Totally Integrated	
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Assembly_conv [FB9]

Assembly_conv Properties											
General											
Name	Assembly_conv	Number	9	Туре	FB	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Assembly_conv								
Name	Data type	Offset	Accessible from HMI/OPC UA	able	HMI engi-	Setpoint	Supervi- sion	Comment
Input								
Output								
InOut								
Static								
Temp								
Constant								

Network 1:

```
"Green_Lid_
conv_timer"
    %18.0
                                               %M5.2
                                                                                          %M4.3
"Assembly
green lid start"
                                           "G_Detected_
Memory"
                                                                                      "move_green_
lid_conv"
                          %18.6
                                                                S_ODT
                    "G_lid_clamped"
                                                                                          -( s )-
                                                                             Q-
                                                    S5T#3S — TV
                                                                             ВІ — ...
                                                                           BCD — ...
    %M5.3
  "G_Reset"
```

Network 2:

```
"Blue_Lid_
conv_timer"
    %18.1
                                            %M5.4
                                                                                    %M4.5
"Assembly blue
lid start"
                                                                                  "move_blue_
lid_conv"
                         %19.4
                                         "B_Detected_
                                                             S_ODT
                    "B_lid_clamped"
                                           Memory"
                                                                         Q-
                                                                                     -( s )-
                                                  S5T#3S — TV
                                                                         ВІ — ...
                                                                       BCD — ...
    %M5.5
   "B_Reset"
     + +
```

Network 3:

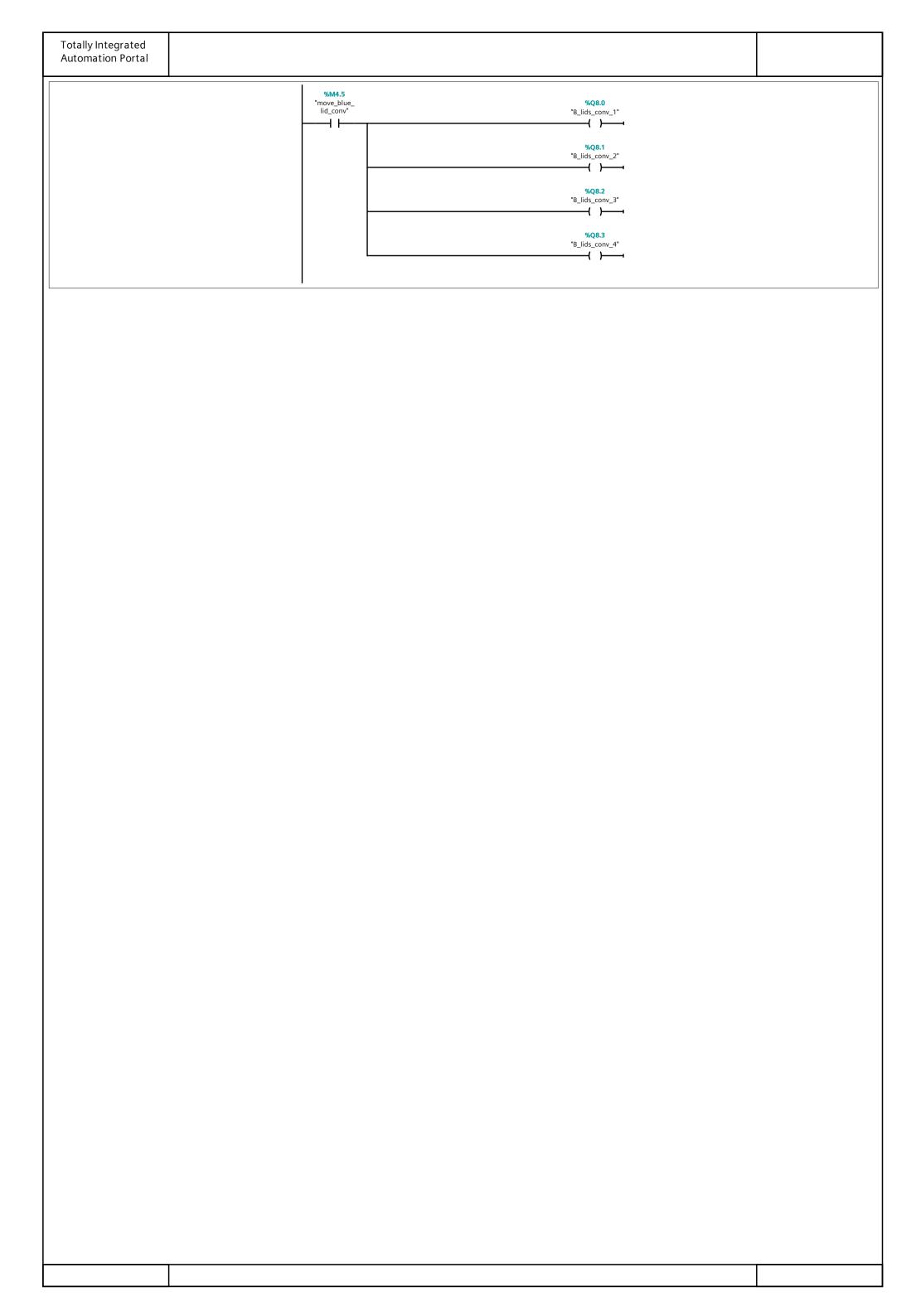
```
%I8.2
"Assembly green base start"
                                                                      %T8
                                                                  "Green_Base_
conv_timer"
                         %18.7
                                               %M5.2
                                                                                           %M4.4
                       "G_base_
clamped"
                                                                                        "move_green_
base_conv"
                                           "G_Detected_
                                             Memory"
                                                                  S_ODT
                                                                                            -( s )-
                                                                              Q-
                                                     S5T#3S — TV
                                                                              ВІ — ...
                                                                            BCD — ...
   %M5.3
 "G_Reset"
```

Network 4:

```
"Blue_Base_
conv_timer"
    %18.3
                        %19.5
                                           %M5.4
                                                                                   %M4.6
                                                                              "move_blue_
base_conv"
                      "B_base_
clamped"
"Assembly blue
                                        "B_Detected_
                                          Memory"
  base start"
                                                           S_ODT
                                                                       Q _____
                                                                                   -( s )-
                                                S5T#3S — TV
                                                                     BCD — ...
    %M5.5
   "B_Reset"
     -| |-
```

Network 5:

```
Totally Integrated
  Automation Portal
                                                                        %M4.3
                                                                     "move_green_
lid_conv"
                                                                                                                                         %Q7.0
"G_lids_conv_1"
                                                                                                                                             →
                                                                                                                                         %Q7.1
"G_lids_conv_2"
                                                                                                                                             →
                                                                                                                                        %Q7.2
"G_lids_conv_3"
———( )———
                                                                                                                                            %Q7.3
                                                                                                                                         "G_lids_conv_4"
                                                                                                                                             %Q7.4
"G_lids_conv_5"
                                                                                                                                             →
                                                                                                                                         %Q7.5
"G_lids_conv_6"
                                                                                                                                         %Q7.6
"G_lids_conv_7"
                                                                                                                                             %Q7.7
                                                                                                                                         "G_lids_conv_8"
                                                                                                                                            \prec \longrightarrow
Network 6:
                                                                       %M4.4
                                                                     "move_green_
base_conv"
                                                                                                                                        %Q8.4
"G_base_conv_1"
                                                                                                                                             %Q8.5
"G_base_conv_2"
                                                                                                                                             %Q8.6
                                                                                                                                        "G_base_conv_3"
                                                                                                                                             %Q8.7
"G_base_conv_4"
                                                                                                                                            %Q9.0
                                                                                                                                         "G_base_conv_5"
                                                                                                                                            →
                                                                                                                                        %Q9.1
"G_base_conv_6"
                                                                                                                                             → →
Network 7:
                                                                        %M4.6
                                                                      "move_blue_
base_conv"
                                                                                                                                        %Q9.2
"B_base_conv_1"
                                                                        \dashv \vdash
                                                                                                                                            %Q9.3
                                                                                                                                         "B_base_conv_2"
                                                                                                                                            %Q9.4
                                                                                                                                        "B_base_conv_3"
                                                                                                                                        %Q9.5
"B_base_conv_4"
Network 8:
```



Totally Integrated	
ation Portal	
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Assembly_Blue [FB11]

Assembly_Blue Properties											
General											
Name	Assembly_Blue	Number	11	Туре	FB	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Assembly_Blue								
Name	Data type	Offset	HMI/OPC UA	able	HMI engi-	Setpoint	Supervi- sion	Comment
Input								
Output								
InOut								
Static								
Temp								
Constant								

Network 1: Clamp when blue lid in place

```
#9.2

"B_lid in place"

CLK

%M4.7

"B_Negative_Trig_1"

*M4.5

"move_blue_lid_conv"

(R)
```

Network 2: Clamp when blue base in place

```
%I9.3
"B_base in place"

CLK

%M5.0
"B_Negative_Trig_2"

%M4.6
"move_blue_base_conv"

(R)

(R)
```

Network 3: move Z and Grab when Base and Lid clamped

Network 4: unclamp when item detected, raise \boldsymbol{z} and extend \boldsymbol{x}

Totally Integrated **Automation Portal %I9.7**"B_item_detect" %Q10.4 "B_clamp_lid" **-(** R **)**-%Q10.5 "B_clamp_base" -(R)-**%Q10.6** "B_move Z" **-(** R **)**− **%Q11.0**"B_move X" **-(** s **)**-**%M5.4**"B_Detected_
Memory" **-(** s **)**-Network 5: lower z after 3 s **%T3** "B_Timer_1" %M5.4 "B_Detected_ Memory" **%Q10.6** "B_move Z" S_ODT **-(** s **)-**ВІ — ... BCD — ... %M5.5 "B_Reset" Network 6: ungrab, raise z and unextend x after 5s **%T4** "B_Timer_2" **%M5.4**"B_Detected_
Memory" **%Q10.7** "B_grab" S_ODT **-(** R **)**-Q-S5T#5S — **TV** ВІ — ... **%M5.5**"B_Reset" BCD — ... **%Q10.6** "B_move Z" **-(** R **)**-%Q11.0 "B_move X" -(R)-Network 7: turn conv on and raise post after 6 s **%T5** "B_Timer_3" **%M5.4**"B_Detected_
Memory" **%M4.6**"move_blue_base_conv" S_ODT Q-S5T#6S — TV ві — ... **%M5.5**"B_Reset" BCD --- ... %M4.5 "move_blue_ lid_conv" %Q11.1 "B_pos.Raise_ bases" **-(** s **)**-Network 8: lower post after part leaves %Q11.1 "B_pos.Raise_ bases" "B_part_leaving" N_TRIG CLK Q - %M5.1 "B_Negative_ Trig_3" %M5.4 "B_Detected_ Memory" _(R)_ **%M5.5**"B_Reset"

Totally Integrated Automation Portal

Assembly_Green [FB10]

Assembly_Green Properties											
General											
Name	Assembly_Green	Number	10	Type	FB	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Assembly_Green								
Name	Data type	Offset	Default value	HMI/OPC UA	able	HMI engi-	Supervi- sion	Comment
Input								
Output								
InOut								
Static								
Temp								
Constant								

Network 1:

```
"G_lid in place"

N_TRIG

CLK Q

%M4.0

"G_Negative_Trig_1"

MM4.3

"move_green_lid_conv"

{R}
```

Network 2:

```
%I8.5

"G_base in place"

CLK

%M4.1

"G_Negative_
Trig_2"

%M4.4

"move_green_
base_conv"

(R)
```

Network 3:

Network 4:

```
Totally Integrated
   Automation Portal
                                                                            %I9.1
"G_item_detect"
                                                                                                                                                          %Q9.6
"G_clamp_lid"
                                                                                                                                                              -( R }--
                                                                                                                                                             %Q9.7
                                                                                                                                                         "G_clamp_base"
                                                                                                                                                              _( R )___
                                                                                                                                                           %Q10.0
"G_move Z"
                                                                                                                                                              _( R )__
                                                                                                                                                           %Q10.2
"G_move X"
                                                                                                                                                             -( s )-
                                                                                                                                                          %M5.2
"G_Detected_
Memory"
                                                                                                                                                              -( s )-
Network 5:
                                                                                                %T0
"G_Timer_1"
                                                                                %M5.2
                                                                             "G_Detected_
Memory"
                                                                                                                                                           %Q10.0
"G_move Z"
                                                                                               S_ODT
                                                                                                                                                              -( s )-
                                                                                                %M5.3
"G_Reset"
                                                                                                         BCD — ...
                                                                                  \dashv \vdash
Network 6:
                                                                                                 %T1
"G_Timer_2"
                                                                              %M5.2
"G_Detected_
Memory"
                                                                                                                                                            %Q10.1
"G_grab"
                                                                                               S_ODT
                                                                                               -( R )-
                                                                                    S5T#5S — TV
                                                                                                         BCD — ...
                                                                               %M5.3
"G_Reset"
                                                                                                                                                           %Q10.0
"G_move Z"
                                                                                                                                                             —( R )—
                                                                                                                                                            %Q10.2
                                                                                                                                                           "G_move X"
                                                                                                                                                              _( R )_
Network 7:
                                                                                                 %T2
"G_Timer_3"
                                                                              %M5.2
"G_Detected_
Memory"
                                                                                                                                                             %M4.4
                                                                                                                                                          "move_green_
base_conv"
                                                                                               S_ODT
                                                                                                                                                              -( s )-
                                                                                                           Q-
                                                                                     S5T#6S — TV
                                                                                                          ві — ...
                                                                                                         BCD — ...
                                                                               %M5.3
"G_Reset"
                                                                                                                                                             %M4.3
                                                                                                                                                          "move_green_
lid_conv"
                                                                                                                                                          %Q10.3
"G_pos.Raise_
bases"
                                                                                                                                                              -( s )-
Network 8:
                                                                                                                                                             %Q10.3
                                                                                                                                                          "G_pos.Raise_
bases"
                                                                            "G_part_leaving"
                                                                                               N_TRIG
                                                                                                CLK Q -
                                                                                                "G_Negative_
Trig_3"
                                                                                                                                                             %M5.2
                                                                                                                                                          "G_Detected_
Memory"
                                                                                                                                                             _( R )_
                                                                                                                                                            %M5.3
"G_Reset"
```

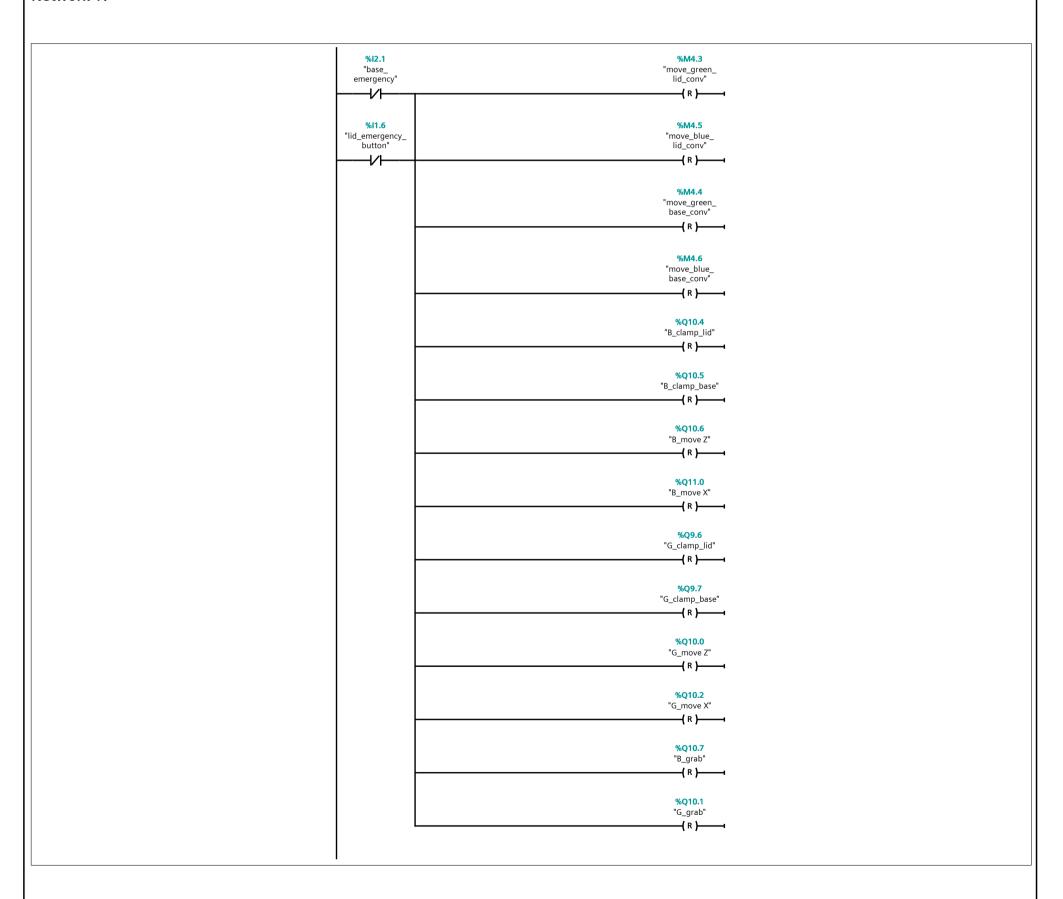
Totally Integrated	
utomation Portal	

Assembly_Emergency [FB13]

Assembly_Emergency Properties											
General											
Name	Assembly_Emergency	Number	13	Туре	FB	Language	LAD				
Numbering	Automatic										
Information											
Title		Author		Comment		Family					
Version	0.1	User-defined ID									

Assembly_Emergency								
Name	Data type	Offset	Default value	HMI/OPC UA	able	HMI engi-	Supervi- sion	Comment
Input								
Output								
InOut								
Static								
Temp								
Constant								

Network 1:



eneral ame umbering	A_COUNTER Number 12				Type F	L	Language LAD			
formation tle	Automatic	Autho	r		Comment		F	amily		
ersion	0.1		lefined ID					<i>-</i>		
COUNTER		Data type	Offset	Default value	from	Writ- Visible ii	Setpoint i-	Supervi- sion	Comment	
					нмі/орс од	from neering HMI/ OPC				
Input						UA				
Output InOut										
Static Temp										
Constant										
twork 1:			ı	%.DB30						
			%i10.0 "CCC1"	Int		%M5.6 "Tag_1"				
				false — R CV — 5 — PV		()	-			
etwork 2:			·							
			%110.1	%DB37 "IEC_Counter_ 0_DB_6" CTU		%M5.7				
			"CCC2"	false — R CV —		"Tag_2"	-1			
etwork 3:										
			%M5.7 "Tag_2'			%M6.1 "Tag_4"				
						(s)	-			
etwork 4:										
			% M5.6 "Tag_1'			%M6.2 "Tag_5" (s)	-1			
etwork 5:			ı							
			%M6.2 "Tag_5'			%M6.0 "Tag_3"				
						(s)				

