

Main_Program [OB1]

Main_Program Properties

General

Name	Main_Program	Number	1	Type	OB
Language	LAD	Numbering	Manual		

Information

Title	SP9-4	Author		Comment	
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: SP9-4

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SP9-4 Oiler Station Control with counter-based sequencer

Additional internal memory:

Tag Address

Run %M0.0 BOOL On while station running

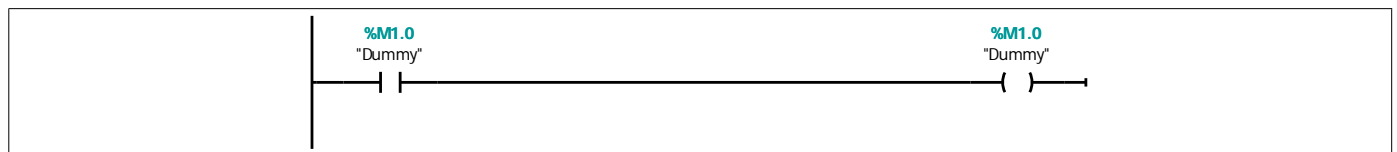
Int_Reset %M0.1 BOOL Internal reset

Seq %DB1 Seq_Type Sequencer data

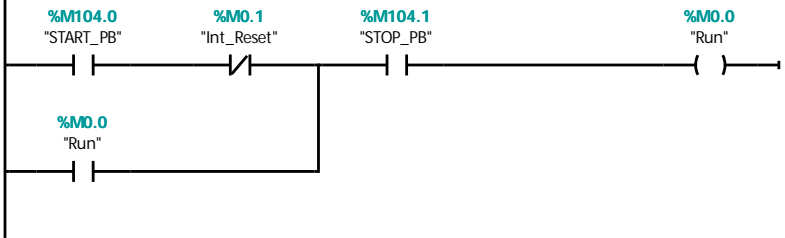
Seq_Ctr %DB3 CTU_SFB Counter for sequencer

Engage_Tmr %DB2 TON_SFB Times engage of part

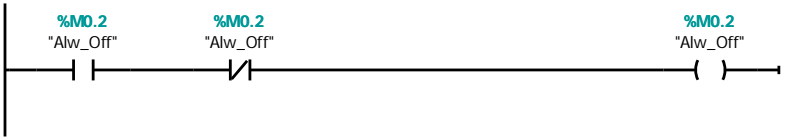
Squirt_Tmr %DB6 TON_SFB Times oil squirt



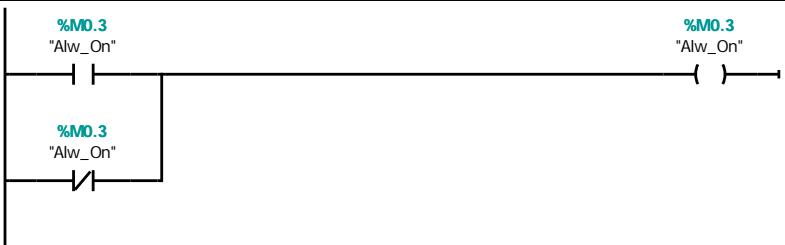
Network 2: Start/stop/pause. Start prevented if reset in progress.



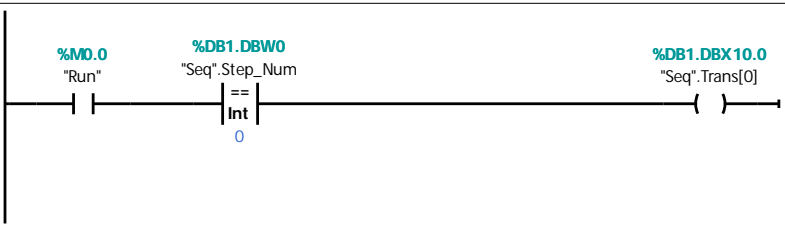
Network 3: Always Off Logic



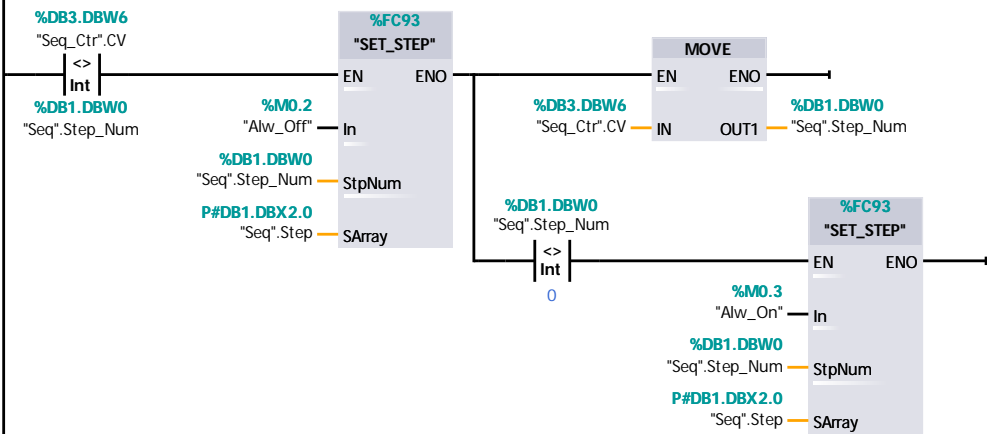
Network 4: Always On Logic



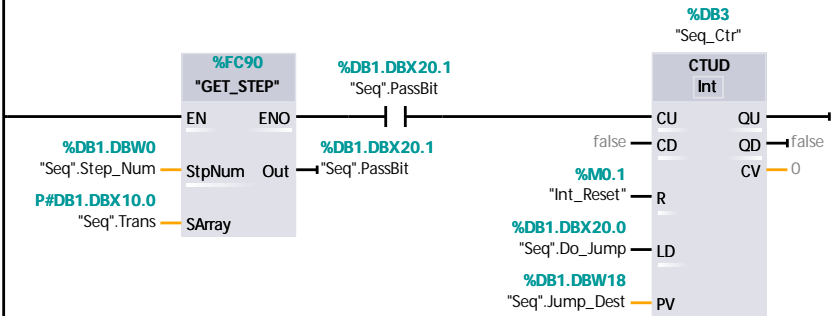
Network 5: First Start - transition out of initial step to step 1.



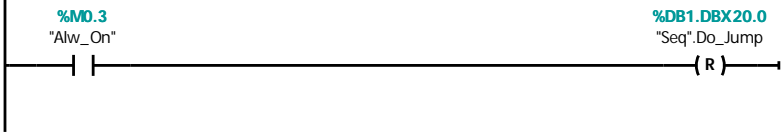
Network 6: Change step-in-progress bit when step changes.



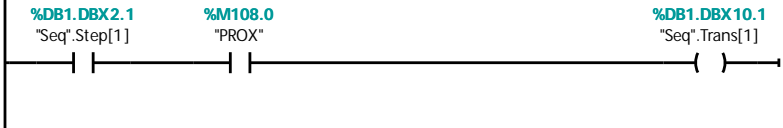
Network 7: Increment to next step when step-done bit set. Also handle jumps



Network 8:



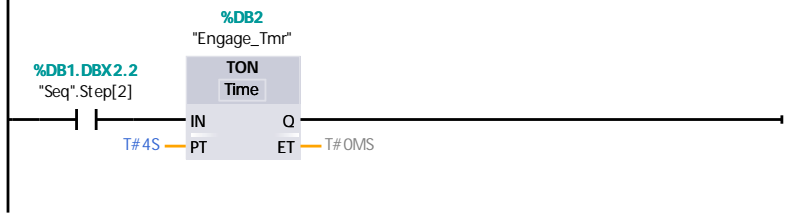
Network 9: Step 1 - Wait for part.



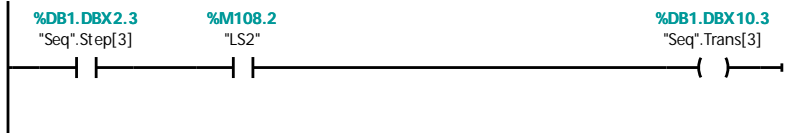
Network 10: Step 2 - Wait for engage



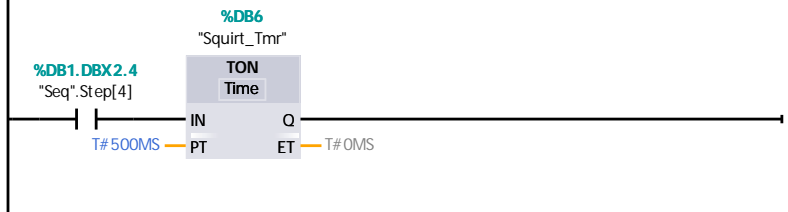
Network 11: Step 2 timer



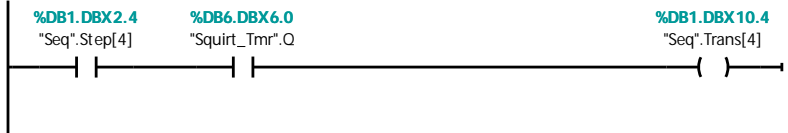
Network 12: Step 3 - Lower oiler



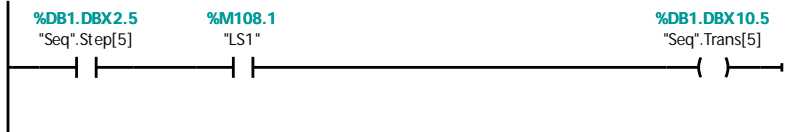
Network 13: Step 4 timer



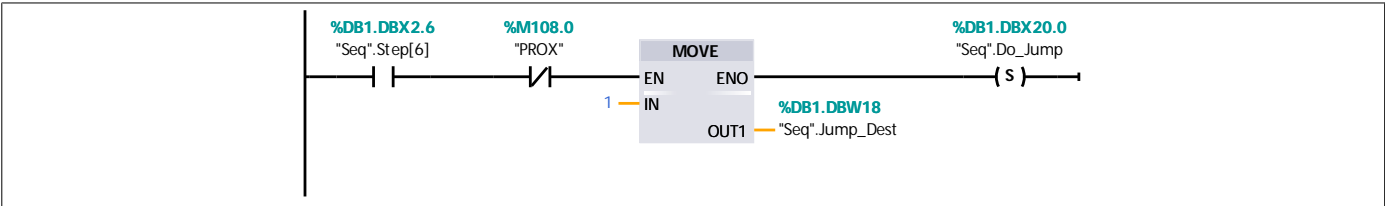
Network 14: Step 4 - Squirt Oil



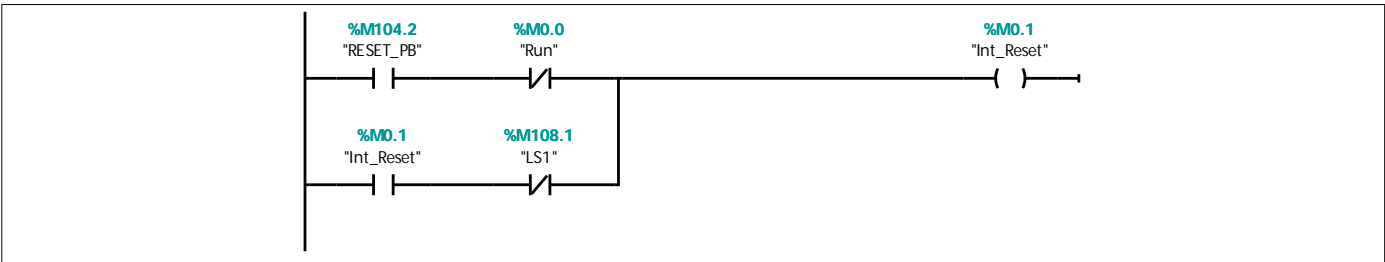
Network 15: Step 5 - Raise oiler



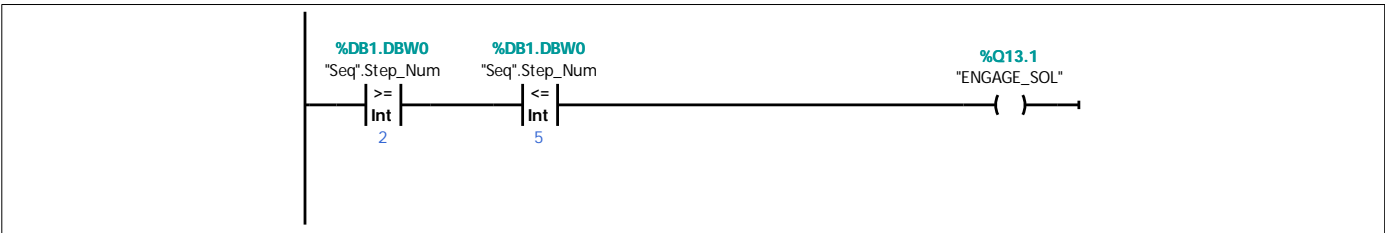
Network 16: Step 6 - Part leaves



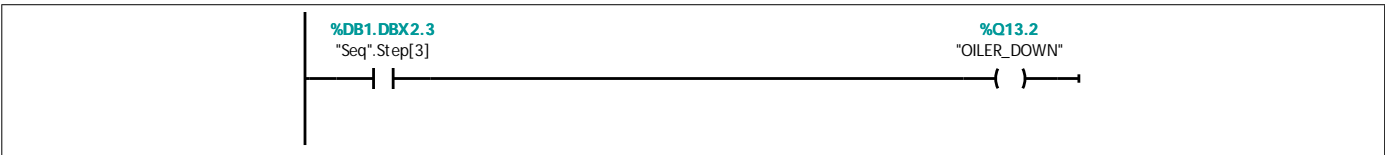
Network 17: Start/stop for reset operation. One step, no need for counter se



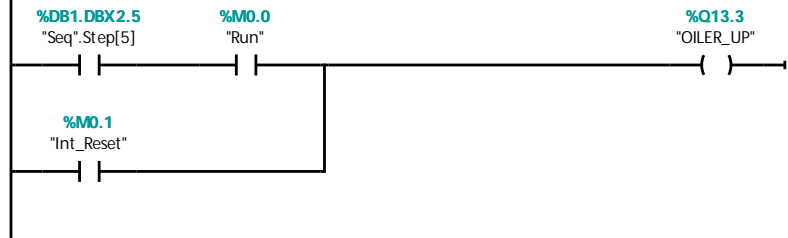
Network 18: On to move up hook to engage platform in station



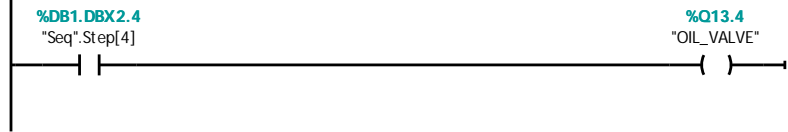
Network 19: On to lower oiler tip



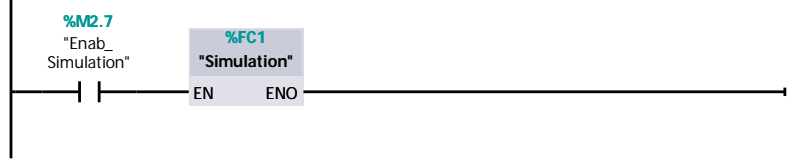
Network 20: On to raise oiler tip



Network 21: On to open valve and squirt oil



Network 22: Simulation



Network 23: Copy real inputs to input image if not simulating



Duplicate_Ins Properties

General	
1	General
2	General
3	General
4	General
5	General
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94	General
95	General
96	General
97	General
98	General
99	General
100	General

Name	Duplicate_Ins	Number	2	Type	FC
Language	LAD	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
Input		
Output		
InOut		
Temp		
Constant		
▼ Return		
Duplicate_Ins	Void	

Network 1:



GET_STEP [FC90]

GET_STEP Properties

General

Name	GET_STEP	Number	90	Type	FC
Language	SCL	Numbering	Manual		

Information

Title		Author		Comment	
Family		Version	0.0	User-defined ID	

Name	Data type	Default value
▼ Input		
StpNum	Int	
SArray	Array[0..63] of Bool	
▼ Output		
Out	Bool	
InOut		
Temp		
Constant		
▼ Return		
GET_STEP	Void	

```
0001
0002   #Out := #SArray[#StpNum];
0003   ENO := TRUE;
0004
```

SET_STEP [FC93]

SET_STEP Properties

General					
Name	SET_STEP	Number	93	Type	FC
Language	SCL	Numbering	Manual		
Information					
Title		Author		Comment	
Family		Version	0.0	User-defined ID	

Name	Data type	Default value
▼ Input		
In	Bool	
StpNum	Int	
Output		
▼ InOut		
SArray	Array[0..63] of Bool	
Temp		
Constant		
▼ Return		
SET_STEP	Void	

```
0001
0002   #SArray[#StpNum] := #In;
0003   ENO := TRUE;
0004
```

Simulation [FC1]

Simulation Properties

General

Name	Simulation	Number	1	Type	FC
Language	LAD	Numbering	Manual		

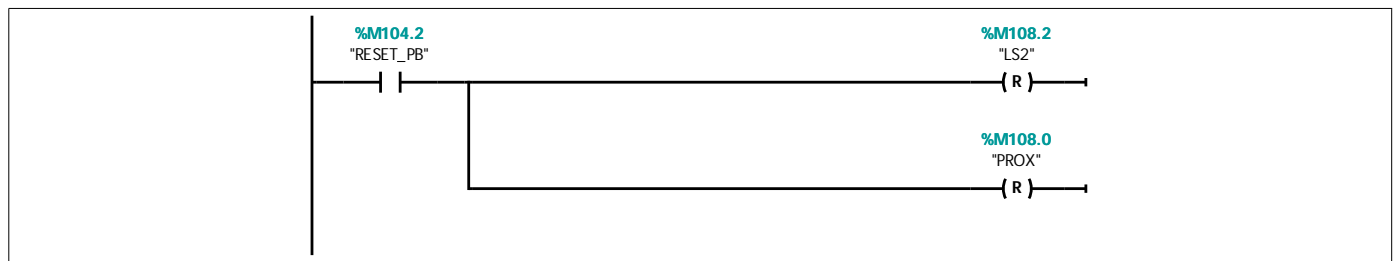
Information

Title		Author		Comment	Copyright (c) 2011, 2015 Dogwood Valley Press, LLC ----- SIMULATION LOGIC
Family		Version	0.1	User-defined ID	

Name	Data type	Default value
Input		
Output		
InOut		
Temp		
Constant		
▼ Return		
Simulation	Void	

Network 1: Limit switch, on (closed) when oiler tip is in lowered position

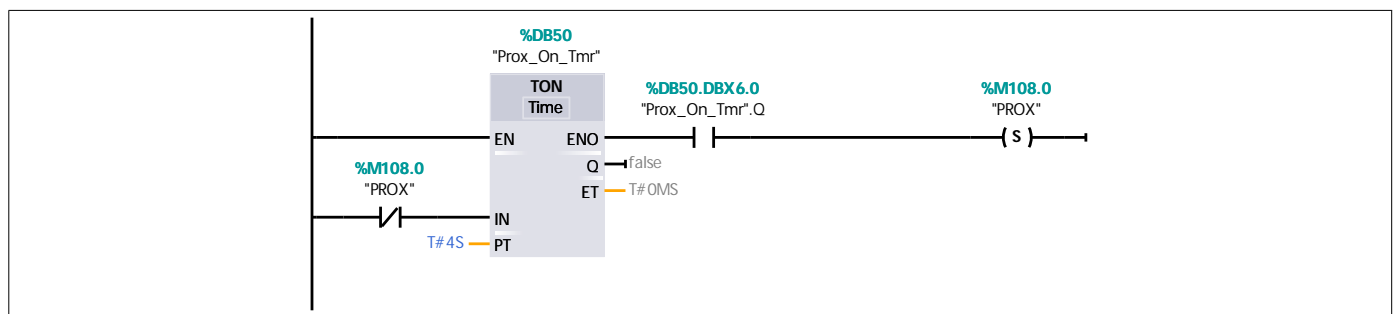
On reset, reset PROX and LS2



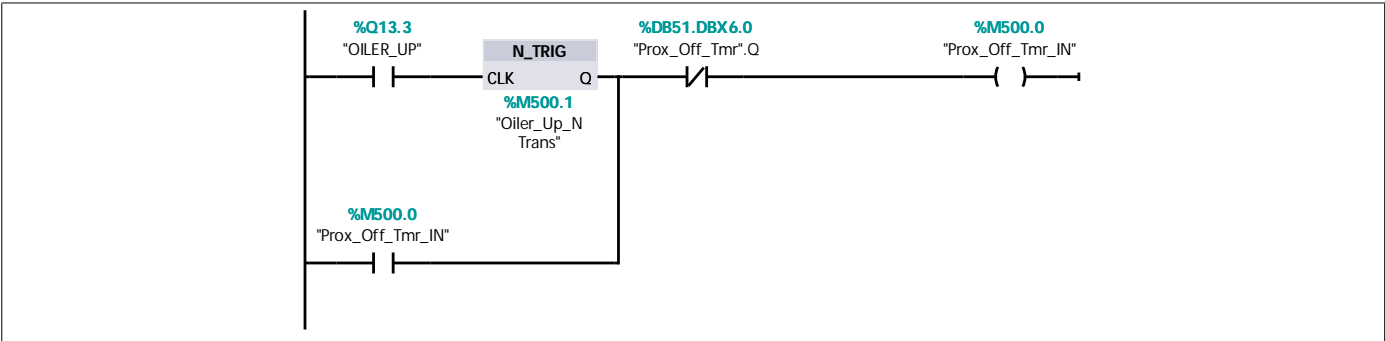
Network 2: Proximity sensor, on when platform is in station

PROX simulation: Set when PROX off and for 4 secs.

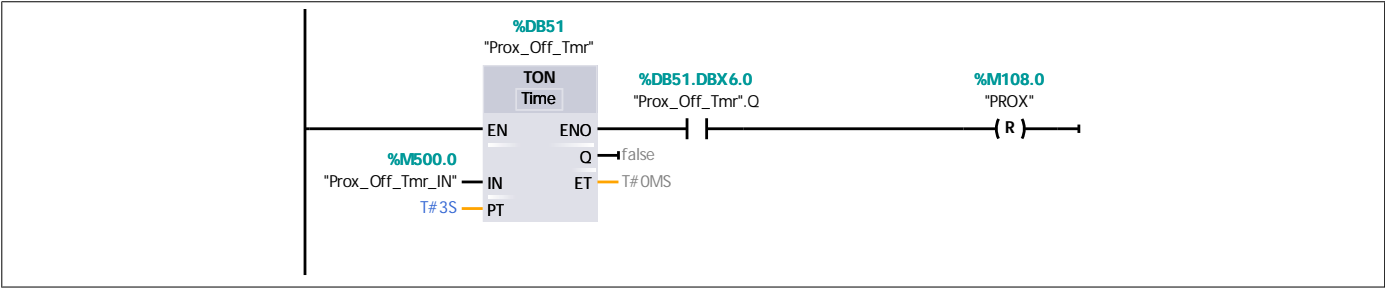
Reset 3 secs after OILER_UP transitions off



Network 3:



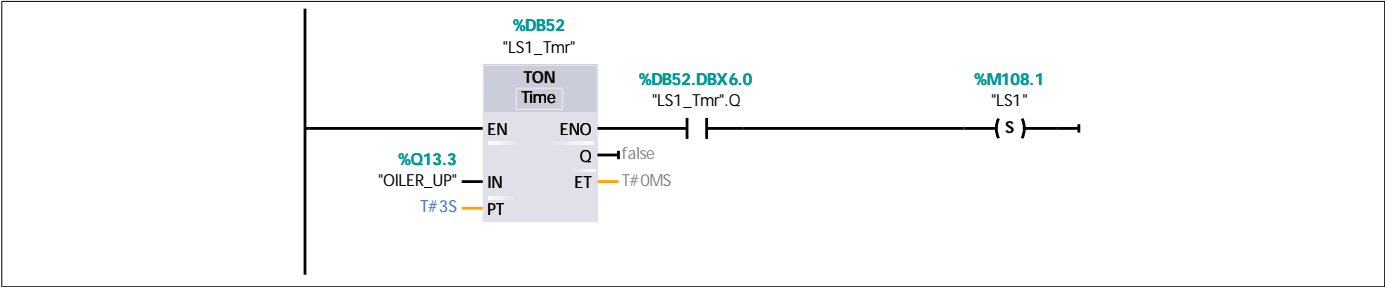
Network 4: Proximity sensor, on when platform is in station



Network 5: Limit switch, on (closed) when oiler tip is in raised position

LS1 and LS2 simulation: Set LS1 when OILER_UP on for 3 sec. Reset when OILER_DOWN

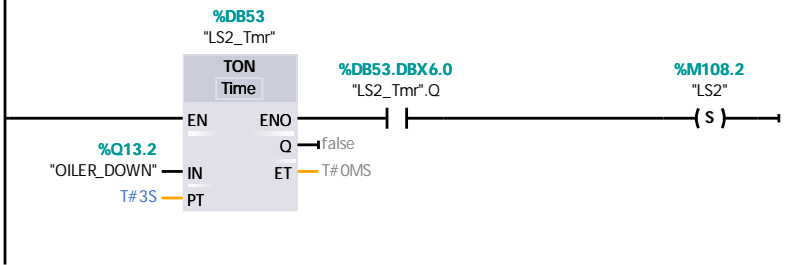
Set LS2 when OILER_DOWN on for 3 sec. Reset when OILER_UP



Network 6: Limit switch, on (closed) when oiler tip is in raised position



Network 7: Proximity sensor, on when 40-foot rail piece in feeder area



Network 8: Limit switch, on (closed) when oiler tip is in lowered position

