

TECHNICAL DOCUMENTATION

SP14_04

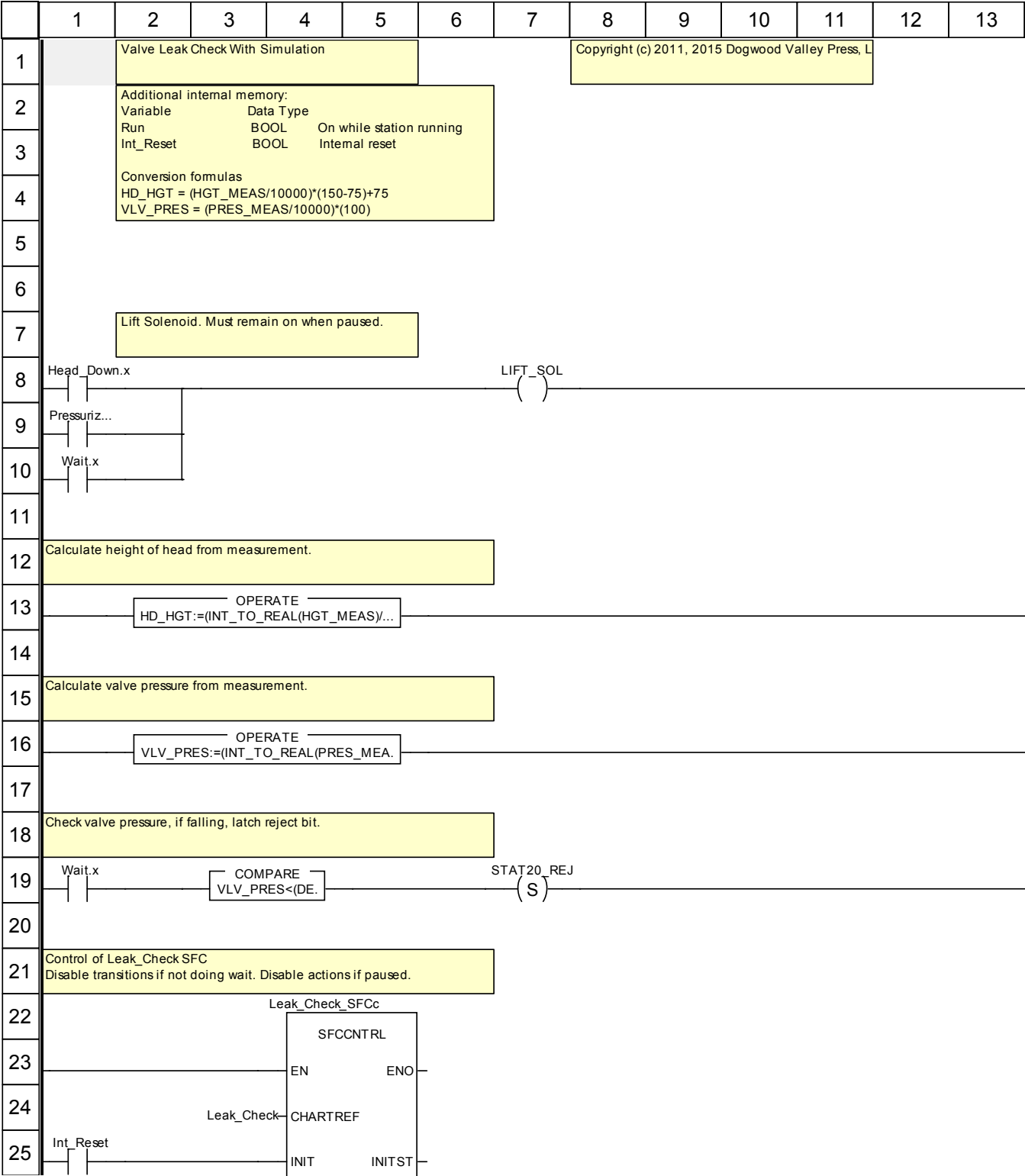
Project	SP14_04
Designer	
Application	sp14_04.stu
Software Version	Unity Pro L V10.0
Creation Date	4/12/2011 8:52:23 PM
Last Modification Date	12/24/2015 6:41:43 AM
Target PLC	BMX P34 1000 02.00CPU 340-10 Modbus

MAST

Specific properties

Configuration	Cyclic
Task period configuration	0
Watchdog time configuration	250

main : [MAST]



	14	15	16
1			
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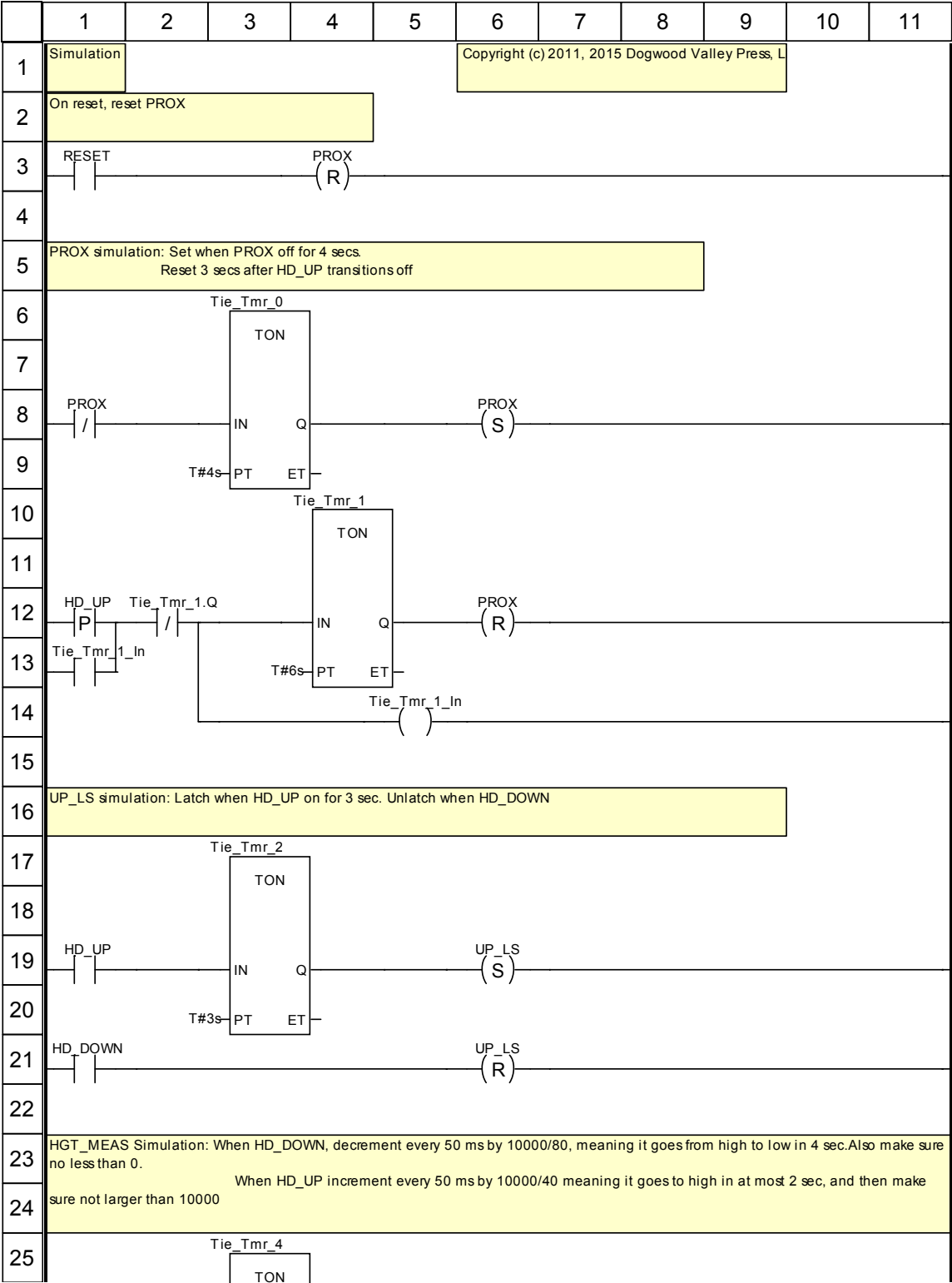
	1	2	3	4	5	6	7	8	9	10	11	12	13
26				CLEAR	CLEARST								
27				DISTIME	TIMEDIS								
28	Run /	Wait,x /			DISTR...	TRANS...							
29	Run /			DISACT	ACTDIS								
30				STEPUN	MODE...								
31				STEPD...	STATE...								
32				RESET...	TIMEERR								
33				DISRM...	TERRA...								
34				ALLTRANS									
35				RESSTEPT									
36													
37				Control of Leak_Check_Reset not needed.									

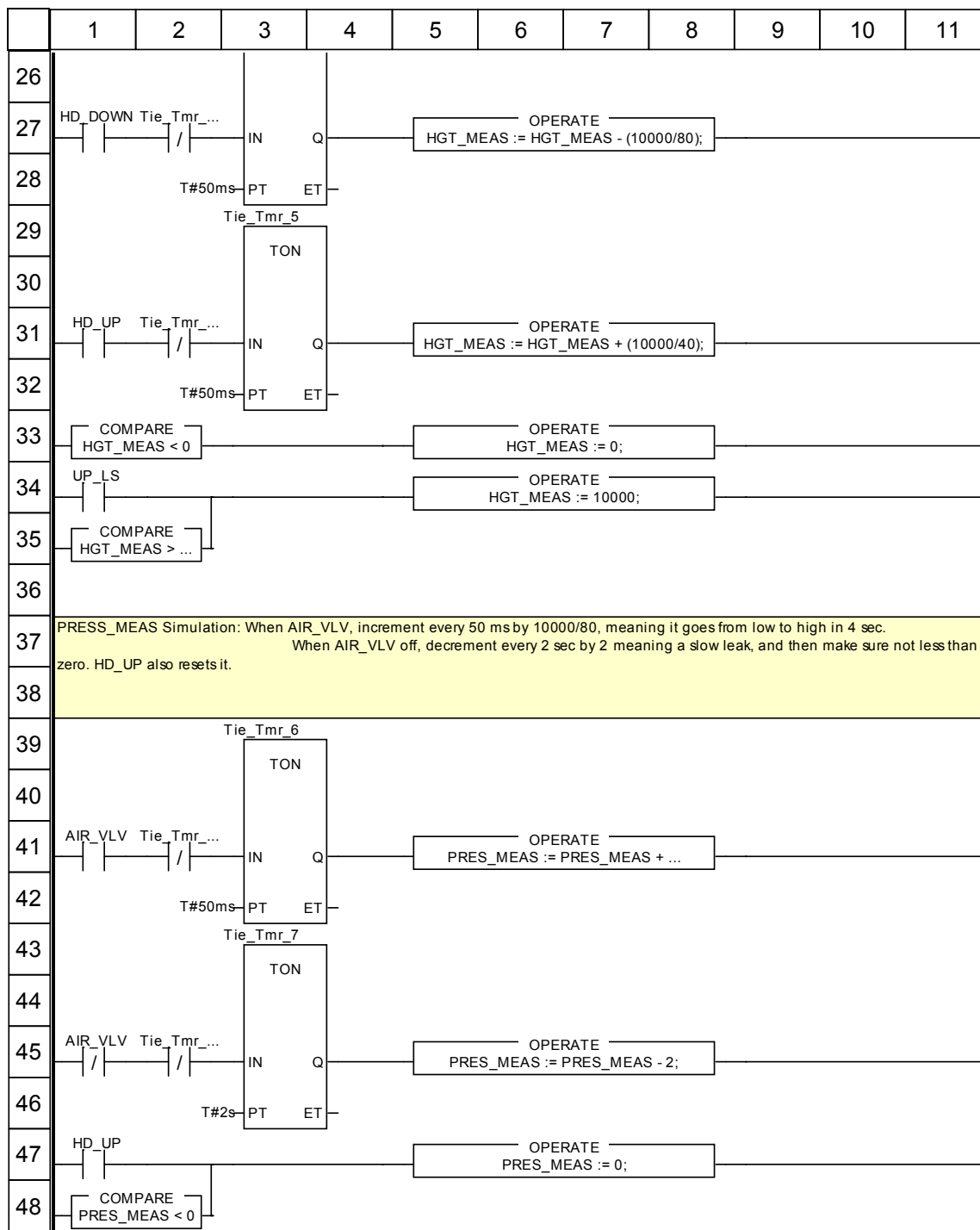
	14	15	16
26			
27			
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35			
36			
37			

Truncated labels:

Label	Position(s)
HD_HGT:=(INT_TO_REAL(HGT_MEAS)/10000.0)*(150.0-75.0)+75.0;	(2, 13)
Pressurize.x	(1, 9)
VLV_PRES:=(INT_TO_REAL(PRES_MEAS)/10000.0)*(100.0-0.0)+0.0;	(2, 16)
VLV_PRES<(DES_PRES-0.1)	(3, 19)

Simulation : [MAST]





Truncated labels:

Label	Position(s)
HGT_MEAS > 10000	(1, 35)
PRES_MEAS := PRES_MEAS + (10000/80);	(5, 41)
Tie_Tmr_4.Q	(2, 27)
Tie_Tmr_5.Q	(2, 31)
Tie_Tmr_6.Q	(2, 41)
Tie_Tmr_7.Q	(2, 45)

Leak_Check : [MAST]

Comment

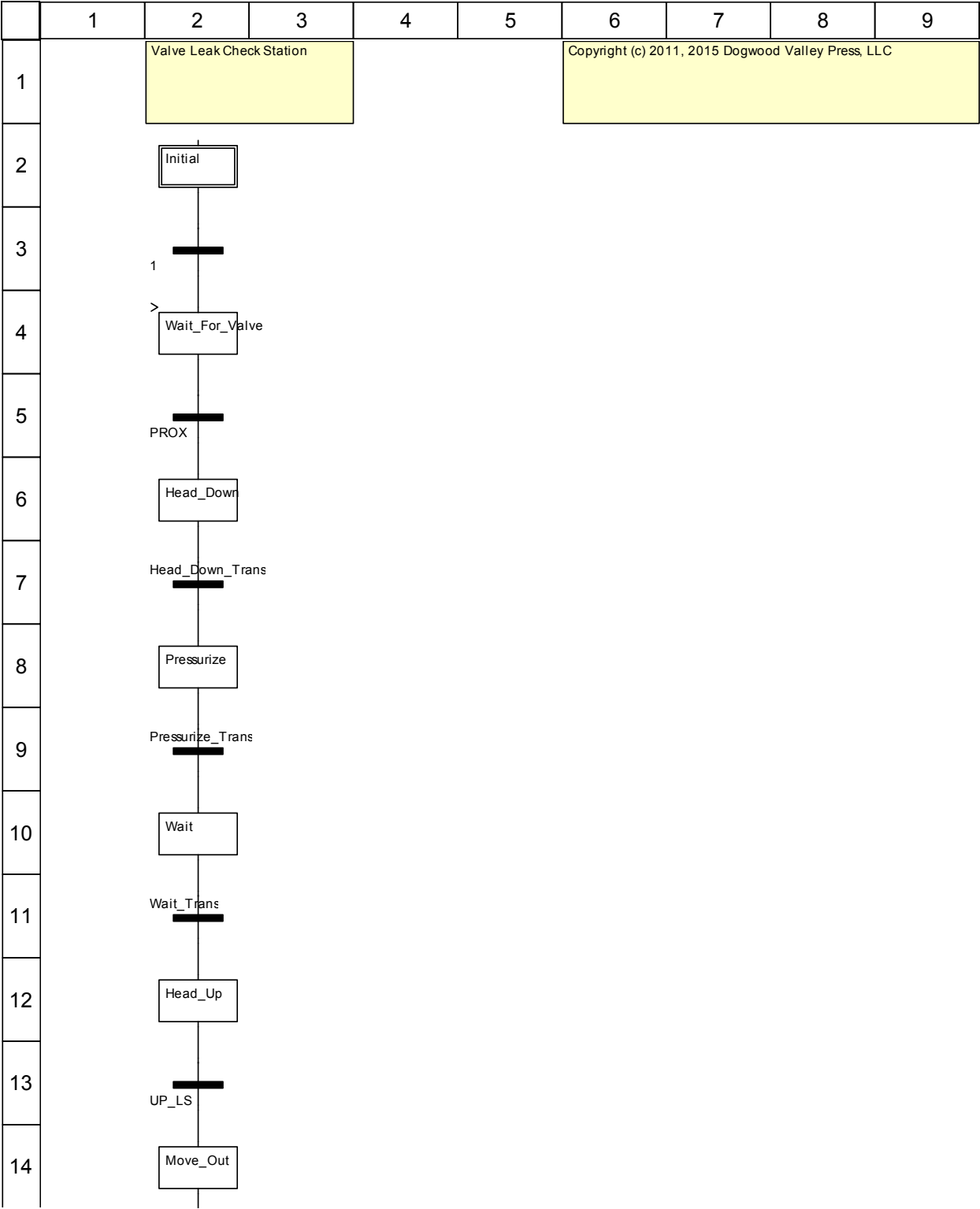
Common properties

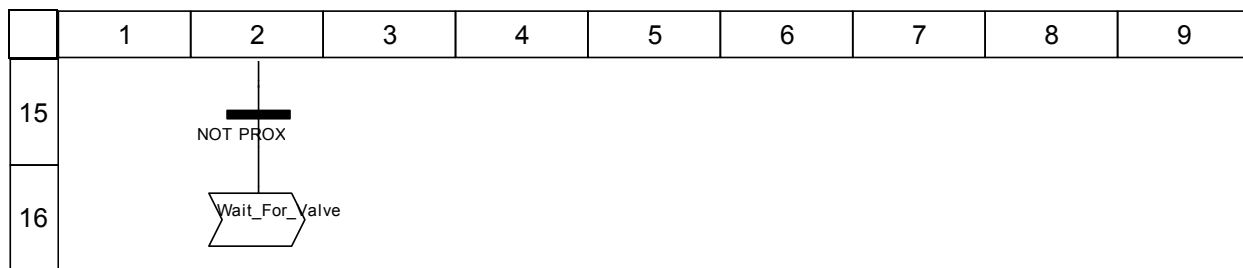
Functional module	
Condition name	

Specific properties

Operator control	No
Area number	0

Chart : [MAST - Leak_Check]





Object description

Steps:

Head_Down	(2, 6)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: N	Time: Variable: HD_DOWN

Head_Up	(2, 12)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: N	Time: Variable: HD_UP

Initial (Initial Step)	(2, 2)
Min./Max. supervision time:	Step delay time:
Comment:	

Move_Out	(2, 14)
Min./Max. supervision time:	Step delay time:
Comment:	

Pressurize	(2, 8)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: N	Time: Variable: AIR_VLV

Wait	(2, 10)
Min./Max. supervision time:	Step delay time:
Comment:	

Wait_For_Valve	(2, 4)
Min./Max. supervision time:	Step delay time:
Comment:	

Transitions:

Name	Type of Condition	Position	Comment
1	Constant	(2, 3)	

ST :: Head_Down_Trans	Section	(2, 7)	
NOT PROX	Variable	(2, 15)	
PROX	Variable	(2, 5)	
ST :: Pressurize_Trans	Section	(2, 9)	
UP_LS	Variable	(2, 13)	
ST :: Wait_Trans	Section	(2, 11)	

Jumps:

Name	Position	Comment
Wait For Valve	(2, 16)	

Head_Down_Trans <Transition> : [MAST - Leak_Check]

120	1	10	20	30	40	50	60	70	80	90	100	110
		134										
1	HD_HGT	<=	VLV_HGT									

Pressurize_Trans <Transition> : [MAST - Leak_Check]

1| 10| 20| 30| 40| 50| 60| 70| 80| 90| 100| 110|
120| 134|
1 VLV_PRES >= DES_PRES

Wait_Trans <Transition> : [MAST - Leak_Check]

```

1|      10|      20|      30|      40|      50|      60|      70|      80|      90|      100|      110|
120|      134|
1  Wait.t >= T#30s
```

Leak_Check_Reset : [MAST]

Comment

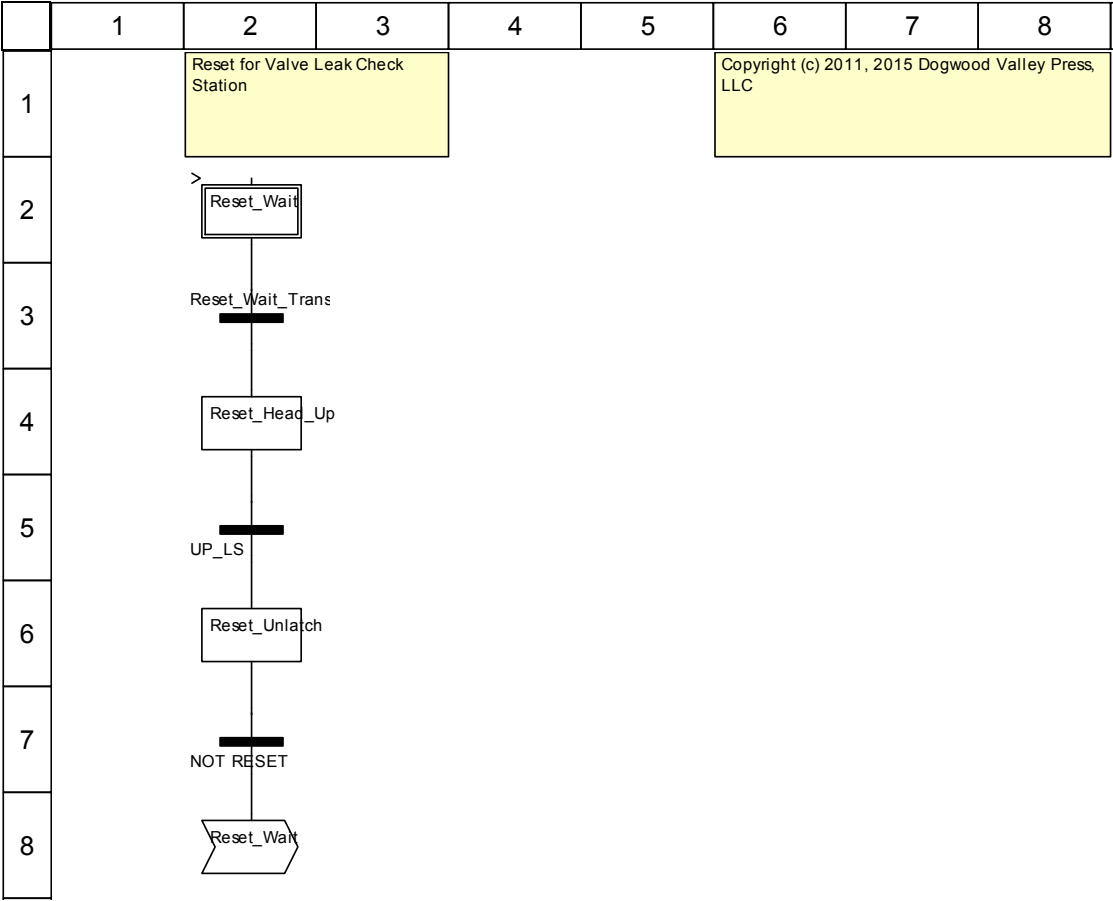
Common properties

Functional module	
Condition name	

Specific properties

Operator control	No
Area number	0

Chart : [MAST - Leak_Check_Reset]



Object description

Steps:

Reset_Head_Up			(2, 4)
Min./Max. supervision time:			Step delay time:
Comment:			
Actions:			
Qualifier: N	Time:	Variable: HD_UP	
Qualifier: S	Time:	Variable: Int_Reset	

Reset_Unlatch			(2, 6)
Min./Max. supervision time:			Step delay time:
Comment:			
Actions:			
Qualifier: R	Time:	Variable: Int_Reset	

Reset_Wait (Initial Step)			(2, 2)
Min./Max. supervision time:			Step delay time:

Comment:

Transitions:

Name	Type of Condition	Position	Comment
NOT RESET	Variable	(2, 7)	
ST :: Reset_Wait_Trans	Section	(2, 3)	
UP_LS	Variable	(2, 5)	

Jumps:

Name	Position	Comment
Reset_Wait	(2, 8)	

Reset_Wait_Trans <Transition> : [MAST - Leak_Check_Reset]

```
1|      10|      20|      30|      40|      50|      60|      70|      80|      90|      100|      110|
120|      134|

1  RESET AND (NOT RUN) AND (NOT Wait.x)
```

Cross References

Application:

Addresses

Object	Referred into	Location	Usage
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Variables or FB instances

Object	Referred into	Location	Usage
AIR_VLV	Chart : [MAST - Leak Check]	(I 8, c: 2)	W
	Simulation : [MAST]	(I 41, c: 1)	R
		(I 45, c: 1)	R
DES_PRES	main : [MAST]	(I 19, c: 3)	R
	Pressurize_Trans <Transition> : [MAST - Leak Check]	(I 1, c: 13)	R
HD_DOWN	Chart : [MAST - Leak Check]	(I 6, c: 2)	W
	Simulation : [MAST]	(I 21, c: 1)	R
		(I 27, c: 1)	R
HD_HGT	Head_Down_Trans <Transition> : [MAST - Leak Check]	(I 1, c: 1)	R
	main : [MAST]	(I 13, c: 2)	W
HD_UP	Chart : [MAST - Leak Check_Reset]	(I 4, c: 2)	W
	Chart : [MAST - Leak Check]	(I 12, c: 2)	W
	Simulation : [MAST]	(I 12, c: 1)	R
		(I 19, c: 1)	R
		(I 31, c: 1)	R
		(I 47, c: 1)	R
HGT_MEAS	main : [MAST]	(I 13, c: 2)	R
	Simulation : [MAST]	(I 27, c: 5)	R
		(I 27, c: 5)	W
		(I 31, c: 5)	R
		(I 31, c: 5)	W
		(I 33, c: 1)	R
		(I 33, c: 5)	W
		(I 34, c: 5)	W
		(I 35, c: 1)	R
Head_Down	Chart : [MAST - Leak Check]	(I 6, c: 2)	W
	main : [MAST]	(I 8, c: 1)	R
Head_Down_Trans	Chart : [MAST - Leak Check]	(I 7, c: 2)	R
	Head_Down_Trans <Transition> : [MAST - Leak Check]	(I 1, c: 1)	W
Head_Up	Chart : [MAST - Leak Check]	(I 12, c: 2)	W
Initial	Chart : [MAST - Leak Check]	(I 2, c: 2)	W
Int_Reset	Chart : [MAST - Leak Check_Reset]	(I 4, c: 2)	W
		(I 6, c: 2)	W
	main : [MAST]	(I 25, c: 1)	R
LIFT_SOL	main : [MAST]	(I 8, c: 7)	W
Leak_Check	main : [MAST]	(I 22, c: 4)	R
Leak_Check_SFCC	main : [MAST]	(I 22, c: 4)	FC
		(I 22, c: 4)	R
		(I 22, c: 4)	R
		(I 22, c: 4)	R
		(I 22, c: 4)	R
Move_Out	Chart : [MAST - Leak Check]	(I 14, c: 2)	W
PRES_MEAS	main : [MAST]	(I 16, c: 2)	R

Cross References

Object	Referred into	Location	Usage
	Simulation : [MAST]	(I 41, c: 5)	R
		(I 41, c: 5)	W
		(I 45, c: 5)	R
		(I 45, c: 5)	W
		(I 47, c: 5)	W
		(I 48, c: 1)	R
PROX	Chart : [MAST - Leak_Check]	(I 5, c: 2)	R
		(I 15, c: 2)	R
	Simulation : [MAST]	(I 3, c: 4)	W
		(I 8, c: 1)	R
		(I 8, c: 6)	W
		(I 12, c: 6)	W
Pressurize	Chart : [MAST - Leak_Check]	(I 8, c: 2)	W
	main : [MAST]	(I 9, c: 1)	R
Pressurize_Trans	Chart : [MAST - Leak_Check]	(I 9, c: 2)	R
	Pressurize_Trans <Transition> : [MAST - Leak_Check]	(I 1, c: 1)	W
RESET	Chart : [MAST - Leak_Check_Reset]	(I 7, c: 2)	R
	Reset_Wait_Trans <Transition> : [MAST - Leak_Check_Reset]	(I 1, c: 1)	R
	Simulation : [MAST]	(I 3, c: 1)	R
Reset_Head_Up	Chart : [MAST - Leak_Check_Reset]	(I 4, c: 2)	W
Reset_Unlatch	Chart : [MAST - Leak_Check_Reset]	(I 6, c: 2)	W
Reset_Wait	Chart : [MAST - Leak_Check_Reset]	(I 2, c: 2)	W
		(I 8, c: 2)	L REF
Reset_Wait_Trans	Chart : [MAST - Leak_Check_Reset]	(I 3, c: 2)	R
	Reset_Wait_Trans <Transition> : [MAST - Leak_Check_Reset]	(I 1, c: 1)	W
Run	Reset_Wait_Trans <Transition> : [MAST - Leak_Check_Reset]	(I 1, c: 16)	R
	main : [MAST]	(I 28, c: 1)	R
		(I 29, c: 1)	R
STAT20_REJ	main : [MAST]	(I 19, c: 7)	W
Tie_Tmr_0	Simulation : [MAST]	(I 6, c: 3)	FC
		(I 6, c: 3)	R
		(I 6, c: 3)	R
Tie_Tmr_1	Simulation : [MAST]	(I 12, c: 2)	R
		(I 10, c: 4)	FC
		(I 10, c: 4)	R
		(I 10, c: 4)	R
Tie_Tmr_1_In	Simulation : [MAST]	(I 13, c: 1)	R
		(I 14, c: 5)	W
Tie_Tmr_2	Simulation : [MAST]	(I 17, c: 3)	FC
		(I 17, c: 3)	R
		(I 17, c: 3)	R
Tie_Tmr_4	Simulation : [MAST]	(I 27, c: 2)	R
		(I 25, c: 3)	FC
		(I 25, c: 3)	R
		(I 25, c: 3)	R
Tie_Tmr_5	Simulation : [MAST]	(I 31, c: 2)	R
		(I 29, c: 3)	FC
		(I 29, c: 3)	R
		(I 29, c: 3)	R
Tie_Tmr_6	Simulation : [MAST]	(I 41, c: 2)	R
		(I 39, c: 3)	FC

Cross References

Object	Referred into	Location	Usage
		(l 39, c: 3)	R
		(l 39, c: 3)	R
Tie_Tmr_7	Simulation : [MAST]	(l 45, c: 2)	R
		(l 43, c: 3)	FC
		(l 43, c: 3)	R
		(l 43, c: 3)	R
UP_LS	Chart : [MAST - Leak_Check_Reset]	(l 5, c: 2)	R
	Chart : [MAST - Leak_Check]	(l 13, c: 2)	R
	Simulation : [MAST]	(l 19, c: 6)	W
		(l 21, c: 6)	W
		(l 34, c: 1)	R
VLV_HGT	Head_Down_Trans <Transition> : [MAST - Leak_Check]	(l 1, c: 11)	R
VLV PRES	main : [MAST]	(l 16, c: 2)	W
		(l 19, c: 3)	R
	Pressurize_Trans <Transition> : [MAST - Leak_Check]	(l 1, c: 1)	R
Wait	Wait_Trans <Transition> : [MAST - Leak_Check]	(l 1, c: 1)	R
	Chart : [MAST - Leak_Check]	(l 10, c: 2)	W
	Reset_Wait_Trans <Transition> : [MAST - Leak_Check_Reset]	(l 1, c: 30)	R
	main : [MAST]	(l 10, c: 1)	R
		(l 19, c: 1)	R
		(l 28, c: 2)	R
Wait_For_Valve	Chart : [MAST - Leak_Check]	(l 4, c: 2)	W
		(l 16, c: 2)	L REF
Wait_Trans	Chart : [MAST - Leak_Check]	(l 11, c: 2)	R
	Wait_Trans <Transition> : [MAST - Leak_Check]	(l 1, c: 1)	W

EF objects

Object	Referred into	Location	Usage
int_to_real	main : [MAST]	(l 13, c: 2)	FC
		(l 16, c: 2)	FC

Subroutines

Object	Referred into	Location	Usage
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