

TECHNICAL DOCUMENTATION

Example 14.1

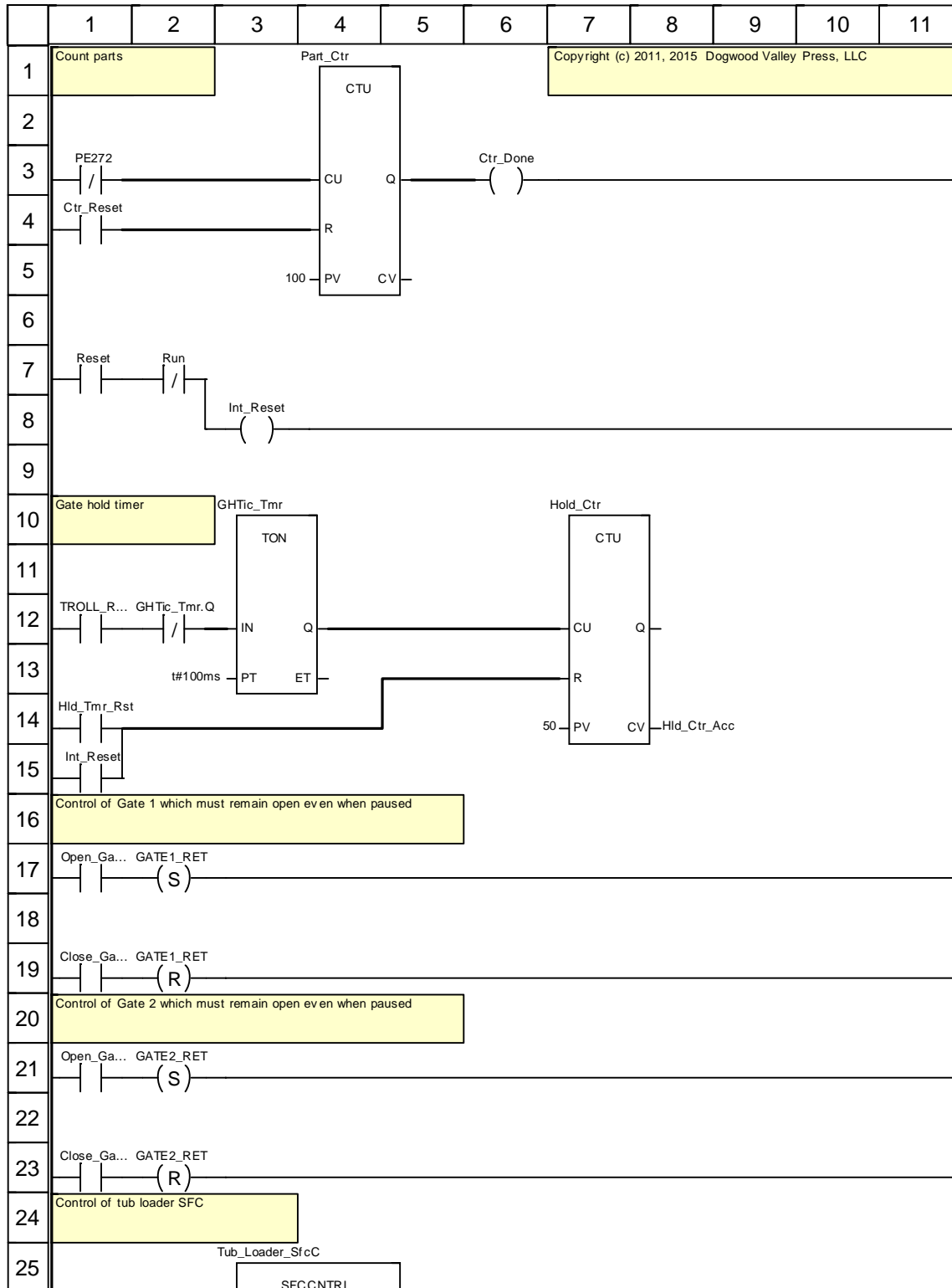
Project	Example 14.1
Designer	
Application	example_14_1.stu
Software Version	ControlExpert V15.0-SP1
Creation Date	12/23/2022 3:15:23 PM
Last Modification Date	6/16/2023 2:17:10 PM
Target PLC	BMX P34 1000 02.00CPU 340-10 Modbus

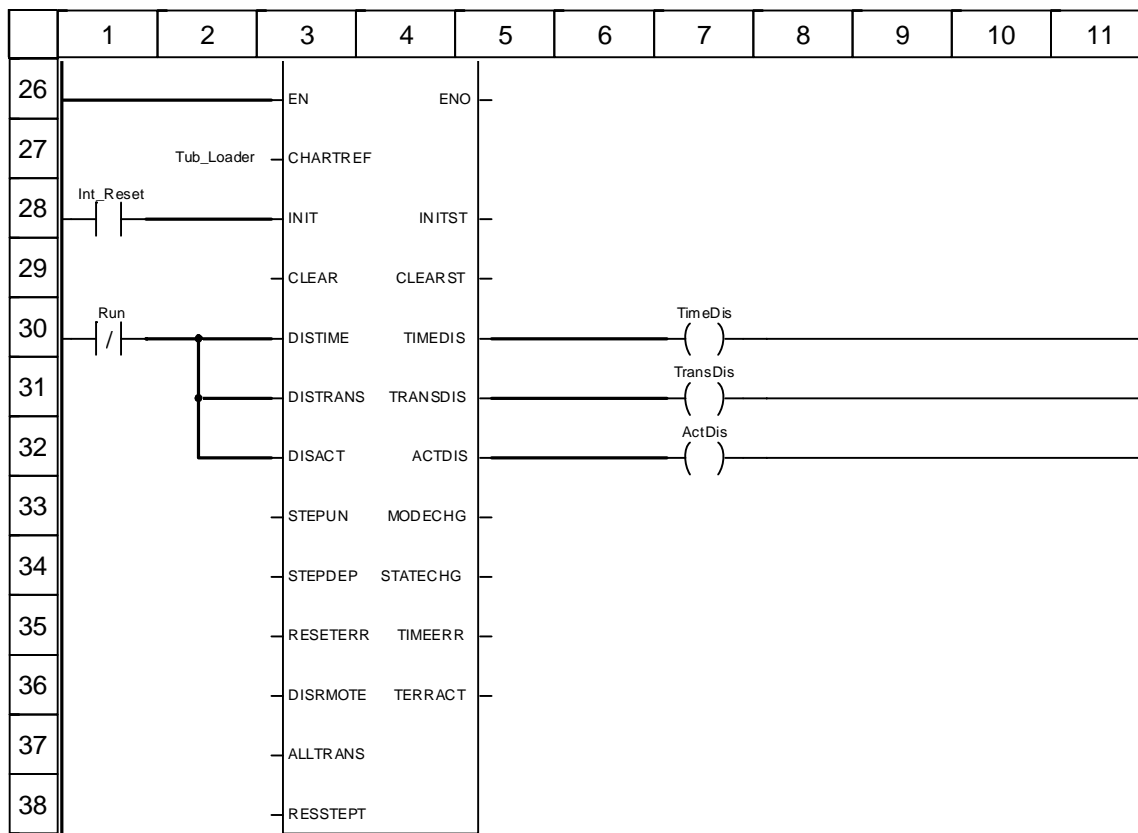
MAST

Specific properties

Configuration	Cyclic
Task period configuration	0
Watchdog time configuration	250

Main_Lad : [MAST]





Truncated labels:

Label	Position(s)
Close_Gate_1.x	(1, 19)
Close_Gate_2.x	(1, 23)
Open_Gate_1.x	(1, 17)
Open_Gate_2.x	(1, 21)
TROLL_RUN	(1, 12)

Tub Loader : [MAST]

Comment

Common properties

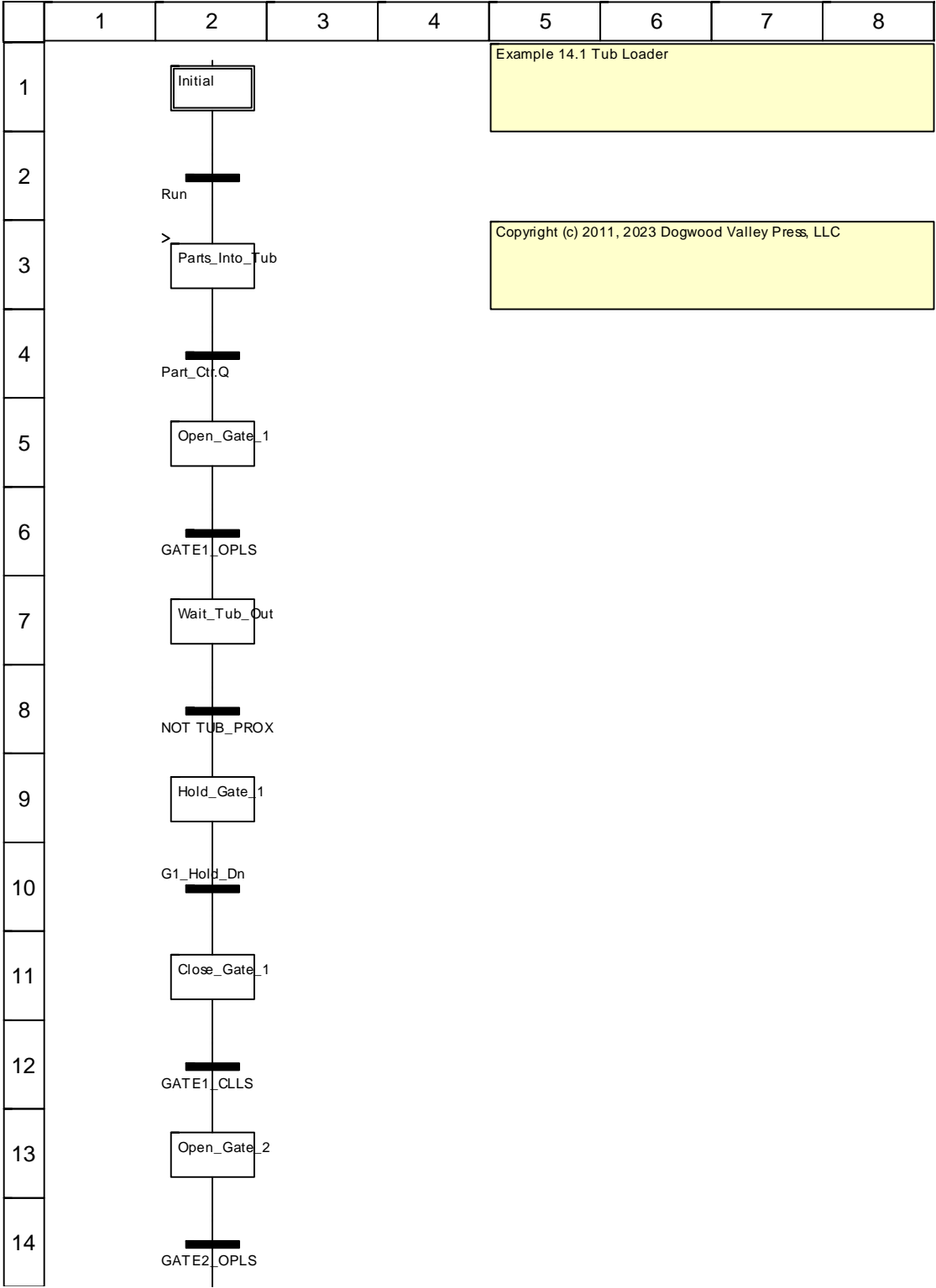
Functional module	
Condition name	

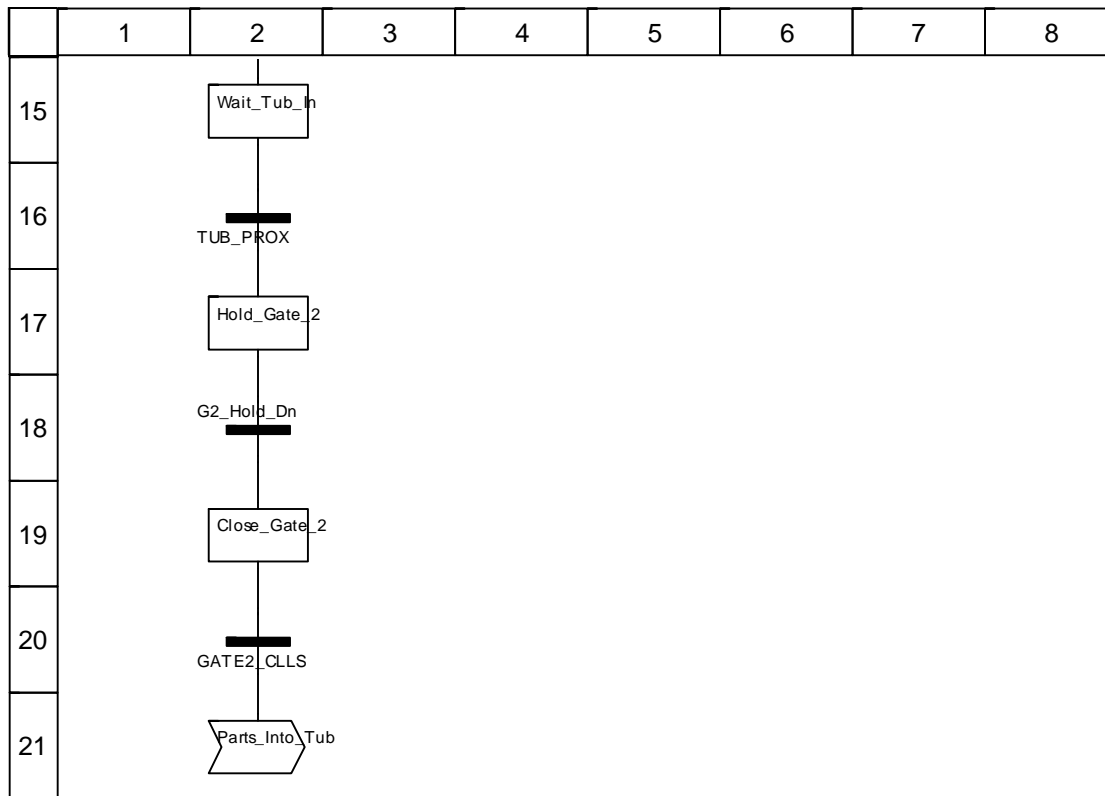
Specific properties

Operator control	No
Area number	0

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Chart : [MAST - Tub_Loader]





Object description

Steps:

Close_Gate_1	(2, 11)
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s
Comment:	

Close_Gate_2	(2, 19)
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s
Comment:	

Hold_Gate_1		(2, 9)
Min./Max. supervision time: T#0s / T#0s		Step delay time: T#0s
Comment:		
Actions:		
Qualifier: N	Time: T#0s	Variable: TROLL_RUN
Qualifier: P	Time: T#0s	Variable: Hld_Tmr_Rst

Hold_Gate_2			(2, 17)		
Min./Max. supervision time: T#0s / T#0s			Step delay time: T#0s		
Comment:					
Actions:					
Qualifier: N		Time: T#0s		Variable: TROLL_RUN	
Qualifier: P		Time: T#0s		Variable: Hld Tmr Rst	

Initial (Initial Step)	(2, 1)
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s

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Comment:		
Open_Gate_1	(2, 5)	
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s	
Comment:		
Open_Gate_2	(2, 13)	
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s	
Comment:		
Parts_Into_Tub	(2, 3)	
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s	
Comment:		
Actions:		
Qualifier: P1	Time:	Variable: Ctr_Reset
Qualifier: N	Time: T#0s	Variable: Tub_Permissive
Qualifier: N	Time: T#0s	Variable: BELT_RUN
Wait_Tub_In	(2, 15)	
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s	
Comment:		
Actions:		
Qualifier: N	Time: T#0s	Variable: TROLL_RUN
Wait_Tub_Out	(2, 7)	
Min./Max. supervision time: T#0s / T#0s	Step delay time: T#0s	
Comment:		
Actions:		
Qualifier: N	Time: T#0s	Variable: TROLL_RUN

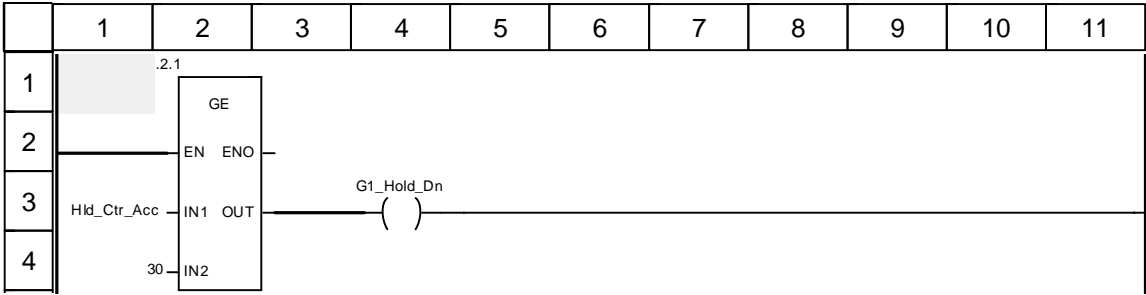
Transitions:

Name	Type of Condition	Position	Comment
LD :: G1_Hold_Dn	Section	(2, 10)	
LD :: G2_Hold_Dn	Section	(2, 18)	
GATE1_CLLS	Variable	(2, 12)	
GATE1_OPLS	Variable	(2, 6)	
GATE2_CLLS	Variable	(2, 20)	
GATE2_OPLS	Variable	(2, 14)	
NOT TUB_PROX	Variable	(2, 8)	
Part_Ctr.Q	Variable	(2, 4)	
Run	Variable	(2, 2)	
TUB_PROX	Variable	(2, 16)	

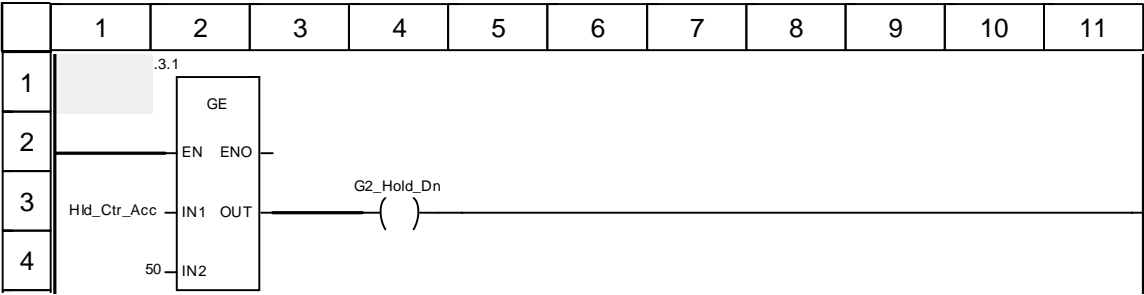
Jumps:

Name	Position	Comment
Parts_Into_Tub	(2, 21)	

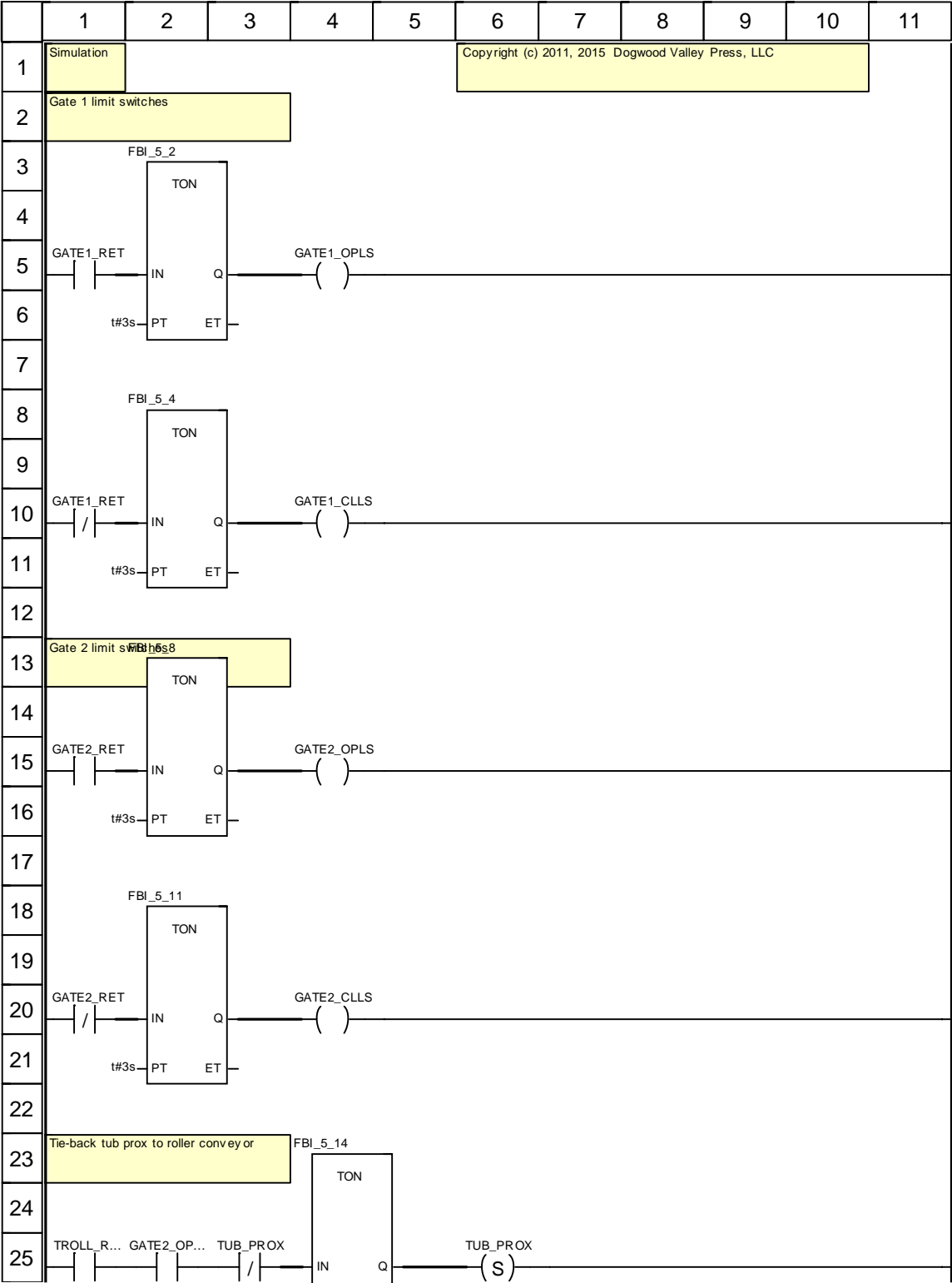
G1_Hold_Dn <Transition> : [MAST - Tub Loader]

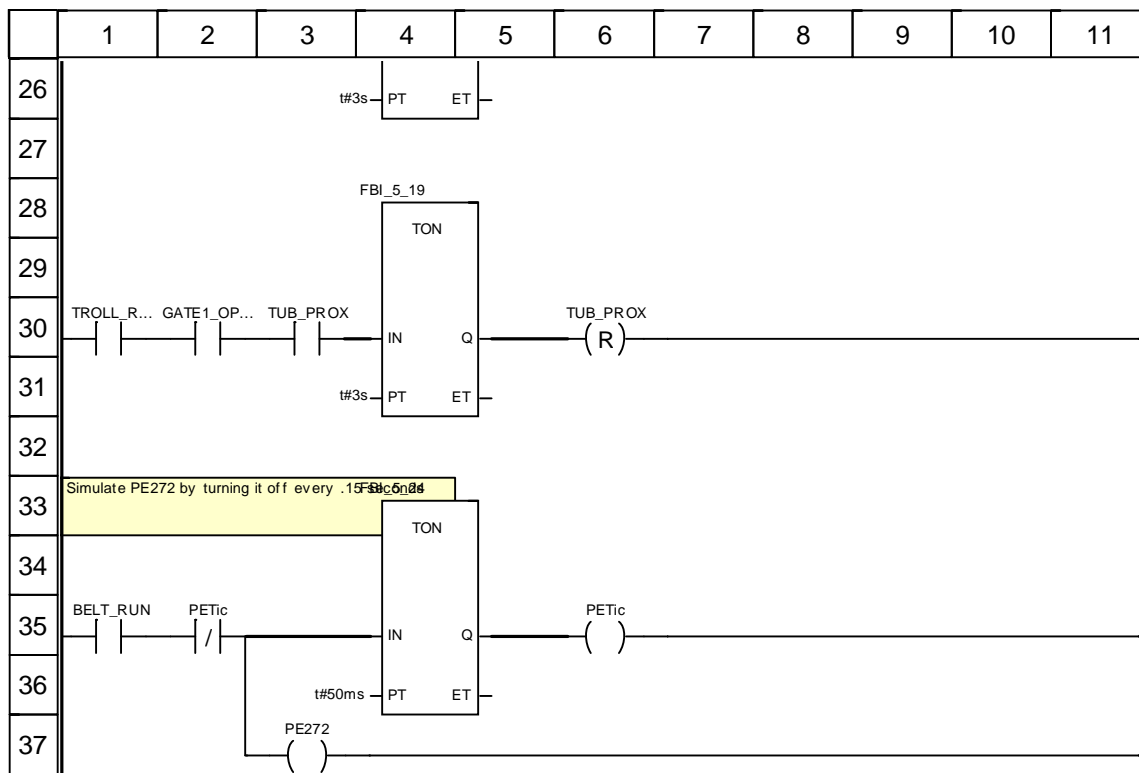


G2_Hold_Dn <Transition> : [MAST - Tub_Loader]



Simulation : [MAST]





Truncated labels:

Label	Position(s)
GATE1_OPLS	(2, 30)
GATE2_OPLS	(2, 25)
TROLL_RUN	(1, 25) (1, 30)

FAST

Specific properties

Configuration	Periodic
Task period configuration	5
Watchdog time configuration	100

Cross References

Application:

Addresses

Object	Referred into	Location	Usage
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Variables or FB instances

Object	Referred into	Location	Usage
ActDis	Main_Lad : [MAST]	(I 32, c: 7)	W
BELT_RUN	Chart : [MAST - Tub_Loader]	(I 3, c: 2)	W
	Simulation : [MAST]	(I 35, c: 1)	R
Close_Gate_1	Main_Lad : [MAST]	(I 19, c: 1)	R
	Chart : [MAST - Tub_Loader]	(I 11, c: 2)	W
Close_Gate_2	Main_Lad : [MAST]	(I 23, c: 1)	R
	Chart : [MAST - Tub_Loader]	(I 19, c: 2)	W
Ctr_Done	Main_Lad : [MAST]	(I 3, c: 6)	W
Ctr_Reset	Main_Lad : [MAST]	(I 4, c: 1)	R
	Chart : [MAST - Tub_Loader]	(I 3, c: 2)	W
FBI_5_2	Simulation : [MAST]	(I 3, c: 2)	FC
FBI_5_4	Simulation : [MAST]	(I 8, c: 2)	FC
FBI_5_8	Simulation : [MAST]	(I 13, c: 2)	FC
FBI_5_11	Simulation : [MAST]	(I 18, c: 2)	FC
FBI_5_14	Simulation : [MAST]	(I 23, c: 4)	FC
FBI_5_19	Simulation : [MAST]	(I 28, c: 4)	FC
FBI_5_24	Simulation : [MAST]	(I 33, c: 4)	FC
G1_Hold_Dn	Chart : [MAST - Tub_Loader]	(I 10, c: 2)	R
	G1_Hold_Dn <Transition> : [MAST - Tub_Loader]	(I 3, c: 4)	W
G2_Hold_Dn	G2_Hold_Dn <Transition> : [MAST - Tub_Loader]	(I 3, c: 4)	W
	Chart : [MAST - Tub_Loader]	(I 18, c: 2)	R
GATE1_CLLS	Chart : [MAST - Tub_Loader]	(I 12, c: 2)	R
	Simulation : [MAST]	(I 10, c: 4)	W
GATE1_OPLS	Chart : [MAST - Tub_Loader]	(I 6, c: 2)	R
	Simulation : [MAST]	(I 5, c: 4)	W
		(I 30, c: 2)	R
GATE1_RET	Main_Lad : [MAST]	(I 17, c: 2)	W
		(I 19, c: 2)	W
	Simulation : [MAST]	(I 5, c: 1)	R
		(I 10, c: 1)	R
GATE2_CLLS	Chart : [MAST - Tub_Loader]	(I 20, c: 2)	R
	Simulation : [MAST]	(I 20, c: 4)	W
GATE2_OPLS	Chart : [MAST - Tub_Loader]	(I 14, c: 2)	R
	Simulation : [MAST]	(I 15, c: 4)	W
		(I 25, c: 2)	R
GATE2_RET	Main_Lad : [MAST]	(I 21, c: 2)	W
		(I 23, c: 2)	W
	Simulation : [MAST]	(I 15, c: 1)	R
		(I 20, c: 1)	R
GHTic_Tmr	Main_Lad : [MAST]	(I 12, c: 2)	R
		(I 10, c: 3)	FC
Hld_Ctr_Acc	G1_Hold_Dn <Transition> : [MAST - Tub_Loader]	(I 1, c: 2)	R

Cross References

Object	Referred into	Location	Usage
	G2_Hold_Dn <Transition> : [MAST - Tub_Loader]	(l 1, c: 2)	R
	Main_Lad : [MAST]	(l 10, c: 7)	W
Hld_Tmr_Rst	Main_Lad : [MAST]	(l 14, c: 1)	R
	Chart : [MAST - Tub_Loader]	(l 9, c: 2)	W
		(l 17, c: 2)	W
Hold_Ctr	Main_Lad : [MAST]	(l 10, c: 7)	FC
Hold_Gate_1	Chart : [MAST - Tub_Loader]	(l 9, c: 2)	W
Hold_Gate_2	Chart : [MAST - Tub_Loader]	(l 17, c: 2)	W
Initial	Chart : [MAST - Tub_Loader]	(l 1, c: 2)	W
Int_Reset	Main_Lad : [MAST]	(l 8, c: 3)	W
		(l 15, c: 1)	R
		(l 28, c: 1)	R
Open_Gate_1	Main_Lad : [MAST]	(l 17, c: 1)	R
	Chart : [MAST - Tub_Loader]	(l 5, c: 2)	W
Open_Gate_2	Main_Lad : [MAST]	(l 21, c: 1)	R
	Chart : [MAST - Tub_Loader]	(l 13, c: 2)	W
Part_Ctr	Main_Lad : [MAST]	(l 1, c: 4)	FC
	Chart : [MAST - Tub_Loader]	(l 4, c: 2)	R
Parts_Into_Tub	Chart : [MAST - Tub_Loader]	(l 3, c: 2)	W
		(l 21, c: 2)	L REF
PE272	Main_Lad : [MAST]	(l 3, c: 1)	R
	Simulation : [MAST]	(l 37, c: 3)	W
PETic	Simulation : [MAST]	(l 35, c: 2)	R
		(l 35, c: 6)	W
Reset	Main_Lad : [MAST]	(l 7, c: 1)	R
Run	Main_Lad : [MAST]	(l 7, c: 2)	R
		(l 30, c: 1)	R
	Chart : [MAST - Tub_Loader]	(l 2, c: 2)	R
TimeDis	Main_Lad : [MAST]	(l 30, c: 7)	W
TransDis	Main_Lad : [MAST]	(l 31, c: 7)	W
TROLL_RUN	Main_Lad : [MAST]	(l 12, c: 1)	R
	Chart : [MAST - Tub_Loader]	(l 7, c: 2)	W
		(l 9, c: 2)	W
		(l 15, c: 2)	W
		(l 17, c: 2)	W
	Simulation : [MAST]	(l 25, c: 1)	R
		(l 30, c: 1)	R
Tub_Loader	Main_Lad : [MAST]	(l 25, c: 3)	R
Tub_Loader_SfcC	Main_Lad : [MAST]	(l 25, c: 3)	FC
Tub_Permissive	Chart : [MAST - Tub_Loader]	(l 3, c: 2)	W
TUB_PROX	Chart : [MAST - Tub_Loader]	(l 8, c: 2)	R
		(l 16, c: 2)	R
	Simulation : [MAST]	(l 25, c: 3)	R
		(l 25, c: 6)	W
		(l 30, c: 3)	R
		(l 30, c: 6)	W
Wait_Tub_In	Chart : [MAST - Tub_Loader]	(l 15, c: 2)	W
Wait_Tub_Out	Chart : [MAST - Tub_Loader]	(l 7, c: 2)	W

EF objects

Object	Referred into	Location	Usage
ge	G2_Hold_Dn <Transition> : [MAST - Tub_Loader]	(l 1, c: 2)	FC

Cross References

Object	Referred into	Location	Usage
	G1_Hold_Dn <Transition> : [MAST - Tub_Loader]	(l: 1, c: 2)	FC
ge_int	G2_Hold_Dn <Transition> : [MAST - Tub_Loader]	(l: 1, c: 2)	FC
	G1_Hold_Dn <Transition> : [MAST - Tub_Loader]	(l: 1, c: 2)	FC

Subroutines

Object	Referred into	Location	Usage
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Cross References

New_DFB:

Variables or FB instances

Object	Referred into	Location	Usage
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