AD Main Program Sweep Cycle)"			Type Comment User-defined ID Default value nis rung.	ОВ
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Automatic 0.1 Data type Bool Bool	Comment User-defined ID Default value	OB
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Automatic 0.1 Data type Bool Bool	Comment User-defined ID Default value	ОВ
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Automatic 0.1 Data type Bool Bool	Comment User-defined ID Default value	OB
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Automatic 0.1 Data type Bool Bool	Comment User-defined ID Default value	OB
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Automatic 0.1 Data type Bool Bool	Comment User-defined ID Default value	OB
Main Program Sweep Cycle)" MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Author Version NOT CHANG	Data type Bool Bool	User-defined ID Default value	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Version NOT CHANG	Data type Bool Bool	User-defined ID Default value	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	Version NOT CHANG	Data type Bool Bool	User-defined ID Default value	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"	NOT CHANG	Data type Bool Bool	Default value	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"		Bool Bool GE	Default value	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"		Bool Bool GE		
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"		Bool	nis rung.	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"		Bool	nis rung.	
MULATE LOGIC - DO s always Network 1 and %FC99 "R99_Simulate"		GE	nis rung.	
s always Network 1 and %FC99 "R99_Simulate"			nis rung.	
s always Network 1 and %FC99 "R99_Simulate"			nis rung.	
	ENO -			-
%FC1 "System Control"				
N	ENO			
%FC2 "Weight Check Station Co N	ontrol"			
	"System Control" N %FC2 "Weight Check Station C	"System Control" N ENO	"System Control" N ENO	"System Control" N ENO WFC2 "Weight Check Station Control"

Totally Integrate Automation Port	ed Fal					
Network 4:						
	%FC3					
	"Pick and Place Control	 "				
— EN		ENO -				4
I						
Network 5:						
network 5:						
l I	%FC4					
	Faults"					
— EN	ENO					4
	2110					
Network 6:						
	%FC5					
	"Production Statistics"					
- EN		ENO -				-
I						

Totally Integrated Automation Portal	

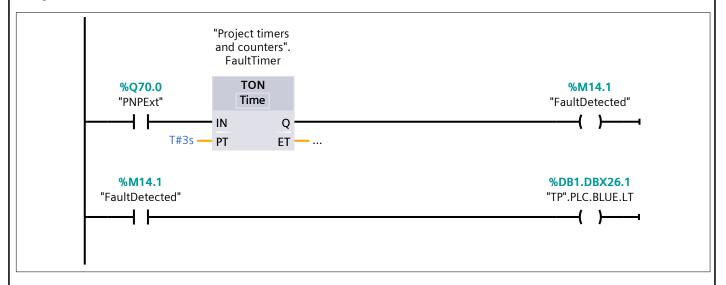
Faults [FC4]

Faults Properti	es				
General					
Name	Faults	Number	4	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined	
				ID	

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

Network 1:

using ton timer to find the faults , when extendion is not done in three seconds fault is detected



Totally Integrated Automation Portal		
	I	

Pick and Place Control [FC3]

Pick and Place Control Properties							
General							
Name	Pick and Place Control	Number	3	Туре	FC		
Language	LAD	Numbering	Automatic				
Information							
Title		Author		Comment			
Family		Version	0.1	User-defined			
				ID			

Name	Data type	Default value	
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Pick and Place Control	Void		

Network 1:

To extedn reject sol, cycle time should be active, part is partpickup and value in not in range

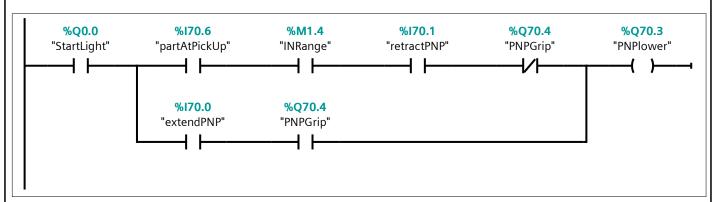
```
%Q0.0 %I70.6 %M1.4 %Q70.5

"StartLight" "partAtPickUp" "INRange" "ConEXT"

( )
```

Network 2:

To lower the soli, Part should be there , value should be in range , pNP should be retract positon and gripper i s in active



Network 3:

TO Activate the gripper , solenoid is in lower position , pnp retracted position , cycle time should be active, not in extended position

Totally Integrated **Automation Portal** %170.3 %Q0.0 %Q70.4 **%I70.1** %170.0 "lower" "retractPNP" "StartLight" "extendPNP" "PNPGrip" ┨┠ %Q70.4 %170.3 "PNPGrip" "lower"

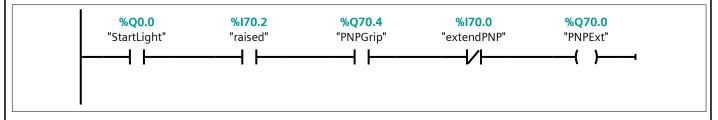
Network 4:

To raise the solenoid the start light should be active , in lower position, PNP Grip should be activated position , not in rasied position then PNP raise

```
%Q0.0
                                        %Q70.4
                                                                                %Q70.2
                     %170.3
                                                             %170.2
                                        "PNPGrip"
"StartLight"
                     "lower"
                                                             "raised"
                                                                               "PNPRaise"
   ┨┠
                     %170.3
                                        %Q70.4
                     "lower"
                                        "PNPGrip"
                      ┨┠
```

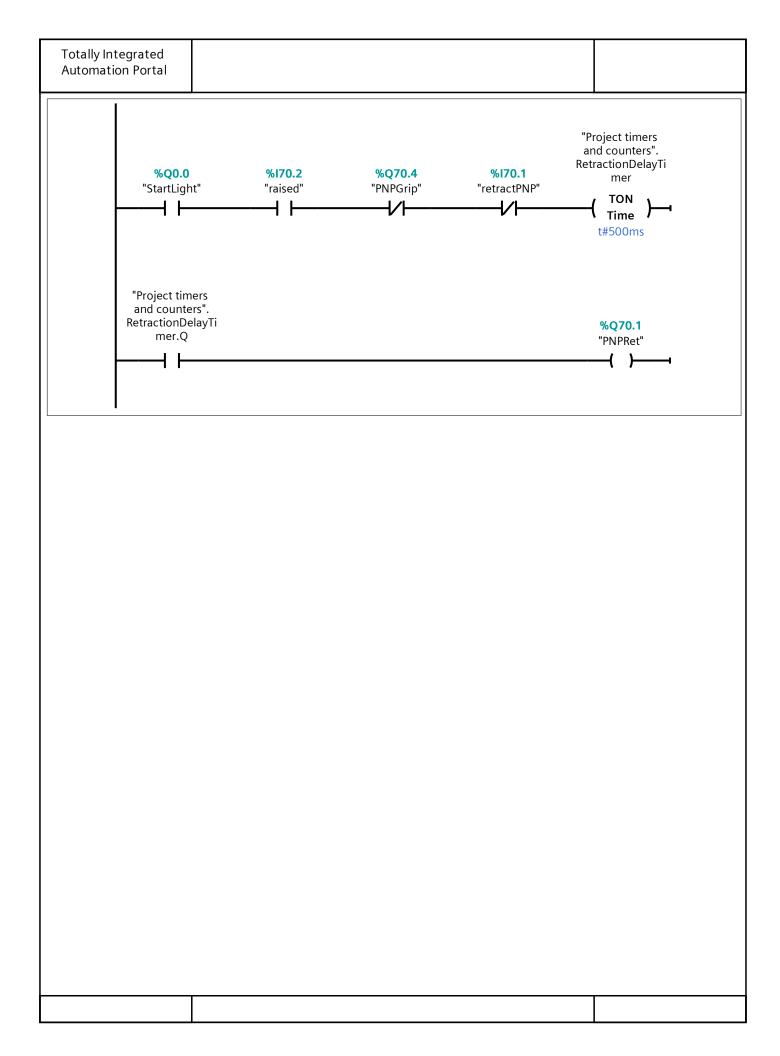
Network 5:

To extend, the cylce should be active, should be in raised poistion, gripper should be active, PNP should not be Extended



Network 6:

Using delay timer, retraction is delayed by half and second, when cylcle is active, raised position, PNP Grip Active, Retracted position



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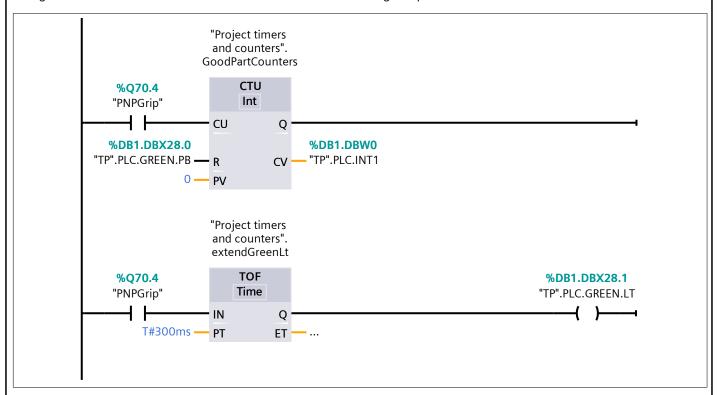
Production Statistics [FC5]

Production St	tatistics Properties				
General					
Name	Production Statistics	Number	5	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined	
				ID	

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

Network 1:

Using a CTU counter instruction calculated the total number of good parts



Network 2:

TO calculate the reject parts using add and move fuction and displayed in int 2

Totally Integrated **Automation Portal** Network 2: ADD %Q70.5 Auto (Int) "ConEXT" ┨┍┝ EN --- ENO %M13.1 "project". "project". "Tag_3" RejectPartCount -RejectPartCount IN1 OUT -- IN2 🤹 %DB1.DBX32.0 "TP".PLC.RED.PB MOVE ┨┝ EN -- ENO -0 — IN "project". RejectPartCount OUT1 • %Q70.5 %DB1.DBX32.1 "ConEXT" "TP".PLC.RED.LT MOVE EN - ENO "project". RejectPartCount **_** %DB1.DBW2 - "TP".PLC.INT2 IN 🤹 OUT1 -Network 3: To calculate cylce timeo part pick up, using TONR (retentive timer), and displayed in real 3

Totally Integrated Automation Portal		
Network 3: (1.1 / 2.1)		
%Q0.0 "StartLight"		
		1
%I70.6 "partAtPickUp"	MOVE	
%M7.1 "Tag_6"	"Project timers and counters". CycleTimer.ET IN ENO "project" cycletimeint	2
	CONV Int to Real	
"project". cycletimeint =	"project". OUT ENO "project". CycletimeREal	3
	"Project timers and counters". CycleTimer	
	TONR Time	
> 1	— IN Q —	
> 2	— R	
T#1D_3H_46M_ 39S_999MS _		
	DIV	
> 3	Auto (Real) EN ENO	
"project". CycletimeREal – 1000.0 –	"TP".PLC.REAL3	
	2.1 (Page4 - 4)	1

Totally Integrated Automation Portal					
Network 3: (2.1 / 2.1) 1.1 (Page4 - 3)					

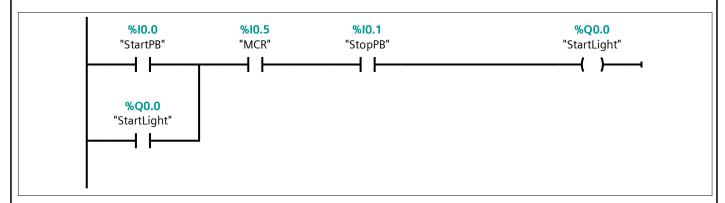
Totally Integrated Automation Portal	

System Control [FC1]

System Cont	rol Properties					
General	General					
Name	System Control	Number	1	Туре	FC	
Language	LAD	Numbering	Automatic			
Information						
Title		Author		Comment	To Active cycle time, Press start PB, turn on MCR, the stop the it press PB	
Family		Version	0.1	User-defined ID		

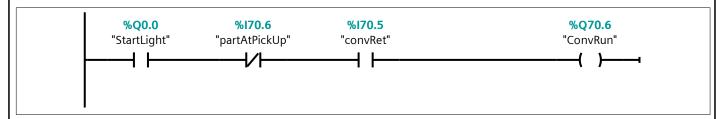
Name	Data type	Default value
Input		
Output		
InOut		
Temp		
Constant		
▼ Return		
System Control	Void	

Network 1:



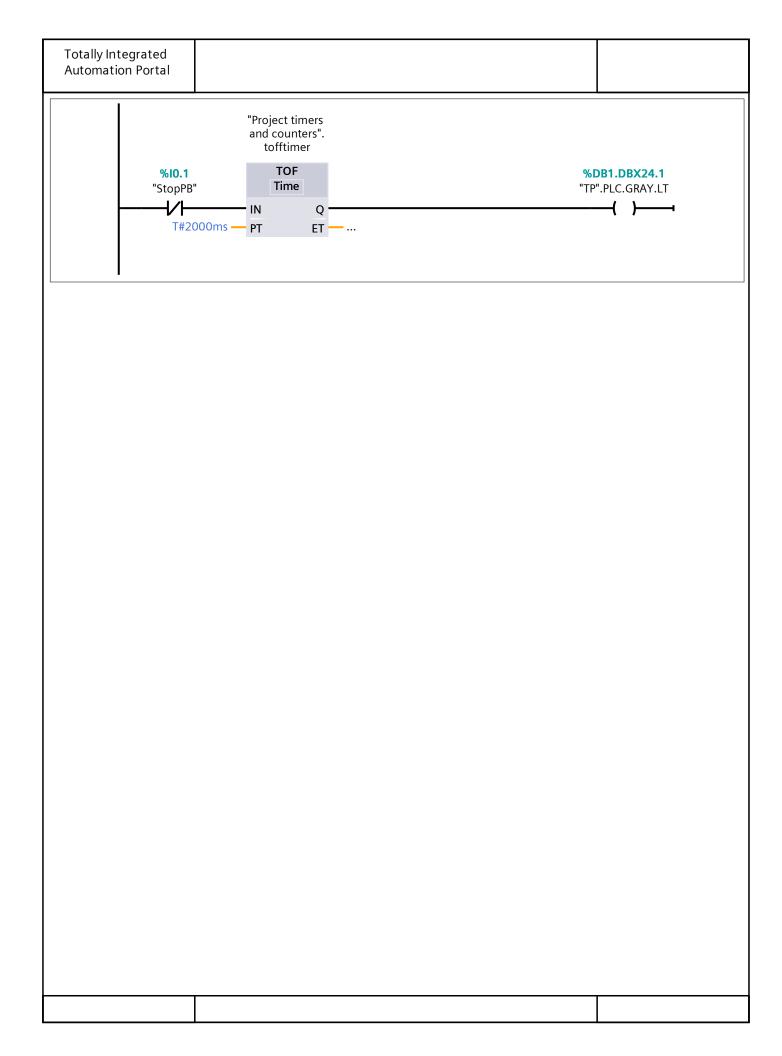
Network 2:

To run the conveyor turn on start light, part is not present at pickup, reject sol is in retracted position



Network 3:

when stop push button is pressed the toff timer extend the singal, to indicate that gray light turns on



Totally Integrated	
Automation Portal	

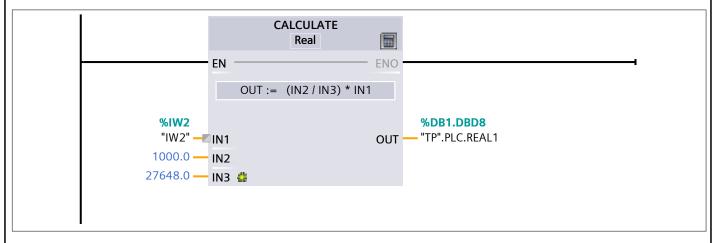
Weight Check Station Control [FC2]

Weight Chec	k Station Control Propertie	25			
General					
Name	Weight Check Station Control	Number	2	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Weight Check Station Control	Void		

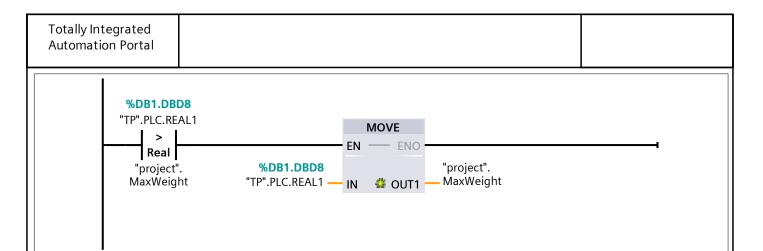
Network 1:

To calculate the weight we need to convert the Analog value to the real weight in gms and displayed in real 1



Network 2:

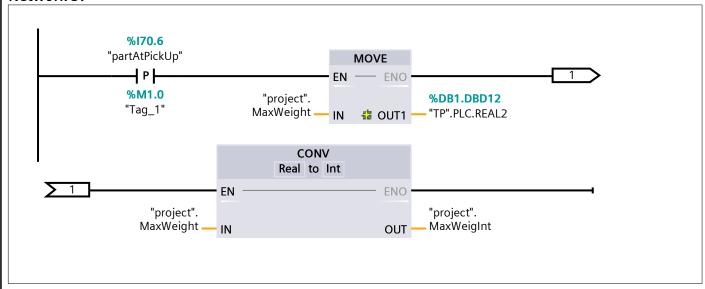
Using the greater than fundtion to calculate maximum height



Network 3:

using move function and Conv function calculate the max weight and covert the real value to int value

Network 3:



Network 4:

using in range function to find the good part and store in range as bool

