

# TECHNICAL DOCUMENTATION

## SP14\_03

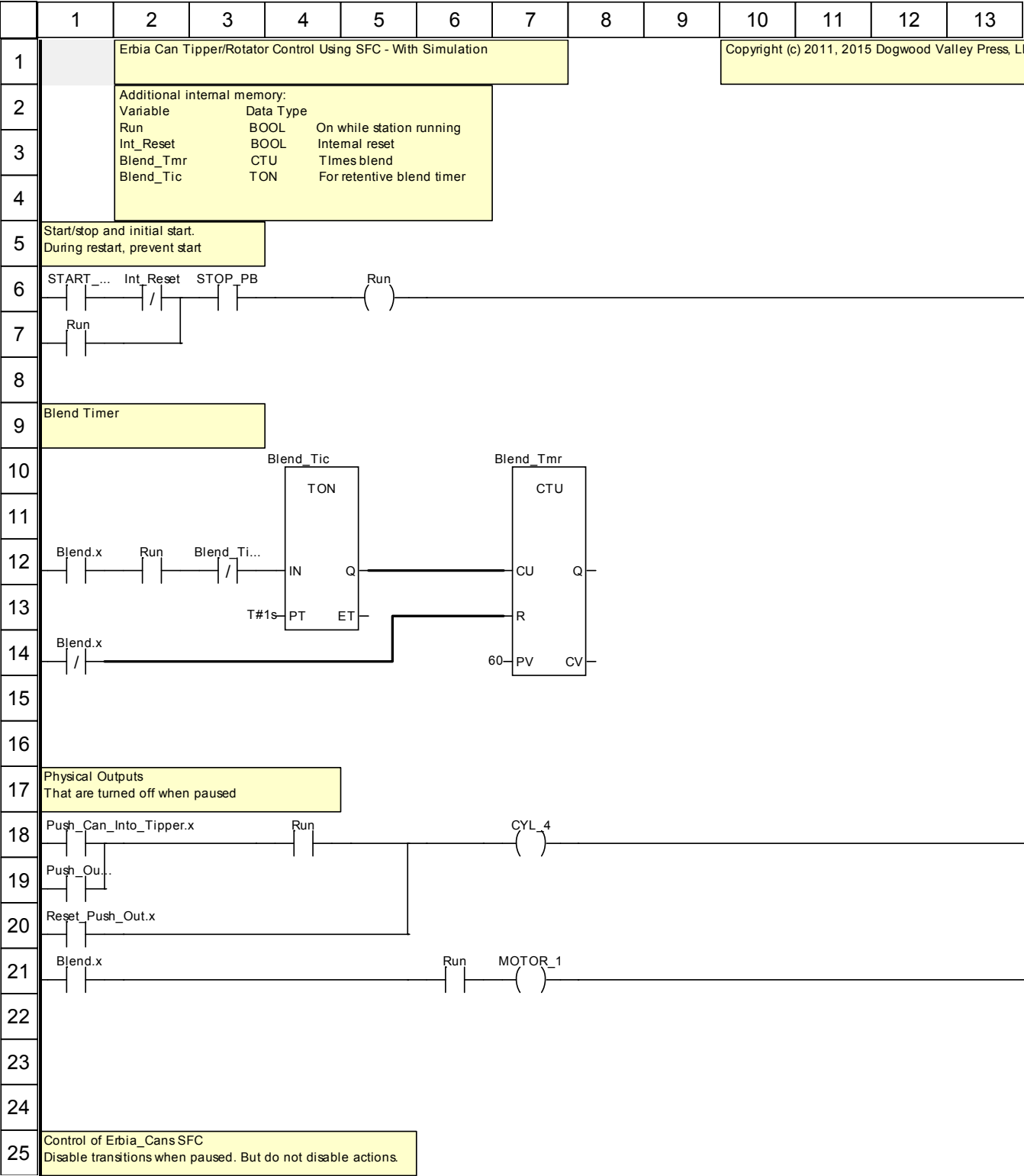
Project	SP14_03
Designer	
Application	sp14_03.stu
Software Version	Unity Pro L V10.0
Creation Date	4/12/2011 8:52:23 PM
Last Modification Date	12/24/2015 6:37:52 AM
Target PLC	BMX P34 1000 02.00CPU 340-10 Modbus

# MAST

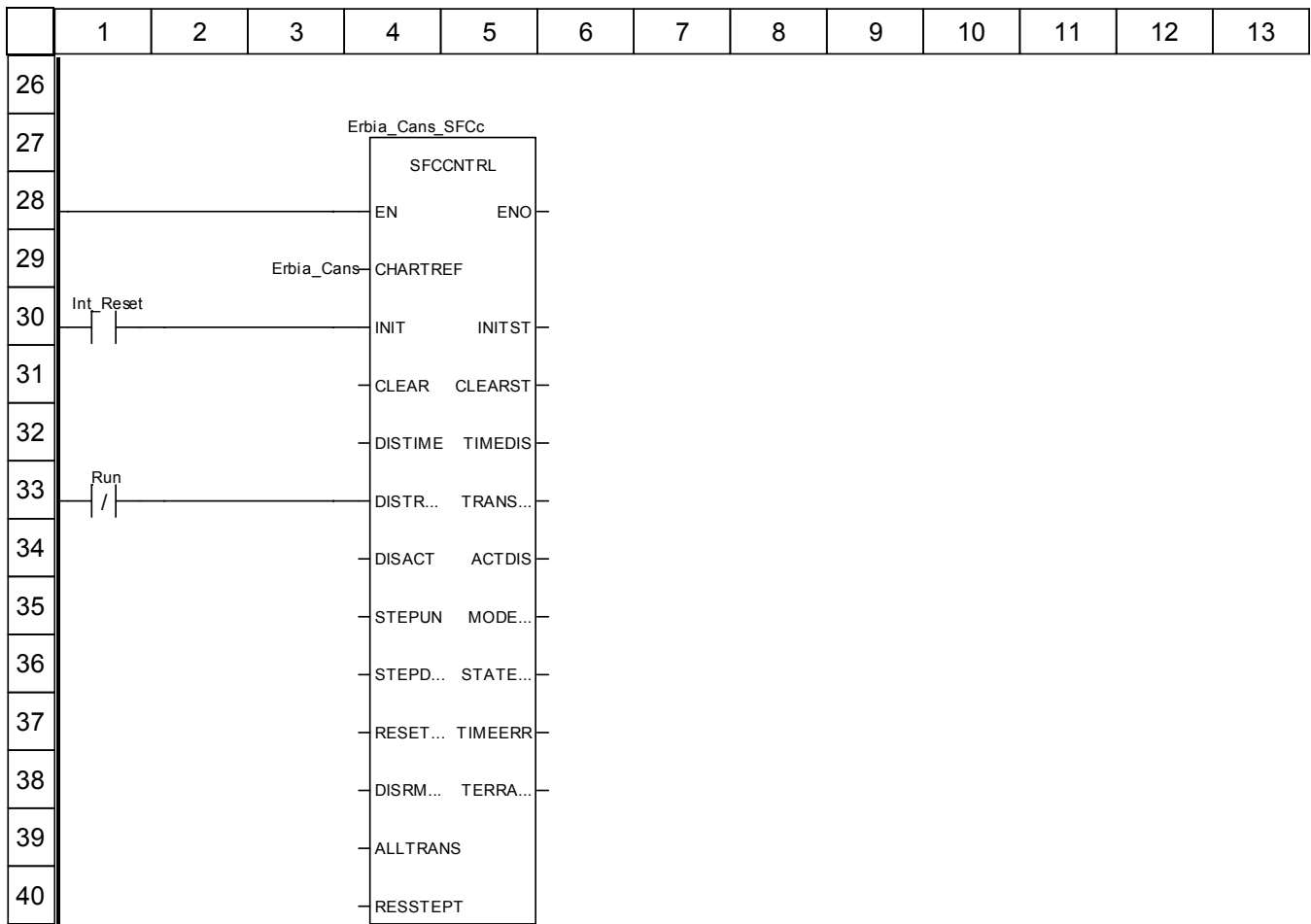
**Specific properties**

Configuration	Cyclic
Task period configuration	0
Watchdog time configuration	250

main : [MAST]



	14	15	16
1	-C		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

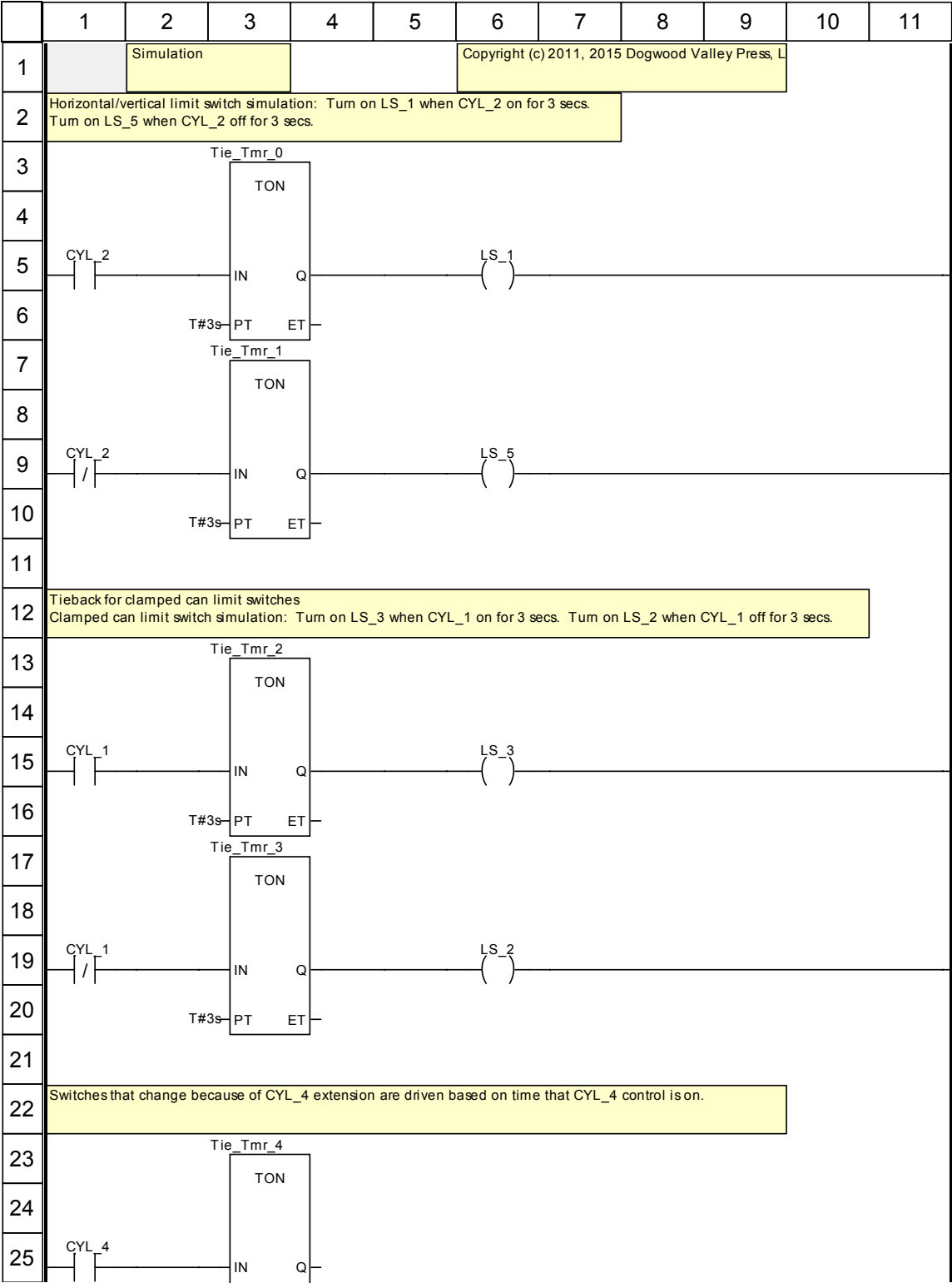


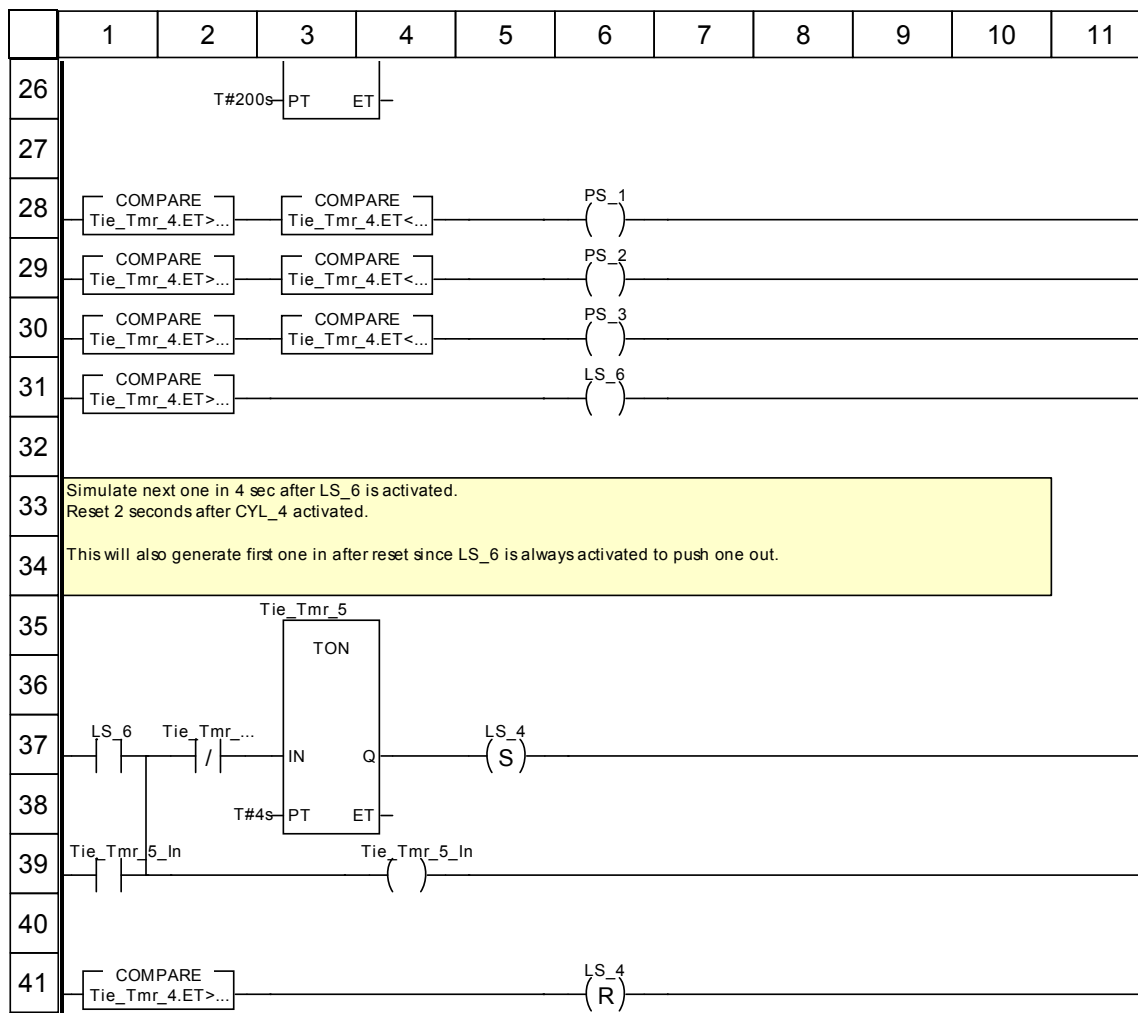
	14	15	16
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			

### Truncated labels:

Label	Position(s)
Blend_Tic.Q	(3, 12)
Push_Out.x	(1, 19)
START_PB	(1, 6)

# Simulation : [MAST]





## Truncated labels:

Label	Position(s)
Tie_Tmr_4.ET<=T#10.5s	(3, 30)
Tie_Tmr_4.ET<=T#6.5s	(3, 28)
Tie_Tmr_4.ET<=T#8.5s	(3, 29)
Tie_Tmr_4.ET>=T#12s	(1, 31)
Tie_Tmr_4.ET>=T#2s	(1, 41)
Tie_Tmr_4.ET>=T#3s	(1, 28)
Tie_Tmr_4.ET>=T#5s	(1, 29)
Tie_Tmr_4.ET>=T#7s	(1, 30)
Tie_Tmr_5.Q	(2, 37)



# Erbia\_Cans : [MAST]

**Comment**

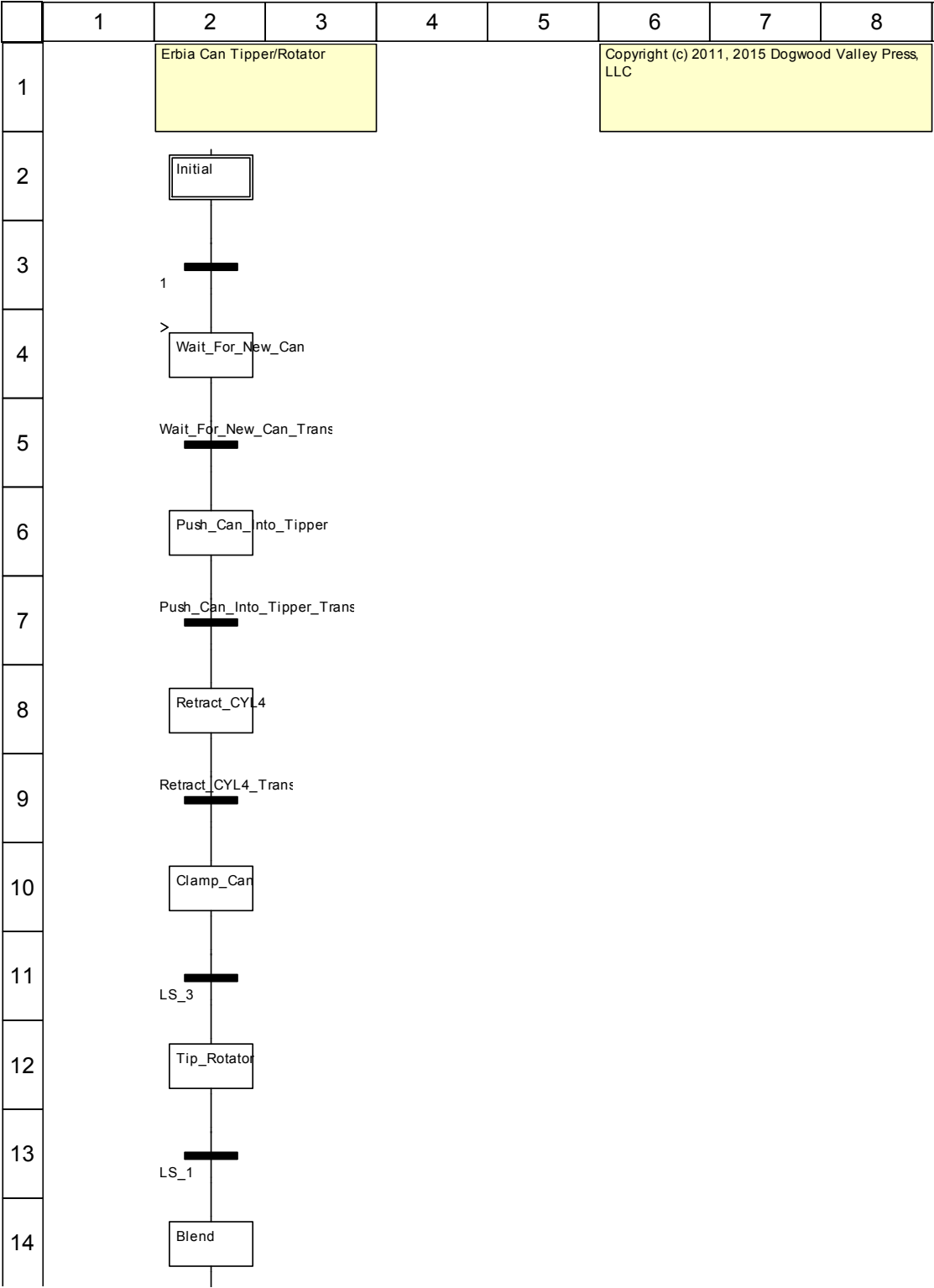
**Common properties**

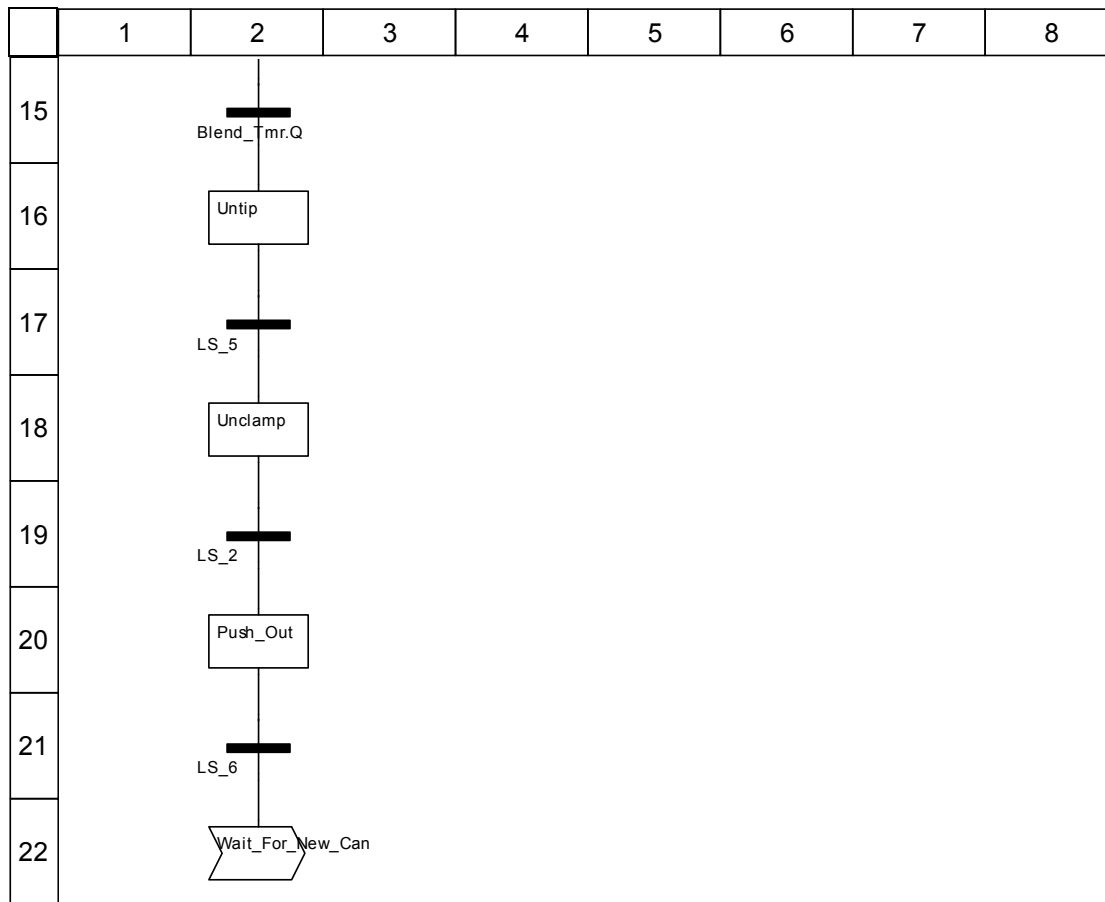
Functional module	
Condition name	

**Specific properties**

Operator control	No
Area number	0

# Chart : [MAST - Erbia\_Cans]





## Object description

### Steps:

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

Clamp Can	(2, 10)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: S	Time: Variable: CYL 1

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

Push Can Into Tipper	(2, 6)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: S	Time: Variable: CYL 3

Push Out	(2, 20)
----------	---------

Min./Max. supervision time:	Step delay time:
Comment:	
Retract CYL4	(2, 8)
Min./Max. supervision time:	Step delay time:
Comment:	
Tip Rotator	(2, 12)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: S	Time: Variable: CYL_2
Unclamp	(2, 18)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: R	Time: Variable: CYL_1
Untip	(2, 16)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: R	Time: Variable: CYL_2
Wait For New Can	(2, 4)
Min./Max. supervision time:	Step delay time:
Comment:	

## Transitions:

Name	Type of Condition	Position	Comment
1	Constant	(2, 3)	
Blend_Tmr.Q	Variable	(2, 15)	
LS_1	Variable	(2, 13)	
LS_2	Variable	(2, 19)	
LS_3	Variable	(2, 11)	
LS_5	Variable	(2, 17)	
LS_6	Variable	(2, 21)	
ST :: Push Can Into Tipper Trans	Section	(2, 7)	
ST :: Retract CYL4 Trans	Section	(2, 9)	
ST :: Wait_For_New_Can_Trans	Section	(2, 5)	

## Jumps:

Name	Position	Comment
Wait_For_New_Can	(2, 22)	

# Wait\_For\_New\_Can\_Trans <Transition> : [MAST - Erbia\_Cans]

```

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

1  LS_4 AND (NOT PS_1) AND (NOT PS_2) AND (NOT PS_3) AND (NOT LS_1) AND LS_2
```

# Push\_Can\_Into\_Tipper\_Trans <Transition> : [MAST - Erbia\_Cans]

120	1	10	20	30	40	50	60	70	80	90	100	110
		134										
1	PS_2	AND	(NOT	PS_1)								

# Retract\_CYL4\_Trans <Transition> : [MAST - Erbia\_Cans]

1| 10| 20| 30| 40| 50| 60| 70| 80| 90| 100| 110|  
120| 134|  
1 Retract\_CYL4.t >= t#2s

# Erbia\_Cans\_Reset : [MAST]

**Comment**

**Common properties**

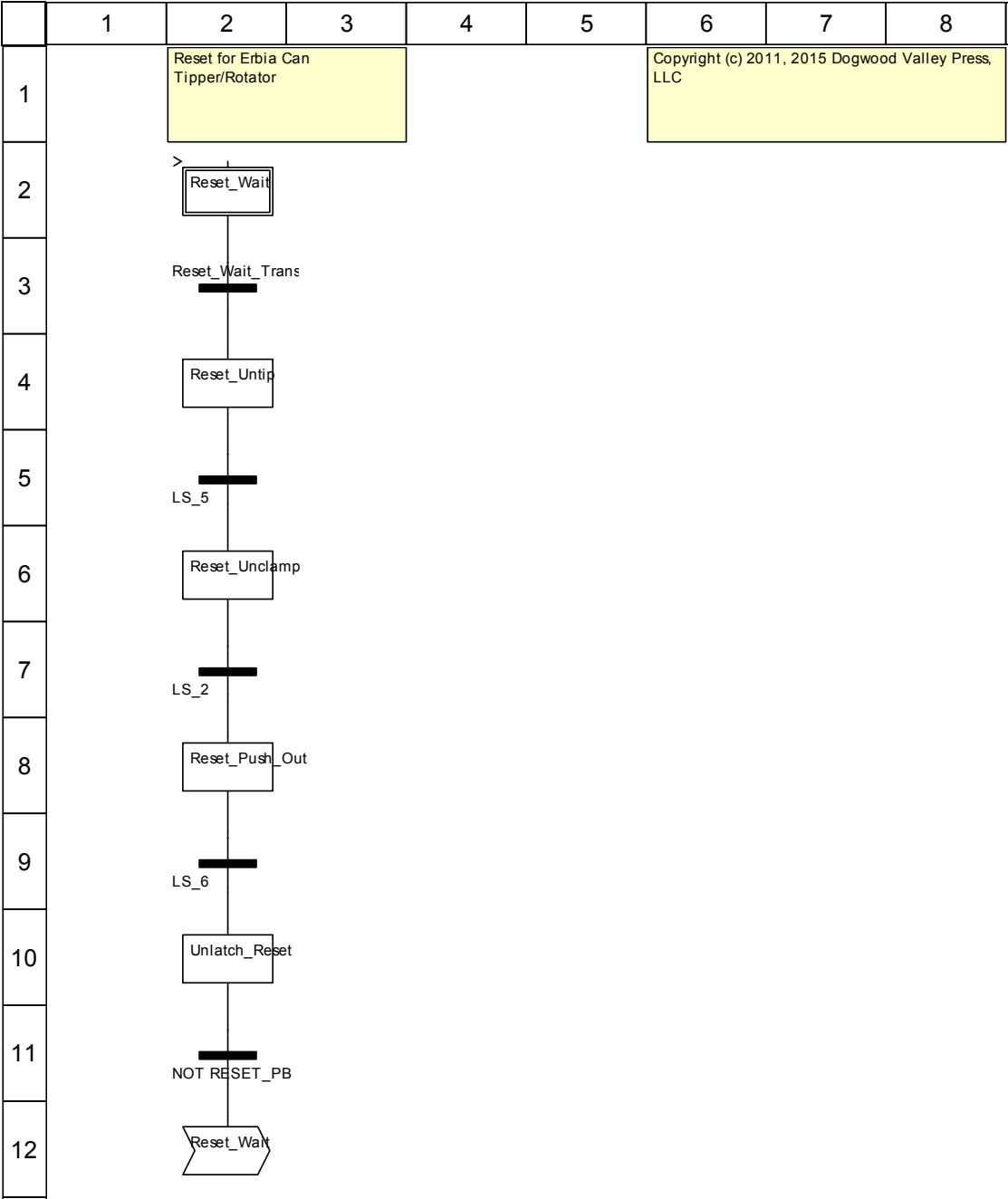
Functional module	
Condition name	

**Specific properties**

Operator control	No
Area number	0



# Chart : [MAST - Erbia\_Cans\_Reset]



## Object description

### Steps:

Reset_Push_Out	(2, 8)
----------------	--------

Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: N	Time: Variable: CYL 4

Reset_Unclamp	(2, 6)
Min./Max. supervision time:	Step delay time:
Comment:	

Reset_Untip	(2, 4)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: N	Time: Variable: CYL 1
Qualifier: S	Time: Variable: CYL 3
Qualifier: S	Time: Variable: Int_Reset

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

Unlatch_Reset	(2, 10)
Min./Max. supervision time:	Step delay time:
Comment:	
Actions:	
Qualifier: R	Time: Variable: Int_Reset
Qualifier: R	Time: Variable: CYL 3

## Transitions:

Name	Type of Condition	Position	Comment
LS_2	Variable	(2, 7)	
LS_5	Variable	(2, 5)	
LS_6	Variable	(2, 9)	
NOT RESET_PB	Variable	(2, 11)	
ST :: Reset_Wait_Trans	Section	(2, 3)	

## Jumps:

Name	Position	Comment
Reset_Wait	(2, 12)	

# Reset\_Wait\_Trans <Transition> : [MAST - Erbia\_Cans\_Reset]

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

120|134|

1 RESET\_PB AND (NOT Run)

# Cross References

## Application:

### Addresses

Object	Referred into	Location	Usage
--------	---------------	----------	-------

### Variables or FB instances

Object	Referred into	Location	Usage
Blend	main : [MAST]	(l 12, c: 1)	R
		(l 14, c: 1)	R
		(l 21, c: 1)	R
	Chart : [MAST - Erbia_Cans]	(l 14, c: 2)	W
Blend_Tic	main : [MAST]	(l 12, c: 3)	R
		(l 10, c: 4)	FC
		(l 10, c: 4)	R
		(l 10, c: 4)	R
Blend_Tmr	main : [MAST]	(l 10, c: 7)	FC
		(l 10, c: 7)	R
		(l 10, c: 7)	R
		(l 10, c: 7)	R
	Chart : [MAST - Erbia_Cans]	(l 15, c: 2)	R
CYL_1	Simulation : [MAST]	(l 15, c: 1)	R
		(l 19, c: 1)	R
	Chart : [MAST - Erbia_Cans_Reset]	(l 4, c: 2)	W
	Chart : [MAST - Erbia_Cans]	(l 10, c: 2)	W
		(l 18, c: 2)	W
CYL_2	Simulation : [MAST]	(l 5, c: 1)	R
		(l 9, c: 1)	R
	Chart : [MAST - Erbia_Cans]	(l 12, c: 2)	W
		(l 16, c: 2)	W
CYL_3	Chart : [MAST - Erbia_Cans_Reset]	(l 4, c: 2)	W
		(l 10, c: 2)	W
	Chart : [MAST - Erbia_Cans]	(l 6, c: 2)	W
CYL_4	main : [MAST]	(l 18, c: 7)	W
	Simulation : [MAST]	(l 25, c: 1)	R
	Chart : [MAST - Erbia_Cans_Reset]	(l 8, c: 2)	W
Clamp_Can	Chart : [MAST - Erbia_Cans]	(l 10, c: 2)	W
Erbia_Cans	main : [MAST]	(l 27, c: 4)	R
Erbia_Cans_SFCC	main : [MAST]	(l 27, c: 4)	FC
		(l 27, c: 4)	R
		(l 27, c: 4)	R
		(l 27, c: 4)	R
Initial	Chart : [MAST - Erbia_Cans]	(l 2, c: 2)	W
Int_Reset	main : [MAST]	(l 6, c: 2)	R
		(l 30, c: 1)	R
	Chart : [MAST - Erbia_Cans_Reset]	(l 4, c: 2)	W
		(l 10, c: 2)	W
LS_1	Simulation : [MAST]	(l 5, c: 6)	W
	Wait For New Can Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 60)	R
	Chart : [MAST - Erbia_Cans]	(l 13, c: 2)	R
LS_2	Simulation : [MAST]	(l 19, c: 6)	W
	Chart : [MAST - Erbia_Cans_Reset]	(l 7, c: 2)	R

## Cross References

Object	Referred into	Location	Usage
	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 70)	R
	Chart : [MAST - Erbia_Cans]	(l 19, c: 2)	R
LS_3	Simulation : [MAST]	(l 15, c: 6)	W
	Chart : [MAST - Erbia_Cans]	(l 11, c: 2)	R
LS_4	Simulation : [MAST]	(l 37, c: 5)	W
		(l 41, c: 6)	W
	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 1)	R
LS_5	Simulation : [MAST]	(l 9, c: 6)	W
	Chart : [MAST - Erbia_Cans_Reset]	(l 5, c: 2)	R
	Chart : [MAST - Erbia_Cans]	(l 17, c: 2)	R
LS_6	Simulation : [MAST]	(l 31, c: 6)	W
		(l 37, c: 1)	R
	Chart : [MAST - Erbia_Cans_Reset]	(l 9, c: 2)	R
	Chart : [MAST - Erbia_Cans]	(l 21, c: 2)	R
MOTOR_1	main : [MAST]	(l 21, c: 7)	W
PS_1	Simulation : [MAST]	(l 28, c: 6)	W
	Push_Can_Into_Tipper_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 15)	R
	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 15)	R
PS_2	Simulation : [MAST]	(l 29, c: 6)	W
	Push_Can_Into_Tipper_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 1)	R
	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 30)	R
PS_3	Simulation : [MAST]	(l 30, c: 6)	W
	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 45)	R
Push_Can_Into_Tipper	main : [MAST]	(l 18, c: 1)	R
	Chart : [MAST - Erbia_Cans]	(l 6, c: 2)	W
Push_Can_Into_Tipper_Trans	Push_Can_Into_Tipper_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 1)	W
	Chart : [MAST - Erbia_Cans]	(l 7, c: 2)	R
Push_Out	main : [MAST]	(l 19, c: 1)	R
	Chart : [MAST - Erbia_Cans]	(l 20, c: 2)	W
RESET_PB	Chart : [MAST - Erbia_Cans_Reset]	(l 11, c: 2)	R
	Reset_Wait_Trans <Transition> : [MAST - Erbia_Cans_Reset]	(l 1, c: 1)	R
Reset_Push_Out	main : [MAST]	(l 20, c: 1)	R
	Chart : [MAST - Erbia_Cans_Reset]	(l 8, c: 2)	W
Reset_Unclamp	Chart : [MAST - Erbia_Cans_Reset]	(l 6, c: 2)	W
Reset_Untip	Chart : [MAST - Erbia_Cans_Reset]	(l 4, c: 2)	W
Reset_Wait	Chart : [MAST - Erbia_Cans_Reset]	(l 2, c: 2)	W
		(l 12, c: 2)	L REF
Reset_Wait_Trans	Chart : [MAST - Erbia_Cans_Reset]	(l 3, c: 2)	R
	Reset_Wait_Trans <Transition> : [MAST - Erbia_Cans_Reset]	(l 1, c: 1)	W
Retract_CYL4	Retract_CYL4_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 1)	R
	Chart : [MAST - Erbia_Cans]	(l 8, c: 2)	W
Retract_CYL4_Trans	Retract_CYL4_Trans <Transition> : [MAST - Erbia_Cans]	(l 1, c: 1)	W
	Chart : [MAST - Erbia_Cans]	(l 9, c: 2)	R
Run	main : [MAST]	(l 6, c: 5)	W

## Cross References

Object	Referred into	Location	Usage
		(l 7, c: 1)	R
		(l 12, c: 2)	R
		(l 18, c: 4)	R
		(l 21, c: 6)	R
		(l 33, c: 1)	R
	Reset_Wait_Trans <Transition> : [MAST - Erbia Cans Reset]	(l 1, c: 19)	R
START_PB	main : [MAST]	(l 6, c: 1)	R
STOP_PB	main : [MAST]	(l 6, c: 3)	R
Tie_Tmr_0	Simulation : [MAST]	(l 3, c: 3)	FC
		(l 3, c: 3)	R
		(l 3, c: 3)	R
Tie_Tmr_1	Simulation : [MAST]	(l 7, c: 3)	FC
		(l 7, c: 3)	R
		(l 7, c: 3)	R
Tie_Tmr_2	Simulation : [MAST]	(l 13, c: 3)	FC
		(l 13, c: 3)	R
		(l 13, c: 3)	R
Tie_Tmr_3	Simulation : [MAST]	(l 17, c: 3)	FC
		(l 17, c: 3)	R
		(l 17, c: 3)	R
Tie_Tmr_4	Simulation : [MAST]	(l 28, c: 1)	R
		(l 28, c: 3)	R
		(l 29, c: 1)	R
		(l 29, c: 3)	R
		(l 30, c: 1)	R
		(l 30, c: 3)	R
		(l 31, c: 1)	R
		(l 41, c: 1)	R
		(l 23, c: 3)	FC
		(l 23, c: 3)	R
		(l 23, c: 3)	R
Tie_Tmr_5	Simulation : [MAST]	(l 37, c: 2)	R
		(l 35, c: 3)	FC
		(l 35, c: 3)	R
		(l 35, c: 3)	R
Tie_Tmr_5_In	Simulation : [MAST]	(l 39, c: 1)	R
		(l 39, c: 4)	W
Tip_Rotator	Chart : [MAST - Erbia Cans]	(l 12, c: 2)	W
Unclamp	Chart : [MAST - Erbia Cans]	(l 18, c: 2)	W
Unlatch_Reset	Chart : [MAST - Erbia Cans Reset]	(l 10, c: 2)	W
Untip	Chart : [MAST - Erbia Cans]	(l 16, c: 2)	W
Wait_For_New_Can	Chart : [MAST - Erbia Cans]	(l 4, c: 2)	W
		(l 22, c: 2)	L REF
Wait_For_New_Can_Trans	Wait_For_New_Can_Trans <Transition> : [MAST - Erbia Cans]	(l 1, c: 1)	W
	Chart : [MAST - Erbia Cans]	(l 5, c: 2)	R

### Subroutines

Object	Referred into	Location	Usage
--------	---------------	----------	-------