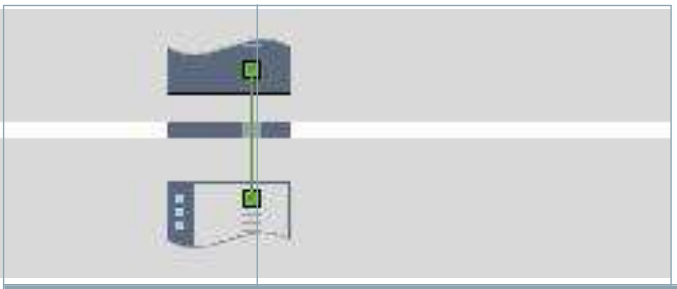
PLC_1 [CPU 1212C AC/DC/Rly]

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**	D6 C7 7F F0 8A B3 C0 76
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		
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		

PROFINET interface [X1]\Digital inputs\Channel0			
Channel address	I0.0	**Input filters**	6.4 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel0			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49152
Event name:	0	**Hardware interrupt:**	0
Rising edge0	Rising edge0		
PROFINET interface [X1]\Digital inputs\Channel0			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel1			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49153
Event name:	0	**Hardware interrupt:**	0
Rising edge1	Rising edge1		
PROFINET interface [X1]\Digital inputs\Channel1			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel2			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49154
Event name:	0	**Hardware interrupt:**	0
Rising edge2	Rising edge2		
PROFINET interface [X1]\Digital inputs\Channel2			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel3			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49155
Event name:	0	**Hardware interrupt:**	0
Rising edge3	Rising edge3		
PROFINET interface [X1]\Digital inputs\Channel3			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel4			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49156
Event name:	0	**Hardware interrupt:**	0

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 millisec
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 millisec
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 millisec
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		

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:	---		



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

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)

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

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

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

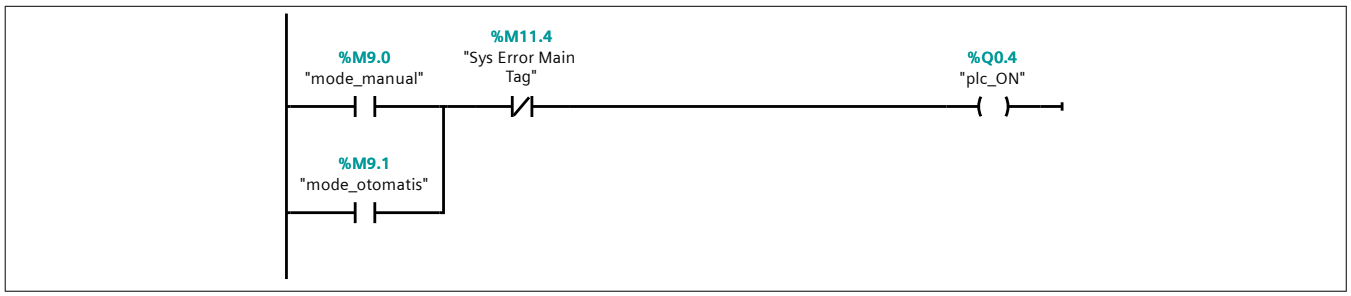
Main [OB1]

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			
Constant			

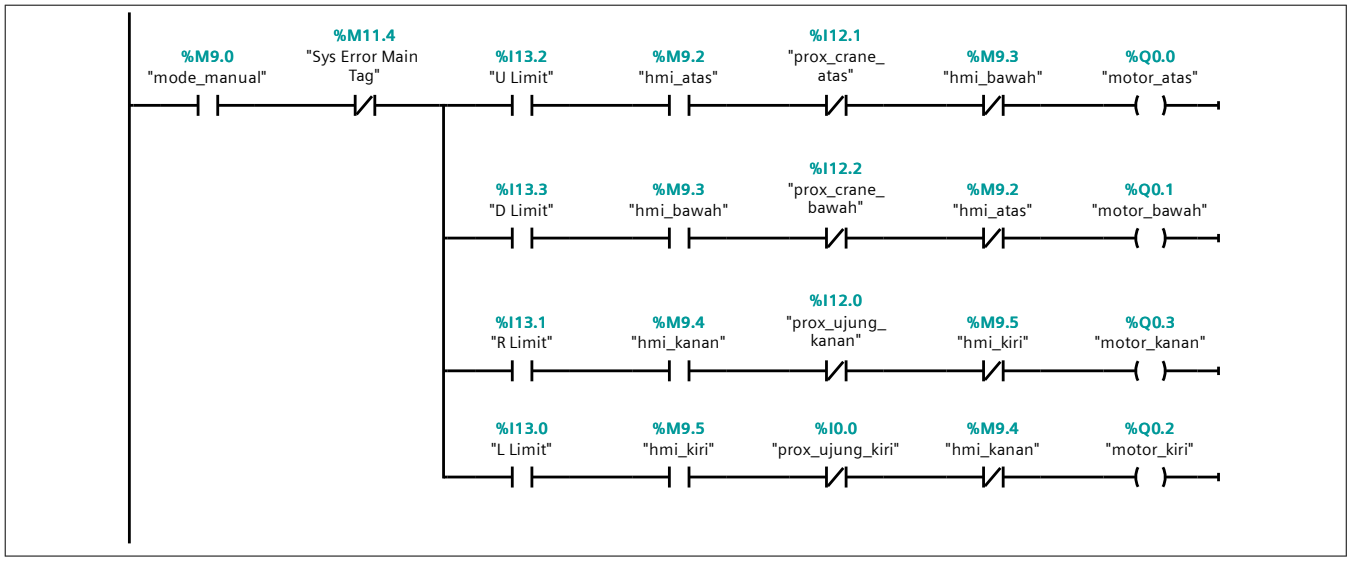
Network 2:

Pemilihan menggunakan selector switch manual atau menggunakan PLC



Network 3:

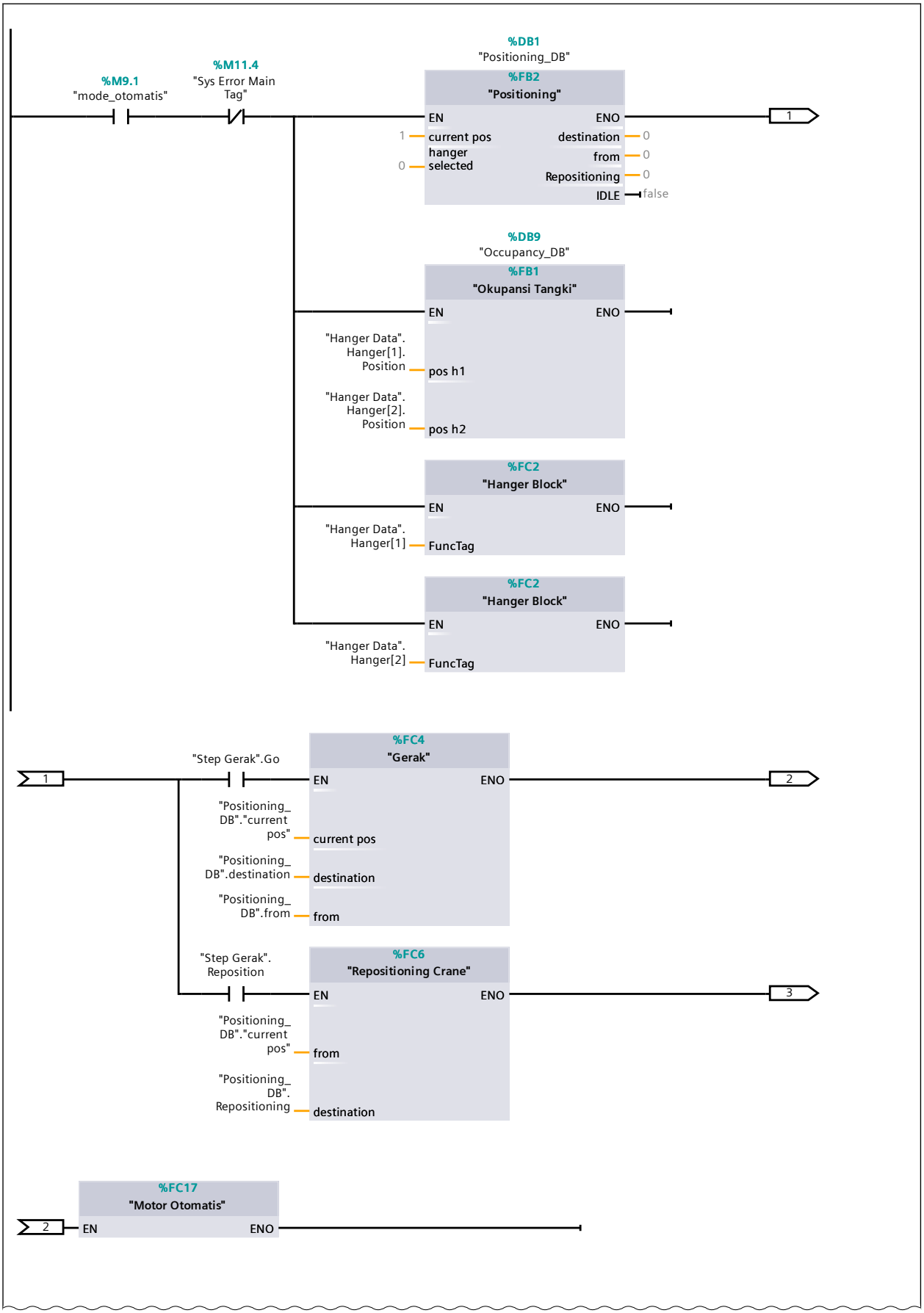
Pengaturan mode manual



Network 4:

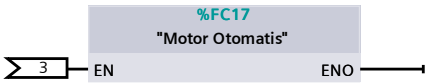
Mode otomatis

Network 4: (1.1 / 2.1)

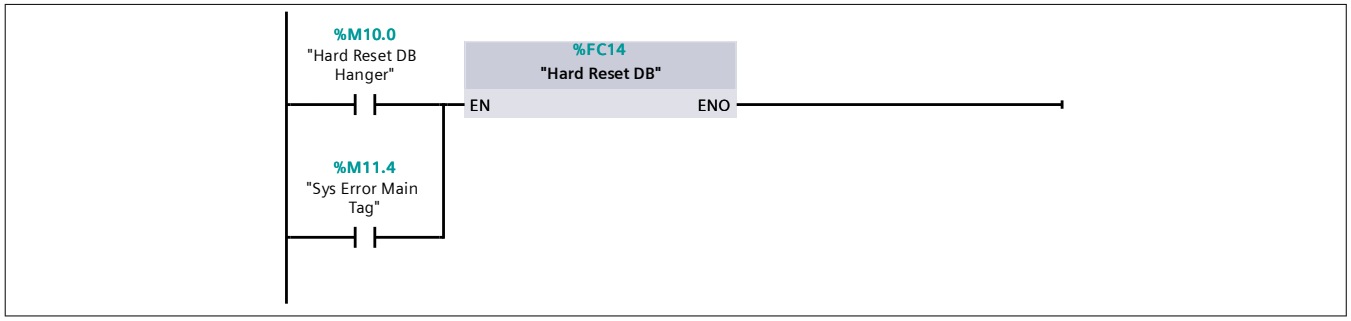


Network 4: (2.1 / 2.1)

1.1 (Page2 - 3)

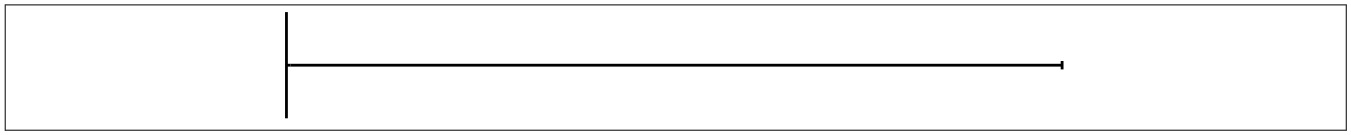


Network 5: Hard Reset DB



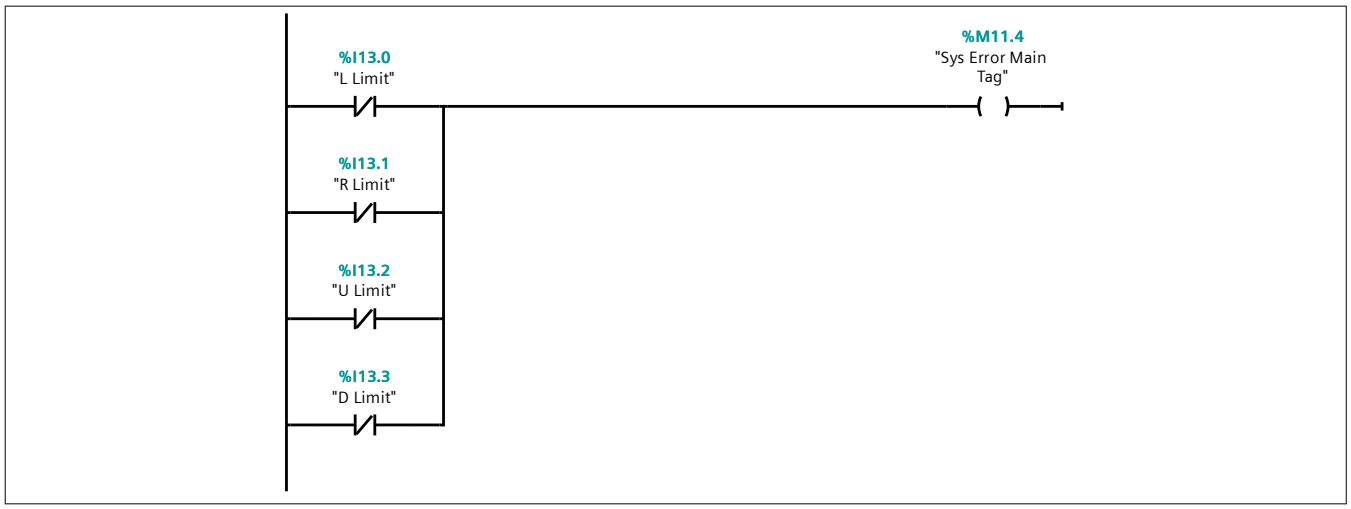
Network 6: Penggerak dan Safety Otomatis (Limit switch)

Limit switch dipasang NC pada rangkaian sehingga pada rung dipasang NO



Network 7: Network trigger error

Limit switch dipasang NC pada rangkaian sehingga pada rung dipasang NO



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

Timer Geser [DB3]

Timer Geser Properties					
General					
Name	Timer Geser	**Number**	3	**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/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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 kiri [DB6]

On Delay kiri Properties					
General					
Name	On Delay kiri	**Number**	6	**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/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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 kanan [DB8]

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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ Static									
▼ Hanger	Array[1..2] of "Hanger"		True	True	True	True	True		
▼ Hanger[1]	"Hanger"		True	True	True	True	True		
Timer_Start	Bool	false	True	True	True	True	False		
Timer_Reset	Bool	false	True	True	True	True	False		
▼ IEC Timer Proses	Array[0..9] of IEC_TIMER		True	True	True	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
IEC Timer Proses[2]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
IEC Timer Proses[3]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
IEC Timer Proses[4]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
IEC Timer Proses[5]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
IEC Timer Proses[6]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ IEC Timer Proses[7]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[9]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ Timer celup	Array[0..9] of Time		True	True	True	True	False		
Timer celup[0]	Time	T#0ms	True	True	True	True	False		
Timer celup[1]	Time	T#0ms	True	True	True	True	False		
Timer celup[2]	Time	T#0ms	True	True	True	True	False		
Timer celup[3]	Time	T#0ms	True	True	True	True	False		
Timer celup[4]	Time	T#0ms	True	True	True	True	False		
Timer celup[5]	Time	T#0ms	True	True	True	True	False		
Timer celup[6]	Time	T#0ms	True	True	True	True	False		
Timer celup[7]	Time	T#0ms	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Timer cel-up[8]	Time	T#0ms	True	True	True	True	False		
Timer cel-up[9]	Time	T#0ms	True	True	True	True	False		
▼ Proc-ess_Start_Time	Ar-ray[0..9] of DInt		True	True	True	True	False		
Proc-ess_Start_Time[0]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[1]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[2]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[3]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[4]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[5]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[6]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[7]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[8]	DInt	0	True	True	True	True	False		
Proc-ess_Start_Time[9]	DInt	0	True	True	True	True	False		
▼ Proc-ess_Stop_Time	Ar-ray[0..9] of DInt		True	True	True	True	False		
Proc-ess_Stop_Time[0]	DInt	9999999	True	True	True	True	False		
Proc-ess_Stop_Time[1]	DInt	0	True	True	True	True	False		
Proc-ess_Stop_Time[2]	DInt	0	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Process_Stop_Time[3]	DInt	0	True	True	True	True	False		
Process_Stop_Time[4]	DInt	0	True	True	True	True	False		
Process_Stop_Time[5]	DInt	0	True	True	True	True	False		
Process_Stop_Time[6]	DInt	0	True	True	True	True	False		
Process_Stop_Time[7]	DInt	0	True	True	True	True	False		
Process_Stop_Time[8]	DInt	0	True	True	True	True	False		
Process_Stop_Time[9]	DInt	0	True	True	True	True	False		
▼ Setpoint	Array[0..9] of Time		True	True	True	True	False		
Setpoint[0]	Time	T#0ms	True	True	True	True	False		
Setpoint[1]	Time	T#0MS	True	True	True	True	False		
Setpoint[2]	Time	T#0MS	True	True	True	True	False		
Setpoint[3]	Time	T#0MS	True	True	True	True	False		
Setpoint[4]	Time	T#0MS	True	True	True	True	False		
Setpoint[5]	Time	T#0ms	True	True	True	True	False		
Setpoint[6]	Time	T#0ms	True	True	True	True	False		
Setpoint[7]	Time	T#0ms	True	True	True	True	False		
Setpoint[8]	Time	T#0ms	True	True	True	True	False		
Setpoint[9]	Time	T#0ms	True	True	True	True	False		
Start_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	True	False		
Stop_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Start Position	Int	3	True	True	True	True	False		
Position	Int	3	True	True	True	True	False		
Destination	Int	0	True	True	True	True	False		
Next Destination	Int	0	True	True	True	True	False		
Ready	Bool	false	True	True	True	True	False		
Proses	Int	0	True	True	True	True	False		
Nomor Proses	Int	0	True	True	True	True	False		
Jml Proses	Int	0	True	True	True	True	False		
Homebase	Int	3	True	True	True	True	False		
Setpoint_Ready	Bool	false	True	True	True	True	False		
Checker_Ready	Bool	false	True	True	True	True	False		
Time_Ready	Bool	false	True	True	True	True	False		
Occupancy_Ready	Bool	false	True	True	True	True	False		
HMI_Ready	Bool	false	True	True	True	True	False		
HMI_Finish	Bool	false	True	True	True	True	False		
HMI_Reset	Bool	false	True	True	True	True	False		
Crane_Ready	Bool	false	True	True	True	True	False		
Sched_Ready	Bool	false	True	True	True	True	False		
Finish Process	Bool	false	True	True	True	True	False		
Divert	Bool	false	True	True	True	True	False		
Nomor Hanger	Int	1	True	True	True	True	False		
CNT_HMI_Ready	Int	0	True	True	True	True	False		
▼ Hanger[2]	"Hanger"		True	True	True	True	True		
Timer_Start	Bool	false	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
Timer_Reset	Bool	false	True	True	True	True	False		
▼ IEC Timer Proses	Array[0..9] of IEC_TIMER		True	True	True	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[2]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[3]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[4]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[7]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ IEC Timer Proses[9]	IEC_TIMER		True	True	True	True	False		
PT	Time	T#0ms	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
ET	Time	T#0ms	True	True	False	True	False		
IN	Bool	false	True	True	True	True	False		
Q	Bool	false	True	True	False	True	False		
▼ Timer celup	Array[0..9] of Time		True	True	True	True	False		
Timer celup[0]	Time	T#0ms	True	True	True	True	False		
Timer celup[1]	Time	T#0ms	True	True	True	True	False		
Timer celup[2]	Time	T#0ms	True	True	True	True	False		
Timer celup[3]	Time	T#0ms	True	True	True	True	False		
Timer celup[4]	Time	T#0ms	True	True	True	True	False		
Timer celup[5]	Time	T#0ms	True	True	True	True	False		
Timer celup[6]	Time	T#0ms	True	True	True	True	False		
Timer celup[7]	Time	T#0ms	True	True	True	True	False		
Timer celup[8]	Time	T#0ms	True	True	True	True	False		
Timer celup[9]	Time	T#0ms	True	True	True	True	False		
▼ Process_Start_Time	Array[0..9] of DInt		True	True	True	True	False		
Process_Start_Time[0]	DInt	0	True	True	True	True	False		
Process_Start_Time[1]	DInt	0	True	True	True	True	False		
Process_Start_Time[2]	DInt	0	True	True	True	True	False		
Process_Start_Time[3]	DInt	0	True	True	True	True	False		
Process_Start_Time[4]	DInt	0	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Process_Start_Time[5]	DInt	0	True	True	True	True	False		
Process_Start_Time[6]	DInt	0	True	True	True	True	False		
Process_Start_Time[7]	DInt	0	True	True	True	True	False		
Process_Start_Time[8]	DInt	0	True	True	True	True	False		
Process_Start_Time[9]	DInt	0	True	True	True	True	False		
▼ Process_Stop_Time	Array[0..9] of DInt		True	True	True	True	False		
Process_Stop_Time[0]	DInt	9999999	True	True	True	True	False		
Process_Stop_Time[1]	DInt	0	True	True	True	True	False		
Process_Stop_Time[2]	DInt	0	True	True	True	True	False		
Process_Stop_Time[3]	DInt	0	True	True	True	True	False		
Process_Stop_Time[4]	DInt	0	True	True	True	True	False		
Process_Stop_Time[5]	DInt	0	True	True	True	True	False		
Process_Stop_Time[6]	DInt	0	True	True	True	True	False		
Process_Stop_Time[7]	DInt	0	True	True	True	True	False		
Process_Stop_Time[8]	DInt	0	True	True	True	True	False		
Process_Stop_Time[9]	DInt	0	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Setpoint	Array[0..9] of Time		True	True	True	True	False		
Setpoint[0]	Time	T#0ms	True	True	True	True	False		
Setpoint[1]	Time	T#40S	True	True	True	True	False		
Setpoint[2]	Time	T#40S	True	True	True	True	False		
Setpoint[3]	Time	T#40S	True	True	True	True	False		
Setpoint[4]	Time	T#40S	True	True	True	True	False		
Setpoint[5]	Time	T#0ms	True	True	True	True	False		
Setpoint[6]	Time	T#0ms	True	True	True	True	False		
Setpoint[7]	Time	T#0ms	True	True	True	True	False		
Setpoint[8]	Time	T#0ms	True	True	True	True	False		
Setpoint[9]	Time	T#0ms	True	True	True	True	False		
Start_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	True	False		
Stop_ToD	Time_Of_Day	TOD#00:00:00	True	True	True	True	False		
Start Position	Int	2	True	True	True	True	False		
Position	Int	2	True	True	True	True	False		
Destination	Int	0	True	True	True	True	False		
Next Destination	Int	0	True	True	True	True	False		
Ready	Bool	false	True	True	True	True	False		
Proses	Int	0	True	True	True	True	False		
Nomor Proses	Int	0	True	True	True	True	False		
Jml Proses	Int	0	True	True	True	True	False		
Homebase	Int	2	True	True	True	True	False		
Setpoint_Ready	Bool	false	True	True	True	True	False		
Checker_Ready	Bool	false	True	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Time_Ready	Bool	false	True	True	True	True	False		
Occupancy_Ready	Bool	false	True	True	True	True	False		
HMI_Ready	Bool	false	True	True	True	True	False		
HMI_Finish	Bool	false	True	True	True	True	False		
HMI_Reset	Bool	false	True	True	True	True	False		
Crane_Ready	Bool	false	True	True	True	True	False		
Sched_Ready	Bool	false	True	True	True	True	False		
Finish Process	Bool	false	True	True	True	True	False		
Divert	Bool	false	True	True	True	True	False		
Nomor Hanger	Int	2	True	True	True	True	False		
CNT_HMI_Ready	Int	0	True	True	True	True	False		
▼ Predict	Array[1..2] of "NP Ready"		False	True	True	True	False		
▼ Predict[1]	"NP Ready"		False	True	True	True	False		
▼ NP Ready	Array[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
NP Ready	Array[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		
Priority	Array[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	Array[1..2] of "Predict Crane"		False	True	True	True	False		
Predict Crane[1]	"Predict Crane"		False	True	True	True	False		
C_Ready	Array[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
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	Array[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	Array[0..10] of DInt		False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[0]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[1]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[2]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[3]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[4]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[5]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[6]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[10]	DInt	999999999	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
▼ Predict Crane[2]	"Predict Crane"		False	True	True	True	False		
▼ C_Ready	Array[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	Array[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
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	Array[0..10] of DInt		False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[0]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[1]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[2]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[3]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[4]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[5]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[6]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[7]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[8]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[9]	DInt	0	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
Stop[10]	DInt	999999999	False	True	True	True	False		sampe 10 untuk menjaga logic cek CRANE
▼ Hanger Default	Array[1..2] of "Hanger"		False	True	True	True	True		berisi start values array Hanger
▼ Hanger Default[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	Array[0..9] of IEC_TIMER		False	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ 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		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ 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		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Timer celup	Array[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		
Process_Start_Time	Array[0..9] of DInt		False	True	True	True	False		
Process_Start_Time[0]	DInt	9999999	False	True	True	True	False		
Process_Start_Time[1]	DInt	0	False	True	True	True	False		
Process_Start_Time[2]	DInt	0	False	True	True	True	False		
Process_Start_Time[3]	DInt	0	False	True	True	True	False		
Process_Start_Time[4]	DInt	0	False	True	True	True	False		
Process_Start_Time[5]	DInt	0	False	True	True	True	False		
Process_Start_Time[6]	DInt	0	False	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Process_Start_Time[7]	DInt	0	False	True	True	True	False		
Process_Start_Time[8]	DInt	0	False	True	True	True	False		
Process_Start_Time[9]	DInt	0	False	True	True	True	False		
▼ Process_Stop_Time	Array[0..9] of DInt		False	True	True	True	False		
Process_Stop_Time[0]	DInt	9999999	False	True	True	True	False		
Process_Stop_Time[1]	DInt	0	False	True	True	True	False		
Process_Stop_Time[2]	DInt	0	False	True	True	True	False		
Process_Stop_Time[3]	DInt	0	False	True	True	True	False		
Process_Stop_Time[4]	DInt	0	False	True	True	True	False		
Process_Stop_Time[5]	DInt	0	False	True	True	True	False		
Process_Stop_Time[6]	DInt	0	False	True	True	True	False		
Process_Stop_Time[7]	DInt	0	False	True	True	True	False		
Process_Stop_Time[8]	DInt	0	False	True	True	True	False		
Process_Stop_Time[9]	DInt	0	False	True	True	True	False		
▼ Setpoint	Array[0..9] of Time		False	True	True	True	False		
Setpoint[0]	Time	T#0ms	False	True	True	True	False		
Setpoint[1]	Time	T#0ms	False	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Setpoint[2]	Time	T#0ms	False	True	True	True	False		
Setpoint[3]	Time	T#0ms	False	True	True	True	False		
Setpoint[4]	Time	T#0ms	False	True	True	True	False		
Setpoint[5]	Time	T#0ms	False	True	True	True	False		
Setpoint[6]	Time	T#0ms	False	True	True	True	False		
Setpoint[7]	Time	T#0ms	False	True	True	True	False		
Setpoint[8]	Time	T#0ms	False	True	True	True	False		
Setpoint[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		
Setpoint_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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
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		
Sched_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	1	False	True	True	True	False		
CNT_HMI_Ready	Int	0	False	True	True	True	False		
▼ Hanger Default[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	Array[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
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		
▼ IEC Timer Proses[7]	IEC_TIMER		False	True	True	True	False		
PT	Time	T#0ms	False	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
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		
IN	Bool	false	False	True	True	True	False		
Q	Bool	false	False	True	False	True	False		
▼ Timer celup	Array[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	Comment
▼ Process_Start_Time	Array[0..9] of DInt		False	True	True	True	False		
Process_Start_Time[0]	DInt	9999999	False	True	True	True	False		
Process_Start_Time[1]	DInt	0	False	True	True	True	False		
Process_Start_Time[2]	DInt	0	False	True	True	True	False		
Process_Start_Time[3]	DInt	0	False	True	True	True	False		
Process_Start_Time[4]	DInt	0	False	True	True	True	False		
Process_Start_Time[5]	DInt	0	False	True	True	True	False		
Process_Start_Time[6]	DInt	0	False	True	True	True	False		
Process_Start_Time[7]	DInt	0	False	True	True	True	False		
Process_Start_Time[8]	DInt	0	False	True	True	True	False		
Process_Start_Time[9]	DInt	0	False	True	True	True	False		
▼ Process_Stop_Time	Array[0..9] of DInt		False	True	True	True	False		
Process_Stop_Time[0]	DInt	9999999	False	True	True	True	False		
Process_Stop_Time[1]	DInt	0	False	True	True	True	False		
Process_Stop_Time[2]	DInt	0	False	True	True	True	False		
Process_Stop_Time[3]	DInt	0	False	True	True	True	False		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
Process_Stop_Time[4]	DInt	0	False	True	True	True	False		
Process_Stop_Time[5]	DInt	0	False	True	True	True	False		
Process_Stop_Time[6]	DInt	0	False	True	True	True	False		
Process_Stop_Time[7]	DInt	0	False	True	True	True	False		
Process_Stop_Time[8]	DInt	0	False	True	True	True	False		
Process_Stop_Time[9]	DInt	0	False	True	True	True	False		
▼ Setpoint	Array[0..9] of Time		False	True	True	True	False		
Setpoint[0]	Time	T#0ms	False	True	True	True	False		
Setpoint[1]	Time	T#0ms	False	True	True	True	False		
Setpoint[2]	Time	T#0ms	False	True	True	True	False		
Setpoint[3]	Time	T#0ms	False	True	True	True	False		
Setpoint[4]	Time	T#0ms	False	True	True	True	False		
Setpoint[5]	Time	T#0ms	False	True	True	True	False		
Setpoint[6]	Time	T#0ms	False	True	True	True	False		
Setpoint[7]	Time	T#0ms	False	True	True	True	False		
Setpoint[8]	Time	T#0ms	False	True	True	True	False		
Setpoint[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		

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
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		
Setpoint_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		
Sched_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		

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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ Input									
pos h1	Int	0	False	True	True	True	False		
pos h2	Int	0	False	True	True	True	False		
Output									
InOut									
▼ Static									
▼ occupancy	Array[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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	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#0S	False	True	True	True	False		
Time geser	Time	T#200MS	False	True	True	True	False		setpoint waktu ngegeser si crane tiap ambil/lepas

Name	Data type	Start value	Retain	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Supervision	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		

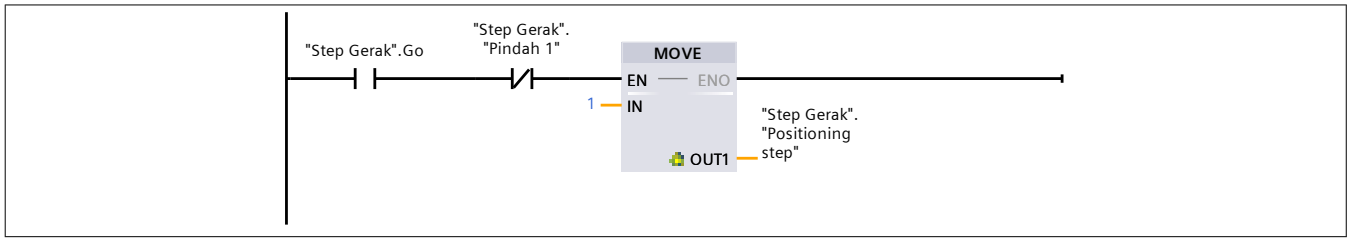
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak [FC4]

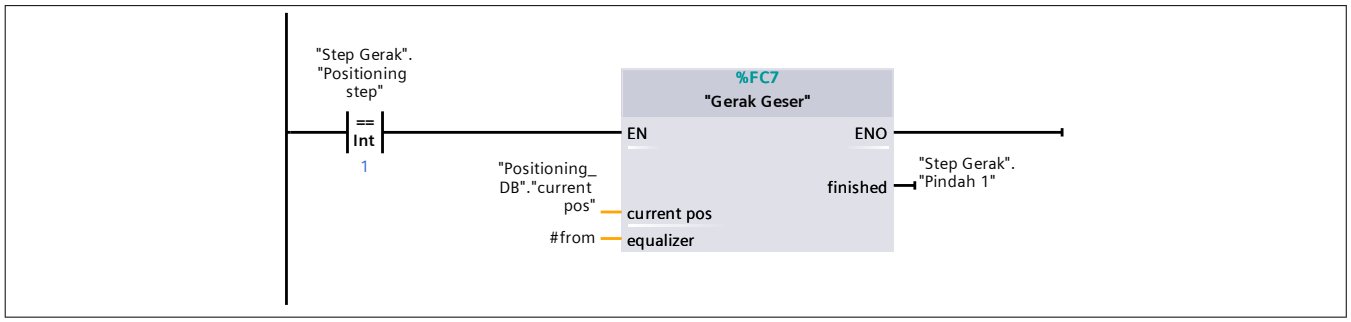
Gerak Properties					
General					
Name	Gerak	**Number**	4	**Type**	FC
Language	LAD	**Numbering**	Automatic		
Information					
Title		**Author**		**Comment**	
Family		**Version**	0.1	**User-defined ID**	

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

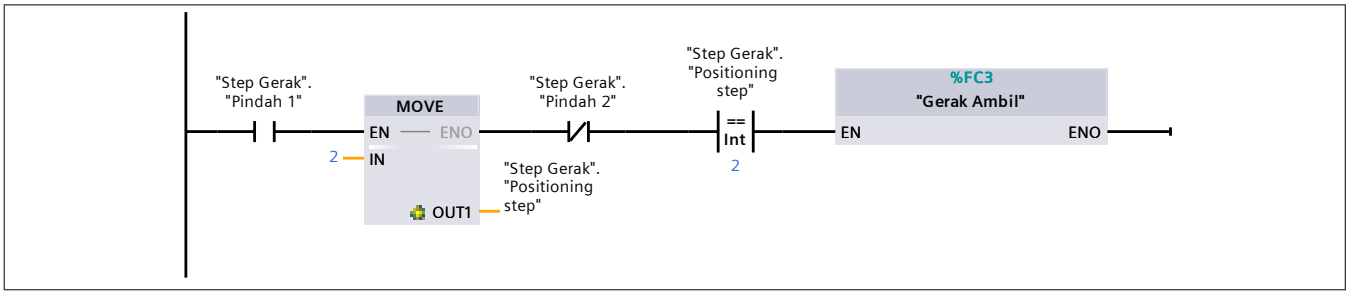
Network 1: Starting command untuk sequence gerak. Dimulai dengan command Go!



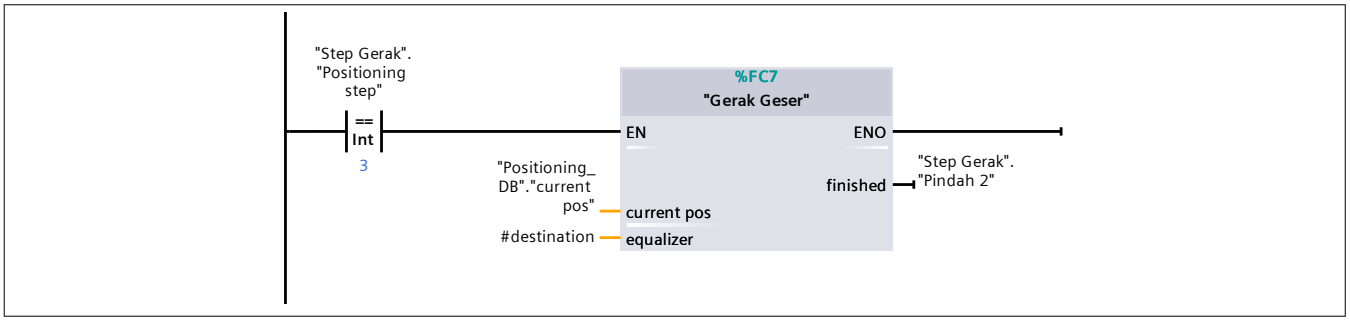
Network 2: Positioning 1 dan 3: Pindah ke posisi horizontal yang sesuai



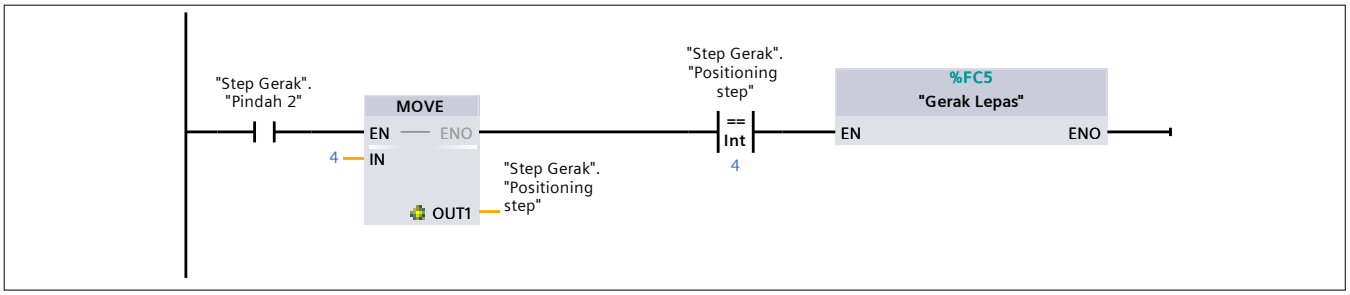
Network 3: Positioning 2: Gerakan mengambil, didahului step pindah 1. Destinasi disini akan berganti



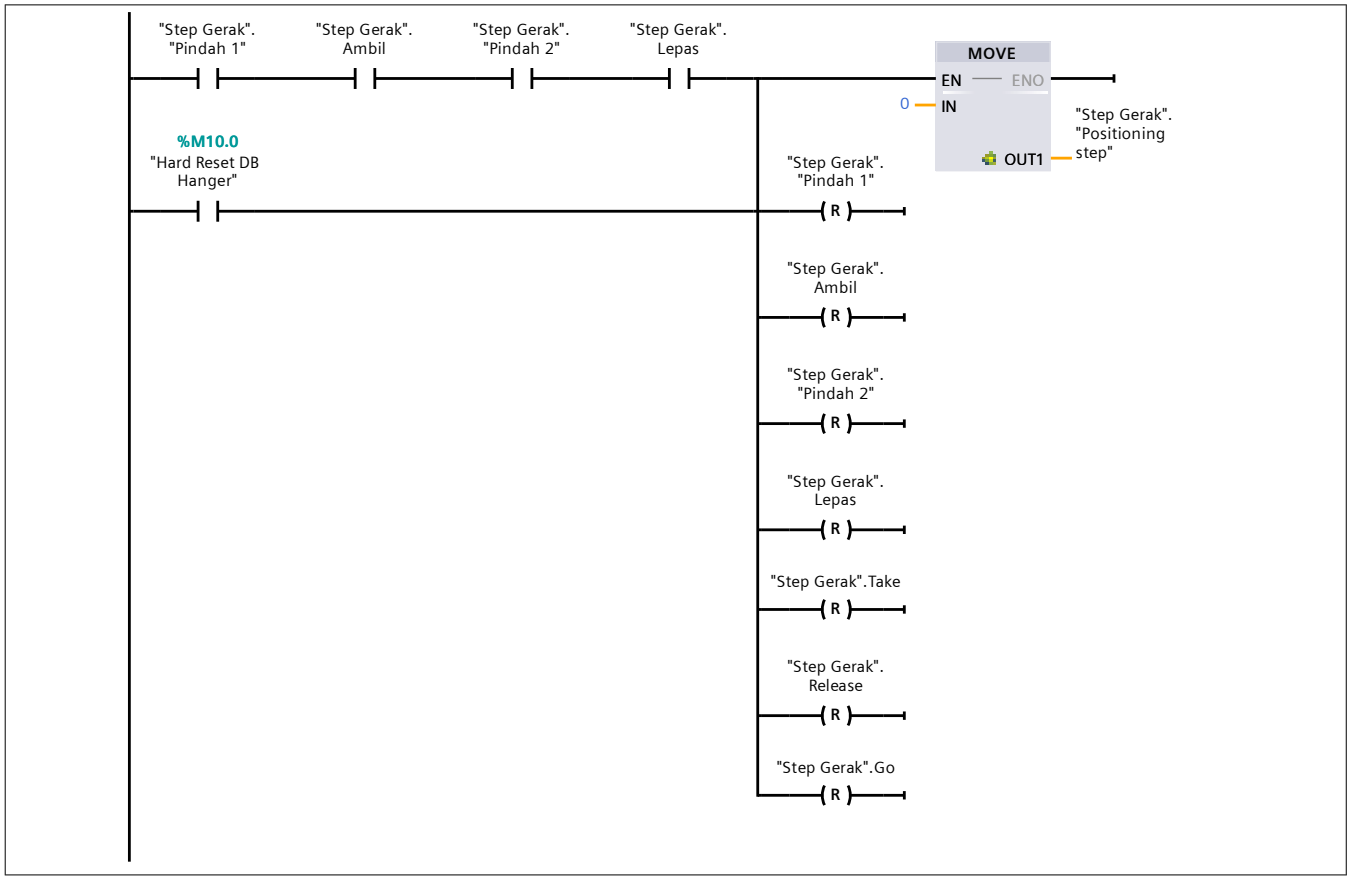
Network 4:



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



Network 6: Reset all, asalkan seluruh proses selesai


"Step Gerak".
"Pindah 1"
"Step Gerak".
Ambil
"Step Gerak".
"Pindah 2"
"Step Gerak".
Lepas
MOVE
EN
ENO
0
IN
OUT1
"Step Gerak".
"Positioning
step"
%M10.0
"Hard Reset DB
Hanger"
"Step Gerak".
"Pindah 1"
R
"Step Gerak".
Ambil
R
"Step Gerak".
"Pindah 2"
R
"Step Gerak".
Lepas
R
"Step Gerak".Take
R
"Step Gerak".
Release
R
"Step Gerak".Go
R

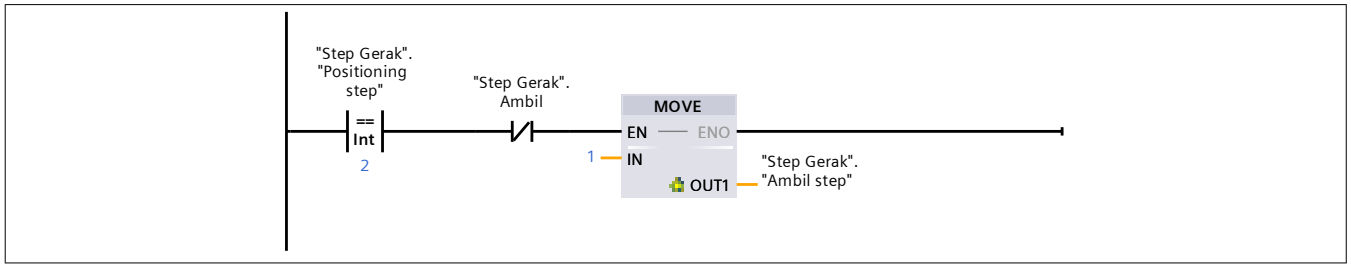
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

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**	

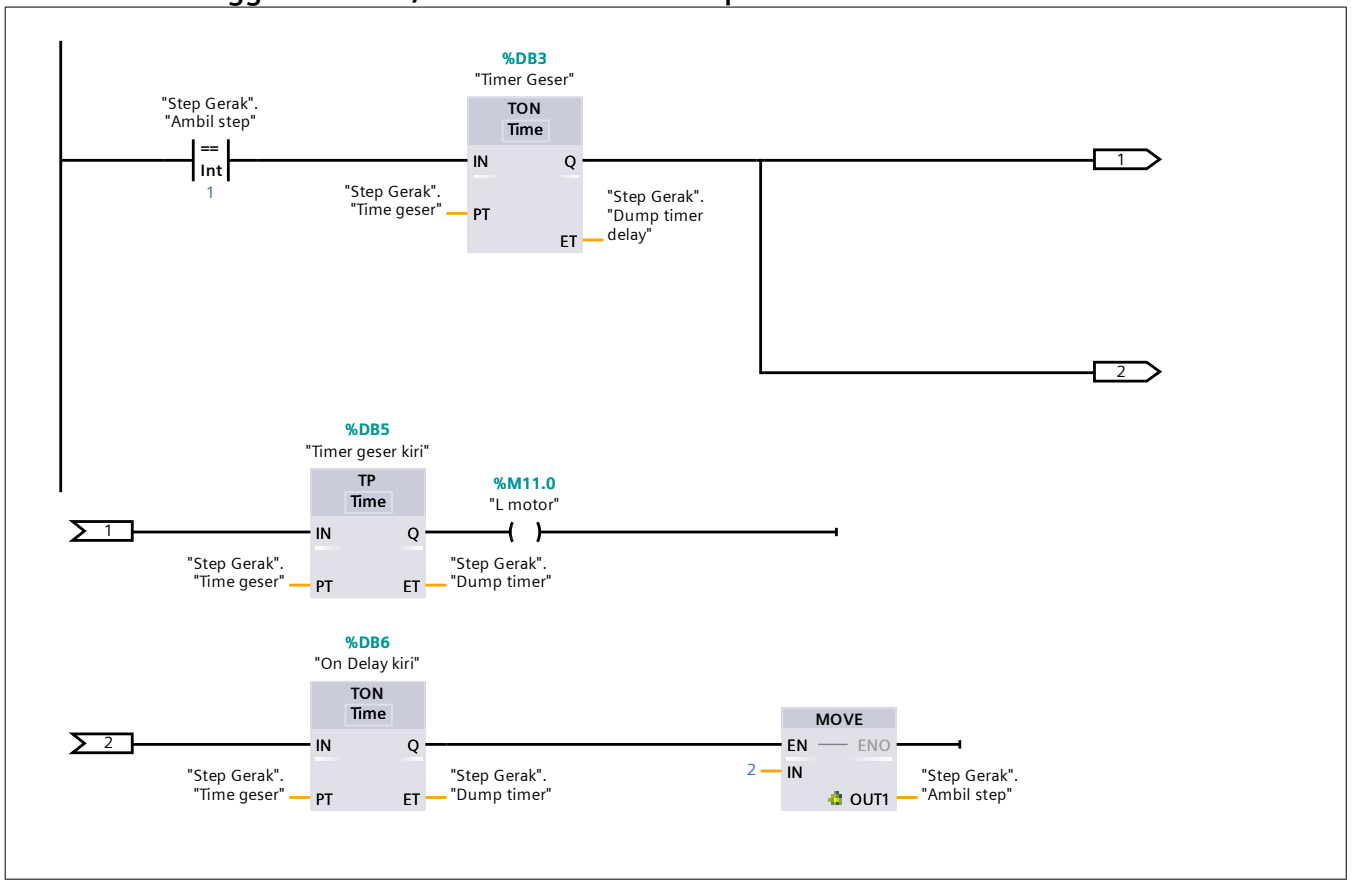
Name	Data type	Default value	Comment
Input			
Output			
InOut			
Temp			
Constant			
▼ Return			
Gerak Ambil	Void		

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



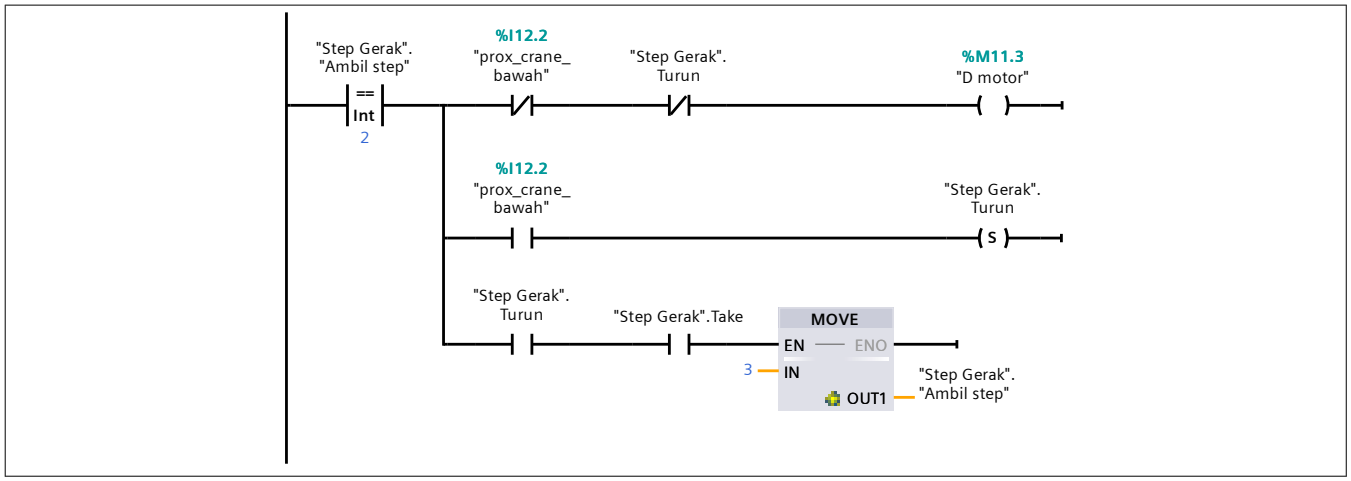
Network 2: Menggeser ke kiri, berhenti ketika timer padam

Network 2: Menggeser ke kiri, berhenti ketika timer padam

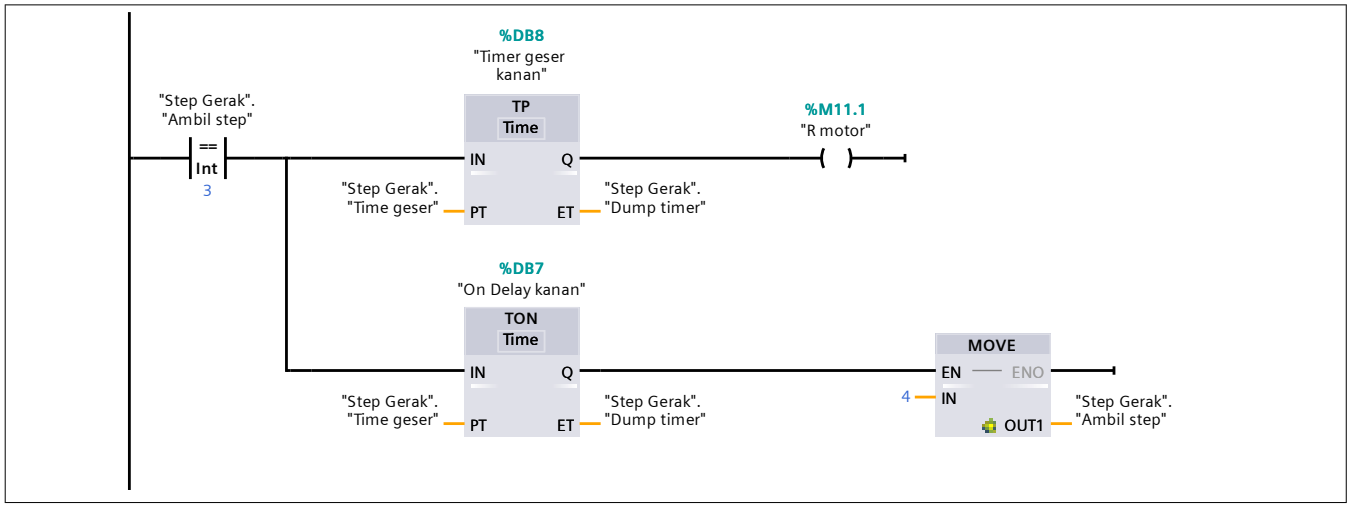


Network 3: Gerak turun ke bawah, berhenti ketika proxy bawah kena.

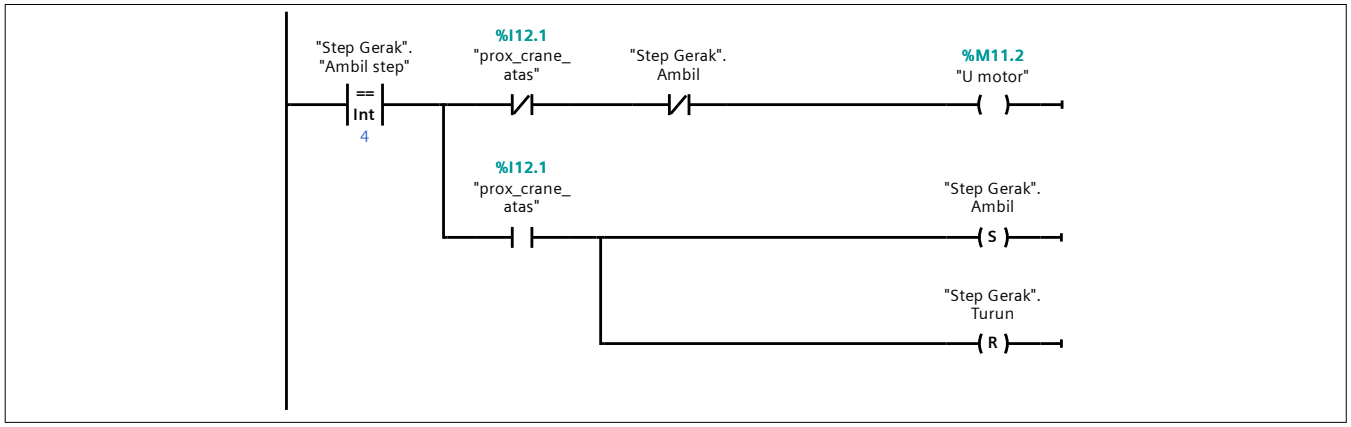
Ada Take yang jadi pencegah hanger diambil prematur



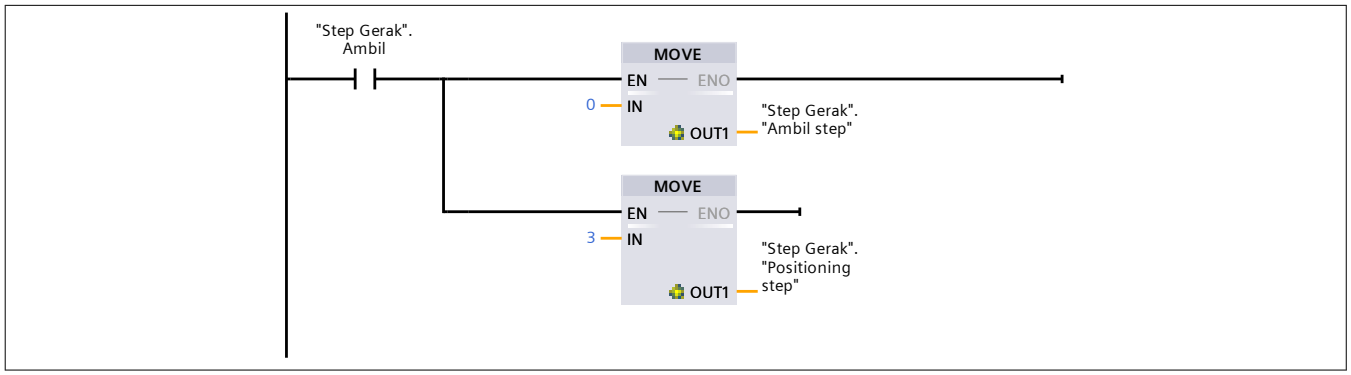
Network 4: Menggeser ke kanan, berhenti ketika timer padam



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



Network 6: reset all parameters



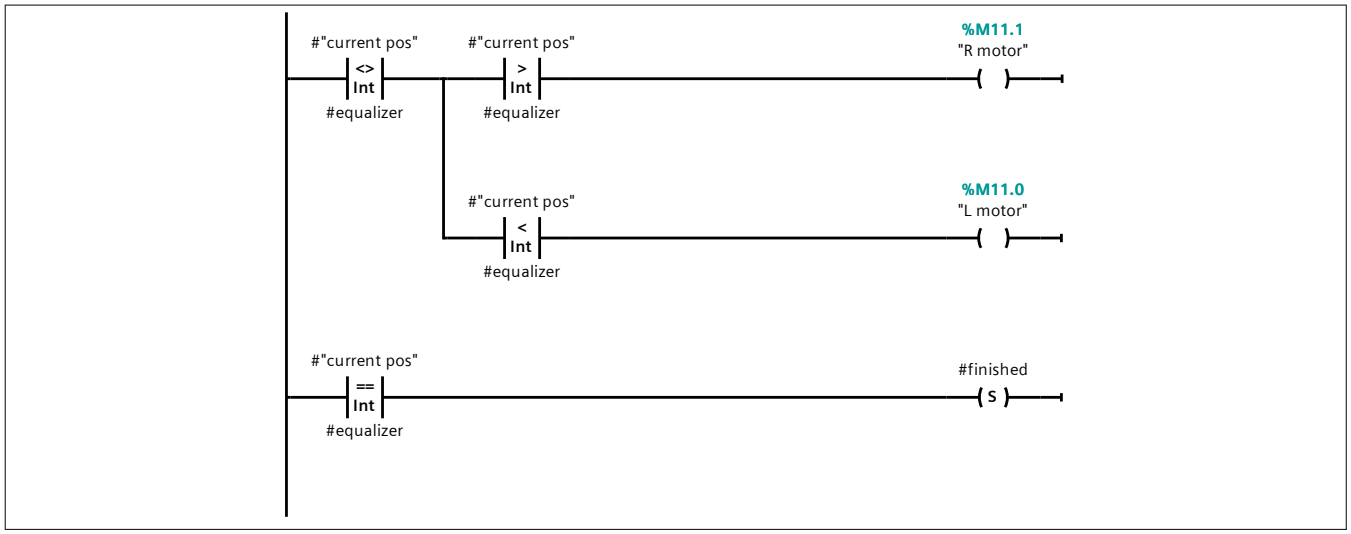
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

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:



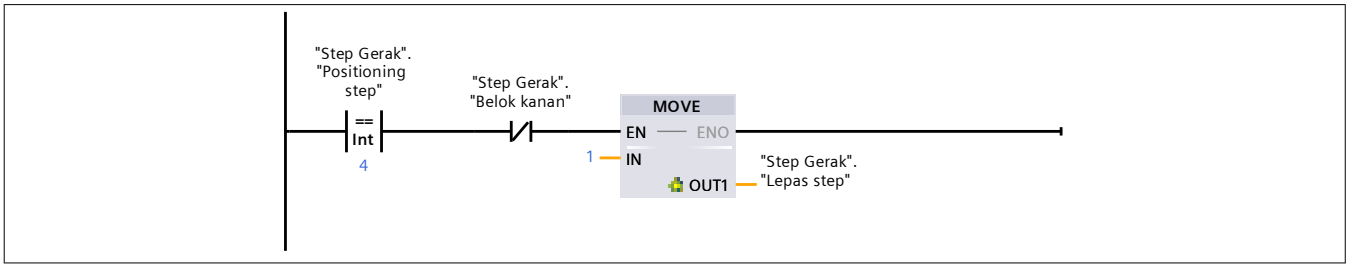
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Gerak Lepas [FC5]

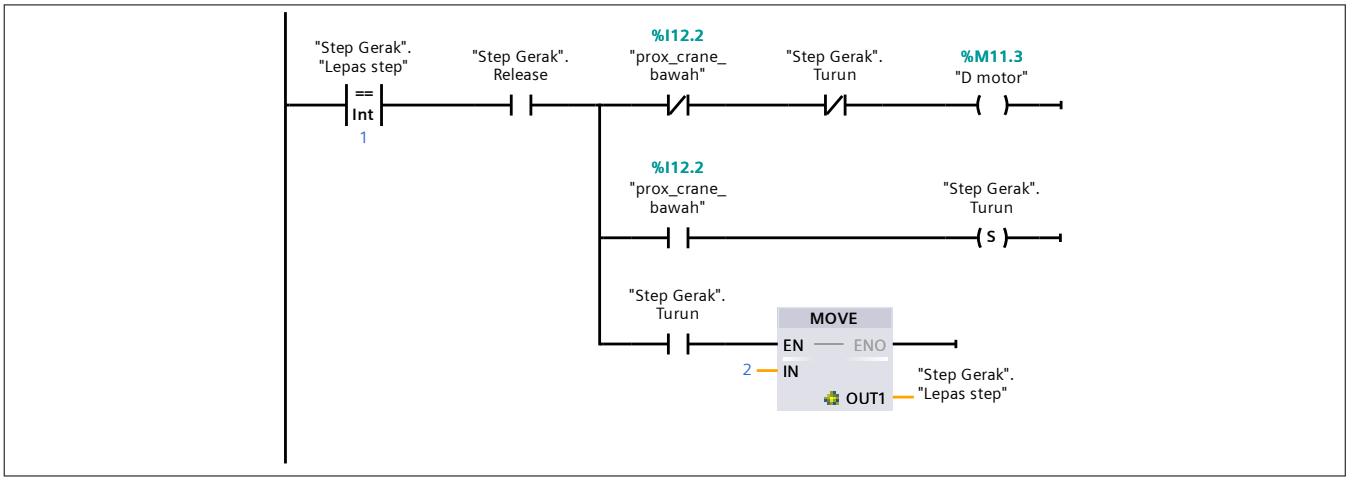
Gerak Lepas Properties					
General					
Name	Gerak Lepas	**Number**	5	**Type**	FC
Language	LAD	**Numbering**	Automatic		
Information					
Title		**Author**		**Comment**	
Family		**Version**	0.1	**User-defined ID**	

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

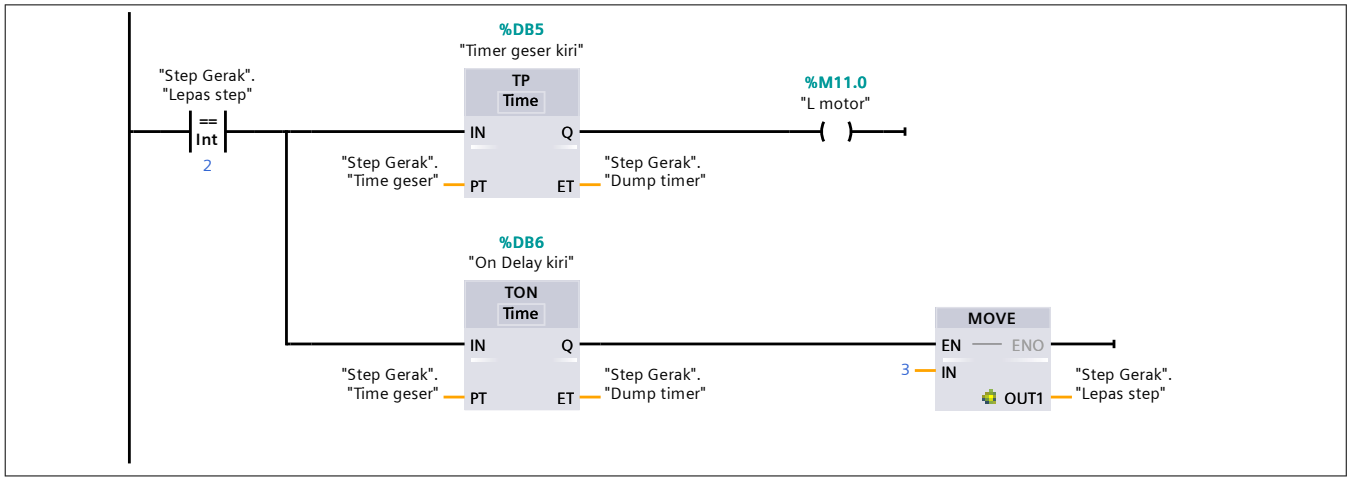
Network 1: Positioning 2: Gerakan melepas. Dimulai dengan pindah operand dan memulai step gerak



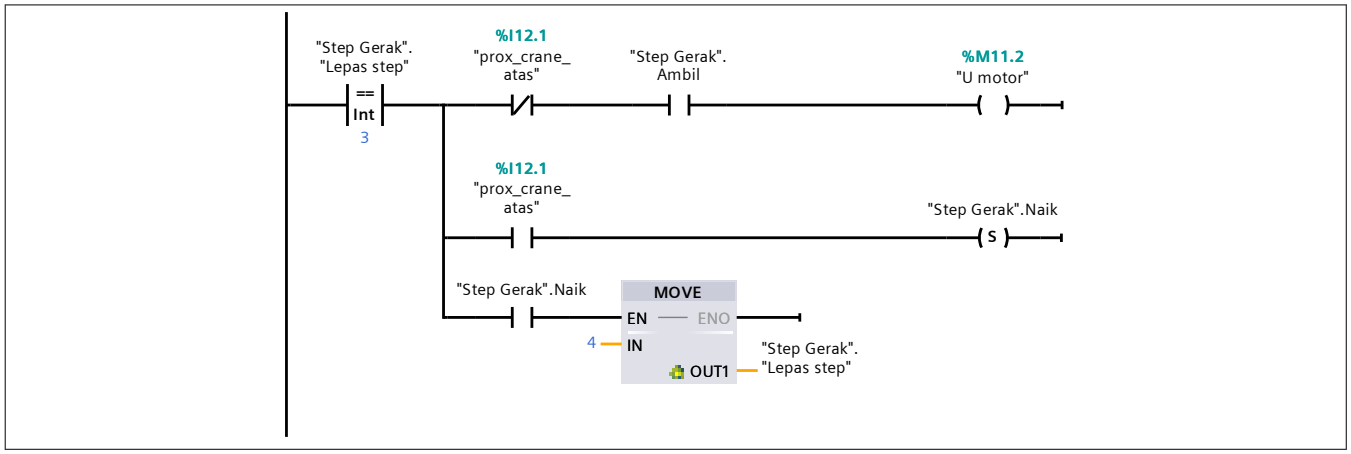
Network 2: Gerak turun ke bawah, berhenti ketika proxy bawah kena.



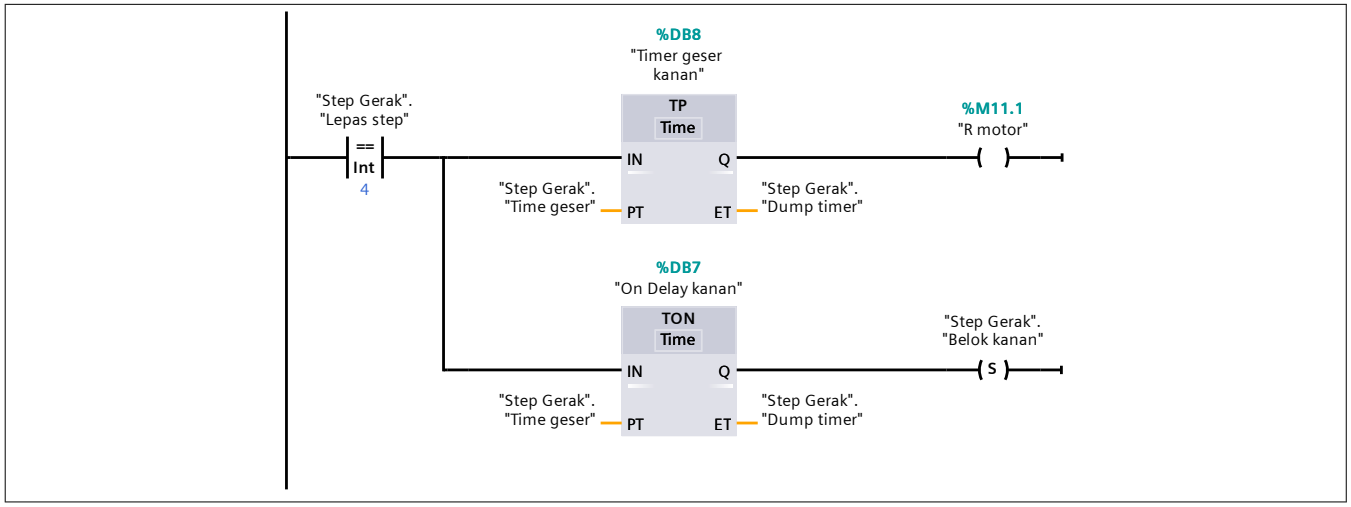
Network 3: Menggeser ke kiri, berhenti ketika timer padam



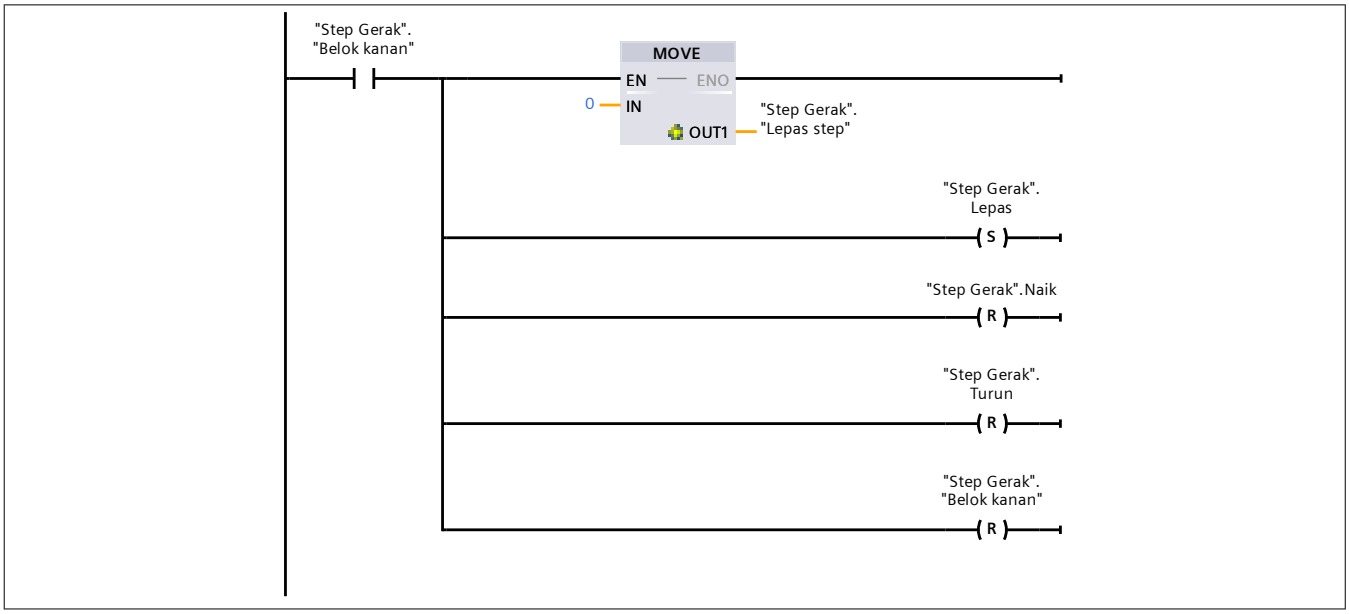
Network 4: Gerak naik ke atas, berhenti ketika proxy atas kena.



Network 5: Menggeser ke kanan, berhenti ketika timer padam



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


"Step Gerak".
"Belok kanan"
MOVE
EN
ENO
0
IN
OUT1
"Step Gerak".
"Lepas step"
"Step Gerak".
Lepas
S
"Step Gerak".Naik
R
"Step Gerak".
Turun
R
"Step Gerak".
"Belok kanan"
R

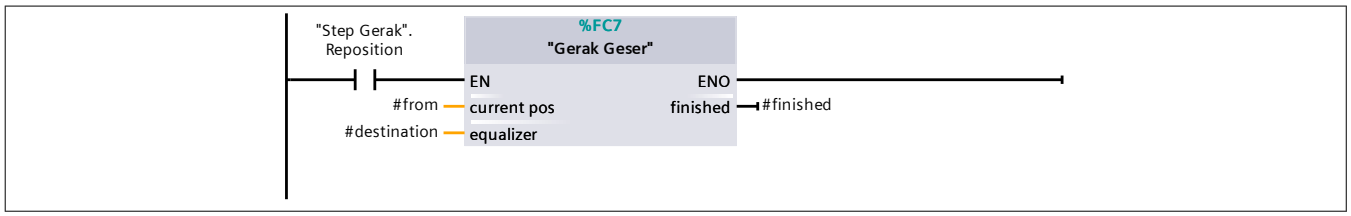
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

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**	

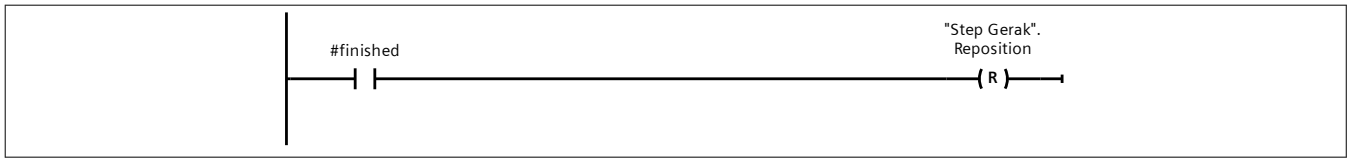
Name	Data type	Default value	Comment
▼ Input			
from	Int		
destination	Int		
Output			
InOut			
▼ Temp			
finished	Bool		
Constant			
▼ Return			
Repositioning Crane	Void		

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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Supervision	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
```

```
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)
```

```
0058      //Perubahan nilai Hanger Selected hanya akan berubah kalo ada arahan ger-
      ak 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    //Gerakin crane ke hanger yang akan selesai duluan buat minimasi waktu ger-
      ak horizontal
0068
0069    //inisialisasi nilai variabel
0070    #stoptime := "Hanger Data".Hanger[1].Process_Stop_Time["Hanger Data".Hang-
      er[1]."Nomor Proses"];
0071    #hangerpos := 1;
0072
0073    //Cek pake counter. Kalo stoptime nya minimal, value #stoptime dan #hanger-
      pos diganti
0074    FOR #counter2 := 1 TO 2 DO //diganti kalo hanger nambah
0075      #np := "Hanger Data".Hanger[#counter2]."Nomor Proses";
0076      IF "Hanger Data".Hanger[#counter2].Process_Stop_Time[#np] < #stoptime THEN
0077        #stoptime := "Hanger Data".Hanger[#counter2].Process_Stop_Time[#np];
0078        #hangerpos := #counter2;
0079      END_IF;
0080      ;
0081    END_FOR;
0082
0083    //Value hangerpos dipake buat mindahin crane
0084    #Repositioning := "Hanger Data".Hanger[#hangerpos].Position;
0085    IF #"current pos" <> #Repositioning AND "Step Gerak".Go = FALSE THEN //kalo
      beda berarti crane harus direpo
0086      "Step Gerak".Reposition := TRUE; //FC adjust akan nyala, tujuannya ke re-
      positioning
0087    ELSE
0088      "Step Gerak".Reposition := FALSE;
0089    END_IF;
0090
0091  END_REGION
0092
0093  //Cek apakah kedua hanger lagi gabut atau engga
0094  IF "Hanger Data".Hanger[1].HMI_Ready = TRUE OR "Hanger Data".Hang-
      er[2].HMI_Ready = TRUE THEN
0095    #IDLE := FALSE;
0096  ELSE
0097    #IDLE := TRUE;
0098  END_IF;
0099
0100  REGION Algoritma Penentuan Take dan Release
0101    //Step gerak.Take
0102    #hs_temp := #"hanger selected";
0103    IF "Step Gerak".Go = TRUE THEN
0104      IF "Hanger Data".Hanger[#hs_temp]."Timer celup"["Hanger Data".Hang-
      er[#hs_temp]."Nomor Proses"] >= "Hanger Data".Hanger[#hs_temp].Setpoint["Hang-
      er Data".Hanger[#hs_temp]."Nomor Proses"] THEN
0105        "Step Gerak".Take := TRUE;
0106      ELSE
0107        ;
```

```
0108      END_IF;
0109
0110      //Step gerak.Release
0111      "Get Local Time"(#localtime);
0112
0113      IF "Hanger Data".Hanger[#hs_temp].Process_Start_Time["Hanger Data".Hang-
      er[#hs_temp]."Nomor Proses"] - "Time Param".Turun_Int <= #localtime THEN
0114        "Step Gerak".Release := TRUE;
0115      ELSE
0116        "Step Gerak".Release := FALSE;
0117        ;
0118      END_IF;
0119    END_IF;
0120
0121  END_REGION
0122
0123
0124
```

Symbol	Address	Type	Comment
"Hanger Data".Hanger[1]."Nomor Proses"		Int	
"Hanger Data".Hanger[1].HMI_Ready		Bool	
"Hanger Data".Hanger[1].Process_Stop_Time[*]		DInt	
"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[*].Position		Int	
"Hanger Data".Hanger[*].Process_Start_Time[*]		DInt	
"Hanger Data".Hanger[*].Process_Stop_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	

Symbol	Address	Type	Comment
"Step Gerak".Take		Bool	
"Time Param".Turun_Int		Int	
#"current pos"		Int	
#"hanger selected"		Int	
#counter		Int	
#counter2		Int	
#destination		Int	
#from		Int	
#hangerpos		Int	
#hs_temp		Int	buat rencana tangki 2 priority
#IDLE		Bool	
#localtime		DInt	
#np		Int	nomor proses
#Repositioning		Int	
#stoptime		DInt	

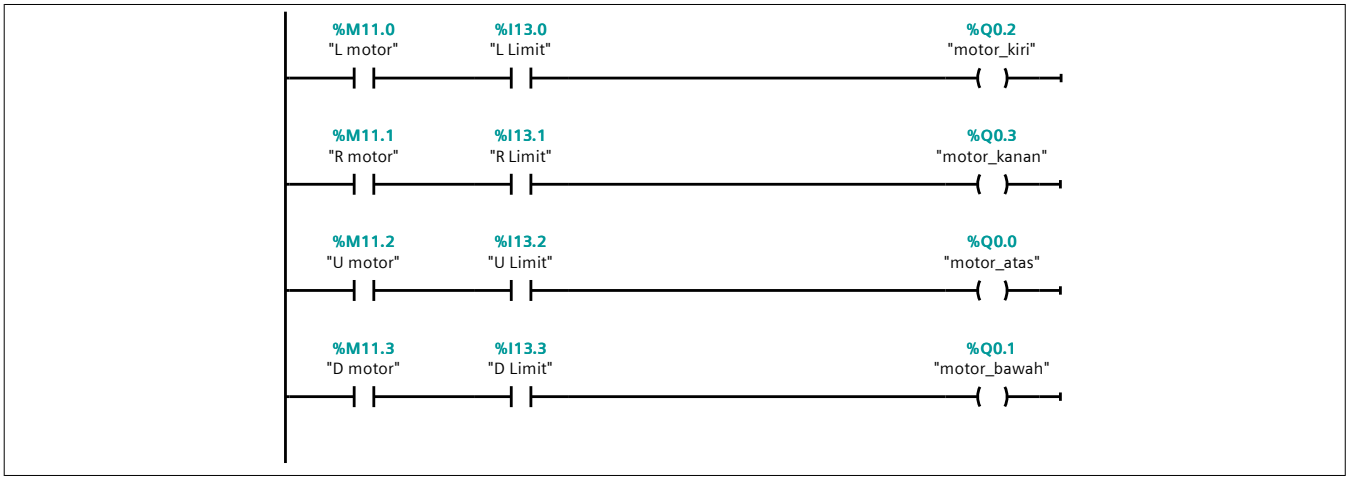
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak

Motor Otomatis [FC17]

Motor Otomatis Properties					
General					
Name	Motor Otomatis	**Number**	17	**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:



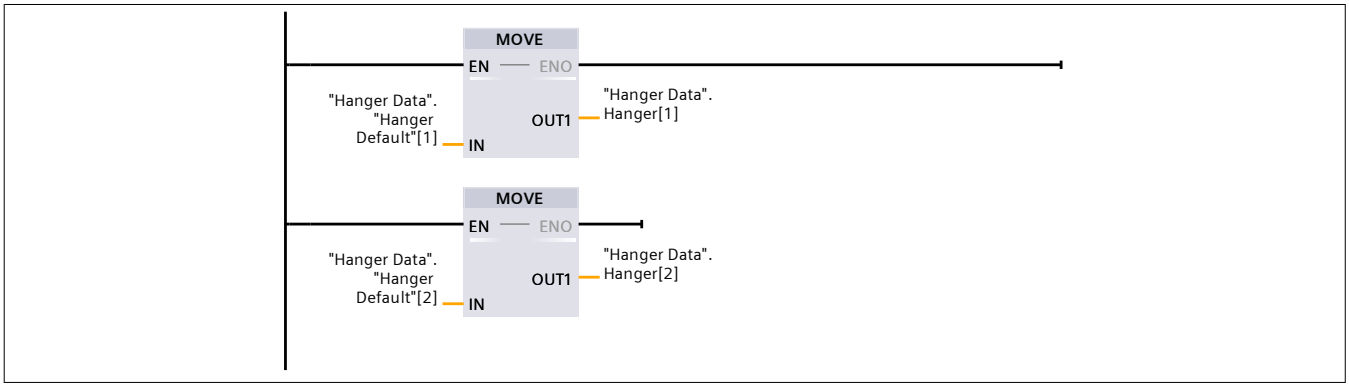
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

Hard Reset DB [FC14]

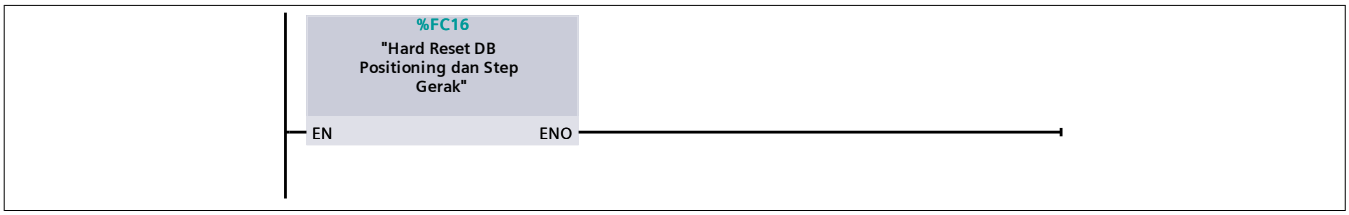
Hard Reset DB Properties					
General					
Name	Hard Reset DB	**Number**	14	**Type**	FC
Language	LAD	**Numbering**	Automatic		
Information					
Title		**Author**		**Comment**	
Family		**Version**	0.1	**User-defined ID**	

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 Position-ing 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"."cur-rent pos"		Int	

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	

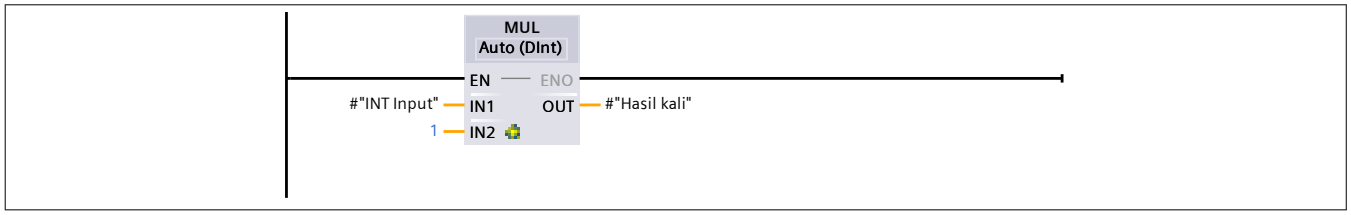
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Convert INT To TIME [FC15]

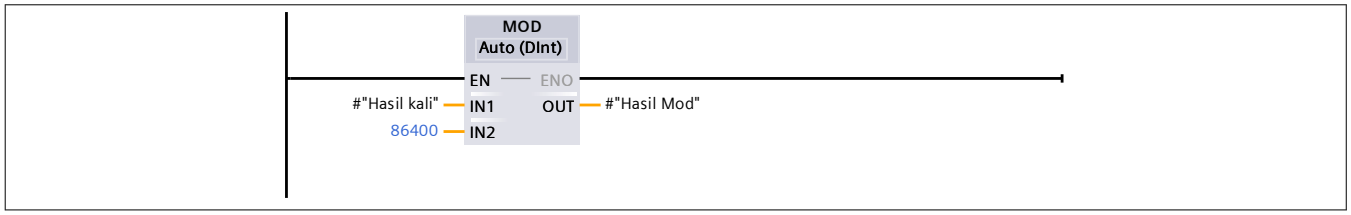
Convert INT To TIME Properties					
General					
Name	Convert INT To TIME	**Number**	15	**Type**	FC
Language	LAD	**Numbering**	Automatic		
Information					
Title	Mengubah waktu D/H/M/S dalam INT menjadi H/M/S	**Author**		**Comment**	
Family		**Version**	0.1	**User-defined ID**	

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		

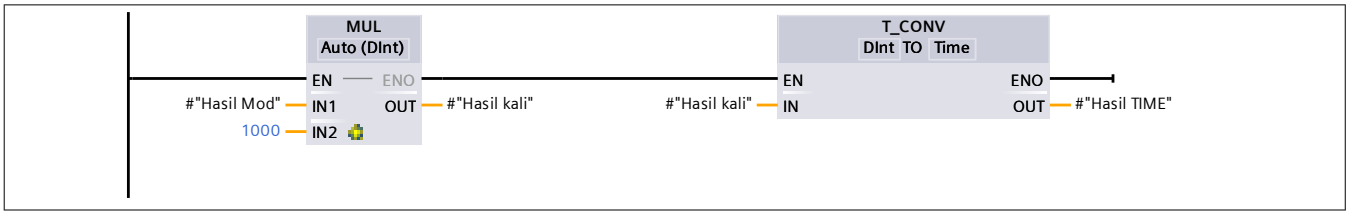
Network 1:



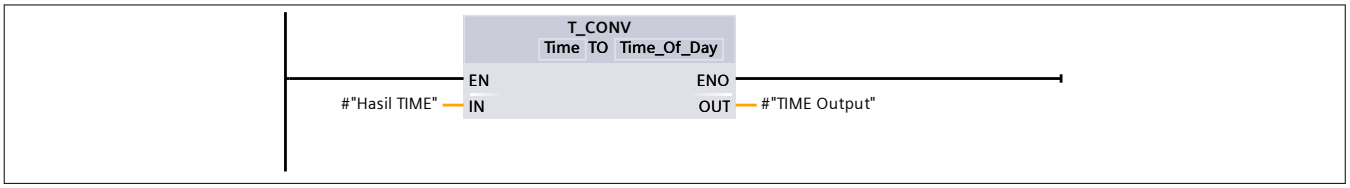
Network 2: Modulo



Network 3:


MUL
Auto (DInt)
EN
ENO
#"Hasil Mod"
IN1
OUT
#"Hasil kali"
1000
IN2
T_CONV
DInt TO Time
EN
ENO
#"Hasil kali"
IN
OUT
#"Hasil TIME"

Network 4:


T_CONV
Time TO Time_Of_Day
EN
ENO
#"Hasil TIME"
IN
OUT
#"TIME Output"

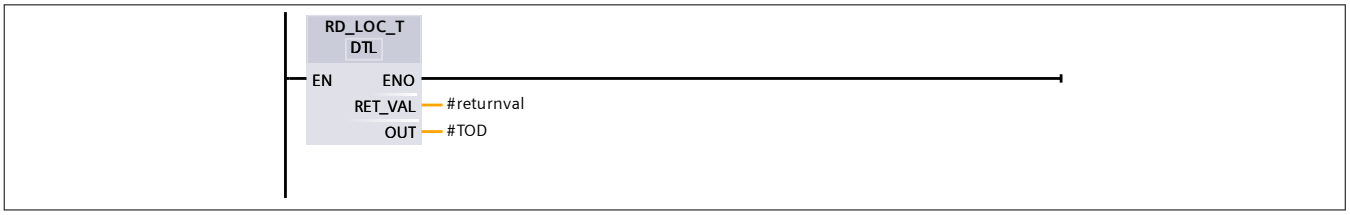
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Get Local Time [FC9]

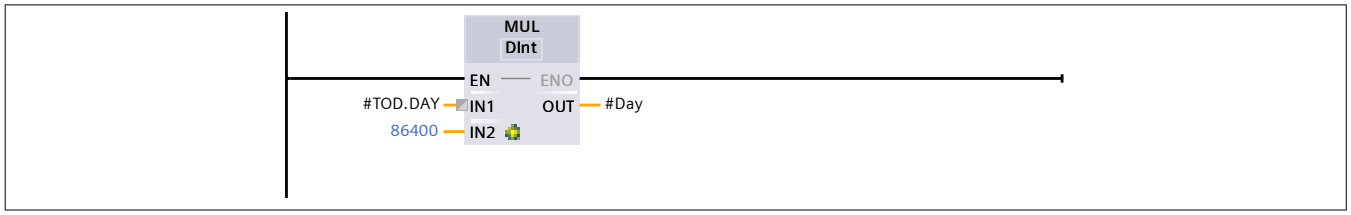
Get Local Time Properties					
General					
Name	Get Local Time	**Number**	9	**Type**	FC
Language	LAD	**Numbering**	Automatic		
Information					
Title	Convert Time of Day jadi marker seconds, dalam bentuk DINT Format.	**Author**		**Comment**	
Family		**Version**	0.1	**User-defined ID**	

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		

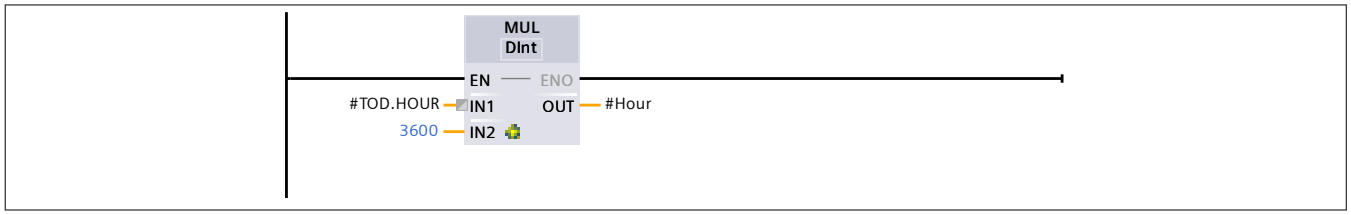
Network 1: Return TOD pake Read Local TIme



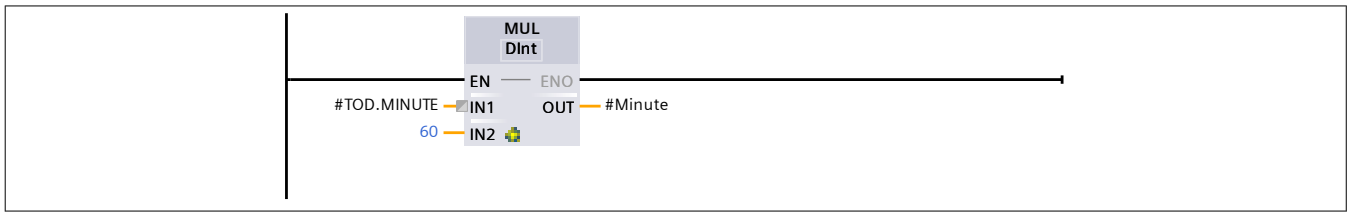
Network 2: Multiply DAY by 86400



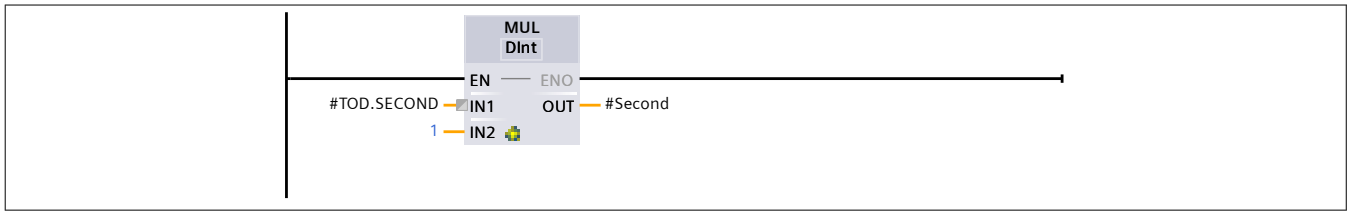
Network 3: Multiply HOUR by 3600



Network 4: Multiply Minute by 100

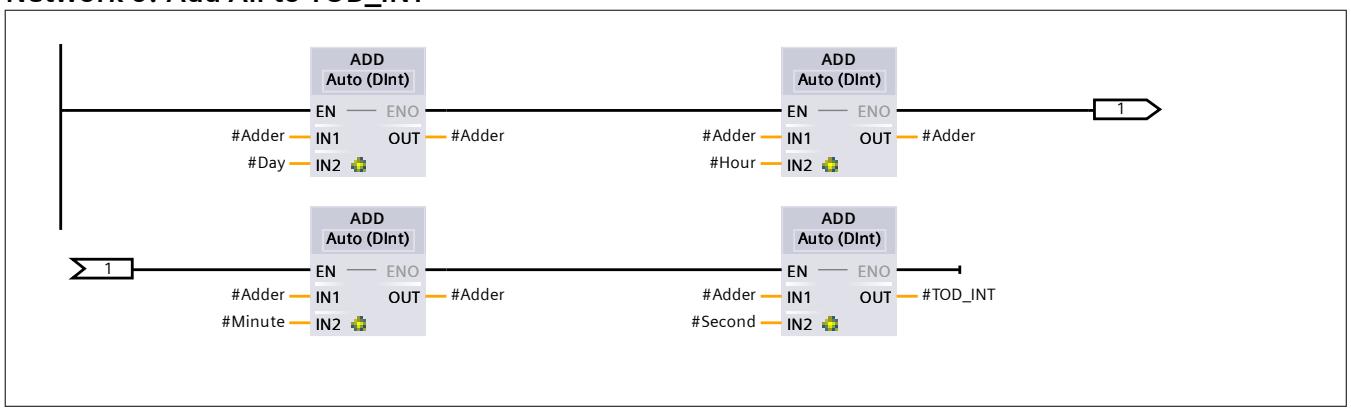


Network 5: Insert TOD.SECOND ke Second (biar semua sama)



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;
```

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

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

Penjadwalan [FC11]

Penjadwalan Properties					
General					
Name	Penjadwalan	**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			
nh	Int		
jml proses	Int		
Output			
▼ InOut			
All Ready	Bool		
▼ Temp			
h1	Int		
CNT_Nomor Proses	Int		
CNT_Hasil Akhir Tank	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		
CNT Prediksi	Int		
conv setpoint	DInt		
modifier pertama	DInt		
modifier start	DInt		
CNT_NP	Int		
CNT_Pred	Int		
CNT_Pembanding	Int		
CNT_Ready	Int		
CNT_Hasil Akhir Crane	Int		
np	Int		
jml proses_p	Int		
jml proses crane	Int		
starttime	DInt		
pembanding_start	DInt		
stoptime	DInt		
pembanding_stop	DInt		
modifier start crane	Int		
modifier stop crane	Int		
modifier pertama crane	Int		

Name	Data type	Default value	Comment
localtime	DInt		
Cek Ready_1	Int		
Tank Ready	Bool		
Crane Ready	Bool		
Constant			
Return			
Penjadwalan	Void		

```
0001 //Algoritma Penentuan TIME dan CRANE READY
0002 //
0003 //pilih pembanding
0004 CASE #nh OF
0005   1:
0006     #h1 := 2;
0007     ;
0008   2:
0009     #h1 := 1;
0010     ;
0011   ELSE  // Statement section ELSE
0012     ;
0013 END_CASE;
0014
0015 //setiap nomor proses dicek
0016 //proses-n siap dilakukan kalo tangkinya lagi ga kepake (start/stop time = 0)
     atau bisa diselipin
0017   //bentuknya prediksi waktu kedepan, dirun satu kali aja sebelum hanger
     TIME_Ready
0018   //Tidak di-run jika TIME_Ready sudah OK
0019
0020     //Ambil waktu saat ini sebagai startpoint dan stoppoints (menjaga logic)
0021 "Get Local Time"("Hanger Data".Hanger[#nh].Process_Start_Time[0]);
0022 "Get Local Time"("Hanger Data".Hanger[#nh].Process_Stop_Time[0]);
0023
0024
0025 REPEAT
0026   //repeat sampe dapet penjadwalan yang sesuai
0027   //tangki
0028   FOR #"CNT Prediksi" := 0 TO ("Hanger Data".Hanger[#nh]."Jml Proses" - 1)
     DO //-1 karena proses terakhir adalah proses pulang
0029
0030     //Waktu mulai [1] = Start Time saat ini (disimpen di waktu mulai [0] +
     Lama perpindahan sampe nyelup
0031     //Waktu Mulai [i] = Waktu selesai [i-1] + Lama perpindahan sampe nyelup,
     kecuali ngangkat
0032     //waktu setpoint diconvert menjadi seconds dalam INT
0033     "Time Converter to seconds"("time input" := "Hanger Data".Hanger[#nh].Set-
     point[#"CNT Prediksi"],
0034                     "time output" => #"conv setpoint");
0035     #"modifier pertama" := (2 * "Time Param"."Avg Moving_Int") + ("Time Par-
     am".Naik_Int) + (2 * "Time Param".Turun_Int);
0036     #"modifier start" := "Time Param"."Avg Moving_Int" + "Time Param".Naik_Int
      + "Time Param".Turun_Int;
0037     IF #"CNT Prediksi" = 0 THEN
0038       ; //do nothing
0039     ELSIF #"CNT Prediksi" = 1 THEN
```

```
0040        "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT Prediksi"] := "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT Prediksi" - 1] + #"modifier pertama";
0041      ELSE
0042        "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT Prediksi"] := "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT Prediksi" - 1] + #"modifier start";
0043      END_IF;
0044      //Waktu selesai [i] = Waktu Mulai [i] + Setpoint
0045      "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT Prediksi"] := "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT Prediksi"] + #"conv setpoint";
0046    END_FOR;
0047    ;
0048    //Pengecekan baru sistem 2 hanger, 3 hanger belom
0049
0050    //cek untuk setiap nomor proses karena jumlah tangki yang dimasukin sebesar jml proses
0051    FOR #"CNT_Nomor Proses" := 1 TO #"jml proses" - 1 DO //Hanya cek sampe nomor proses max nya aja
0052
0053      CASE #"CNT_Nomor Proses" OF
0054        1, 3:
0055          IF "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = 0 THEN //STOP = 0 berarti gaada proses
0056            "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;
0057          ELSIF "Hanger Data".Hanger[#h1].Process_Start_Time[#"CNT_Nomor Proses"] > "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE
0058            OR "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] > "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE THEN
0059            "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;
0060          ELSE
0061            "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := FALSE;
0062          END_IF;
0063          ;
0064        2, 4, 6:
0065          CASE "Hanger Data".Hanger[#h1]."Jml Proses" OF //beda nomor proses = beda IF supaya ga kena yang nol
0066            3:  //2 doang
0067              IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE)
0068                OR ("Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[2] = TRUE) THEN
0069                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;
0070              ELSE
0071                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := FALSE;
0072              END_IF;
0073            5: //2 4
0074              IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE)
0075                OR ("Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[4] = TRUE)
0076                OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[2] <= "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] = TRUE AND "Hanger Data".Hanger[#h1].Process_Start_Time[4] >= "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE) THEN
```

```
0077                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
    TRUE;
0078              ELSE
0079                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
    FALSE;
0080              END_IF;
0081
0082            7:  //2 4 6
0083              IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger
    Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE)
0084                OR ("Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor
    Proses"] >= "Hanger Data".Hanger[#h1].Process_Stop_Time[6] = TRUE)
0085                OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[2] <= "Hanger
    Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] = TRUE AND "Hanger
    Data".Hanger[#h1].Process_Start_Time[4] >= "Hanger Data".Hanger[#nh].Proc-
    ess_Stop_Time[#"CNT_Nomor Proses"] = TRUE)
0086                OR ("Hanger Data".Hanger[#h1].Process_Stop_Time[4] <= "Hanger
    Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor Proses"] = TRUE AND "Hanger
    Data".Hanger[#h1].Process_Start_Time[6] >= "Hanger Data".Hanger[#nh].Proc-
    ess_Stop_Time[#"CNT_Nomor Proses"] = TRUE) THEN
0087
0088                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
    TRUE;
0089              ELSE
0090                "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
    FALSE;
0091              END_IF;
0092              ;
0093            ELSE //case
0094              ;
0095          END_CASE;
0096          ;
0097        5: //bisa jadi pake tangki yang berbeda (4 for CCC dan 5 for CAA)
0098          IF "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] =
    0 THEN //STOP = 0 berarti gaada proses
0099            "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] := TRUE;
0100
0101          ELSE   //ada proses di NP 5
0102            CASE "Hanger Data".Hanger[#nh].Proses OF //tergantung proses hanger
    sebelah itu CCC atau CAA
0103              4:  // CCC
0104                IF "Hanger Data".Hanger[#h1].Proses = 5 THEN //beda tangki
0105                  "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
    TRUE;
0106                ELSIF "Hanger Data".Hanger[#h1].Proses = 4 THEN
0107                  IF "Hanger Data".Hanger[#h1].Process_Start_Time[#"CNT_Nomor
    Proses"] > "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] =
    TRUE
0108                    OR "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor
    Proses"] > "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] =
    TRUE THEN
0109                    "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Pro-
    ses"] := TRUE;
0110                  ELSE
0111                    "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Pro-
    ses"] := FALSE;
0112                  END_IF;
0113                END_IF;
0114                ;
```

```
0115              5:  // CAA
0116                IF "Hanger Data".Hanger[#h1].Proses = 4 THEN //beda tangki
0117                  "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Proses"] :=
      TRUE;
0118                ELSIF "Hanger Data".Hanger[#h1].Proses = 5 THEN
0119                  IF "Hanger Data".Hanger[#h1].Process_Start_Time[#"CNT_Nomor
      Proses"] > "Hanger Data".Hanger[#nh].Process_Stop_Time[#"CNT_Nomor Proses"] =
      TRUE
0120                    OR "Hanger Data".Hanger[#nh].Process_Start_Time[#"CNT_Nomor
      Proses"] > "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] =
      TRUE THEN
0121                    "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Pro-
      ses"] := TRUE;
0122                  ELSE
0123                    "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Nomor Pro-
      ses"] := FALSE;
0124                  END_IF;
0125                END_IF;
0126                ;
0127              ELSE  // Statement section ELSE
0128                ;
0129            END_CASE;
0130          END_IF;
0131
0132        ELSE  // Statement section ELSE
0133          ;
0134      END_CASE;
0135    END_FOR;
0136
0137    //cek hasil akhir
0138    FOR #"CNT_Hasil Akhir Tank" := 1 TO #"jml proses" - 1 DO //Hanya cek sampe
      nomor proses max nya aja
0139      IF "Hanger Data".Predict[#nh]."NP Ready"[#"CNT_Hasil Akhir Tank"] = TRUE
      THEN
0140        #"Cek Ready" := #"Cek Ready" + 1;
0141        IF #"Cek Ready" = #"jml proses" - 1 THEN
0142          #"Tank Ready" := TRUE;
0143        END_IF;
0144      ELSE
0145        #"Tank Ready" := FALSE;
0146        EXIT;
0147      END_IF;
0148    END_FOR;
0149    ;
0150
0151    //Crane
0152    //Deklarasi variabel
0153    #np := "Hanger Data".Hanger[#nh]."Nomor Proses";
0154    #"jml proses_p" := "Hanger Data".Hanger[#h1]."Jml Proses";
0155    #"jml proses crane" := "Hanger Data".Hanger[#nh]."Jml Proses";
0156
0157    #"modifier start crane" := ("Time Param"."Avg Moving_Int" + "Time Par-
      am".Turun_Int); //waktu yang dipake buat moving dan turun
0158    #"modifier stop crane" := "Time Param".Naik_Int; //buat naik lagi setelah
      stop
0159    #"modifier pertama crane" := "Time Param"."Avg Moving_Int" + (2 * "Time Par-
      am".Naik_Int) + "Time Param"."Avg Moving_Int" + (2 * "Time Param".Turun_Int);
0160
0161    "Get Local Time"(#"localtime"); //get local time, save to #local time
```

```
0162
0163   //FOR untuk write data crane usage. Ambil dari start stop aja. Lihat buku catatan buat grafik gantt nya
0164   FOR #CNT_NP := 1 TO #"jml proses crane" DO //Aakan ada pergerakan crane sebanyak jml proses
0165
0166     //Start crane ketika waktu start prediksi dikurangi dengan modifier
0167     IF #CNT_NP = 1 THEN //kalo starter beda di bagian start nya, karena gaada pengurangan modifier
0168       "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] := "Hanger Data".Hanger[#nh].Process_Start_Time[0];
0169       "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_NP] := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] + #"modifier pertama crane";
0170     ELSIF #CNT_NP = #"jml proses crane" THEN //kalo akhiran juga beda soalnya gaada stop nya
0171       "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] := "Hanger Data".Hanger[#nh].Process_Stop_Time[#CNT_NP - 1] - #"modifier start crane";
0172       "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_NP] := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] + #"modifier pertama crane";
0173     ELSE //kalo kondisi lain
0174       "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] := "Hanger Data".Hanger[#nh].Process_Stop_Time[#CNT_NP - 1] - #"modifier start crane";
0175       "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_NP] := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_NP] + #"modifier pertama crane";
0176     END_IF;
0177   END_FOR;
0178
0179   //Add keterangan untuk informasi kapan proses mulai dan selesai
0180   IF "Hanger Data".Hanger[#nh].HMI_Ready = TRUE AND ("Hanger Data".Hanger[#nh].Crane_Ready = FALSE OR "Hanger Data".Hanger[#nh].Time_Ready = FALSE) THEN
0181     //call function
0182     "Convert INT To TIME"("INT Input" := "Hanger Data"."Predict Crane"[#nh].Start[1],
0183                 "TIME Output" => "Hanger Data".Hanger[#nh].Start_ToD);
0184     "Convert INT To TIME"("INT Input" := "Hanger Data"."Predict Crane"[#nh].Stop["Hanger Data".Hanger[#nh]."Jml Proses"],
0185                 "TIME Output" => "Hanger Data".Hanger[#nh].Stop_ToD);
0186   END_IF;
0187
0188   //Cek waktu availability crane (nyontek dari kode cek time ready).
0189
0190   //sampe 9 karena harus ngecek dengan semua possibility pergerakan crane
0191   //Kalo hanger sebelah lagi gabut, langsung ready
0192   IF "Hanger Data".Hanger[#h1].HMI_Ready = FALSE THEN
0193     #"Crane Ready" := TRUE;
0194
0195     //kalo hanger sebelah lagi ga gabut
0196   ELSE
0197     FOR #CNT_Pred := 1 TO #"jml proses crane" DO //untuk setiap crane movement di Hanger ini
0198
0199       //deklarasi start/stop time dari hanger
0200       #starttime := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_Pred];
0201       #stoptime := "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_Pred];
0202
0203       FOR #CNT_Pembanding := 1 TO #"jml proses_p" DO //dicek dengan seluruh crane movement hanger sebelah, start maupun stop
0204
```

```
0205          //deklarasi start/stop time hanger sebelah
0206          #pembanding_start := "Hanger Data"."Predict
      Crane"[#h1].Start[#CNT_Pembanding + 1]; //plus satu supaya pas ngecek nomor 9
      ga error (kehabisan index array)
0207          #pembanding_stop := "Hanger Data"."Predict Crane"[#h1].Stop[#CNT_Pem-
      banding];
0208
0209          //start perbandingan antara Crane 1 dengan Crane 1-n dari hanger satu-
      nya
0210          //Kondisi : Cocok di sela-sela Crane satunya (diantara Crane 1 dan 2,
      2 dan 3, dst).
0211          IF #CNT_Pembanding = #"jml proses_p" THEN //khusus untuk pembanding
      terakhir, karena stop nya infinit
0212            IF #starttime > #pembanding_stop THEN
0213              "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := TRUE;
0214              EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya;
0215            ELSE
0216              ; //Lanjut cek CNT Pembanding berikutnya
0217            END_IF;
0218          ELSIF #CNT_Pembanding < #"jml proses_p" THEN //untuk pembanding yang
      lain
0219            IF #starttime > #pembanding_stop AND #stoptime < #pembanding_start
      THEN
0220              "Hanger Data"."Predict Crane"[#nh].C_Ready[#CNT_Pred] := TRUE;
0221              EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya
0222            ELSE
0223              ; //Lanjut cek CNT Pembanding berikutnya
0224            END_IF;
0225          END_IF;
0226        END_FOR;
0227      END_FOR;
0228
0229      FOR #"CNT_Hasil Akhir Crane" := 1 TO #"jml proses crane" DO //Hanya cek
      sampe nomor proses max nya aja
0230        IF "Hanger Data"."Predict Crane"[#nh].C_Ready[#"CNT_Hasil Akhir Crane"]
      = TRUE THEN
0231          #"Cek Ready" := #"Cek Ready" + 1;
0232          IF #"Cek Ready" = #"jml proses crane" THEN
0233            #"Crane Ready" := TRUE;
0234            EXIT;
0235          END_IF;
0236        ELSE
0237          #"Crane Ready" := FALSE;
0238          EXIT;
0239        END_IF;
0240      END_FOR;
0241
0242    END_IF; //Buat IF HMI ready sebelah = FALSE
0243
0244    IF #"Crane Ready" = TRUE AND #"Tank Ready" = TRUE THEN
0245      #"All Ready" := TRUE;
0246    ELSE
0247      #"All Ready" := FALSE;
0248      "Hanger Data".Hanger[#nh].Process_Start_Time[0] := "Hanger Data".Hang-
      er[#nh].Process_Start_Time[0] + 1;
0249      "Hanger Data".Hanger[#nh].Process_Stop_Time[0] := "Hanger Data".Hang-
      er[#nh].Process_Stop_Time[0] + 1;
0250    END_IF;
0251
```

```
0252    //Ada -1 soalnya jumlah proses ada proses pulang ke homebase
0253    ;
0254 UNTIL #"All Ready" = TRUE
0255 END_REPEAT;
```

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[*].Crane_Ready		Bool	
"Hanger Data".Hanger[*].HMI_Ready		Bool	
"Hanger Data".Hanger[*].Process_Start_Time[0]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[2]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[4]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[6]		DInt	
"Hanger Data".Hanger[*].Process_Start_Time[*]		DInt	
"Hanger Data".Hanger[*].Process_Stop_Time[0]		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".Hanger[*].Setpoint[*]		Time	
"Hanger Data".Hanger[*].Start_ToD		Time_Of_Day	
"Hanger Data".Hanger[*].Stop_ToD		Time_Of_Day	
"Hanger Data".Hanger[*].Time_Ready		Bool	

Symbol	Address	Type	Comment
"Hanger Data".Predict[*]."NP Ready"[*]		Bool	
"Time Param"."Avg Moving_Int"		Int	
"Time Param".Naik_Int		Int	
"Time Param".Turun_Int		Int	
#"All Ready"		Bool	
#"Cek Ready"		Int	
#"CNT Prediksi"		Int	
#"CNT_Hasil Akhir Crane"		Int	
#"CNT_Hasil Akhir Tank"		Int	
#"CNT_Nomor Proses"		Int	
#"conv setpoint"		DInt	
#"Crane Ready"		Bool	
#"jml proses crane"		Int	
#"jml proses"		Int	
#"jml proses_p"		Int	
#"modifier pertama crane"		Int	
#"modifier pertama"		DInt	
#"modifier start crane"		Int	
#"modifier start"		DInt	
#"modifier stop crane"		Int	
#"Tank Ready"		Bool	
#CNT_NP		Int	
#CNT_Pembanding		Int	
#CNT_Pred		Int	
#h1		Int	
#localtime		DInt	
#nh		Int	
#np		Int	
#pembanding_start		DInt	
#pembanding_stop		DInt	
#starttime		DInt	
#stoptime		DInt	

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-
     ki berikutnya
0011       2:  // tangki 2
0012         #destination := 5;
0013         #"next destination" := 6;
0014       3:  // tangki 3
0015         #destination := 6;
0016         #"next destination" := 5;
0017       4:  // tangki 2
0018         #destination := 5;
0019         #"next destination" := #homebase; //pulang
0020       5: //pulang
0021         #destination := #homebase; //HARUSNYA HOMEBASE
0022         #"next destination" := #homebase;
0023       ELSE  // Statement section ELSE
0024         #proses := 0 //kalau nomor proses ditambah lagi, proses ke 0, berhen-
     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;
```

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

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]

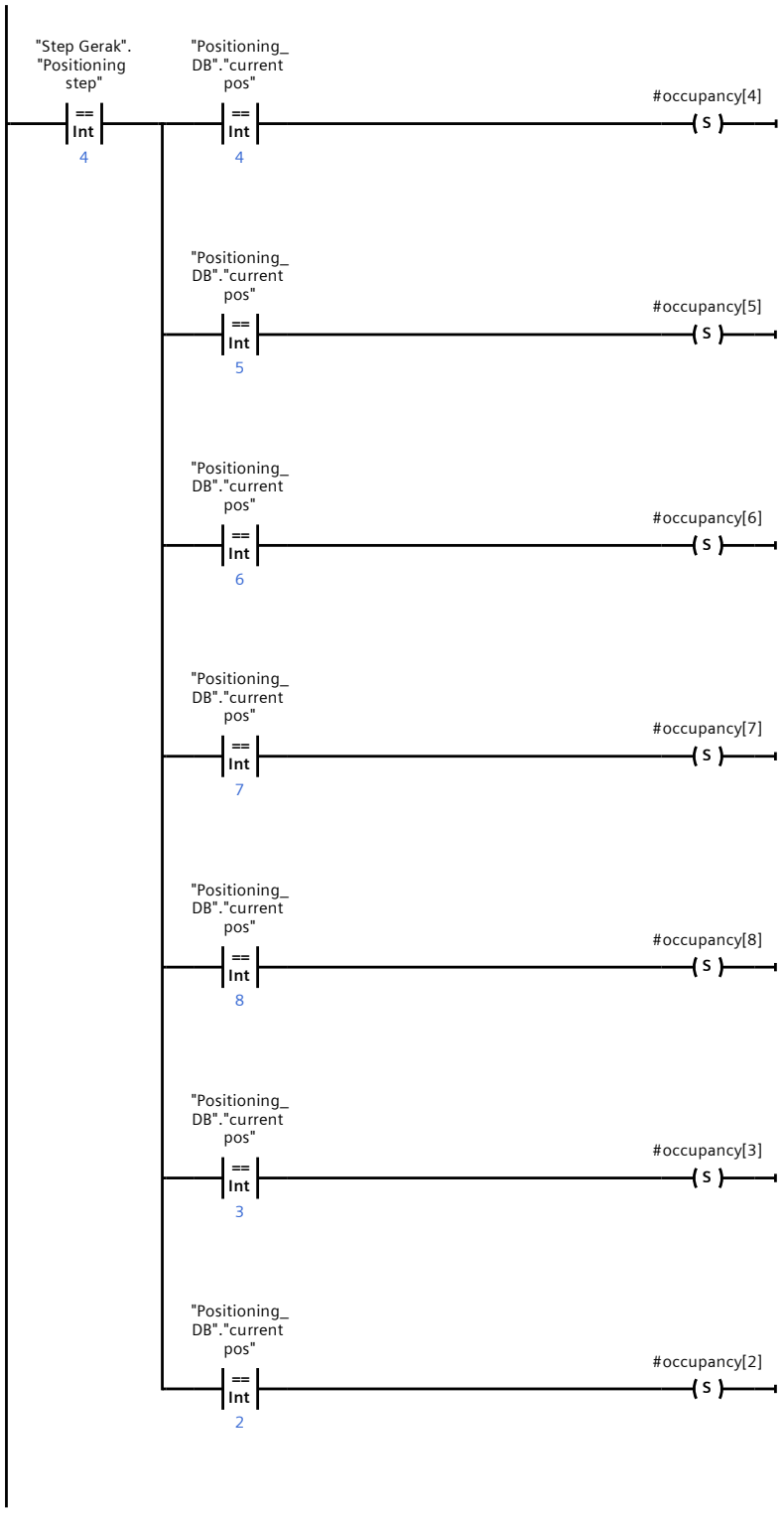
Okupansi Tangki Properties					
General					
Name	Okupansi Tangki	**Number**	1	**Type**	FB
Language	LAD	**Numbering**	Automatic		
Information					
Title	Menentukan occupied dari setiap tangki	**Author**		**Comment**	Menentukan okupansi dari setiap tangki, berdasarkan posisi hanger sedang ambil atau lepas. 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	Setpoint	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		

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
occupancy[7]	Bool	false	Non-retain	True	True	True	False		
occupancy[8]	Bool	false	Non-retain	True	True	True	False		
occupancy[9]	Bool	false	Non-retain	True	True	True	False		
Temp									
Constant									

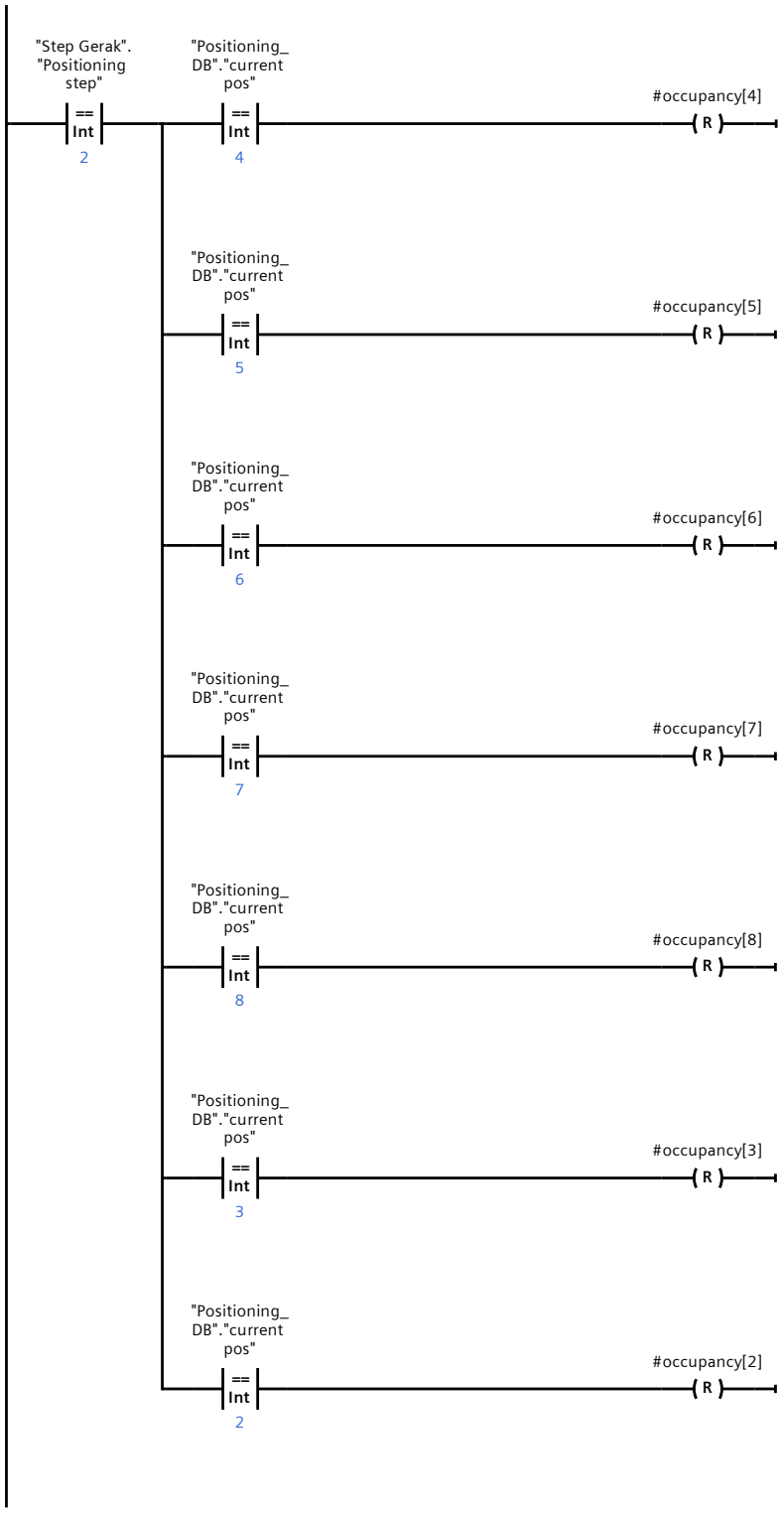
Network 1: Step Lepas

Set kontak to TRUE when positioning step = 4 AND current pos = n



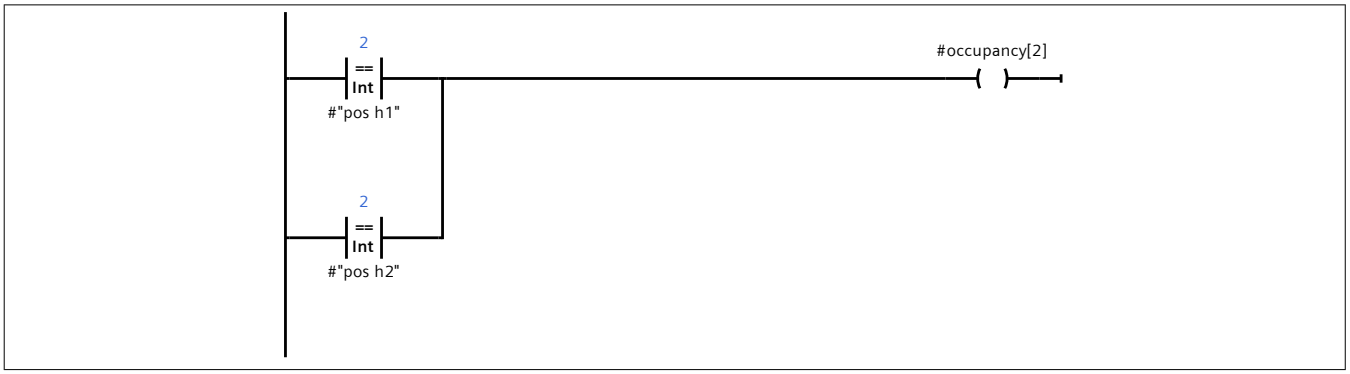
Network 2: Step Ambil

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



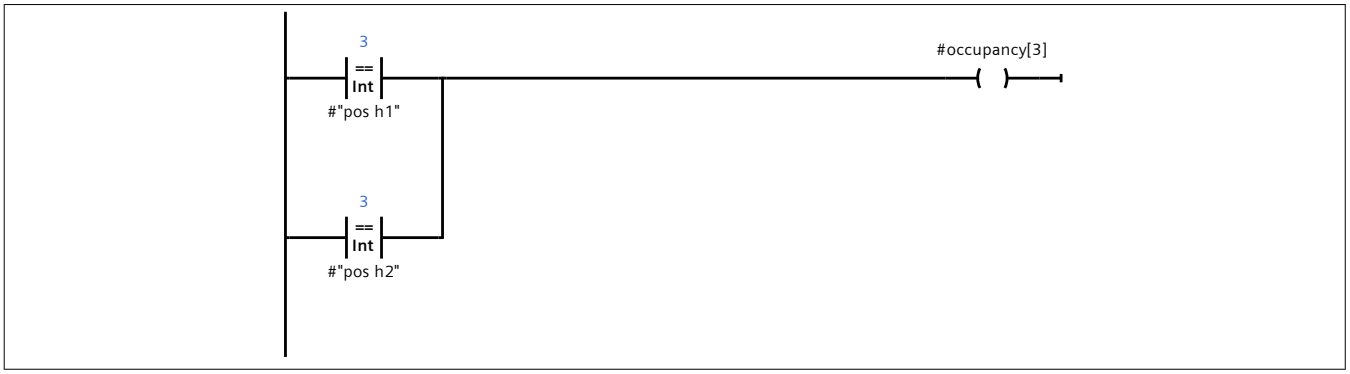
Network 4: Coba algoritma yang lebih mudah buat nentuin okupansi

ST2



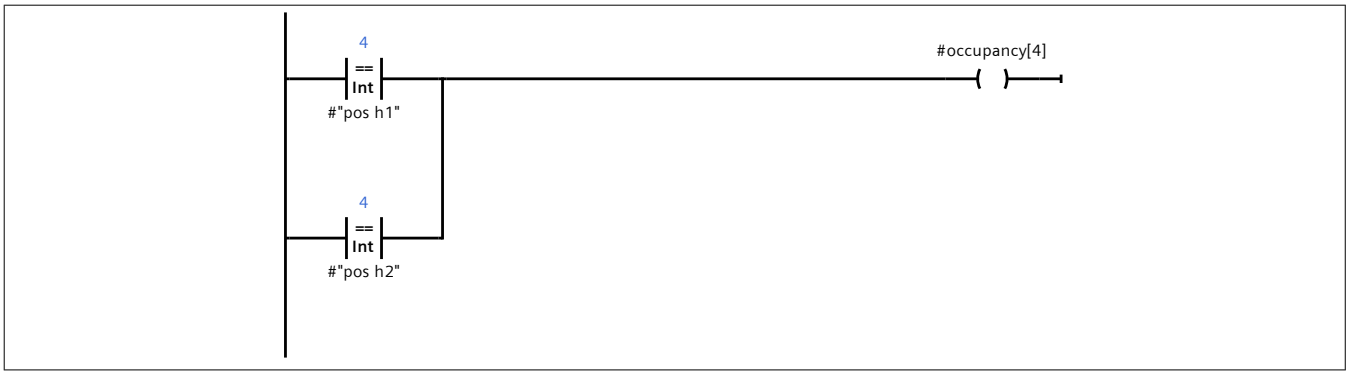
Network 5: Coba algoritma yang lebih mudah buat nentuin okupansi

ST1



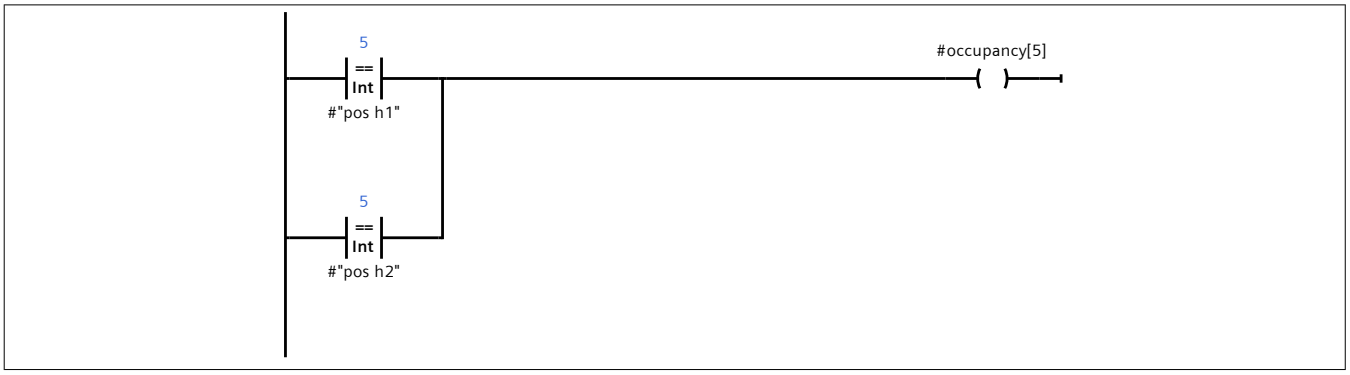
Network 6: Coba algoritma yang lebih mudah buat nentuin okupansi

ALK



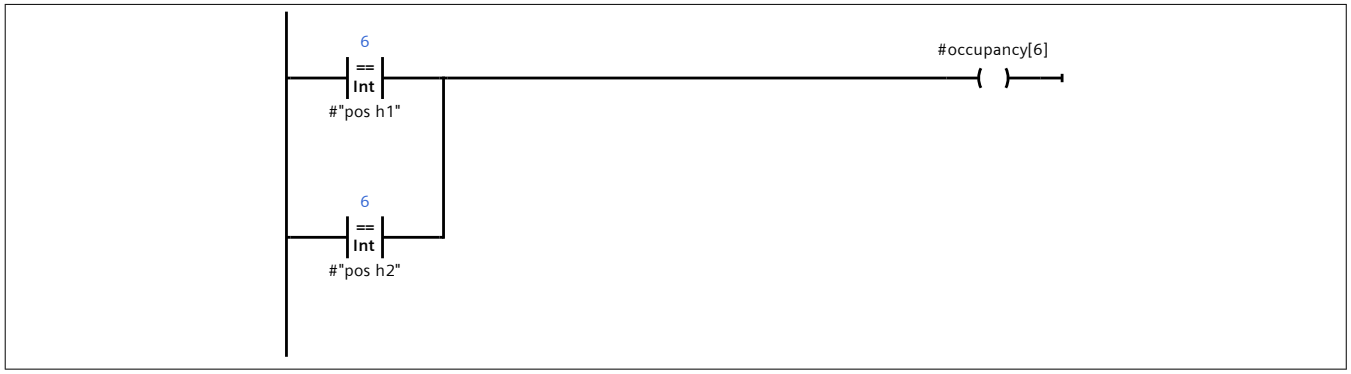
Network 7: Coba algoritma yang lebih mudah buat nentuin okupansi

RIN



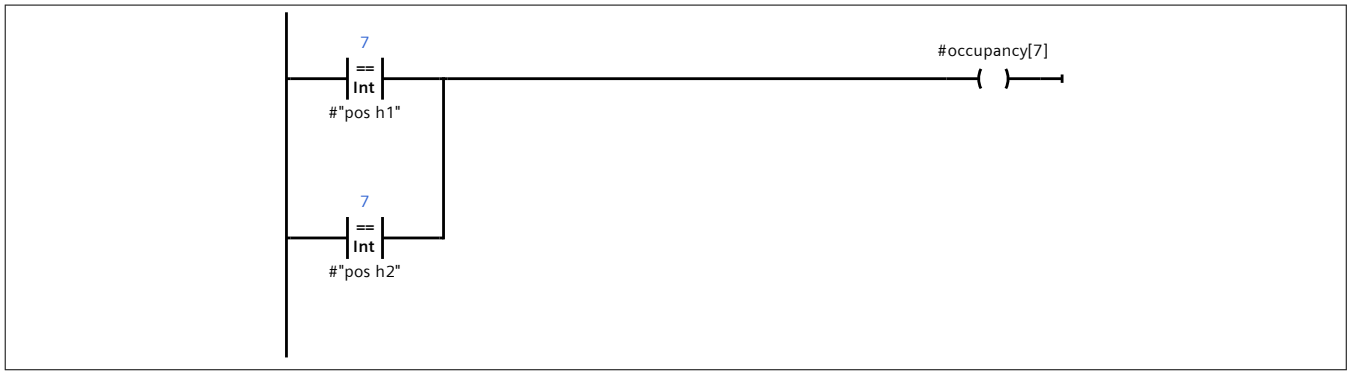
Network 8: Coba algoritma yang lebih mudah buat nentuin okupansi

DEOX



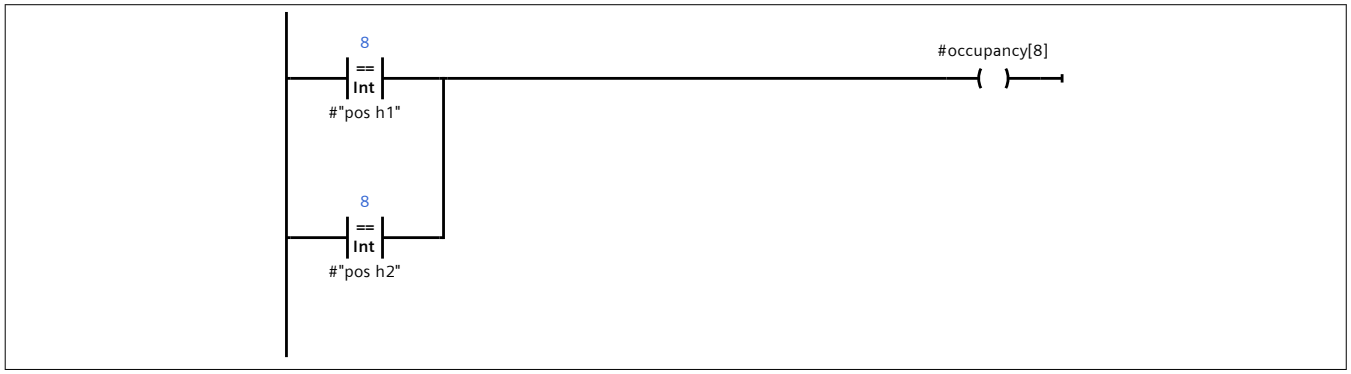
Network 9: Coba algoritma yang lebih mudah buat nentuin okupansi

CCC



Network 10: Coba algoritma yang lebih mudah buat nentuin okupansi

CAA



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

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		

Name	Data type	Default value	Comment
▼ Process_Stop_Time	Array[0..9] of DInt		
Process_Stop_Time[0]	DInt		
Process_Stop_Time[1]	DInt		
Process_Stop_Time[2]	DInt		
Process_Stop_Time[3]	DInt		
Process_Stop_Time[4]	DInt		
Process_Stop_Time[5]	DInt		
Process_Stop_Time[6]	DInt		
Process_Stop_Time[7]	DInt		
Process_Stop_Time[8]	DInt		
Process_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		
Sched_Ready	Bool		
Finish Process	Bool		

Name	Data type	Default value	Comment
Divert	Bool		
Nomor Hanger	Int		
CNT_HMI_Ready	Int		
▼ Temp			
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
Constant			
▼ Return			
Hanger Block	Void		

```
0001 "Get Local Time"(#localtime);
0002
0003
0004 //Cari routing berdasarkan input
0005 IF #FuncTag.Divert = FALSE THEN //kalo lagi divert, jangan dirun
0006   "Routing Hanger"(homebase:= #FuncTag.Homebase,
0007            proses := #FuncTag.Proses,
0008            "nomor proses" := #FuncTag."Nomor Proses",
0009            destination => #FuncTag.Destination,
0010            "jml proses" => #FuncTag."Jml Proses",
0011            "next destination" => #FuncTag."Next Destination");
0012 END_IF;
0013
0014 REGION Cek Setpoint
0015   // Call Setpoint
0016   "Check Setpoint Time"(nh:=#FuncTag."Nomor Hanger",
0017               "jml proses":=#FuncTag."Jml Proses",
0018               Ready=>#FuncTag.Setpoint_Ready);
0019 END_REGION
0020
0021
0022
```

```
0023 REGION Algoritma Penentuan Ready
0024   //Call function untuk cek kesiapan waktu, hanya ketika HMI udah bilang Ready
0025   IF #FuncTag.HMI_Ready = TRUE AND #FuncTag.Sched_Ready = FALSE THEN //run
       code sampe ketemu waktu yang cocok buat di-run
0026
0027     "Penjadwalan"(nh := #FuncTag."Nomor Hanger",
0028             "jml proses" := #FuncTag."Jml Proses",
0029             "All Ready":= #FuncTag.Sched_Ready);
0030   END_IF;
0031 END_REGION
0032 //Save nomor proses sebelum diangkat pada region Algoritma Penentuan READY
0033 #"nomor proses_before" := #FuncTag."Nomor Proses";
0034
0035 REGION Algoritma Penentuan READY
0036   //Mulai algoritma pencarian apakah hanger READY atau TIDAK
0037
0038   //Cek apakah tangki next destination kosong.
0039   IF "Occupancy_DB".occupancy[#FuncTag."Next Destination"] = FALSE THEN
0040     #FuncTag.Occupancy_Ready := TRUE;
0041   ELSE
0042     #FuncTag.Occupancy_Ready := FALSE;
0043   END_IF;
0044
0045   //Skenario 1: Hanger ready karena belum dimulai prosesnya/sedang di homebase
0046   //IF HMI pencet OK AND pos hanger = homebase AND tangki destinasi kosong,
       then READY = TRUE. Cek Destinasi Akhir di bawah
0047   //Ini juga mengakomodasi yang loncat gara2 diverted. Akan di-run setiap cy-
       cle. Yang ini hanya READY ketika ada tangki kosong.
0048   IF #FuncTag.Position = #FuncTag.Homebase AND #FuncTag.Sched_Ready = TRUE
       AND #FuncTag."Nomor Proses" = 0 THEN
0049     IF #FuncTag.HMI_Ready = TRUE AND #FuncTag.Process_Start_Time[#Func-
         Tag."Nomor Proses"] <= #localtime //secara timing harus ok
0050       AND #FuncTag.Occupancy_Ready = TRUE THEN//next tank harus OK
0051       #FuncTag.Ready := TRUE;
0052     ELSE
0053       #FuncTag.Ready := FALSE;
0054     END_IF; //Loncat ke cek destinasi
0055   END_IF;
0056
0057   //Skenario 2: Hanger telah berproses, kemudian waktu celup sudah selesai
0058   //Cek apakah waktu celup sudah selesai. Jika sudah selesai, pasti diangkut
0059   //Nilai timer celup ditambah waktu untuk bergerak turun sebagai offset.
       Yang pindah ga dipake soalnya waktunya dinamis tergantung jarak yang ditempuh
0060   IF #FuncTag.Position <> #FuncTag.Homebase AND #FuncTag.Sched_Ready = TRUE //
       secara timing harus ok
0061     AND #FuncTag.Occupancy_Ready = TRUE THEN
0062     //ditambah waktu untuk moving dan turun
0063     IF #FuncTag."Timer celup"[#FuncTag."Nomor Proses"] + ("Time Param"."Avg
       Moving" + "Time Param".Turun) > #FuncTag.Setpoint[#FuncTag."Nomor Proses"]
       THEN
0064       #FuncTag.Ready := TRUE;
0065     ELSE
0066       #FuncTag.Ready := FALSE;
0067     END_IF; //Loncat ke cek destinasi
0068   END_IF;
0069
0070   //Cek Destinasi final
0071   //Apakah diangkut ke tangki berikutnya atau ke hanger station. (Checker se-
       bagai latch)
```

```
0072   //Pengecekan dilakukan ketika sudah diangkat. Ambil pake step 4 supaya yang timing jalan duluan
0073   IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step Gerak"."Ambil step" = 4 AND #FuncTag.Checker_Ready = FALSE
0074     AND #FuncTag."Finish Process" = FALSE THEN //Kalo proses kelar yaudah gausah nambahin nomor proses
0075
0076     //Skenario A: Tangki berikutnya Kosong. Tambah nomor proses.
0077     IF #FuncTag.Ready = TRUE AND #FuncTag.Occupancy_Ready = TRUE THEN
0078       #FuncTag."Nomor Proses" := #FuncTag."Nomor Proses" + 1;
0079       #FuncTag.Checker_Ready := TRUE;
0080
0081       //Skenario B: Tangki berikutnya PENUH, loncat ke kode di paling bawah
0082     ELSIF #FuncTag.Ready AND #FuncTag.Occupancy_Ready = FALSE THEN
0083       #FuncTag.Divert := TRUE;
0084       #FuncTag.Destination := #FuncTag.Homebase; //Pindahin dulu ke Homebase. Kalo proses divert selesai, cek di kode paling bawah
0085       #FuncTag.Checker_Ready := TRUE;
0086     END_IF;
0087   ELSE
0088     ; //do nothing
0089   END_IF;
0090
0091
0092 END_REGION
0093
0094
0095 REGION Algoritma Timing
0096   IF #FuncTag.HMI_Ready = TRUE AND #FuncTag.Sched_Ready = TRUE THEN
0097     //run timing
0098     // Start timer ke-n apabila sudah mulai gerak lepas dan gerak ambil. Setpoint akan diatur nanti, di input HMI
0099     // Waktu celup disimpan di ET
0100
0101     // Start waktu celup jika dan hanya jika hanger tersebut selesai dilepas DAN bukan hasil divert. Rewrite waktu mulai.
0102     IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step Gerak"."Lepas step" = 2 AND #FuncTag.Position <> #FuncTag.Homebase THEN
0103       #FuncTag.Timer_Start := TRUE;
0104       #FuncTag.Checker_Ready := FALSE;
0105
0106     END_IF;
0107
0108     //Stop waktu celup ketika hanger diangkat. Rewrite waktu selesai.
0109     IF ("Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step Gerak"."Ambil step" = 3) OR #FuncTag."Nomor Proses" = 0 THEN
0110       #FuncTag.Timer_Start := FALSE;
0111     END_IF;
0112     //Timer nya jalan ketika timer start true.
0113     #FuncTag."IEC Timer Proses"[#FuncTag."Nomor Proses"].TONR(IN := #FuncTag.Timer_Start, //Sesuai command di atas
0114                                     R := #FuncTag.Timer_Reset, //perlu diganti
0115                                     PT := T#999M, //biar ET gapernah mentok
0116                                     Q => #"dump output", //ga dipake
0117                                     ET => #FuncTag."Timer celup"[#FuncTag."Nomor Proses"]); //storage
0118   END_IF;
0119 END_REGION
0120
```

```
0121 REGION Algoritima Penentuan Posisi Hanger
0122   // Agar data Position pada DB selalu terupdate. Ikut berubah jika hanger se-
     lected oleh Positioning dan pemindahan sudah selesai
0123   IF "Positioning_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step
     Gerak"."Ambil step" = 4 THEN
0124     //Pakai destination, karena yang dihitung hanya posisi akhir hanger
0125     #FuncTag.Position := #FuncTag.Destination; //Dengan Catatan tiap kali
     crane ganti, hanger selected kereset.
0126     #FuncTag."Start Position" := #FuncTag.Position;
0127   END_IF;
0128
0129 END_REGION
0130
0131
0132 REGION Ending Sequence
0133   // Supaya block nya bisa dipake lagi, ketika jml proses udah semua dan pro-
     ses terakhir sudah dilakukan
0134   IF #FuncTag."Nomor Proses" = #FuncTag."Jml Proses" AND ("Position-
     ing_DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step Gerak"."Lepas
     step" = 3) THEN
0135     #FuncTag."Finish Process" := TRUE; //ini yang jadi marker buat popup HMI,
     sekaligus jd marker buat ambil data
0136   END_IF;
0137
0138   //kalau HMI udah dipencet berarti clear, reset all
0139   IF #FuncTag.HMI_Finish = TRUE OR #FuncTag.HMI_Reset = TRUE THEN
0140     #FuncTag.Proses := 0; //Harus dikembangin ke arah HMI
0141     #FuncTag."Nomor Proses" := 0; //Dibalikin ke nol supaya reset
0142     #FuncTag.HMI_Ready := FALSE; //ntar diganti supaya datanya ditarik dulu
     sebelum bener2 "FINISH" di HMI nya
0143     #FuncTag.Checker_Ready := FALSE;
0144     #FuncTag.Sched_Ready := TRUE;
0145     #FuncTag."Finish Process" := FALSE;
0146     #FuncTag.Timer_Reset := TRUE; //untuk reset timer di bawah
0147
0148     //Reset semua timer ketika Timer_Reset = TRUE -> ET nya udah gausah dis-
     impen
0149     IF #FuncTag.Timer_Reset = TRUE THEN //ntar ke HMI aja nyambungnya
0150       FOR #counter := 0 TO 9 DO //Timer celup dari 0 sampe 9
0151         #FuncTag."Timer celup"[#counter] := T#0MS; //reset timer celup
0152         #FuncTag.Process_Start_Time[#counter] := 0;
0153         #FuncTag.Process_Stop_Time[#counter] := 0;
0154         #FuncTag.Setpoint[#counter] := T#0MS; //reset setpointnya
0155         RESET_TIMER(#FuncTag."IEC Timer Proses"[#counter]);
0156         ;
0157       END_FOR;
0158       FOR #counter := 0 TO 10 DO //reset yang predict crane
0159         "Hanger Data"."Predict Crane"[#FuncTag."Nomor Hanger"].Start[#counter]
      := 0;
0160         "Hanger Data"."Predict Crane"[#FuncTag."Nomor Hanger"].Stop[#coun-
     ter] := 0;
0161       END_FOR;
0162       #FuncTag.Timer_Reset := FALSE; //false in lagi
0163     END_IF;
0164
0165     //lalu rewrite HMI finish supaya bisa dipake lagi
0166     #FuncTag.HMI_Finish := FALSE;
0167     //Prediction ga di-reset karena sistemnya time-based, karena time selalu
     maju jd pasti memenuhi kondisi
```

```
0168    END_IF;
0169
0170    //Kalau reset, rerun program tapi dengan proses 6 (proses resetting hanger)
0171    IF #FuncTag.HMI_Reset = TRUE THEN
0172      #FuncTag.Proses := 6; //routing reset
0173      #FuncTag.HMI_Ready := TRUE; //anggap ready
0174      #FuncTag.HMI_Reset := FALSE; //balikin lagi kondisi HMI reset
0175    END_IF;
0176  END_REGION
0177
0178  //Kode yang mengecek apakah proses Divert sudah selesai. Kalo udah selesai,
      loncat ke Skenario 1. Ditaro di akhir supaya FunctagDivert gak ke FALSE duluan
0179  IF #FuncTag.Divert = TRUE THEN
0180    //cek apakah divert sudah selesai, melalui posisi si hanger.
0181    IF #FuncTag.Position = #FuncTag.Homebase AND "Step Gerak"."Lepas step" = 3
      THEN
0182      //Loncat ke skenario 1
0183      #FuncTag.Divert := FALSE;
0184      #FuncTag.Ready := FALSE;
0185      #FuncTag.Checker_Ready := FALSE;
0186    END_IF;
0187  END_IF;
0188
0189
0190
0191
0192
0193
0194
0195
```

Symbol	Address	Type	Comment
"Hanger Data"."Predict Crane"[*].Start[*]		DInt	
"Hanger Data"."Predict Crane"[*].Stop[*]		DInt	
"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	
#"dump output"		Bool	dipake di timer
#"nomor proses_before"		Int	
#counter		Int	dipake di FOR loop waktu
#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	

Symbol	Address	Type	Comment
#FuncTag."Start Position"		Int	
#FuncTag."Timer cel-up"[*]		Time	
#FuncTag.Checker_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.Sched_Ready		Bool	
#FuncTag.Setpoint[*]		Time	
#FuncTag.Setpoint_Ready		Bool	
#FuncTag.Timer_Reset		Bool	
#FuncTag.Timer_Start		Bool	
#localtime		DInt	take local time

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	

Icon	Name	Data type	Address	Visible in HMI engineering	Accessible from HMI/OPC UA/Web API	Comment
	Sys Error Reset	Bool	%M11.5	True	True	
	Tag_1	Bool	%M9.6	True	True	
	Tag_2	Bool	%M9.7	True	True	
	Tag_3	Bool	%M30.2	True	True	
	Tag_4	Bool	%M30.3	True	True	
	Tag_5	Bool	%M30.4	True	True	
	U Limit	Bool	%I13.2	True	True	
	U motor	Bool	%M11.2	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	

Icon	Name	Data type	Address	Visible in HMI engineering	Accessible from HMI/OPC UA/Web API	Comment
	Sys Error Reset	Bool	%M11.5	True	True	
	Tag_1	Bool	%M9.6	True	True	
	Tag_2	Bool	%M9.7	True	True	
	Tag_3	Bool	%M30.2	True	True	
	Tag_4	Bool	%M30.3	True	True	
	Tag_5	Bool	%M30.4	True	True	
	U Limit	Bool	%I13.2	True	True	
	U motor	Bool	%M11.2	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Comment
Q	Bool	false	True	False	True	False	
▼ IEC Timer Proses[3]	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[4]	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[5]	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[6]	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[7]	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	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Comment
Q	Bool	false	True	False	True	False	
▼ IEC Timer Proses[8]	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[9]	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	
▼ Timer celup	Array[0..9] of Time		True	True	True	False	
Timer celup[0]	Time	T#0ms	True	True	True	False	
Timer celup[1]	Time	T#0ms	True	True	True	False	
Timer celup[2]	Time	T#0ms	True	True	True	False	
Timer celup[3]	Time	T#0ms	True	True	True	False	
Timer celup[4]	Time	T#0ms	True	True	True	False	
Timer celup[5]	Time	T#0ms	True	True	True	False	
Timer celup[6]	Time	T#0ms	True	True	True	False	
Timer celup[7]	Time	T#0ms	True	True	True	False	
Timer celup[8]	Time	T#0ms	True	True	True	False	
Timer celup[9]	Time	T#0ms	True	True	True	False	
▼ Process_Start_Time	Array[0..9] of DInt		True	True	True	False	
Process_Start_Time[0]	DInt	9999999	True	True	True	False	
Process_Start_Time[1]	DInt	0	True	True	True	False	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Comment
Process_Start_Time[2]	DInt	0	True	True	True	False	
Process_Start_Time[3]	DInt	0	True	True	True	False	
Process_Start_Time[4]	DInt	0	True	True	True	False	
Process_Start_Time[5]	DInt	0	True	True	True	False	
Process_Start_Time[6]	DInt	0	True	True	True	False	
Process_Start_Time[7]	DInt	0	True	True	True	False	
Process_Start_Time[8]	DInt	0	True	True	True	False	
Process_Start_Time[9]	DInt	0	True	True	True	False	
▼ Process_Stop_Time	Array[0..9] of DInt		True	True	True	False	
Process_Stop_Time[0]	DInt	9999999	True	True	True	False	
Process_Stop_Time[1]	DInt	0	True	True	True	False	
Process_Stop_Time[2]	DInt	0	True	True	True	False	
Process_Stop_Time[3]	DInt	0	True	True	True	False	
Process_Stop_Time[4]	DInt	0	True	True	True	False	
Process_Stop_Time[5]	DInt	0	True	True	True	False	
Process_Stop_Time[6]	DInt	0	True	True	True	False	
Process_Stop_Time[7]	DInt	0	True	True	True	False	
Process_Stop_Time[8]	DInt	0	True	True	True	False	
Process_Stop_Time[9]	DInt	0	True	True	True	False	
▼ Setpoint	Array[0..9] of Time		True	True	True	False	
Setpoint[0]	Time	T#0ms	True	True	True	False	
Setpoint[1]	Time	T#0ms	True	True	True	False	
Setpoint[2]	Time	T#0ms	True	True	True	False	
Setpoint[3]	Time	T#0ms	True	True	True	False	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Set-point	Comment
Sched_Ready	Bool	false	True	True	True	False	
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	

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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	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

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

Activity

Activity Properties					
General					
Name	Activity	**Number**	3	**Type**	UDT
Language		**Numbering**			
Information					
Title		**Author**		**Comment**	
Family		**Version**		**User-defined ID**	

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	Writable from HMI/OPC UA/Web API	Visible in HMI engineering	Setpoint	Comment
setpoint	Time	T#0ms	True	True	True	False	
resource	Int	0	True	True	True	False	
starttime	DInt	0	True	True	True	False	
stoptime	DInt	0	True	True	True	False	
starttime TOD	Time_Of_Day	TOD#00:00:00	True	True	True	False	
stoptime TOD	Time_Of_Day	TOD#00:00:00	True	True	True	False	
run	Bool	false	True	True	True	False	
from	Int	0	True	True	True	False	
to	Int	0	True	True	True	False	

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

System data types

This folder is empty.

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

Force table

Name	Address	Display format	Force value	Comment

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

Timing

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

PLC_1 [CPU 1212C AC/DC/Rly] / OPC UA communication

Server interfaces

This folder is empty.

PLC_1 [CPU 1212C AC/DC/Rly]

PLC alarm text lists

This folder is empty.

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

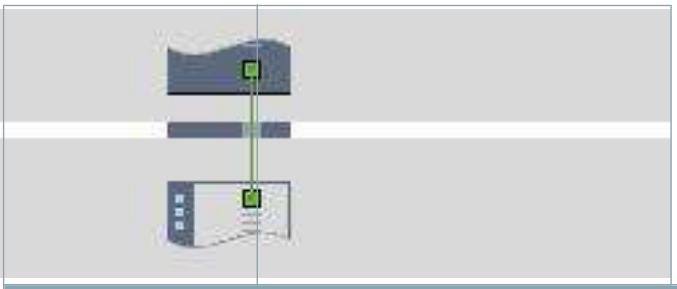
PLC_1 [CPU 1212C AC/DC/Rly]

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**	D6 C7 7F F0 8A B3 C0 76
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		
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		

PROFINET interface [X1]\Digital inputs\Channel0			
Channel address	I0.0	**Input filters**	6.4 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel0			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49152
Event name:	0	**Hardware interrupt:**	0
Rising edge0	Rising edge0		
PROFINET interface [X1]\Digital inputs\Channel0			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel1			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49153
Event name:	0	**Hardware interrupt:**	0
Rising edge1	Rising edge1		
PROFINET interface [X1]\Digital inputs\Channel1			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel2			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49154
Event name:	0	**Hardware interrupt:**	0
Rising edge2	Rising edge2		
PROFINET interface [X1]\Digital inputs\Channel2			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel3			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49155
Event name:	0	**Hardware interrupt:**	0
Rising edge3	Rising edge3		
PROFINET interface [X1]\Digital inputs\Channel3			
Enable falling edge detection	0	**RidPrefixFallingEdgeEvent**	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 millisec
Enable pulse catch	0		
PROFINET interface [X1]\Digital inputs\Channel4			
Enable rising edge detection	0	**RidPrefixRisingEdgeEvent**	49156
Event name:	0	**Hardware interrupt:**	0

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 millisec
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 millisec
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 millisec
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		

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:	---		



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

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)

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

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

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**	
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		
DI 16/DQ 16\Digital inputs\Channel1			
Channel address	I12.1		
DI 16/DQ 16\Digital inputs\Channel2			
Channel address	I12.2		
DI 16/DQ 16\Digital inputs\Channel3			
Channel address	I12.3		
DI 16/DQ 16\Digital inputs\Channel4			
Channel address	I12.4		
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		
DI 16/DQ 16\Digital inputs\Channel9			
Channel address	I13.1		
DI 16/DQ 16\Digital inputs\Channel10			
Channel address	I13.2		
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		
DI 16/DQ 16\Digital inputs\Channel15			
Channel address	I13.7		
DI 16/DQ 16\Digital outputs			
Reaction to CPU STOP	Use substitute value		
DI 16/DQ 16\Digital outputs\Channel0			
Channel address	Q12.0	**Substitute a value of 1 on a change from RUN to STOP.**	0

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

DI 16/DQ 16\I/O addresses\Input addresses			
Start address	12.0	**End address**	13.7
Organization block	0	**Process image**	0
DI 16/DQ 16\I/O addresses\Output addresses			
Start address	12.0	**End address**	13.7
Organization block	0	**Process image**	0