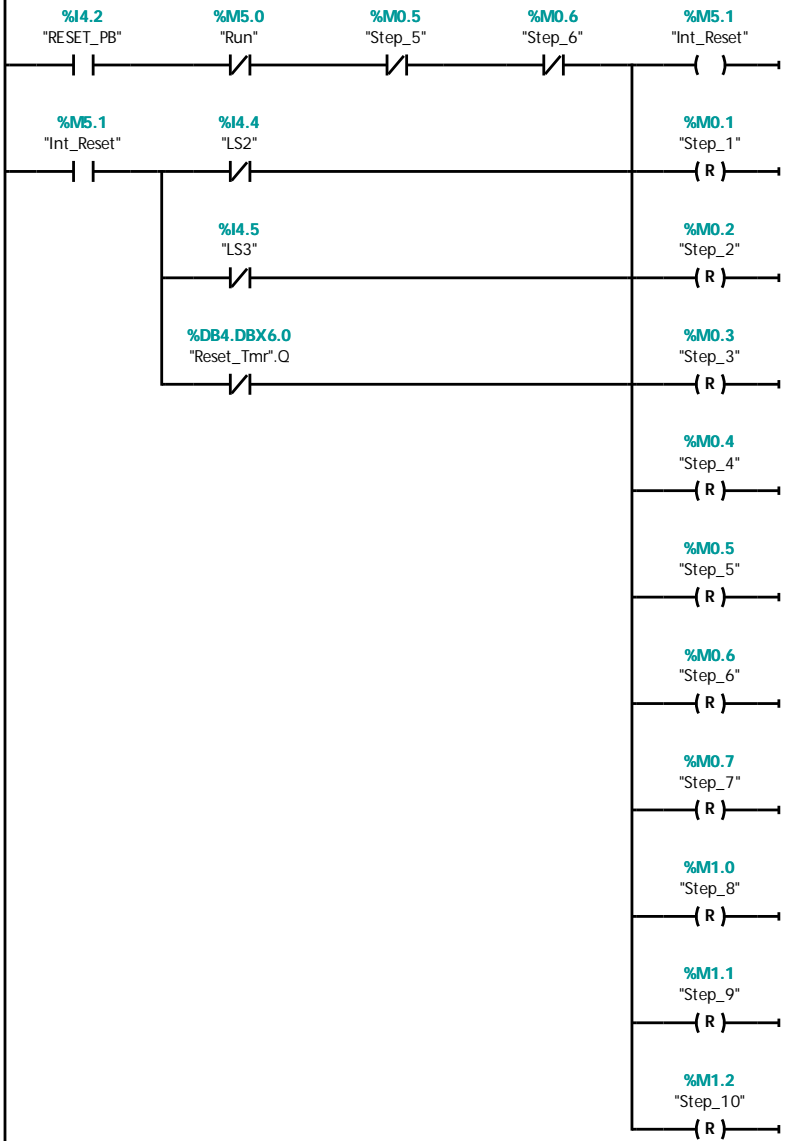


Network 15: Step 10 - Retract cylinder



Network 16: Reset

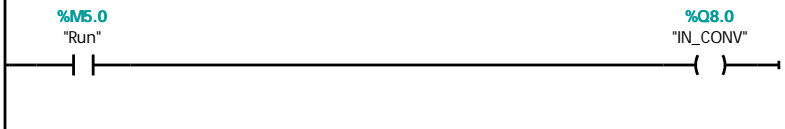
Cannot reset during drill down and pause steps



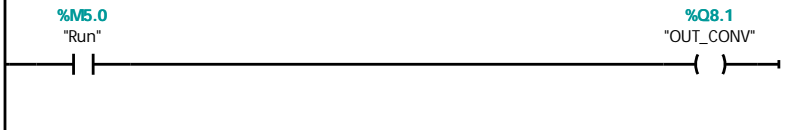
Network 17: Timer for retracting CYL1 when reset



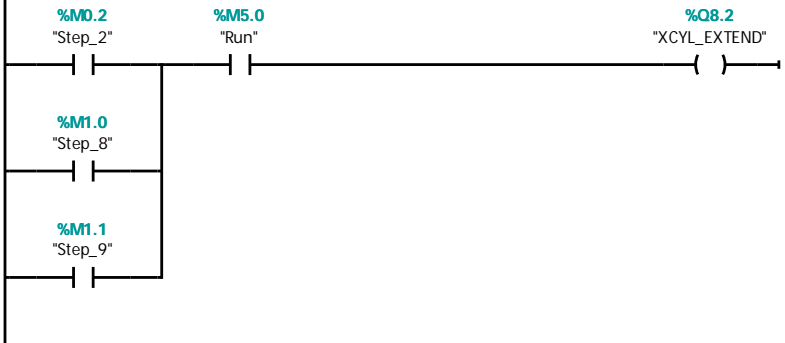
Network 18: Conveyor controls



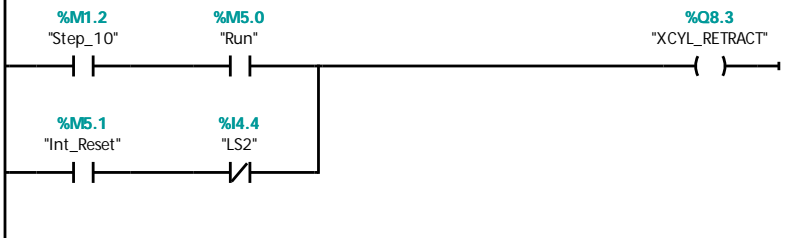
**Network 19: Outbound conveyor motor**



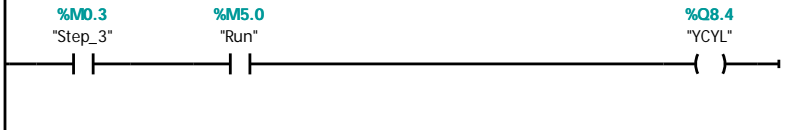
**Network 20: X, Y Cylinder Controls**



**Network 21: Main cylinder extension control**



**Network 22: Main cylinder retraction control**

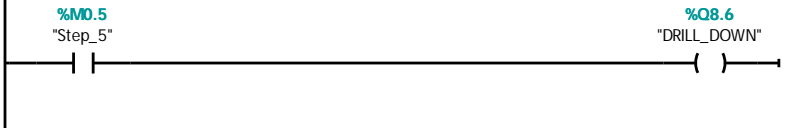


**Network 23: Clamp cylinder control**

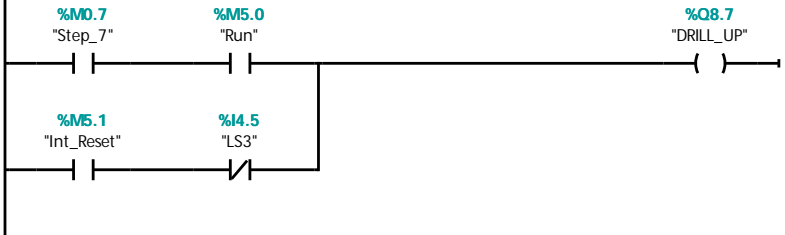
Must remain on when paused.



**Network 24: Drill control**



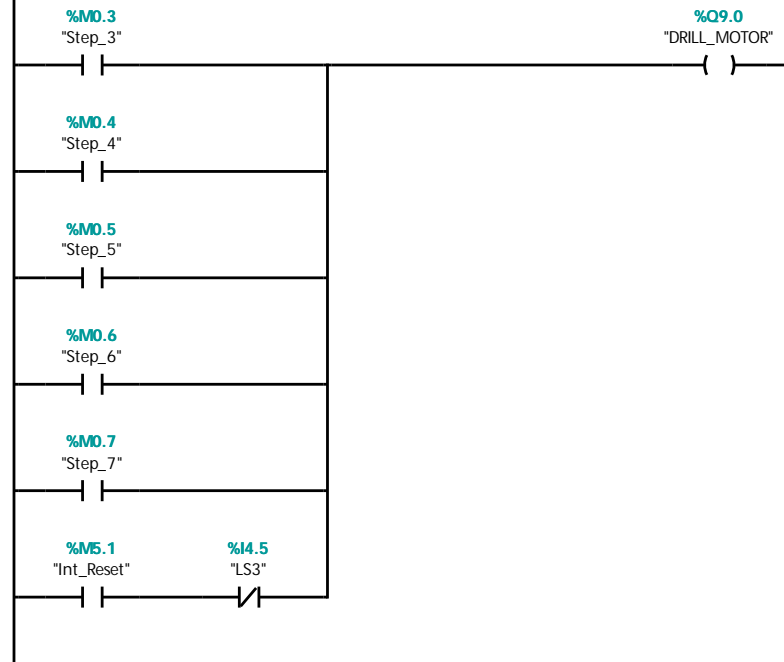
**Network 25: Drill cylinder retraction control**



**Network 26: Drill motor control**

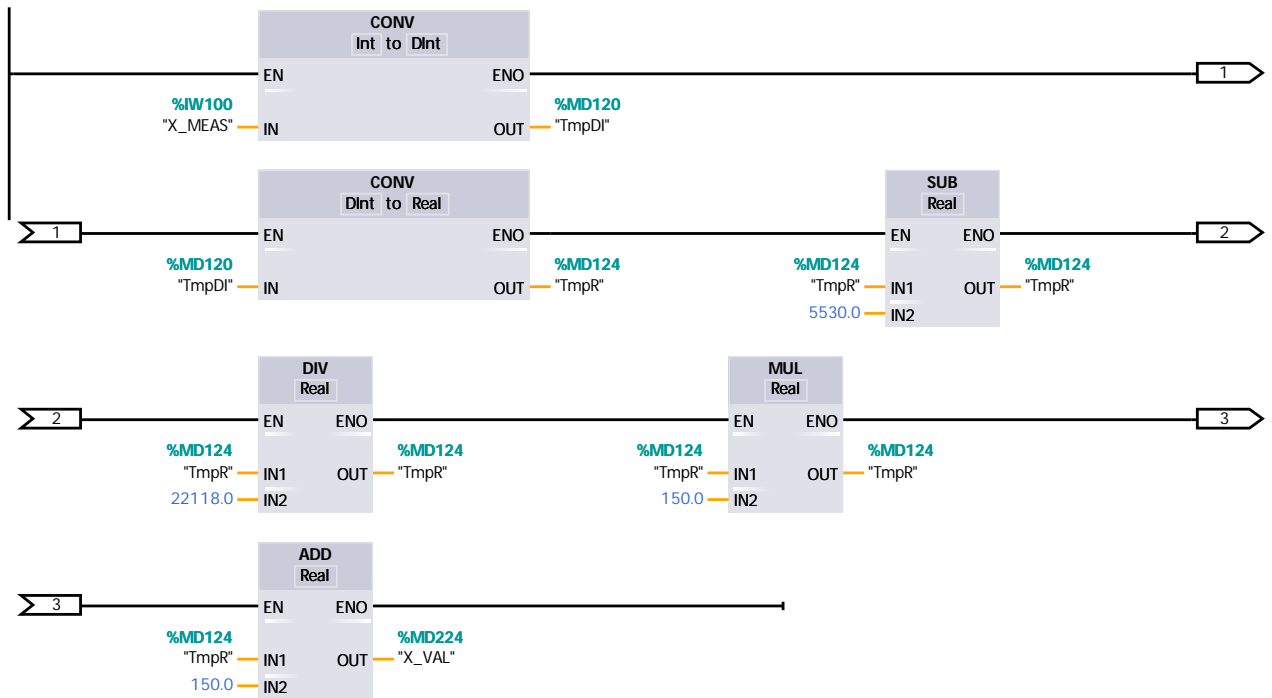
Must remain on when paused. Must run during reset if retracting drill.





### Network 27: Convert X measurement with comp blocks

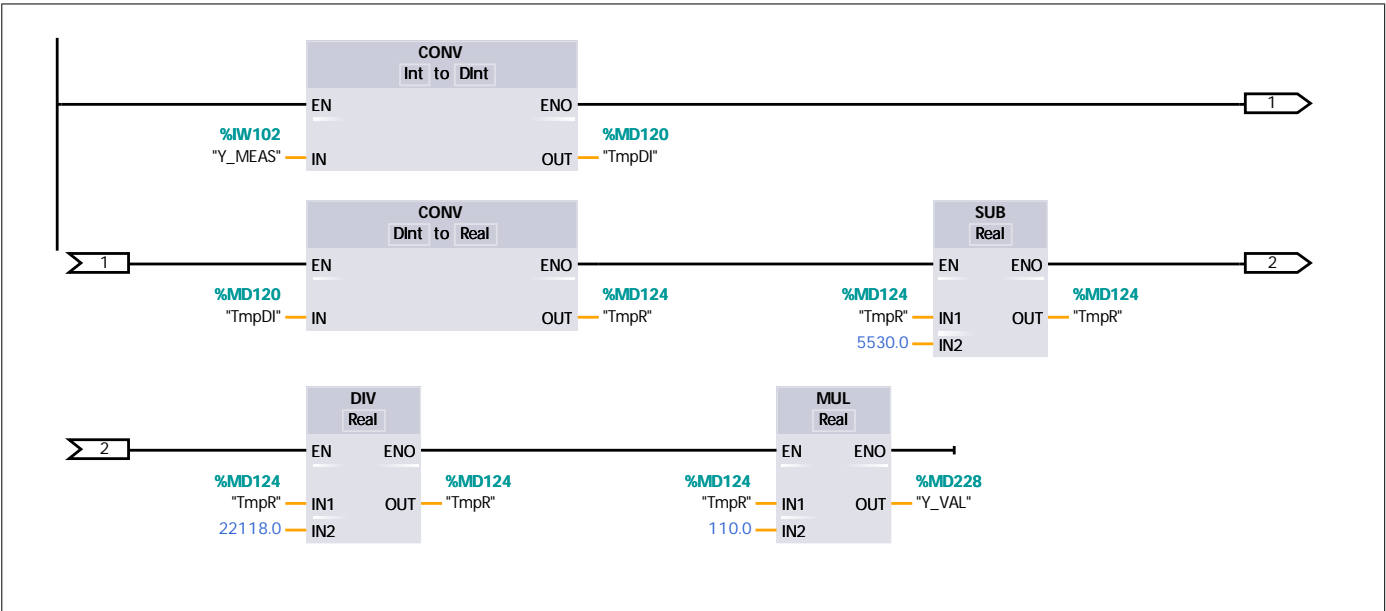
Convert X measurement to mm.  
Uses individual computation blocks.



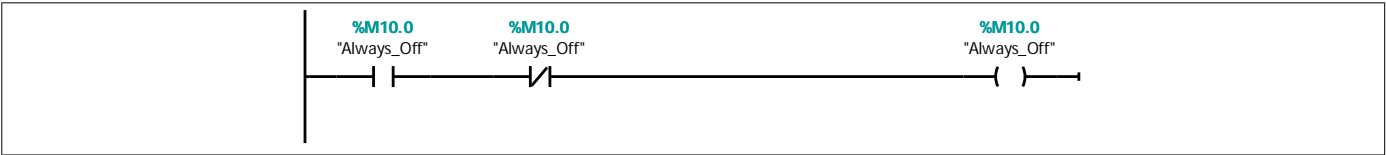
### Network 28: Convert Y measurement with comp blocks

Convert Y measurement to mm.

Uses individual computation blocks.



**Network 29: Always Off**



**Network 30: Convert X and Y measurements with SCALE**

Convert X and Y measurements to mm.  
Uses SCALE block. Note that the lo\_lim input is 25% lower than zero weight to account for this block assuming the minimum value of the analog in is zero rather than the 5530 (which corresponds to 4 mA).

