

Main [OB1]

Main Properties

General

Name	Main	Number	1	Type	OB
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Language	LAD	Numbering	Manual		
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Information

Title	SP9-4	Author		Comment	
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Family		Version	0.1	User-defined ID	
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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

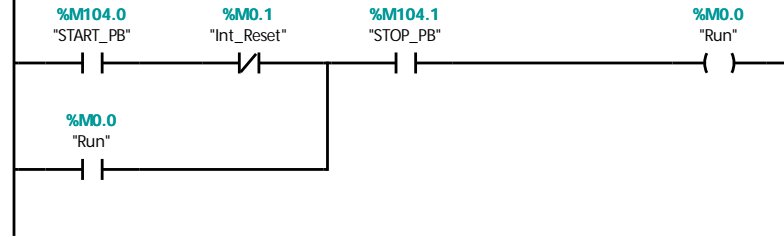
Seq_Ctr %DB3 IEC_COUNTER Counter for sequencer

Engage_Tmr %DB2 IEC_TIMER Times engage of part

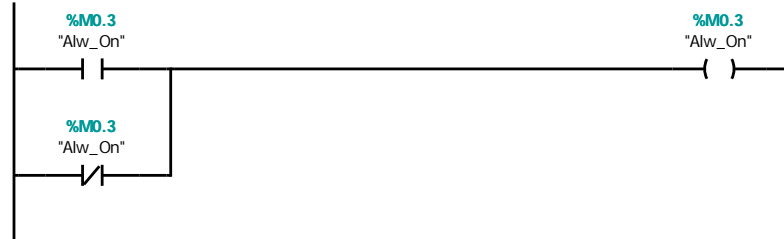
Squirt_Tmr %DB6 IEC_TIMER Times oil squirt



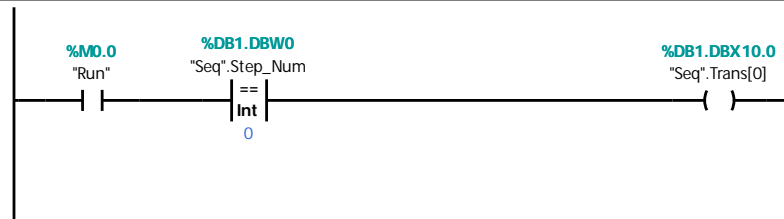
Network 2: Start/stop/pause. Start prevented if reset in progress.



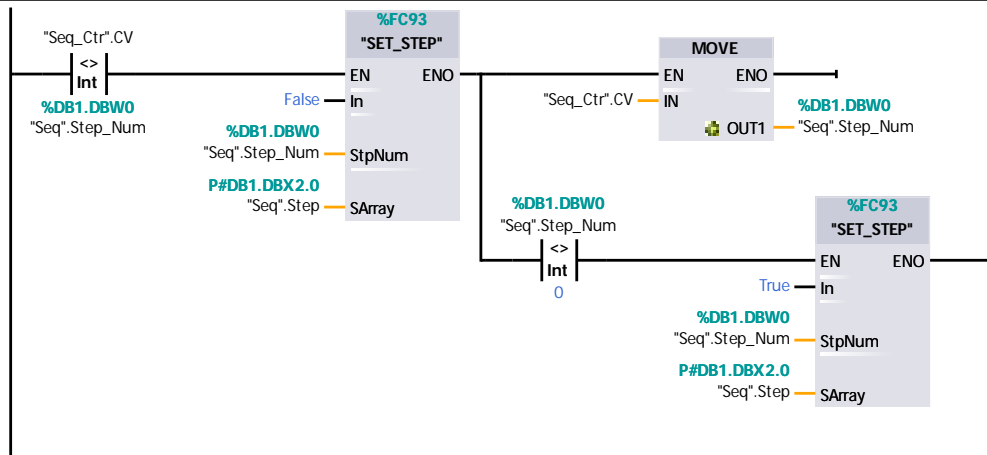
Network 3: Always On Logic



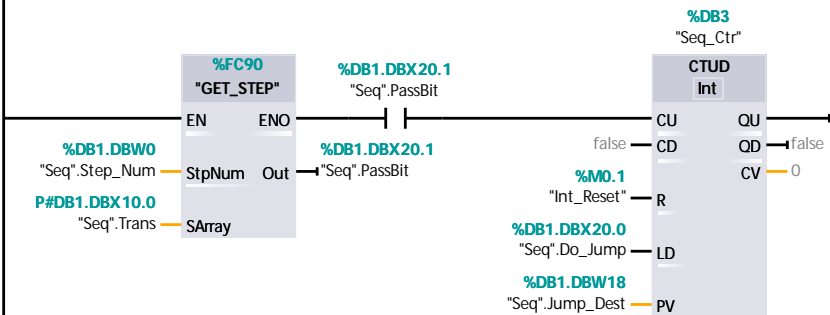
Network 4: First Start - transition out of initial step to step 1.



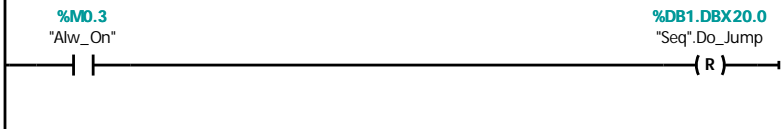
Network 5: Change step-in-progress bit when step changes.



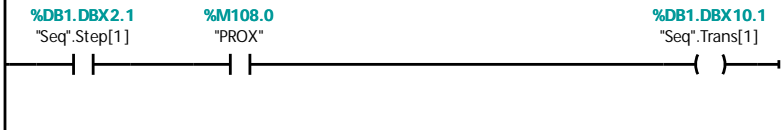
Network 6: Increment to next step when step-done bit set. Also handle jumps



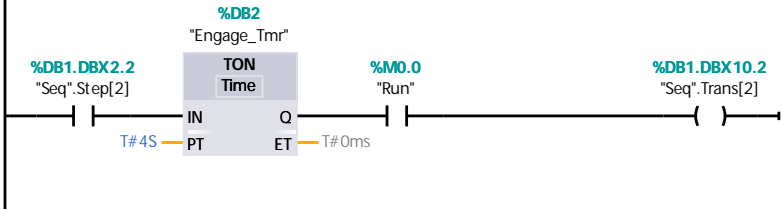
Network 7:



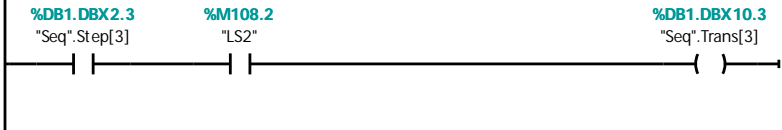
Network 8: Step 1 - Wait for part.



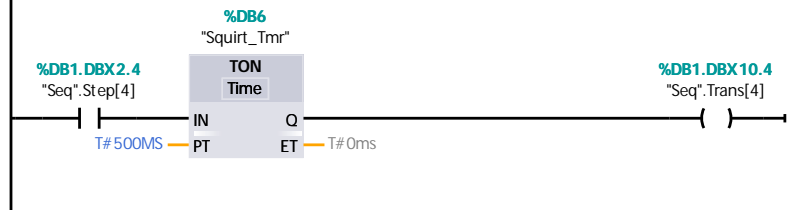
Network 9: Step 2 - Wait for engage



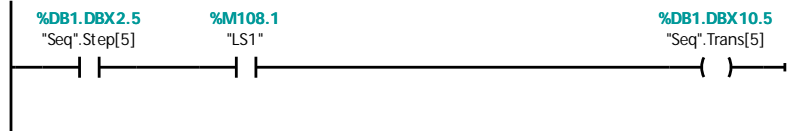
Network 10: Step 3 - Lower oiler



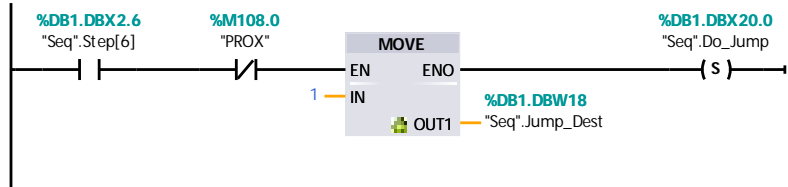
Network 11: Step 4 - Squirt Oil



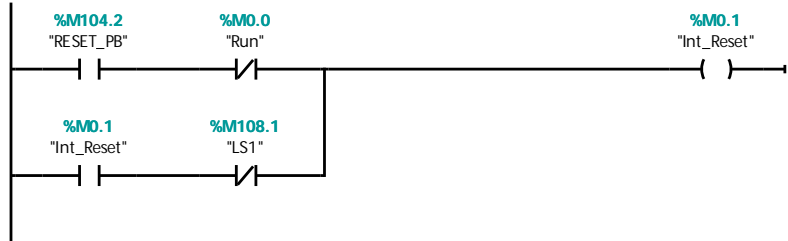
Network 12: Step 5 - Raise oiler



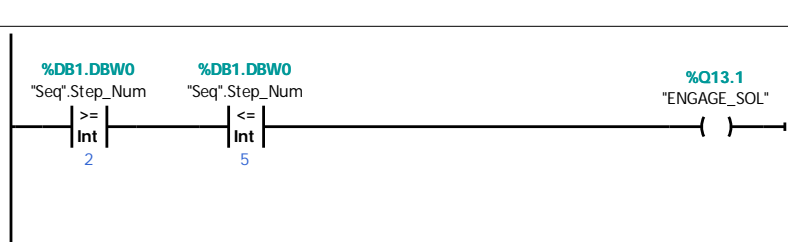
Network 13: Step 6 - Part leaves



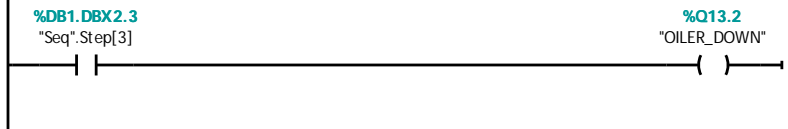
Network 14: Start/stop for reset operation. One step, no need for counter se



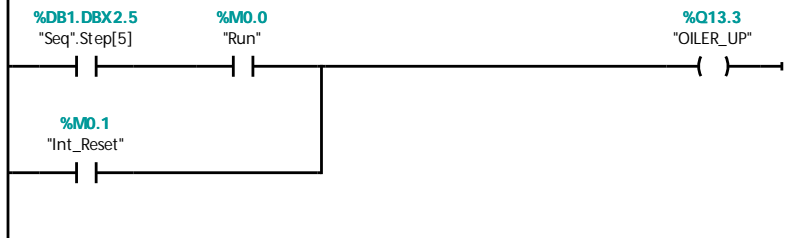
Network 15: On to move up hook to engage platform in station



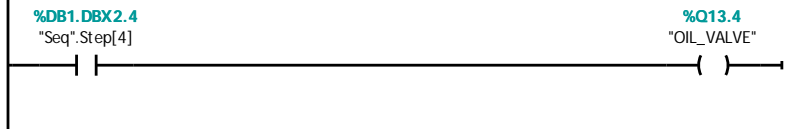
Network 16: On to lower oiler tip



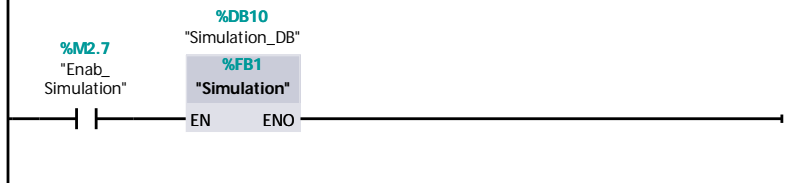
Network 17: On to raise oiler tip



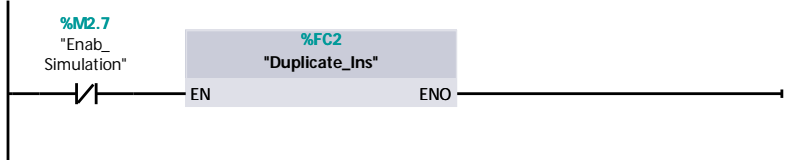
Network 18: On to open valve and squirt oil



Network 19: Simulation



Network 20: Copy real inputs to input image if not simulating



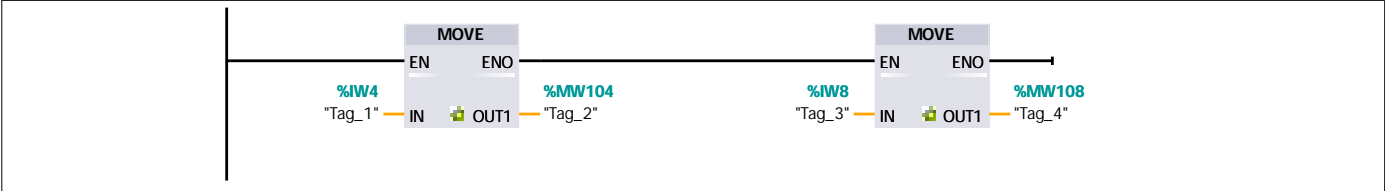
Duplicate_Ins [FC2]

Duplicate_Ins Properties

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:



Simulation [FB1]

Simulation Properties

General

Name	Simulation	Number	1	Type	FB
Language	LAD	Numbering	Automatic		

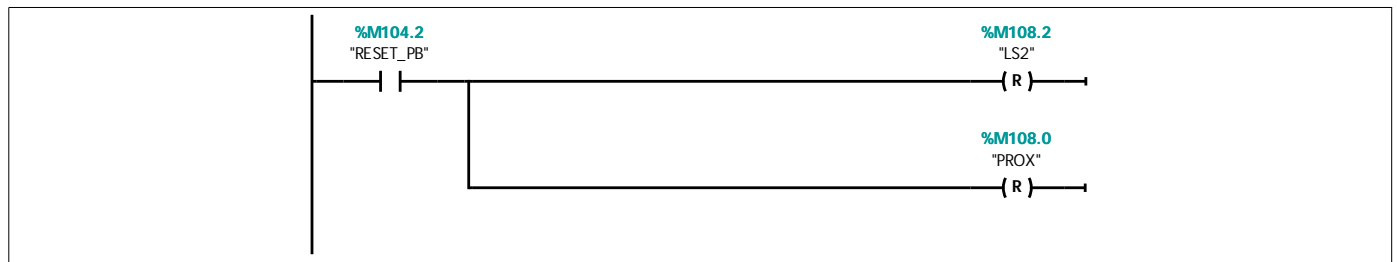
Information

Title		Author		Comment	Copyright (c) 2011-2023 Dogwood Valley Press, LLC ----- SIMULATION LOGIC
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain
Input			
Output			
InOut			
▼ Static			
Prox_On_Tmr	IEC_TIMER		Non-retain
Prox_Off_Tmr	IEC_TIMER		Non-retain
Prox_Off_Tmr_IN	Bool	false	Non-retain
LS2_Tmr	IEC_TIMER		Non-retain
LS1_Tmr	IEC_TIMER		Non-retain
Temp			
Constant			

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

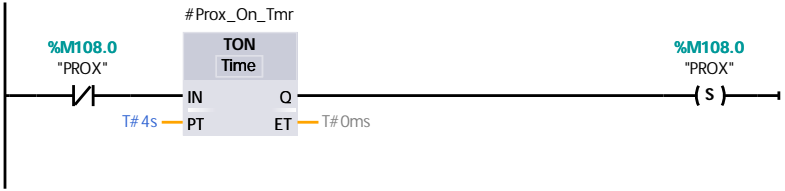
On reset, reset PROX and LS2



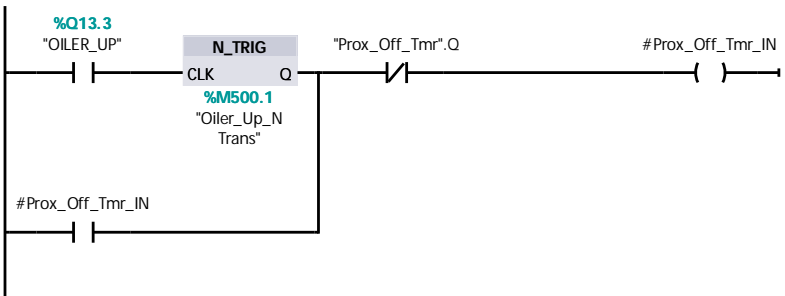
Network 2: Proximity sensor, on when platform is in station

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

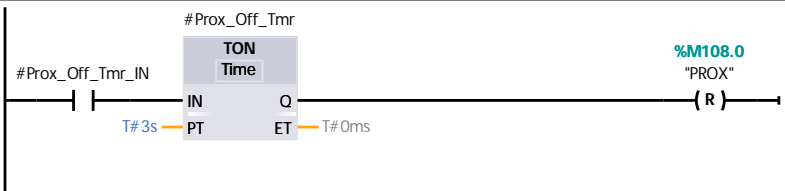
Reset 3 secs after OILER_UP transitions off



Network 3:



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

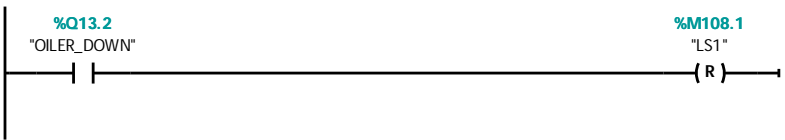


Network 5: Limit switch, on (closed) when oiler tip is in raised position

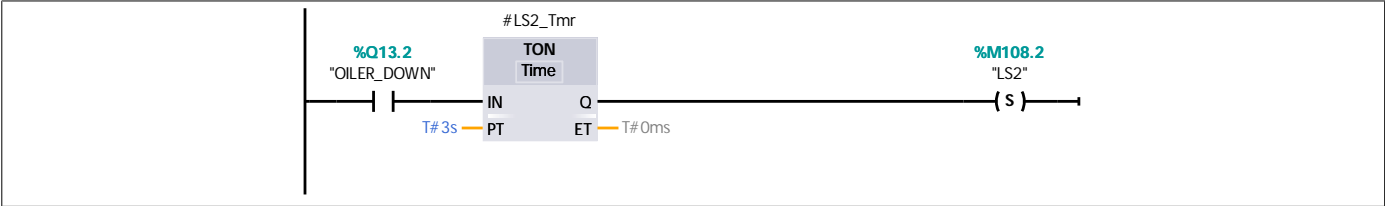
LS1 and LS2 simulation: Set LS1 when OILER_UP on for 3 sec. Reset when OILER_DOWN
Set LS2 when OILER_DOWN on for 3 sec. Reset when OILER_UP



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



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
```