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# Sorting line\_Project / PLC\_1 [CPU 1211C DC/DC/DC] / Program blocks

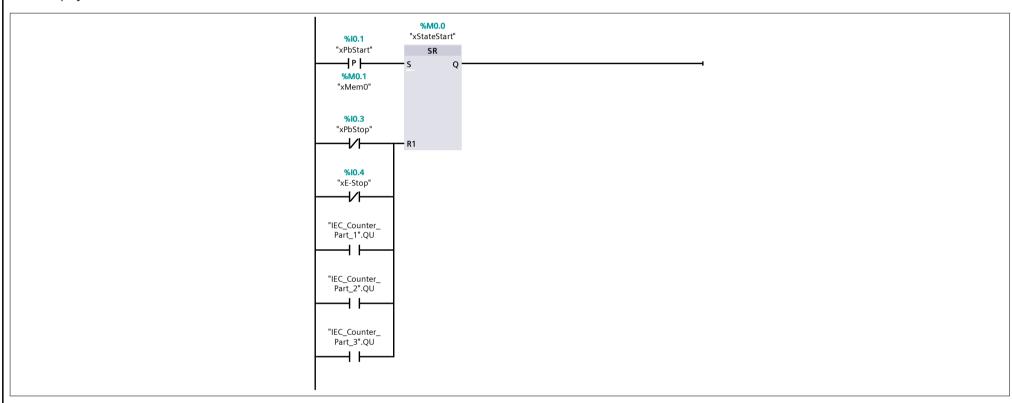
# Main [OB1]

Main Properties										
General Control of the Control of th										
Name	Main	Number	1	Туре	ОВ	Language	LAD			
Numbering	Automatic									
Information										
Title	"Main Program Sweep (Cy-cle)"	Author		Comment		Family				
Version	0.1	User-defined ID			:		1			

Main									
Name	Data type	Default value	Comment						
<b>▼</b> Input									
Initial_Call	Bool		Initial call of this OB						
Remanence	Bool		=True, if remanent data are available						
Тетр									
Constant									

## Network 1: Start/Stop system

Start/Stop system



## Network 2: Input conveyor initialization

Input conveyor initialization

Totally Integrated **Automation Portal** %Q0.0 "xConveyorEntryM otor" %M0.0 "xStateStart" -( R )-**%M3.3**"xStep\_
ConvEntry\_30\_
MoveFurther" %10.2 "xPbReset" %M1.0 **%M3.2**"xStep\_
ConvEntry\_20\_
WaitForConvSort" "FirstScan" **%M3.1**"xStep\_

ConvEntry\_10\_

WaitForProduct" **%M3.0**"xStep\_
ConvEntry\_0\_
Init" **%M3.0**"xStep\_
ConvEntry\_0\_
Init" **%M3.1**"xStep\_

ConvEntry\_10\_

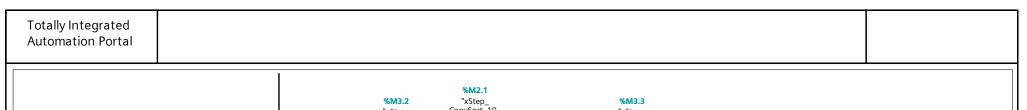
WaitForProduct" %M0.0 "xStateStart" **%M3.0**"xStep\_
ConvEntry\_0\_
Init"

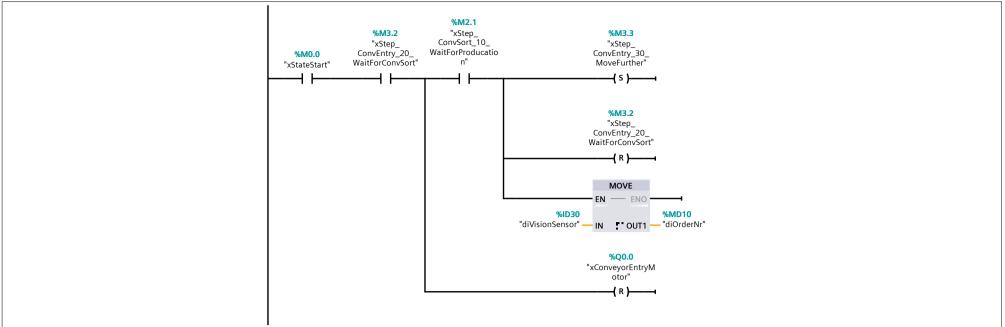
### Network 3: Input conveyor Step 10 Waiting for product

Input conveyor Step 10 Waiting for product

### Network 4: Input conveyor Step 20 Waiting for sorting conveyor

Input conveyor Step 20 Waiting for sorting conveyor





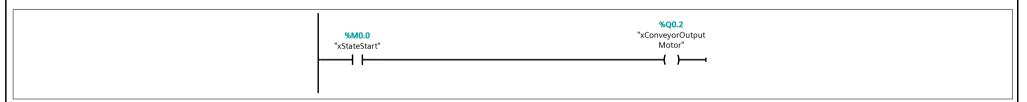
## Network 5: Input conveyor Step 30 Move product to the next conveyo

Input conveyor Step 30 Move product to the next conveyor

```
%DB2
                           %M3.3
                                                                                                                            %M3.3
                                                                     "IEC_Timer_0_DB"
                      "xStep_
ConvEntry_30_
MoveFurther"
                                                                                                                       "xStep_
ConvEntry_30_
MoveFurther"
                                                                             TON
   %M0.0
                                                                            Time
"xStateStart"
                                                                                     Q·
                                                          T#1.5s — PT
                                                                                    ET — T#0ms
                                                                                                                            %M3.1
                                                                                                                      "xStep_
ConvEntry_10_
WaitForProduct"
                                                                                                    %Q0.0
                                                                                             "xConveyorEntryM
otor"
                                                                                                                            -( s )-
```

## Network 6: Activating the output conveyor

Activating the output conveyor



### Network 7: Sorting conveyor assembly Step 0 Initialization

Sorting conveyor assembly Step 0 Initialization

Totally Integrated **Automation Portal** %M2.0 "xStep\_ ConvSort\_0\_ Init" %M0.0 %10.2 "xStateStart" "xPbReset" (s)-%M1.0 %M2.3 "FirstScan" "xStep\_ ConvSort\_30\_ ProductPushed" -( R )-%M2.2 "xStep\_ ConvSort\_20\_ SetSorters" -( R )-**%M2.1**"xStep\_

ConvSort\_10\_

WaitForProducatio -(R)-%M2.1 "xStep\_ ConvSort\_10\_ %M2.0 "xStep\_ ConvSort\_0\_ Init" WaitForProducatio %M0.0 "xStateStart"

**%M2.0**"xStep\_
ConvSort\_0\_
Init"

#### Network 8: Sorting conveyor assembly Step 10 Waiting for the input conveyor to provide the product

Sorting conveyor assembly Step 10 Waiting for the input conveyor to provide the product

## Network 9: Sorting conveyor assembly Step 20 Setting the sorters

Sorting conveyor assembly Step 20 Setting the sorters

# Network 10: Sorting conveyor assembly Step 30 Timer after pushing the product off

Sorting conveyor assembly Step 30 Timer after pushing the product off

Totally Integrated Automation Portal										
Automation Portal										
"M2.3 "IEC_Timer_0_ DB_1" "xStep_ ConvSort_30_ ProductPushed" Time										
T#2s — PT ET — T#0ms  *M2.3  "xStep_ ConvSort_30_ ProductPushed"  ( R )										
Network 11: Checking if the elements fall within the given range										
checking if the elements fall within the given range										

Totally Integrated **Automation Portal** %M2.2 "xStep\_ ConvSort\_20\_ SetSorters" IN\_RANGE %Q1.0 "xSorterBelt\_3" %M0.0 "xStateStart" -( R )-1 — MIN %MD10 "diOrderNr" — VAL **%Q0.7**"xSorterRotate\_3" 3 — MAX **-(** R **)**− %Q0.4 "xSorterBelt\_1" \_( R )\_ **%Q0.3**"xSorterRotate\_1" \_( R )\_ %Q0.6 "xSorterBelt\_2" **-(** s **)-**%Q0.5 "xSorterRotate\_2" **-(** s **)**--IN\_RANGE Dint %Q1.0 "xSorterBelt\_3" -( R )-%MD10 "diOrderNr" — VAL **%Q0.7**"xSorterRotate\_3" **-(** R **)**--6 — MAX %Q0.4 "xSorterBelt\_1" **-(** s **)**-**%Q0.3**"xSorterRotate\_1" **-(** s **)**-%Q0.6 "xSorterBelt\_2" **--(** ℝ **)**--%Q0.5 "xSorterRotate\_2" **-(** R **)**− OUT\_RANGE %Q1.0 "xSorterBelt\_3" **-(** s **)**-%MD10 "diOrderNr" — VAL **%Q0.7** "xSorterRotate\_3" 6 — MAX **-(** s **)**-**%Q0.4**"xSorterBelt\_1" **-(** R **)**-**%Q0.3**"xSorterRotate\_1" **-(** ℝ **)**--**%Q0.6**"xSorterBelt\_2" **-(** R **)**-%Q0.5 "xSorterRotate\_2" **-(** R **)**− %M0.0 %Q1.0 "xSorterBelt\_3" "xStateStart" -( R )-%Q0.7 "xSorterRotate\_3" **-(** R **)**-"xSorterBelt\_1" \_( R )\_\_\_\_ %Q0.3 "xSorterRotate\_1" \_( R )\_\_\_\_ %Q0.6 "xSorterBelt\_2" —( R )—— %Q0.5 "xSorterRotate\_2" —( R )—— **Network 12: Push buton's LEDs** Push buton's LEDs

Totally Integrated **Automation Portal** %M0.0 "xStateStart" %Q1.1 "xPbStartLed" %Q1.3 "xPbStopLed" H NOT H **%M3.0**"xStep\_
ConvEntry\_0\_
Init" %Q1.2 "xPbResetLed" %M0.0 %M50.5 "xStateStart" "Clock\_1Hz" **-**( )-Network 13: %DB3 "IEC\_Counter\_ Part\_1" CTU %Q0.4 %10.0 "xSorterBelt\_1" "xSensorAtExit" Int - CU %QD30

"diCounterProduct
CV — Green" %M0.0 %10.2 "xPbReset" "xStateStart" 12 — PV **%DB4**"IEC\_Counter\_
Part\_2" **%Q0.6**"xSorterBelt\_2" CTU %10.0 "xSensorAtExit" Int - CU %QD34 "diCounterProduct %M0.0 %10.2 "xPbReset" "xStateStart" 12 — PV **%DB5**"IEC\_Counter\_
Part\_3" CTU %Q1.0 %10.0 "xSorterBelt\_3" "xSensorAtExit" Int - CU %QD38
"diCounterProduct
CV ── Metal" %M0.0 %10.2 "xStateStart" "xPbReset" 12 — PV **Network 14: FIO communication** "MHJ-PLC-Lab-Function-S71200" ENO