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# PLC\_1 [CPU 1212C AC/DC/Rly]

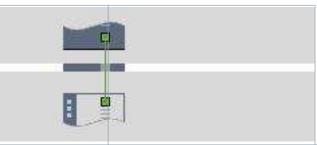
•-	<b> </b>		
PLC_1			
General\Project inform	nation		
Name	PLC_1	Author	Asus
Comment		Slot	1
Rack	0		
General\Catalog inforr	nation		
Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK/ SOURCE, DQ6 x relay and AI2 on board; 4 high-speed 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 informa- tion	
General\Checksums			
Text lists	FA 70 E8 75 1D 5A 8E 29	Software	D6 C7 7F F0 8A B3 C0 76
PROFINET interface [X	-	II -	
Name	PROFINET interface_1	Author	Asus
Comment			
	1]\General\Project information		
Name	DI 8/DQ 6_1	Comment	
Name	Al 2_1	Comment	
Subnet:	1]\Ethernet addresses\Interface netw  PN/IE_1	orkea with	
	1]\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
	1]\Ethernet addresses\PROFINET	Ose router	laise
PROFINET device name is set directly at the device	False	Generate PROFINET device name auto- matically	True
PROFINET device name:	plc_1	Converted name:	plcxb1d0ed
Device number:	0		
l control of the cont	1]\Time synchronization		
nization via NTP serv-	Enable time synchronization via NTP server		IP addresses
er 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	JCIVEI T	0.0.0.0
-	No synchronization		

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PROFINET interface [X1	1]\Digital inputs\Channel0			
Channel address	10.0	Input filters	6.4 millisec	

PROFINET interface [X	1]\Digital inputs\Channel0		
Channel address	10.0	Input filters	6.4 millisec
Enable pulse catch	0	<u> </u>	
	1]\Digital inputs\Channel0\		
Enable rising edge de-		RidPrefixRisingEdgeE-	49152
tection	Ŭ	vent	13132
Event name:	0	Hardware interrupt:	0
Rising edge0	Rising edge0	maravare interrupt.	<u> </u>
	1]\Digital inputs\Channel0\		
Enable falling edge		Did Due fiv Falling False	49280
detection	0	RidPrefixFallingEdg- eEvent	49280
	0		0
Event name:		Hardware interrupt:	0
Falling edge0	Falling edge0		
	1]\Digital inputs\Channel1		Ja
Channel address	10.1	Input filters	6.4 millisec
Enable pulse catch	0		
P P	1]\Digital inputs\Channel1\		
Enable rising edge de-	0	RidPrefixRisingEdgeE-	49153
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge1	Rising edge1		
PROFINET interface [X	1]\Digital inputs\Channel1\		
Enable falling edge	0	RidPrefixFallingEdg-	49281
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge1	Falling edge1	-	
	1]\Digital inputs\Channel2		
Channel address	10.2	Input filters	6.4 millisec
Enable pulse catch	0		
	1]\Digital inputs\Channel2\		
Enable rising edge de-	,	RidPrefixRisingEdgeE-	49154
tection		vent	15151
Event name:	0	Hardware interrupt:	0
Rising edge2	Rising edge2		
	1]\Digital inputs\Channel2\		
		DidDuafiy Fallin o Falo	40202
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent	49282
Event name:	0	Hardware interrupt:	0
Falling edge2	Falling edge2		
	1]\Digital inputs\Channel3		6.4.909
Channel address	10.3	Input filters	6.4 millisec
Enable pulse catch	0		
	1]\Digital inputs\Channel3\		
Enable rising edge de-	0	RidPrefixRisingEdgeE-	49155
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge3	Rising edge3		
PROFINET interface [X	1]\Digital inputs\Channel3\		
Enable falling edge	0	RidPrefixFallingEdg-	49283
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge3	Falling edge3		
	1]\Digital inputs\Channel4		
Channel address	10.4	Input filters	6.4 millisec
Enable pulse catch	0	pat inters	or r minisce
Enable rising edge de-		PidProfivPicingEdge	10156
tection	U	RidPrefixRisingEdgeE- vent	טכו כ+
	0		0
Event name:	0	Hardware interrupt:	0

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Rising edge4	Rising edge4		<u> </u>
	X1]\Digital inputs\Channel4\		
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent	49284
Event name:	0	Hardware interrupt:	0
Falling edge4	Falling edge4		
	[X1]\Digital inputs\Channel5		
Channel address	10.5	Input filters	6.4 millisec
Enable pulse catch	0		
PROFINET interface [	X1]\Digital inputs\Channel5\		
Enable rising edge d	<b>e</b> -0	RidPrefixRisingEdgeE-	49157
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge5	Rising edge5		
	X1]\Digital inputs\Channel5\		
Enable falling edge	0	RidPrefixFallingEdg-	49285
detection	0	eEvent	0
Event name:	Falling edge5	Hardware interrupt:	0
Falling edge5			
PROFINET INTERTACE ( Channel address	X1]\Digital inputs\Channel6	In most files as	6.4 millisec
	0	Input filters	6.4 minisec
Enable pulse catch	[X1]\Digital inputs\Channel6\		
Enable rising edge d		RidPrefixRisingEdgeE-	40159
Enable hsing edge d tection	<b>e</b> -0	vent	49138
Event name:	0	Hardware interrupt:	0
Rising edge6	Rising edge6	naraware interrupt.	
	[X1]\Digital inputs\Channel6\		
Enable falling edge	0	RidPrefixFallingEdg-	49286
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge6	Falling edge6		
PROFINET interface [	X1]\Digital inputs\Channel7		
Channel address	10.7	Input filters	6.4 millisec
Enable pulse catch	0		
PROFINET interface [	X1]\Digital inputs\Channel7\		
Enable rising edge d	<b>e-</b> 0	RidPrefixRisingEdgeE-	49159
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge7	Rising edge7		
	[X1]\Digital inputs\Channel7\		
Enable falling edge	0	RidPrefixFallingEdg-	49287
detection	0	eEvent  Hardware interrupt:	0
Event name:	Falling edge7	Hardware Interrupt:	U
Falling edge7	[X1]\Analog inputs\Noise reductio	n	
Integration time	50 Hz (20 ms)	1	
	[X1]\Analog inputs\Channel0		
Channel address	IW64	Measurement type	Voltage
Voltage range	010 V	Smoothing	Weak (4 cycles)
voltage range	0 10 V	Enable overflow diag-	
		nostics	
PROFINET interface	[X1]\Analog inputs\Channel1		
Channel address	IW66	Measurement type	Voltage
Voltage range	010 V	Smoothing	Weak (4 cycles)
		Enable overflow diag-	
		nostics	
PROFINET interface [			
	P Use substitute value		

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	(1]\Digital outputs\Channel0		_
Channel address	Q0.0	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel1		
Channel address	Q0.1	Substitute a value of	0
		1 on a change from RUN to STOP.	
PROFINET interface [X	(1]\Digital outputs\Channel2		_
Channel address	Q0.2	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel3		
Channel address	Q0.3	Substitute a value of 1 on a change from RUN to STOP.	0
	(1]\Digital outputs\Channel4		
Channel address	Q0.4	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel5		
Channel address	Q0.5	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Operating mode		
IO controller	True	IO system	
Device number	0	IO device	False
PROFINET interface [X	(1]\I/O addresses\Input addresses		_
Start address	0.0	End address	0.7
Organization block	0	Process image	0
	(1]\I/O addresses\Input addresses		_
Start address	64	End address	67
Organization block	0	Process image	0
	(1]\I/O addresses\Output addresses		1
Start address	0.0	End address	0.7
Organization block	0	Process image	0
	(1]\Advanced options\Interface option		E. L.
Support device re- placement without exchangeable medi- um	True	Permit overwriting of device names of all assigned IO devices	False
Use IEC V2.2 LLDP mode	False	Keep-Alive connection monitoring:	30s
	(1]\Advanced options\Real time sett	ings\IO communication	
Send clock:	1.000ms		
PROFINET interface [X	(1]\Advanced options\Real time sett		
Calculated bandwidth for cyclic IO data:		Calculated bandwidth for cyclic IO data:	0.000%
	(1]\Advanced options\Port [X1 P1]\G		
Name	Port_1	Author	Asus
Comment	(1) Advanced aution ID at Did Ballo	out interes and estimate	mauh.
PROFINET INTERFACE (X Local port:	(1]\Advanced options\Port [X1 P1]\Port_1\PROFINET interface_1 [X1]\Port_1 [X1 P1]	Medium:	Copper
Cable name:			
	1		



PROFINET interface [X	1]\Advanced options\Port [X1 P1]\Port	: interconnection\Partne	er port:
	Monitoring of partner port is not possi-	Partner port:	Any partner
	ble		
PROFINET interface [X	1]\Advanced options\Port [X1 P1]\Port	options\Activate	
Activate this port for	True		
use			
	1]\Advanced options\Port [X1 P1]\Port	options\Connection	
Transmission rate /	Automatic	Monitor	False
duplex:			
3	True		
tion		'' \D     '	
	1]\Advanced options\Port [X1 P1]\Port		le i
End of detection of accessible devices	False	End of topology dis-	False
	False	covery	
End of the sync do- main	raise		
PROFINET interface [X	1 NWob sorver access		
Enable Web server for	, <del>-</del>	The Web server must	
Enable web server for the IP address of this	raise	also be activated in	
interface		the properties of the	
		PLC.	
High speed counters (I	HSC)\HSC1\General\Enable		
Enable this high	0	Enable this high	0
speed counter		speed counter	
Enable this high	0	Enable this high	0
speed counter		speed counter	
Enable this high	0	Enable this high	0
speed counter		speed counter	
High speed counters (I	HSC)\HSC1\General\Project informatio	n	
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 (I	HSC)\HSC1\I/O addresses\Input addres	ses	
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		0
Process image	0		0
	/PWM)\PTO1/PWM1\General\Enable		
Enable this pulse gen-		Enable this pulse gen-	0
yell paise yell	~	gen	~

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Pulse generators (PTC	)/PWM)\PTO1/PWN	/1\General\Proiect in	formation		
Name	Pulse_1	,	Comment		
Name	Pulse 2		Comment		
Pulse generators (PTC		/1\I/O addresses\Out			
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	Warm restart - mo	ode before POWER	Comparison preset	to Startup CPU	even if mismatch
ON	OFF		actual configuration		
Configuration time	60000ms		OBs should be inter	- 1	
			ruptible		
Cycle					
Cycle monitoring time					
Enable minimum cy-			Minimum cycle time	e 1ms	
cle time for cyclic OBs	;				
Communication load					
Cycle load due to	20%				
communication					
System and clock mer		iory bits			
Enable the use of sys-	0		Address of system	1	
tem memory byte			memory byte (MBx)		
First cycle			Diagnostic status changed		
Always 1 (high)			Always 0 (low)		
System and clock mei	mory\Clock memo	ry hits	/livays o (low)		
Enable the use of	0	ly bits	Address of clock	0	
clock memory byte	O		memory byte (MBx)	•	
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	False		Permit access only	True	
on all modules of this			with HTTPS		
device					
Neb server\Automati	c update				
Enable automatic up-	True		Update interval	Os	
date			-		
Web server\User man	agement				
User name			User rights		
Everybody					
Web server\User-defir	ned web pages				
Application name H	TML source path	Default HTML page	Files with dynamic	Web DB numbe	r Fragment DB num
			content		ber
		index.htm	.htm;.html	333	334
Web server\Overview	of interfaces				
Device		Interface		Enabled web se	erver access
PLC_1		PROFINET interface_	1	False	
	ges				
Jser interface langua			User interface langu	iages	
Jser interface langua	ige			•	
Jser interface langua Assign project langua			German		
<b>Jser interface langua</b> <b>Assign project langua</b> English (United States)					
<b>User interface langua</b> <b>Assign project langua</b> English (United States) English (United States)			English		
<b>User interface langua Assign project langua English (United States) English (United States) English (United States)</b>			English French		
<b>User interface langua</b> <b>Assign project langua</b> English (United States) English (United States)			English		

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irst anuary ving time\Start of stand	ıht saving tir		nd daylight	60mins	
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ving time\Start of stand				Sunday	
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No protection					
onnection mechanisms					
alse					
ocurity event					
		Length of a	an interval	20	
Tide .		Length or c	an interval	20	
seconds					
kternal load memory					
onfiguration control for	central conf	figuration			
	central conf	figuration		_	
		ources - Re-	Station res	ources - Dy- nfigured	Module resources - PLC_1 [CPU 1212C AC/DC/Rly] - Configure
Station resources - Re-	Station reso	ources - Re-			PLC_1 [CPU 1212C
Station resources - Reserved - Maximum  Maximum	Station reso served - Cor	ources - Re-	namic - Co	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure
Station resources - Re- served - Maximum	Station resc served - Col	ources - Re-	namic - Co	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68
Station resources - Re- served - Maximum	Station resc served - Col	ources - Re-	namic - Co	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68
Station resources - Reserved - Maximum  Maximum  4  12	Station reso served - Con 62 Configured	ources - Re-	6 Configured	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured -	ources - Re-	6 Configured - 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured -
Station resources - Reserved - Maximum  Maximum  4  12	Station reso served - Col 62 Configured - 1	ources - Re-	namic - Co  6  Configured - 0 0 -	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Col 62 Configured - 1	ources - Re-	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re-	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
Station resources - Reserved - Maximum  Maximum  4  12  8  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
Station resources - Reserved - Maximum  Maximum  4  12  8  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
	ecurity event	ecurity event rue econds ecternal load memory	connection mechanisms  False  Ecurity event  Frue  Length of a seconds  Ecconds  Ecconds  Ecconds  Ecconds  Ecconds	curity event True Length of an interval econds ecternal load memory	curity event True Length of an interval 20 econds ecternal load memory

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Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
	0	0	DI 8/DQ 6_1	Automatic update		-	1 Bytes	-	0	11
)	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	11
	64	67	AI 2_1	Automatic update		-	4 Bytes	-	0	1 2
	1000	1003	HSC_1	Automatic update		-	4 Bytes	-	0	1 16
	1004	1007	HSC_2	Automatic update		-	4 Bytes	-	0	1 17
	1008	1011	HSC_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 18
	1012	1015	HSC_4	Automatic update		-	4 Bytes	-	0	1 19
	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
0	1000	1001	Pulse_1	Automatic update		-	2 Bytes	-	0	1 32
0	1002	1003	Pulse_2	Automatic update		-	2 Bytes	-	0	1 33
0	1004	1005	Pulse_3	Automatic update		-	2 Bytes	-	0	1 34
0	1006	1007	Pulse_4	Automatic update		-	2 Bytes	-	0	1 35
	12	13	DI 16x24VDC /DQ 16xRe- lay_1	Automatic update		_	2 Bytes	-	0	2
0	12	13	DI 16x24VDC /DQ	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2

/pe	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 Proper	rties				
General					
Name	Main	Number	1	Туре	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
<b>▼</b> 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

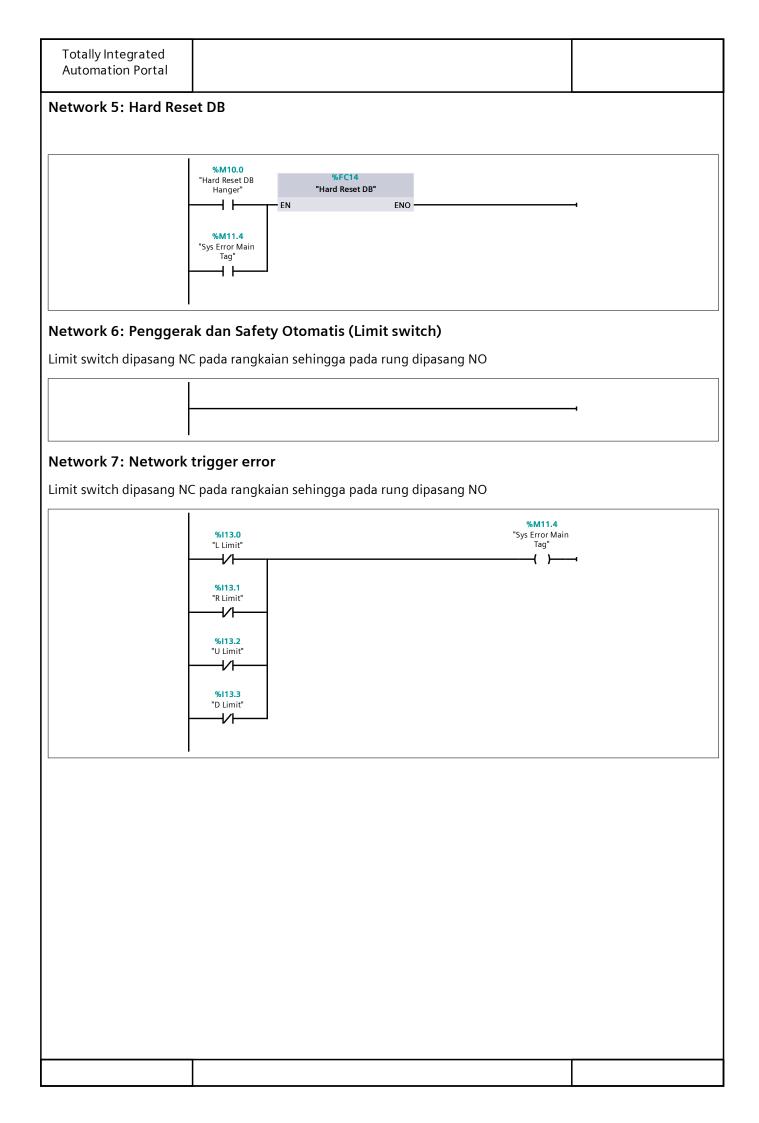
```
%M11.4
"Sys Error Main
                                                                                           %I12.1
    %M9.0
                                                %I13.2
                                                                     %M9.2
                                                                                                                 %M9.3
                                                                                                                                       %Q0.0
                                                                                        "prox_crane_
atas"
"mode_manual"
                           Tag"
                                               "U Limit"
                                                                    "hmi_atas"
                                                                                                              "hmi_bawah"
                                                                                                                                    "motor_atas"
                                                                                             <del>1</del>/}
                                                                                                                                        ( )-
                                                                                           %I12.2
                                                %113.3
                                                                     %M9.3
                                                                                                                 %M9.2
                                                                                                                                       %Q0.1
                                                                                        "prox_crane_
bawah"
                                               "D Limit"
                                                                  "hmi_bawah"
                                                                                                               "hmi_atas"
                                                                                                                                   "motor_bawah"
                                                                                             <del>-</del>1/}
                                                                                                                                        %I12.0
                                               %I13.1
"R Limit"
                                                                                        "prox_ujung_
kanan"
                                                                     %M9.4
                                                                                                                 %M9.5
                                                                                                                                       %Q0.3
                                                                                                                "hmi_kiri"
                                                                   "hmi_kanan"
                                                                                                                                   "motor_kanan"
                                                 H F
                                                                       <del>1</del>/|-
                                                                                                                   <del>1</del>/}
                                                                                                                                        <del>(</del> )-
                                                %113.0
                                                                     %M9.5
                                                                                            %10.0
                                                                                                                 %M9.4
                                                                                                                                       %Q0.2
                                                                    "hmi_kiri"
                                                                                      "prox_ujung_kiri"
                                                                                                              "hmi_kanan"
                                                                                                                                    "motor_kiri"
                                                                                                                                        ( )
```

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Network 4:	
Mode otomatis	

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etwork 4: (1.1 / 2.1)			
%M9.1 "mode_otomatis"	%M11.4 "Sys Error Main Tag"	%DB1 "Positioning_DB" %FB2 "Positioning"  EN ENO destination 0 hanger from 0 Repositioning 0	1
	"Hanger Di Hange Posi "Hanger Di Hange	r[1]. ition — pos h1 ata"	
	Posi	#FC2 "Hanger Block"  EN ENO  ata". er[1] — FuncTag  #FC2 "Hanger Block"  EN ENO	
<u>&gt; 1</u>	"Step Gerak".Go  "Positioning_		2
	DB"."current pos" — current pos  "Positioning_ DB".destination — destination  "Positioning_ DB".from — from	%FC6	
	Reposition "Repos  I Positioning_ DB"."current pos" from  "Positioning_ DB". Repositioning destination	ENO	3
"Motor C			
<u></u>		2.1 ( Page2 - 4)	

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Network 4: (2.1 / 2.1)	1.1 ( Page2 - 3)	
%FC "Motor O	17 omatis" ENO	
EN	ENO	
L	T	



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PLC_1 [C Program Timer Ges	resou	rces	C/D(	C/Rly] / P	rog	gra	am b	loc	cks /	Syste	em b	locks /
Timer Geser P	roperties											
General												
Name	Timer Ges	er		Number	3					Туре		DB
Language	DB			Numbering	_	uton	natic					
Information												
Title	IF.C			Author		mat	ic			Commo User-do		IFC TAID
Family	IEC			Version	1.	0				ID	етіпеа	IEC_TMR
Name		Data type	Start	value	Reta		from HMI/O PC UA/We	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
▼ Static	-	T:	T#0		Fals	_	True	т	True	False		
PT			T#0m					e				
ET	-	Time	T#0m	ıs	Fals	e	True	Fals e	True	False		
IN		Bool	false		Fals	e	True	Tru e	True	False		
Q		Bool	false	Fals	e	True		True	False			
												_

Anguage DB Numbering Automatic  Itle Author Simatic Comment  User-defined ID	Program Fimer ges Fimer geser k	ser kiri [	DB5]								
Author Simatic User-defined ID IEC_TMR    Data type   Start value   Retain   Accessible   ta-sible   ta-sible	lame .anguage		er kiri		Number Numbering	5 Autor	natic			Type	DB
Data type   Start value   Retain   Accessible   ta-in HMI   From HMI/O   From HMI/O	nformation					6.					
Data type       Start value       Retain sible from HMI/O PC UA/We b API       Wri ain HMI point vision       Supervision       Comment vision         ▶ Static       Time       T#0ms       False       True       True e Balse e True       False True       False True       False False True       False False False E True       False False False E True       False False False E True       False False E True       False False E True       False E	amily	IEC					ic.				IEC_TMR
sible from HMI/O PC UA/We HM b API I/O PC UA/ We DATE I/O PC UA										ID	
PT Time T#0ms False True Tru True False  ET Time T#0ms False True Fals True False  IN Bool false False True True False  Q Bool false False True Fals True False	Name		Data type :	Start	value	Retain	sible from HMI/O PC UA/We	ta- ble fro m HM I/O PC UA/ We b	in HMI engi- neer- ing		Comment
ET Time T#0ms False True False   False	<b>▼</b> Static										
ET Time T#0ms False True False   False	PT		Time	Γ#0m	ıs	False	True		True	False	
IN Bool false False True True False Q Bool false False True False True False True False	ET		Time	Γ#0m	ıs	False	True	Fals	True	False	
Q Bool false False True Fals True False	IN		Bool 1	false		False	True		True	False	
	Q		Bool 1	false		False	True		True	False	

Totally Inte Automation												
PLC_1 [C Program On Delay	resour	ces	D(	C/Rly] / P	ro	gra	am b	loc	cks / :	Syste	em b	locks /
On Delay kiri F												
General												
Name	On Delay k	iri		Number	6					Туре		DB
_anguage	DB			Numbering	Α	uton	natic					
Information												
Γitle				Author	S	imat	ic			Comme	ent	
amily	IEC			Version	1	.0				User-de ID	efined	IEC_TMR
Name	C	Pata type S	tart	value	Ret		sible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
<b>▼</b> Static												
PT	Т	ime T	#0m	S	Fals		True	Tru e	True	False		
ET	Т	ime T	#0m	S	Fals	se	True	Fals e	True	False		
IN	Е	Bool fa	lse		Fals	se	True	Tru e	True	False		
Q	В	Bool fa	lse		Fals	se	True		True	False		

Totally Inte Automation												
PLC_1 [C Program On Delay	resour	ces	D(	C/Rly] / P	ro	gra	am b	loc	cks / S	Syste	em b	locks /
On Delay kana												
General	<u> </u>											
Name	On Delay k	anan		Number	7					Туре		DB
anguage	DB			Numbering	Α	uton	natic					
Information												
Γitle				Author	S	imat	ic			Comm		
amily	IEC			Version	1	.0				User-do ID	efined	IEC_TMR
Name	C	Pata type S	tart '	value	Ret		sible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
▼ Static		· -	".0		F 1		_	_	_	F 1		
PT			#0m		Fals			e	True	False		
ET	Т	ime T	#0m	S	Fals	se	True	Fals e	True	False		
IN	E	Bool fa	alse		Fals	se	True	Tru e	True	False		
Q	В	Bool fa	alse		Fals	se	True	Fals e	True	False		

Totally Inte Automation											
PLC_1 [C Program Timer ges	resou	rces		C/Rly] / P	rogr	am b	loc	cks /	Syste	em b	locks /
Timer geser ka											
General	·										
Name	Timer ges	er kanan		Number	8				Туре		DB
_anguage	DB			Numbering		matic			_ <b>,</b>		
nformation											
Title				Author	Sima	tic			Commo	ent	
Family	IEC			Version	1.0					efined	IEC_TMR
Name		Data type	Start	value	Retain	from HMI/O PC UA/We	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
▼ Static PT	-	Time	T#0m	15	False	True	Tru	True	False		
ET			T#0m		False	True	e	True	False		
IN			false	13	False	True	e	True	False		
							e				
Q		Bool	false		False	True	e	True	False		
		L								T	

Totally Integrated Automation Portal		
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# PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

## Hanger Data [DB10]

<b>Hanger Data</b>	Properties				
General					
Name	Hanger Data	Number	10	Туре	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined	
				ID	

Name	Data type	Start value	Retain	Acces- sible		Visible in HMI		Super- vision	Comment
				from HMI/O PC UA/We b API	ble fro m	engi-	point	VISIOII	
<b>▼</b> Static									
<b>▼</b> Hanger	Ar- ray[12] of "Hang- er"		True	True	Tru e	True	True		
▼ Hanger[1]	"Hanger"		True	True	Tru e	True	True		
Timer_Start	Bool	false	True	True	Tru e	True	False		
Timer_Reset	Bool	false	True	True	Tru e	True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		True	True	Tru e	True	False		
▼ IEC Timer Proses[0]			True	True	Tru e	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q	Bool	false	True	True	Fals e	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		True	True	Tru e	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN	Bool	false	True	True	_	True	False		
Q	Bool	false	True	True	Fals e	True	False		

									<u> </u>
lame	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
▼ IEC Timer	IEC_TIMER		True	True		True	False		
Proses[2] PT	Time	T#0ms	True	True	e Tru	True	False		
					e				
ET	Time	T#0ms	True	True	e e	True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q	Bool	false	True	True	-	True	False		
✓ IEC Timer Proses[3]	IEC_TIMER		True	True	Tru e	True	False		
PT	Time	T#0ms	True	True		True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN	Bool	false	True	True		True	False		
Q	Bool	false	True	True	Fals e	True	False		
▼ IEC Timer Proses[4]	IEC_TIMER		True	True	_	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True		True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q		false	True	True		True	False		
▼ IEC Timer Proses[5]			True	True	e	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN		false	True	True	Tru e	True	False		
Q	Bool	false	True	True	Fals e	True	False		
▼ IEC Timer Proses[6]			True	True	Tru e	True	False		
PT		T#0ms	True	True	е	True	False		
ET		T#0ms	True	True	e	True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q	Bool	false	True	True		True	False		

ame	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
▼ IEC Timer Proses[7]	IEC_TIMER		True	True	Tru e	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True		True	False		
IN	Bool	false	True	True		True	False		
Q	Bool	false	True	True	-	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	True	Fals	True	False		
IN	Bool	false	True	True		True	False		
Q	Bool	false	True	True		True	False		
▼ IEC Timer	IEC_TIMER		True	True		True	False		
Proses[9] PT	Time	T#0ms	True	True		True	False		
ET	Time	T#0ms	True	True		True	False		
IN	Bool	false	True	True		True	False		
Q	Bool	false	True	True		True	False		
<b>▼</b> Timer celup	Ar- ray[09] of Time		True	True	e Tru e	True	False		
Timer cel- up[0]		T#0ms	True	True	Tru e	True	False		
Timer cel- up[1]	Time	T#0ms	True	True		True	False		
Timer cel- up[2]	Time	T#0ms	True	True	_	True	False		
Timer cel-	Time	T#0ms	True	True	_	True	False		
up[3] Timer cel-	Time	T#0ms	True	True	Tru	True	False		
up[4] Timer cel-	Time	T#0ms	True	True		True	False		
up[5] Timer cel-	Time	T#0ms	True	True		True	False		
up[6] Timer cel- up[7]	Time	T#0ms	True	True	e Tru e	True	False		

ne	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b	ing		Super- vision	Comment
Timer cel-	Time	T#0ms	True	True	<b>API</b> Tru e	True	False		
up[8] Timer cel- up[9]	Time	T#0ms	True	True		True	False		
▼ Proc- ess_Start_Ti me	Ar- ray[09] of DInt		True	True		True	False		
Proc- ess_Start _Time[0]		0	True	True	Tru e	True	False		
Proc- ess_Start _Time[1]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[2]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[3]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[4]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[5]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[6]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[7]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[8]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[9]	DInt	0	True	True	Tru e	True	False		
▼ Proc-	Ar- ray[09] of DInt		True	True	Tru e	True	False		
Proc- ess_Stop_ Time[0]		9999999	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[1]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[2]	DInt	0	True	True	Tru e	True	False		

	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
Proc- ess_Stop_ Time[3]		0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[4]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[5]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[6]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[7]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[8]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[9]		0	True	True	Tru e	True	False		
▼ Setpoint	Ar- ray[09] of Time		True	True	Tru e	True	False		
Set- point[0]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[1]	Time	T#0MS	True	True	Tru e	True	False		
Set- point[2]	Time	T#0MS	True	True	Tru e	True	False		
Set- point[3]	Time	T#0MS	True	True		True	False		
Set- point[4]	Time	T#0MS	True	True		True	False		
Set- point[5]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[6]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[7]	Time	T#0ms	True	True		True	False		
Set- point[8]	Time	T#0ms	True	True		True	False		
Set- point[9]	Time	T#0ms	True	True		True	False		
Start_ToD	Time_Of_ Day	TOD#00:00:00	True	True		True	False		
Stop_ToD		TOD#00:00:00	True	True		True	False		

							_			
ame		Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
	Start Posi- ion	Int	3	True	True	Tru e	True	False		
ſ	Position	Int	3	True	True	Tru e	True	False		
[	Destination	Int	0	True	True	Tru e		False		
	nation	Int	0	True	True	Tru e		False		
F	Ready	Bool	false	True	True	e		False		
F	Proses	Int	0	True	True	e	True	False		
	Nomor Pro- ses	Int	0	True	True	Tru e	True	False		
J	lml Proses	Int	0	True	True	Tru e	True	False		
ŀ	Homebase	Int	3	True	True	Tru e	True	False		
	Set- point_Ready	Bool	false	True	True	Tru e	True	False		
	Check- er_Ready	Bool	false	True	True	Tru e	True	False		
7	Гime_Ready	Bool	false	True	True	Tru e	True	False		
	Occupan- cy_Ready	Bool	false	True	True	Tru e	True	False		
		Bool	false	True	True	Tru e	True	False		
ŀ	HMI_Finish	Bool	false	True	True		True	False		
ŀ	HMI_Reset	Bool	false	True	True		True	False		
	Crane_Read	Bool	false	True	True		True	False		
9	Sched_Read /	Bool	false	True	True		True	False		
·		Bool	false	True	True		True	False		
		Bool	false	True	True		True	False		
	Nomor Hanger	Int	1	True	True		True	False		
(	CNT_HMI_Re ady	Int	0	True	True		True	False		
<b>▼</b> Har		"Hanger"		True	True	Tru	True	True		
	Γimer_Start	Bool	false	True	True	e Tru	True	False		

e	Data type	Start value	Retain	Acces-				Super-	Comment
				sible from HMI/O PC UA/We b API	ble fro m		point	vision	
Timer_Reset	Bool	false	True	True		True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		True	True	е	True	False		
▼ IEC Timer Proses[0]			True	True	е	True	False		
PT		T#0ms	True	True	e	True	False		
ET		T#0ms	True	True	e	True	False		
IN		false	True	True	е	True	False		
Q ▼ IEC Timer		false	True True	True True	е	True True	False False		
Proses[1]		T#0ms	True	True	е	True	False		
ET		T#0ms	True	True	e	True	False		
IN		false	True	True	е	True	False		
Q		false	True	True	e	True	False		
▼ IEC Timer			True	True	е	True	False		
Proses[2]		T#0			е				
PT		T#0ms	True	True	е	True	False		
ET		T#0ms	True	True	e	True	False		
IN		false	True	True	е	True	False		
Q ▼ IEC Timer		false	True	True	е	True True	False False		
Proses[3]		T#0ms	True	True	e				
PT		T#0ms T#0ms	True	True True	e	True True	False False		
ET		false	True	True	е	True	False		
IN Q		false	True True	True	е	True	False		
▼ IEC Timer			True	True	е	True	False		
Proses[4]		T#0ms	True	True	e	True	False		

ame	Data type	Start value	Retain	Acces-	Wri	Visible	Set-	Super-	Comment
		Start value	Netum	sible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing	point	vision	Comment
ET	Time	T#0ms	True	True	Fals e	True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q	Bool	false	True	True	Fals e	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		True	True	Tru e	True	False		
PT	Time	T#0ms	True	True	е	True	False		
ET		T#0ms	True	True	e	True	False		
IN		false	True	True	е	True	False		
Q		false	True	True	e	True	False		
▼ IEC Timer Proses[6]			True	True	е	True	False		
PT	Time	T#0ms	True	True	е	True	False		
ET	Time	T#0ms	True	True	е	True	False		
IN		false	True		е	True	False		
Q		false	True	True	е	True	False		
▼ IEC Timer Proses[7]	IEC_TIMER		True	True	Tru e	True	False		
PT		T#0ms	True	True	Tru e	True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN	Bool	false	True	True	Tru e	True	False		
Q		false	True	True	е	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		True	True	Tru e	True	False		
PT		T#0ms	True	True	е	True	False		
ET	Time	T#0ms	True	True	Fals e	True	False		
IN		false	True	True	е	True	False		
Q	Bool	false	True	True	Fals e	True	False		
▼ IEC Timer Proses[9]	IEC_TIMER		True	True	Tru e	True	False		
PT	Time	T#0ms	True	True	Tru e	True	False		

ie	Data type	Start value	Retain	sible from	ta- ble fro m	Visible in HMI engi- neer- ing		Super- vision	Comment
ET	Time	T#0ms	True	True		True	False		
IN	Bool	false	True	True		True	False		
Q	Bool	false	True	True		True	False		
▼ Timer celup	Ar- ray[09] of Time		True	True	_	True	False		
Timer cel- up[0]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[1]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[2]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[3]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[4]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[5]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[6]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[7]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[8]	Time	T#0ms	True	True	Tru e	True	False		
Timer cel- up[9]	Time	T#0ms	True	True	Tru e	True	False		
▼ Proc- ess_Start_Ti me	Ar- ray[09] of DInt		True	True	Tru e	True	False		
Proc- ess_Start _Time[0]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[1]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[2]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[3]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Start _Time[4]	DInt	0	True	True	Tru e	True	False		

ne	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
Proc- ess_Start _Time[5]	DInt	0	True	True	е	True	False		
Proc- ess_Start _Time[6]		0	True	True	е	True	False		
Proc- ess_Start _Time[7]		0	True	True	е	True	False		
Proc- ess_Start _Time[8]		0	True	True	е	True	False		
Proc- ess_Start _Time[9]	DInt	0	True	True	е	True	False		
▼ Proc- ess_Stop_Ti me	of DInt		True	True	е	True	False		
Proc- ess_Stop_ Time[0]	DInt -	9999999	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[1]		0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[2]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[3]	DInt -	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[4]	DInt -	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[5]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[6]	DInt	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[7]	DInt -	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[8]	DInt -	0	True	True	Tru e	True	False		
Proc- ess_Stop_ Time[9]		0	True	True	Tru e	True	False		

Automation Portal									
ame	Data type	Start value	Retain	sible from	ta- ble fro m	Visible in HMI engi- neer- ing		Supervision	Comment
▼ Setpoint	Ar- ray[09] of Time		True	True	Tru e	True	False		
Set- point[0]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[1]	Time	T#40S	True	True	Tru e	True	False		
Set- point[2]	Time	T#40S	True	True	Tru e	True	False		
Set- point[3]	Time	T#40S	True	True	Tru e	True	False		
Set- point[4]	Time	T#40S	True	True	Tru e	True	False		
Set- point[5]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[6]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[7]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[8]	Time	T#0ms	True	True	Tru e	True	False		
Set- point[9]	Time	T#0ms	True	True	Tru e	True	False		
Start_ToD	Time_Of_ Day	TOD#00:00:00	True	True	Tru e	True	False		
Stop_ToD	Time_Of_ Day	TOD#00:00:00	True	True	Tru e	True	False		
Start Posi- tion	Int	2	True	True	Tru e	True	False		
Position	Int	2	True	True	Tru e	True	False		
Destination	Int	0	True	True	e	True	False		
Next Desti- nation	Int	0	True	True	е	True	False		
Ready	Bool	false	True	True	e	True	False		
Proses	Int	0	True	True	e	True	False		
Nomor Pro- ses	Int	0	True	True	e	True	False		
Jml Proses	Int	0	True	True	е	True	False		
Homebase	Int	2	True	True	e	True	False		
Set- point_Ready		false	True	True	е	True	False		
Check- er_Ready	Bool	false	True	True	Tru e	True	False		

	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
Time_Ready	Bool	false	True	True	Tru e	True	False		
Occupan- cy_Ready	Bool	false	True	True	Tru e	True	False		
HMI_Ready	Bool	false	True	True	Tru e	True	False		
HMI_Finish	Bool	false	True	True	Tru e	True	False		
HMI_Reset	Bool	false	True	True		True	False		
Crane_Read y	Bool	false	True	True		True	False		
Sched_Read y	Bool	false	True	True	Tru e	True	False		
Finish Proc- ess	Bool	false	True	True		True	False		
Divert	Bool	false	True	True		True	False		
Nomor Hanger	Int	2	True	True		True	False		
CNT_HMI_Re ady	Int	0	True	True		True	False		
Predict	Ar- ray[12] of "NP Ready"		False	True		True	False		
➤ Predict[1]	"NP Ready"		False	True	Tru e	True	False		
▼ NP Ready	Ar- ray[06] of Bool		False	True	Tru e	True	False		
NP Ready[0]	Bool	false	False	True	Tru e	True	False		
NP Ready[1]	Bool	false	False	True	Tru e	True	False		
NP Ready[2]	Bool	false	False	True	Tru e	True	False		
NP Ready[3]	Bool	false	False	True	Tru e	True	False		
NP Ready[4]	Bool	false	False	True		True	False		
NP Ready[5]	Bool	false	False	True		True	False		
NP Ready[6]	Bool	false	False	True		True	False		
▼ Predict[2]	"NP Ready"		False	True		True	False		

<u>a</u>	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b			Super- vision	Comment
▼ NP Ready	Ar- ray[06]		False	True	API Tru e	True	False		
NP Ready[0]	of Bool Bool	false	False	True	Tru e	True	False		
NP Ready[1]	Bool	false	False	True		True	False		
NP Ready[2]	Bool	false	False	True	Tru e	True	False		
NP Ready[3]	Bool	false	False	True	Tru e	True	False		
NP Ready[4]		false	False	True	e	True	False		
NP Ready[5]		false	False	True	е	True	False		
NP Ready[6]		false	False	True	е	True	False		
Priority	Ar- ray[12] of Bool		False	True	e e	True	True		
Priority[1]	Bool	false	False	True	Tru e	True	True		
Priority[2]		false	False	True	e	True	True		
Predict Crane	Ar- ray[12] of "Predict Crane"		False	True	Tru e	True	False		
▼ Predict Crane[1]	"Predict Crane"		False	True	Tru e	True	False		
<b>▼</b> C_Ready	Ar- ray[010] of Bool		False	True	Tru e	True	False		
C_Ready[ 0]		false	False	True	e	True	False		
C_Ready[ 1]		false	False	True	е	True	False		
C_Ready[ 2]		false	False	True	e	True	False		
C_Ready[ 3]		false	False	True	e	True	False		
C_Ready[ 4]		false	False	True	e	True	False		
C_Ready[ 5]		false	False	True	е	True	False		
C_Ready[ 6] C_Ready[		false false	False False	True True	е	True True	False False		

Automation Portal									
lame	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
C_Ready[ 8]	Bool	false	False	True		True	False		
C_Ready[ 9]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 10]	Bool	false	False	True	Tru e	True	False		
▼ Start	Ar- ray[010] of DInt		False	True	Tru e	True	False		
Start[0]		0	False	True	Tru e	True	False		
Start[1]	DInt	0	False	True	Tru	True	False		
Start[2]	DInt	0	False	True	Tru e	True	False		
Start[3]	DInt	0	False	True	-	True	False		
Start[4]	DInt	0	False	True	-	True	False		
Start[5]	DInt	0	False	True	-	True	False		
Start[6]	DInt	0	False	True		True	False		
Start[7]	DInt	0	False	True		True	False		
Start[8]	DInt	0	False	True		True	False		
Start[9]	DInt	0	False	True	-	True	False		
Start[10]	DInt	99999999	False	True		True	False		
<b>▼</b> Stop	Ar- ray[010] of DInt		False	True	-	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[0]		0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[1]	DInt	0	False	True	_	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[2]	DInt	0	False	True	_	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[3]	DInt	0	False	True		True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[4]	DInt	0	False	True		True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[5]	DInt	0	False	True		True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[6]	DInt	0	False	True	-	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[7]	DInt	0	False	True	-	True	False		sampe 10 untuk menja ga logic cek CRANE

ame	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m	ing		Super- vision	Comment
Stop[8]	DInt	0	False	True	e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]		99999999	False	True	е	True	False		sampe 10 untuk menja- ga logic cek CRANE
▼ Predict	"Predict Crane"		False	True	Tru e	True	False		
Crane[2] <b>▼</b> C_Ready	Ar- ray[010] of Bool		False	True	_	True	False		
C_Ready[ 0]		false	False	True	Tru e	True	False		
C_Ready[ 1]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 2]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 3]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 4]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 5]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 6]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 7]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 8]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 9]	Bool	false	False	True	Tru e	True	False		
C_Ready[ 10]	Bool	false	False	True	Tru e	True	False		
<b>▼</b> Start	Ar- ray[010] of DInt		False	True	Tru e	True	False		
Start[0]		0	False	True	е	True	False		
Start[1]		0	False	True	e	True	False		
Start[2]		0	False	True	е	True	False		
Start[3]		0	False	True	е	True	False		
Start[4]		0	False	True	е	True	False		
Start[5]	DInt	0	False	True	l ru e	True	False		

ame	Data type	Start value	Retain	sible from	ta- ble fro m	Visible in HMI engi- neer- ing		Super- vision	Comment
Start[6]	DInt	0	False	True	API Tru	True	False		
					е				
Start[7]	DInt	0	False	True	Tru e	True	False		
Start[8]	DInt	0	False	True	Tru e	True	False		
Start[9]	DInt	0	False	True	Tru e	True	False		
Start[10]	DInt	999999999	False	True	Tru	True	False		
<b>▼</b> Stop	Ar- ray[010] of DInt		False	True	e Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[0]	DInt	0	False	True		True	False		sampe 10 untuk menja
Stop[1]	DInt	0	False	True	e Tru	True	False		ga logic cek CRANE sampe 10 untuk menja
Stop[2]	DInt	0	False	True	e Tru	True	False		ga logic cek CRANE sampe 10 untuk menja
Stop[3]	DInt	0	False	True	e Tru	True	False		ga logic cek CRANE sampe 10 untuk menja
·					е				ga logic cek CRANE
Stop[4]	DInt	0	False	True	l ru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[5]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[6]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[7]	DInt	0	False	True		True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[8]	DInt	0	False	True		True	False		sampe 10 untuk menja
Stop[9]	DInt	0	False	True	e Tru	True	False		ga logic cek CRANE sampe 10 untuk menja
Stop[10]	DInt	999999999	False	True	e Tru	True	False		ga logic cek CRANE sampe 10 untuk menja
·	Ar-		False	True	e	True	True		ga logic cek CRANE berisi start values array
▼ Hanger Default	ray[12] of "Hang- er"		raise	True	e	True	True		Hanger
▼ Hanger De- fault[1]	"Hanger"		False	True	Tru e	True	True		berisi start values array Hanger
Timer_Start	Bool	false	False	True	Tru e	True	False		
Timer_Reset	Bool	false	False	True	-	True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		False	True	-	True	False		

Totally Integrated Automation Portal									
lame	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
▼ IEC Timer Proses[0]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	Fals e	True	False		
IN	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	e	True	False		
▼ IEC Timer Proses[1]			False	True	е	True	False		
PT	Time	T#0ms	False	True	e	True	False		
ET	Time	T#0ms	False	True	e	True	False		
IN	Bool	false	False	True	е	True	False		
Q	Bool	false	False	True	е	True	False		
▼ IEC Timer Proses[2]			False	True	e	True	False		
PT	Time	T#0ms	False False	True	е	True True	False False		
ET	Time	T#0ms false	False	True True	е	True	False		
IN Q		false	False	True	е	True	False		
▼ IEC Timer			False	True	e	True	False		
Proses[3]	Time	T#0ms	False	True	е	True	False		
ET	Time	T#0ms	False	True	e	True	False		
IN		false	False	True	е	True	False		
Q	Bool	false	False	True	e Fals	True	False		
▼ IEC Timer	IEC_TIMER		False	True		True	False		
Proses[4]	Time	T#0ms	False	True		True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	e Fals e	True	False		

otally Integrated utomation Portal									
ne	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
▼ IEC Timer Proses[5]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET		T#0ms	False	True	e	True	False		
		false	False	True	e	True	False		
·		false	False	True	е	True	False		
▼ IEC Timer Proses[6]			False	True	е	True	False		
		T#0ms	False	True	e	True	False		
		T#0ms	False	True	e	True	False		
		false false	False False	True True	e	True True	False False		
Q <b>▼</b> IEC Timer		Taise	False	True	e	True	False		
Proses[7]		T#0ms			e				
PT	Time Time	T#0ms T#0ms	False False	True True	е	True True	False False		
		false	False	True	e	True	False		
		false	False	True	е	True	False		
▼ IEC Timer		Taise	False	True	e	True	False		
Proses[8]		T#0ms	False	True	e	True	False		
	Time	T#0ms	False	True	е	True	False		
		false	False	True	e	True	False		
		false	False	True	e	True	False		
▼ IEC Timer			False	True	e	True	False		
Proses[9]		T#0ms	False	True	e	True	False		
		T#0ms	False	True	e	True	False		
IN	Bool	false	False	True	e Tru	True	False		
Q	Bool	false	False	True	e Fals e	True	False		

	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
▼ Timer celup	Ar- ray[09] of Time		False	True	Tru e	True	False		
Timer cel- up[0]		T#0ms	False	True	е	True	False		
Timer cel- up[1]		T#0ms	False	True	e	True	False		
Timer cel- up[2]		T#0ms	False	True	е	True	False		
Timer cel- up[3]		T#0ms	False	True	е	True	False		
Timer cel- up[4]		T#0ms	False	True	е	True	False		
Timer cel- up[5]		T#0ms	False	True	е	True	False		
Timer cel- up[6]		T#0ms	False	True	е	True	False		
Timer cel- up[7]		T#0ms	False	True	е	True	False		
Timer cel- up[8]		T#0ms	False	True	е	True	False		
Timer cel- up[9]		T#0ms	False	True	е		False		
▼ Proc- ess_Start_Ti me	Ar- ray[09] of DInt		False	True	Tru e	True	False		
Proc- ess_Start _Time[0]	DInt	9999999	False	True	Tru e	True	False		
Proc- ess_Start _Time[1]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[2]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[3]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[4]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[5]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[6]	DInt	0	False	True	Tru e	True	False		

e	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b	ing		Super- vision	Comment
Proc- ess_Start _Time[7]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[8]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[9]	DInt	0	False	True	Tru e	True	False		
▼ Proc- ess_Stop_Ti me	Ar- ray[09] of DInt		False	True	Tru e	True	False		
Proc- ess_Stop_ Time[0]	DInt -	9999999	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[1]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[2]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[3]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[4]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[5]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[6]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[7]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[8]	DInt -	0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[9]	DInt -	0	False	True	Tru e	True	False		
<b>▼</b> Setpoint	Ar- ray[09] of Time		False	True	Tru e	True	False		
Set- point[0]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[1]	Time	T#0ms	False	True	Tru e	True	False		

Automation Portal									
lame	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
Set- point[2]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[3]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[4]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[5]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[6]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[7]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[8]	Time	T#0ms	False	True	Tru e	True	False		
Set- point[9]	Time	T#0ms	False	True	Tru e	True	False		
Start_ToD	Time_Of_ Day	TOD#00:00:00	False	True	Tru e	True	False		
Stop_ToD	Time_Of_ Day	TOD#00:00:00	False	True	Tru e	True	False		
Start Posi- tion	Int	3	False	True	Tru e	True	False		
Position	Int	3	False	True	Tru e	True	False		
Destination	Int	0	False	True	Tru e	True	False		
Next Desti- nation	Int	0	False	True	Tru e	True	False		
Ready	Bool	false	False	True	Tru e	True	False		
Proses	Int	0	False	True	e	True	False		
Nomor Pro- ses	Int	0	False	True	е	True	False		
Jml Proses	Int	0	False	True	e	True	False		
Homebase	Int	3	False	True	е	True	False		
Set- point_Ready		false	False	True	е	True	False		
Check- er_Ready	Bool	false	False	True	Tru e	True	False		
Time_Ready		false	False	True	Tru e	True	False		
Occupan- cy_Ready	Bool	false	False	True	Tru e	True	False		
HMI_Ready	Bool	false	False	True	Tru e	True	False		

HMI_Reset E				sible from HMI/O PC	ble	in HMI engi-	point	vision	
HMI_Reset E				b API	m HM I/O PC UA/ We b				
_	Bool	false	False	True	_	True	False		
	Bool	false	False	True		True	False		
Crane_Read E y	Bool	false	False	True		True	False		
Sched_Read E	Bool	false	False	True		True	False		
	Bool	false	False	True	Tru e	True	False		
	Bool	false	False	True	Tru e	True	False		
Nomor li Hanger	nt	1	False	True	Tru e	True	False		
CNT_HMI_Re li ady	nt	0	False	True	Tru e	True	False		
▼ Hanger De- fault[2]	Hanger"		False	True	Tru e	True	True		berisi start values array Hanger
Timer_Start E	Bool	false	False	True	Tru e	True	False		
Timer_Reset E	Bool	false	False	True	Tru e	True	False		
Proses r	Ar- ay[09] of EC_TIMER		False	True	Tru e	True	False		
▼ IEC Timer Proses[0]	EC_TIMER		False	True	Tru e	True	False		
PT T	Time	T#0ms	False	True	Tru e	True	False		
ET T	Гime	T#0ms	False	True	Fals e	True	False		
		false	False	True	е	True	False		
,		false	False	True	е	True	False		
▼ IEC Timer   Proses[1]			False	True	е	True	False		
		T#0ms	False	True	е	True	False		
		T#0ms	False	True	е	True	False		
		false false	False	True	е	True	False		
Q E IEC Timer I		ıaıse	False False	True True	е	True True	False False		
Proses[2]		T#0ms	False	True	е	True	False		

lame	Data type	Start value	Retain	Acces-	W/ri	Visible	Set-	Super-	Comment
idille	Data type	Start value	Retaili	sible from	ta- ble fro m	in HMI engi- neer- ing		vision	Comment
ET	Time	T#0ms	False	True	Fals e	True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[3]	IEC_TIMER		False	True	-	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	Fals e	True	False		
IN	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[4]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	Fals e	True	False		
IN		false	False	True	Tru e	True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	е	True	False		
ET	Time	T#0ms	False	True	Fals e	True	False		
IN		false	False	True	e	True	False		
Q		false	False	True	e	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	Fals e	True	False		
IN		false	False	True	Tru e	True	False		
Q		false	False	True	e	True	False		
▼ IEC Timer Proses[7]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		

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lame	Data type	Start value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
ET	Time	T#0ms	False	True	Fals e	True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	Fals	True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		False	True	e Tru e	True	False		
PT	Time	T#0ms	False	True	Tru	True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True	e Tru e	True	False		
Q	Bool	false	False	True	-	True	False		
▼ IEC Timer Proses[9]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	-	True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True	_	True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ Timer celup	Ar- ray[09] of Time		False	True	Tru e	True	False		
Timer cel- up[0]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[1]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[2]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[3]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[4]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[5]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[6]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[7]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[8]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[9]	Time	T#0ms	False	True	Tru e	True	False		

	Data type	Start value	Retain	sible from HMI/O PC UA/We	ta- ble fro m	ing		Super- vision	Comment
▼ Proc- ess_Start_Ti me	Ar- ray[09] of DInt		False	True	Tru e	True	False		
Proc- ess_Start _Time[0]	DInt	9999999	False	True	Tru e	True	False		
Proc- ess_Start _Time[1]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[2]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[3]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[4]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[5]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[6]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[7]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[8]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Start _Time[9]	DInt	0	False	True	Tru e	True	False		
▼ Proc-	Ar- ray[09] of DInt		False	True	Tru e	True	False		
Proc- ess_Stop_ Time[0]	DInt	9999999	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[1]		0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[2]		0	False	True	Tru e	True	False		
Proc- ess_Stop_ Time[3]		0	False	True	Tru e	True	False		

9	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
					We b API				
Proc- ess_Stop Time[4]	DInt _	0	False	True	Tru e	True	False		
Proc- ess_Stop Time[5]	DInt _	0	False	True	Tru e	True	False		
Proc- ess_Stop Time[6]	DInt _	0	False	True	Tru e	True	False		
Proc- ess_Stop Time[7]	DInt _	0	False	True	Tru e	True	False		
Proc- ess_Stop Time[8]	DInt	0	False	True	Tru e	True	False		
Proc- ess_Stop Time[9]	DInt _	0	False	True	Tru e	True	False		
▼ Setpoint	Ar- ray[09] of Time		False	True	Tru e	True	False		
Set- point[0]	Time	T#0ms	False	True	e	True	False		
Set- point[1]	Time	T#0ms	False	True	е	True	False		
Set- point[2]	Time	T#0ms	False	True	е	True	False		
Set- point[3]	Time	T#0ms	False	True	е	True	False		
Set- point[4]	Time	T#0ms	False	True	е	True	False		
Set- point[5]	Time Time	T#0ms	False False	True	е	True	False False		
Set- point[6] Set-	Time	T#0ms T#0ms	False	True True	е	True True	False		
point[7] Set-	Time	T#0ms	False	True	е	True	False		
point[8] Set-	Time	T#0ms	False	True	е	True	False		
point[9]					е				
Start_ToD	Day	TOD#00:00:00 TOD#00:00:00	False False	True True	e	True True	False False		
Stop_ToD	Day				e				
Start Posi- tion Position	Int	2	False False	True True	е	True True	False False		

me	Data type	Start value	Retain	PC	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
Destination	Int	0	False	True		True	False		
Next Desti- nation	Int	0	False	True	Tru e	True	False		
Ready	Bool	false	False	True	Tru e	True	False		
Proses	Int	0	False	True	Tru e	True	False		
Nomor Pro- ses	Int	0	False	True		True	False		
Jml Proses	Int	0	False	True	Tru e	True	False		
Homebase	Int	2	False	True		True	False		
Set- point_Ready	Bool	false	False	True		True	False		
Check- er_Ready	Bool	false	False	True	Tru e	True	False		
Time_Ready	Bool	false	False	True	Tru e	True	False		
Occupan- cy_Ready	Bool	false	False	True		True	False		
HMI_Ready	Bool	false	False	True	Tru e	True	False		
HMI_Finish	Bool	false	False	True	Tru e	True	False		
HMI_Reset	Bool	false	False	True		True	False		
Crane_Read y	Bool	false	False	True		True	False		
Sched_Read y	Bool	false	False	True	Tru e	True	False		
Finish Proc- ess	Bool	false	False	True	Tru e	True	False		
Divert	Bool	false	False	True	Tru e	True	False		
Nomor Hanger	Int	2	False	True		True	False		
CNT_HMI_Re ady	Int	0	False	True	Tru e	True	False		

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# PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

# Occupancy\_DB [DB9]

Occupancy_[	DB Properties									
General										
Name	Occupancy_DB	Number	9	Туре	DB					
Language	DB	Numbering	Automatic		·					
Information										
Title		Author		Comment						
Family		Version	0.1	User-defined ID						

ame	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi-		Super- vision	Comment
<b>▼</b> Input									
pos h1	Int	0	False	True	Tru e	True	False		
pos h2	Int	0	False	True	Tru e	True	False		
Output									
InOut									
<b>▼</b> Static									
<b>▼</b> occupancy	Ar- ray[09] of Bool		False	True	е	True	False		
occupancy[0]	Bool	TRUE	False	True	e	True	False		
occupancy[1]	Bool	false	False	True	е	True	False		
occupancy[2]	Bool	false	False	True	е	True	False		
occupancy[3]	Bool	false	False	True	e	True	False		
occupancy[4]	Bool	false	False	True	Tru e	True	False		
occupancy[5]	Bool	false	False	True	Tru e	True	False		
occupancy[6]	Bool	false	False	True	Tru e	True	False		
occupancy[7]	Bool	false	False	True	Tru e	True	False		
occupancy[8]	Bool	false	False	True	Tru e	True	False		
occupancy[9]	Bool	false	False	True	Tru e	True	False		

Totally Integ											
PLC_1 [C	g_DB	[DB1]	C/D(	C/Rly] / P	rogr	am b	lo	cks /	Data	base	
Positioning_DI	3 Propert	ies									
General									_		
Name	Positioni	ng_DB		Number	1				Type		DB
Language Information	DB			Numbering	Auto	matic					
miormation Title				Author					Commo	nt	
Family				Version	0.1				User-de		
Name		Data type	Start	value	Retain	Acces- sible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
Input											
▼ Output											
destinati	on	Int	0		False	True	e	True	False		
from		Int	0		False	True	e	True	False		
Repositio	oning	Int	0		False	True	е	True	False		
IDLE		Bool	false		False	True	Tru e	True	False		
<b>▼</b> InOut											
current p	oos	Int	1		False	True	Tru e	True	False		
hanger s	elected	Int	0		False	True	Tru	True	False		

e

e

False

False

True

True

Tru True

Tru True

False

False

**▼** Static

counter

counter2

Int

Int

0

0

|--|

# PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Database

# Step Gerak [DB2]

Step Gerak P	roperties				
General					
Name	Step Gerak	Number	2	Туре	DB
Language	DB	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

me	<b>Бата туре</b>	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi-		vision	Comment
Static									
Positioning step	Int	0	False	True	е		False		
Pindah 1	Bool	false	False	True	Tru e	True	False		
Ambil	Bool	false	False	True	Tru e	True	False		
Pindah 2	Bool	false	False	True	Tru e	True	False		
Lepas	Bool	false	False	True	Tru e	True	False		
Ambil step	Int	0	False	True	Tru e	True	False		
Belok kiri	Bool	false	False	True	Tru e	True	False		
Turun	Bool	false	False	True	Tru e	True	False		
Belok kanan	Bool	false	False	True	Tru e	True	False		
Naik	Bool	false	False	True	Tru e	True	False		
Lepas step	Int	0	False	True	Tru e	True	False		
Go	Bool	false	False	True	Tru e	True	False		
Reposition	Bool	false	False	True	Tru e	True	False		
Take	Bool	false	False	True	Tru e	True	False		
Release	Bool	false	False	True		True	False		
Dump timer	Time	T#0S	False	True	Tru e	True	False		
Time geser	Time	T#200MS	False	True		True	False		setpoint waktu ngegosi crane tiap ambil/le

Automation Portal	Data tura	Start value	Doto:	٨٥٥٥٥	\A/=:	Visible	Co+	Sunce	Comment
anie	Data type	Start value	netain	sible from HMI/O PC UA/We b API	ta- ble fro m	in HMI engi- neer- ing	point	vision	Comment
Dump timer delay	Time	T#0S	False	True			False		

<b>eneral</b> a <b>me</b> Tin	ne Param	Number	4				Туре		DB
<b>anguage</b> DB	ie i ai aiii	Numberir		matic			туре		ОВ
nformation itle		Author					Comm	ent	
amily		Version	0.1				User-d		
lame	D. t. t	Start value	D - 4 - 3	Acces-	14/	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ID	<b>C</b>	Comment
				sible from HMI/O PC UA/We b API	ble fro m	ing	point	vision	
<b>▼</b> Static									
Naik	Time	T#13S	False	True	Tru e	True	False		
Turun	Time	T#13S	False	True	Tru e	True	False		
Avg Moving	Time	T#12S	False	True	Tru	True	False		
Naik_Int	Int	13	False	True	e Tru e	True	False		
Turun_Int	Int	13	False	True	Tru	True	False		
Avg Moving	_Int Int	12	False	True		True	False		
					е				

|--|

### Gerak [FC4]

<b>Gerak Prope</b>	rties				
General					
Name	Gerak	Number	4	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined	
				ID	

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

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

```
"Step Gerak". "Pindah 1"

IN

"Step Gerak". "Pindah 1"

IN

"Step Gerak". "Step Gerak". "Step Gerak". "Positioning Step"
```

#### 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

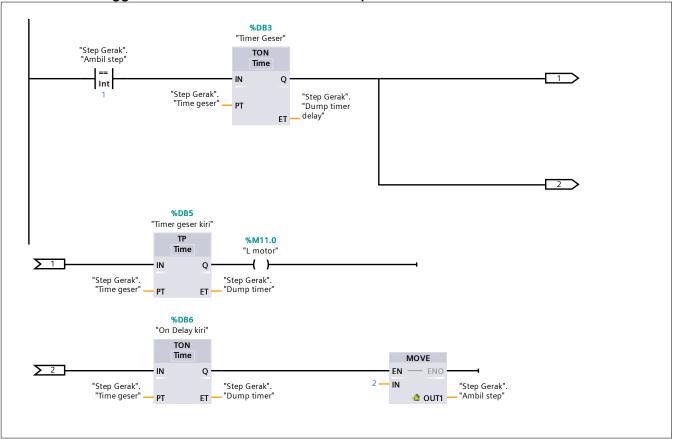
## Totally Integrated **Automation Portal** "Step Gerak". "Positioning step" %FC3 "Step Gerak". "Pindah 1" "Step Gerak". "Pindah 2" "Gerak Ambil" MOVE 1 F EN - ENO - EN ENO Int IN "Step Gerak". "Positioning step" 🧔 OUT1 -Network 4: "Step Gerak". "Positioning step" %FC7 "Gerak Geser" EN ENO Int "Step Gerak". "Positioning\_ 🛶 "Pindah 2" DB"."current finished pos" \_ current pos #destination — equalizer Network 5: Positioning 4: Gerakan melepas, didahului step pindah 2 "Step Gerak". "Positioning %FC5 "Step Gerak". "Pindah 2" step" "Gerak Lepas" MOVE Int I 4 F - ENO · EN - EN ENO -"Step Gerak". "Positioning OUT1 — step" 4 — IN Network 6: Reset all, asalkan seluruh proses selesai

# Totally Integrated **Automation Portal** "Step Gerak". Ambil "Step Gerak". "Pindah 1" "Step Gerak". "Pindah 2" "Step Gerak". Lepas MOVE $\dashv \vdash$ EN -- ENO 0 — IN "Step Gerak". "Positioning \_\_step" **%M10.0**"Hard Reset DB Hanger" "Step Gerak". "Pindah 1" out1 --(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 )\_

Gerak Ambil General	Properties						
Name	Gerak Ambil	Nu	nber	3		Туре	FC
Language	LAD		nbering	Automatic		. , , , ,	j. 5
Information		. 10					
Title		Aut	hor			Comment	
Family		Ver	sion	0.1		User-defined ID	
Name		Data type	Defau	ılt value	Comm	nent	
Input							
Output							
InOut							
Temp							
Constant							
Return							
Gerak /	Ambil	Void					
step gerak	"Step "Posit st	Gerak". ioning "Si ep" "Si ent 2	ep Gerak". Ambil		"Step Gerak". "Ambil step"		

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#### 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

```
%I12.2
"Step Gerak".
"Ambil step"
                                            "Step Gerak".
Turun
                      "prox_crane_
bawah"
                                                                                            %M11.3
                                                                                            "D motor"
   Int
                         %112.2
                                                                                          "Step Gerak".
Turun
                      "prox_crane_
                        bawah"
                                                                                              (s)
                      "Step Gerak".
Turun
                                          "Step Gerak".Take
                                                                  MOVE
                                                                  EN
                                                                           - ENO
                                                                  - IN
                                                                                      "Step Gerak".
                                                                                     _ "Ambil step"
                                                                        🧔 OUT1 -
```

Network 4: Menggeser ke kanan, berhenti ketika timer padam

#### Totally Integrated **Automation Portal** %DB8 "Timer geser kanan" "Step Gerak". "Ambil step" TP %M11.1 Time "R motor" $\leftarrow$ Int "Step Gerak". "Time geser" **\_** "Step Gerak". \_\_ "Dump timer" PT %DB7 "On Delay kanan" TON Time MOVE EN -IN - ENO "Step Gerak". "Time geser" \_ "Step Gerak". "Dump timer" 4 — IN "Step Gerak". \_\_ "Ambil step" d OUT1 PT Network 5: Gerak naik ke atas, berhenti ketika proxy atas kena. %I12.1 "Step Gerak". "Ambil step" "Step Gerak". Ambil **%M11.2** "U motor" "prox\_crane\_ atas" <del>(</del> )-Int **%I12.1** "Step Gerak". Ambil "prox\_crane\_ atas" 4 F (s)-"Step Gerak". Turun (R) Network 6: reset all parameters "Step Gerak". Ambil MOVE · EN - IN "Step Gerak". \_\_ "Ambil step" d OUT1 MOVE - EN -- ENO 3 -IN "Step Gerak". "Positioning step" d OUT1 -

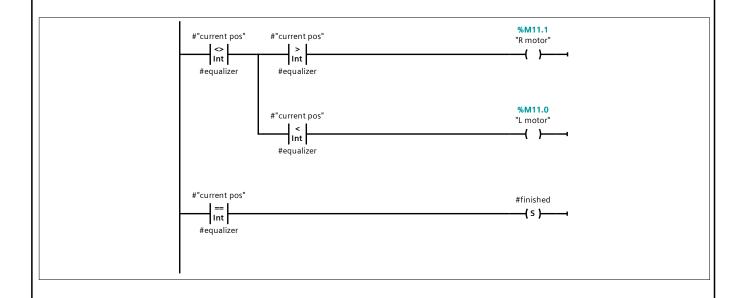
|--|

## Gerak Geser [FC7]

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

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

#### Network 1:



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### **Gerak Lepas [FC5]**

<b>Gerak Lepas</b>	Properties				
General					
Name	Gerak Lepas	Number	5	Туре	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				
<b>▼</b> Return				
Gerak Lepas	Void			

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

```
"Step Gerak".

"Positioning step" "Step Gerak".

"Belok kanan"

Int

4

Step Gerak".

"Belok kanan"

IN

Step Gerak".

"Step Gerak".

"Step Gerak".

"Step Gerak".

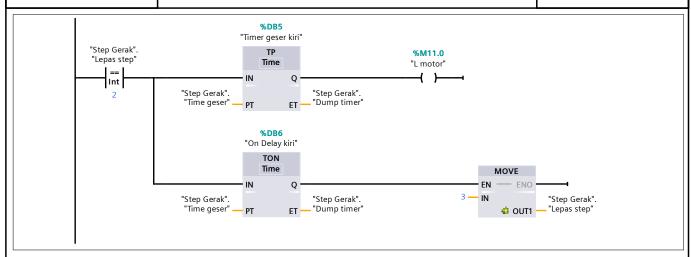
"Lepas step"
```

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

```
%112.2
"Step Gerak".
                                                           "Step Gerak".
Turun
                   "Step Gerak".
                                       "prox_crane_
                                                                                 %M11.3
"Lepas step"
                      Release
                                         bawah"
                                                                                "D motor"
   Int
                                         %112.2
                                                                              "Step Gerak".
                                         bawah"
                                                                                  Turun
                                                                                  (s)-
                                       "Step Gerak".
Turun
                                                         MOVE
                                                          EN - ENO
                                                         - IN
                                                                           "Step Gerak".
                                                                           - "Lepas step"
                                                               d OUT1
```

Network 3: Menggeser ke kiri, berhenti ketika timer padam

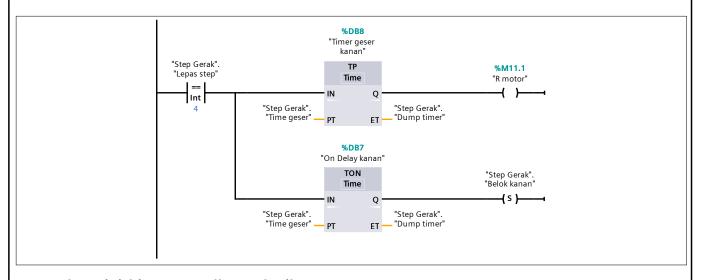
# Totally Integrated Automation Portal



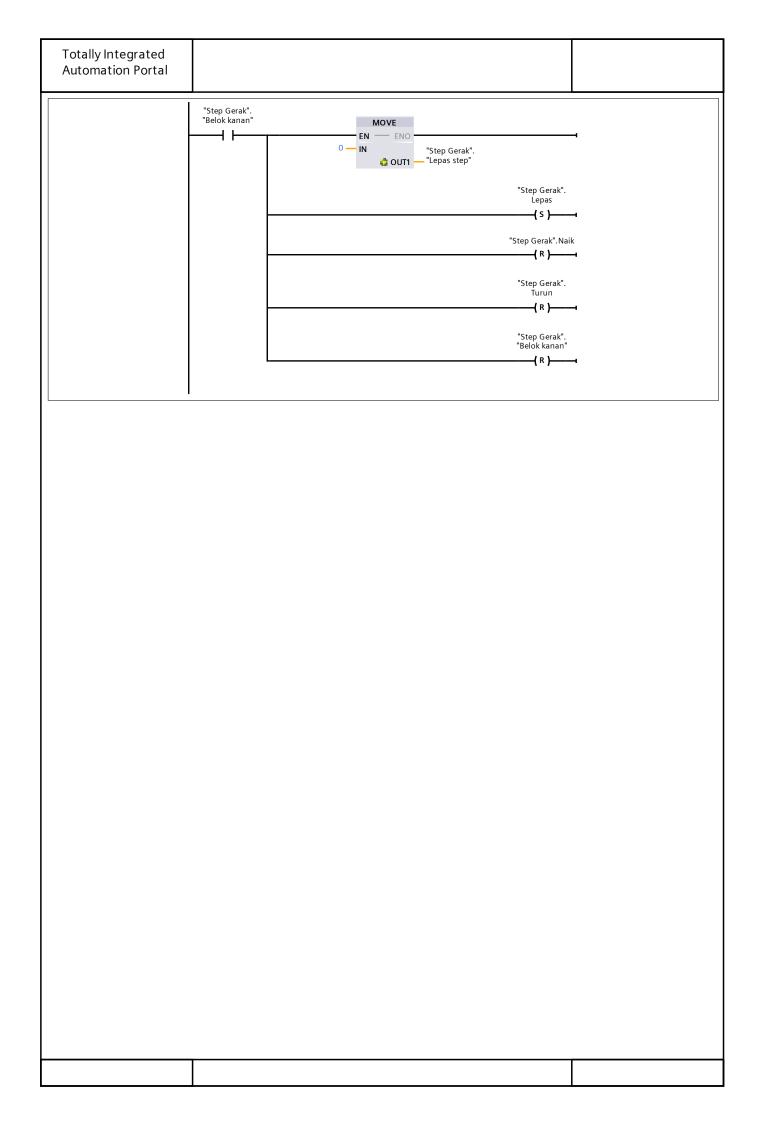
Network 4: Gerak naik ke atas, berhenti ketika proxy atas kena.

```
%112.1
"Step Gerak".
                                          "Step Gerak".
Ambil
                    "prox_crane_
atas"
                                                                                       %M11.2
"Lepas step"
                                                                                      "U motor"
   Int
                       %I12.1
                     "prox_crane_
atas"
                                                                                  "Step Gerak".Naik
                                                                                        -( s )-
                   "Step Gerak".Naik
                                             MOVE
                                         EN
                                                 - ENO
                                         IN
                                                            "Step Gerak".
                                               ₫ OUT1 -
                                                            "Lepas step"
```

Network 5: Menggeser ke kanan, berhenti ketika timer padam



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



Repositioning General Name Language		C2						
Name Language								
	Repositioning	Crane	Numb	er	6		Туре	FC
	LAD		Numb		Automatic		71	
Information								
Title 			Autho				Comment	
Family			Versio	n	0.1		User-defined ID	
		5		D ( )				
Name		Data t	ype	Default	t value	Comme	ent	
▼ Input								
from		Int						
destinati	on	Int						
Output								
InOut Tomp								
Temp								
finished		Bool						
Constant								
Return	oning Crane	Void						
Network 1:	-	!		!				
		Step Gerak". Reposition #from #destination		-		ned		
Network 2:		kalo udal	n selesa	i				
	ep gerak reno							
Mematikan ste	ep gerak repo 						IIC+ C   I II	
	ep gerak repo	#finished					"Step Gerak". Reposition	
	ep gerak repo	#finished						1

Totally Integrated Automation Portal					
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak Positioning [FB2]					
Positioning Properties General					

Positioning F	Properties				
General					
Name	Positioning	Number	2	Туре	FB
Language	SCL	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Retain	Acces- sible from HMI/OP C UA/We b API	ta- ble fro m	in HMI engi- neer- ing		Super- vision	Comment
Input									
▼ Output									
destination	Int	0	Non-retain	True	Tru e	True	False		
from	Int	0	Non-retain	True	Tru e	True	False		
Repositioning	Int	0	Non-retain	True	Tru e	True	False		
IDLE	Bool	false	Non-retain	True	Tru e	True	False		
▼ InOut									
current pos	Int	0	Non-retain	True	Tru e	True	False		
hanger selected	Int	0	Non-retain	True	Tru e	True	False		
<b>▼</b> Static									
counter	Int	0	Non-retain	True	Tru e	True	False		
counter2	Int	0	Non-retain	True	Tru e	True	False		
<b>▼</b> Temp									
run	Bool								
stoptime	DInt								
np	Int								nomor proses
hangerpos	Int								
hs_temp	Int								buat rencana tang- ki 2 priority
from_temp	Int								buat rencana tang- ki 2 priority
localtime	DInt								
Constant									

0001 REGION CRANE POSITION

```
Totally Integrated
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```

```
0002 //Mencari tahu posisi crane berdasarkan prox yang menyala
0003 IF "prox ujung kanan" = TRUE THEN
0004
       #"current pos" := 1;
     END IF;
0005
0006
     IF "prox hanger 2" = TRUE THEN
0007
       #"current pos" := 2;
0008
0009
      END IF;
0010
0011 IF "prox hanger 1" = TRUE THEN
0012
       #"current pos" := 3;
0013 END_IF;
0014
      IF "prox_tangki 1" = TRUE THEN
0015
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
       #"current pos" := 7;
0028
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
      #"current pos" := 9;
0036
     END IF;
0037
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
       FOR #counter := 1 TO 2 DO //diganti kalo hanger nambah
0043
0044
          IF "Hanger Data".Hanger[#counter].Ready = TRUE THEN
0045
            #"hanger selected" := #counter;
            #from := "Hanger Data".Hanger[#counter]."Start Position";
0046
0047
            "Step Gerak".Go := TRUE;
0048
           EXIT;
         ELSE //Kalo gaada yang ready
0049
0050
           #"hanger selected" := 0;
0051
            //Yaudah ga ngapa2in, paling loopnya ngulang terus.
0052
          END_IF;
0053
         ;
      END FOR;
0054
0055 END IF;
0056
0057
       //Step Gerak.Go Akan FALSE sendiri ketika proses pemindahan sudah selesai
     (Cek Gerak FC4)
```

```
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```

```
0058
         //Perubahan nilai Hanger Selected hanya akan berubah kalo ada arahan ger-
     ak lagi.
        //Bind Variabel "Destination" dengan hanger terpilih jika sudah Go
0059
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
         #np := "Hanger Data".Hanger[#counter2]."Nomor Proses";
0075
0076
         IF "Hanger Data".Hanger[#counter2].Process Stop Time[#np] < #stoptime THEN
          #stoptime := "Hanger Data".Hanger[#counter2].Process Stop Time[#np];
0077
0078
           #hangerpos := #counter2;
0079
       END IF;
0800
0081
      END FOR;
0082
0083
       //Value hangerpos dipake buat mindahin crane
0084
       #Repositioning := "Hanger Data".Hanger[#hangerpos].Position;
      IF #"current pos" <> #Repositioning AND "Step Gerak".Go = FALSE THEN //kalo
0085
     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";
     IF "Step Gerak".Go = TRUE THEN
0103
         IF "Hanger Data". Hanger[#hs temp]. "Timer celup"["Hanger Data". Hang-
0104
     er[#hs temp]."Nomor Proses"] >= "Hanger Data".Hanger[#hs temp].Setpoint["Hang-
     er Data".Hanger[#hs temp]."Nomor Proses"] THEN
          "Step Gerak". Take := TRUE;
0105
0106
         ELSE
0107
           ;
```

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

"Hanger Data" Hange ef [1]. "Nomor Proses"   "Hanger Data" Hange ef [1]. HMI. Ready   "Hanger Data" Hange ef [1]. HMI. Ready   "Hanger Data" Hange ef [1]. HMI. Ready   "Hanger Data" Hange ef [2]. HMI. Ready   "Hanger Data" Hange ef [4]. "Honor Proses"   "Hanger Data" Hange ef [4]. "Honor Proses"   "Hanger Data" Hange ef [4]. "Honor Proses"   "Hanger Data" Hange ef [4]. "Start Position"   "Hanger Data" Hange ef [4]. "Start Position"   "Hanger Data" Hange ef [4]. "Start Position"   "Hanger Data" Hange ef [4]. "Position   "Hanger Data" Hanger ef [4]. "Positi	Symbol	Address	Туре	Comment
"Hanger Data". Hanger	"Hanger Data".Hang-			
"Hanger Data". Hanger operate ". Hanger operate". Hanger operate ". Hange			Bool	
"Hanger Data" Hange er[2]. HML Ready "Hanger Data" Hange er[*]. "Nomor Proses" "Hanger Data" Hange er[*]. "Start Position" "Hanger Data" Hange er[*]. "Start Position" "Hanger Data" Hange er[*]. "Start Position" "Hanger Data" Hange er[*]. Destination "Hanger Data" Hange er[*]. Destination "Hanger Data" Hange er[*]. Position "Hanger Data" Hange er[*]. Position "Hanger Data" Hange er[*]. Proc. ess_Star_Time[*] "Hanger Data" Hange er[*]. Proc. ess_Star_Time[*] "Hanger Data". Hange er[*]. Proc. ess_Stop_Time[*] "Hanger Data". Hange er[*]. Ready "Hanger Data". Hange er[*]. Stepoint[*] "prox_hanger_1" "prox_hanger_2" "blo.6 "blo.6 "blo.0 "prox_tangki_2" "blo.3 "blo.4 "blo.3 "blo.0 "prox_tangki_3" "blo.3 "blo.0 "prox_tangki_3" "blo.0 "prox_tangki_3" "blo.0 "prox_tangki_5" "blo.0 "blo.0 "prox_tangki_6" "blo.0 "blo.0 "prox_tangki_6" "blo.0 "blo	"Hanger Data".Hang- er[1].Proc-		DInt	
er[2].HML Ready       Int         "Hanger Data".Hang- er[*]."Nomor Proses"       Int         "Hanger Data".Hang- er[*]."Start Position"       Int         "Hanger Data".Hang- er[*]. Timer celup*[*]       Time         "Hanger Data". Hang- er[*]. Destination       Int         "Hanger Data". Hang- er[*]. Proc- ess_Start_Time[*]       Int         "Hanger Data". Hang- er[*]. Proc- ess_Stop_Time[*]       Dint         "Hanger Data". Hang- er[*]. Ready       Dint         "Hanger Data". Hang- er[*]. Ready       Time         "Hanger Data". Hang- er[*]. Setpoint[*]       Time         "prox_hanger_1"       %IO.7       Bool         "prox_hanger_1"       %IO.7       Bool         "prox_hanger_1"       %IO.5       Bool         "prox_tangki_1"       %IO.5       Bool         "prox_tangki_2"       %IO.4       Bool         "prox_tangki_2"       %IO.3       Bool         "prox_tangki_3"       %IO.3       Bool         "prox_tangki_5"       %IO.1       Bool         "prox_tangki_5"       %IO.1       Bool         "prox_ujung_kiri"       %IO.0       Bool         "prox_ujung_kiri"       %IO.0       Bool         "prox_tangki_5"       %IO.0       Bool				
er[*]."Nomor Proses"  "Hanger Data".Hang- er[*]."Start Position"  "Hanger Data".Hang- er[*]."Start Position"  "Hanger Data".Hang- er[*]. Position "Hanger Data".Hang- er[*]. Position "Hanger Data".Hang- er[*]. Position  "Hanger Data". Hang- er[*]. Proc- ess_Start_Time[*]  "Hanger Data". Hang- er[*]. Proc- ess_Stop_Time[*]  "Hanger Data". Hang- er[*]. Psetjoint[*]  "Prox_hanger_2"  "Bool  "prox_hanger_2"  %IO.7  Bool  "prox_hanger_2"  %IO.5  Bool  "prox_tangki_1"  %IO.5  Bool  "prox_tangki_2"  %IO.4  Bool  "prox_tangki_3"  %IO.3  Bool  "prox_tangki_3"  %IO.3  Bool  "prox_tangki_4"  %IO.2  Bool  "prox_tangki_5"  %IO.1  Bool  "prox_tangki_6"  "prox_tangki_6"  %IO.0  Bool  "prox_tangki_6"  %IO.0  Bool  "prox_ujung_kiri"  %IO.0  Bool  "prox_ujung_kiri"  %IO.0  Bool  "Step Gerak". Release  Bool	er[2].HMI_Ready			
er[*]."Start Position"       "Hanger Data". Hanger Pata". Ha	er[*]."Nomor Proses"		Int	
er[*]. "Timer celup"[*]       "Hanger Data". Hanger[*]. Destination         "Hanger Data". Hanger Data". Hanger[*]. Process_Start_Time[*]       Int         "Hanger Data". Hanger[*]. Process_Start_Time[*]       DInt         "Hanger Data". Hanger[*]. Process_Stop_Time[*]       Bool         "Hanger Data". Hanger[*]. Process_Stop_Time[*]. Process_Stop_Time[*]	er[*]."Start Position"		Int	
er[*].Destination       "Hanger Data".Hanger[*].Position         "Hanger Data".Hanger[*].Proc-ess_Start_Time[*]       DInt         "Hanger Data".Hanger[*]       DInt         "Hanger Data".Hanger[*]       Dint         "Hanger Data".Hanger[*]       Bool         "Hanger Data".Hanger[*].Setpoint[*]       Time         "prox_hanger_1"       %10.7       Bool         "prox_hanger_2"       %10.6       Bool         "prox_tangki_1"       %10.5       Bool         "prox_tangki_2"       %10.4       Bool         "prox_tangki_2"       %10.3       Bool         "prox_tangki_3"       %10.3       Bool         "prox_tangki_4"       %10.2       Bool         "prox_tangki_5"       %10.1       Bool         "prox_ujung_kanan"       %12.0       Bool         "prox_ujung_kiri"       %10.0       Bool         "step Gerak".Go       Bool       Bool         "Step Gerak".Release       Bool       Bool	er[*]."Timer celup"[*]		Time	
er[*].Position       "Hanger Data".Hang-er[*]. Proc-ess_Start_Time[*]         er[*].Proc-ess_Stop_Time[*]       DInt         "Hanger Data".Hang-er[*]. Ready       Bool         "Hanger Data".Hang-er[*]. Ready       Time         "Hanger Data".Hang-er[*]. Setpoint[*]       Time         "prox_hanger_1"       %10.7       Bool         "prox_hanger_2"       %10.6       Bool         "prox_tangki_1"       %10.5       Bool         "prox_tangki_2"       %10.4       Bool         "prox_tangki_3"       %10.3       Bool         "prox_tangki_4"       %10.2       Bool         "prox_tangki_5"       %10.1       Bool         "prox_ujung_kanan"       %112.0       Bool         "prox_ujung_kiri"       %10.0       Bool         "Step Gerak".Go       Bool       Bool         "Step Gerak".Release       Bool	er[*].Destination		Int	
er[*].Proc- ess_Start_Time[*]  "Hanger Data".Hang- er[*].Proc- ess_Stop_Time[*]  "Hanger Data".Hang- er[*].Ready  "Hanger Data".Hang- er[*].Setpoint[*]  "prox_hanger_1"  "prox_hanger_2"  "blo.6  "prox_tangki_1"  "prox_tangki_2"  "blo.4  "prox_tangki_2"  "blo.5  "prox_tangki_2"  "blo.6  "prox_tangki_3"  "prox_tangki_3"  "prox_tangki_4"  "prox_tangki_4"  "prox_tangki_5"  "prox_tangki_5"  "prox_tangki_6"  "prox_tangki_6"  "prox_ujung_kanan"  "prox_ujung_kanan"  "prox_ujung_kiri"  "blo.0  "bool  "step Gerak".Go  "Step Gerak".Release  Bool			Int	
"Hanger Data".Hanger[*]       DInt         "Hanger Data".Hanger[*]       Bool         "Hanger Data".Hanger[*].Ready       Time         "Hanger Data".Hanger[*].Setpoint[*]       Time         "prox_hanger_1"       %IO.7       Bool         "prox_hanger_2"       %IO.6       Bool         "prox_tangki_1"       %IO.5       Bool         "prox_tangki_2"       %IO.4       Bool         "prox_tangki_3"       %IO.3       Bool         "prox_tangki_4"       %IO.2       Bool         "prox_tangki_5"       %IO.1       Bool         "prox_ujung_kanan"       %I12.0       Bool         "prox_ujung_kiri"       %IO.0       Bool         "Step Gerak".Go       Bool       Bool	er[*].Proc-		DInt	
"Hanger Data". Hanger! [*]. Ready       Time         "Hanger Data". Hanger! [*]. Setpoint[*]       Time         "prox_hanger_1"       %10.7       Bool         "prox_hanger_2"       %10.6       Bool         "prox_tangki_1"       %10.5       Bool         "prox_tangki_2"       %10.4       Bool         "prox_tangki_2"       %10.3       Bool         "prox_tangki_3"       %10.3       Bool         "prox_tangki_4"       %10.2       Bool         "prox_tangki_5"       %10.1       Bool         "prox_ujung_kanan"       %12.0       Bool         "prox_ujung_kiri"       %10.0       Bool         "Step Gerak".Go       Bool         "Step Gerak".Release       Bool	"Hanger Data".Hang- er[*].Proc-		Dint	
er[*].Setpoint[*]                 "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	"Hanger Data".Hang-		Bool	
"prox_hanger_2"       %10.6       Bool         "prox_tangki_1"       %10.5       Bool         "prox_tangki_2"       %10.4       Bool         "prox_tangki_3"       %10.3       Bool         "prox_tangki_4"       %10.2       Bool         "prox_tangki_5"       %10.1       Bool         "prox_ujung_kanan"       %12.0       Bool         "prox_ujung_kiri"       %10.0       Bool         "Step Gerak".Go       Bool         "Step Gerak".Release       Bool			Time	
"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			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	<u> </u>		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	•			
"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				
"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	·			
"prox_ujung_kanan"%I12.0Bool"prox_ujung_kiri"%I0.0Bool"Step Gerak".GoBool"Step Gerak".ReleaseBool			Bool	
"prox_ujung_kiri" %I0.0 Bool "Step Gerak".Go Bool "Step Gerak".Release Bool			Bool	
"Step Gerak".Go Bool "Step Gerak".Release Bool			Bool	
"Step Gerak".Release Bool		%10.0	Bool	
·			Bool	
"Step Gerak".Reposition Bool	•		Bool	
	"Step Gerak".Reposition		Bool	

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ymbol	Address	Туре	Comment	
Step Gerak".Take	rtuaress	Bool	Comment	
Fime Param".Turun_Int		Int		
"current pos"		Int		
"bangar salastad"				
"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		

|--|

## **Motor Otomatis [FC17]**

Motor Otomatis Properties							
General							
Name	Motor Otomatis	Number	17	Туре	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:

```
%M11.0
"L motor"
                           %I13.0
"L Limit"
                                                                                                        %Q0.2
"motor_kiri"
   \dashv \vdash
                             +
                                                                                                            <del>(</del> )—
%M11.1
"R motor"
                           %I13.1
"R Limit"
                                                                                                           %Q0.3
                                                                                                      "motor_kanan"
                             +
   ┨┝
%M11.2
"U motor"
                           %I13.2
"U Limit"
                                                                                                           %Q0.0
                                                                                                        "motor_atas"
  \dashv \vdash
                            \dashv \vdash
                                                                                                            ← )—
%M11.3 "D motor"
                          %I13.3
"D Limit"
                                                                                                           %Q0.1
                                                                                                      "motor_bawah"
   +
                             +
                                                                                                            <del>(</del> )-
```

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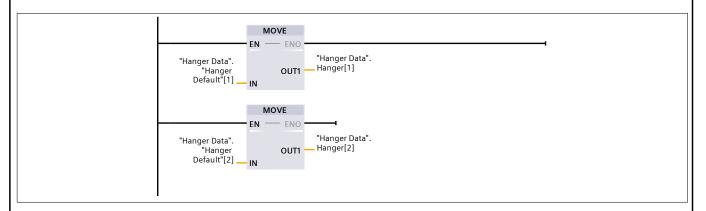
## PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

## Hard Reset DB [FC14]

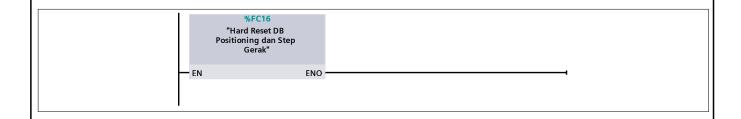
Hard Reset DB Properties							
General							
Name	Hard Reset DB	Number	14	Туре	FC		
Language	LAD	Numbering	Automatic				
Information							
Title		Author		Comment			
Family		Version	0.1	User-defined			
				ID			

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	General						
Name	Hard Reset DB Position- ing dan Step Gerak	Number	16	Туре	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				
<b>▼</b> 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;
0025 "Step Gerak".Go := FALSE;
0026 "Step Gerak".Reposition := FALSE;
0027 "Step Gerak". Take := FALSE;
0028 "Step Gerak".Release := FALSE;
0029
```

Symbol	Address	Туре	Comment
"Positioning_DB"."cur- rent pos"		Int	

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## PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

### **Check Setpoint Time [FC8]**

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

Name	Data type	Default value	Comment	
<b>▼</b> Input				
nh	Int			
jml proses	Int			
▼ Output				
Ready	Bool			
InOut				
<b>▼</b> Temp				
CNT_Jml Proses	Int			
Constant				
<b>▼</b> 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
      IF "Hanger Data".Hanger[#nh].Setpoint[#"CNT Jml Proses"] = 0 THEN
0006
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)
        AND "Hanger Data".Hanger[#nh].Setpoint[#"CNT Jml Proses"] <> 0 THEN
0013
0014
         #Ready := TRUE;
0015
      END IF;
0016 END FOR;
0017
```

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

INT Input  INT Input  Output  TIME Output  Time_Of_Day  InOut  ▼ Temp  Hasil kali  DInt  Hasil Mod  DInt  Hasil TIME  Constant  ▼ Return  Convert INT To TIME  Network 1:   MUL  Auto (Dint)  #"INT Input" — IN1  OUT — #"Hasil kali"  1 — IN2   OUT — #"Hasil kali"		
Convert INT To TIME Properties  General Name   Convert INT To TIME   Number   15   Numbering   Automatic   Information  Title   Mengubah waktu   D/H/M/S dalam INT menjadi H/M/S	ks / Penjadwal	an
Convert INT To TIME   Number   15		
Name   Convert INT To TIME   Number   15		
Language IAD Numbering Automatic  Information  Title Mengubah waktu D/H/M/S dalam INT menjadi H/M/S  Family Version 0.1  Name Data type Default value Culture INT Input DInt Time_Of_Day InOut Temp  Hasil kali DInt Hasil Mod DInt Hasil IMBE Time Constant Return Convert INT To TIME Void  Network 1:  Network 2: Modulo		
Information  Title   Mengubah waktu   DH/M/IS dalam INT menjadi H/M/IS   Version   0.1  Name   Data type   Default value   C	Type F0	С
Title Mengubah waktu D/H/M/IS dalam INT men- jadi H/M/S  Family  Version  0.1  Name  □ Data type □ Default value □ C □ Input □ INT Input □ Infle Output □ InOut □ Temp □ Hasil kali □ DInt □ Hasil Mod □ DInt □ Hasil TIME □ Constant □ Convert INT To TIME □ Void  Network 1:  Network 2: Modulo   *"Hasil kali" □ Input □ I		
Name  Variable  Name  Variable  Name  Variable  Name  Variable  Name  Variable  Variable  Name  Variable  Name  Variable  Name  Data type  Default value  C	Comment	
Input	User-defined ID	
INT Input  ✓ Output  TIME Output  Time_Of_Day  InOut  ✓ Temp  Hasil kali  DInt  Hasil Mod  DInt  Hasil TIME  Constant  ✓ Return  Convert INT To TIME  Void  Network 1:   MUL  Auto (Dint)  #"Hasil kali"  Nout  Auto (Dint)  #"Hasil kali"  Nout  #"Hasil kali"  #"Hasil kali"  Nout  #"Hasil kali"  #"Hasil kali"  #"Hasil kali"  #"Hasil Mod"	omment	
TIME Output  TIME Output  Time_Of_Day  InOut  ▼ Temp  Hasil kali  DInt  Hasil Mod  DInt  Hasil TIME  Constant  ▼ Return  Convert INT To TIME   Network 1:   MUL  Auto (Dint)  #"Hasil kali"  Network 2: Modulo   MOD  Auto (Dint)  #"Hasil kali"  Network 2: Modulo		
TIME Output InOut  ▼ Temp  Hasil kali DInt Hasil Mod DInt Hasil TIME Constant  ▼ Return Convert INT To TIME  Network 1:   MUL Auto (Dint)  #"INT Input"  IN1 OUT  #"Hasil kali"  MOD Auto (Oint)  #"Hasil Mod"		
InOut  ▼ Temp  Hasil kali DInt Hasil Mod DInt Hasil Time  Constant  ▼ Return  Convert INT To TIME  Network 1:   MUL Auto (Dint)  #"INT Input" IN1 OUT #"Hasil kali"  Network 2: Modulo		
InOut  ▼ Temp  Hasil kali DInt Hasil Mod DInt Hasil Time  Constant  ▼ Return  Convert INT To TIME  Network 1:   MUL Auto (Dint)  #"INT Input" — IN1 OUT — #"Hasil kali"  Network 2: Modulo		
Temp  Hasil kali DInt Hasil Mod DInt Hasil Time Constant  ▼ Return Convert INT To TIME  Network 1:   MUL Auto (Dint)  #"INT Input" IN1 OUT #"Hasil kali"  Network 2: Modulo  MOD Auto (Dint)  #"Hasil kali" IN1 OUT #"Hasil Mod"		
Hasil kali  Hasil Mod  DInt  Hasil TIME  Constant  ▼ Return  Convert INT To TIME  Network 1:   MUL  Auto (Dint)  #"INT Input" — IN1  1 — IN2   MOD  Auto (Dint)  #"Hasil kali" — IN1  OUT — #"Hasil Mod"		
Hasil Mod Hasil TIME  Constant  ▼ Return  Convert INT To TIME  Network 1:     MUL Auto (Dint)   EN ENO		
Hasil TIME Constant  ✓ Return  Convert INT To TIME  Void  Network 1:   #"INT Input"  IN1  OUT  #"Hasil kali"  #"Hasil kali"  WOD  Auto (DInt)  EN  EN  EN  EN  EN  EN  EN  EN  EN  E		
Return  Convert INT To TIME  Void  Network 1:     MUL   Auto (Dint)   EN   EN   OUT   #"Hasil kali"		
Network 1:    MUL   Auto (Dint)		
Network 1:    MUL   Auto (Dint)		
Network 1:    MUL		
MOD Auto (Dint)  EN ENO #"Hasil kali" N1 OUT #"Hasil Mod"		
#"Hasil kali" N1 OUT #"Hasil Mod"		
#"Hasil kali" — IN1 OUT — #"Hasil Mod"		
IIVZ		
Network 3:		

# Totally Integrated Automation Portal T\_CONV Dint TO Time MUL Auto (DInt) #"Hasil Mod" — EN — ENO — #"Hasil kali" - EN ENO -#"Hasil kali" — IN OUT — #"Hasil TIME" 1000 — IN2 🥼 Network 4: T\_CONV Time TO Time\_Of\_Day OUT — #"TIME Output" #"Hasil TIME" — IN

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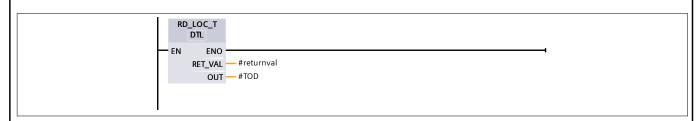
## PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

### Get Local Time [FC9]

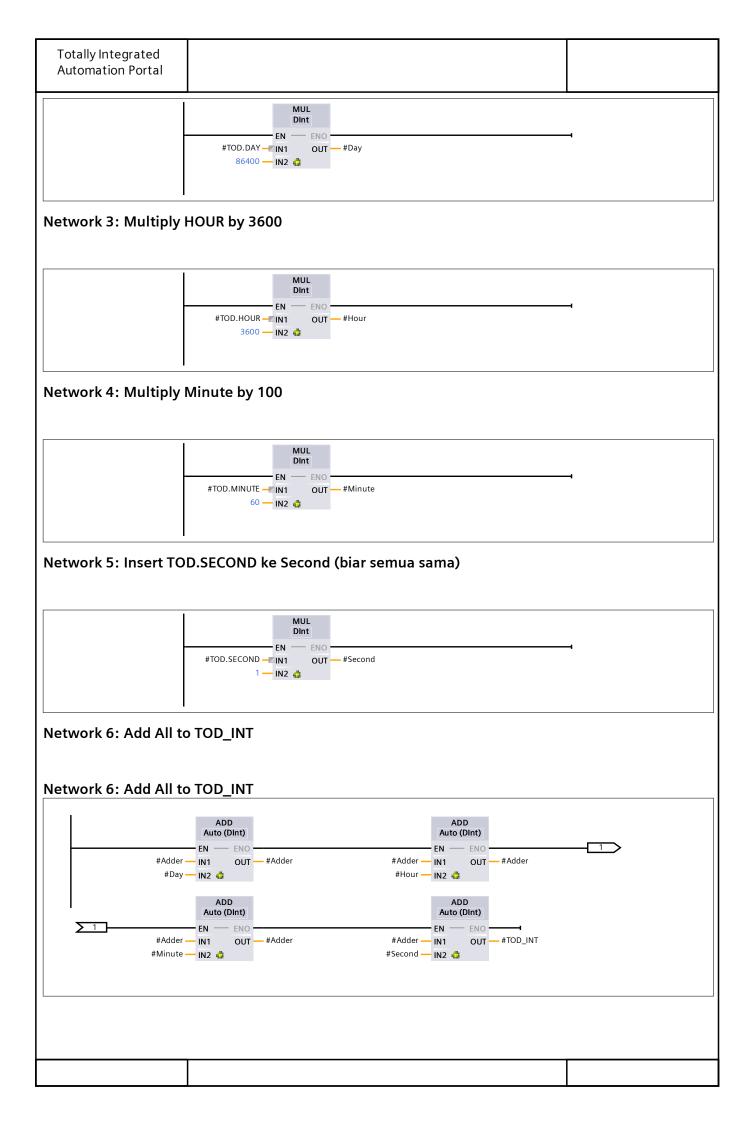
Catland Tim	D				
Get Local III	ne Properties				
General					
Name	Get Local Time	Number	9	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title	Convert Time of Day jadi marker seconds, dalam bentuk DINT Format.	Author		Comment	
Family		Version	0.1	User-defined ID	

Name	Data type	Default value	Comment	
Input				
▼ Output				
TOD_INT	DInt			
InOut				
<b>▼</b> 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				
<b>▼</b> Return				
Get Local Time	Void			

#### Network 1: Return TOD pake Read Local Time



Network 2: Multiply DAY by 86400



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### PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

#### Time Converter to seconds [FC10]

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

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

```
//Mengganti format TIME T#_H_M_S menjadi format integer
//Conv to DINT
//Conv to DINT
#"time output" := TIME_TO_DINT(#"time input") / 1000;
//Di bawah ini kode bekas bikin seconds menjadi INT
//Di bawah ini kode bekas bikin seconds menjadi INT
//Ambil tiap komponen waktu
//#hour := FLOOR(#"time used" / 3600) * 10000;
//#minute := FLOOR(#"time used" / 60 MOD 60) * 100;
//#seconds := FLOOR(#"time used" MOD 60);
//#seconds := FLOOR(#"time used" MOD 60);
//Tambahin lagi untuk mendapat format integer
//#"time output" := #hour + #minute + #seconds;
```

9	Symbol	Address	Type	Comment
i	#"time input"		DInt	
1	#"time output"		DInt	

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PLC 1 [CPU 121	2C AC/DC/Rly] / Program blocks / Penjadwalar	n

# Penjadwalan [FC11]

Penjadwalan	Properties				
General					
Name	Penjadwalan	Number	11	Туре	FC
Language	SCL	Numbering	Automatic		
Information					
Title		Author		Comment	
Family		Version	0.1	User-defined	
				ID	

lame	Data type	Default value	Comment
<b>r</b> Input			
nh	Int		
jml proses	Int		
Output			
r InOut			
All Ready	Bool		
✓ Temp	ВООТ		
<u> </u>	I 4		
h1	Int		
CNT_Nomor Proses	Int		
CNT_Hasil Akhir Tank	Int		
▼ NP_Ready	Array[06] 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		

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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
       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"],
                       "time output" => #"conv setpoint");
0034
0035
         #"modifier pertama" := (2 * "Time Param"."Avg Moving Int") + ("Time Par-
     am".Naik Int) + (2 * "Time Param".Turun Int);
         #"modifier start" := "Time Param"."Avg Moving Int" + "Time Param".Naik Int
0036
      + "Time Param".Turun Int;
         IF #"CNT Prediksi" = 0 THEN
0037
           ; //do nothing
0038
0039
         ELSIF #"CNT Prediksi" = 1 THEN
```

```
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```

```
0040
           "Hanger Data".Hanger[#nh].Process Start Time[#"CNT Prediksi"] := "Hang-
     er Data".Hanger[#nh].Process Stop Time[#"CNT Prediksi" - 1] + #"modifier per-
     tama";
0041
         ELSE
0042
           "Hanger Data". Hanger [#nh]. Process Start Time [#"CNT Prediksi"] := "Hang-
     er 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 nom-
     or proses max nya aja
0052
0053
         CASE #"CNT Nomor Proses" OF
0054
           1, 3:
             IF "Hanger Data".Hanger[#h1].Process Stop Time[#"CNT Nomor Proses"] =
0055
     0 THEN //STOP = 0 berarti gaada proses
0056
               "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] := TRUE;
             ELSIF "Hanger Data". Hanger[#h1]. Process Start Time[#"CNT Nomor Pro-
     ses"] > "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
0059
               "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] := TRUE;
0060
0061
               "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] := FALSE;
0062
             END IF;
0063
           2, 4, 6:
0064
             CASE "Hanger Data".Hanger[#h1]."Jml Proses" OF //beda nomor proses =
0065
     beda IF supaya ga kena yang nol
0066
               3: //2 doang
                 IF ("Hanger Data".Hanger[#h1].Process Start Time[2] >= "Hanger
0067
     Data".Hanger[#nh].Process Stop Time[#"CNT Nomor Proses"] = TRUE)
                  OR ("Hanger Data".Hanger[#nh].Process Start Time[#"CNT Nomor
0068
     Proses"] >= "Hanger Data".Hanger[#h1].Process Stop Time[2] = TRUE) THEN
0069
                   "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] :=
     TRUE;
0070
                 ELSE
                   "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] :=
0071
     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)
                   OR ("Hanger Data".Hanger[#nh].Process Start Time[#"CNT Nomor
0075
     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].Proc-
     ess Stop Time[#"CNT Nomor Proses"] = TRUE) THEN
```

```
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```

```
0077
                   "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] :=
     TRUE;
0078
                 ELSE
                   "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] :=
0079
     FALSE;
0800
                 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
                   "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] :=
0088
     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
               "Hanger Data".Predict[#nh]."NP Ready"[#"CNT Nomor Proses"] := TRUE;
0099
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"] =
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
```

```
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```

```
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
                     IF "Hanger Data". Hanger[#h1]. Process Start Time[#"CNT Nomor
0119
     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
               END CASE;
0129
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;
           IF #"Cek Ready" = #"jml proses" - 1 THEN
0141
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";
       #"jml proses p" := "Hanger Data".Hanger[#h1]."Jml Proses";
0154
       #"jml proses crane" := "Hanger Data".Hanger[#nh]."Jml Proses";
0155
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
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
       "Get Local Time"(#"localtime"); //get local time, save to #local time
0161
```

```
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0162
0163
       //FOR untuk write data crane usage. Ambil dari start stop aja. Lihat buku
     catatan buat grafik gantt nya
      FOR #CNT NP := 1 TO #"jml proses crane" DO //Aakan ada pergerakan crane se-
     banyak 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".Hang-
     er[#nh].Process Start Time[0];
           "Hanger Data". "Predict Crane"[#nh]. Stop[#CNT NP] := "Hanger Data". "Pre-
0169
     dict Crane"[#nh].Start[#CNT NP] + #"modifier pertama crane";
        ELSIF #CNT NP = #"jml proses crane" THEN //kalo akhiran juga beda soalnya
0170
     gaada stop nya
0171
           "Hanger Data". "Predict Crane" [#nh] . Start [#CNT NP] := "Hanger Data". Hang-
     er[#nh].Process Stop Time[#CNT NP - 1] - #"modifier start crane";
           "Hanger Data". "Predict Crane" [#nh] . Stop [#CNT NP] := "Hanger Data". "Pre-
0172
     dict Crane"[#nh].Start[#CNT NP] + #"modifier pertama crane";
0173
         ELSE //kalo kondisi lain
           "Hanger Data". "Predict Crane" [#nh] . Start [#CNT NP] := "Hanger Data". Hang-
0174
     er[#nh].Process Stop Time[#CNT NP - 1] - #"modifier start crane";
           "Hanger Data". "Predict Crane"[#nh]. Stop[#CNT NP] := "Hanger Data". "Pre-
0175
     dict Crane"[#nh].Start[#CNT NP] + #"modifier pertama crane";
0176
         END IF;
      END FOR;
0177
0178
0179
       //Add keterangan untuk informasi kapan proses mulai dan selesai
0180
       IF "Hanger Data". Hanger[#nh]. HMI Ready = TRUE AND ("Hanger Data". Hang-
     er[#nh].Crane Ready = FALSE OR "Hanger Data".Hanger[#nh].Time Ready = FALSE)
0181
         //call function
0182
         "Convert INT To TIME" ("INT Input" := "Hanger Data". "Predict
     Crane"[#nh].Start[1],
                     "TIME Output" => "Hanger Data".Hanger[#nh].Start ToD);
0183
         "Convert INT To TIME"("INT Input" := "Hanger Data"."Predict
0184
     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 move-
     ment di Hanger ini
```

```
//sampe 9 karena harus ngecek dengan semua possibility pergerakan crane
//Kalo hanger sebelah lagi gabut, langsung ready
IF "Hanger Data".Hanger[#h1].HMI_Ready = FALSE THEN
#"Crane Ready" := TRUE;

//kalo hanger sebelah lagi ga gabut
ELSE
FOR #CNT_Pred := 1 TO #"jml proses crane" DO //untuk setiap crane movement di Hanger ini

//deklarasi start/stop time dari hanger
#starttime := "Hanger Data"."Predict Crane"[#nh].Start[#CNT_Pred];
#stoptime := "Hanger Data"."Predict Crane"[#nh].Stop[#CNT_Pred];

FOR #CNT_Pembanding := 1 TO #"jml proses_p" DO //dicek dengan seluruh crane movement hanger sebelah, start maupun stop
```

```
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```

```
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)
             #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).
            IF #CNT Pembanding = #"jml proses p" THEN //khusus untuk pembanding
0211
     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
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;
             IF #"Cek Ready" = #"jml proses crane" THEN
0232
              #"Crane Ready" := TRUE;
0233
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;
         "Hanger Data".Hanger[#nh].Process Start Time[0] := "Hanger Data".Hang-
0248
     er[#nh].Process Start Time[0] + 1;
         "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	Туре	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".Hang- er[*]."Jml Proses"		Int	
"Hanger Data".Hang- er[*]."Nomor Proses"		Int	
"Hanger Data".Hang- er[*].Crane_Ready		Bool	
"Hanger Data".Hang- er[*].HMI_Ready		Bool	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[0]		Dint	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[2]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[4]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[6]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[*]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Stop_Time[0]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Stop_Time[2]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Stop_Time[4]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Stop_Time[6]		DInt	
"Hanger Data".Hang- er[*].Proc- ess_Stop_Time[*]		DInt	
"Hanger Data".Hang- er[*].Proses		Int	
"Hanger Data".Hang- er[*].Setpoint[*]		Time	
"Hanger Data".Hang- er[*].Start_ToD		Time_Of_Day	
"Hanger Data".Hang- er[*].Stop_ToD		Time_Of_Day	
"Hanger Data".Hang- er[*].Time_Ready		Bool	

Totally Integrated
<b>Automation Portal</b>

#### PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Hanger

#### Routing Hanger [FC1]

Routing Han	ger Properties				
General					
Name	Routing Hanger	Number	1	Туре	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			
<b>▼</b> InOut				
proses	Int			
nomor proses	Int			
<b>▼</b> Temp				
temps	Bool			
Constant				
<b>▼</b> Return				
Routing Hanger	Void			

```
0001 CASE #proses OF
0002
     1: // CBP-IP
         #"jml proses" := 5;
0003
         CASE #"nomor proses" OF
0004
0005
          0: // agar logic nomor proses berjalan (logic cek kekosongan)
0006
            #destination := 4;
0007
             #"next destination" := 4;
8000
           1: // tangki 1
0009
            #destination := 4;
             #"next destination" := 5; //penanda untuk ngecek readiness pada tang-
0010
     ki berikutnya
0011
          2: // tangki 2
0012
            #destination := 5;
             #"next destination" := 6;
0013
0014
           3: // tangki 3
            #destination := 6;
0015
0016
             #"next destination" := 5;
          4: // tangki 2
0017
0018
             #destination := 5;
0019
             #"next destination" := #homebase; //pulang
0020
           5: //pulang
             #destination := #homebase; //HARUSNYA HOMEBASE
0021
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
```

```
Totally Integrated
Automation Portal
```

```
0025
0026
         END CASE;
0027
0028
     2: // CBP-ADS
0029
         #"jml proses" := 3;
0030
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;
             #"next destination" := #homebase; //pulang
0040
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
        ;
     3: // CCC
0048
0049
         #"jml proses" := 7;
         CASE #"nomor proses" OF
0050
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;
             #"next destination" := 7;
0065
0066
           5: // tangki 4
0067
             #destination := 7;
0068
             #"next destination" := 5;
0069
           6: // tangki 2
             #destination := 5;
0070
0071
             #"next destination" := #homebase; //pulang
0072
           7: //pulang
0073
             #destination := #homebase; //HARUSNYA HOMEBASE
             #"next destination" := #homebase;
0074
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
         END CASE;
0078
0079
       4: // CAA
```

```
Totally Integrated
Automation Portal
```

```
0800
       #"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;
           #"next destination" := 5; //penanda untuk ngecek readiness pada tangki
0087
     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;
          #"next destination" := 5;
0099
0100
         6: // tangki 2
0101
         #destination := 5;
0102
           #"next destination" := #homebase; //pulang
0103
         7: //pulang
0104
           #destination := #homebase; //HARUSNYA HOMEBASE
           #"next destination" := #homebase;
0105
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;
         4: // tangki 2
0125
0126
           #destination := 5;
0127
           #"next destination" := #homebase; //pulang
0128
         5: //pulang
          #destination := #homebase; //HARUSNYA HOMEBASE
0129
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
0: // agar logic nomor proses berjalan (logic cek kekosongan)
0140
         #destination := #homebase;
0141
         #"next destination" := #homebase;
0142 1: //pulangin
       #destination := #homebase;
0143
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	Туре	Comment
#"jml proses"		Int	
#"next destination"		Int	
#"nomor proses"		Int	
#destination		Int	
#homebase		Int	
#proses		Int	

Fotally Integrated	
tion Portal	

# PLC\_1 [CPU 1212C AC/DC/Rly] / Program blocks / Hanger

# Okupansi Tangki [FB1]

kupansi Tan ieneral	<u> </u>										
lame	Okupans	si Tangki		Number	1			Туре		FB	
anguage	LAD	,		Numbering	Automatic			. 7 6 -			
nformation				rtumzemig	riacomacie						
<b>Fitle</b>		ukan occupie ap tangki	ed	Author				Comm	ent	dari se sarkan dang a ka pos cupan pos ste pancy	ntukan okupansi tiap tangki, berd posisi hanger se ambil atau lepas. step ambil (2), c cy = FALSE ep lepas (4), occu = TRUE lilihat adalah KE- AN-NYA
Family				Version	0.1			User-d ID	efined	TEITISII	11171
Name		Data type	Defa	ult value	Retain	Accessible from HMI/OF C UA/We b API	ta- ble fro m	in HMI engi-		Super- vision	Comment
▼ Input  pos h1		Int	0		Non-retain	True	<b>API</b> Tru	True	False		
<u> </u>							е				
pos h2		Int	0		Non-retain	True	l ru e	True	False		
Output											
InOut											
▼ Static  ▼ occupar  ▼ occup	псу	Array[09] of Bool			Non-retain	True	Tru e	True	False		
occu	pancy[0]		false		Non-retain	True	Tru e	True	False		
occu	pancy[1]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[2]		false		Non-retain	True	Tru e	True	False		
	pancy[3]		false		Non-retain	True	e	True	False		
	pancy[4]	Bool	false		Non-retain	True	е	True	False		
	pancy[5]		false		Non-retain	True	е	True	False		
occu	pancy[6]	Bool	false		Non-retain	True	Tru e	True	False		

Name    Data type   Default value   Retain   Accessible tate in HMI point vision	Totally Integrated Automation Portal								
occupancy[7] Bool false Non-retain True True False e Occupancy[8] Bool false Non-retain True True False e Occupancy[9] Bool false Non-retain True True False e True False e Non-retain True True True True True False E Non-retain True True True True True True True True	Name	Data type	Default value	Retain	sible from HMI/OP C UA/We	ta- ble fro m HM I/O PC UA/ We b	in HMI engi- neer- ing		Comment
occupancy[8] Bool false Non-retain True Tru True False e Occupancy[9] Bool false Non-retain True True False e Temp Constant Network 1: Step Lepas	occupancy[7]	Bool	false	Non-retain	True	Tru	True	False	
occupancy[9] Bool false Non-retain True True False  Temp Constant  Network 1: Step Lepas	occupancy[8]	Bool	false	Non-retain	True	Tru	True	False	
Temp Constant  Network 1: Step Lepas	occupancy[9]	Bool	false	Non-retain	True	Tru	True	False	
Network 1: Step Lepas	Temp					-			
	Constant								

```
Totally Integrated
   Automation Portal
                                           "Step Gerak".
"Positioning
step"
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[4]
                                                                                                                                       -(s)-
                                               Int
                                                                     Int
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[5]
                                                                     ==
Int
                                                                                                                                       -( s )-
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[6]
                                                                                                                                       -(s)-
                                                                       6
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[7]
                                                                     ==
Int
                                                                                                                                       -(s)-
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[8]
                                                                                                                                       (s)-
                                                                     Int
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                  #occupancy[3]
                                                                                                                                       (s)
                                                                     Int
                                                                 "Positioning_
DB"."current
                                                                     pos"
                                                                                                                                  #occupancy[2]
                                                                     ==
Int
                                                                                                                                       (s)—
Network 2: Step Ambil
Set kontak to FALSE when positioning step = 2 AND current pos = n
```

```
Totally Integrated
   Automation Portal
                                           "Step Gerak".
"Positioning
                                                                 "Positioning_
DB"."current
pos"
                                               step"
                                                                                                                                   #occupancy[4]
                                                                                                                                        -( R )-
                                                Int
                                                                      Int
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                   #occupancy[5]
                                                                     ==
Int
                                                                                                                                        -( R )-
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                   #occupancy[6]
                                                                                                                                        –( R )–
                                                                        6
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                   #occupancy[7]
                                                                      ==
Int
                                                                                                                                        -( R )-
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                   #occupancy[8]
                                                                                                                                        -(R)-
                                                                      Int
                                                                 "Positioning_
DB"."current
pos"
                                                                                                                                   #occupancy[3]
                                                                                                                                        -( R )-
                                                                      Int
                                                                 "Positioning_
DB"."current
                                                                      pos"
                                                                                                                                   #occupancy[2]
                                                                     ==
Int
                                                                                                                                        -( R )---
Network 4: Coba algoritma yang lebih mudah buat nentuin okupansi
ST2
```

```
Totally Integrated
  Automation Portal
                                                                                   #occupancy[2]
                              ==
Int
                                                                                      <del>(</del> )-
                             #"pos h1"
                              ==
Int
                             #"pos h2"
Network 5: Coba algoritma yang lebih mudah buat nentuin okupansi
ST1
                                                                                   #occupancy[3]
                              ==
Int
                             #"pos h1"
                              ==
Int
                             #"pos h2"
Network 6: Coba algoritma yang lebih mudah buat nentuin okupansi
ALK
                                                                                   #occupancy[4]
                              ==
Int
                                                                                      -( )—
                             #"pos h1"
                              ==
Int
                             #"pos h2"
Network 7: Coba algoritma yang lebih mudah buat nentuin okupansi
RIN
                                                                                   #occupancy[5]
                              ==
Int
                             #"pos h1"
                              ==
Int
                             #"pos h2"
```

Totally Integrated Automation Portal		
Network 8: Coba algo	oritma yang lebih mudah buat nentuin okupansi	
DEOX		
	6 #occupancy[6]   Int	
Network 9: Coba algo	oritma yang lebih mudah buat nentuin okupansi	
	7 #occupancy[7]   ==	1
Network 10: Coba alg	goritma yang lebih mudah buat nentuin okupansi	
	8 #occupancy[8]    Int	

Totally Integ Automation								
LC_1 [CF	PU 1212C	AC/D	C/Rly	] / Pr	ogram k	olocks /	Hangei	r
Hanger Blo	ock [FC2]							
Hanger Block P								
nanger Block P General	roperties							
	Hanger Block		Numbe	er	2		Туре	FC
	SCL		Numb		Automatic		1,700	, c
nformation								
Title			Autho	r			Comment	
Family			Versio	n	0.1		User-define ID	ed
Name		Data ty	pe	Defaul	t value	Comm	ient	
Input								
Output								
<b>▼</b> InOut								
<b>▼</b> FuncTag		"Hange	r"					
Timer_	_Start	Bool						
Timer_ Timer_		Bool Bool						
Timer_								
Timer_ <b>▼</b> IEC Tin	_Reset	Bool Array[0	1ER					
Timer_ <b>▼</b> IEC Tin	Reset ner Proses Timer Proses[0]	Bool Array[0 IEC_TIM	1ER					
Timer_ ▼ IEC Tin ▼ IEC	Reset ner Proses	Bool Array[0 IEC_TIN	1ER					
Timer_  ▼ IEC Tin  ▼ IEC	Reset ner Proses Timer Proses[0]	Bool Array[0 IEC_TIN IEC_TIN Time	1ER					

IEC\_TIMER

Time

Time

Bool

Bool IEC\_TIMER

Time Time

Bool

Bool

Time Time

Bool Bool

Time

Time

Bool

Bool

Time Time

Bool

Bool

IEC\_TIMER

IEC\_TIMER

IEC\_TIMER

▼ IEC Timer Proses[1]

▼ IEC Timer Proses[2]

▼ IEC Timer Proses[3]

▼ IEC Timer Proses[4]

▼ IEC Timer Proses[5]

ET

IN

Q

PT

ET

 $\mathsf{IN}$ 

Q

ET IN

PT

 $\mathsf{ET}$ 

IN

Q

PT

ΕT

IN Q

Total	ly Integ	ırated
Auto	mation	<b>Portal</b>

Name	Data type	Default value	Comment	
▼ IEC Timer Proses[6]	IEC_TIMER	Delault value	Comment	
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[09] of Time			
Timer celup[0]	Time			
Timer celup[1]	Time			
Timer celup[2]	Time			
Timer celup[3]	Time			
Timer celup[4]	Time			
Timer celup[4]	Time			
Timer celup[6]	Time			
Timer celup[7]	Time			
Timer celup[8]	Time			
Timer celup[9]	Time			
▼ Process_Start_Time	Array[09] of			
▼ Process_start_rime	Dint			
Proc-	DInt			
ess_Start_Time[0]				
Proc- ess_Start_Time[1]	DInt			
Proc-	DInt			
ess_Start_Time[2]				
Proc-	DInt			
ess_Start_Time[3]	Dist			
Proc- ess_Start_Time[4]	DInt			
Proc-	DInt			
ess_Start_Time[5]	5			
Proc-	DInt			
ess_Start_Time[6]				
Proc- ess_Start_Time[7]	DInt			
Proc-	DInt			
ess_Start_Time[8]				
Proc-	DInt			
ess_Start_Time[9]				

Total	lly Integrated	
Auto	mation Portal	

		1_		-
Name		Data type	Default value	Comment
_	Process_Stop_Time	Array[09] of DInt		
	Proc- ess_Stop_Time[0]	DInt		
	Proc-	DInt		
	ess_Stop_Time[1]	DI .		
	Proc- ess_Stop_Time[2]	DInt		
	Proc- ess_Stop_Time[3]	DInt		
	Proc- ess_Stop_Time[4]	DInt		
	Proc-	DInt		
	ess_Stop_Time[5] Proc-	DInt		
	ess_Stop_Time[6] Proc-	DInt		
	ess_Stop_Time[7]			
	Proc- ess_Stop_Time[8]	DInt		
	Proc- ess_Stop_Time[9]	DInt		
•	Setpoint	Array[09] of Time		
	Setpoint[0]	Time		
	Setpoint[1]	Time		
	Setpoint[2]	Time		
	· · · · · · · · · · · · · · · · · · ·	Time		
	Setpoint[3]	Time		
	Setpoint[4]			
	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		
		Bool		
	HMI_Finish			
	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		
<b>▼</b> 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[06] 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,
                proses := #FuncTag.Proses,
0007
8000
                "nomor proses" := #FuncTag. "Nomor Proses",
0009
                destination => #FuncTag.Destination,
0010
                "jml proses" => #FuncTag."Jml Proses",
                "next destination" => #FuncTag."Next Destination");
0011
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
```

```
Totally Integrated Automation Portal
```

```
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 #FuncTaq.Position = #FuncTaq.Homebase AND #FuncTaq.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</pre>
          AND #FuncTag.Occupancy Ready = TRUE THEN//next tank harus OK
0050
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
         IF #FuncTag."Timer celup"[#FuncTag."Nomor Proses"] + ("Time Param"."Avg
0063
     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)
```

```
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```
//Pengecekan dilakukan ketika sudah diangkat. Ambil pake step 4 supaya yang
0072
     timing jalan duluan
       IF "Positioning DB"."hanger selected" = #FuncTag."Nomor Hanger" AND "Step
0073
     Gerak"."Ambil step" = 4 AND #FuncTag.Checker Ready = FALSE
0074
         AND #FuncTag. "Finish Process" = FALSE THEN //Kalo proses kelar yaudah gau-
     sah 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
      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. Set-
     point 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
          #FuncTag.Timer Start := FALSE;
0110
0111
         END IF;
0112
         //Timer nya jalan ketika timer start true.
0113
         #FuncTag."IEC Timer Proses"[#FuncTag."Nomor Proses"].TONR(IN := #Func-
     Tag.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"[#Func-
     Tag."Nomor Proses"]); //storage
0118
     END IF;
0119 END REGION
0120
```

```
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```
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
     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
     // Supaya block nya bisa dipake lagi, ketika jml proses udah semua dan pro-
0133
     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
         #FuncTag. "Finish Process" := TRUE; //ini yang jadi marker buat popup HMI,
0135
     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
         #FuncTag.HMI Ready := FALSE; //ntar diganti supaya datanya ditarik dulu
0142
     sebelum bener2 "FINISH" di HMI nya
     #FuncTag.Checker Ready := FALSE;
0143
         #FuncTag.Sched Ready := TRUE;
0144
0145
         #FuncTag."Finish Process" := FALSE;
         #FuncTag.Timer Reset := TRUE; //untuk reset timer di bawah
0146
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
          FOR #counter := 0 TO 9 DO //Timer celup dari 0 sampe 9
0150
0151
             #FuncTag."Timer celup"[#counter] := T#OMS; //reset timer celup
0152
             #FuncTag.Process Start Time[#counter] := 0;
             #FuncTag.Process Stop Time[#counter] := 0;
0153
0154
             #FuncTag.Setpoint[#counter] := T#OMS; //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
             "Hanger Data". "Predict Crane" [#FuncTag. "Nomor Hanger"]. Start [#counter]
0159
      := 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
     //Kalau reset, rerun program tapi dengan proses 6 (proses resetting hanger)
0170
0171 IF #FuncTag.HMI Reset = TRUE THEN
        #FuncTag.Proses := 6; //routing reset
0172
        #FuncTag.HMI Ready := TRUE; //anggap ready
0173
        #FuncTag.HMI Reset := FALSE; //balikin lagi kondisi HMI reset
0174
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
     //cek apakah divert sudah selesai, melalui posisi si hanger.
0180
0181
     IF #FuncTaq.Position = #FuncTaq.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	Туре	Comment	
"Hanger Data"."Predict Crane"[*].Start[*]		DInt		
"Hanger Data"."Predict Crane"[*].Stop[*]		DInt		
"Occupancy_DB".occu- pancy[*]		Bool		
"Positioning_DB"."hanger selected"		Int		
"Step Gerak"."Ambil step"		Int		
"Step Gerak"."Lepas step"		Int		
"Time Param"."Avg Mov- ing"		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 Hang- er"		Int		
#FuncTag."Nomor Pro- ses"		Int		

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PLC_1 [CPU 1212C AC/DC/Rly] Technology objects									
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# PLC\_1 [CPU 1212C AC/DC/Rly]

# PLC tags

con	Name	Data type	Address	Address Visible in HMI en-	Accessible from	Comment
		,		gineering	HMI/OPC UA/Web API	
Ei	D Limit	Bool	%I13.3	True	True	
EI	D motor	Bool	%M11.3	True	True	
<b>1</b>	Edge Memory Kanan	Bool	%M30.1	True	True	
•	Edge Memory Kiri	Bool	%M30.0	True	True	
all .	Hard Reset DB Hanger	Bool	%M10.0	True	True	
œH	hmi_atas	Bool	%M9.2	True	True	
OII	hmi_bawah	Bool	%M9.3	True	True	
ŒĪ.	hmi_kanan	Bool	%M9.4	True	True	
ŒĪ.	hmi_kiri	Bool	%M9.5	True	True	
1	L Limit	Bool	%I13.0	True	True	
TII	L motor	Bool	%M11.0	True	True	
an e	mode_manual	Bool	%M9.0	True	True	
ŒII	mode_otoma- tis	Bool	%M9.1	True	True	
(वा)	motor_atas	Bool	%Q0.0	True	True	
ा।	motor_bawah	Bool	%Q0.1	True	True	
OH I	motor_kanan	Bool	%Q0.3	True	True	
OH I	motor_kiri	Bool	%Q0.2	True	True	
(III)	plc_ON	Bool	%Q0.4	True	True	
•	prox_crane_at as	Bool	%l12.1	True	True	
ŒĪ	prox_crane_ba wah	Bool	%I12.2	True	True	
(वा)	prox_hanger_1	Bool	%10.7	True	True	
all .	prox_hanger_2	Bool	%10.6	True	True	
all .	prox_tangki_1	Bool	%10.5	True	True	
<b>1</b>	prox_tangki_2	Bool	%10.4	True	True	
1	prox_tangki_3	Bool	%10.3	True	True	
(III	prox_tangki_4	Bool	%10.2	True	True	
OII	prox_tangki_5	Bool	%IO.1	True	True	
all .	prox_ujung_ka nan	Bool	%l12.0	True	True	
•	prox_ujung_kir i	Bool	%10.0	True	True	
1	R Limit	Bool	%I13.1	True	True	
an e	R motor	Bool	%M11.1	True	True	
ŒĪ.	Sys Error Main Tag	Bool	%M11.4	True	True	

Icon	Name	Data type	Address	Visible in HMI en- gineering	Accessible from HMI/OPC UA/Web API	Comment
<b>III</b>	Sys Error Reset	Bool	%M11.5	True	True	
-11	Tag_1	Bool	%M9.6	True	True	
-11	Tag_2	Bool	%M9.7	True	True	
<b>√III</b>	Tag_3	Bool	%M30.2	True	True	
<b>√III</b>	Tag_4	Bool	%M30.3	True	True	
<Ⅲ	Tag_5	Bool	%M30.4	True	True	
- III	U Limit	Bool	%I13.2	True	True	
-	U motor	Bool	%M11.2	True	True	

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# PLC\_1 [CPU 1212C AC/DC/Rly] / PLC tags

### Default tag table [70]

lcon	Name	Data type	Address	Visible in HMI en- gineering	Accessible from HMI/OPC UA/Web	Comment
					API	
411	D Limit	Bool	%I13.3	True	True	
<b>1</b>	D motor	Bool	%M11.3	True	True	
1	Edge Memory Kanan	Bool	%M30.1	True	True	
<b>1</b>	Edge Memory Kiri	Bool	%M30.0	True	True	
<b>4</b>	Hard Reset DB Hanger	Bool	%M10.0	True	True	
4III	hmi_atas	Bool	%M9.2	True	True	
<b>4II</b>	hmi_bawah	Bool	%M9.3	True	True	
all .	hmi_kanan	Bool	%M9.4	True	True	
dii	hmi_kiri	Bool	%M9.5	True	True	
1	L Limit	Bool	%I13.0	True	True	
<b>1</b>	L motor	Bool	%M11.0	True	True	
<b>all</b>	mode_manual	Bool	%M9.0	True	True	
TI I	mode_otoma- tis	Bool	%M9.1	True	True	
(III)	motor_atas	Bool	%Q0.0	True	True	
्वा <u>।</u>	motor_bawah	Bool	%Q0.1	True	True	
(III)	motor_kanan	Bool	%Q0.3	True	True	
(III)	motor_kiri	Bool	%Q0.2	True	True	
(III)	plc_ON	Bool	%Q0.4	True	True	
<b>1</b>	prox_crane_at as	Bool	%l12.1	True	True	
<b>4</b>	prox_crane_ba wah	Bool	%l12.2	True	True	
(III)	prox_hanger_1	Bool	%10.7	True	True	
<b>(III</b>	prox_hanger_2	Bool	%10.6	True	True	
an a	prox_tangki_1	Bool	%10.5	True	True	
<b>1</b>	prox_tangki_2	Bool	%10.4	True	True	
<b>1</b>	prox_tangki_3	Bool	%10.3	True	True	
an e	prox_tangki_4	Bool	%10.2	True	True	
THE STATE OF THE S	prox_tangki_5	Bool	%10.1	True	True	
Œ	prox_ujung_ka nan	Bool	%I12.0	True	True	
<b>1</b>	prox_ujung_kir i	Bool	%10.0	True	True	
<b>II</b>	R Limit	Bool	%I13.1	True	True	
dil .	R motor	Bool	%M11.1	True	True	
<b>(III</b>	Sys Error Main Tag	Bool	%M11.4	True	True	

Icon	Name	Data type	Address	Visible in HMI en- gineering	Accessible from HMI/OPC UA/Web API	Comment
<b>III</b>	Sys Error Reset	Bool	%M11.5	True	True	
-11	Tag_1	Bool	%M9.6	True	True	
-11	Tag_2	Bool	%M9.7	True	True	
<b>√III</b>	Tag_3	Bool	%M30.2	True	True	
<Ⅲ	Tag_4	Bool	%M30.3	True	True	
<Ⅲ	Tag_5	Bool	%M30.4	True	True	
- III	U Limit	Bool	%I13.2	True	True	
-	U motor	Bool	%M11.2	True	True	

# PLC\_1 [CPU 1212C AC/DC/Rly] / PLC data types

langer Propertie	es							
General								
Name H	anger	Number	1			Туре		UDT
anguage		Numbering						
nformation								
Title		Author				Comme		
amily		Version				User-de ID	fined	
Name	Data ty	pe Default valu	ble fr	m HM I/O PC UA/ We b	in HMI engi- neer- ing		Comm	ent
Timer_Start	Bool	false	True	Tru e	True	False		
Timer_Reset	Bool	false	True		True	False		
▼ IEC Timer Pros	ses Array[0. IEC_TIM		True	Tru e	True	False		
▼ IEC Timer F ses[0]			True	е	True	False		
PT	Time	T#0ms	True	е	True	False		
ET	Time	T#0ms	True	е	True	False		
IN	Bool	false	True	е	True	False		
Q	Bool	false	True	е	True	False		
▼ IEC Timer F ses[1]			True	е	True	False		
PT	Time	T#0ms	True	е	True	False		
ET	Time	T#0ms	True	е	True True	False False		
IN Q	Bool	false false	True True	е	True	False		
▼ IEC Timer F			True	е	True	False		
ses[2]	Time	T#0ms	True	е	True	False		
ET	Time	T#0ms	True	e	True	False		
IN	Bool	false	True	е	True	False		

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Name	Data type	Default value	ble from HMI/OPC	ta- ble fro	engi- neer- ing		Comment
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro- ses[3]	IEC_TIMER		True		True	False	
PT	Time	T#0ms	True		True	False	
ET	Time	T#0ms	True		True	False	
IN	Bool	false	True	_	True	False	
Q	Bool	false	True		True	False	
▼ IEC Timer Pro- ses[4]	IEC_TIMER		True		True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True		True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True		True	False	
▼ IEC Timer Pro- ses[5]	IEC_TIMER		True	_	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro- ses[6]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro- ses[7]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
				<u> </u>	_	<del> </del>	

false

Bool

IN

True

Tru True

е

False

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ame	Data type	Default value	Accessible from HMI/OPC UA/Web API	ta- ble fro	in HMI engi- neer- ing		Comment
Q	Bool	false	True		True	False	
▼ IEC Timer Pro- ses[8]	IEC_TIMER		True		True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True		True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ IEC Timer Pro- ses[9]	IEC_TIMER		True	Tru e	True	False	
PT	Time	T#0ms	True	Tru e	True	False	
ET	Time	T#0ms	True	Fals e	True	False	
IN	Bool	false	True	Tru e	True	False	
Q	Bool	false	True	Fals e	True	False	
▼ Timer celup	Array[09] of Time		True	Tru e	True	False	
Timer celup[0]	Time	T#0ms	True	Tru e	True	False	
Timer celup[1]	Time	T#0ms	True	е	True	False	
Timer celup[2]	Time	T#0ms	True	e	True	False	
Timer celup[3]	Time	T#0ms	True	e	True	False	
Timer celup[4]	Time	T#0ms	True	е	True	False	
Timer celup[5]	Time	T#0ms	True	e	True	False	
Timer celup[6]	Time	T#0ms	True	e	True	False	
Timer celup[7]	Time	T#0ms	True	е	True	False	
Timer celup[8]	Time	T#0ms	True	e	True	False	
Timer celup[9]	Time	T#0ms	True	e	True	False	
▼ Process_Start_Time	Array[09] of Dint	0000000	True	е	True	False	
Proc- ess_Start_Time[0]	DInt	9999999	True	e	True	False	
Proc-	DInt	0	True	Tru	True	False	

ess\_Start\_Time[1]

Totally Integrated Automation Portal								
Name	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro	engi- neer- ing		Comn	nent
Proc- ess_Start_Time[2]	DInt	0	True	_	True	False		
Proc- ess_Start_Time[3]	DInt	0	True		True	False		
Proc- ess_Start_Time[4]	DInt	0	True	Tru e	True	False		
Proc- ess_Start_Time[5]	DInt	0	True	Tru e	True	False		
Proc- ess_Start_Time[6]	DInt	0	True	Tru e	True	False		
Proc- ess_Start_Time[7]	DInt	0	True	Tru e	True	False		
Proc- ess_Start_Time[8]	DInt	0	True	Tru e	True	False		
Proc- ess_Start_Time[9]	DInt	0	True	e	True	False		
▼ Process_Stop_Time	Array[09] of DInt		True	е	True	False		
Proc- ess_Stop_Time[0]	DInt	9999999	True	e	True	False		
Proc- ess_Stop_Time[1]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[2]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[3]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[4]	Dint	0	True	е	True	False False		
Proc- ess_Stop_Time[5]	Dint	0	True	е	True	False		
Proc- ess_Stop_Time[6] Proc-	DInt	0	True	е	True True	False		
ess_Stop_Time[7] Proc-	Dint	0	True True	е	True	False		
ess_Stop_Time[8] Proc-	Dint	0		е	True	False		
ess_Stop_Time[9]	Array[09] of	U	True	е		False		
✓ Setpoint  Setpoint[0]	Time Time	T#0ms	True True	e	True True	False		
Setpoint[0] Setpoint[1]	Time	T#0ms	True	е	True	False		
Setpoint[2]	Time	T#0ms	True	e	True	False		
Setpoint[3]	Time	T#0ms	True	е	True	False		

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

e

me	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro	in HMI engi- neer- ing	Set- point	Comment
Sched_Ready	Bool	false	True		True	False	
Finish Process	Bool	false	True		True	False	
Divert	Bool	false	True		True	False	
Nomor Hanger	Int	0	True		True	False	
CNT_HMI_Ready	Int	0	True		True	False	

Totally In Automati									
PLC_1 [	CPU 1	212C AC/D	C/Rly] / PL	.C data t	ype	es			
NP Read									
NP Ready Pr	operties								
General									
Name	NP Read	dy	Number	2			Туре		UDT
Language			Numbering						
Information									
Title			Author				Comme	nt	
Family			Version				User-de	fined	
							ID		
Name		Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro m HM I/O PC UA/ We b API	in HMI engi- neer- ing	point	Comm	ent
▼ NP Ready		Array[06] of Bool		True	e	True	False		
NP Rea		Bool	false	True	е	True	False		
NP Rea	ady[1]	Bool	false	True	Tru e	True	False		
NP Rea	ady[2]	Bool	false	True	Tru	True	False		

Tru True

Tru True

Tru True

Tru True

e

e

True

True

True

True

False

False

False

False

NP Ready[3]

NP Ready[4]

NP Ready[5]

NP Ready[6]

Bool

Bool

Bool

Bool

false

false

false

false

#### PLC\_1 [CPU 1212C AC/DC/Rly] / PLC data types

false

false

false

false

false

false

false

false

false

0

0

0

C\_Ready[2]

C\_Ready[3]

C\_Ready[4]

C\_Ready[5]

C\_Ready[6]

C\_Ready[7]

C\_Ready[8]

C\_Ready[9]

C\_Ready[10]

Start[0]

Start[1]

Start[2]

Start[3]

**▼** Start

Bool

Bool

Bool

Bool

Bool

Bool

Bool

Bool

Bool

DInt

DInt

DInt

DInt

DInt

Array[0..10] of

Predict Crane	e Propertie	s								
General	·									
Name	Predict C	rane	Number	4				Туре		UDT
Language			Numbering							
Information										
Title			Author					Comme	ent	
Family			Version					User-de ID	efined	
Name		Data type	Default value		Accessi- ble from HMI/OPC UA/Web API	ta- ble fro m HM I/O PC UA/ We b API	in HMI engi- neer- ing	point	Commo	ent
C_Ready		Array[010] of Bool			True	Tru e	True	False		
C_Read	dy[0]	Bool	false		True	Tru e	True	False		
C_Read	dy[1]	Bool	false		True	Tru e	True	False		

True

Tru True

e

e

e

e

e

e

e

e

e

False

Totally	Integ	rated
Automa	ation	Portal

ime	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro			Comment
Start[4]	DInt	0	True		True	False	
Start[5]	DInt	0	True	_	True	False	
Start[6]	DInt	0	True	Tru e	True	False	
Start[7]	DInt	0	True	Tru e	True	False	
Start[8]	DInt	0	True	Tru e	True	False	
Start[9]	DInt	0	True	Tru e	True	False	
Start[10]	DInt	0	True	Tru e	True	False	
Stop	Array[010] of DInt		True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[0]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[1]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[2]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[3]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[4]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[5]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[6]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[7]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[8]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[9]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE
Stop[10]	DInt	0	True	Tru e	True	False	sampe 10 untuk menjaga logi cek CRANE

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly] / PLC data types	

# Activity

rties				
Activity	Number	3	Туре	UDT
	Numbering			
	Author		Comment	
	Version		User-defined ID	
		Activity Number Numbering Author	Activity Number 3 Numbering Author	Activity Number 3 Type Numbering Comment Version User-defined

Name	Data type	Default value	Accessible from HMI/OPC UA/Web API	ta- ble fro			Comment
setpoint	Time	T#0ms	True	Tru e	True	False	
resource	Int	0	True	Tru e	True	False	
starttime	DInt	0	True	Tru e	True	False	
stoptime	DInt	0	True	Tru e	True	False	
starttime TOD	Time_Of_Day	TOD#00:00:00	True	Tru e	True	False	
stoptime TOD	Time_Of_Day	TOD#00:00:00	True	е	True	False	
run	Bool	false	True	e	True	False	
from	Int	0	True	е	True	False	
to	Int	0	True	Tru e	True	False	

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly] / PLC data types	
System data types	<b>;</b>	
This folder is empty.		

Totally Integrated Automation Portal				
PLC_1 [CPU 121	2C AC/DC/Rly	/] / Watch and f	orce tables	
Force table				
Name Ac	ddress	Display format	Force value	Comment

Totally Integrated Automation Portal							
PLC_1 [CPU 12	PLC_1 [CPU 1212C AC/DC/Rly] / Watch and force tables						
Timing							
Name	Address	Display format	Modify value	Comment			
"Hanger Data".Hang- er[1]."Timer celup"[1]		Time					
er[1]."Timer celup"[1]							
	i						

# 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 Destin	nation			
"Positioning_DB"."cur- rent pos"		DEC+/-		
"Positioning_DB".desti- nation		DEC+/-		

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly]	
Traces		
Name		

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly] / Traces	
Measurements		
This folder is empty.		

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly] / Traces	
Combined measu	rements	
Name		
	Г	

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly] / OPC UA communication	
Server interfaces		
This folder is empty.		

Totally Integrated Automation Portal		
PLC_1 [CPU 121	2C AC/DC/Rly]	
PLC alarm text list		
This folder is empty.		

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tomation Portal	
	1

# PLC\_1 [CPU 1212C AC/DC/Rly] / Local modules

### PLC\_1 [CPU 1212C AC/DC/Rly]

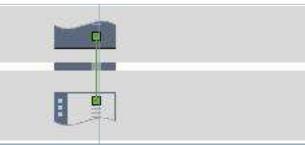
Name	PLC_1	Author	Asus
Comment	. 20	Slot	1
Rack	0	3.00	
General\Catalog inform	-		
Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK SOURCE, DQ6 x relay and AI2 on board; 4 high-speed counters (exparable with digital signal board) and 4
			pulse outputs on board; signal board expands on-board I/O; up to 3 commication 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 U/Server DA
	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 informa- tion	
General\Checksums			
Text lists	FA 70 E8 75 1D 5A 8E 29	Software	D6 C7 7F F0 8A B3 C0 76
PROFINET interface [X	1]\General		
Name	PROFINET interface_1	Author	Asus
Comment			-
PROFINET interface [X	1]\General\Project information		
Name	DI 8/DQ 6_1	Comment	
Name	AI 2_1	Comment	
PROFINET interface [X	1]\Ethernet addresses\Interface netw	orked with	
Subnet:	PN/IE_1		
PROFINET interface [X	1]\Ethernet addresses\IP protocol		
P configuration	Set IP address in the project	IP address:	192.168.0.1
Subnet mask:	255.255.255.0	Use router	False
PROFINET interface [X	1]\Ethernet addresses\PROFINET		
PROFINET device	False	Generate PROFINET	True
name is set directly at the device		device name auto- matically	
PROFINET device	plc_1	Converted name:	plcxb1d0ed
name:			
Device number:	0		
	1]\Time synchronization		
Enable time synchro- nization via NTP serv- er	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 2 Server 4	0.0.0.0
Server 3 Update interval	10sec	Jeivei 4	0.0.0.0
-	No synchronization		
modules of the de- vice.	avo synchronization		

Totally Integrated Automation Portal			
PROFINET interface [X	1]\Digital inputs\Channel0		
Channel address	10.0	Input filters	6.4 millisec
Enable pulse satch	0		

PROFINET interface [X	1]\Digital inputs\Channel0		
Channel address	10.0	Input filters	6.4 millisec
Enable pulse catch	0	_ <b>-</b>	-
-	1]\Digital inputs\Channel0\		
Enable rising edge de-		RidPrefixRisingEdgeE-	49152
tection		vent	77132
Event name:	0	Hardware interrupt:	0
	<u> </u>	naruware interrupt:	U
Rising edge0	Rising edge0		
	1]\Digital inputs\Channel0\		
Enable falling edge	0	RidPrefixFallingEdg-	49280
detection		eEvent	
Event name:	0	Hardware interrupt:	0
	Falling edge0		
PROFINET interface [X	1]\Digital inputs\Channel1		
Channel address	10.1	Input filters	6.4 millisec
Enable pulse catch	0	_ •	-
	1]\Digital inputs\Channel1\		
		Did Due fiv Die in a Eda e E	40152
Enable rising edge de- tection		RidPrefixRisingEdgeE- vent	20164
	0		
Event name:	0	Hardware interrupt:	0
Rising edge1	Rising edge1		
PROFINET interface [X	1]\Digital inputs\Channel1\		
Enable falling edge	0	RidPrefixFallingEdg-	49281
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge1	Falling edge1		
	1]\Digital inputs\Channel2		
Channel address	10.2	Input filters	6.4 millisec
Enable pulse catch	0		
	1]\Digital inputs\Channel2\		
		DidDucfivDicio aFdacF	40154
Enable rising edge de- tection	U	RidPrefixRisingEdgeE-	49154
		vent	
Event name:	0	Hardware interrupt:	0
	Rising edge2		
	1]\Digital inputs\Channel2\		
Enable falling edge	0	RidPrefixFallingEdg-	49282
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge2	Falling edge2		
PROFINET interface [X	1]\Digital inputs\Channel3		
Channel address	10.3	Input filters	6.4 millisec
Enable pulse catch	0		-
-	1]\Digital inputs\Channel3\		
Enable rising edge de-		Did Drofiv Dising Edge	40155
tection		RidPrefixRisingEdgeE-	CC   CT
	0	vent	
Event name:	0	Hardware interrupt:	0
Rising edge3	Rising edge3		
	1]\Digital inputs\Channel3\		
Enable falling edge	0	RidPrefixFallingEdg-	49283
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge3	Falling edge3		
	1]\Digital inputs\Channel4		
Channel address	10.4	Input filters	6.4 millisec
Enable pulse catch	0		
	-		
	1]\Digital inputs\Channel4\	Distriction of the Distriction o	40156
Enable rising edge de-	U	RidPrefixRisingEdgeE-	95150
tection		vent	
Event name:	0	Hardware interrupt:	0
	1		<u> </u>
İ			Ī

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Automation Porta	al		
Rising edge4	Rising edge4		<u> </u>
	[X1]\Digital inputs\Channel4\		
Enable falling edge detection	0	RidPrefixFallingEdg-	49284
	0	eEvent	0
Event name: Falling edge4	Falling edge4	Hardware interrupt:	O
	[X1]\Digital inputs\Channel5		
Channel address	10.5	Input filters	6.4 millisec
Enable pulse catch	0	input inters	0.4 minisec
<b>.</b>	[X1]\Digital inputs\Channel5\		
Enable rising edge d		RidPrefixRisingEdgeE-	49157
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge5	Rising edge5	•	
	[X1]\Digital inputs\Channel5\		
Enable falling edge	0	RidPrefixFallingEdg-	49285
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge5	Falling edge5		
PROFINET interface	[X1]\Digital inputs\Channel6		
Channel address	10.6	Input filters	6.4 millisec
Enable pulse catch	0		
PROFINET interface	[X1]\Digital inputs\Channel6\		
Enable rising edge d	<b>e</b> - 0	RidPrefixRisingEdgeE-	49158
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge6	Rising edge6		
	[X1]\Digital inputs\Channel6\		
Enable falling edge	0	RidPrefixFallingEdg-	49286
detection		eEvent	
Event name:	0	Hardware interrupt:	0
Falling edge6	Falling edge6		
	[X1]\Digital inputs\Channel7		\
Channel address	10.7	Input filters	6.4 millisec
Enable pulse catch	0		
	[X1]\Digital inputs\Channel7\		1.0.1
Enable rising edge d	<b>e</b> -0	RidPrefixRisingEdgeE-	49159
tection Event name:	0	vent	0
	<u> </u>	Hardware interrupt:	0
Rising edge7	Rising edge7		
	[X1]\Digital inputs\Channel7\	DidDrofix Calling a Calar	40297
Enable falling edge detection	U	RidPrefixFallingEdg- eEvent	49287
Event name:	0	Hardware interrupt:	0
Falling edge7	Falling edge7	nardware interrupt.	O
	[X1]\Analog inputs\Noise reductio	n	
Integration time	50 Hz (20 ms)		
	[X1]\Analog inputs\Channel0		
Channel address	IW64	Measurement type	Voltage
Voltage range	010 V	Smoothing	Weak (4 cycles)
- ortuge runge	J 10 V	Enable overflow diag-	
		nostics	ľ
PROFINET interface I	[X1]\Analog inputs\Channel1		
Channel address	IW66	Measurement type	Voltage
Voltage range	010 V	Smoothing	Weak (4 cycles)
		Enable overflow diag-	
		nostics	
PROFINET interface	[X1]\Digital outputs		

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Automation Portal			
	(1]\Digital outputs\Channel0		_
Channel address	Q0.0	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel1		
Channel address	Q0.1	Substitute a value of	0
		1 on a change from RUN to STOP.	
PROFINET interface [X	(1]\Digital outputs\Channel2		_
Channel address	Q0.2	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel3		
Channel address	Q0.3	Substitute a value of 1 on a change from RUN to STOP.	0
	(1]\Digital outputs\Channel4		
Channel address	Q0.4	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Digital outputs\Channel5		
Channel address	Q0.5	Substitute a value of 1 on a change from RUN to STOP.	0
PROFINET interface [X	(1]\Operating mode		
IO controller	True	IO system	
Device number	0	IO device	False
PROFINET interface [X	(1]\I/O addresses\Input addresses		_
Start address	0.0	End address	0.7
Organization block	0	Process image	0
	(1]\I/O addresses\Input addresses		_
Start address	64	End address	67
Organization block	0	Process image	0
	(1]\I/O addresses\Output addresses		1
Start address	0.0	End address	0.7
Organization block	0	Process image	0
	(1]\Advanced options\Interface option		E. L.
Support device re- placement without exchangeable medi- um	True	Permit overwriting of device names of all assigned IO devices	False
Use IEC V2.2 LLDP mode	False	Keep-Alive connection monitoring:	30s
	(1]\Advanced options\Real time sett	ings\IO communication	
Send clock:	1.000ms		
PROFINET interface [X	(1]\Advanced options\Real time sett		
Calculated bandwidth for cyclic IO data:		Calculated bandwidth for cyclic IO data:	0.000%
	(1]\Advanced options\Port [X1 P1]\G		
Name	Port_1	Author	Asus
Comment	(1) Advanced aution ID at IVA DAIR	out interes and estimate	mauh.
PROFINET INTERFACE (X Local port:	(1]\Advanced options\Port [X1 P1]\Port_1\PROFINET interface_1 [X1]\Port_1 [X1 P1]	Medium:	Copper
Cable name:			
	1		



PROFINET interface [X	1]\Advanced options\Port [X1 P1]\Port	: interconnection\Partne	er port:
	Monitoring of partner port is not possi-	Partner port:	Any partner
	ble		
PROFINET interface [X	1]\Advanced options\Port [X1 P1]\Port	options\Activate	
Activate this port for	True		
use			
	1]\Advanced options\Port [X1 P1]\Port	options\Connection	
	Automatic	Monitor	False
duplex:			
,	True		
tion		'' \D     '	
	1]\Advanced options\Port [X1 P1]\Port		le i
End of detection of accessible devices	False	End of topology dis-	False
	False	covery	
End of the sync do- main	raise		
PROFINET interface [X	1 NWob som/or assess		
Enable Web server for	-	The Web server mint	
Enable Web server for the IP address of this	raise	The Web server must also be activated in	
interface		the properties of the	
interrace		PLC.	
High speed counters (	HSC)\HSC1\General\Enable		
	0	Enable this high	0
speed counter		speed counter	
•	0	Enable this high	0
speed counter		speed counter	
Enable this high	0	Enable this high	0
speed counter		speed counter	
High speed counters (I	HSC)\HSC1\General\Project informatio	n	
Name	HSC_1	Comment	
Name	HSC_2	Comment	
Name	HSC_3	Comment	
Name	HSC_4	Comment	
Name	HSC_5	Comment	
Name	HSC 6	Comment	
	HSC)\HSC1\I/O addresses\Input addres	ses	
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		0
Process image Process image	0		0
	/PWM)\PTO1/PWM1\General\Enable	r rocess illiage	
Enable this pulse gen-		Enable this pulse gen-	0
	IU.	iichable tills bulse den-	IU

T a & a      .						
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Pulse generators (PTC	D/PWM)\PTO1/PWM	/1\General\Project in	formation			
Name	Pulse_1	•	Comment			
Name	Pulse_2		Comment			
Pulse generators (PTC		/11\I/O addresses\Out	put 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		ode before POWER	Comparison preset		even if mismatch	
ON	OFF		actual configuration			
Configuration time	60000ms		OBs should be inter	·- 1		
Svala			ruptible			
Cycle Cycle manitaring time	1 F O m s					
Cycle monitoring time			Naiminassuma assalla dina	- 1		
Enable minimum cy- cle time for cyclic OBs			Minimum cycle tim	e 1ms		
Communication load						
Cycle load due to	20%					
cycle load due to communication	20%					
System and clock me	mory\System mem	nory hits				
Enable the use of sys-		iory bits	Address of system	1		
tem memory byte	J		memory byte (MBx)	1.		
First cycle			Diagnostic status			
,			changed			
Always 1 (high)			Always 0 (low)			
System and clock me	mory\Clock memo	ry bits				
Enable the use of	0		Address of clock	0		
clock memory byte			memory byte (MBx)	)		
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	False		Permit access only	True		
on all modules of this	<b>;</b>		with HTTPS			
device						
Web server\Automati						
Enable automatic up-	Irue		Update interval	Os		
date	<b>.</b>					
Web server\User man 	agement					
User name			User rights			
Everybody						
Web server\User-defi						
Application name H	ITML source path	Default HTML page	Files with dynamic content	Web DB numb	i. The second se	
		index.htm	.htm;.html	333	334	
Web server\Overview	of interfere	index.nun		333	334	
	or interraces					
Device		Interface	1	Enabled web s	server access	
PLC_1		PROFINET interface_	l	False		
Jser interface langua						
Assign project langua			User interface langu	uages		
English (United States)			German			
English (United States)			English			
English (United States)			French			
English (United States)			Spanish			
			Italian			
English (United States) English (United States)			Chinese (simplified)			

UTC +07:00) Bangkok, Having time  ving time\Start of daylight irst  anuary ving time\Start of stand- irst anuary	ght saving tir	saving time	nd daylight	60mins Sunday	
ving time ving time\Start of daylig irst anuary ving time\Start of stand irst anuary	ght saving tir	standard a saving time ne	nd daylight		
ving time\Start of daylig irst anuary ving time\Start of stand irst anuary		standard a saving time ne	nd daylight		
ving time\Start of daylig irst anuary ving time\Start of stand irst anuary		standard a saving time ne	nd daylight		
irst anuary ving time\Start of stand irst anuary		ne		Sunday	
anuary ving time\Start of stand irst anuary	ard time	at		Sunday	
ving time\Start of stand irst anuary	ard time	at			
ving time\Start of stand irst anuary	ard time			Midnight	
anuary					
				Sunday	
o protection		at		Midnight	
lo protection					
o protection					
nnection mechanisms					
alse					
curity event					
rue		Length of	n interval	20	
ide		Length or c	an interval		
econds					
ternal load memory					
onfiguration control for					
omiguration control for	central conf	figuration			
	central conf	figuration			
		ources - Re-	Station res	ources - Dy- nfigured	Module resources - PLC_1 [CPU 1212C AC/DC/Rly] - Configure
Station resources - Reserved - Maximum	Station resc served - Col	ources - Re-	namic - Co	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68
Station resources - Reserved - Maximum	Station reso served - Cor	ources - Re-	namic - Co	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure
Station resources - Re- served - Maximum Maximum	Station reso served - Con 62 Configured	ources - Re-	namic - Co  6  Configured -	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured
Station resources - Reserved - Maximum  Maximum  4	Station reso served - Con 62 Configured -	ources - Re-	namic - Co  6  Configured  - 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured -
Station resources - Reserved - Maximum  Maximum  4  12	Station reso served - Col 62 Configured - 1	ources - Re-	namic - Co  6  Configured  - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured -	ources - Re-	namic - Co  6  Configured - 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured -
Station resources - Reserved - Maximum  Maximum  4  12	Station reso served - Col 62 Configured - 1	ources - Re-	namic - Co  6  Configured - 0 0 -	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured - 1 0	ources - Re-	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re-	namic - Co  6  Configured - 0 0 - 0 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
Station resources - Reserved - Maximum  Maximum  4  12  8  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0
Station resources - Reserved - Maximum  Maximum  4  12  8  8  30  -  Overview of addresses\	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
Station resources - Reserved - Maximum  Maximum  4  12  8  8	Station reso served - Con 62 Configured - 1 0 0	ources - Re- nfigured	namic - Co  6  Configured - 0 0 - 0 0 0	nfigured	PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68 Configured - 1 0 0
r r		econds ternal load memory	econds ternal load memory	Length of an interval econds ternal load memory	Length of an interval 20 econds ternal load memory

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Type	Addr. from	Addr. to	Module	PIP	Device name	Device number	Size	Master / IO system	Rack	Slot
	0	0	DI 8/DQ 6_1	Automatic update		-	1 Bytes	-	0	11
)	0	0	DI 8/DQ 6_1	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	1 Bytes	-	0	11
	64	67	AI 2_1	Automatic update		-	4 Bytes	-	0	1 2
	1000	1003	HSC_1	Automatic update		-	4 Bytes	-	0	1 16
	1004	1007	HSC_2	Automatic update		-	4 Bytes	-	0	1 17
	1008	1011	HSC_3	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	4 Bytes	-	0	1 18
	1012	1015	HSC_4	Automatic update		-	4 Bytes	-	0	1 19
	1016	1019	HSC_5	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	_	4 Bytes	-	0	1 20
	1020	1023	HSC_6	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	_	4 Bytes	-	0	1 21
0	1000	1001	Pulse_1	Automatic update		-	2 Bytes	-	0	1 32
0	1002	1003	Pulse_2	Automatic update		-	2 Bytes	-	0	1 33
0	1004	1005	Pulse_3	Automatic update		-	2 Bytes	-	0	1 34
0	1006	1007	Pulse_4	Automatic update		-	2 Bytes	-	0	1 35
	12	13	DI 16x24VDC /DQ 16xRe- lay_1	Automatic update		_	2 Bytes	-	0	2
0	12	13	DI 16x24VDC /DQ	Automatic update	PLC_1 [CPU 1212C AC/DC/Rly]	-	2 Bytes	-	0	2

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

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# PLC\_1 [CPU 1212C AC/DC/Rly] / Local modules

### DI 16x24VDC/DQ 16xRelay\_1

DI 16x24VDC/DQ 16xR	elay_1		
General\Project inforn	nation		
Name	DI 16x24VDC/DQ 16xRelay_1	Author	Asus
Comment		Slot	2
General\Catalog inform	mation		
Short designation	SM 1223 DI16/DQ16 x relay	Description	Digital input/output module DI16 x 24VDC SINK/SOURCE and DQ16 x re- lay; configurable input delay; plug-in terminal blocks
Article number	6ES7 223-1PL32-0XB0	Firmware version	V2.0
DI 16/DQ 16\Project in	formation		
Name	DI 16x24VDC/DQ 16xRelay_1	Comment	
DI 16/DQ 16\Digital inp	puts\Input filters		
l12.0 - l12.3	6.40ms	l12.4 - l12.7	6.40ms
l13.0 - l13.3	6.40ms	l13.4 - l13.7	6.40ms
DI 16/DQ 16\Digital inp	puts\Channel0	"	
Channel address	l12.0		
DI 16/DQ 16\Digital inp	puts\Channel1		
Channel address	l12.1		
DI 16/DQ 16\Digital inp	puts\Channel2		
Channel address	112.2		
DI 16/DQ 16\Digital inp	puts\Channel3		
Channel address	l12.3		
DI 16/DQ 16\Digital inp	puts\Channel4		
Channel address	112.4		
DI 16/DQ 16\Digital inp	puts\Channel5		
Channel address	l12.5		
DI 16/DQ 16\Digital in	puts\Channel6		
Channel address	112.6		
DI 16/DQ 16\Digital in	puts\Channel7		
Channel address	112.7		
DI 16/DQ 16\Digital in	puts\Channel8		
Channel address	113.0		
DI 16/DQ 16\Digital in	I.		
Channel address	113.1		
DI 16/DQ 16\Digital inp			
Channel address	113.2		
DI 16/DQ 16\Digital in			
Channel address	113.3		
DI 16/DQ 16\Digital in			
Channel address	113.4		
DI 16/DQ 16\Digital in	1		
Channel address	113.5		
DI 16/DQ 16\Digital in			
Channel address	113.6		
DI 16/DQ 16\Digital in	1		
Channel address	113.7		
DI 16/DQ 16\Digital ou	11.1.1.1		
Reaction to CPU STOP			
DI 16/DQ 16\Digital ou			
Channel address	Q12.0	Substitute a value of 1 on a change from RUN to STOP.	0

DI 16/DQ 16\Digital	outnuts\Channel1		
Channel address	Q12.1	Substitute a value of 1 on a change from RUN to STOP.	0
DI 16/DQ 16\Digital			
Channel address	Q12.2	Substitute a value of 1 on a change from RUN to STOP.	0
OI 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			-
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 (		"	
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			
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			
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	<u>'</u>	
Channel address	Q13.7	Substitute a value of 1 on a change from RUN to STOP.	0

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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				
Start address 12.	.0	End address	13.7	
Organization block 0		Process image	0	
				Ī