

Totally Integrated Automation Portal		
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PLC_1 [CPU 1212C AC/DC/Rly]

PLC_1

General\Project information

Name	PLC_1	Author	Asus
Comment		Slot	1
Rack	0		

General\Catalog information

Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK/ SOURCE, DQ6 x relay and AI2 on board; 4 high-speed counters (expandable with digital signal board) and 4 pulse outputs on board; signal board expands on-board I/O; up to 3 communication modules for serial communication; up to 2 signal modules for I/O expansion; PROFINET IO controller, I-device, transport protocol TCP/IP, secure Open User Communication, S7 communication, Web server, OPC UA: Server DA
Article number	6ES7 212-1BE40-0XB0	Firmware version	V4.4

General\Identification & Maintenance

Plant designation		Location identifier	
Installation date	2023-02-17 07:29:25.735	Additional information	

General\Checksums

Text lists	FA 70 E8 75 1D 5A 8E 29	Software	AD FA 25 9D 3D 99 07 41
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PROFINET interface [X1]\General

Name	PROFINET interface_1	Author	Asus
Comment			

PROFINET interface [X1]\General\Project information

Name	DI 8/DQ 6_1	Comment	
Name	AI 2_1	Comment	

PROFINET interface [X1]\Ethernet addresses\Interface networked with

Subnet:	PN/IE_1		
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PROFINET interface [X1]\Ethernet addresses\IP protocol

IP configuration	Set IP address in the project	IP address:	192.168.0.1
Subnet mask:	255.255.255.0	Use router	False

PROFINET interface [X1]\Ethernet addresses\PROFINET

PROFINET device name is set directly at the device	False	Generate PROFINET device name automatically	True
PROFINET device name:	plc_1	Converted name:	plcxb1d0ed
Device number:	0		

PROFINET interface [X1]\Time synchronization


Enable time synchronization via NTP server	Enable time synchronization via NTP server		IP addresses
Server 1	0.0.0.0	Server 2	0.0.0.0
Server 3	0.0.0.0	Server 4	0.0.0.0
Update interval	10sec		
CPU synchronizes the modules of the device.	No synchronization		

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PROFINET interface [X1]\Digital inputs\Channel0		
Channel address	I0.0	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel0\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49152
Event name:	0	Hardware interrupt: 0
Rising edge0	Rising edge0	
PROFINET interface [X1]\Digital inputs\Channel0\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49280
Event name:	0	Hardware interrupt: 0
Falling edge0	Falling edge0	
PROFINET interface [X1]\Digital inputs\Channel1		
Channel address	I0.1	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel1\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49153
Event name:	0	Hardware interrupt: 0
Rising edge1	Rising edge1	
PROFINET interface [X1]\Digital inputs\Channel1\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49281
Event name:	0	Hardware interrupt: 0
Falling edge1	Falling edge1	
PROFINET interface [X1]\Digital inputs\Channel2		
Channel address	I0.2	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel2\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49154
Event name:	0	Hardware interrupt: 0
Rising edge2	Rising edge2	
PROFINET interface [X1]\Digital inputs\Channel2\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49282
Event name:	0	Hardware interrupt: 0
Falling edge2	Falling edge2	
PROFINET interface [X1]\Digital inputs\Channel3		
Channel address	I0.3	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel3\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49155
Event name:	0	Hardware interrupt: 0
Rising edge3	Rising edge3	
PROFINET interface [X1]\Digital inputs\Channel3\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49283
Event name:	0	Hardware interrupt: 0
Falling edge3	Falling edge3	
PROFINET interface [X1]\Digital inputs\Channel4		
Channel address	I0.4	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel4\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49156
Event name:	0	Hardware interrupt: 0

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Rising edge4		Rising edge4			
PROFINET interface [X1]\Digital inputs\Channel4\					
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49284		
Event name:	0	Hardware interrupt:	0		
Falling edge4		Falling edge4			
PROFINET interface [X1]\Digital inputs\Channel5					
Channel address	I0.5	Input filters	6.4 millise		
Enable pulse catch	0				
PROFINET interface [X1]\Digital inputs\Channel5\					
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49157		
Event name:	0	Hardware interrupt:	0		
Rising edge5		Rising edge5			
PROFINET interface [X1]\Digital inputs\Channel5\					
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49285		
Event name:	0	Hardware interrupt:	0		
Falling edge5		Falling edge5			
PROFINET interface [X1]\Digital inputs\Channel6					
Channel address	I0.6	Input filters	6.4 millise		
Enable pulse catch	0				
PROFINET interface [X1]\Digital inputs\Channel6\					
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49158		
Event name:	0	Hardware interrupt:	0		
Rising edge6		Rising edge6			
PROFINET interface [X1]\Digital inputs\Channel6\					
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49286		
Event name:	0	Hardware interrupt:	0		
Falling edge6		Falling edge6			
PROFINET interface [X1]\Digital inputs\Channel7					
Channel address	I0.7	Input filters	6.4 millise		
Enable pulse catch	0				
PROFINET interface [X1]\Digital inputs\Channel7\					
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49159		
Event name:	0	Hardware interrupt:	0		
Rising edge7		Rising edge7			
PROFINET interface [X1]\Digital inputs\Channel7\					
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49287		
Event name:	0	Hardware interrupt:	0		
Falling edge7		Falling edge7			
PROFINET interface [X1]\Analog inputs\Noise reduction					
Integration time	50 Hz (20 ms)				
PROFINET interface [X1]\Analog inputs\Channel0					
Channel address	IW64	Measurement type	Voltage		
Voltage range	0..10 V	Smoothing	Weak (4 cycles)		
		Enable overflow diagnostics	1		
PROFINET interface [X1]\Analog inputs\Channel1					
Channel address	IW66	Measurement type	Voltage		
Voltage range	0..10 V	Smoothing	Weak (4 cycles)		
		Enable overflow diagnostics	1		
PROFINET interface [X1]\Digital outputs					
Reaction to CPU STOP	Use substitute value				

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PROFINET interface [X1]\Digital outputs\Channel0			
Channel address	Q0.0	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel1			
Channel address	Q0.1	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel2			
Channel address	Q0.2	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel3			
Channel address	Q0.3	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel4			
Channel address	Q0.4	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel5			
Channel address	Q0.5	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Operating mode			
IO controller	True	IO system	
Device number	0	IO device	False
PROFINET interface [X1]\I/O addresses\Input addresses			
Start address	0.0	End address	0.7
Organization block	0	Process image	0
PROFINET interface [X1]\I/O addresses\Input addresses			
Start address	64	End address	67
Organization block	0	Process image	0
PROFINET interface [X1]\I/O addresses\Output addresses			
Start address	0.0	End address	0.7
Organization block	0	Process image	0
PROFINET interface [X1]\Advanced options\Interface options			
Support device replacement without exchangeable medium	True	Permit overwriting of device names of all assigned IO devices	False
Use IEC V2.2 LLDP mode	False	Keep-Alive connection monitoring:	30s
PROFINET interface [X1]\Advanced options\Real time settings\IO communication			
Send clock:	1.000ms		
PROFINET interface [X1]\Advanced options\Real time settings\Real time options			
Calculated bandwidth for cyclic IO data:	0.000ms	Calculated bandwidth for cyclic IO data:	0.000%
PROFINET interface [X1]\Advanced options\Port [X1 P1]\General			
Name	Port_1	Author	Asus
Comment			
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port interconnection\Local port:			
Local port:	PLC_1\PROFINET interface_1 [X1]\Port_1 [X1 P1]	Medium:	Copper
Cable name:	---		

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PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port interconnection\Partner port:			
	Monitoring of partner port is not possible	Partner port:	Any partner
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Activate			
Activate this port for use	True		
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Connection			
Transmission rate / duplex:	Automatic	Monitor	False
Enable autonegotiation	True		
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Boundaries			
End of detection of accessible devices	False	End of topology discovery	False
End of the sync domain	False		
PROFINET interface [X1]\Web server access			
Enable Web server for the IP address of this interface	False	The Web server must also be activated in the properties of the PLC.	
High speed counters (HSC)\HSC1\General\Enable			
Enable this high speed counter	0	Enable this high speed counter	0
Enable this high speed counter	0	Enable this high speed counter	0
Enable this high speed counter	0	Enable this high speed counter	0
High speed counters (HSC)\HSC1\General\Project information			
Name	HSC_1	Comment	
Name	HSC_2	Comment	
Name	HSC_3	Comment	
Name	HSC_4	Comment	
Name	HSC_5	Comment	
Name	HSC_6	Comment	
High speed counters (HSC)\HSC1\I/O addresses\Input addresses			
Start address	1000.0	End address	1003.7
Start address	1004.0	End address	1007.7
Organization block	0	Start address	1008.0
End address	1011.7	Organization block	0
Process image	0	Start address	1012.0
End address	1015.7	Organization block	0
Process image	0	Start address	1016.0
End address	1019.7	Organization block	0
Process image	0	Start address	1020.0
End address	1023.7	Organization block	0
Process image	0	Organization block	0
Process image	0	Process image	0
Pulse generators (PTO/PWM)\PTO1/PWM1\General\Enable			
Enable this pulse generator	0	Enable this pulse generator	0

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Pulse generators (PTO/PWM)\PTO1/PWM1\General\Project information					
Name	Pulse_1		Comment		
Name	Pulse_2		Comment		
Pulse generators (PTO/PWM)\PTO1/PWM1\I/O addresses\Output addresses					
Start address	1000.0		End address	1001.7	
Start address	1002.0		End address	1003.7	
Organization block	0		Organization block	0	
Process image	0		Process image	0	
Startup					
Startup after POWER ON	Warm restart - mode before POWER OFF		Comparison preset to actual configuration	Startup CPU even if mismatch	
Configuration time	60000ms		OBs should be interruptible	1	
Cycle					
Cycle monitoring time	150ms				
Enable minimum cycle time for cyclic OBs	0		Minimum cycle time	1ms	
Communication load					
Cycle load due to communication	20%				
System and clock memory\System memory bits					
Enable the use of system memory byte	0		Address of system memory byte (MBx)	1	
First cycle			Diagnostic status changed		
Always 1 (high)			Always 0 (low)		
System and clock memory\Clock memory bits					
Enable the use of clock memory byte	0		Address of clock memory byte (MBx)	0	
10 Hz clock			5 Hz clock		
2.5 Hz clock			2 Hz clock		
1.25 Hz clock			1 Hz clock		
0.625 Hz clock			0.5 Hz clock		
Web server\General					
Activate Web server on all modules of this device	False		Permit access only with HTTPS	True	
Web server\Automatic update					
Enable automatic update	True		Update interval	0s	
Web server\User management					
User name			User rights		
Everybody					
Web server\User-defined web pages					
Application name	HTML source path	Default HTML page	Files with dynamic content	Web DB number	Fragment DB number
		index.htm	.htm;.html	333	334
Web server\Overview of interfaces					
Device		Interface		Enabled web server access	
PLC_1		PROFINET interface_1		False	
User interface languages					
Assign project language			User interface languages		
English (United States)			German		
English (United States)			English		
English (United States)			French		
English (United States)			Spanish		
English (United States)			Italian		
English (United States)			Chinese (simplified)		

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Time of day\Local time					
Time zone		(UTC +07:00) Bangkok, Hanoi, Jakarta			
Time of day\Daylight saving time					
Activate daylight saving time		0		Difference between standard and daylight saving time 60mins	
Time of day\Daylight saving time\Start of daylight saving time					
Starting week of the month:		First		Sunday	
of		January		at Midnight	
Time of day\Daylight saving time\Start of standard time					
		First		Sunday	
of		January		at Midnight	
Protection & Security					
Level of protection		No protection			
Protection & Security\Connection mechanisms					
Permit access with PUT/GET communication from remote partner		False			
Protection & Security\Security event					
Summarize diagnostics in case of high message volume		True		Length of an interval 20	
Unit		seconds			
Protection & Security\External load memory					
Disable copying from internal load memory to external load memory		False			
Configuration control\Configuration control for central configuration					
Allow to reconfigure the device via the user program		0			
Connection resources\					
	Station resources - Reserved - Maximum	Station resources - Reserved - Configured	Station resources - Dynamic - Configured	Module resources - PLC_1 [CPU 1212C AC/DC/Rly] - Configured	
Maximum number of resources:		62	6	68	
	Maximum	Configured	Configured	Configured	
PG communication:	4	-	-	-	
HMI communication:	12	1	0	1	
S7 communication:	8	0	0	0	
Open user communication:	8	0	0	0	
Web communication:	30	-	-	-	
Other communication:	-	-	0	0	
Total resources used:		1	0	1	
Available resources:		61	6	67	
Overview of addresses\Overview of addresses\Overview of addresses					
Inputs		True		Outputs True	
Address gaps		False		Slot True	

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Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
I	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	1 1
O	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	1 1
I	64	67	AI 2_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 2
I	1000	1003	HSC_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 16
I	1004	1007	HSC_2	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 17
I	1008	1011	HSC_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 18
I	1012	1015	HSC_4	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 19
I	1016	1019	HSC_5	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 20
I	1020	1023	HSC_6	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 21
O	1000	1001	Pulse_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 32
O	1002	1003	Pulse_2	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 33
O	1004	1005	Pulse_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 34
O	1006	1007	Pulse_4	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 35
I	12	13	DI 16x24VDC /DQ 16xRe-lay_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2
O	12	13	DI 16x24VDC /DQ	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2

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Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
			16xRe-lay_1							

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks

Main [OB1]

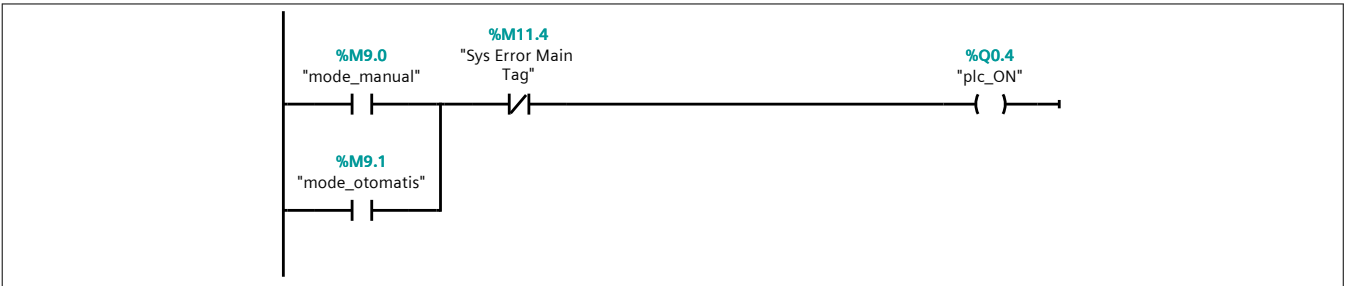
Main Properties

General					
Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Automatic		
Information					
Title	"Main Program Sweep (Cycle)"	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
Initial_Call	Bool		Initial call of this OB
Remanence	Bool		=True, if remanent data are available
▼ Temp			
retval	Int		
Constant			

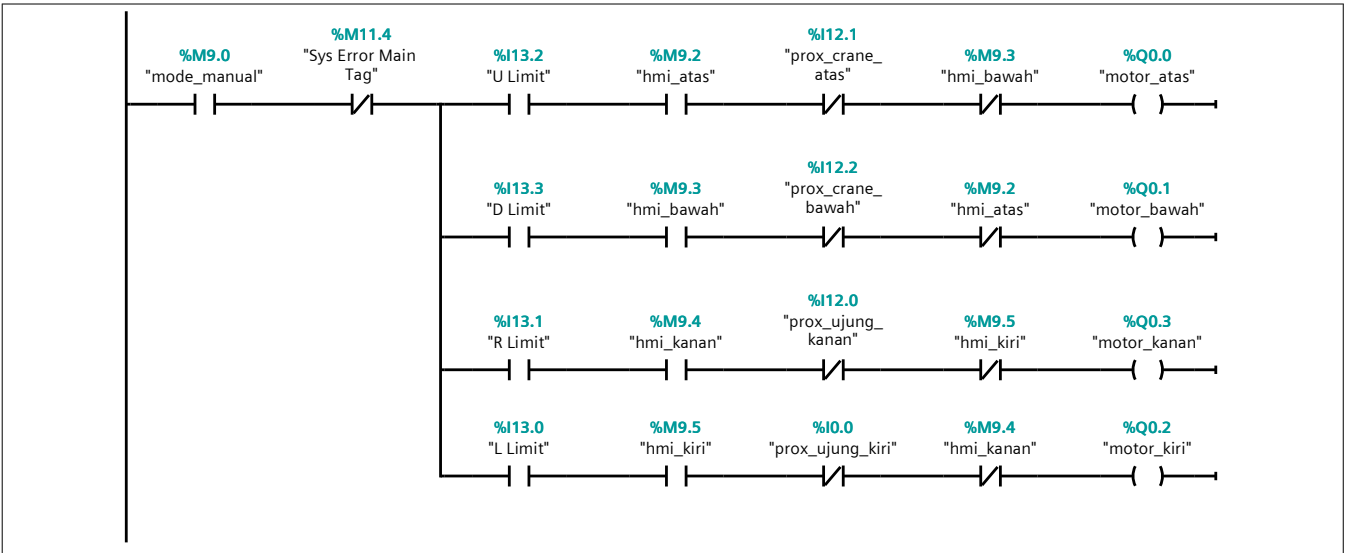
Network 2:

Pemilihan menggunakan selector switch manual atau menggunakan PLC



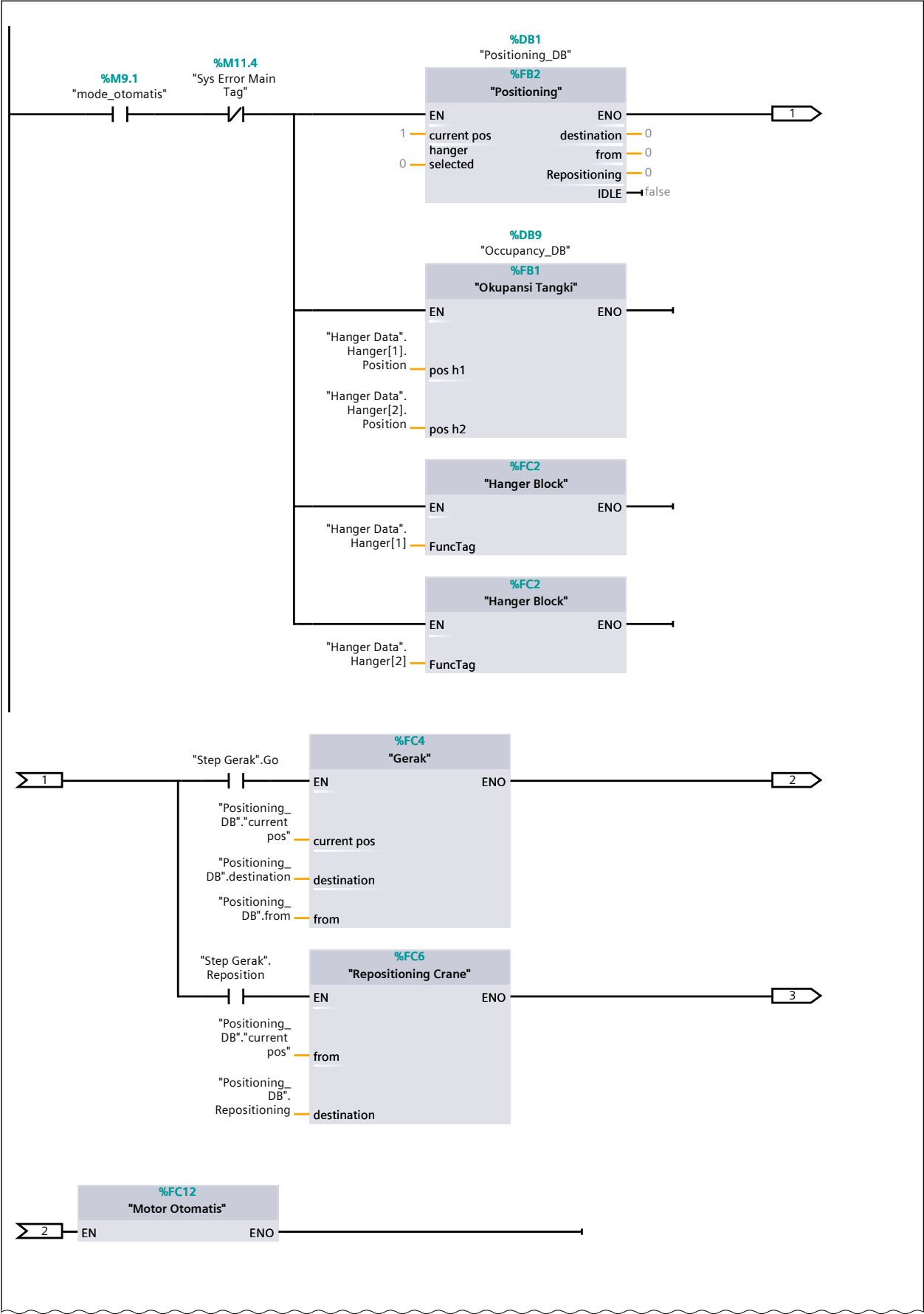
Network 3:

Pengaturan mode manual



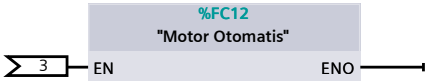
Totally Integrated Automation Portal		
Network 4: Mode otomatis		

Network 4: (1.1 / 2.1)

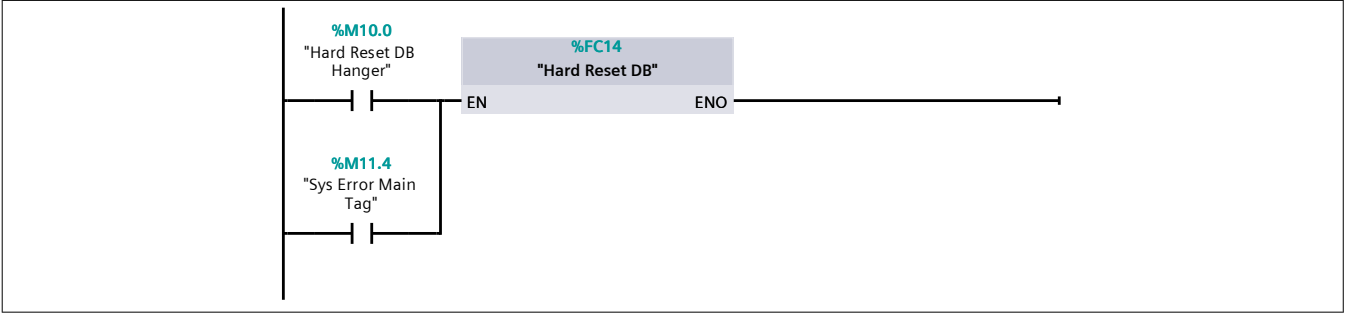


Network 4: (2.1 / 2.1)

1.1 (Page2 - 3)

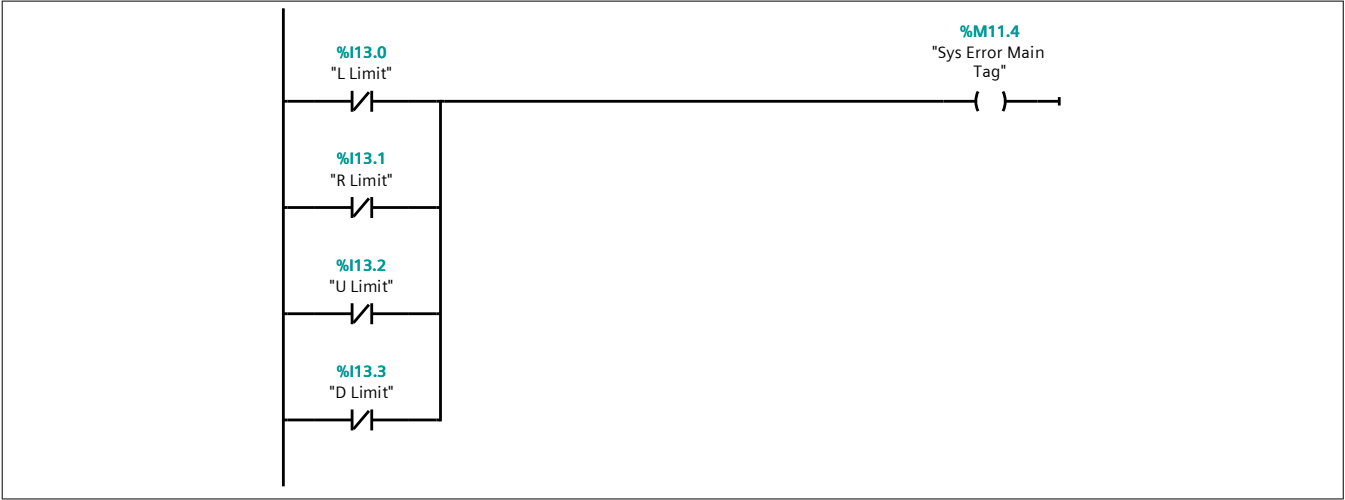


Network 5: Hard Reset DB

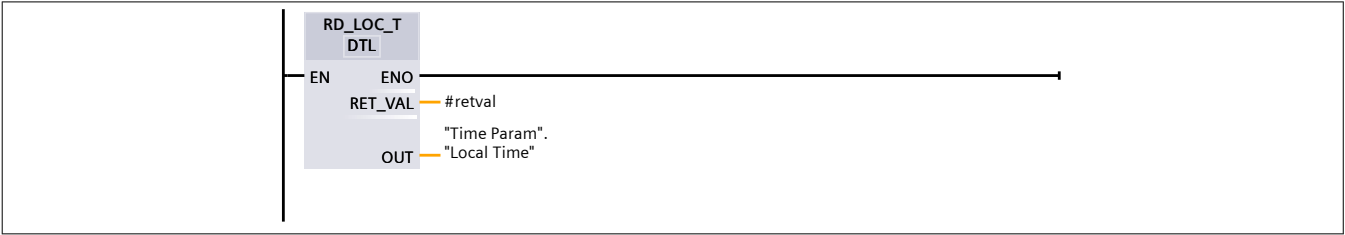


Network 6: Network trigger error

Limit switch dipasang NC pada rangkaian sehingga pada rung dipasang NO



Network 7: Input Time



<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>Timer geser kiri [DB5]</div> </div>												
Timer geser kiri Properties												
General												
Name	Timer geser kiri		Number	5		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HMI/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources

Timer geser kiri [DB5]

Timer geser kiri Properties												
General												
Name	Timer geser kiri		Number	5		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					

Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HM I/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

Timer gesser kiri Properties					
General					
Name	Timer gesser kiri	Number	5	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Timer gesser kiri Properties					
General					
Name	Timer gesser kiri	Number	5	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Timer gesser kiri Properties					
General					
Name	Timer gesser kiri	Number	5	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HMI/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>On Delay kanan [DB7]</div> </div>												
On Delay kanan Properties												
General												
Name	On Delay kanan		Number	7		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>On Delay kanan [DB7]</div> </div>												
On Delay kanan Properties												
General												
Name	On Delay kanan		Number	7		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HMI/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>On Delay kanan [DB7]</div> </div>												
On Delay kanan Properties												
General												
Name	On Delay kanan		Number	7		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>On Delay kanan [DB7]</div> </div>												
On Delay kanan Properties												
General												
Name	On Delay kanan		Number	7		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HMI/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources

On Delay kanan [DB7]

On Delay kanan Properties

General

Name	On Delay kanan	Number	7	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Name	Data type	Start value	Retain	Access- sible from HMI/O PC UA/We b API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>On Delay kanan [DB7]</div> </div>												
On Delay kanan Properties												
General												
Name	On Delay kanan		Number	7		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources

On Delay kanan [DB7]

On Delay kanan Properties

General

Name	On Delay kanan	Number	7	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources

On Delay kanan [DB7]

On Delay kanan Properties

General

Name	On Delay kanan	Number	7	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>Timer geser kanan [DB8]</div> </div>												
Timer geser kanan Properties												
General												
Name	Timer geser kanan		Number	8		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

<div> <div>PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / System blocks / Program resources</div> <div>Timer geser kanan [DB8]</div> </div>												
Timer geser kanan Properties												
General												
Name	Timer geser kanan		Number	8		Type	DB					
Language	DB		Numbering	Automatic								
Information												
Title			Author	Simatic		Comment						
Family	IEC		Version	1.0		User-defined ID	IEC_TMR					
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super-vision	Comment			
▼ Static												
PT	Time	T#0ms	False	True	True	True	False					
ET	Time	T#0ms	False	True	False	True	False					
IN	Bool	false	False	True	True	True	False					
Q	Bool	false	False	True	False	True	False					

Timer gesser kanan Properties					
General					
Name	Timer gesser kanan	Number	8	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Timer gesser kanan Properties					
General					
Name	Timer gesser kanan	Number	8	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Timer gesser kanan Properties					
General					
Name	Timer gesser kanan	Number	8	Type	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Information					
Title		Author	Simatic	Comment	
Family	IEC	Version	1.0	User-defined ID	IEC_TMR

Name	Data type	Start value	Retain	Accessible from HMI/O PC UA/Web API	Writable from HMI/O PC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
▼ Static									
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

Hanger Data [DB10]

Hanger Data Properties

General

Name	Hanger Data	Number	10	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble from eng- ineer- ing HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Static									
▼ Hanger	Ar- ray[1..2] of "Hang- er"		False	True	True	True	True		
▼ Hanger[1]	"Hanger"		False	True	True	True	True		
Timer_Start	Bool	false	False	True	True	True	False		
Timer_Reset	Bool	false	False	True	True	True	False		
▼ IEC Timer Proses	Ar- ray[0..9] of IEC_TIMER		False	True	True	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/Web API	Wri- ta- ble from HMI I/O PC UA/ Web API	Visible in HMI engi- neering	Set- point	Super- vision	Comment
▼ IEC Timer Proses[2]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[3]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[4]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment	
Timer cel- up[8]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[9]	Time	T#0ms	False	True	True	True	False			
▼ Proc- ess_Start_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False			
Proc- ess_Start _Time[0]	DInt	9999999	False	True	True	True	False			
Proc- ess_Start _Time[1]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[2]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[3]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[4]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[5]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[6]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[7]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[8]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[9]	DInt	0	False	True	True	True	False			
▼ Proc- ess_Stop_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False			
Proc- ess_Stop_ Time[0]	DInt	9999999	False	True	True	True	False			
Proc- ess_Stop_ Time[1]	DInt	0	False	True	True	True	False			
Proc- ess_Stop_ Time[2]	DInt	0	False	True	True	True	False			

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	Proc- ess_Stop_ Time[3]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[4]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[5]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[8]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[9]	DInt	0	False	True	True	True	False		
	▼ Setpoint	Ar- ray[0..9] of Time		False	True	True	True	False		
	Set- point[0]	Time	T#0ms	False	True	True	True	False		
	Set- point[1]	Time	T#0MS	False	True	True	True	False		
	Set- point[2]	Time	T#0MS	False	True	True	True	False		
	Set- point[3]	Time	T#0MS	False	True	True	True	False		
	Set- point[4]	Time	T#0MS	False	True	True	True	False		
	Set- point[5]	Time	T#0ms	False	True	True	True	False		
	Set- point[6]	Time	T#0ms	False	True	True	True	False		
	Set- point[7]	Time	T#0ms	False	True	True	True	False		
	Set- point[8]	Time	T#0ms	False	True	True	True	False		
	Set- point[9]	Time	T#0ms	False	True	True	True	False		
	Start_ToD	Time_Of_ Day	TOD#00:00:00	False	True	True	True	False		
	Stop_ToD	Time_Of_ Day	TOD#00:00:00	False	True	True	True	False		

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/Web API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neering	Set- point	Super- vision	Comment
	Start Posi- tion	Int	3	False	True	True	True	False		
	Position	Int	3	False	True	True	True	False		
	Destination	Int	0	False	True	True	True	False		
	Next Desti- nation	Int	0	False	True	True	True	False		
	Ready	Bool	false	False	True	True	True	False		
	Proses	Int	0	False	True	True	True	False		
	Nomor Pro- ses	Int	0	False	True	True	True	False		
	Jml Proses	Int	0	False	True	True	True	False		
	Homebase	Int	3	False	True	True	True	False		
	Set- point_Ready	Bool	false	False	True	True	True	False		
	Check- er_Ready	Bool	false	False	True	True	True	False		
	Time_Ready	Bool	false	False	True	True	True	False		
	Occupan- cy_Ready	Bool	false	False	True	True	True	False		
	HMI_Ready	Bool	false	False	True	True	True	False		
	HMI_Finish	Bool	false	False	True	True	True	False		
	HMI_Reset	Bool	false	False	True	True	True	False		
	Crane_Read y	Bool	false	False	True	True	True	False		
	Finish Proc- ess	Bool	false	False	True	True	True	False		
	Divert	Bool	false	False	True	True	True	False		
	Nomor Hanger	Int	1	False	True	True	True	False		
	CNT_HMI_Re ady	Int	0	False	True	True	True	False		
	▼ Hanger[2]	"Hanger"		False	True	True	True	True		
	Timer_Start	Bool	false	False	True	True	True	False		
	Timer_Reset	Bool	false	False	True	True	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment	
▼ IEC Timer Proses	Ar- ray[0..9] of IEC_TIMER		False	True	True	True	False			
▼ IEC Timer Proses[0]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ IEC Timer Proses[1]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ IEC Timer Proses[2]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ IEC Timer Proses[3]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ IEC Timer Proses[4]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble from HMI I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[7]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[9]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment	
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ Timer celup	Ar- ray[0..9] of Time		False	True	True	True	False			
Timer celup[0]	Time	T#0ms	False	True	True	True	False			
Timer celup[1]	Time	T#0ms	False	True	True	True	False			
Timer celup[2]	Time	T#0ms	False	True	True	True	False			
Timer celup[3]	Time	T#0ms	False	True	True	True	False			
Timer celup[4]	Time	T#0ms	False	True	True	True	False			
Timer celup[5]	Time	T#0ms	False	True	True	True	False			
Timer celup[6]	Time	T#0ms	False	True	True	True	False			
Timer celup[7]	Time	T#0ms	False	True	True	True	False			
Timer celup[8]	Time	T#0ms	False	True	True	True	False			
Timer celup[9]	Time	T#0ms	False	True	True	True	False			
▼ Proc- ess_Start_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False			
Proc- ess_Start _Time[0]	DInt	9999999	False	True	True	True	False			
Proc- ess_Start _Time[1]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[2]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[3]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[4]	DInt	0	False	True	True	True	False			
Proc- ess_Start _Time[5]	DInt	0	False	True	True	True	False			

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	Proc- ess_Start _Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[8]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[9]	DInt	0	False	True	True	True	False		
▼	Proc- ess_Stop_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False		
	Proc- ess_Stop_ Time[0]	DInt	9999999	False	True	True	True	False		
	Proc- ess_Stop_ Time[1]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[2]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[3]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[4]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[5]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[8]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[9]	DInt	0	False	True	True	True	False		
▼	Setpoint	Ar- ray[0..9] of Time		False	True	True	True	False		
	Set- point[0]	Time	T#0ms	False	True	True	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment	
Set-point[1]	Time	T#40S	False	True	True	True	False			
Set-point[2]	Time	T#40S	False	True	True	True	False			
Set-point[3]	Time	T#40S	False	True	True	True	False			
Set-point[4]	Time	T#40S	False	True	True	True	False			
Set-point[5]	Time	T#0ms	False	True	True	True	False			
Set-point[6]	Time	T#0ms	False	True	True	True	False			
Set-point[7]	Time	T#0ms	False	True	True	True	False			
Set-point[8]	Time	T#0ms	False	True	True	True	False			
Set-point[9]	Time	T#0ms	False	True	True	True	False			
Start_ToD	Time_Of_Day	TOD#00:00:00	False	True	True	True	False			
Stop_ToD	Time_Of_Day	TOD#00:00:00	False	True	True	True	False			
Start Position	Int	2	False	True	True	True	False			
Position	Int	2	False	True	True	True	False			
Destination	Int	0	False	True	True	True	False			
Next Destination	Int	0	False	True	True	True	False			
Ready	Bool	false	False	True	True	True	False			
Proses	Int	0	False	True	True	True	False			
Nomor Proses	Int	0	False	True	True	True	False			
Jml Proses	Int	0	False	True	True	True	False			
Homebase	Int	2	False	True	True	True	False			
Set-point_Ready	Bool	false	False	True	True	True	False			
Checker_Ready	Bool	false	False	True	True	True	False			
Time_Ready	Bool	false	False	True	True	True	False			
Occupancy_Ready	Bool	false	False	True	True	True	False			

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neer-ing	Set-point	Super- vision	Comment	
HMI_Ready	Bool	false	False	True	True	True	False			
HMI_Finish	Bool	false	False	True	True	True	False			
HMI_Reset	Bool	false	False	True	True	True	False			
Crane_Ready	Bool	false	False	True	True	True	False			
Finish Process	Bool	false	False	True	True	True	False			
Divert	Bool	false	False	True	True	True	False			
Nomor Hanger	Int	2	False	True	True	True	False			
CNT_HMI_Ready	Int	0	False	True	True	True	False			
▼ Predict	Ar-ray[1..2] of "NP Ready"		False	True	True	True	False			
▼ Predict[1]	"NP Ready"		False	True	True	True	False			
▼ NP Ready	Ar-ray[0..6] of Bool		False	True	True	True	False			
NP Ready[0]	Bool	false	False	True	True	True	False			
NP Ready[1]	Bool	false	False	True	True	True	False			
NP Ready[2]	Bool	false	False	True	True	True	False			
NP Ready[3]	Bool	false	False	True	True	True	False			
NP Ready[4]	Bool	false	False	True	True	True	False			
NP Ready[5]	Bool	false	False	True	True	True	False			
NP Ready[6]	Bool	false	False	True	True	True	False			
▼ Predict[2]	"NP Ready"		False	True	True	True	False			
▼ NP Ready	Ar-ray[0..6] of Bool		False	True	True	True	False			
NP Ready[0]	Bool	false	False	True	True	True	False			
NP Ready[1]	Bool	false	False	True	True	True	False			

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- sible from HMI/O PC UA/We b API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	NP Ready[2]	Bool	false	False	True	True	True	False		
	NP Ready[3]	Bool	false	False	True	True	True	False		
	NP Ready[4]	Bool	false	False	True	True	True	False		
	NP Ready[5]	Bool	false	False	True	True	True	False		
	NP Ready[6]	Bool	false	False	True	True	True	False		
▼	Priority	Ar- ray[1..2] of Bool		False	True	True	True	True		
	Priority[1]	Bool	false	False	True	True	True	True		
	Priority[2]	Bool	false	False	True	True	True	True		
▼	Predict Crane	Ar- ray[1..2] of "Predict Crane"		False	True	True	True	False		
▼	Predict Crane[1]	"Predict Crane"		False	True	True	True	False		
▼	C_Ready	Ar- ray[0..10] of Bool		False	True	True	True	False		
	C_Ready[0]	Bool	false	False	True	True	True	False		
	C_Ready[1]	Bool	false	False	True	True	True	False		
	C_Ready[2]	Bool	false	False	True	True	True	False		
	C_Ready[3]	Bool	false	False	True	True	True	False		
	C_Ready[4]	Bool	false	False	True	True	True	False		
	C_Ready[5]	Bool	false	False	True	True	True	False		
	C_Ready[6]	Bool	false	False	True	True	True	False		
	C_Ready[7]	Bool	false	False	True	True	True	False		
	C_Ready[8]	Bool	false	False	True	True	True	False		
	C_Ready[9]	Bool	false	False	True	True	True	False		
	C_Ready[10]	Bool	false	False	True	True	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Start	Ar- ray[0..10] of DInt		False	True	True	True	False		
Start[0]	DInt	0	False	True	True	True	False		
Start[1]	DInt	0	False	True	True	True	False		
Start[2]	DInt	0	False	True	True	True	False		
Start[3]	DInt	0	False	True	True	True	False		
Start[4]	DInt	0	False	True	True	True	False		
Start[5]	DInt	0	False	True	True	True	False		
Start[6]	DInt	0	False	True	True	True	False		
Start[7]	DInt	0	False	True	True	True	False		
Start[8]	DInt	0	False	True	True	True	False		
Start[9]	DInt	0	False	True	True	True	False		
Start[10]	DInt	999999999	False	True	True	True	False		
▼ Stop	Ar- ray[0..10] of DInt		False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[0]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[1]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[2]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[3]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[4]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[5]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[6]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]	DInt	999999999	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Predict Crane[2]	"Predict Crane"		False	True	True	True	False		
▼ C_Ready	Ar- ray[0..10] of Bool		False	True	True	True	False		
C_Ready[0]	Bool	false	False	True	True	True	False		
C_Ready[1]	Bool	false	False	True	True	True	False		
C_Ready[2]	Bool	false	False	True	True	True	False		
C_Ready[3]	Bool	false	False	True	True	True	False		
C_Ready[4]	Bool	false	False	True	True	True	False		
C_Ready[5]	Bool	false	False	True	True	True	False		
C_Ready[6]	Bool	false	False	True	True	True	False		
C_Ready[7]	Bool	false	False	True	True	True	False		
C_Ready[8]	Bool	false	False	True	True	True	False		
C_Ready[9]	Bool	false	False	True	True	True	False		
C_Ready[10]	Bool	false	False	True	True	True	False		
▼ Start	Ar- ray[0..10] of DInt		False	True	True	True	False		
Start[0]	DInt	0	False	True	True	True	False		
Start[1]	DInt	0	False	True	True	True	False		
Start[2]	DInt	0	False	True	True	True	False		
Start[3]	DInt	0	False	True	True	True	False		
Start[4]	DInt	0	False	True	True	True	False		
Start[5]	DInt	0	False	True	True	True	False		
Start[6]	DInt	0	False	True	True	True	False		
Start[7]	DInt	0	False	True	True	True	False		
Start[8]	DInt	0	False	True	True	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/Web API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neering	Set- point	Super- vision	Comment
Start[9]	DInt	0	False	True	True	True	False		
Start[10]	DInt	999999999	False	True	True	True	False		
▼ Stop	Ar- ray[0..10] of DInt		False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[0]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[1]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[2]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[3]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[4]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[5]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[6]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]	DInt	999999999	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
▼ Hanger Default	Ar- ray[1..2] of "Hang- er"		False	True	True	True	True		berisi start values array Hanger
▼ Hanger De- fault[1]	"Hanger"		False	True	True	True	True		berisi start values array Hanger
Timer_Start	Bool	false	False	True	True	True	False		
Timer_Reset	Bool	false	False	True	True	True	False		
▼ IEC Timer Proses	Ar- ray[0..9] of IEC_TIMER		False	True	True	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	Timer cel- up[1]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[2]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[3]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[4]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[5]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[6]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[7]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[8]	Time	T#0ms	False	True	True	True	False		
	Timer cel- up[9]	Time	T#0ms	False	True	True	True	False		
▼	Proc- ess_Start_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False		
	Proc- ess_Start _Time[0]	DInt	9999999	False	True	True	True	False		
	Proc- ess_Start _Time[1]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[2]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[3]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[4]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[5]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[8]	DInt	0	False	True	True	True	False		

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/Web API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
Proc- ess_Start _Time[9]		DInt	0	False	True	True	True	False		
▼ Proc- ess_Stop_Ti me		Ar- ray[0..9] of DInt		False	True	True	True	False		
Proc- ess_Stop_ Time[0]		DInt	9999999	False	True	True	True	False		
Proc- ess_Stop_ Time[1]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[2]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[3]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[4]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[5]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[6]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[7]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[8]		DInt	0	False	True	True	True	False		
Proc- ess_Stop_ Time[9]		DInt	0	False	True	True	True	False		
▼ Setpoint		Ar- ray[0..9] of Time		False	True	True	True	False		
Set- point[0]		Time	T#0ms	False	True	True	True	False		
Set- point[1]		Time	T#0ms	False	True	True	True	False		
Set- point[2]		Time	T#0ms	False	True	True	True	False		
Set- point[3]		Time	T#0ms	False	True	True	True	False		
Set- point[4]		Time	T#0ms	False	True	True	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neering	Set- point	Super- vision	Comment	
Set-point[5]	Time	T#0ms	False	True	True	True	False			
Set-point[6]	Time	T#0ms	False	True	True	True	False			
Set-point[7]	Time	T#0ms	False	True	True	True	False			
Set-point[8]	Time	T#0ms	False	True	True	True	False			
Set-point[9]	Time	T#0ms	False	True	True	True	False			
Start_ToD	Time_Of_Day	TOD#00:00:00	False	True	True	True	False			
Stop_ToD	Time_Of_Day	TOD#00:00:00	False	True	True	True	False			
Start Position	Int	3	False	True	True	True	False			
Position	Int	3	False	True	True	True	False			
Destination	Int	0	False	True	True	True	False			
Next Destination	Int	0	False	True	True	True	False			
Ready	Bool	false	False	True	True	True	False			
Proses	Int	0	False	True	True	True	False			
Nomor Proses	Int	0	False	True	True	True	False			
Jml Proses	Int	0	False	True	True	True	False			
Homebase	Int	3	False	True	True	True	False			
Set-point_Ready	Bool	false	False	True	True	True	False			
Checker_Ready	Bool	false	False	True	True	True	False			
Time_Ready	Bool	false	False	True	True	True	False			
Occupancy_Ready	Bool	false	False	True	True	True	False			
HMI_Ready	Bool	false	False	True	True	True	False			
HMI_Finish	Bool	false	False	True	True	True	False			
HMI_Reset	Bool	false	False	True	True	True	False			
Crane_Read y	Bool	false	False	True	True	True	False			

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
Finish Proc- ess	Bool	false	False	True	True	True	False		
Divert	Bool	false	False	True	True	True	False		
Nomor Hanger	Int	1	False	True	True	True	False		
CNT_HMI_Re- ady	Int	0	False	True	True	True	False		
▼ Hanger De- fault[2]	"Hanger"		False	True	True	True	True		berisi start values array Hanger
Timer_Start	Bool	false	False	True	True	True	False		
Timer_Reset	Bool	false	False	True	True	True	False		
▼ IEC Timer Proses	Ar- ray[0..9] of IEC_TIMER		False	True	True	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[2]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[3]	IEC_TIMER		False	True	True	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[4]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[7]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		
ET	Time	T#0ms	False	True	False	True	False		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		False	True	True	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/Web API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment	
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ IEC Timer Proses[9]	IEC_TIMER		False	True	True	True	False			
PT	Time	T#0ms	False	True	True	True	False			
ET	Time	T#0ms	False	True	False	True	False			
IN	Bool	false	False	True	True	True	False			
Q	Bool	false	False	True	False	True	False			
▼ Timer celup	Ar- ray[0..9] of Time		False	True	True	True	False			
Timer cel- up[0]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[1]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[2]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[3]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[4]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[5]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[6]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[7]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[8]	Time	T#0ms	False	True	True	True	False			
Timer cel- up[9]	Time	T#0ms	False	True	True	True	False			
▼ Proc- ess_Start_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False			
Proc- ess_Start _Time[0]	DInt	9999999	False	True	True	True	False			

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	Proc- ess_Start _Time[1]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[2]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[3]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[4]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[5]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[8]	DInt	0	False	True	True	True	False		
	Proc- ess_Start _Time[9]	DInt	0	False	True	True	True	False		
▼	Proc- ess_Stop_Ti me	Ar- ray[0..9] of DInt		False	True	True	True	False		
	Proc- ess_Stop_ Time[0]	DInt	9999999	False	True	True	True	False		
	Proc- ess_Stop_ Time[1]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[2]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[3]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[4]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[5]	DInt	0	False	True	True	True	False		

Totally Integrated Automation Portal										
Name		Data type	Start value	Retain	Access- sible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
	Proc- ess_Stop_ Time[6]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[7]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[8]	DInt	0	False	True	True	True	False		
	Proc- ess_Stop_ Time[9]	DInt	0	False	True	True	True	False		
	▼ Setpoint	Ar- ray[0..9] of Time		False	True	True	True	False		
	Set- point[0]	Time	T#0ms	False	True	True	True	False		
	Set- point[1]	Time	T#0ms	False	True	True	True	False		
	Set- point[2]	Time	T#0ms	False	True	True	True	False		
	Set- point[3]	Time	T#0ms	False	True	True	True	False		
	Set- point[4]	Time	T#0ms	False	True	True	True	False		
	Set- point[5]	Time	T#0ms	False	True	True	True	False		
	Set- point[6]	Time	T#0ms	False	True	True	True	False		
	Set- point[7]	Time	T#0ms	False	True	True	True	False		
	Set- point[8]	Time	T#0ms	False	True	True	True	False		
	Set- point[9]	Time	T#0ms	False	True	True	True	False		
	Start_ToD	Time_Of_ Day	TOD#00:00:00	False	True	True	True	False		
	Stop_ToD	Time_Of_ Day	TOD#00:00:00	False	True	True	True	False		
	Start Posi- tion	Int	2	False	True	True	True	False		
	Position	Int	2	False	True	True	True	False		
	Destination	Int	0	False	True	True	True	False		
	Next Desti- nation	Int	0	False	True	True	True	False		
	Ready	Bool	false	False	True	True	True	False		

Totally Integrated Automation Portal										
Name	Data type	Start value	Retain	Access-ible from HMI/O PC UA/Web API	Wri-ta-ble from HM I/O PC UA/ Web API	Visible in HMI engi-neering	Set-point	Super-vision	Comment	
Proses	Int	0	False	True	True	True	False			
Nomor Proses	Int	0	False	True	True	True	False			
Jml Proses	Int	0	False	True	True	True	False			
Homebase	Int	2	False	True	True	True	False			
Set-point_Ready	Bool	false	False	True	True	True	False			
Checker_Ready	Bool	false	False	True	True	True	False			
Time_Ready	Bool	false	False	True	True	True	False			
Occupancy_Ready	Bool	false	False	True	True	True	False			
HMI_Ready	Bool	false	False	True	True	True	False			
HMI_Finish	Bool	false	False	True	True	True	False			
HMI_Reset	Bool	false	False	True	True	True	False			
Crane_Ready	Bool	false	False	True	True	True	False			
Finish Process	Bool	false	False	True	True	True	False			
Divert	Bool	false	False	True	True	True	False			
Nomor Hanger	Int	2	False	True	True	True	False			
CNT_HMI_Ready	Int	0	False	True	True	True	False			
▼ Predict Default	Ar-ray[1..2] of "NP Ready"		False	True	True	True	True			
▼ Predict Default[1]	"NP Ready"		False	True	True	True	True			
▼ NP Ready	Ar-ray[0..6] of Bool		False	True	True	True	False			
NP Ready[0]	Bool	false	False	True	True	True	False			
NP Ready[1]	Bool	false	False	True	True	True	False			
NP Ready[2]	Bool	false	False	True	True	True	False			
NP Ready[3]	Bool	false	False	True	True	True	False			

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neering	Set- point	Super- vision	Comment
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
▼ Predict Crane Default[2]	"Predict Crane"		False	True	True	True	True		
▼ C_Ready	Ar- ray[0..10] of Bool		False	True	True	True	False		
C_Ready[0]	Bool	false	False	True	True	True	False		
C_Ready[1]	Bool	false	False	True	True	True	False		
C_Ready[2]	Bool	false	False	True	True	True	False		
C_Ready[3]	Bool	false	False	True	True	True	False		
C_Ready[4]	Bool	false	False	True	True	True	False		
C_Ready[5]	Bool	false	False	True	True	True	False		
C_Ready[6]	Bool	false	False	True	True	True	False		
C_Ready[7]	Bool	false	False	True	True	True	False		
C_Ready[8]	Bool	false	False	True	True	True	False		
C_Ready[9]	Bool	false	False	True	True	True	False		
C_Ready[10]	Bool	false	False	True	True	True	False		
▼ Start	Ar- ray[0..10] of DInt		False	True	True	True	False		
Start[0]	DInt	0	False	True	True	True	False		
Start[1]	DInt	0	False	True	True	True	False		
Start[2]	DInt	0	False	True	True	True	False		
Start[3]	DInt	0	False	True	True	True	False		
Start[4]	DInt	0	False	True	True	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
Start[5]	DInt	0	False	True	True	True	False		
Start[6]	DInt	0	False	True	True	True	False		
Start[7]	DInt	0	False	True	True	True	False		
Start[8]	DInt	0	False	True	True	True	False		
Start[9]	DInt	0	False	True	True	True	False		
Start[10]	DInt	0	False	True	True	True	False		
▼ Stop	Ar- ray[0..10] of DInt		False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[0]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[1]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[2]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[3]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[4]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[5]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[6]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]	DInt	0	False	True	True	True	False		sampe 10 untuk menja- ga logic cek CRANE

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

Occupancy_DB [DB9]

Occupancy_DB Properties

General

Name	Occupancy_DB	Number	9	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble from en- gineer- ing HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Input									
pos h1	Int	0	False	True	True	True	False		
pos h2	Int	0	False	True	True	True	False		
Output									
InOut									
▼ Static									
▼ occupancy	Ar- ray[0..9] of Bool		False	True	True	True	False		
occupancy[0]	Bool	TRUE	False	True	True	True	False		
occupancy[1]	Bool	false	False	True	True	True	False		
occupancy[2]	Bool	false	False	True	True	True	False		
occupancy[3]	Bool	false	False	True	True	True	False		
occupancy[4]	Bool	false	False	True	True	True	False		
occupancy[5]	Bool	false	False	True	True	True	False		
occupancy[6]	Bool	false	False	True	True	True	False		
occupancy[7]	Bool	false	False	True	True	True	False		
occupancy[8]	Bool	false	False	True	True	True	False		
occupancy[9]	Bool	false	False	True	True	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

Positioning_DB [DB1]

Positioning_DB Properties

General

Name	Positioning_DB	Number	1	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m eng- neer- ing	Visible in HMI	Set- point	Super- vision	Comment
Input									
▼ Output									
destination	Int	0	False	True	True	True	False		
from	Int	0	False	True	True	True	False		
Repositioning	Int	0	False	True	True	True	False		
IDLE	Bool	false	False	True	True	True	False		
▼ InOut									
current pos	Int	1	False	True	True	True	False		
hanger selected	Int	0	False	True	True	True	False		
▼ Static									
counter	Int	0	False	True	True	True	False		
counter2	Int	0	False	True	True	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

Step Gerak [DB2]

Step Gerak Properties

General

Name	Step Gerak	Number	2	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble from en- gineer- ing HMI/O PC UA/ Web API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
▼ Static									
Positioning step	Int	0	False	True	True	True	False		
Pindah 1	Bool	false	False	True	True	True	False		
Ambil	Bool	false	False	True	True	True	False		
Pindah 2	Bool	false	False	True	True	True	False		
Lepas	Bool	false	False	True	True	True	False		
Ambil step	Int	0	False	True	True	True	False		
Belok kiri	Bool	false	False	True	True	True	False		
Turun	Bool	false	False	True	True	True	False		
Belok kanan	Bool	false	False	True	True	True	False		
Naik	Bool	false	False	True	True	True	False		
Lepas step	Int	0	False	True	True	True	False		
Go	Bool	false	False	True	True	True	False		
Reposition	Bool	false	False	True	True	True	False		
Take	Bool	false	False	True	True	True	False		
Release	Bool	false	False	True	True	True	False		
Dump timer	Time	T#OS	False	True	True	True	False		
Time geser	Time	T#200MS	False	True	True	True	False		setpoint waktu ngegeser si crane tiap ambil/lepas

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	Access- sible from HMI/O PC UA/Web API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
Dump timer delay	Time	T#0S	False	True	True	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

Time Param [DB4]

Time Param Properties

General

Name	Time Param	Number	4	Type	DB
Language	DB	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Start value	Retain	Access- ible from HMI/O PC UA/We b API	Wri- ta- ble fro m eng- neer- ing	Visible in HMI	Set- point	Super- vision	Comment
▼ Static									
Naik	Time	T#13S	False	True	True	True	False		
Turun	Time	T#13S	False	True	True	True	False		
Avg Moving	Time	T#12S	False	True	True	True	False		
Naik_Int	Int	13	False	True	True	True	False		
Turun_Int	Int	13	False	True	True	True	False		
Avg Moving_Int	Int	12	False	True	True	True	False		
▼ Local Time	DTL	DTL#1970-01-01-00:00:00	False	True	True	True	False		
YEAR	UInt	1970	False	True	True	True	False		
MONTH	USInt	1	False	True	True	True	False		
DAY	USInt	1	False	True	True	True	False		
WEEKDAY	USInt	5	False	True	True	True	False		
HOUR	USInt	0	False	True	True	True	False		
MINUTE	USInt	0	False	True	True	True	False		
SECOND	USInt	0	False	True	True	True	False		
NANOSECOND	UDInt	0	False	True	True	True	False		

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak [FC4]

Gerak Properties

General

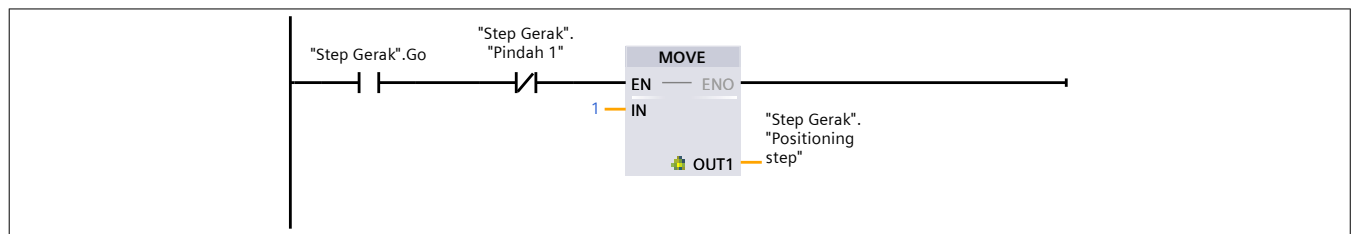
Name	Gerak	Number	4	Type	FC
Language	LAD	Numbering	Automatic		

Information

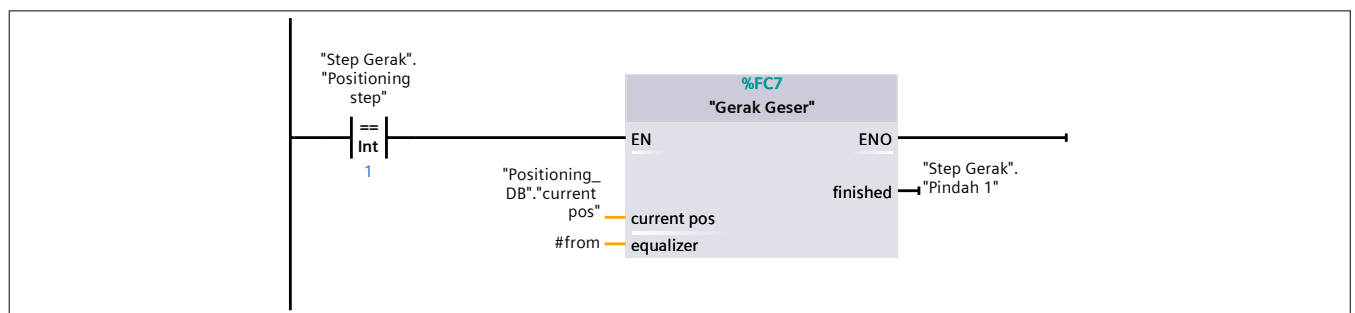
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
current pos	Int		
destination	Int		
from	Int		
Output			
InOut			
Temp			
Constant			
▼ Return			
Gerak	Void		

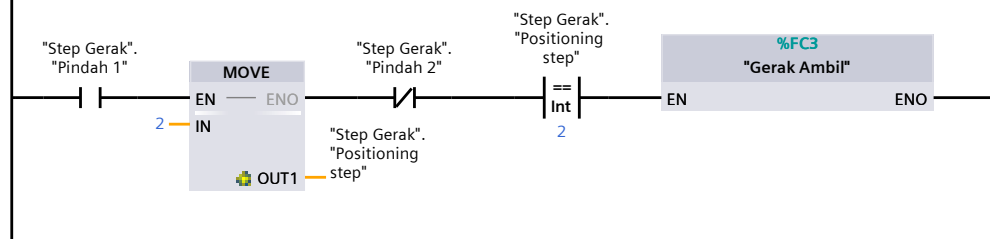
Network 1: Starting command untuk sequence gerak. Dimulai dengan command Go!



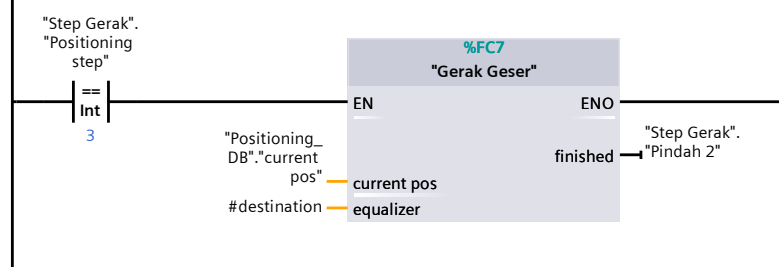
Network 2: Positioning 1 dan 3: Pindah ke posisi horizontal yang sesuai



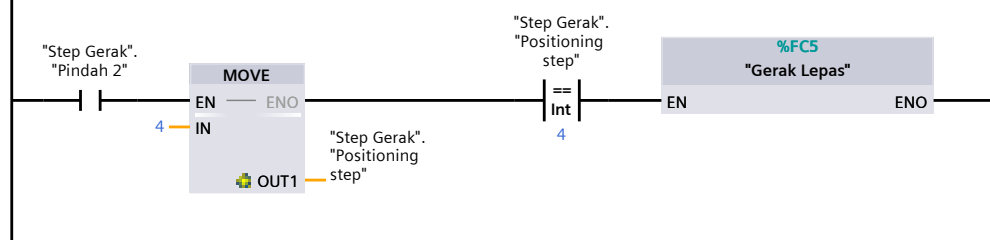
Network 3: Ambil



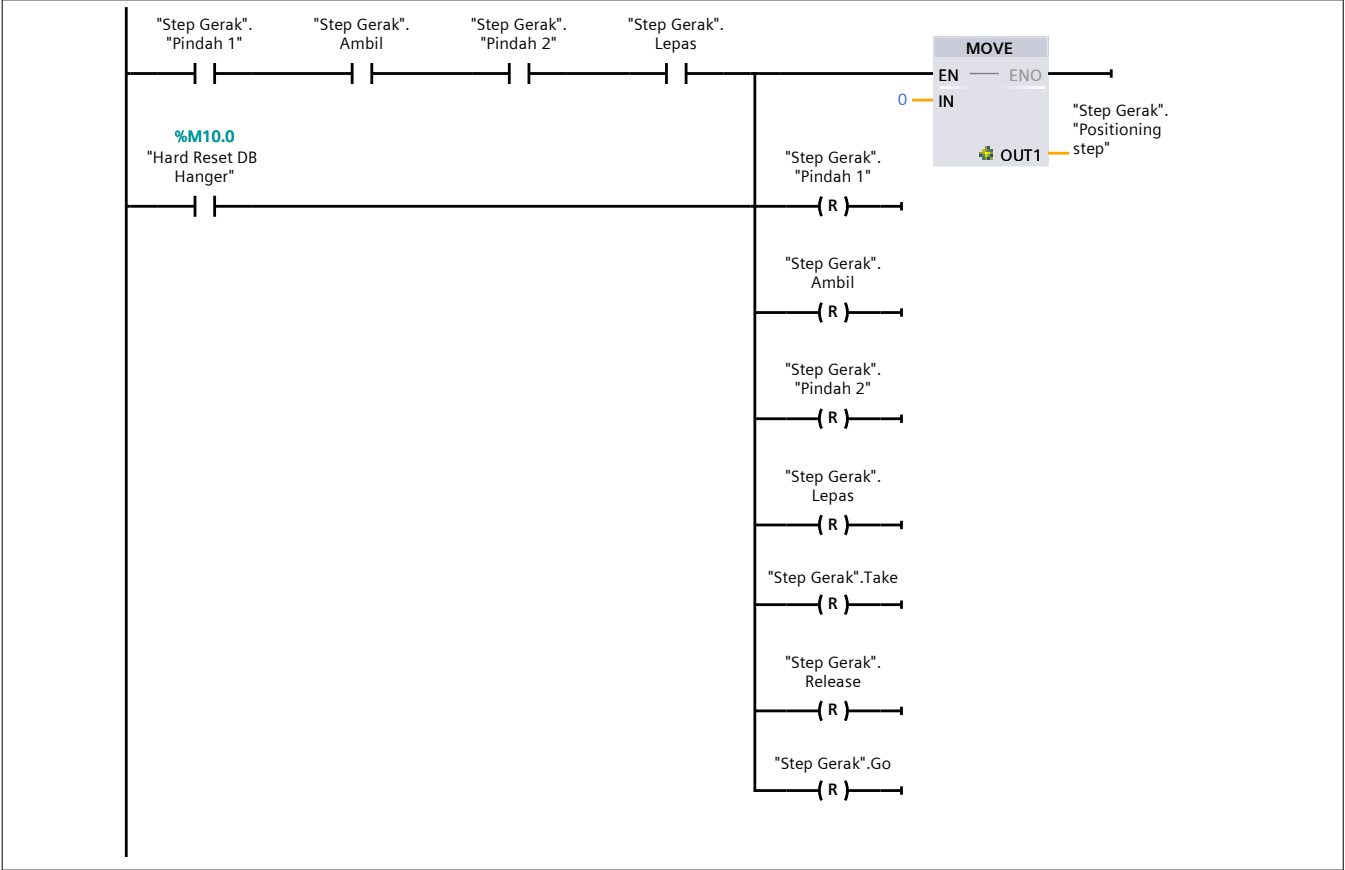
Network 4: Positioning 1 dan 3: Pindah ke posisi horizontal yang sesuai



Network 5: Positioning 4: Gerakan melepas, didahului step pindah 2



Network 6: Reset all, asalkan seluruh proses selesai



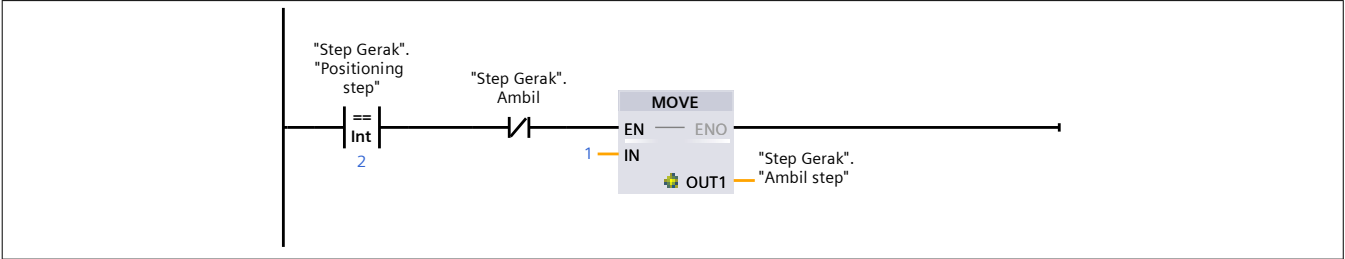
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak Ambil [FC3]

Gerak Ambil Properties					
General					
Name	Gerak Ambil	Number	3	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

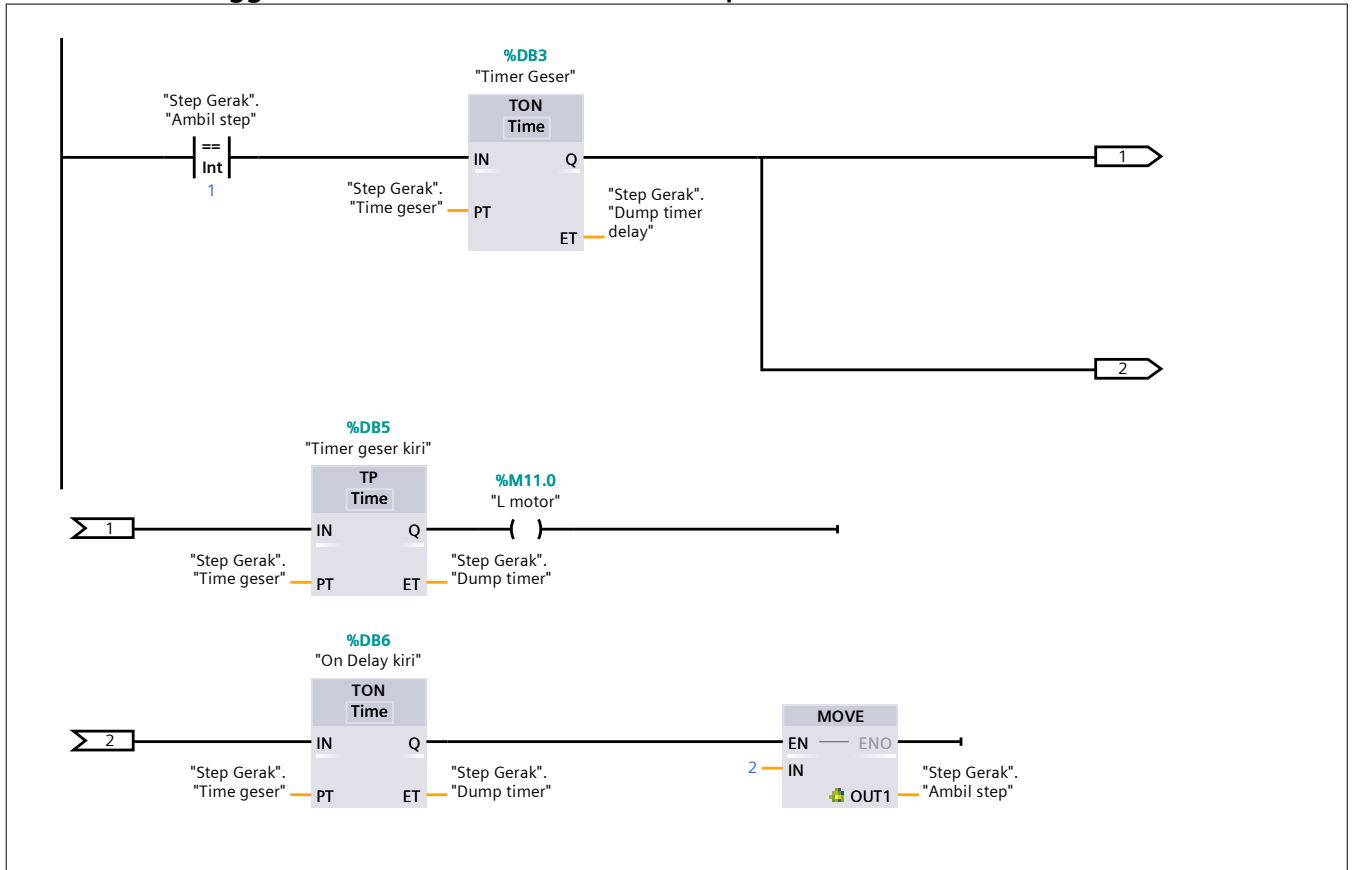
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Gerak Ambil	Void		

Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memulai step gerak



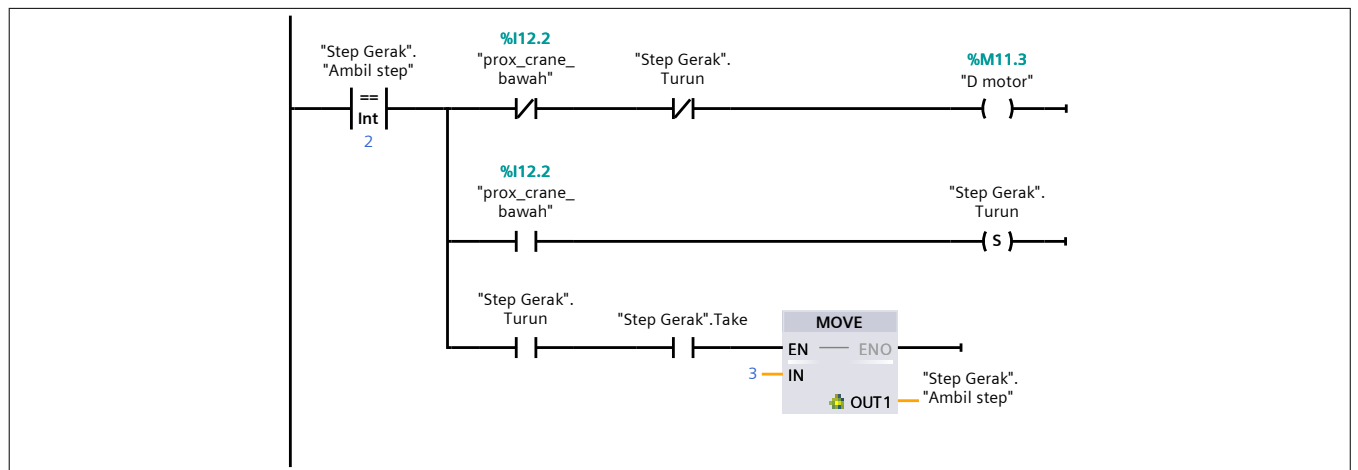
Network 2: Menggeser ke kiri, berhenti ketika timer padam

Network 2: Menggeser ke kiri, berhenti ketika timer padam

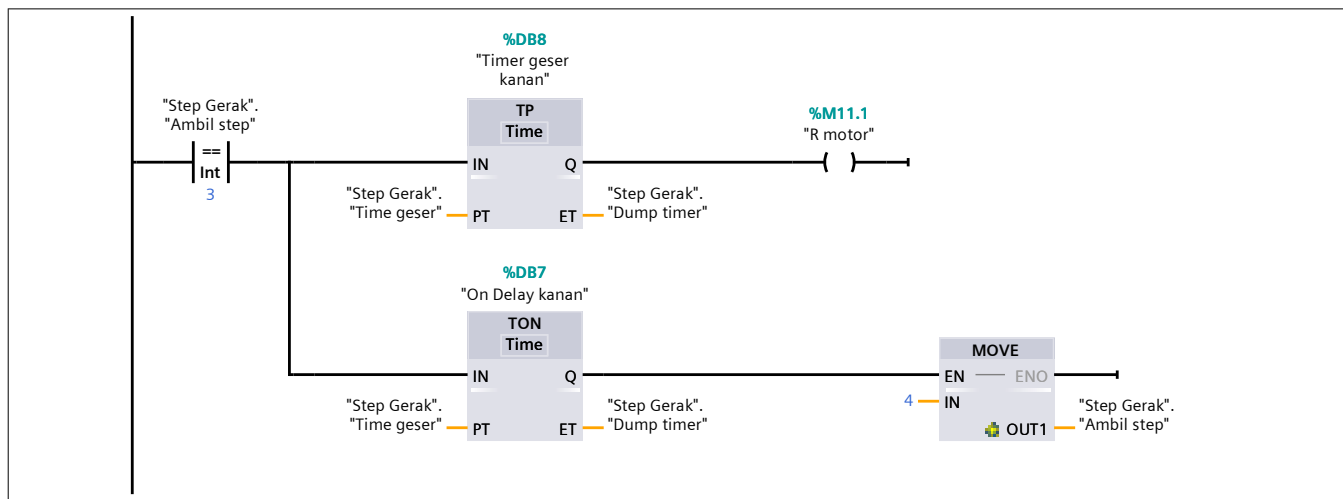


Network 3: Gerak turun ke bawah, berhenti ketika proxy bawah kena.

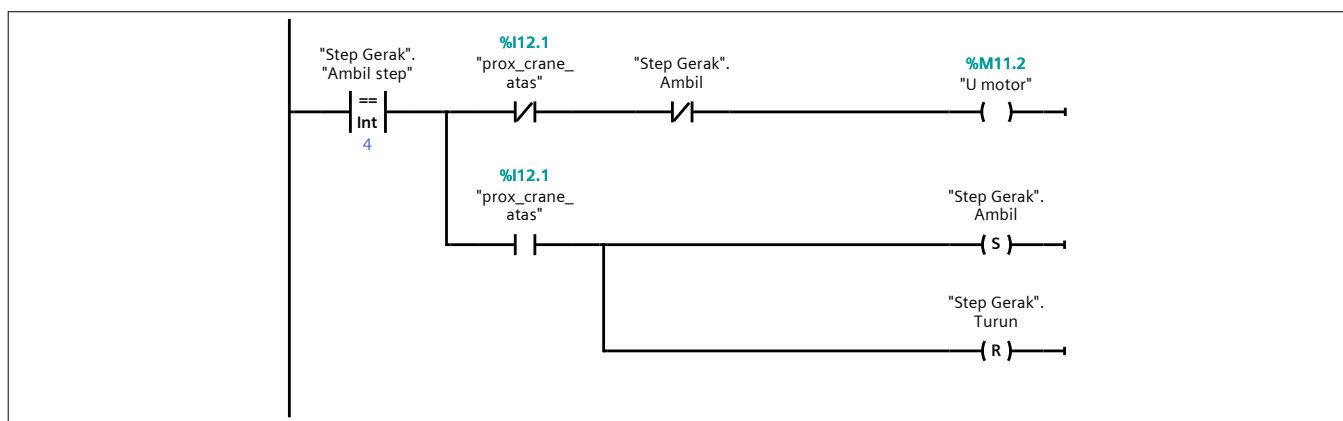
Ada Take yang jadi pencegah hanger diambil prematur



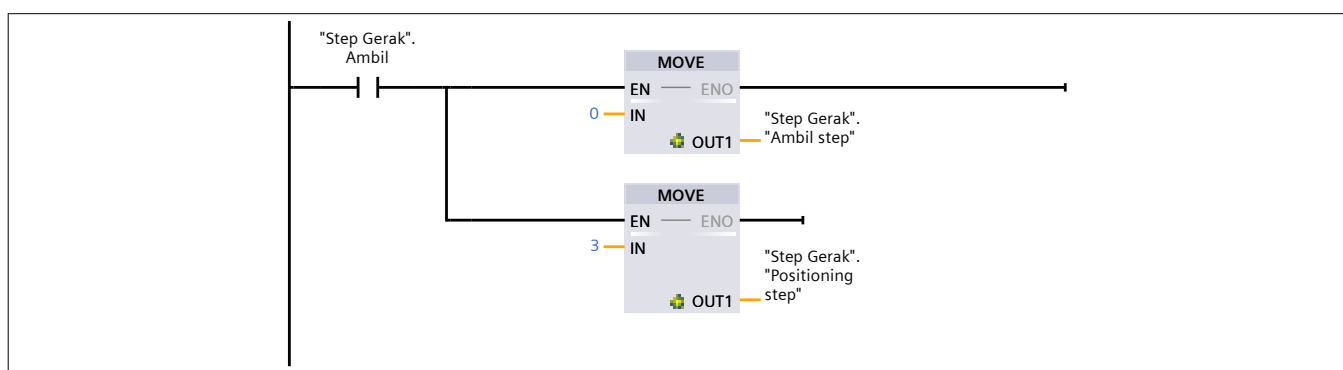
Network 4: Menggeser ke kanan, berhenti ketika timer padam



Network 5: Gerak naik ke atas, berhenti ketika proxy atas kena.



Network 6: reset all parameters



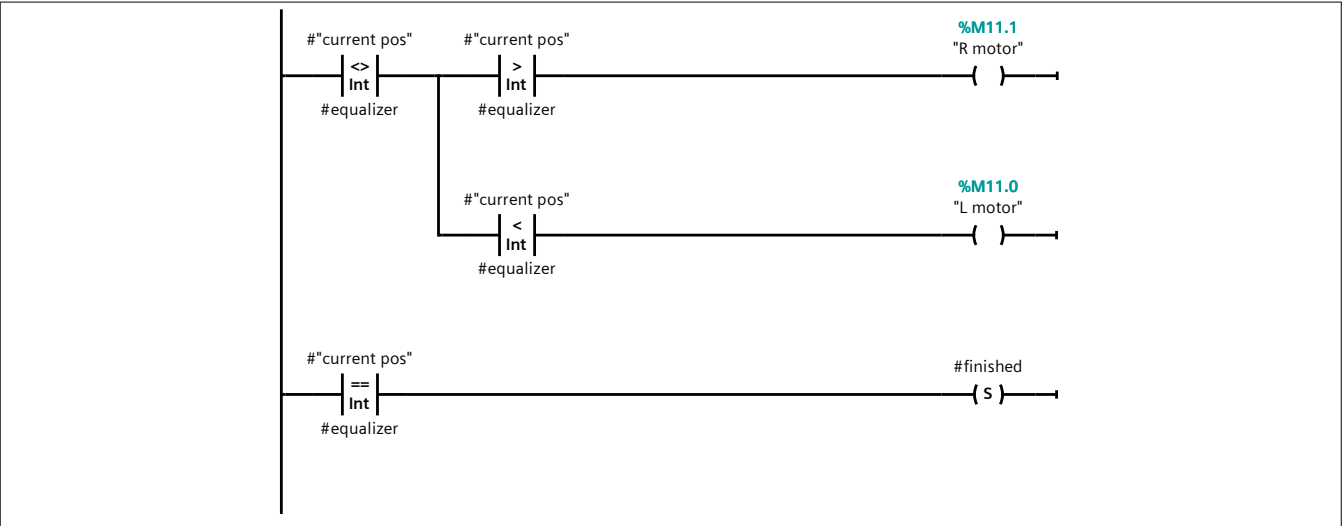
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak Geser [FC7]

Gerak Geser Properties					
General					
Name	Gerak Geser	Number	7	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
current pos	Int		
equalizer	Int		
▼ Output			
finished	Bool		
InOut			
Temp			
Constant			
▼ Return			
Gerak Geser	Void		

Network 1:



PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak Lepas [FC5]

Gerak Lepas Properties

General

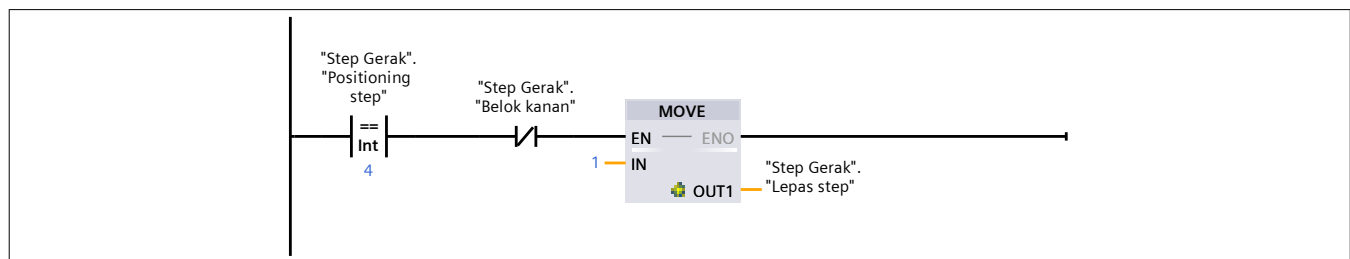
Name	Gerak Lepas	Number	5	Type	FC
Language	LAD	Numbering	Automatic		

Information

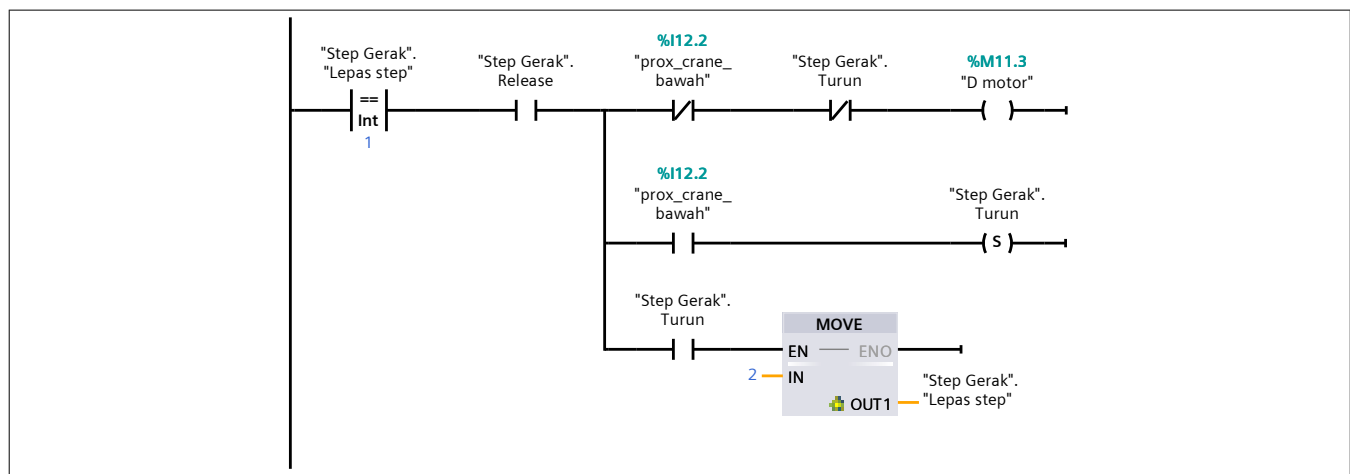
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Gerak Lepas	Void		

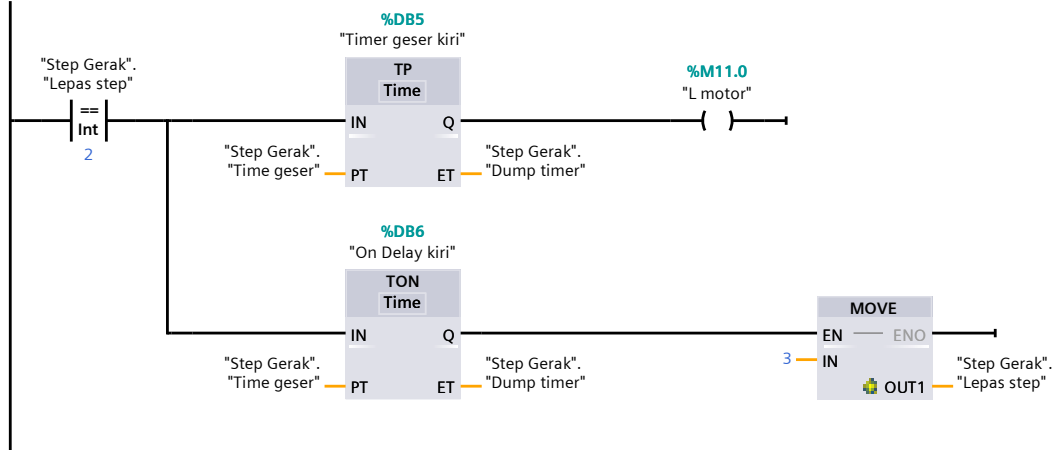
Network 1: Positioning 2: Gerakan melepas. Dimulai dengan pindah operand dan memulai step gerak



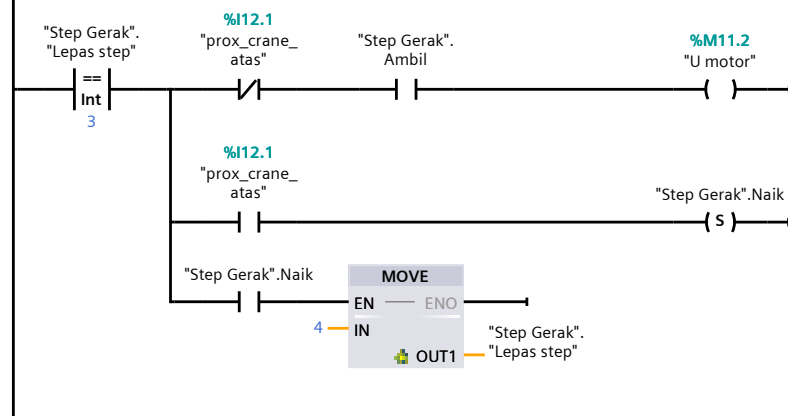
Network 2: Gerak turun ke bawah, berhenti ketika proxy bawah kena.



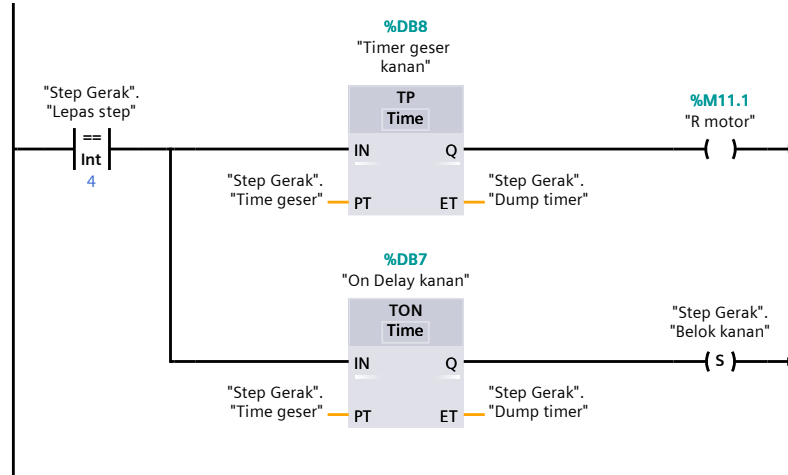
Network 3: Menggeser ke kiri, berhenti ketika timer padam



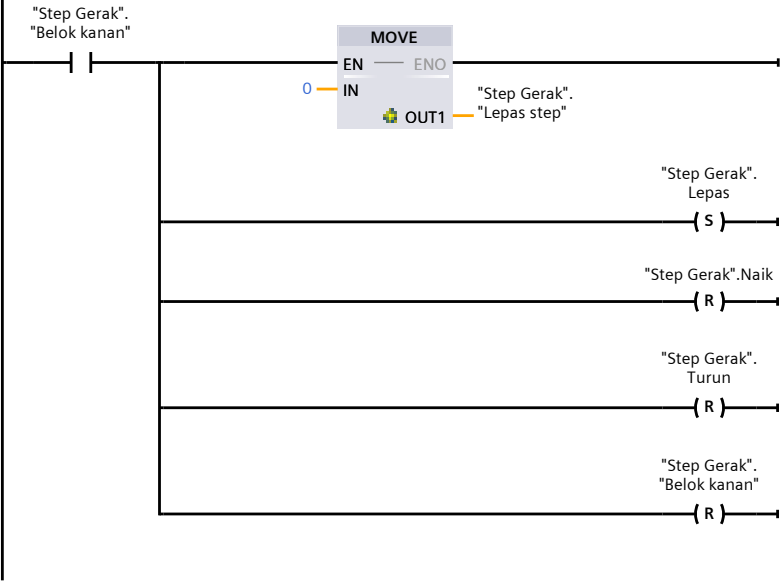
Network 4: Gerak naik ke atas, berhenti ketika proxy atas kena.



Network 5: Menggeser ke kanan, berhenti ketika timer padam



Network 6: Finishing, reset all state ketika stepnya nomor 5



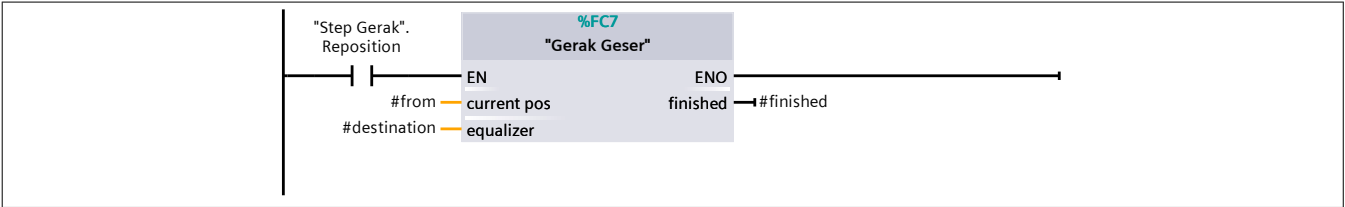
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Repositioning Crane [FC6]

Repositioning Crane Properties					
General					
Name	Repositioning Crane	Number	6	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

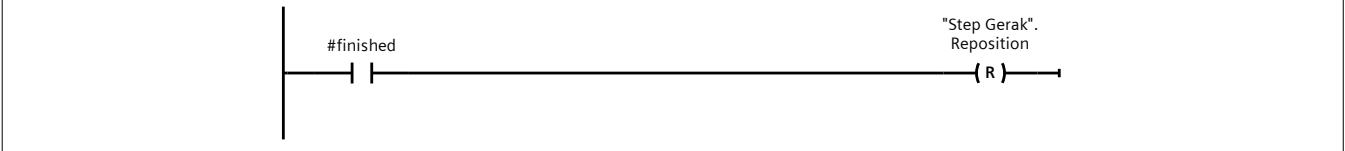
Name	Data type	Default value	Comment
▼ Input			
from	Int		
destination	Int		
Output			
InOut			
▼ Temp			
finished	Bool		
Constant			
▼ Return			
Repositioning Crane	Void		

Network 1:



Network 2:

Mematikan step gerak repo kalo udah selesai



PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Positioning [FB2]

Positioning Properties

General

Name	Positioning	Number	2	Type	FB
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain	Access- ible from HMI/OP C UA/We b API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Super- vision	Comment
Input									
▼ Output									
destination	Int	0	Non-retain	True	True	True	False		
from	Int	0	Non-retain	True	True	True	False		
Repositioning	Int	0	Non-retain	True	True	True	False		
IDLE	Bool	false	Non-retain	True	True	True	False		
▼ InOut									
current pos	Int	0	Non-retain	True	True	True	False		
hanger selected	Int	0	Non-retain	True	True	True	False		
▼ Static									
counter	Int	0	Non-retain	True	True	True	False		
counter2	Int	0	Non-retain	True	True	True	False		
▼ Temp									
run	Bool								
stoptime	DInt								
np	Int								nomor proses
hangerpos	Int								
hs_temp	Int								buat rencana tang- ki 2 priority
from_temp	Int								buat rencana tang- ki 2 priority
localtime	DInt								
Constant									

0001 REGION CRANE POSITION

Totally Integrated Automation Portal		
<pre> 0002 //Mencari tahu posisi crane berdasarkan prox yang menyala 0003 IF "prox_ujung_kanan" = TRUE THEN 0004 #"current pos" := 1; 0005 END_IF; 0006 0007 IF "prox_hanger_2" = TRUE THEN 0008 #"current pos" := 2; 0009 END_IF; 0010 0011 IF "prox_hanger_1" = TRUE THEN 0012 #"current pos" := 3; 0013 END_IF; 0014 0015 IF "prox_tangki_1" = TRUE THEN 0016 #"current pos" := 4; 0017 END_IF; 0018 0019 IF "prox_tangki_2" = TRUE THEN 0020 #"current pos" := 5; 0021 END_IF; 0022 0023 IF "prox_tangki_3" = TRUE THEN 0024 #"current pos" := 6; 0025 END_IF; 0026 0027 IF "prox_tangki_4" = TRUE THEN 0028 #"current pos" := 7; 0029 END_IF; 0030 0031 IF "prox_tangki_5" = TRUE THEN 0032 #"current pos" := 8; 0033 END_IF; 0034 0035 IF "prox_ujung_kiri" = TRUE THEN 0036 #"current pos" := 9; 0037 END_IF; 0038 END_REGION 0039 0040 REGION HANGER SELECTOR 0041 // Memilih hanger yang akan digerakkan, akan start sekali saja. Kalau Crane tidak GO. GO sebagai filter. 0042 IF "Step Gerak".Go = FALSE THEN 0043 FOR #counter := 1 TO 2 DO //diganti kalo hanger nambah 0044 IF "Hanger Data".Hanger[#counter].Ready = TRUE THEN 0045 #"hanger selected" := #counter; 0046 #from := "Hanger Data".Hanger[#counter].Start Position; 0047 "Step Gerak".Go := TRUE; 0048 EXIT; 0049 ELSE //Kalo gaada yang ready 0050 #"hanger selected" := 0; 0051 //Yaudah ga ngapa2in, paling loopnya ngulang terus. 0052 END_IF; 0053 ; 0054 END_FOR; 0055 END_IF; 0056 0057 //Step Gerak.Go Akan FALSE sendiri ketika proses pemindahan sudah selesai (Cek Gerak FC4) </pre>		

Totally Integrated Automation Portal		
0058	//Perubahan nilai Hanger Selected hanya akan berubah kalo ada arahan gerak lagi.	
0059	//Bind Variabel "Destination" dengan hanger terpilih jika sudah Go	
0060	IF "Step Gerak".Go = TRUE THEN	
0061	#destination := "Hanger Data".Hanger[#counter].Destination;	
0062	END_IF;	
0063		
0064	END_REGION	
0065		
0066	REGION Adjust Position	
0067		
0068	//Value hangerpos dipake buat mindahin crane	
0069	#Repositioning := 5;	
0070	IF #"current pos" <> #Repositioning AND "Step Gerak".Go = FALSE THEN //kalo beda berarti crane harus direpo	
0071	"Step Gerak".Reposition := TRUE; //FC adjust akan nyala, tujuannya ke repositioning	
0072	ELSE	
0073	"Step Gerak".Reposition := FALSE;	
0074	END_IF;	
0075		
0076	END_REGION	
0077		
0078	//Cek apakah kedua hanger lagi gabut atau engga	
0079	IF "Hanger Data".Hanger[1].HMI_Ready = TRUE OR "Hanger Data".Hanger[2].HMI_Ready = TRUE THEN	
0080	#IDLE := FALSE;	
0081	ELSE	
0082	#IDLE := TRUE;	
0083	END_IF;	
0084		
0085	REGION Algoritma Penentuan Take dan Release	
0086	//Step gerak.Take	
0087	#hs_temp := #"hanger selected";	
0088	IF "Step Gerak".Go = TRUE THEN	
0089	IF "Hanger Data".Hanger[#hs_temp]."Timer celup"["Hanger Data".Hanger[#hs_temp]."Nomor Proses"] >= "Hanger Data".Hanger[#hs_temp].Setpoint["Hanger Data".Hanger[#hs_temp]."Nomor Proses"] THEN	
0090	"Step Gerak".Take := TRUE;	
0091	ELSE	
0092	;	
0093	END_IF;	
0094		
0095	//Step gerak.Release	
0096	"Get Local Time"(#localtime);	
0097		
0098	IF "Hanger Data".Hanger[#hs_temp].Process_Start_Time["Hanger Data".Hanger[#hs_temp]."Nomor Proses"] - "Time Param".Turun_Int <= #localtime THEN	
0099	"Step Gerak".Release := TRUE;	
0100	ELSE	
0101	"Step Gerak".Release := FALSE;	
0102	;	
0103	END_IF;	
0104	END_IF;	
0105		
0106	END_REGION	
0107		
0108		
0109		

Totally Integrated Automation Portal			
Symbol	Address	Type	Comment
"Hanger Data".Hanger[1].HMI_Ready		Bool	
"Hanger Data".Hanger[2].HMI_Ready		Bool	
"Hanger Data".Hanger[*].Nomor Proses"		Int	
"Hanger Data".Hanger[*].Start Position"		Int	
"Hanger Data".Hanger[*].Timer celup"[*]		Time	
"Hanger Data".Hanger[*].Destination		Int	
"Hanger Data".Hanger[*].Process_Start_Time[*]		DInt	
"Hanger Data".Hanger[*].Ready		Bool	
"Hanger Data".Hanger[*].Setpoint[*]		Time	
"prox_hanger_1"	%I0.7	Bool	
"prox_hanger_2"	%I0.6	Bool	
"prox_tangki_1"	%I0.5	Bool	
"prox_tangki_2"	%I0.4	Bool	
"prox_tangki_3"	%I0.3	Bool	
"prox_tangki_4"	%I0.2	Bool	
"prox_tangki_5"	%I0.1	Bool	
"prox_ujung_kanan"	%I12.0	Bool	
"prox_ujung_kiri"	%I0.0	Bool	
"Step Gerak".Go		Bool	
"Step Gerak".Release		Bool	
"Step Gerak".Reposition		Bool	
"Step Gerak".Take		Bool	
"Time Param".Turun_Int		Int	
#"current pos"		Int	
#"hanger selected"		Int	
#counter		Int	
#destination		Int	
#from		Int	
#hs_temp		Int	buat rencana tangki 2 priority
#IDLE		Bool	
#localtime		DInt	
#Repositioning		Int	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Motor Otomatis [FC12]

Motor Otomatis Properties					
General					
Name	Motor Otomatis	Number	12	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Motor Otomatis	Void		

Network 1:



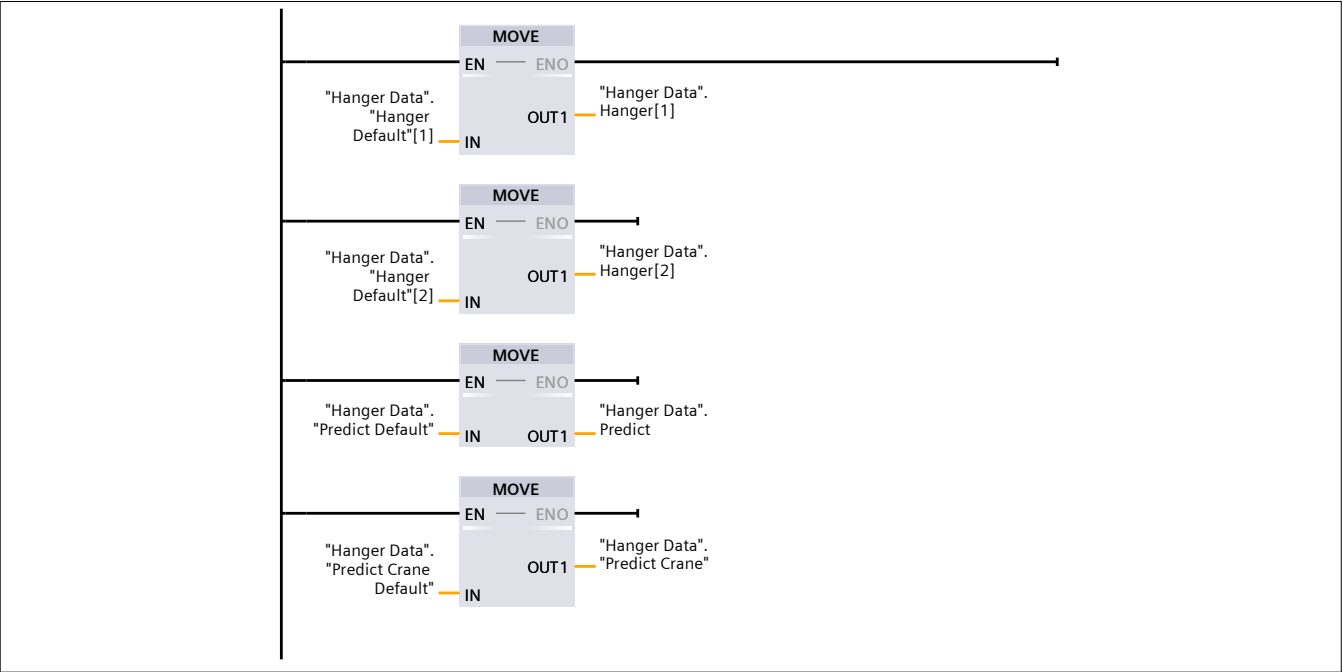
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

Hard Reset DB [FC14]

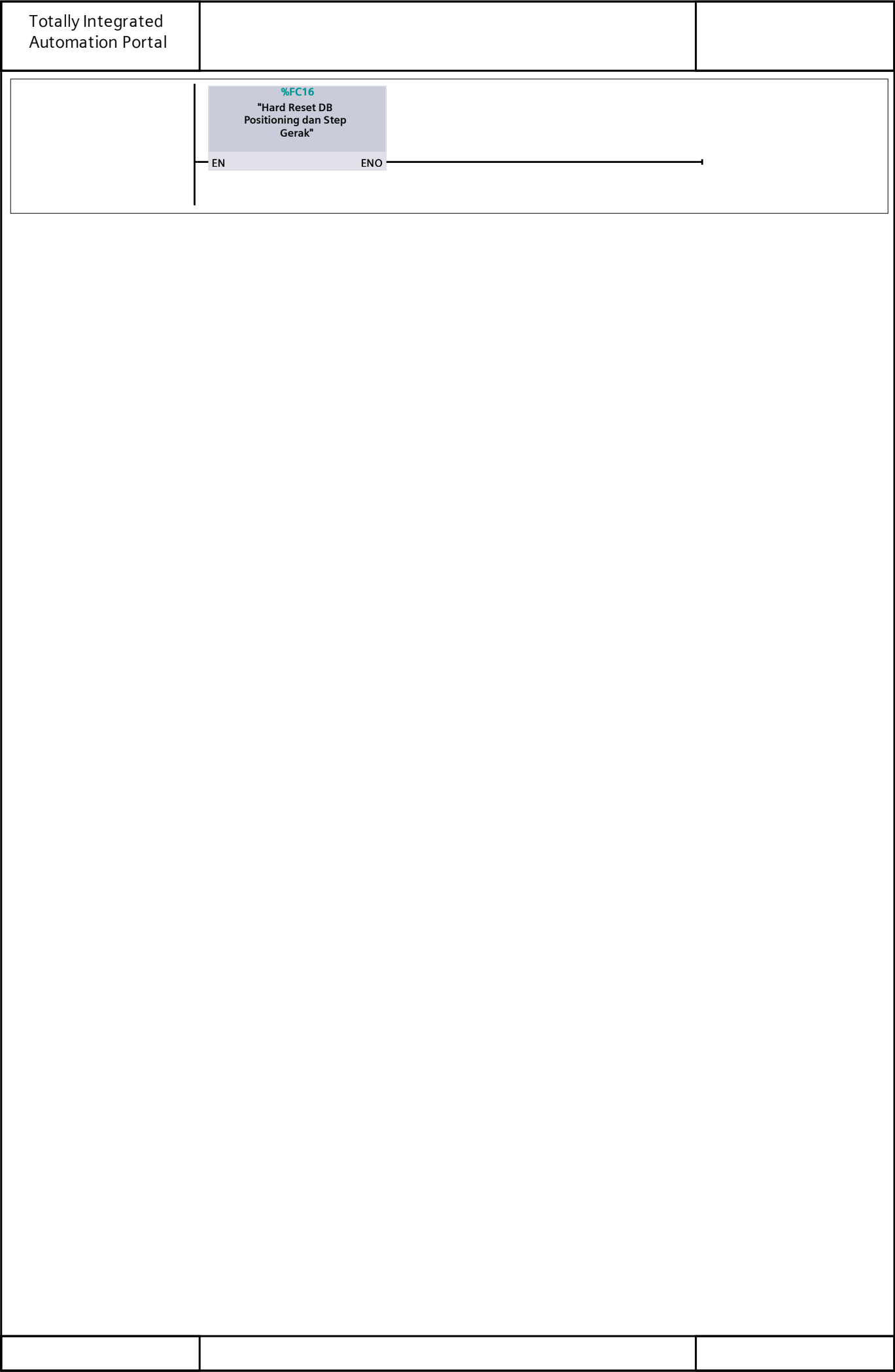
Hard Reset DB Properties					
General					
Name	Hard Reset DB	Number	14	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Hard Reset DB	Void		

Network 1: Reset Hanger Data DB



Network 2: Reset Step Gerak dan Positioning



PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

Hard Reset DB Positioning dan Step Gerak [FC16]

Hard Reset DB Positioning dan Step Gerak Properties

General

Name	Hard Reset DB Positioning dan Step Gerak	Number	16	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Hard Reset DB Positioning dan Step Gerak	Void		

```
0001 //Reset positioning DB. Belum menemukan cara untuk overwrite satu DB sekaligus
0002 "Positioning_DB".counter := 0;
0003 "Positioning_DB".counter2 := 0;
0004 "Positioning_DB"."current pos" := 1;
0005 "Positioning_DB".destination := 0;
0006 "Positioning_DB".from := 0;
0007 "Positioning_DB"."hanger selected" := 0;
0008 "Positioning_DB".IDLE := FALSE;
0009 "Positioning_DB".Repositioning := 0;
0010
0011 //Reset Step gerak
0012 "Step Gerak"."Positioning step" := 0;
0013 "Step Gerak"."Pindah 1" := FALSE;
0014 "Step Gerak".Ambil := FALSE;
0015 "Step Gerak"."Pindah 2" := FALSE;
0016 "Step Gerak".Lepas := FALSE;
0017
0018 "Step Gerak"."Ambil step" := 0;
0019 "Step Gerak"."Belok kiri" := FALSE;
0020 "Step Gerak".Turun := FALSE;
0021 "Step Gerak"."Belok kanan" := FALSE;
0022 "Step Gerak".Naik := FALSE;
0023 "Step Gerak"."Lepas step" := 0;
0024
0025 "Step Gerak".Go := FALSE;
0026 "Step Gerak".Reposition := FALSE;
0027 "Step Gerak".Take := FALSE;
0028 "Step Gerak".Release := FALSE;
0029
```

Symbol	Address	Type	Comment
"Positioning_DB"."current pos"		Int	

Totally Integrated Automation Portal			
Symbol	Address	Type	Comment
"Positioning_DB". "hanger selected"		Int	
"Positioning_DB".counter		Int	
"Positioning_DB".counter2		Int	
"Positioning_DB".destination		Int	
"Positioning_DB".from		Int	
"Positioning_DB".IDLE		Bool	
"Positioning_DB".Repositioning		Int	
"Step Gerak". "Ambil step"		Int	
"Step Gerak". "Belok kanan"		Bool	
"Step Gerak". "Belok kiri"		Bool	
"Step Gerak". "Lepas step"		Int	
"Step Gerak". "Pindah 1"		Bool	
"Step Gerak". "Pindah 2"		Bool	
"Step Gerak". "Positioning step"		Int	
"Step Gerak".Ambil		Bool	
"Step Gerak".Go		Bool	
"Step Gerak".Lepas		Bool	
"Step Gerak".Naik		Bool	
"Step Gerak".Release		Bool	
"Step Gerak".Reposition		Bool	
"Step Gerak".Take		Bool	
"Step Gerak".Turun		Bool	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

Check Setpoint Time [FC8]

Check Setpoint Time Properties

General					
Name	Check Setpoint Time	Number	8	Type	FC
Language	SCL	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
nh	Int		
jml proses	Int		
▼ Output			
Ready	Bool		
InOut			
▼ Temp			
CNT_Jml Proses	Int		
Constant			
▼ Return			
Check Setpoint Time	Void		

```
0001 //Mengecek apakah seluruh setpoint sudah tidak nol atau ada yang masih nol
      karena setpoint nilai minimalnya 1 (1 menit)
0002
0003 FOR # "CNT_Jml Proses" := 1 TO # "jml proses" - 1 DO
0004     // Statement section FOR
0005     // Kalo ada yang nol langsung exit
0006     IF "Hanger Data".Hanger[#nh].Setpoint[# "CNT_Jml Proses"] = 0 THEN
0007         #Ready := FALSE;
0008         EXIT;
0009     END_IF;
0010
0011     //kalo udah sampe counter nomor jml proses - 1 dan beliaupun setpoint nya
      tidak sama dengan nol
0012     IF # "CNT_Jml Proses" = (# "jml proses" - 1)
0013         AND "Hanger Data".Hanger[#nh].Setpoint[# "CNT_Jml Proses"] <> 0 THEN
0014         #Ready := TRUE;
0015     END_IF;
0016 END_FOR;
0017
```

Symbol	Address	Type	Comment
"Hanger Data".Hanger[*].Setpoint[*]		Time	
# "CNT_Jml Proses"		Int	
# "jml proses"		Int	
#nh		Int	
#Ready		Bool	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Penjadwalan CRANE [FC13]

Penjadwalan CRANE Properties

General

Name	Penjadwalan CRANE	Number	13	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
nh	Int		nomor hanger
▼ Output			
Ready	Bool		
InOut			
▼ Temp			
CNT_NP	Int		
CNT_Pred	Int		
CNT_Pembanding	Int		
CNT_Ready	Int		
CNT_Hasil Akhir	Int		
CNT Reset	Int		
CNT	Int		
jml proses_p	Int		
h1	Int		
jml proses	Int		
starttime	DInt		
pembanding_start	DInt		
stoptime	DInt		
pembanding_stop	DInt		
modifier start	Int		
modifier stop	Int		
modifier pertama	Int		
local time	DInt		
Cek Ready	Int		
▼ Constant			
Moving	Int	15	
Ambil	Int	26	
Lepas	Int	26	
▼ Return			
Penjadwalan CRANE	Void		

```
0001 //
0002 //pilih pembanding
0003 CASE #nh OF
0004 1:
0005     #h1 := 2;
0006 ;
0007 2:
```

```

0008     #h1 := 1;
0009     ;
0010     ELSE // Statement section ELSE
0011     ;
0012 END_CASE;
0013
0014 //Deklarasi variabel
0015 #CNT := "Hanger Data".Hanger[#nh]. "Nomor Proses";
0016 #"jml proses_p" := "Hanger Data".Hanger[#h1]. "Jml Proses";
0017 #"jml proses" := "Hanger Data".Hanger[#nh]. "Jml Proses";
0018
0019 #"modifier start" := ("Time Param". "Avg Moving_Int" + "Time Param".Turun_Int);
    //waktu yang dipake buat moving dan turun
0020 #"modifier stop" := "Time Param".Naik_Int; //buat naik lagi setelah stop
0021 #"modifier pertama" := "Time Param". "Avg Moving_Int" + (2 * "Time Par-
am".Naik_Int) + "Time Param". "Avg Moving_Int" + (2 * "Time Param".Turun_Int);
0022
0023 "Get Local Time"("#local time"); //get local time, save to #local time
0024
0025 //FOR untuk write data crane usage. Ambil dari start stop aja. Lihat buku cat-
atan buat grafik ganntt nya
0026 FOR #CNT_NP := 1 TO #"jml proses" DO //Aakan ada pergerakan crane sebanyak
jml proses
0027
0028     //Start crane ketika waktu start prediksi dikurangi dengan modifier
0029     IF #CNT_NP = 1 THEN //kalo starter beda di bagian start nya, karena gaada
pengurangan modifier
0030         "Hanger Data". "Predict Crane"[#nh].Start[#CNT_NP] := #"local time";
0031         "Hanger Data". "Predict Crane"[#nh].Stop[#CNT_NP] := "Hanger Data". "Pre-
dict Crane"[#nh].Start[#CNT_NP] + #"modifier pertama";
0032     ELSE //kondisi lainnya
0033         "Hanger Data". "Predict Crane"[#nh].Start[#CNT_NP] := "Hanger Data".Hang-
er[#nh].Process_Stop_Time[#CNT_NP - 1] - #"modifier start";
0034         "Hanger Data". "Predict Crane"[#nh].Stop[#CNT_NP] := "Hanger Data". "Pre-
dict Crane"[#nh].Start[#CNT_NP] + #"modifier pertama";
0035     END_IF;
0036 END_FOR;
0037
0038 //Add keterangan untuk informasi kapan proses mulai dan selesai
0039 //call function
0040 "Convert INT To TIME"("INT Input" := "Hanger Data". "Predict
Crane"[#nh].Start[1],
0041     "TIME Output" => "Hanger Data".Hanger[#nh].Start_ToD);
0042 "Convert INT To TIME"("INT Input" := "Hanger Data". "Predict
Crane"[#nh].Stop[#jml proses],
0043     "TIME Output" => "Hanger Data".Hanger[#nh].Stop_ToD);
0044
0045 //Cek waktu availability crane (nyontek dari kode cek time ready).
0046
0047 //sampe 9 karena harus ngecek dengan semua possibility pergerakan crane
0048 //Kalo hanger sebelah lagi gabut, langsung ready
0049 IF "Hanger Data".Hanger[#h1].HMI_Ready = FALSE THEN
0050     #Ready := TRUE;
0051
0052     //kalo hanger sebelah lagi ga gabut
0053 ELSE
0054     FOR #CNT_Pred := 1 TO #"jml proses" DO //untuk setiap crane movement di
Hanger ini
0055

```

```
0056 //deklarasi start/stop time dari hanger
0057 #starttime := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_Pred];
0058 #stoptime := "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_Pred];
0059
0060 FOR #CNT_Pembanding := 1 TO #"jml proses_p" DO //dicek dengan seluruh
    crane movement hanger sebelah, start maupun stop
0061
0062 //deklarasi start/stop time hanger sebelah
0063 #pembanding_start := "Hanger Data"."Predict Crane"[#h1].Start[#CNT_Pem-
    banding + 1]; //plus satu supaya pas ngecek nomor 9 ga error (kehabisan index
    array)
0064 #pembanding_stop := "Hanger Data"."Predict Crane"[#h1].Stop[#CNT_Pem-
    banding];
0065
0066 //start perbandingan antara Crane 1 dengan Crane 1-n dari hanger satunya
0067 //Kondisi : Cocok di sela-sela Crane satunya (diantara Crane 1 dan 2, 2
    dan 3, dst).
0068 IF #CNT_Pembanding = #"jml proses_p" THEN //khusus untuk pembanding ter-
    akhir, karena stop nya infinit
0069     IF #starttime > #pembanding_stop THEN
0070         "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := TRUE;
0071         EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya;
0072     ELSE
0073         "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := FALSE;
0074         ; //Lanjut cek CNT Pembanding berikutnya
0075     END_IF;
0076 ELSIF #CNT_Pembanding < #"jml proses_p" THEN //untuk pembanding yang
    lain
0077     IF #starttime > #pembanding_stop AND #stoptime < #pembanding_start
    THEN
0078         "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := TRUE;
0079         EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya
0080     ELSE
0081         "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := FALSE;
0082         ; //Lanjut cek CNT Pembanding berikutnya
0083     END_IF;
0084     END_IF;
0085     END_FOR;
0086 END_FOR;
0087
0088 FOR #"CNT_Hasil Akhir" := 1 TO #"jml proses" DO //Hanya cek sampe nomor pro-
    ses max nya aja
0089     IF "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Hasil Akhir] = TRUE
    THEN
0090         #"Cek Ready" := #"Cek Ready" + 1;
0091         IF #"Cek Ready" = #"jml proses" THEN
0092             #Ready := TRUE;
0093             EXIT;
0094         END_IF;
0095     ELSE
0096         #Ready := FALSE;
0097         EXIT;
0098     END_IF;
0099 END_FOR;
0100
0101 END_IF; //Buat IF HMI ready sebelah = FALSE
0102
```

Totally Integrated Automation Portal			
Symbol	Address	Type	Comment
"Hanger Data". "Predict Crane"[*].C_Ready[*]		Bool	
"Hanger Data". "Predict Crane"[*].Start[1]		DInt	
"Hanger Data". "Predict Crane"[*].Start[*]		DInt	
"Hanger Data". "Predict Crane"[*].Stop[*]		DInt	
"Hanger Data".Hanger[*].Jml Proses"		Int	
"Hanger Data".Hanger[*]. "Nomor Proses"		Int	
"Hanger Data".Hanger[*].HMI_Ready		Bool	
"Hanger Data".Hanger[*].Process_Stop_Time[*]		DInt	
"Hanger Data".Hanger[*].Start_ToD		Time_Of_Day	
"Hanger Data".Hanger[*].Stop_ToD		Time_Of_Day	
"Time Param". "Avg Moving_Int"		Int	
"Time Param".Naik_Int		Int	
"Time Param".Turun_Int		Int	
#"Cek Ready"		Int	
#"CNT_Hasil Akhir"		Int	
#"jml proses"		Int	
#"jml proses_p"		Int	
#"local time"		DInt	
#"modifier pertama"		Int	
#"modifier start"		Int	
#"modifier stop"		Int	
#CNT		Int	
#CNT_NP		Int	
#CNT_Pembanding		Int	
#CNT_Pred		Int	
#h1		Int	
#nh		Int	nomor hanger
#pembanding_start		DInt	
#pembanding_stop		DInt	
#Ready		Bool	
#starttime		DInt	
#stoptime		DInt	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Penjadwalan TANGKI [FC11]

Penjadwalan TANGKI Properties

General

Name	Penjadwalan TANGKI	Number	11	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
nomor hanger	Int		
jml proses	Int		
▼ Output			
Ready	Bool		
▼ InOut			
▼ FuncTag	"Hanger"		
Timer_Start	Bool		
Timer_Reset	Bool		
▼ IEC Timer Proses	Array[0..9] of IEC_TIMER		
▼ IEC Timer Proses[0]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[1]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[2]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[3]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[4]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[5]	IEC_TIMER		

Totally Integrated Automation Portal			
Name	Data type	Default value	Comment
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[6]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[7]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[8]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[9]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ Timer celup	Array[0..9] of Time		
Timer celup[0]	Time		
Timer celup[1]	Time		
Timer celup[2]	Time		
Timer celup[3]	Time		
Timer celup[4]	Time		
Timer celup[5]	Time		
Timer celup[6]	Time		
Timer celup[7]	Time		
Timer celup[8]	Time		
Timer celup[9]	Time		
▼ Process_Start_Time	Array[0..9] of DInt		
Proc- ess_Start_Time[0]	DInt		
Proc- ess_Start_Time[1]	DInt		
Proc- ess_Start_Time[2]	DInt		
Proc- ess_Start_Time[3]	DInt		
Proc- ess_Start_Time[4]	DInt		
Proc- ess_Start_Time[5]	DInt		
Proc- ess_Start_Time[6]	DInt		

Totally Integrated Automation Portal				
Name		Data type	Default value	Comment
Proc-ess_Start_Time[7]		DInt		
Proc-ess_Start_Time[8]		DInt		
Proc-ess_Start_Time[9]		DInt		
▼ Process_Stop_Time		Array[0..9] of DInt		
Proc-ess_Stop_Time[0]		DInt		
Proc-ess_Stop_Time[1]		DInt		
Proc-ess_Stop_Time[2]		DInt		
Proc-ess_Stop_Time[3]		DInt		
Proc-ess_Stop_Time[4]		DInt		
Proc-ess_Stop_Time[5]		DInt		
Proc-ess_Stop_Time[6]		DInt		
Proc-ess_Stop_Time[7]		DInt		
Proc-ess_Stop_Time[8]		DInt		
Proc-ess_Stop_Time[9]		DInt		
▼ Setpoint		Array[0..9] of Time		
Setpoint[0]		Time		
Setpoint[1]		Time		
Setpoint[2]		Time		
Setpoint[3]		Time		
Setpoint[4]		Time		
Setpoint[5]		Time		
Setpoint[6]		Time		
Setpoint[7]		Time		
Setpoint[8]		Time		
Setpoint[9]		Time		
Start_ToD		Time_Of_Day		
Stop_ToD		Time_Of_Day		
Start Position		Int		
Position		Int		
Destination		Int		
Next Destination		Int		
Ready		Bool		
Proses		Int		
Nomor Proses		Int		
Jml Proses		Int		
Homebase		Int		
Setpoint_Ready		Bool		
Checker_Ready		Bool		
Time_Ready		Bool		
Occupancy_Ready		Bool		

Totally Integrated Automation Portal			
Name	Data type	Default value	Comment
HMI_Ready	Bool		
HMI_Finish	Bool		
HMI_Reset	Bool		
Crane_Ready	Bool		
Finish Process	Bool		
Divert	Bool		
Nomor Hanger	Int		
CNT_HMI_Ready	Int		
▼ Temp			
h1	Int		
CNT_Nomor Proses	Int		
CNT_Hasil Akhir	Int		
▼ NP_Ready	Array[0..6] of Bool		
NP_Ready[0]	Bool		
NP_Ready[1]	Bool		
NP_Ready[2]	Bool		
NP_Ready[3]	Bool		
NP_Ready[4]	Bool		
NP_Ready[5]	Bool		
NP_Ready[6]	Bool		
Cek Ready	Int		
counter prediksi	Int		
modifier pertama	Int		
modifier start	Int		
conv setpoint	DInt		
Constant			
▼ Return			
Penjadwalan TANGKI	Void		

```
0001 //Algoritma Penentuan TIME_Ready
0002 //
0003 //pilih pembanding
0004 CASE #"nomor hanger" OF
0005   1:
0006     #h1 := 2;
0007     ;
0008   2:
0009     #h1 := 1;
0010     ;
0011 ELSE // Statement section ELSE
0012     ;
0013 END_CASE;
0014
0015 REGION Prediksi Waktu Mulai dan Selesai
0016 //bentuknya prediksi waktu kedepan, dirun satu kali aja sebelum hanger
TIME_Ready
0017 //Tidak di-run jika TIME_Ready sudah OK
0018 IF (#FuncTag.Time_Ready = FALSE OR #FuncTag.Crane_Ready = FALSE) AND #Func-
Tag.HMI_Ready = TRUE THEN //Time Ready dibikin TRUE kalo pake sistem baru
0019 //Ambil waktu saat ini sebagai startpoint dan stoppoints (menjaga logic)
0020 "Get Local Time" (#FuncTag.Process_Start_Time[0]);
0021 "Get Local Time" (#FuncTag.Process_Stop_Time[0]);
0022 //Ada -1 soalnya jumlah proses ada proses pulang ke homebase
0023 FOR #"counter prediksi" := 0 TO (#FuncTag."Jml Proses" - 1) DO
```

```
0024
0025      //Waktu mulai [1] = Start Time saat ini (disimpan di waktu mulai [0] +
Lama perpindahan sampe nyelup
0026      //Waktu Mulai [i] = Waktu selesai [i-1] + Lama perpindahan sampe nyel-
up, kecuali ngangkat
0027      //waktu setpoint diconvert menjadi seconds dalam INT
0028      "Time Converter to seconds"("time input" := #FuncTag.Setpoint[#"counter
prediksi"],
0029          "time output" => #"conv setpoint");
0030      #"modifier pertama" := (2 * "Time Param"."Avg Moving_Int") + ("Time Par-
am".Naik_Int) + (2 * "Time Param".Turun_Int);
0031      #"modifier start" := "Time Param"."Avg Moving_Int" + "Time Par-
am".Naik_Int + "Time Param".Turun_Int;
0032      IF #"counter prediksi" = 0 THEN
0033          "Get Local Time"(#FuncTag.Process_Start_Time[0]);
0034          "Get Local Time"(#FuncTag.Process_Stop_Time[0]);
0035      ELSIF #"counter prediksi" = 1 THEN
0036          #FuncTag.Process_Start_Time[#"counter prediksi"] := #FuncTag.Proc-
ess_Stop_Time[#"counter prediksi" - 1] + #"modifier pertama";
0037      ELSE
0038          #FuncTag.Process_Start_Time[#"counter prediksi"] := #FuncTag.Proc-
ess_Stop_Time[#"counter prediksi" - 1] + #"modifier start";
0039      END_IF;
0040      //Waktu selesai [i] = Waktu Mulai [i] + Setpoint + Possibility crane
sibuk
0041      #FuncTag.Process_Stop_Time[#"counter prediksi"] := #FuncTag.Proc-
ess_Start_Time[#"counter prediksi"] + #"conv setpoint";
0042      END_FOR;
0043
0044      "Convert INT To TIME"("INT Input" := #FuncTag.Process_Start_Time[0],
0045          "TIME Output" => #FuncTag.Start_ToD);
0046      "Convert INT To TIME"("INT Input" := #FuncTag.Process_Stop_Time[#Func-
Tag."Jml Proses"],
0047          "TIME Output" => #FuncTag.Stop_ToD);
0048      END_IF;
0049  END_REGION
0050
0051  //setiap nomor proses dicek
0052  //proses-n siap dilakukan kalo tangkinya lagi ga kepake (start/stop time = 0)
atau bisa diselipin
0053
0054  //Pengecekan baru sistem 2 hanger, 3 hanger belom
0055
0056  //cek untuk setiap nomor proses karena jumlah tangki yang dimasukin sebesar
jml proses
0057  FOR #"CNT_Nomor Proses" := 1 TO #"jml proses" - 1 DO //Hanya cek sampe nomor
proses max nya aja
0058
0059      //untuk proses ganjil yang tangkinya cuma dipake sekali
0060      IF #"CNT_Nomor Proses" MOD 2 <> 0 THEN
0061          IF "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = 0
THEN //STOP = 0 berarti gaada proses
0062              "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Pro-
ses"] := TRUE;
0063          ELSIF "Hanger Data".Hanger[#h1].Process_Start_Time[#"CNT_Nomor Proses"] >
"Hanger Data".Hanger[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"] =
TRUE
```

Totally Integrated Automation Portal		
0064	OR "Hanger Data".Hanger[#"nomor hanger"].Process_Start_Time[#"CNT_Nomor Proses"] > "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE THEN	
0065	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;	
0066	ELSE	
0067	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := FALSE;	
0068	END_IF;	
0069		
0070	//untuk proses genap	
0071	ELSIF #"CNT_Nomor Proses" MOD 2 = 0 THEN	
0072	IF "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = 0 THEN //kalo 0 berarti gaada prosesnya	
0073	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;	
0074	//pertama cek dengan CNT Nomor Proses	
0075	ELSIF ("Hanger Data".Hanger[#h1].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE	
0076	OR "Hanger Data".Hanger[#"nomor hanger"].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE) THEN	
0077		
0078	//lalu dengan nomor proses lain. Intinya start h < start < stop h dan start h < stop > stop h = FALSE	
0079	CASE "Hanger Data".Hanger[#h1]."Jml Proses" OF //beda nomor proses = beda IF supaya ga kena yang nol	
0080	3: //2 doang	
0081	IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Data".Hanger[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"]) = TRUE	
0082	OR ("Hanger Data".Hanger[#"nomor hanger"].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[2]) = TRUE THEN	
0083	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;	
0084	ELSE	
0085	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := FALSE;	
0086	END_IF;	
0087	5: //2 4	
0088	IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Data".Hanger[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"]) = TRUE	
0089	OR ("Hanger Data".Hanger[#"nomor hanger"].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[4]) = TRUE	
0090	OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[2] <= "Hanger Data".Hanger[#"nomor hanger"].Process_Start_Time[#"CNT_Nomor Proses"] = TRUE AND "Hanger Data".Hanger[#h1].Process_Start_Time[4] >= "Hanger Data".Hanger[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE) THEN	
0091	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;	
0092	ELSE	
0093	"Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT_Nomor Proses"] := FALSE;	
0094	END_IF;	
0095		
0096	7: //2 4 6	

Totally Integrated Automation Portal		
0097	IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Data".Hanger[# "nomor hanger"].Process_Stop_Time[# "CNT_Nomor Proses"]) = TRUE	
0098	OR ("Hanger Data".Hanger[# "nomor hanger"].Process_Start_Time[# "CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[6]) = TRUE	
0099	OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[2] <= "Hanger Data".Hanger[# "nomor hanger"].Process_Start_Time[# "CNT_Nomor Proses"]) = TRUE AND ("Hanger Data".Hanger[#h1].Process_Start_Time[4] >= "Hanger Data".Hanger[# "nomor hanger"].Process_Stop_Time[# "CNT_Nomor Proses"]) = TRUE	
0100	OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[4] <= "Hanger Data".Hanger[# "nomor hanger"].Process_Start_Time[# "CNT_Nomor Proses"] = TRUE AND "Hanger Data".Hanger[#h1].Process_Start_Time[6] >= "Hanger Data".Hanger[# "nomor hanger"].Process_Stop_Time[# "CNT_Nomor Proses"] = TRUE) THEN	
0101		
0102	"Hanger Data".Predict[# "nomor hanger"]."NP Ready"[# "CNT_Nomor Proses"] := TRUE;	
0103	ELSE	
0104		
0105	"Hanger Data".Predict[# "nomor hanger"]."NP Ready"[# "CNT_Nomor Proses"] := FALSE;	
0106	END_IF;	
0107	;	
0108	ELSE //case	
0109	;	
0110	END_CASE;	
0111	END_IF;	
0112	END_IF;	
0113	END_FOR;	
0114		
0115	//cek hasil akhir, kecuali untuk proses RES	
0116	IF "Hanger Data".Hanger[# "nomor hanger"].Proses = 6 THEN	
0117	#Ready := TRUE;	
0118	ELSE //selain proses res	
0119	FOR # "CNT_Hasil Akhir" := 1 TO # "jml proses" - 1 DO //Hanya cek sampe nomor proses max nya aja	
0120	IF "Hanger Data".Predict[# "nomor hanger"]."NP Ready"[# "CNT_Hasil Akhir"] = TRUE THEN	
0121	# "Cek Ready" := # "Cek Ready" + 1;	
0122	IF # "Cek Ready" = # "jml proses" - 1 THEN	
0123	#Ready := TRUE;	
0124	END_IF;	
0125	ELSE	
0126	#Ready := FALSE;	
0127	EXIT;	
0128	END_IF;	
0129	END_FOR;	
0130	END_IF;	
0131		

Symbol	Address	Type	Comment
"Hanger Data".Hanger[*].Jml Proses"		Int	
"Hanger Data".Hanger[*].Process_Start_Time[2]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[4]		DInt	

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Symbol	Address	Type	Comment
"Hanger Data".Hanger[*].Process_Start_Time[6]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[*]		DInt	
"Hanger Data".Hanger[*].Process_Stop_Time[2]		DInt	
"Hanger Data".Hanger[*].Process_Stop_Time[4]		DInt	
"Hanger Data".Hanger[*].Process_Stop_Time[6]		DInt	
"Hanger Data".Hanger[*].Process_Stop_Time[*]		DInt	
"Hanger Data".Hanger[*].Proses		Int	
"Hanger Data".Predict[*].NP Ready"[*]		Bool	
"Time Param".Avg Moving_Int"		Int	
"Time Param".Naik_Int		Int	
"Time Param".Turun_Int		Int	
"#Cek Ready"		Int	
"#CNT_Hasil Akhir"		Int	
"#CNT_Nomor Proses"		Int	
"#conv setpoint"		DInt	
"#counter prediksi"		Int	
"#jml proses"		Int	
"#modifier pertama"		Int	
"#modifier start"		Int	
"#nomor hanger"		Int	
#FuncTag."Jml Proses"		Int	
#FuncTag.Crane_Ready		Bool	
#FuncTag.HMI_Ready		Bool	
#FuncTag.Process_Start_Time[0]		DInt	
#FuncTag.Process_Start_Time[*]		DInt	
#FuncTag.Process_Stop_Time[0]		DInt	
#FuncTag.Process_Stop_Time[*]		DInt	
#FuncTag.Setpoint[*]		Time	
#FuncTag.Start_ToD		Time_Of_Day	
#FuncTag.Stop_ToD		Time_Of_Day	
#FuncTag.Time_Ready		Bool	
#h1		Int	
#Ready		Bool	

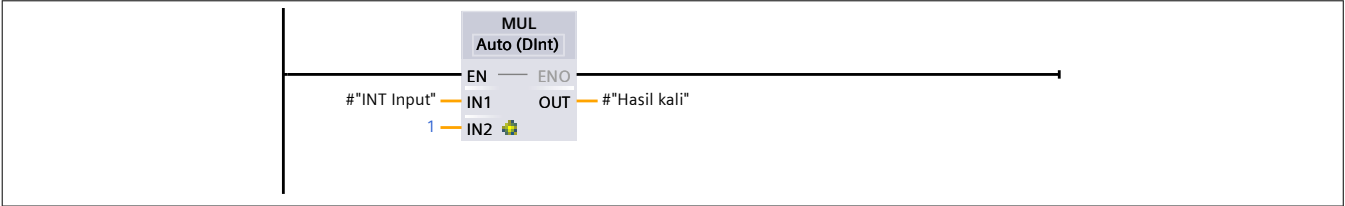
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Convert INT To TIME [FC15]

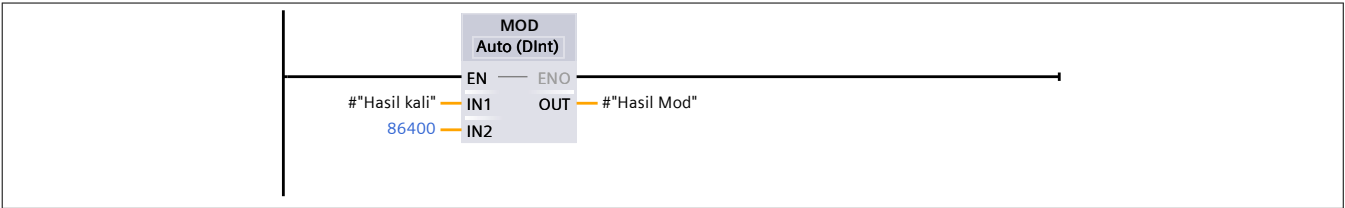
Convert INT To TIME Properties					
General					
Name	Convert INT To TIME	Number	15	Type	FC
Language	LAD	Numbering	Automatic		
Information					
Title	Mengubah waktu D/H/M/S dalam INT menjadi H/M/S	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
INT Input	DInt		
▼ Output			
TIME Output	Time_Of_Day		
InOut			
▼ Temp			
Hasil kali	DInt		
Hasil Mod	DInt		
Hasil TIME	Time		
Constant			
▼ Return			
Convert INT To TIME	Void		

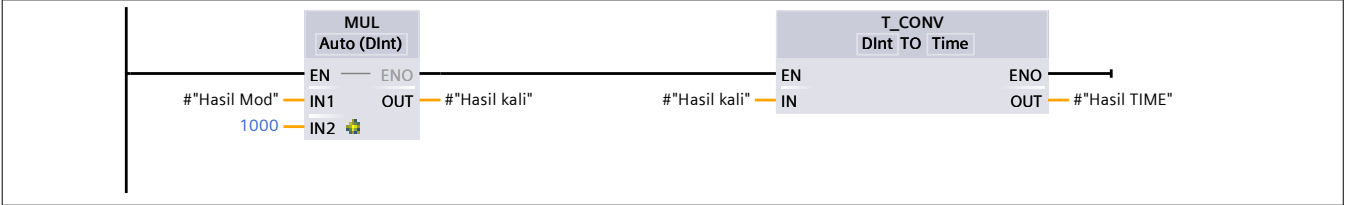
Network 1:



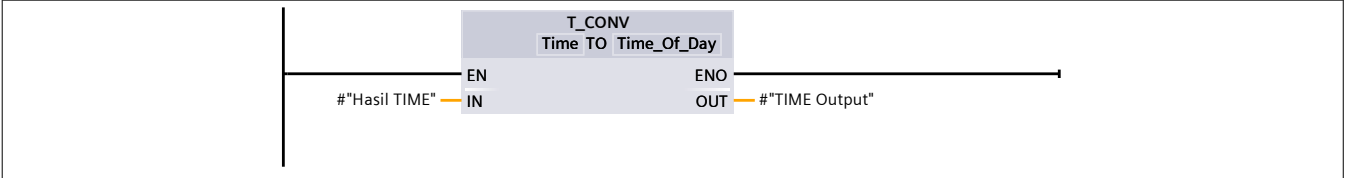
Network 2: Modulo



Network 3:



Network 4:



Totally Integrated Automation Portal

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Get Local Time [FC9]

Get Local Time Properties

General

Name	Get Local Time	Number	9	Type	FC
Language	LAD	Numbering	Automatic		

Information

Title	Convert Time of Day jadi marker seconds, dalam bentuk DINT Format.	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
▼ Output			
TOD_INT	DInt		
InOut			
▼ Temp			
returnval	Int		
▼ TOD	DTL		
YEAR	UInt		
MONTH	USInt		
DAY	USInt		
WEEKDAY	USInt		
HOUR	USInt		
MINUTE	USInt		
SECOND	USInt		
NANOSECOND	UDInt		
Day	DInt		
Hour	DInt		
Minute	DInt		
Second	DInt		
Adder	DInt		
Constant			
▼ Return			
Get Local Time	Void		

Network 1: Return TOD pake Read Local Time

RD_LOC_T

DTL

EN

ENO

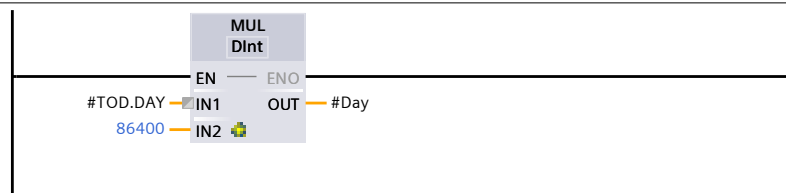
RET_VAL

OUT

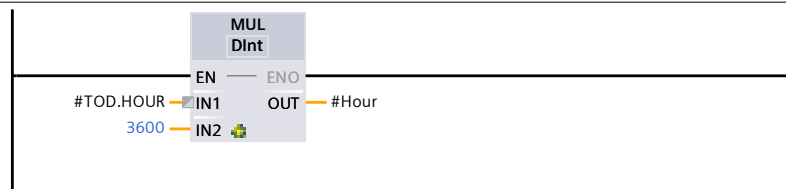
#returnval

#TOD

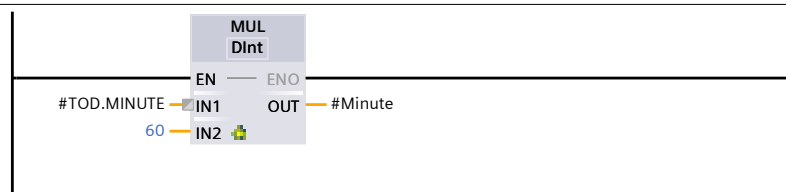
Network 2: Multiply DAY by 86400



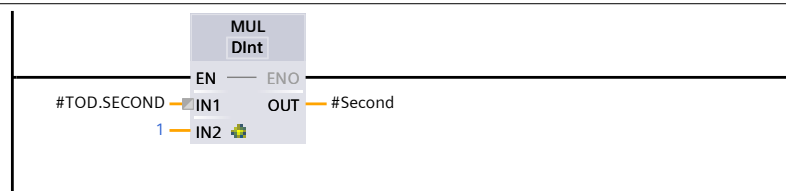
Network 3: Multiply HOUR by 3600



Network 4: Multiply Minute by 100

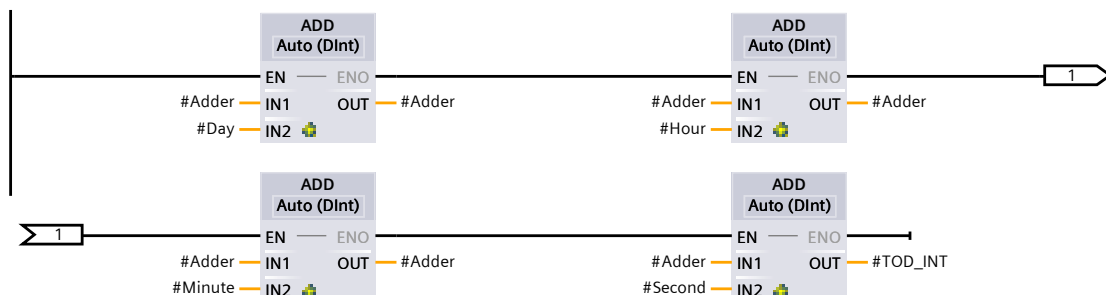


Network 5: Insert TOD.SECOND ke Second (biar semua sama)



Network 6: Add All to TOD_INT

Network 6: Add All to TOD_INT



PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Time Converter to seconds [FC10]

Time Converter to seconds Properties

General					
Name	Time Converter to seconds	Number	10	Type	FC
Language	SCL	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
time input	DInt		
▼ Output			
time output	DInt		
InOut			
▼ Temp			
hour	DInt		
minute	DInt		
seconds	DInt		
time used	DInt		
Constant			
▼ Return			
Time Converter to seconds	Void		

```
0001 //Mengganti format TIME T#_H_M_S menjadi format integer
0002
0003 //Conv to DINT
0004 # "time output" := TIME_TO_DINT(# "time input") / 1000;
0005
0006
0007 //Di bawah ini kode bekas bikin seconds menjadi INT
0008
0009 //Ambil tiap komponen waktu
0010 // #hour := FLOOR(# "time used" / 3600) * 10000;
0011 // #minute := FLOOR(# "time used" / 60 MOD 60) * 100;
0012 // #seconds := FLOOR(# "time used" MOD 60);
0013
0014 //Tambahin lagi untuk mendapat format integer
0015 // # "time output" := #hour + #minute + #seconds;
0016 //
0017 //FC UNUSED
```

Symbol	Address	Type	Comment
# "time input"		DInt	
# "time output"		DInt	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Hanger

Hanger Block [FC2]

Hanger Block Properties

General

Name	Hanger Block	Number	2	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
Input			
Output			
▼ InOut			
▼ FuncTag	"Hanger"		
Timer_Start	Bool		
Timer_Reset	Bool		
▼ IEC Timer Proses	Array[0..9] of IEC_TIMER		
▼ IEC Timer Proses[0]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[1]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[2]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[3]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[4]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[5]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		

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Name	Data type	Default value	Comment
▼ IEC Timer Proses[6]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[7]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[8]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ IEC Timer Proses[9]	IEC_TIMER		
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
▼ Timer celup	Array[0..9] of Time		
Timer celup[0]	Time		
Timer celup[1]	Time		
Timer celup[2]	Time		
Timer celup[3]	Time		
Timer celup[4]	Time		
Timer celup[5]	Time		
Timer celup[6]	Time		
Timer celup[7]	Time		
Timer celup[8]	Time		
Timer celup[9]	Time		
▼ Process_Start_Time	Array[0..9] of DInt		
Proc-ess_Start_Time[0]	DInt		
Proc-ess_Start_Time[1]	DInt		
Proc-ess_Start_Time[2]	DInt		
Proc-ess_Start_Time[3]	DInt		
Proc-ess_Start_Time[4]	DInt		
Proc-ess_Start_Time[5]	DInt		
Proc-ess_Start_Time[6]	DInt		
Proc-ess_Start_Time[7]	DInt		
Proc-ess_Start_Time[8]	DInt		
Proc-ess_Start_Time[9]	DInt		

Totally Integrated Automation Portal			
Name	Data type	Default value	Comment
▼ Process_Stop_Time	Array[0..9] of DInt		
Proc-ess_Stop_Time[0]	DInt		
Proc-ess_Stop_Time[1]	DInt		
Proc-ess_Stop_Time[2]	DInt		
Proc-ess_Stop_Time[3]	DInt		
Proc-ess_Stop_Time[4]	DInt		
Proc-ess_Stop_Time[5]	DInt		
Proc-ess_Stop_Time[6]	DInt		
Proc-ess_Stop_Time[7]	DInt		
Proc-ess_Stop_Time[8]	DInt		
Proc-ess_Stop_Time[9]	DInt		
▼ Setpoint	Array[0..9] of Time		
Setpoint[0]	Time		
Setpoint[1]	Time		
Setpoint[2]	Time		
Setpoint[3]	Time		
Setpoint[4]	Time		
Setpoint[5]	Time		
Setpoint[6]	Time		
Setpoint[7]	Time		
Setpoint[8]	Time		
Setpoint[9]	Time		
Start_ToD	Time_Of_Day		
Stop_ToD	Time_Of_Day		
Start Position	Int		
Position	Int		
Destination	Int		
Next Destination	Int		
Ready	Bool		
Proses	Int		
Nomor Proses	Int		
Jml Proses	Int		
Homebase	Int		
Setpoint_Ready	Bool		
Checker_Ready	Bool		
Time_Ready	Bool		
Occupancy_Ready	Bool		
HMI_Ready	Bool		
HMI_Finish	Bool		
HMI_Reset	Bool		
Crane_Ready	Bool		
Finish Process	Bool		
Divert	Bool		

Totally Integrated Automation Portal			
Name	Data type	Default value	Comment
Nomor Hanger	Int		
CNT_HMI_Ready	Int		
▼ Temp			
CNT_Reset Crane	Int		
CNT_Reset Tank	Int		
counter	Int		dipake di FOR loop waktu
counter prediksi	Int		dipake di FOR loop prediksi start stop
counter overwrite	Int		dipake di FOR loop overwrite prediksi
counter time ready	Int		dipake di FOR loop penentuan time ready
dump output	Bool		dipake di timer
conv setpoint	DInt		dipake di FOR loop prediksi start stop
nomor proses_before	Int		
current time	DInt		dipake untuk ambil waktu di overwrite
CNT_Time_Ready	Int		dipake ngecek HMI_Ready
CNT_Nomor Proses	Int		dipake ngecek spare waktu tiap proses
CNT_Nomor_Ready	Int		dipake ngecek readiness spare waktu tiap proses
CNT_Hanger	Int		ngeloop tiap hanger
▼ NP_Ready	Array[0..6] of Bool		
NP_Ready[0]	Bool		
NP_Ready[1]	Bool		
NP_Ready[2]	Bool		
NP_Ready[3]	Bool		
NP_Ready[4]	Bool		
NP_Ready[5]	Bool		
NP_Ready[6]	Bool		
modifier pertama	Int		
modifier start	Int		
delt stop	Int		
localtime	DInt		take local time
counter reset	DInt		
Constant			
▼ Return			
Hanger Block	Void		

```
0001 //Cari routing berdasarkan input
0002 IF #FuncTag.Divert = FALSE THEN //kalo lagi divert, jangan dirun
0003     "Routing Hanger"(homebase:= #FuncTag.Homebase,
0004         proses := #FuncTag.Proses,
0005         "nomor proses" := #FuncTag."Nomor Proses",
0006         destination => #FuncTag.Destination,
0007         "jml proses" => #FuncTag."Jml Proses",
0008         "next destination" => #FuncTag."Next Destination");
0009 END_IF;
0010
0011
0012 REGION Cek Setpoint
0013     // Call Setpoint
0014     "Check Setpoint Time"(nh:=#FuncTag."Nomor Hanger",
0015         "jml proses":=#FuncTag."Jml Proses",
0016         Ready=>#FuncTag.Setpoint_Ready);
0017     END_REGION
0018
0019 REGION Algoritma Penentuan TIME_Ready dan CRANE_Ready
0020     //Call function untuk cek kesiapan waktu, hanya ketika HMI udah bilang Ready
```

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0021	IF #FuncTag.HMI_Ready = TRUE AND (#FuncTag.Time_Ready = FALSE OR #FuncTag.Crane_Ready = FALSE) THEN //run code sampe ketemu waktu yang cocok buat di-run	
0022	"Penjadwalan TANGKI"("nomor hanger" := #FuncTag."Nomor Hanger",	
0023	"jml proses" := #FuncTag."Jml Proses",	
0024	Ready => #FuncTag.Time_Ready,	
0025	FuncTag:=#FuncTag);	
0026	END_IF;	
0027	//Call function untuk hitung prediksi penggunaan crane dan bandingin sama hanger satunya	
0028	IF #FuncTag.HMI_Ready = TRUE AND (#FuncTag.Crane_Ready = FALSE OR #FuncTag.Time_Ready = FALSE) THEN	
0029	"Penjadwalan CRANE"(nh := #FuncTag."Nomor Hanger",	
0030	Ready => #FuncTag.Crane_Ready);	
0031	END_IF;	
0032		
0033	END_REGION	
0034		
0035		
0036	//Save nomor proses sebelum diangkat pada region Algoritma Penentuan READY	
0037	#"nomor proses_before" := #FuncTag."Nomor Proses";	
0038		
0039	REGION Algoritma Penentuan READY	
0040	//Mulai algoritma pencarian apakah hanger READY atau TIDAK	
0041		
0042	//Cek apakah tangki next destination kosong.	
0043	IF "Occupancy_DB".occupancy[#FuncTag."Next Destination"] = FALSE THEN	
0044	#FuncTag.Occupancy_Ready := TRUE;	
0045	ELSE	
0046	#FuncTag.Occupancy_Ready := FALSE;	
0047	END_IF;	
0048		
0049	//Skenario 1: Hanger ready karena belum dimulai prosesnya/sedang di homebase	
0050	//IF HMI pencet OK AND pos hanger = homebase AND tangki destinasi kosong,	
	then READY = TRUE. Cek Destinasi Akhir di bawah	
0051	//Ini juga mengakomodasi yang loncat gara2 diverted. Akan di-run setiap cycle. Yang ini hanya READY ketika ada tangki kosong.	
0052	IF #FuncTag.Position = #FuncTag.Homebase THEN	
0053	IF (#FuncTag.Time_Ready = TRUE AND #FuncTag.Crane_Ready = TRUE) //secara timing harus ok	
0054	AND #FuncTag.Occupancy_Ready = TRUE THEN//next tank harus OK	
0055	#FuncTag.Ready := TRUE;	
0056	ELSE	
0057	#FuncTag.Ready := FALSE;	
0058	END_IF; //Loncat ke cek destinasi	
0059	END_IF;	
0060		
0061	//Skenario 2: Hanger telah berproses, kemudian waktu celup sudah selesai	
0062	//Cek apakah waktu celup sudah selesai. Jika sudah selesai, pasti diangkat	
0063	//Nilai timer celup ditambah waktu untuk bergerak turun sebagai offset.	
	Yang pindah ga dipake soalnya waktunya dinamis tergantung jarak yang ditempuh	
0064	IF #FuncTag.Position <> #FuncTag.Homebase AND (#FuncTag.Time_Ready = TRUE AND #FuncTag.Crane_Ready = TRUE) //secara timing harus ok	
0065	AND #FuncTag.Occupancy_Ready = TRUE THEN	
0066	//ditambah waktu untuk moving dan turun	
0067	IF #FuncTag."Timer celup"[#FuncTag."Nomor Proses"] + ("Time Param"."Avg Moving" + "Time Param".Turun) > #FuncTag.Setpoint[#FuncTag."Nomor Proses"] THEN	
0068	#FuncTag.Ready := TRUE;	

Totally Integrated Automation Portal		
0069	ELSE	
0070	#FuncTag.Ready := FALSE;	
0071	END_IF; //Loncat ke cek destinasi	
0072	END_IF;	
0073		
0074	//Cek Destinasi final	
0075	//Apakah diangkut ke tangki berikutnya atau ke hanger station. (Checker se-	
	bagai latch)	
0076	//Pengecekan dilakukan ketika sudah diangkat. Ambil pake step 4 supaya yang	
	timing jalan duluan	
0077	IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step	
	Gerak"."Ambil step" = 4 AND #FuncTag.Checker_Ready = FALSE	
0078	AND #FuncTag."Finish Process" = FALSE THEN //Kalo proses kelar yaudah gau-	
	sah nambahin nomor proses	
0079		
0080	//Skenario A: Tangki berikutnya Kosong. Tambah nomor proses.	
0081	IF #FuncTag.Ready = TRUE AND #FuncTag.Occupancy_Ready = TRUE THEN	
0082	#FuncTag."Nomor Proses" := #FuncTag."Nomor Proses" + 1;	
0083	#FuncTag.Checker_Ready := TRUE;	
0084		
0085	//Skenario B: Tangki berikutnya PENUH, loncat ke kode di paling bawah	
0086	ELSIF #FuncTag.Ready AND #FuncTag.Occupancy_Ready = FALSE THEN	
0087	#FuncTag.Divers := TRUE;	
0088	#FuncTag.Destination := #FuncTag.Homebase; //Pindahin dulu ke Homebase.	
	Kalo proses divert selesai, cek di kode paling bawah	
0089	#FuncTag.Checker_Ready := TRUE;	
0090	END_IF;	
0091	ELSE	
0092	; //do nothing	
0093	END_IF;	
0094		
0095		
0096	END_REGION	
0097		
0098		
0099	REGION Algoritma Timing	
0100	IF #FuncTag.HMI_Ready = TRUE AND #FuncTag.Time_Ready = TRUE THEN	
0101	//run timing	
0102	// Start timer ke-n apabila sudah mulai gerak lepas dan gerak ambil. Set-	
	point akan diatur nanti, di input HMI	
0103	// Waktu celup disimpan di ET	
0104		
0105	// Start waktu celup jika dan hanya jika hanger tersebut selesai dilepas	
	DAN bukan hasil divert. Rewrite waktu mulai.	
0106	IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step	
	Gerak"."Lepas step" = 2 AND #FuncTag.Position <> #FuncTag.Homebase THEN	
0107	#FuncTag.Timer_Start := TRUE;	
0108	#FuncTag.Checker_Ready := FALSE;	
0109		
0110	END_IF;	
0111		
0112	//Stop waktu celup ketika hanger diangkat. Rewrite waktu selesai.	
0113	IF ("Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND	
	"Step Gerak"."Ambil step" = 3) OR #FuncTag."Nomor Proses" = 0 THEN	
0114	#FuncTag.Timer_Start := FALSE;	
0115	END_IF;	
0116	//Timer nya jalan ketika timer start true.	
0117	#FuncTag."IEC Timer Proses"[#FuncTag."Nomor Proses"].TONR(IN := #Func-	
	Tag.Timer_Start, //Sesuai command di atas	

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0118	R := #FuncTag.Timer_Reset, //perlu diganti	
0119	PT := T#999M, //biar ET gapernah mentok	
0120	Q => # "dump output", //ga dipake	
0121	ET => #FuncTag."Timer celup" [#Func-	
	Tag."Nomor Proses"]); //storage	
0122	END_IF;	
0123	END_REGION	
0124		
0125	REGION Algoritma Penentuan Posisi Hanger	
0126	// Agar data Position pada DB selalu terupdate. Ikut berubah jika hanger se-	
	lected oleh Positioning dan pemindahan sudah selesai	
0127	IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step	
	Gerak"."Ambil step" = 4 THEN	
0128	//Pakai destination, karena yang dihitung hanya posisi akhir hanger	
0129	#FuncTag.Position := #FuncTag.Destination; //Dengan Catatan tiap kali	
	crane ganti, hanger selected mereset.	
0130	#FuncTag."Start Position" := #FuncTag.Position;	
0131	END_IF;	
0132		
0133	END_REGION	
0134		
0135		
0136	REGION Ending Sequence	
0137	// Supaya block nya bisa dipake lagi, ketika jml proses udah semua dan pro-	
	ses terakhir sudah dilakukan	
0138	IF #FuncTag."Nomor Proses" = #FuncTag."Jml Proses" AND ("Position-	
	ing_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step Gerak"."Lepas	
	step" = 3) THEN	
0139	#FuncTag."Finish Process" := TRUE; //ini yang jadi marker buat popup HMI,	
	sekali jd marker buat ambil data	
0140	END_IF;	
0141		
0142	//kalau HMI udah dipencet berarti clear, reset all	
0143	IF #FuncTag.HMI_Finish = TRUE OR #FuncTag.HMI_Reset = TRUE THEN	
0144	#FuncTag.Proses := 0; //Harus dikembangkan ke arah HMI	
0145	#FuncTag."Nomor Proses" := 0; //Dibalikin ke nol supaya reset	
0146	#FuncTag.HMI_Ready := FALSE; //ntar diganti supaya datanya ditarik dulu	
	sebelum bener2 "FINISH" di HMI nya	
0147	#FuncTag.Checker_Ready := FALSE;	
0148	#FuncTag.Time_Ready := FALSE;	
0149	#FuncTag.Crane_Ready := FALSE;	
0150	#FuncTag."Finish Process" := FALSE;	
0151	#FuncTag.Timer_Reset := TRUE; //untuk reset timer di bawah	
0152		
0153		
0154	//reset pengecekan penjadwalan	
0155	FOR # "CNT_Reset Crane" := 0 TO 10 DO	
0156	"Hanger Data"."Predict Crane" [#FuncTag."Nomor Hanger"].C_Ready [# "CNT_Re-	
	set Crane"] := FALSE;	
0157	// Statement section FOR	
0158	END_FOR;	
0159		
0160	FOR # "CNT_Reset Tank" := 0 TO 6 DO	
0161	"Hanger Data".Predict [#FuncTag."Nomor Hanger"]. "NP Ready" [# "CNT_Reset	
	Tank"] := FALSE;	
0162	// Statement section FOR	
0163	END_FOR;	
0164		

```

0165 //Reset semua timer ketika Timer_Reset = TRUE -> ET nya udah gausah dis-
impen
0166 IF #FuncTag.Timer_Reset = TRUE THEN //ntar ke HMI aja nyambungnya
0167   FOR #counter := 0 TO 9 DO //Timer celup dari 0 sampe 9
0168     #FuncTag."Timer celup"[#counter] := T#0MS; //reset timer celup
0169     #FuncTag.Process_Start_Time[#counter] := 0;
0170     #FuncTag.Process_Stop_Time[#counter] := 0;
0171     #FuncTag.Setpoint[#counter] := T#0MS; //reset setpointnya
0172     RESET_TIMER(#FuncTag."IEC Timer Proses"[#counter]);
0173   ;
0174   END_FOR;
0175   FOR #counter := 0 TO 10 DO //reset yang predict crane
0176     "Hanger Data"."Predict Crane"[#FuncTag."Nomor Hanger"].Start[#counter]
:= 0;
0177     "Hanger Data"."Predict Crane"[#FuncTag."Nomor Hanger"].Stop[#coun-
ter] := 0;
0178   END_FOR;
0179   #FuncTag.Timer_Reset := FALSE; //false in lagi
0180 END_IF;
0181
0182 //lalu rewrite HMI finish supaya bisa dipake lagi
0183 #FuncTag.HMI_Finish := FALSE;
0184 //Prediction ga di-reset karena sistemnya time-based, karena time selalu
maju jd pasti memenuhi kondisi
0185 END_IF;
0186
0187 //Kalau reset, rerun program tapi dengan proses 6 (proses resetting hanger)
0188 IF #FuncTag.HMI_Reset = TRUE THEN
0189   #FuncTag.Proses := 6; //routing reset
0190   #FuncTag.HMI_Ready := TRUE; //anggap ready
0191   #FuncTag.HMI_Reset := FALSE; //balikin lagi kondisi HMI reset
0192 END_IF;
0193 END_REGION
0194
0195 //Kode yang mengecek apakah proses Divert sudah selesai. Kalo udah selesai,
loncat ke Skenario 1. Ditaro di akhir supaya FunctagDiverit gak ke FALSE duluan
0196 IF #FuncTag.Diverit = TRUE THEN
0197   //cek apakah diverit sudah selesai, melalui posisi si hanger.
0198   IF #FuncTag.Position = #FuncTag.Homebase AND "Step Gerak"."Lepas step" = 3
THEN
0199     //Loncat ke skenario 1
0200     #FuncTag.Diverit := FALSE;
0201     #FuncTag.Ready := FALSE;
0202     #FuncTag.Checker_Ready := FALSE;
0203   END_IF;
0204 END_IF;
0205
0206
0207
0208
0209
0210
0211
0212

```

Symbol	Address	Type	Comment
"Hanger Data"."Predict Crane"[*].C_Ready[*]		Bool	
"Hanger Data"."Predict Crane"[*].Start[*]		DInt	

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Symbol	Address	Type	Comment
"Hanger Data".Predict Crane[*].Stop[*]		DInt	
"Hanger Data".Predict[*].NP Ready[*]		Bool	
"Occupancy_DB".occupancy[*]		Bool	
"Positioning_DB".hanger selected		Int	
"Step Gerak".Ambil step		Int	
"Step Gerak".Lepas step		Int	
"Time Param".Avg Moving		Time	
"Time Param".Turun		Time	
#CNT_Reset Crane		Int	
#CNT_Reset Tank		Int	
#dump output		Bool	dipake di timer
#nomor proses_before		Int	
#counter		Int	dipake di FOR loop waktu
#FuncTag		Block_UDT	
#FuncTag.Finish Process		Bool	
#FuncTag.IEC Timer Proses[*]		IEC_Timer	
#FuncTag.Jml Proses		Int	
#FuncTag.Next Destination		Int	
#FuncTag.Nomor Hanger		Int	
#FuncTag.Nomor Proses		Int	
#FuncTag.Start Position		Int	
#FuncTag.Timer celup[*]		Time	
#FuncTag.Checker_Ready		Bool	
#FuncTag.Crane_Ready		Bool	
#FuncTag.Destination		Int	
#FuncTag.Divert		Bool	
#FuncTag.HMI_Finish		Bool	
#FuncTag.HMI_Ready		Bool	
#FuncTag.HMI_Reset		Bool	
#FuncTag.Homebase		Int	
#FuncTag.Occupancy_Ready		Bool	
#FuncTag.Position		Int	
#FuncTag.Process_Start_Time[*]		DInt	
#FuncTag.Process_Stop_Time[*]		DInt	
#FuncTag.Proses		Int	
#FuncTag.Ready		Bool	
#FuncTag.Setpoint[*]		Time	
#FuncTag.Setpoint_Ready		Bool	
#FuncTag.Time_Ready		Bool	
#FuncTag.Timer_Reset		Bool	

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Symbol	Address	Type	Comment
#FuncTag.Timer_Start		Bool	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Hanger

Routing Hanger [FC1]

Routing Hanger Properties

General

Name	Routing Hanger	Number	1	Type	FC
Language	SCL	Numbering	Automatic		

Information

Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment
▼ Input			
homebase	Int		
▼ Output			
destination	Int		
jml proses	Int		
next destination	Int		
▼ InOut			
proses	Int		
nomor proses	Int		
▼ Temp			
temps	Bool		
Constant			
▼ Return			
Routing Hanger	Void		

```
0001 CASE #proses OF
0002   1: // CBP-IP
0003     #"jml proses" := 5;
0004     CASE #"nomor proses" OF
0005       0: // agar logic nomor proses berjalan (logic cek kekosongan)
0006         #destination := 4;
0007         #"next destination" := 4;
0008       1: // tangki 1
0009         #destination := 4;
0010         #"next destination" := 5; //penanda untuk ngecek readiness pada tang-
0011         ki berikutnya
0012       2: // tangki 2
0013         #destination := 5;
0014         #"next destination" := 6;
0015       3: // tangki 3
0016         #destination := 6;
0017         #"next destination" := 5;
0018       4: // tangki 2
0019         #destination := 5;
0020         #"next destination" := #homebase; //pulang
0021       5: //pulang
0022         #destination := #homebase; //HARUSNYA HOMEBASE
0023         #"next destination" := #homebase;
0024     ELSE // Statement section ELSE
0025       #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhen-
0026       ti (kayanya harusnya no proses deh). Belum bikin end sequenc
```



```
0025     ;
0026     END_CASE;
0027     ;
0028
0029 2:  // CBP-ADS
0030     #"jml proses" := 3;
0031     CASE #"nomor proses" OF
0032     0:  // agar logic nomor proses berjalan (logic cek kekosongan)
0033         #destination := 4;
0034         #"next destination" := 4;
0035     1:  // tangki 1
0036         #destination := 4;
0037         #"next destination" := 5; //penanda untuk ngecek readiness pada tang-
ki berikutnya
0038     2:  // tangki 2
0039         #destination := 5;
0040         #"next destination" := #homebase; //pulang
0041     3:  // PULANG
0042         #destination := #homebase; //Lokasi pulang beda2 tergantung hanger
nomor berapa
0043         #"next destination" := #homebase;
0044     ELSE  // Statement section ELSE
0045     ;
0046     END_CASE;
0047     ;
0048 3:  // CCC
0049     #"jml proses" := 7;
0050     CASE #"nomor proses" OF
0051     0:  // agar logic nomor proses berjalan (logic cek kekosongan)
0052         #destination := 4;
0053         #"next destination" := 4;
0054     1:  // tangki 1
0055         #destination := 4;
0056         #"next destination" := 5; //penanda untuk ngecek readiness pada tang-
ki berikutnya
0057     2:  // tangki 2
0058         #destination := 5;
0059         #"next destination" := 6;
0060     3:  // tangki 3
0061         #destination := 6;
0062         #"next destination" := 5;
0063     4:  // tangki 2
0064         #destination := 5;
0065         #"next destination" := 7;
0066     5:  // tangki 4
0067         #destination := 7;
0068         #"next destination" := 5;
0069     6:  // tangki 2
0070         #destination := 5;
0071         #"next destination" := #homebase; //pulang
0072     7:  //pulang
0073         #destination := #homebase; //HARUSNYA HOMEBASE
0074         #"next destination" := #homebase;
0075     ELSE  // Statement section ELSE
0076         #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhen-
ti (kayanya harusnya no proses deh). Belum bikin end sequenc
0077     ;
0078     END_CASE;
0079 4:  // CAA
```

```
0080  #"jml proses" := 7;
0081  CASE #"nomor proses" OF
0082    0:  // agar logic nomor proses berjalan (logic cek kekosongan)
0083        #destination := 4;
0084        #"next destination" := 4;
0085    1:  // tangki 1
0086        #destination := 4;
0087        #"next destination" := 5; //penanda untuk ngecek readiness pada tangki
berikutnya
0088    2:  // tangki 2
0089        #destination := 5;
0090        #"next destination" := 6;
0091    3:  // tangki 3
0092        #destination := 6;
0093        #"next destination" := 5;
0094    4:  // tangki 2
0095        #destination := 5;
0096        #"next destination" := 8;
0097    5:  // tangki 4
0098        #destination := 8;
0099        #"next destination" := 5;
0100    6:  // tangki 2
0101        #destination := 5;
0102        #"next destination" := #homebase; //pulang
0103    7:  //pulang
0104        #destination := #homebase; //HARUSNYA HOMEBASE
0105        #"next destination" := #homebase;
0106  ELSE  // Statement section ELSE
0107      #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhenti
(kayanya harusnya no proses deh). Belum bikin end sequenc
0108      ;
0109  END_CASE;
0110  5:  //SAA
0111  #"jml proses" := 5;
0112  CASE #"nomor proses" OF
0113    0:  // agar logic nomor proses berjalan (logic cek kekosongan)
0114        #destination := 4;
0115        #"next destination" := 4;
0116    1:  // tangki 1
0117        #destination := 4;
0118        #"next destination" := 5; //penanda untuk ngecek readiness pada tangki
berikutnya
0119    2:  // tangki 2
0120        #destination := 5;
0121        #"next destination" := 6;
0122    3:  // tangki 3
0123        #destination := 6;
0124        #"next destination" := 5;
0125    4:  // tangki 2
0126        #destination := 5;
0127        #"next destination" := #homebase; //pulang
0128    5:  //pulang
0129        #destination := #homebase; //HARUSNYA HOMEBASE
0130        #"next destination" := #homebase;
0131  ELSE  // Statement section ELSE
0132      #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhenti
(kayanya harusnya no proses deh). Belum bikin end sequenc
0133      ;
0134  END_CASE;
```

Totally Integrated Automation Portal			
<div>0135 ;</div> <div>0136 6: //Reset</div> <div>0137 #"jml proses" := 1;</div> <div>0138 CASE #"nomor proses" OF</div> <div>0139 0: // agar logic nomor proses berjalan (logic cek kekosongan)</div> <div>0140 #destination := #homebase;</div> <div>0141 #"next destination" := #homebase;</div> <div>0142 1: //pulangin</div> <div>0143 #destination := #homebase;</div> <div>0144 #"next destination" := #homebase;</div> <div>0145 ELSE // Statement section ELSE</div> <div>0146 #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhenti</div> <div>(kayanya harusnya no proses deh). Belum bikin end sequenc</div> <div>0147 ;</div> <div>0148 END_CASE;</div> <div>0149 ELSE // Statement section ELSE</div> <div>0150 ;</div> <div>0151 END_CASE;</div> <div>0152</div>			
Symbol	Address	Type	Comment
"jml proses"		Int	
"next destination"		Int	
"nomor proses"		Int	
#destination		Int	
#homebase		Int	
#proses		Int	

PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Hanger

Okupansi Tangki [FB1]

Okupansi Tangki Properties

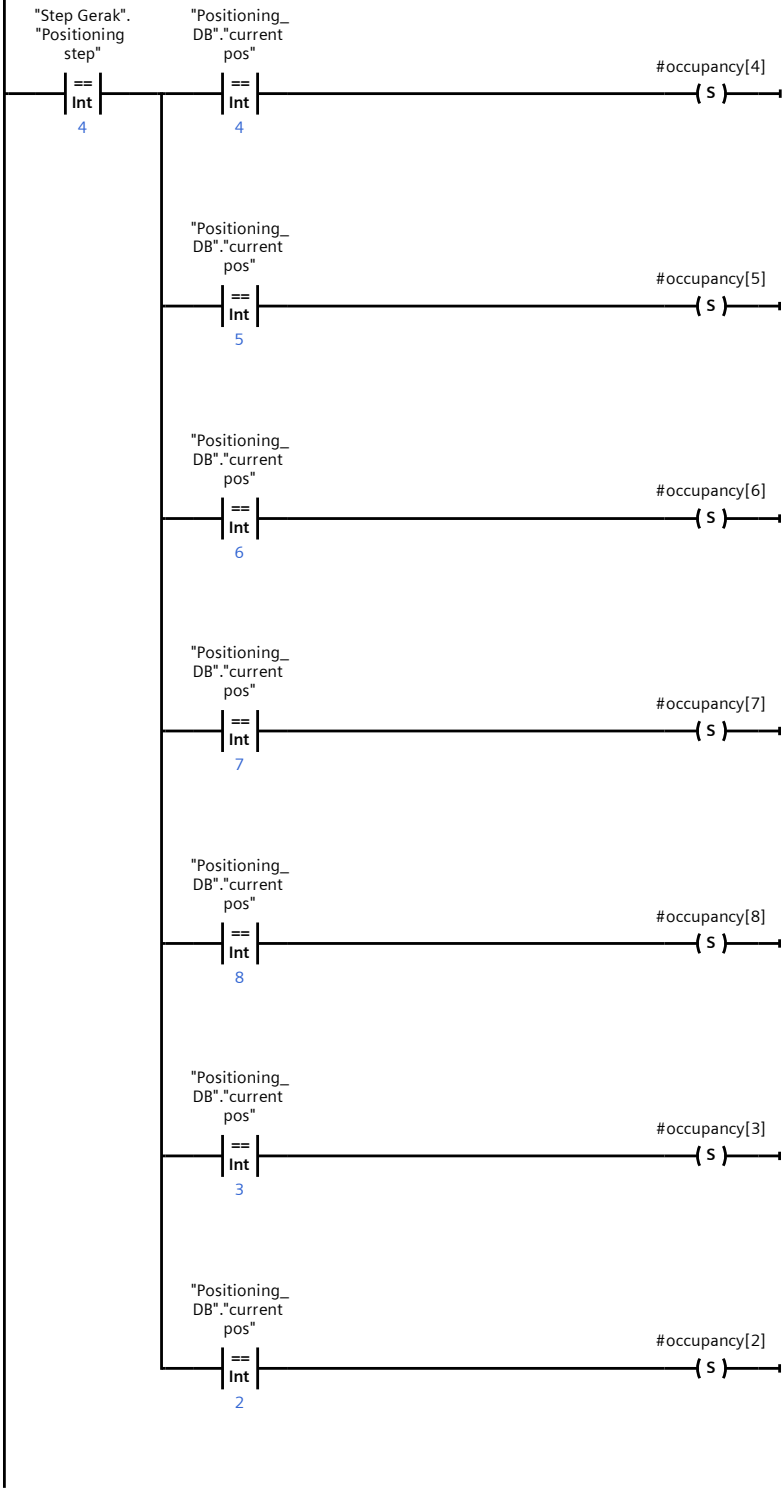
General

Name	Okupansi Tangki	Number	1	Type	FB
Language	LAD	Numbering	Automatic		

Information

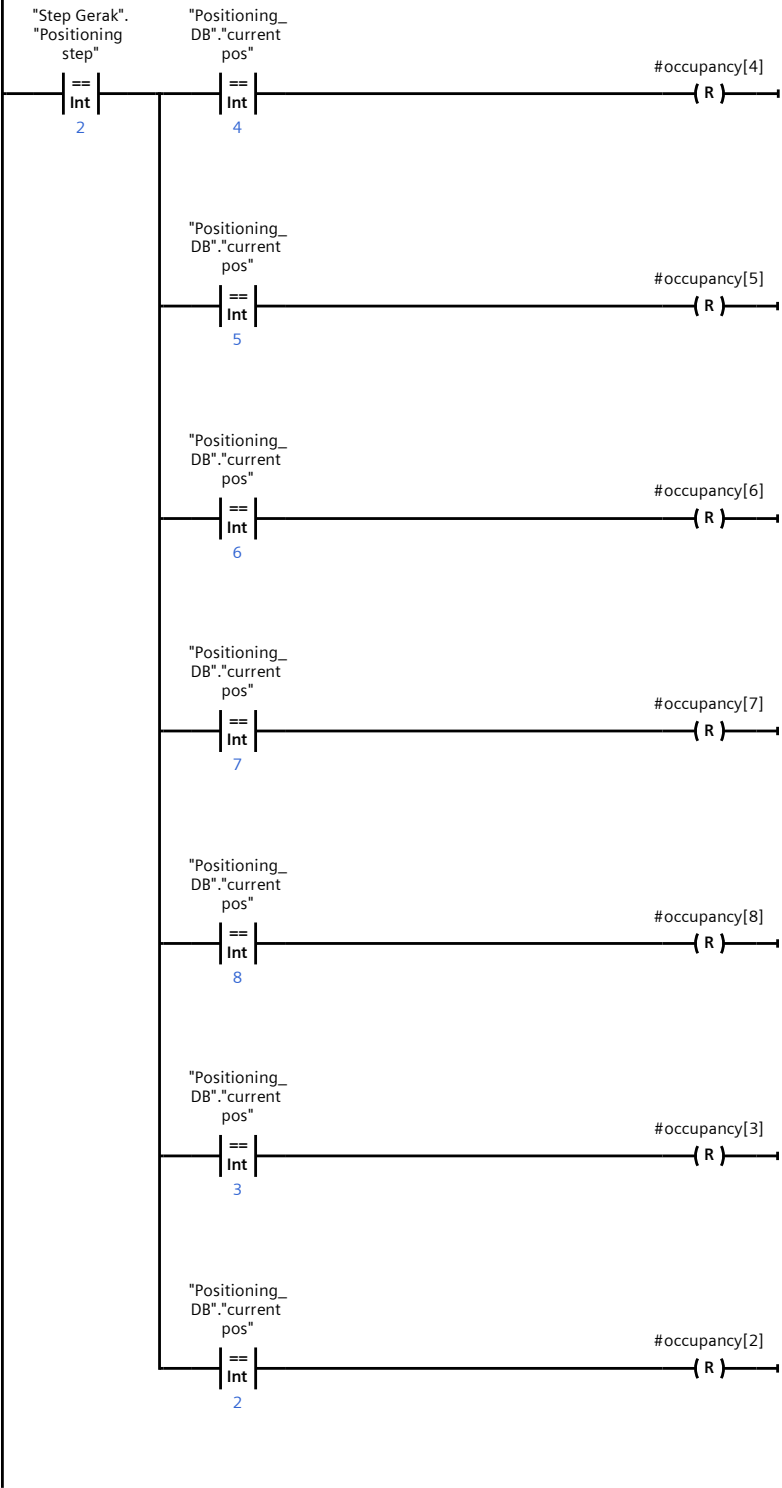
Title	Menentukan occupied dari setiap tangki	Author		Comment	Menentukan okupansi dari setiap tangki, berdasarkan posisi hanger sedang ambil atau lepas. Jika pos step ambil (2), occupancy = FALSE pos step lepas (4), occupancy = TRUE yang dilihat adalah KETERISIAN-NYA
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
▼ Input									
pos h1	Int	0	Non-retain	True	True	True	False		
pos h2	Int	0	Non-retain	True	True	True	False		
Output									
InOut									
▼ Static									
▼ occupancy	Array[0..9] of Bool		Non-retain	True	True	True	False		
occupancy[0]	Bool	false	Non-retain	True	True	True	False		
occupancy[1]	Bool	false	Non-retain	True	True	True	False		
occupancy[2]	Bool	false	Non-retain	True	True	True	False		
occupancy[3]	Bool	false	Non-retain	True	True	True	False		
occupancy[4]	Bool	false	Non-retain	True	True	True	False		
occupancy[5]	Bool	false	Non-retain	True	True	True	False		
occupancy[6]	Bool	false	Non-retain	True	True	True	False		



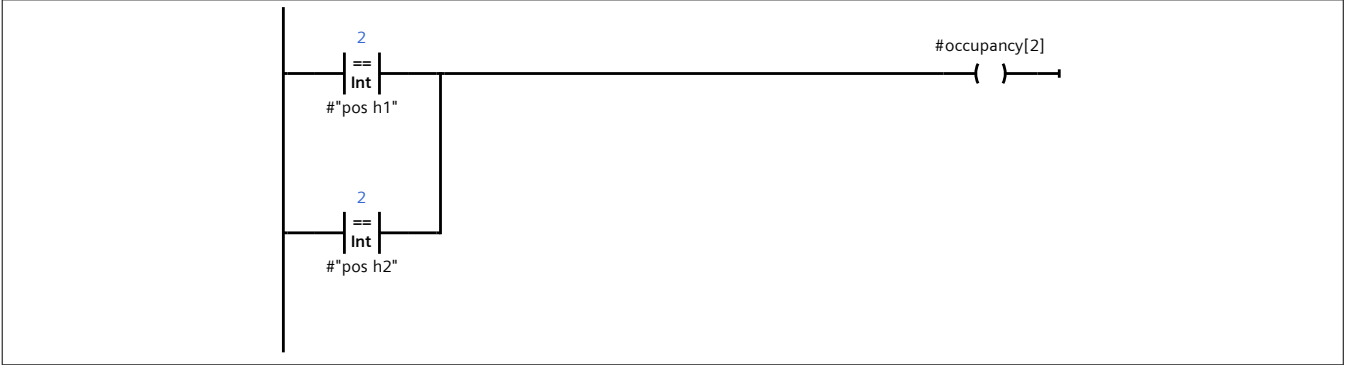
Network 2: Step Ambil

Set kontak to FALSE when positioning step = 2 AND current pos = n



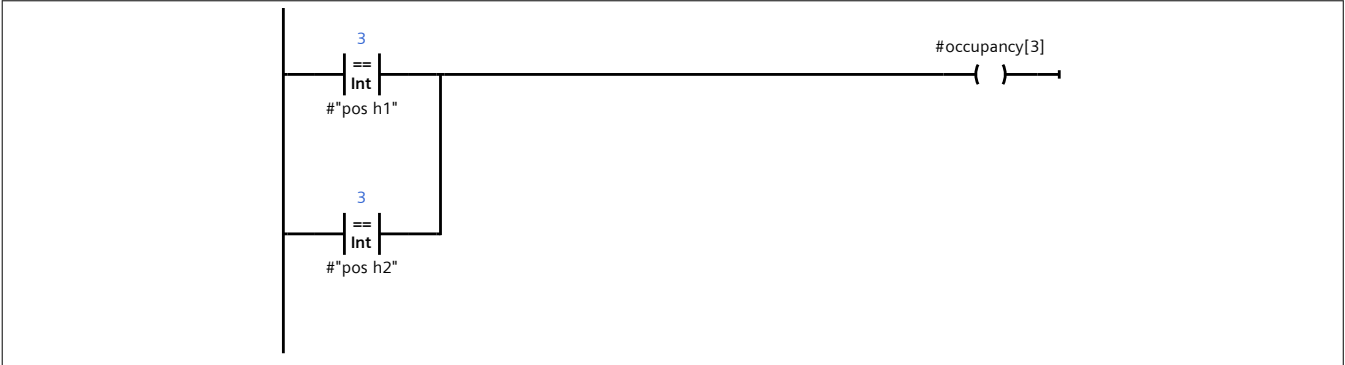
Network 4: Coba algoritma yang lebih mudah buat nentuin okupansi

ST2



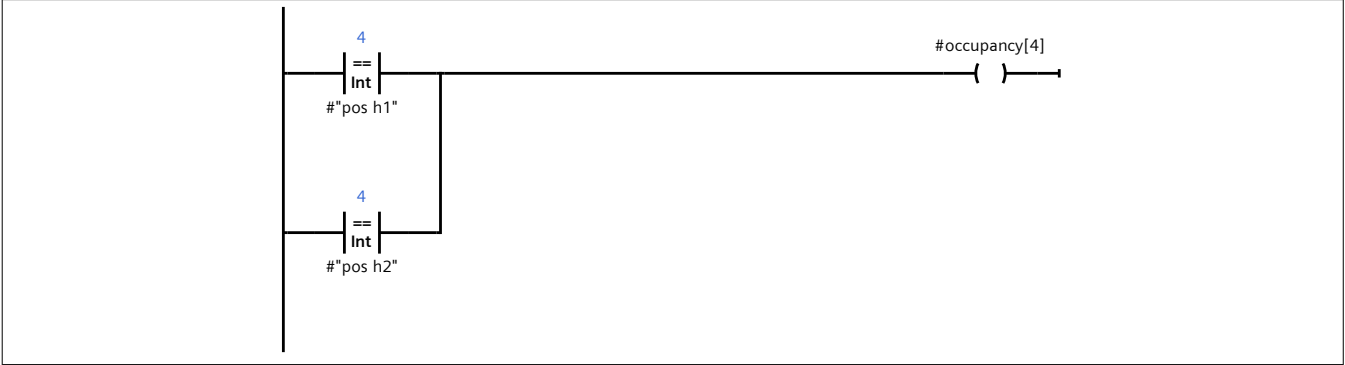
Network 5: Coba algoritma yang lebih mudah buat nentuin okupansi

ST1



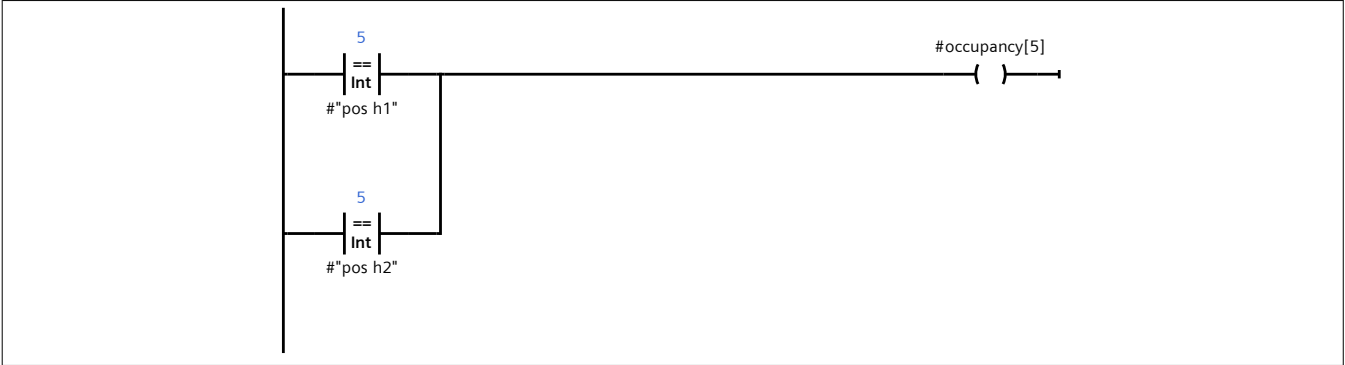
Network 6: Coba algoritma yang lebih mudah buat nentuin okupansi

ALK



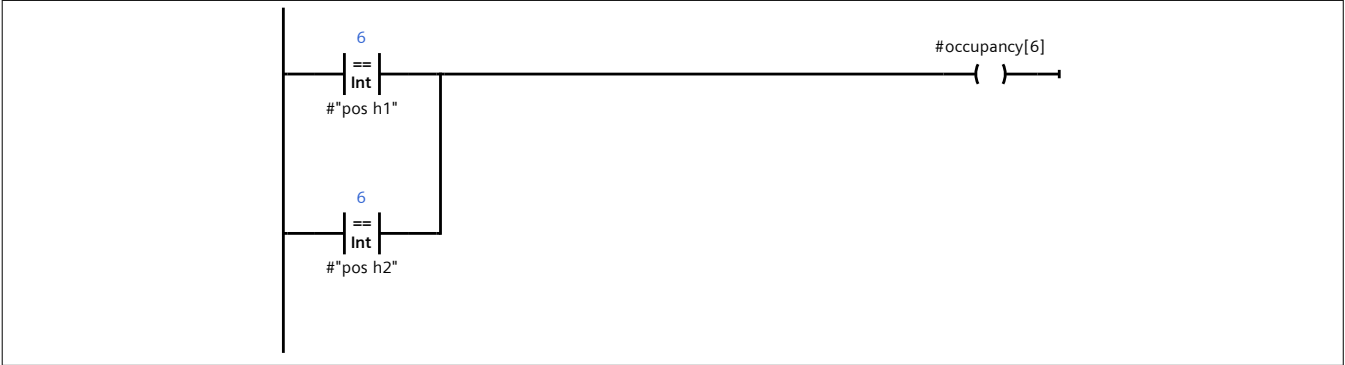
Network 7: Coba algoritma yang lebih mudah buat nentuin okupansi

RIN



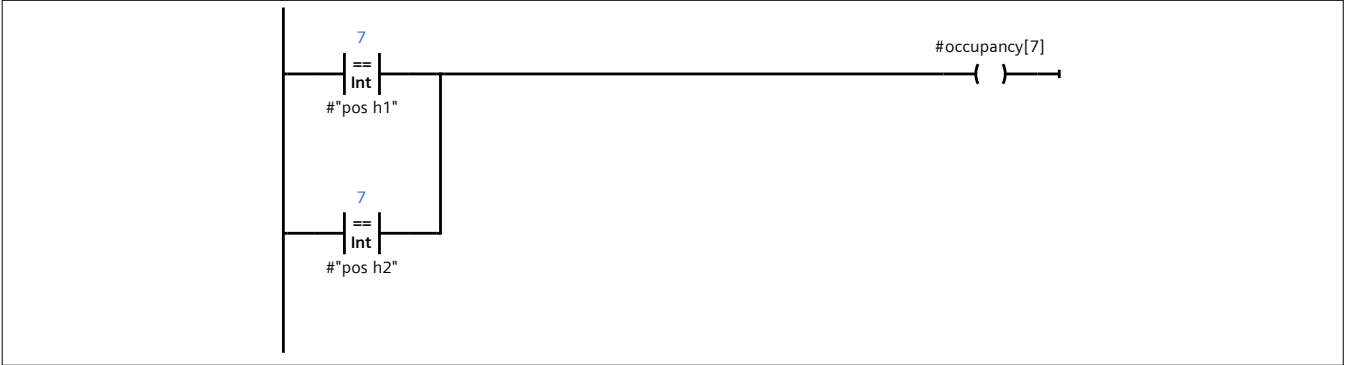
Network 8: Coba algoritma yang lebih mudah buat nentuin okupansi

DEOX



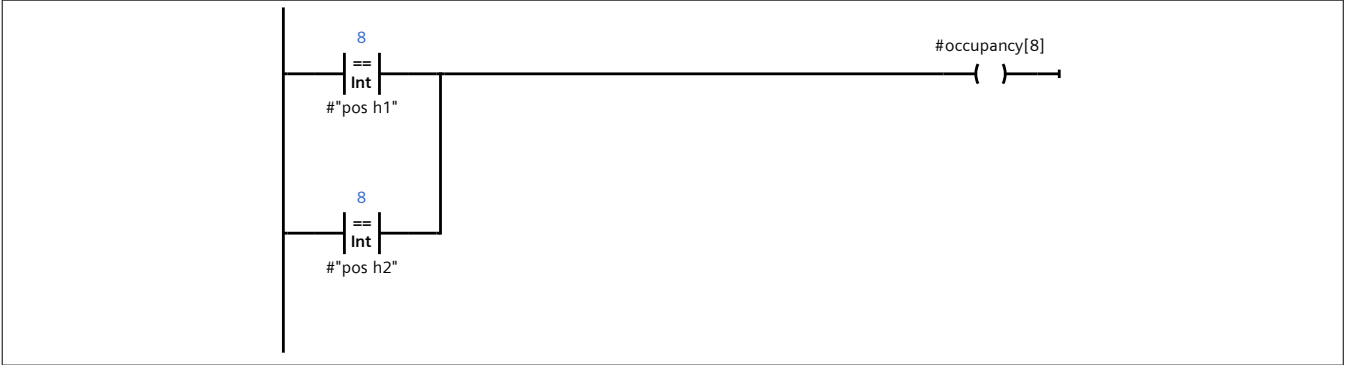
Network 9: Coba algoritma yang lebih mudah buat nentuin okupansi

CCC



Network 10: Coba algoritma yang lebih mudah buat nentuin okupansi

CAA



PLC_1 [CPU 1212C AC/DC/Rly]

































Technology objects

This folder is empty.

PLC_1 [CPU 1212C AC/DC/Rly]

PLC tags

































PLC tags

Icon	Name	Data type	Address	Visible in HMI engineering	Accessible from HMI/OPC UA/Web API	Comment
	D Limit	Bool	%I13.3	True	True	
	D motor	Bool	%M11.3	True	True	
	Edge Memory Kanan	Bool	%M30.1	True	True	
	Edge Memory Kiri	Bool	%M30.0	True	True	
	Hard Reset DB Hanger	Bool	%M10.0	True	True	
	hmi_atas	Bool	%M9.2	True	True	
	hmi_bawah	Bool	%M9.3	True	True	
	hmi_kanan	Bool	%M9.4	True	True	
	hmi_kiri	Bool	%M9.5	True	True	
	L Limit	Bool	%I13.0	True	True	
	L motor	Bool	%M11.0	True	True	
	mode_manual	Bool	%M9.0	True	True	
	mode_otomatis	Bool	%M9.1	True	True	
	motor_atas	Bool	%Q0.0	True	True	
	motor_bawah	Bool	%Q0.1	True	True	
	motor_kanan	Bool	%Q0.3	True	True	
	motor_kiri	Bool	%Q0.2	True	True	
	plc_ON	Bool	%Q0.4	True	True	
	prox_crane_atas	Bool	%I12.1	True	True	
	prox_crane_bawah	Bool	%I12.2	True	True	
	prox_hanger_1	Bool	%I0.7	True	True	
	prox_hanger_2	Bool	%I0.6	True	True	
	prox_tangki_1	Bool	%I0.5	True	True	
	prox_tangki_2	Bool	%I0.4	True	True	
	prox_tangki_3	Bool	%I0.3	True	True	
	prox_tangki_4	Bool	%I0.2	True	True	
	prox_tangki_5	Bool	%I0.1	True	True	
	prox_ujung_kanan	Bool	%I12.0	True	True	
	prox_ujung_kiri	Bool	%I0.0	True	True	
	R Limit	Bool	%I13.1	True	True	
	R motor	Bool	%M11.1	True	True	
	Sys Error Main Tag	Bool	%M11.4	True	True	

PLC_1 [CPU 1212C AC/DC/Rly] / PLC tags

Default tag table [70]

PLC tags

Icon	Name	Data type	Address	Visible in HMI engineering	Accessible from HMI/OPC UA/Web API	Comment
	D Limit	Bool	%I13.3	True	True	
	D motor	Bool	%M11.3	True	True	
	Edge Memory Kanan	Bool	%M30.1	True	True	
	Edge Memory Kiri	Bool	%M30.0	True	True	
	Hard Reset DB Hanger	Bool	%M10.0	True	True	
	hmi_atas	Bool	%M9.2	True	True	
	hmi_bawah	Bool	%M9.3	True	True	
	hmi_kanan	Bool	%M9.4	True	True	
	hmi_kiri	Bool	%M9.5	True	True	
	L Limit	Bool	%I13.0	True	True	
	L motor	Bool	%M11.0	True	True	
	mode_manual	Bool	%M9.0	True	True	
	mode_otomatis	Bool	%M9.1	True	True	
	motor_atas	Bool	%Q0.0	True	True	
	motor_bawah	Bool	%Q0.1	True	True	
	motor_kanan	Bool	%Q0.3	True	True	
	motor_kiri	Bool	%Q0.2	True	True	
	plc_ON	Bool	%Q0.4	True	True	
	prox_crane_atas	Bool	%I12.1	True	True	
	prox_crane_bawah	Bool	%I12.2	True	True	
	prox_hanger_1	Bool	%I0.7	True	True	
	prox_hanger_2	Bool	%I0.6	True	True	
	prox_tangki_1	Bool	%I0.5	True	True	
	prox_tangki_2	Bool	%I0.4	True	True	
	prox_tangki_3	Bool	%I0.3	True	True	
	prox_tangki_4	Bool	%I0.2	True	True	
	prox_tangki_5	Bool	%I0.1	True	True	
	prox_ujung_kanan	Bool	%I12.0	True	True	
	prox_ujung_kiri	Bool	%I0.0	True	True	
	R Limit	Bool	%I13.1	True	True	
	R motor	Bool	%M11.1	True	True	
	Sys Error Main Tag	Bool	%M11.4	True	True	

PLC_1 [CPU 1212C AC/DC/Rly] / PLC data types

Hanger

Hanger Properties

General

Name	Hanger	Number	1	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value	Access- ible from HMI/OPC UA/Web API	Wri- ta- ble from HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Comment
Timer_Start	Bool	false	True	True	True	False	
Timer_Reset	Bool	false	True	True	True	False	
▼ IEC Timer Proses	Array[0..9] of IEC_TIMER		True	True	True	False	
▼ IEC Timer Proses[0]	IEC_TIMER		True	True	True	False	
PT	Time	T#0ms	True	True	True	False	
ET	Time	T#0ms	True	False	True	False	
IN	Bool	false	True	True	True	False	
Q	Bool	false	True	False	True	False	
▼ IEC Timer Proses[1]	IEC_TIMER		True	True	True	False	
PT	Time	T#0ms	True	True	True	False	
ET	Time	T#0ms	True	False	True	False	
IN	Bool	false	True	True	True	False	
Q	Bool	false	True	False	True	False	
▼ IEC Timer Proses[2]	IEC_TIMER		True	True	True	False	
PT	Time	T#0ms	True	True	True	False	
ET	Time	T#0ms	True	False	True	False	
IN	Bool	false	True	True	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/ We b API	Visible in HMI engi-neer-ing	Set-point	Comment
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[3]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[4]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[5]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[6]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[7]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/ We b API	Visible in HMI engi-neer-ing	Set-point	Comment
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[8]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro-ses[9]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ Timer celup	Array[0..9] of Time		True	Tru e	True	False	
Timer celup[0]	Time	T#0ms	True	Tru e	True	False	
Timer celup[1]	Time	T#0ms	True	Tru e	True	False	
Timer celup[2]	Time	T#0ms	True	Tru e	True	False	
Timer celup[3]	Time	T#0ms	True	Tru e	True	False	
Timer celup[4]	Time	T#0ms	True	Tru e	True	False	
Timer celup[5]	Time	T#0ms	True	Tru e	True	False	
Timer celup[6]	Time	T#0ms	True	Tru e	True	False	
Timer celup[7]	Time	T#0ms	True	Tru e	True	False	
Timer celup[8]	Time	T#0ms	True	Tru e	True	False	
Timer celup[9]	Time	T#0ms	True	Tru e	True	False	
▼ Process_Start_Time	Array[0..9] of DInt		True	Tru e	True	False	
Proc-ess_Start_Time[0]	DInt	9999999	True	Tru e	True	False	
Proc-ess_Start_Time[1]	DInt	0	True	Tru e	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Access- ible from HMI/OPC UA/Web API	Wri- ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Comment
Proc- ess_Start_Time[2]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[3]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[4]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[5]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[6]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[7]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[8]	DInt	0	True	Tru e	True	False	
Proc- ess_Start_Time[9]	DInt	0	True	Tru e	True	False	
▼ Process_Stop_Time	Array[0..9] of DInt		True	Tru e	True	False	
Proc- ess_Stop_Time[0]	DInt	9999999	True	Tru e	True	False	
Proc- ess_Stop_Time[1]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[2]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[3]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[4]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[5]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[6]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[7]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[8]	DInt	0	True	Tru e	True	False	
Proc- ess_Stop_Time[9]	DInt	0	True	Tru e	True	False	
▼ Setpoint	Array[0..9] of Time		True	Tru e	True	False	
Setpoint[0]	Time	T#0ms	True	Tru e	True	False	
Setpoint[1]	Time	T#0ms	True	Tru e	True	False	
Setpoint[2]	Time	T#0ms	True	Tru e	True	False	
Setpoint[3]	Time	T#0ms	True	Tru e	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/ We b API	Visible in HMI engi-neer-ing	Set-point	Comment
Setpoint[4]	Time	T#0ms	True	True	True	False	
Setpoint[5]	Time	T#0ms	True	True	True	False	
Setpoint[6]	Time	T#0ms	True	True	True	False	
Setpoint[7]	Time	T#0ms	True	True	True	False	
Setpoint[8]	Time	T#0ms	True	True	True	False	
Setpoint[9]	Time	T#0ms	True	True	True	False	
Start_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	False	
Stop_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	False	
Start Position	Int	0	True	True	True	False	
Position	Int	0	True	True	True	False	
Destination	Int	0	True	True	True	False	
Next Destination	Int	0	True	True	True	False	
Ready	Bool	false	True	True	True	False	
Proses	Int	0	True	True	True	False	
Nomor Proses	Int	0	True	True	True	False	
Jml Proses	Int	0	True	True	True	False	
Homebase	Int	0	True	True	True	False	
Setpoint_Ready	Bool	false	True	True	True	False	
Checker_Ready	Bool	false	True	True	True	False	
Time_Ready	Bool	false	True	True	True	False	
Occupancy_Ready	Bool	false	True	True	True	False	
HMI_Ready	Bool	false	True	True	True	False	
HMI_Finish	Bool	false	True	True	True	False	
HMI_Reset	Bool	false	True	True	True	False	
Crane_Ready	Bool	false	True	True	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/ We b API	Visible in HMI engi-neer-ing	Set-point	Comment
Finish Process	Bool	false	True	True	True	False	
Divert	Bool	false	True	True	True	False	
Nomor Hanger	Int	0	True	True	True	False	
CNT_HMI_Ready	Int	0	True	True	True	False	

Totally Integrated Automation Portal

PLC_1 [CPU 1212C AC/DC/Rly] / PLC data types

NP Ready

NP Ready Properties

General

Name	NP Ready	Number	2	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/We b API	Visible in HMI engi-neer-ing	Set-point	Comment
▼ NP Ready	Array[0..6] of Bool		True	True	True	False	
NP Ready[0]	Bool	false	True	True	True	False	
NP Ready[1]	Bool	false	True	True	True	False	
NP Ready[2]	Bool	false	True	True	True	False	
NP Ready[3]	Bool	false	True	True	True	False	
NP Ready[4]	Bool	false	True	True	True	False	
NP Ready[5]	Bool	false	True	True	True	False	
NP Ready[6]	Bool	false	True	True	True	False	

PLC_1 [CPU 1212C AC/DC/Rly] / PLC data types

Predict Crane

Predict Crane Properties

General

Name	Predict Crane	Number	4	Type	UDT
Language		Numbering			

Information

Title		Author		Comment	
Family		Version		User-defined ID	

Name	Data type	Default value	Access- ible from HMI/OPC UA/Web API	Wri- ta- ble from m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	Set- point	Comment
▼ C_Ready	Array[0..10] of Bool		True	True	True	False	
C_Ready[0]	Bool	false	True	True	True	False	
C_Ready[1]	Bool	false	True	True	True	False	
C_Ready[2]	Bool	false	True	True	True	False	
C_Ready[3]	Bool	false	True	True	True	False	
C_Ready[4]	Bool	false	True	True	True	False	
C_Ready[5]	Bool	false	True	True	True	False	
C_Ready[6]	Bool	false	True	True	True	False	
C_Ready[7]	Bool	false	True	True	True	False	
C_Ready[8]	Bool	false	True	True	True	False	
C_Ready[9]	Bool	false	True	True	True	False	
C_Ready[10]	Bool	false	True	True	True	False	
▼ Start	Array[0..10] of DInt		True	True	True	False	
Start[0]	DInt	0	True	True	True	False	
Start[1]	DInt	0	True	True	True	False	
Start[2]	DInt	0	True	True	True	False	
Start[3]	DInt	0	True	True	True	False	

Totally Integrated Automation Portal							
Name	Data type	Default value	Accessi-ble from HMI/OPC UA/Web API	Wri-ta-ble from HM I/O PC UA/ We b API	Visible in HMI engi-neer-ing	Set-point	Comment
Start[4]	DInt	0	True	True	True	False	
Start[5]	DInt	0	True	True	True	False	
Start[6]	DInt	0	True	True	True	False	
Start[7]	DInt	0	True	True	True	False	
Start[8]	DInt	0	True	True	True	False	
Start[9]	DInt	0	True	True	True	False	
Start[10]	DInt	0	True	True	True	False	
▼ Stop	Array[0..10] of DInt		True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[0]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[1]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[2]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[3]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[4]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[5]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[6]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[7]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[8]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[9]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE
Stop[10]	DInt	0	True	True	True	False	sampe 10 untuk menjaga logic cek CRANE

Totally Integrated Automation Portal		
<div>PLC_1 [CPU 1212C AC/DC/Rly] / PLC data types</div> <div>System data types</div> <div>This folder is empty.</div>		

PLC_1 [CPU 1212C AC/DC/Rly] / Watch and force tables

Force table

Name	Address	Display format	Force value	Comment
------	---------	----------------	-------------	---------

Totally Integrated Automation Portal												
<div>PLC_1 [CPU 1212C AC/DC/Rly] / Watch and force tables</div> <div>Timing</div> <table><tr><th>Name</th><th>Address</th><th>Display format</th><th>Modify value</th><th>Comment</th></tr><tr><td>"Hanger Data".Hanger[1].Timer celup[1]</td><td></td><td>Time</td><td></td><td></td></tr></table>			Name	Address	Display format	Modify value	Comment	"Hanger Data".Hanger[1].Timer celup[1]		Time		
Name	Address	Display format	Modify value	Comment								
"Hanger Data".Hanger[1].Timer celup[1]		Time										

PLC_1 [CPU 1212C AC/DC/Rly] / Watch and force tables

Watch table_1

Name	Address	Display format	Modify value	Comment
	%M0.2	Bool		
	%M0.3	Bool		
	%M0.4	Bool		
	%M0.5	Bool		
// Command Gerak				
	%M0.1	Bool		
	%M0.0	Bool		
// Motor				
"motor_atas"	%Q0.0	Bool		
"motor_bawah"	%Q0.1	Bool		
"motor_kanan"	%Q0.3	Bool		
"motor_kiri"	%Q0.2	Bool		
// Proxy				
"prox_crane_atas"	%I12.1	Bool		
"prox_crane_bawah"	%I12.2	Bool		
"Timer Geser".IN		Bool		
"Timer Geser".ET		Time		
// Position and Destination				
"Positioning_DB"."current pos"		DEC+/-		
"Positioning_DB"."destination"		DEC+/-		

PLC_1 [CPU 1212C AC/DC/Rly]

Traces

Name

PLC_1 [CPU 1212C AC/DC/Rly] / Traces

Measurements

This folder is empty.

PLC_1 [CPU 1212C AC/DC/Rly] / Traces

Combined measurements

Name

Totally Integrated Automation Portal		
<div>PLC_1 [CPU 1212C AC/DC/Rly] / OPC UA communication</div> <div>Server interfaces</div> <div>This folder is empty.</div>		

PLC_1 [CPU 1212C AC/DC/Rly]

PLC alarm text lists

This folder is empty.

PLC_1 [CPU 1212C AC/DC/Rly] / Local modules

PLC_1 [CPU 1212C AC/DC/Rly]

PLC_1

General\Project information

Name	PLC_1	Author	Asus
Comment		Slot	1
Rack	0		

General\Catalog information

Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK/ SOURCE, DQ6 x relay and AI2 on board; 4 high-speed counters (expandable with digital signal board) and 4 pulse outputs on board; signal board expands on-board I/O; up to 3 communication modules for serial communication; up to 2 signal modules for I/O expansion; PROFINET IO controller, I-device, transport protocol TCP/IP, secure Open User Communication, S7 communication, Web server, OPC UA: Server DA
Article number	6ES7 212-1BE40-0XB0	Firmware version	V4.4

General\Identification & Maintenance

Plant designation		Location identifier	
Installation date	2023-02-17 07:29:25.735	Additional information	

General\Checksums

Text lists	FA 70 E8 75 1D 5A 8E 29	Software	AD FA 25 9D 3D 99 07 41
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PROFINET interface [X1]\General

Name	PROFINET interface_1	Author	Asus
Comment			

PROFINET interface [X1]\General\Project information

Name	DI 8/DQ 6_1	Comment	
Name	AI 2_1	Comment	

PROFINET interface [X1]\Ethernet addresses\Interface networked with

Subnet:	PN/IE_1		
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PROFINET interface [X1]\Ethernet addresses\IP protocol

IP configuration	Set IP address in the project	IP address:	192.168.0.1
Subnet mask:	255.255.255.0	Use router	False

PROFINET interface [X1]\Ethernet addresses\PROFINET

PROFINET device name is set directly at the device	False	Generate PROFINET device name automatically	True
PROFINET device name:	plc_1	Converted name:	plcxb1d0ed
Device number:	0		


PROFINET interface [X1]\Time synchronization

Enable time synchronization via NTP server	Enable time synchronization via NTP server		IP addresses
Server 1	0.0.0.0	Server 2	0.0.0.0
Server 3	0.0.0.0	Server 4	0.0.0.0
Update interval	10sec		
CPU synchronizes the modules of the device.	No synchronization		

Totally Integrated Automation Portal		
PROFINET interface [X1]\Digital inputs\Channel0		
Channel address	I0.0	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel0\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49152
Event name:	0	Hardware interrupt: 0
Rising edge0	Rising edge0	
PROFINET interface [X1]\Digital inputs\Channel0\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49280
Event name:	0	Hardware interrupt: 0
Falling edge0	Falling edge0	
PROFINET interface [X1]\Digital inputs\Channel1		
Channel address	I0.1	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel1\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49153
Event name:	0	Hardware interrupt: 0
Rising edge1	Rising edge1	
PROFINET interface [X1]\Digital inputs\Channel1\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49281
Event name:	0	Hardware interrupt: 0
Falling edge1	Falling edge1	
PROFINET interface [X1]\Digital inputs\Channel2		
Channel address	I0.2	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel2\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49154
Event name:	0	Hardware interrupt: 0
Rising edge2	Rising edge2	
PROFINET interface [X1]\Digital inputs\Channel2\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49282
Event name:	0	Hardware interrupt: 0
Falling edge2	Falling edge2	
PROFINET interface [X1]\Digital inputs\Channel3		
Channel address	I0.3	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel3\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49155
Event name:	0	Hardware interrupt: 0
Rising edge3	Rising edge3	
PROFINET interface [X1]\Digital inputs\Channel3\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent 49283
Event name:	0	Hardware interrupt: 0
Falling edge3	Falling edge3	
PROFINET interface [X1]\Digital inputs\Channel4		
Channel address	I0.4	Input filters 6.4 millise
Enable pulse catch	0	
PROFINET interface [X1]\Digital inputs\Channel4\		
Enable rising edge de- tection	0	RidPrefixRisingEdgeE- vent 49156
Event name:	0	Hardware interrupt: 0

Totally Integrated Automation Portal			
Rising edge4	Rising edge4		
PROFINET interface [X1]\Digital inputs\Channel4\			
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49284
Event name:	0	Hardware interrupt:	0
Falling edge4	Falling edge4		
PROFINET interface [X1]\Digital inputs\Channel5			
Channel address	I0.5	Input filters	6.4 millise
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel5\			
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49157
Event name:	0	Hardware interrupt:	0
Rising edge5	Rising edge5		
PROFINET interface [X1]\Digital inputs\Channel5\			
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49285
Event name:	0	Hardware interrupt:	0
Falling edge5	Falling edge5		
PROFINET interface [X1]\Digital inputs\Channel6			
Channel address	I0.6	Input filters	6.4 millise
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel6\			
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49158
Event name:	0	Hardware interrupt:	0
Rising edge6	Rising edge6		
PROFINET interface [X1]\Digital inputs\Channel6\			
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49286
Event name:	0	Hardware interrupt:	0
Falling edge6	Falling edge6		
PROFINET interface [X1]\Digital inputs\Channel7			
Channel address	I0.7	Input filters	6.4 millise
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel7\			
Enable rising edge detection	0	RidPrefixRisingEdgeEvent	49159
Event name:	0	Hardware interrupt:	0
Rising edge7	Rising edge7		
PROFINET interface [X1]\Digital inputs\Channel7\			
Enable falling edge detection	0	RidPrefixFallingEdgeEvent	49287
Event name:	0	Hardware interrupt:	0
Falling edge7	Falling edge7		
PROFINET interface [X1]\Analog inputs\Noise reduction			
Integration time	50 Hz (20 ms)		
PROFINET interface [X1]\Analog inputs\Channel0			
Channel address	IW64	Measurement type	Voltage
Voltage range	0..10 V	Smoothing	Weak (4 cycles)
		Enable overflow diagnostics	1
PROFINET interface [X1]\Analog inputs\Channel1			
Channel address	IW66	Measurement type	Voltage
Voltage range	0..10 V	Smoothing	Weak (4 cycles)
		Enable overflow diagnostics	1
PROFINET interface [X1]\Digital outputs			
Reaction to CPU STOP	Use substitute value		

Totally Integrated Automation Portal			
PROFINET interface [X1]\Digital outputs\Channel0			
Channel address	Q0.0	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel1			
Channel address	Q0.1	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel2			
Channel address	Q0.2	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel3			
Channel address	Q0.3	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel4			
Channel address	Q0.4	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Digital outputs\Channel5			
Channel address	Q0.5	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X1]\Operating mode			
IO controller	True	IO system	
Device number	0	IO device	False
PROFINET interface [X1]\I/O addresses\Input addresses			
Start address	0.0	End address	0.7
Organization block	0	Process image	0
PROFINET interface [X1]\I/O addresses\Input addresses			
Start address	64	End address	67
Organization block	0	Process image	0
PROFINET interface [X1]\I/O addresses\Output addresses			
Start address	0.0	End address	0.7
Organization block	0	Process image	0
PROFINET interface [X1]\Advanced options\Interface options			
Support device replacement without exchangeable medium	True	Permit overwriting of device names of all assigned IO devices	False
Use IEC V2.2 LLDP mode	False	Keep-Alive connection monitoring:	30s
PROFINET interface [X1]\Advanced options\Real time settings\IO communication			
Send clock:	1.000ms		
PROFINET interface [X1]\Advanced options\Real time settings\Real time options			
Calculated bandwidth for cyclic IO data:	0.000ms	Calculated bandwidth for cyclic IO data:	0.000%
PROFINET interface [X1]\Advanced options\Port [X1 P1]\General			
Name	Port_1	Author	Asus
Comment			
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port interconnection\Local port:			
Local port:	PLC_1\PROFINET interface_1 [X1]\Port_1 [X1 P1]	Medium:	Copper
Cable name:	---		

Totally Integrated Automation Portal			
			
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port interconnection\Partner port:			
	Monitoring of partner port is not possible	Partner port:	Any partner
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Activate			
Activate this port for use	True		
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Connection			
Transmission rate / duplex:	Automatic	Monitor	False
Enable autonegotiation	True		
PROFINET interface [X1]\Advanced options\Port [X1 P1]\Port options\Boundaries			
End of detection of accessible devices	False	End of topology discovery	False
End of the sync domain	False		
PROFINET interface [X1]\Web server access			
Enable Web server for the IP address of this interface	False	The Web server must also be activated in the properties of the PLC.	
High speed counters (HSC)\HSC1\General\Enable			
Enable this high speed counter	0	Enable this high speed counter	0
Enable this high speed counter	0	Enable this high speed counter	0
Enable this high speed counter	0	Enable this high speed counter	0
High speed counters (HSC)\HSC1\General\Project information			
Name	HSC_1	Comment	
Name	HSC_2	Comment	
Name	HSC_3	Comment	
Name	HSC_4	Comment	
Name	HSC_5	Comment	
Name	HSC_6	Comment	
High speed counters (HSC)\HSC1\I/O addresses\Input addresses			
Start address	1000.0	End address	1003.7
Start address	1004.0	End address	1007.7
Organization block	0	Start address	1008.0
End address	1011.7	Organization block	0
Process image	0	Start address	1012.0
End address	1015.7	Organization block	0
Process image	0	Start address	1016.0
End address	1019.7	Organization block	0
Process image	0	Start address	1020.0
End address	1023.7	Organization block	0
Process image	0	Organization block	0
Process image	0	Process image	0
Pulse generators (PTO/PWM)\PTO1/PWM1\General\Enable			
Enable this pulse generator	0	Enable this pulse generator	0

Totally Integrated Automation Portal					
Pulse generators (PTO/PWM)\PTO1/PWM1\General\Project information					
Name	Pulse_1		Comment		
Name	Pulse_2		Comment		
Pulse generators (PTO/PWM)\PTO1/PWM1\I/O addresses\Output addresses					
Start address	1000.0		End address	1001.7	
Start address	1002.0		End address	1003.7	
Organization block	0		Organization block	0	
Process image	0		Process image	0	
Startup					
Startup after POWER ON	Warm restart - mode before POWER OFF		Comparison preset to actual configuration	Startup CPU even if mismatch	
Configuration time	60000ms		OBs should be interruptible	1	
Cycle					
Cycle monitoring time	150ms				
Enable minimum cycle time for cyclic OBs	0		Minimum cycle time	1ms	
Communication load					
Cycle load due to communication	20%				
System and clock memory\System memory bits					
Enable the use of system memory byte	0		Address of system memory byte (MBx)	1	
First cycle			Diagnostic status changed		
Always 1 (high)			Always 0 (low)		
System and clock memory\Clock memory bits					
Enable the use of clock memory byte	0		Address of clock memory byte (MBx)	0	
10 Hz clock			5 Hz clock		
2.5 Hz clock			2 Hz clock		
1.25 Hz clock			1 Hz clock		
0.625 Hz clock			0.5 Hz clock		
Web server\General					
Activate Web server on all modules of this device	False		Permit access only with HTTPS	True	
Web server\Automatic update					
Enable automatic update	True		Update interval	0s	
Web server\User management					
User name			User rights		
Everybody					
Web server\User-defined web pages					
Application name	HTML source path	Default HTML page	Files with dynamic content	Web DB number	Fragment DB number
		index.htm	.htm;.html	333	334
Web server\Overview of interfaces					
Device		Interface		Enabled web server access	
PLC_1		PROFINET interface_1		False	
User interface languages					
Assign project language			User interface languages		
English (United States)			German		
English (United States)			English		
English (United States)			French		
English (United States)			Spanish		
English (United States)			Italian		
English (United States)			Chinese (simplified)		

Totally Integrated Automation Portal					
Time of day\Local time					
Time zone		(UTC +07:00) Bangkok, Hanoi, Jakarta			
Time of day\Daylight saving time					
Activate daylight saving time		0	Difference between standard and daylight saving time		60mins
Time of day\Daylight saving time\Start of daylight saving time					
Starting week of the month:		First			Sunday
of		January	at		Midnight
Time of day\Daylight saving time\Start of standard time					
		First			Sunday
of		January	at		Midnight
Protection & Security					
Level of protection		No protection			
Protection & Security\Connection mechanisms					
Permit access with PUT/GET communication from remote partner		False			
Protection & Security\Security event					
Summarize diagnostics in case of high message volume		True	Length of an interval		20
Unit		seconds			
Protection & Security\External load memory					
Disable copying from internal load memory to external load memory		False			
Configuration control\Configuration control for central configuration					
Allow to reconfigure the device via the user program		0			
Connection resources\					
	Station resources - Reserved - Maximum	Station resources - Reserved - Configured	Station resources - Dynamic - Configured	Module resources - PLC_1 [CPU 1212C AC/DC/Rly] - Configured	
Maximum number of resources:		62	6	68	
	Maximum	Configured	Configured	Configured	
PG communication:	4	-	-	-	
HMI communication:	12	1	0	1	
S7 communication:	8	0	0	0	
Open user communication:	8	0	0	0	
Web communication:	30	-	-	-	
Other communication:	-	-	0	0	
Total resources used:		1	0	1	
Available resources:		61	6	67	
Overview of addresses\Overview of addresses\Overview of addresses					
Inputs		True	Outputs		True
Address gaps		False	Slot		True

Totally Integrated Automation Portal										
Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
I	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	1 1
O	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	1 1
I	64	67	AI 2_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 2
I	1000	1003	HSC_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 16
I	1004	1007	HSC_2	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 17
I	1008	1011	HSC_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 18
I	1012	1015	HSC_4	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 19
I	1016	1019	HSC_5	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 20
I	1020	1023	HSC_6	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 21
O	1000	1001	Pulse_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 32
O	1002	1003	Pulse_2	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 33
O	1004	1005	Pulse_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 34
O	1006	1007	Pulse_4	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	1 35
I	12	13	DI 16x24VDC /DQ 16xRe-lay_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2
O	12	13	DI 16x24VDC /DQ	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2

Totally Integrated Automation Portal										
Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
			16xRe-lay_1							

PLC_1 [CPU 1212C AC/DC/Rly] / Local modules

DI 16x24VDC/DQ 16xRelay_1

DI 16x24VDC/DQ 16xRelay_1

General\Project information

Name	DI 16x24VDC/DQ 16xRelay_1	Author	Asus
Comment		Slot	2

General\Catalog information

Short designation	SM 1223 DI16/DQ16 x relay	Description	Digital input/output module DI16 x 24VDC SINK/SOURCE and DQ16 x relay; configurable input delay; plug-in terminal blocks
Article number	6ES7 223-1PL32-0XB0	Firmware version	V2.0

DI 16/DQ 16\Project information

Name	DI 16x24VDC/DQ 16xRelay_1	Comment	
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DI 16/DQ 16\Digital inputs\Input filters

I12.0 - I12.3	6.40ms	I12.4 - I12.7	6.40ms
I13.0 - I13.3	6.40ms	I13.4 - I13.7	6.40ms

DI 16/DQ 16\Digital inputs\Channel0

Channel address	I12.0	
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DI 16/DQ 16\Digital inputs\Channel1

Channel address	I12.1	
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DI 16/DQ 16\Digital inputs\Channel2

Channel address	I12.2	
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DI 16/DQ 16\Digital inputs\Channel3

Channel address	I12.3	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel4

Channel address	I12.4	
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DI 16/DQ 16\Digital inputs\Channel5

Channel address	I12.5	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel6

Channel address	I12.6	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel7

Channel address	I12.7	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel8

Channel address	I13.0	
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DI 16/DQ 16\Digital inputs\Channel9

Channel address	I13.1	
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DI 16/DQ 16\Digital inputs\Channel10

Channel address	I13.2	
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DI 16/DQ 16\Digital inputs\Channel11

Channel address	I13.3	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel12

Channel address	I13.4	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel13

Channel address	I13.5	
-----------------	-------	--

DI 16/DQ 16\Digital inputs\Channel14

Channel address	I13.6	
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DI 16/DQ 16\Digital inputs\Channel15

Channel address	I13.7	
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DI 16/DQ 16\Digital outputs

Reaction to CPU STOP	Use substitute value	
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DI 16/DQ 16\Digital outputs\Channel0

Channel address	Q12.0	Substitute a value of 1 on a change from RUN to STOP.	0
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Totally Integrated Automation Portal		
DI 16/DQ 16\Digital outputs\Channel1		
Channel address	Q12.1	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel2		
Channel address	Q12.2	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel3		
Channel address	Q12.3	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel4		
Channel address	Q12.4	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel5		
Channel address	Q12.5	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel6		
Channel address	Q12.6	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel7		
Channel address	Q12.7	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel8		
Channel address	Q13.0	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel9		
Channel address	Q13.1	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel10		
Channel address	Q13.2	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel11		
Channel address	Q13.3	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel12		
Channel address	Q13.4	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel13		
Channel address	Q13.5	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel14		
Channel address	Q13.6	Substitute a value of 1 on a change from RUN to STOP.
		0
DI 16/DQ 16\Digital outputs\Channel15		
Channel address	Q13.7	Substitute a value of 1 on a change from RUN to STOP.
		0

[illegible]