|--|

PLC_1 [CPU 1212C AC/DC/Rly]

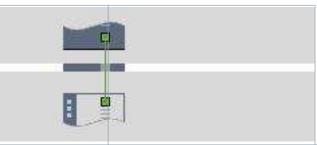
•-	 		
PLC_1			
General\Project inform	nation		
Name	PLC_1	Author	Asus
Comment		Slot	1
Rack	0		
General\Catalog inforr	nation		
Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK/ SOURCE, DQ6 x relay and AI2 on board; 4 high-speed counters (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	11	
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	AD FA 25 9D 3D 99 07 41
PROFINET interface [X	, <u>-</u>	II -	
Name	PROFINET interface_1	Author	Asus
Comment			
	1]\General\Project information		
Name	DI 8/DQ 6_1	Comment	
Name	Al 2_1 1]\Ethernet addresses\Interface netw	Comment	
Subnet:	PN/IE_1	orked 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 route.	i disc
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		
	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		6.4.90
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	e -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	e -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	e- 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)	"	
	[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	, -	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	~

T.A. II. 1.A A I					
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Automation Portai					
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		
Jser interface langua Assign project langua English (United States)					
User interface langua Assign project langua English (United States) English (United States)			English		
User interface langua Assign project langua English (United States) English (United States) English (United States)			English French		
User interface langua Assign project langua English (United States) English (United States)			English		

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ving time\Start of stand				Sunday	
		at		Midnight	
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anuary		at		Midnight	
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 - Re- served - 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 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 Propert	ties				
General					
Name	Main	Number	1	Type	OB
Language	LAD	Numbering	Automatic		
Information					
Title	"Main Program Sweep (Cycle)"	Author		Comment	
Family		Version	0.1	User-defined ID	

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

Network 2:

Pemilihan menggunakan selector switch manual atau menggunakan PLC

```
%M11.4

%M9.0
"mode_manual"

Tag"

"plc_ON"

WM9.1
"mode_otomatis"

"mode_otomatis"
```

Network 3:

Pengaturan mode manual

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

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Network 4:	
Mode otomatis	

ı

%M9.1 "mode_otomatis"	%M11.4 "Sys Error Main Tag"	%DB1 "Positioning_DB" %FB2 "Positioning" EN ENO	
"mode_otomatis"	"Sys Error Main Tag"	"Positioning_DB" %FB2 "Positioning" EN ENO	
		1 current pos destination 0 hanger from 0 selected Repositioning 1DLE 1false	
	"Hanger Dai Hanger Posit "Hanger Dai Hanger Posit	%DB9 "Occupancy_DB" %FB1 "Okupansi Tangki" EN ENO ta". 1]. ion pos h1 ta". 2].	
	"Hanger Dai Hanger "Hanger Dai Hanger	FuncTag %FC2 "Hanger Block" EN ENO	
<u>>1</u>	"Positioning_ DB".destination "Positioning_ DB".destination "Positioning	%FC4 "Gerak" ENO	2
	DB".from — from "Step Gerak".	%FC6 tioning Crane" ENO	3
"Motor O			

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Network 4: (2.1 / 2.1)	1.1 (Page2 - 3)	
%FC "Motor O EN	1.1 (Page 2 - 3) 12 ENO 1.1 (Page 2 - 3)	

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Network 5: Hard Reset DB

```
%M10.0
"Hard Reset DB
Hanger"

EN

EN

ENO

WH11.4
"Sys Error Main
Tag"
```

Network 6: Network trigger error

Limit switch dipasang NC pada rangkaian sehingga pada rung dipasang NO

```
%I13.0

"L Limit"

%I13.1

"R Limit"

%I13.2

"U Limit"

%I13.3

"D Limit"
```

Network 7: Input Time

```
RD_LOC_T
DTL

EN ENO
RET_VAL — #retval

"Time Param".
OUT — "Local Time"
```

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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			Comment User-defined		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	е	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	▼ 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
▼ 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			_ ,		
nformation											
Title				Author	Sima	tic			Commo	ent	
Family	IEC			Version	1.0				User-de ID		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]

Hanger Data	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		Super- vision	Comment
				from HMI/O PC UA/We b API	ble fro m	in HMI engi- neer- ing	point	VISION	
▼ Static									
▼ Hanger	Ar- ray[12] of "Hang- er"		False	True	Tru e	True	True		
▼ Hanger[1]	"Hanger"		False	True	Tru e	True	True		
Timer_Start	Bool	false	False	True	Tru e	True	False		
Timer_Reset	Bool	false	False	True	Tru e	True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		False	True	Tru e	True	False		
▼ IEC Timer Proses[0]			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	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[1]	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	Bool	false	False	True	_	True	False		
Q	Bool	false	False	True	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[2]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET		T#0ms	False	True	e	True	False		
IN		false	False	True	e	True	False		
Q		false	False	True	e	True	False		
▼ IEC Timer Proses[3]			False	True	е	True	False		
PT		T#0ms	False	True	e	True	False		
ET		T#0ms	False	True	e	True	False		
IN		false	False	True	e	True	False		
Q	Bool	false	False	True	е	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		T#0ms	False	True	e	True	False		
IN		false	False	True	e	True	False		
Q		false	False	True	e	True	False		
▼ IEC Timer Proses[5]			False	True	e	True	False		
PT		T#0ms	False	True	e	True	False		
ET	Time	T#0ms	False	True	e	True	False		
IN		false	False	True	e	True	False		
Q		false	False	True	e	True	False		
▼ IEC Timer Proses[6]			False	True	e	True	False		
PT		T#0ms	False	True	e	True	False		
ET		T#0ms	False	True	е	True	False		
IN		false	False	True	е	True	False		
Q	Bool	false	False	True	Fals e	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[7]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True	Tru	True	False		
Q	Bool	false	False	True	e Fals e	True	False		
▼ IEC Timer	IEC_TIMER		False	True	-	True	False		
Proses[8] PT	Time	T#0ms	False	True	Tru	True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True		True	False		
▼ IEC Timer			False	True		True	False		
Proses[9] 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	e Fals	True	False		
▼ Timer celup	Ar- ray[09] of Time		False	True	e Tru e	True	False		
Timer cel- up[0]		T#0ms	False	True	Tru e	True	False		
up[o] Timer cel up[1]	- Time	T#0ms	False	True		True	False		
	- Time	T#0ms	False	True		True	False		
Timer cel	- Time	T#0ms	False	True		True	False		
up[3] Timer cel	- Time	T#0ms	False	True	Tru	True	False		
up[4] Timer cel	- Time	T#0ms	False	True		True	False		
up[5] Timer cel	- Time	T#0ms	False	True		True	False		
up[6] Timer cel	- Time	T#0ms	False	True		True	False		
up[7]					е				

ne	Data type	Start value	Retain	sible from	ta- ble	Visible in HMI engi- neer-		Super- vision	Comment
				PC UA/We b API	m	ing			
Timer cel- up[8]		T#0ms	False	True	e	True	False		
Timer cel- up[9]		T#0ms	False	True	е	True	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		
	DInt	0	False	True	Tru e	True	False		
	DInt	0	False	True	Tru e	True	False		
	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]	DInt	0	False	True	Tru e	True	False		
	DInt	0	False	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	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]		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	Tru e	True	False		
Set- point[1]	Time	T#0MS	False	True	Tru e	True	False		
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		True	False		
Set- point[5]	Time	T#0ms	False	True		True	False		
Set- point[6]	Time	T#0ms	False	True		True	False		
Set- point[7]	Time	T#0ms	False	True		True	False		
Set- point[8]	Time	T#0ms	False	True		True	False		
Set- point[9]	Time	T#0ms	False	True		True	False		
Start_ToD	Time_Of_ Day	TOD#00:00:00	False	True		True	False		
Stop_ToD		TOD#00:00:00	False	True		True	False		

ame		Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
	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	Tru e	True	False		
	Nomor Pro- ses	Int	0	False	True	_	True	False		
		Int	0	False	True	Tru e	True	False		
	Homebase	Int	3	False	True		True	False		
	Set- point_Ready	Bool	false	False	True		True	False		
	Check- er_Ready	Bool	false	False	True		True	False		
	Time_Ready	Bool	false	False	True		True	False		
	Occupan- cy_Ready	Bool	false	False	True		True	False		
		Bool	false	False	True	Tru	True	False		
	HMI_Finish	Bool	false	False	True		True	False		
	HMI_Reset	Bool	false	False	True	e Tru e	True	False		
	Crane_Read	Bool	false	False	True		True	False		
		Bool	false	False	True	Tru	True	False		
	ess Divert	Bool	false	False	True		True	False		
		Int	1	False	True		True	False		
	Hanger CNT_HMI_Re	Int	0	False	True		True	False		
▼ F	ady langer[2]	"Hanger"		False	True		True	True		
	Timer_Start	Bool	false	False	True		True	False		
	Timer_Reset	Bool	false	False	True	e Tru	True	False		

	<u> </u>	1		1-			-	-	1-
ie	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
▼ IEC Timer Proses	Ar- ray[09] of		False	True	_	True	False		
▼ IEC Timer Proses[0]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True		True	False		
ET	Time	T#0ms	False	True	е	True	False		
IN		false false	False False	True True	e	True True	False False		
Q ▼ IEC Timer			False	True	e	True	False		
Proses[1] PT	Time	T#0ms	False	True	е	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[2]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	е	True	False		
ET	Time	T#0ms	False	True	е	True	False		
IN Q		false false	False False	True True	е	True True	False False		
▼ IEC Timer			False	True	e	True	False		
Proses[3] PT	Time	T#0ms	False	True		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[4]			False	True	е	True	False		
PT ET	Time Time	T#0ms T#0ms	False False	True True	e	True True	False False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
IN	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	-	True	False		
▼ IEC Timer Proses[5]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	-	True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	-	True	False		
▼ IEC Timer Proses[6]	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	_	True	False		
▼ IEC Timer Proses[7]	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	Bool	false	False	True		True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[8]	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[9]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True		True	False		
ET	Time	T#0ms	False	True		True	False		

9	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	in HMI engi- neer- ing		Super- vision	Comment
IN	Bool	false	False	True	API Tru e	True	False		
Q	Bool	false	False	True		True	False		
▼ Timer celup	Ar- ray[09] of Time		False	True		True	False		
Timer cel- up[0]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[1]	Time	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	e	True	False		
Timer cel- up[5]		T#0ms	False	True	Tru e	True	False		
Timer cel- up[6]		T#0ms	False	True	e	True	False		
Timer cel- up[7]	Time	T#0ms	False	True	e	True	False		
Timer cel- up[8]		T#0ms	False	True	e	True	False		
Timer cel- up[9]	Time	T#0ms	False	True	e	True	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		
	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		

e	Data type	Start value	Retain	sible from	ta- ble fro m HM I/O PC			Super- vision	Comment
					UA/ We b API				
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- 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		
▼ Setpoint	Ar- ray[09] of Time		False	True	Tru e	True	False		
Set- point[0]	Time	T#0ms	False	True	Tru	True	False		

Name		Start value		PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b API	in HMI engi- neer- ing	point	Super- vision	Comment
Set- point[1]	Time	T#40S	False	True	Tru e	True	False		
Set- point[2]	Time	T#40S	False	True	Tru e	True	False		
Set- point[3]	Time	T#40S	False	True	Tru e	True	False		
Set- point[4]	Time	T#40S	False	True		True	False		
Set- point[5]	Time	T#0ms	False	True		True	False		
Set-	Time	T#0ms	False	True	Tru	True	False		
point[6] Set-	Time	T#0ms	False	True		True	False		
point[7] Set- point[8]	Time	T#0ms	False	True	e Tru e	True	False		
Set- point[9]	Time	T#0ms	False	True		True	False		
Start_ToD		TOD#00:00:00	False	True	Tru	True	False		
Stop_ToD	Day Time_Of_ Day	TOD#00:00:00	False	True	e Tru e	True	False		
Start Posi- tion	Int	2	False	True		True	False		
Position	Int	2	False	True		True	False		
Destination	Int	0	False	True		True	False		
Next Desti- nation	Int	0	False	True		True	False		
Ready	Bool	false	False	True		True	False		
Proses	Int	0	False	True	_	True	False		
Nomor Pro- ses	Int	0	False	True		True	False		
Jml Proses	Int	0	False	True		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		True	False		
Time_Ready	Bool	false	False	True		True	False		
Occupan- cy_Ready	Bool	false	False	True	_	True	False		

	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We	in HMI engi- neer- ing		Super- vision	Comment
HMI_Ready	Bool	false	False	True	b API Tru	True	False		
HMI_Finish		false	False	True	e	True	False		
HMI_Reset	Bool	false	False	True	e	True	False		
					e				
Crane_Read y		false	False	True	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		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		True	False		
NP Ready[3]	Bool	false	False	True		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		False	True	Tru	True	False		
▼ NP Ready	Ready" Ar- ray[06] of Bool		False	True	e Tru e	True	False		
NP Ready[0]		false	False	True	Tru e	True	False		
NP Ready[1]	Bool	false	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	in HMI engi- neer- ing		Super- vision	Comment
					UA/ We b API				
NP Ready[2]		false	False	True	е	True	False		
NP Ready[3]		false	False	True	е	True	False		
NP Ready[4]		false	False	True	е	True	False		
NP Ready[5]		false	False	True	e	True	False		
NP Ready[6]	Bool Ar-	false	False False	True True	e	True True	False True		
Priority	ray[12] of Bool		raise	True	e	True	True		
Priority[1]		false	False	True	Tru e	True	True		
Priority[2]		false	False	True	е	True	True		
Predict Crane	Ar- ray[12] of "Predict Crane"		False	True	l ru e	True	False		
▼ Predict Crane[1]	"Predict Crane"		False	True	Tru e	True	False		
▼ C_Ready	Ar- ray[010] of Bool		False	True	Tru e	True	False		
C_Ready[0]		false	False	True	е	True	False		
C_Ready[1]		false	False	True	e	True	False		
C_Ready[2]		false	False	True	е	True	False		
C_Ready[3] C_Ready[false false	False False	True True	е	True True	False False		
C_Ready[C_Ready[false	False	True	e	True	False		
5] C_Ready[false	False	True	е	True	False		
6] C_Ready[false	False	True	е	True	False		
7] C_Ready[false	False	True		True	False		
8] C_Ready[Bool	false	False	True		True	False		
9] C_Ready[10]	Bool	false	False	True	e Tru e	True	False		

me	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- neer- ing			
▼ Start	Ar- ray[010] of DInt		False	True	_	True	False		
Start[0]		0	False	True	Tru e	True	False		
Start[1]	DInt	0	False	True	Tru e	True	False		
Start[2]	DInt	0	False	True	Tru e	True	False		
Start[3]	DInt	0	False	True	Tru e	True	False		
Start[4]	DInt	0	False	True	Tru e	True	False		
Start[5]	DInt	0	False	True	Tru e	True	False		
Start[6]	DInt	0	False	True	Tru e	True	False		
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 e	True	False		
▼ Stop	Ar- ray[010] of DInt		False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[0]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[1]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[2]	DInt	0	False	True	e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[3]		0	False	True	e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[4]		0	False	True	e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[5]	DInt	0	False	True	е	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[6]	DInt	0	False	True	e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[7]		0	False	True	е	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[8]		0	False	True	е	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[9]	DInt	0	False	True	е	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[10]	DInt	999999999	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE

lame		Start value		sible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b API	Visible in HMI engi- neer- ing	point	Super- vision	Comment
▼ Predict Crane[2]	"Predict Crane"		False	True	Tru e	True	False		
▼ C_Ready	Ar- ray[010] of Bool		False	True		True	False		
C_Ready[0]	Bool	false	False	True	Tru e	True	False		
	Bool	false	False	True		True	False		
C_Ready[2]	Bool	false	False	True	Tru e	True	False		
C_Ready[3]		false	False	True		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]		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]	DInt	0	False	True	Tru e	True	False		
Start[1]	DInt	0	False	True	Tru e	True	False		
Start[2]	DInt	0	False	True	Tru e	True	False		
Start[3]	DInt	0	False	True	Tru e	True	False		
Start[4]	DInt	0	False	True	e	True	False		
Start[5]	DInt	0	False	True	е	True	False		
Start[6]	DInt	0	False	True	e	True	False		
Start[7]	DInt	0	False	True	е	True	False		
Start[8]	DInt	0	False	True	Tru e	True	False		

me	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
Start[9]	DInt	0	False	True	Tru e	True	False		
Start[10]	DInt	999999999	False	True	Tru e	True	False		
▼ Stop	Ar- ray[010] of DInt		False	True	-	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[0]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[1]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[2]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[3]	DInt	0	False	True	Tru e	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
Stop[8]	DInt	0	False	True	_	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[9]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[10]	DInt	999999999	False	True	_	True	False		sampe 10 untuk menja ga logic cek CRANE
▼ Hanger Default	Ar- ray[12] of "Hang- er"		False	True	_	True	True		berisi start values array 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	Tru e	True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		False	True	-	True	False		
▼ IEC Timer Proses[0]			False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	-	True	False		

Totally Integrated Automation Portal									
lame	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
IN	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True		True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	_	True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	-	True	False		
▼ IEC Timer Proses[2]	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	_	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		True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[4]	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[5]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True		True	False		
ET	Time	T#0ms	False	True		True	False		

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

Name		Start value		sible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We b API	ing	point	Super- vision	Comment
Timer cel- up[1]	Time	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]	Time	T#0ms	False	True		True	False		
Timer cel- up[5]	Time	T#0ms	False	True		True	False		
Timer cel- up[6]	Time	T#0ms	False	True		True	False		
upլեյ Timer cel- up[7]	Time	T#0ms	False	True		True	False		
Timer cel- up[8]	Time	T#0ms	False	True		True	False		
Timer cel-	Time	T#0ms	False	True		True	False		
up[9] ▼ Proc- ess_Start_Ti me	Ar- ray[09] of DInt		False	True		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		

ne	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m HM I/O PC UA/ We	ing		Super- vision	Comment
					b API				
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		
▼ 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		
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		

	Integrated ation Portal									
lame		Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
	Set- point[5]	Time	T#0ms	False	True	Tru e	True	False		
	Set- point[6]	Time	T#0ms	False	True	е	True	False		
	Set- point[7]	Time	T#0ms	False	True	е	True	False		
	Set- point[8]	Time	T#0ms	False	True	е	True	False		
	Set- point[9]	Time	T#0ms	False	True	е	True	False		
	Start_ToD	Day	TOD#00:00:00	False	True	e	True	False		
	Stop_ToD	Day	TOD#00:00:00	False	True	e	True	False		
	Start Posi- tion	Int	3	False	True	e	True	False		
	Position	Int	3	False	True	е	True	False		
	Destination	Int	0	False	True	е	True	False False		
	nation	Int		False	True	е				
	Ready	Bool	false 0	False False	True	e	True	False False		
	Proses Nomor Pro-	Int	0	False	True True	е	True True	False		
	ses					e				
	Jml Proses	Int	3	False	True	e	True	False False		
	Homebase Set-	Int Bool	false	False False	True True	e	True True	False		
	point_Ready Check-		false	False	True	е	True	False		
	er_Ready		false	False		е		False		
	Time_Ready Occupan-	Bool	false	False	True True	е	True True	False		
	cy_Ready HMI_Ready	Bool	false	False	True	е	True	False		
	HMI_Ready HMI_Finish	Bool	false	False	True	e	True	False		
	HMI_Reset	Bool	false	False	True	е	True	False		
	Crane_Read		false	False	True	e	True	False		
	y y	5001	14130	i uise	i i a c	e	iiuc	, aise		

lame	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m			Super- vision	Comment
Finish Proc- ess	Bool	false	False	True	Tru e	True	False		
Divert	Bool	false	False	True	Tru e	True	False		
Nomor Hanger	Int	1	False	True	Tru e	True	False		
CNT_HMI_Re ady	Int	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	Bool	false	False	True	Tru e	True	False		
Timer_Reset	Bool	false	False	True	Tru e	True	False		
▼ IEC Timer Proses	Ar- ray[09] of IEC_TIMER		False	True	Tru e	True	False		
▼ IEC Timer Proses[0]	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	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	Fals e	True	False		
▼ IEC Timer Proses[1]	IEC_TIMER		False	True	Tru e	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True		True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True		True	False		
▼ IEC Timer Proses[2]	IEC_TIMER		False	True	_	True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	_	True	False		
IN	Bool	false	False	True		True	False		
Q	Bool	false	False	True	_	True	False		
▼ IEC Timer Proses[3]			False	True	_	True	False		

ame	Data type	Start value	Retain	Acces	Wri	Visible	Set-	Super	Comment
anie	Data type	Start value	Retaili	sible from	ta- ble fro m	in HMI engi- neer- ing		vision	Comment
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	-	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		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		True	False		
▼ IEC Timer Proses[5]	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	_	True	False		
▼ IEC Timer Proses[6]	IEC_TIMER		False	True		True	False		
PT	Time	T#0ms	False	True	Tru e	True	False		
ET	Time	T#0ms	False	True	_	True	False		
IN	Bool	false	False	True	_	True	False		
Q	Bool	false	False	True		True	False		
▼ IEC Timer Proses[7]	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		True	False		
▼ IEC Timer Proses[8]	IEC_TIMER		False	True	-	True	False		

Name	Data type	Start value	Retain	sible from	ta- ble fro m	Visible in HMI engi- neer- ing		Super- vision	Comment
PT	Time	T#0ms	False	True	_	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[9]	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	Bool	false	False	True	Tru e	True	False		
Q	Bool	false	False	True	Fals e	True	False		
' '	Ar- ray[09] of Time		False	True	е	True	False		
Timer cel- up[0]		T#0ms		True	е	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]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[5]	Time	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]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[8]	Time	T#0ms	False	True	Tru e	True	False		
Timer cel- up[9]	Time	T#0ms	False	True	Tru e	True	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		

e	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
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- 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		

e	Data type	Start value	Retain	Acces- sible from	ta-	Visible in HMI engi-		Super- vision	Comment
					fro m	neer- ing			
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	Tru e	True	False		
Set- point[1]	Time	T#0ms	False	True	Tru e	True	False		
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	е	True	False		
Set- point[8]	Time	T#0ms	False	True	е	True	False		
Set- point[9]	Time	T#0ms	False	True	e	True	False		
Start_ToD	Day	TOD#00:00:00	False	True	е	True	False		
Stop_ToD	Day	TOD#00:00:00	False	True	е	True	False		
Start Posi- tion	Int	2	False	True	е	True	False		
Position	Int	2	False	True	е	True	False		
Destination	Int	0	False	True	е	True	False		
Next Desti- nation	Int	0	False	True	e	True	False		
Ready	Bool	false	False	True	Tru e	True	False		

Automation Portal									
Jame	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
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	True	False		
Homebase	Int	2	False	True	-	True	False		
Set- point_Ready	Bool	false	False	True	-	True	False		
Check-	Bool	false	False	True	_	True	False		
er_Ready Time_Ready	Bool	false	False	True	Tru	True	False		
Occupan-	Bool	false	False	True		True	False		
cy_Ready HMI_Ready	Bool	false	False	True		True	False		
HMI_Finish	Bool	false	False	True		True	False		
HMI_Reset	Bool	false	False	True	e Tru	True	False		
Crane_Read	Bool	false	False	True		True	False		
y Finish Proc-	Bool	false	False	True	e Tru	True	False		
ess Divert	Bool	false	False	True	e Tru	True	False		
					е				
Nomor Hanger	Int	2	False	True	Tru e	True	False		
CNT_HMI_Re ady	Int	0	False	True	Tru e	True	False		
▼ Predict Default	Ar- ray[12] of "NP Ready"		False	True	Tru e	True	True		
▼ Predict De- fault[1]	"NP Ready"		False	True	Tru e	True	True		
▼ NP Ready	Ar- ray[06] of Bool		False	True		True	False		
NP Ready[0]		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		True	False		
NP Ready[3]	Bool	false	False	True		True	False		

ame	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
					We b API				
NP Ready[4]		false	False	True	e	True	False		
NP Ready[5]	Bool	false	False	True	е	True	False		
NP Ready[6]		false	False	True	е	True	False		
▼ Predict De- fault[2]	"NP Ready"		False	True	Tru e	True	True		
▼ 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	Tru e	True	False		
NP Ready[5]	Bool	false	False	True	Tru e	True	False		
NP Ready[6]	Bool	false	False	True	Tru e	True	False		
▼ Predict Crane Default	Ar- ray[12] of "Predict Crane"		False	True	е		True		
▼ Predict Crane Default[1]	"Predict Crane"		False	True	Tru e	True	True		
▼ C_Ready	Ar- ray[010] of Bool		False	True	Tru e	True	False		
C_Ready[0]		false	False	True	Tru e		False		
C_Ready[1]		false	False	True	е		False		
C_Ready[2]		false	False	True	е		False		
C_Ready[3]		false	False	True	e		False		
C_Ready[4]		false	False	True	е		False		
C_Ready[5]		false	False	True	е	True	False		
C_Ready[6]	Bool	false	False	True	Tru e	True	False		

Name	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
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		
▼ Start	Ar- ray[010] of DInt		False	True	Tru e	True	False		
Start[0]	DInt	0	False	True	Tru e	True	False		
Start[1]	DInt	0	False	True	Tru e	True	False		
Start[2]	DInt	0	False	True	Tru e	True	False		
Start[3]	DInt	0	False	True	Tru e	True	False		
Start[4]	DInt	0	False	True	e	True	False		
Start[5]	DInt	0	False	True	e	True	False		
Start[6]	DInt	0	False	True	e	True	False		
Start[7]	DInt	0	False	True	e	True	False		
Start[8]	DInt	0	False	True	е	True	False		
Start[9]	DInt	0	False	True	e	True	False		
Start[10]	DInt	0	False	True	e	True	False		
▼ Stop	Ar- ray[010] of DInt		False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[0]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[1]	DInt	0	False	True	е	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[2]	DInt	0	False	True	e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[3]	DInt	0	False	True	е	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[4]	DInt	0	False	True	e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[5]	DInt	0	False	True	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

me	Data type	Start value	Retain	sible from	ta- ble fro m			Super- vision	Comment
Stop[7]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
Stop[8]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menj ga logic cek CRANE
Stop[9]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menj ga logic cek CRANE
Stop[10]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja ga logic cek CRANE
▼ Predict Crane Default[2]	"Predict Crane"		False	True	_	True	True		
▼ 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	True	False		
C_Ready[3]	Bool	false	False	True		True	False		
C_Ready[4]	Bool	false	False	True		True	False		
C_Ready[5]	Bool	false	False	True		True	False		
C_Ready[6]	Bool	false	False	True	Tru	True	False		
C_Ready[7]	Bool	false	False	True		True	False		
C_Ready[8]	Bool	false	False	True		True	False		
	Bool	false	False	True	-	True	False		
C_Ready[10]	Bool	false	False	True	-	True	False		
▼ Start	Ar- ray[010] of DInt		False	True	-	True	False		
Start[0]		0	False	True	Tru e	True	False		
Start[1]	DInt	0	False	True	Tru e	True	False		
Start[2]	DInt	0	False	True	Tru e	True	False		
Start[3]	DInt	0	False	True	Tru e	True	False		
Start[4]	DInt	0	False	True	Tru e	True	False		

Totally Integrated Automation Portal									
Name	Data type	Start value	Retain	sible from	ta- ble fro m	Visible in HMI engi- neer- ing		Super- vision	Comment
Start[5]	DInt	0	False	True		True	False		
Start[6]	DInt	0	False	True	Tru	True	False		
Start[7]	DInt	0	False	True	e Tru e	True	False		
Start[8]	DInt	0	False	True	-	True	False		
Start[9]	DInt	0	False	True	_	True	False		
Start[10]	DInt	0	False	True	-	True	False		
▼ Stop	Ar- ray[010] of DInt		False	True	-	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[0]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[1]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[2]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[3]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[4]	DInt	0	False	True	Tru 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	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[8]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[9]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE
Stop[10]	DInt	0	False	True	Tru e	True	False		sampe 10 untuk menja- ga logic cek CRANE

Totally Integrated Automation Portal	
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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						

me	Data type	Start value	Retain	Accessible from HMI/O PC UA/We b API	ta- ble fro m	Visible in HMI engi- neer- ing		Super- vision	Comment
Input									
pos h1	Int	0	False	True	Tru e	True	False		
pos h2	Int	0	False	True	Tru e	True	False		
Output									
InOut									
Static									
▼ occupancy	Ar- ray[09] of Bool		False	True	Tru e	True	False		
occupancy[0]	Bool	TRUE	False	True	Tru e	True	False		
occupancy[1]	Bool	false	False	True	Tru e	True	False		
occupancy[2]	Bool	false	False	True	e	True	False		
occupancy[3]	Bool	false	False	True	Tru e	True	False		
occupancy[4]	Bool	false	False	True	Tru e	True	False		
occupancy[5]	Bool	false	False	True	e	True	False		
occupancy[6]	Bool	false	False	True	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 Int	egrated										
Automatic											
Positioni	ng_DB	[DB1]	C/D(C/Rly] / P	rogr	am b	loc	cks /	Data	base	
General	Docition	ing DD		Number	1				Tyrno		DB
Name Language	Position DB	iiiid_nr		Number Numbering	1 Autor	matic			Type		DB
nformation	טט			raumbering	Autol	nauc					
Title				Author					Commo	ent	
Family				Version	0.1				User-de ID	efined	
Input		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
▼ Output											
destina	ation	Int	0		False	True	Tru e	True	False		
from		Int	0		False	True	Tru e	True	False		
	tioning	Int	0		False	True	е	True	False		
IDLE		Bool	false		False	True	Tru e	True	False		
▼ InOut											
curren	t pos	Int	1		False	True	Tru	True	False		

False

False

False

True

True

True

Tru True

Tru True

Tru True

e

e

False

False

False

hanger selected

counter

counter2

▼ Static

0

0

0

Int

Int

Int

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Automation Portal	

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	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
Static					API				
Positioning step	Int	0	False	True	Tru e	True	False		
Pindah 1	Bool	false	False	True		True	False		
Ambil	Bool	false	False	True		True	False		
Pindah 2	Bool	false	False	True		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	Tru e	True	False		
Dump timer	Time	T#0S	False	True		True	False		
Time geser	Time	T#200MS	False	True	_	True	False		setpoint waktu ngeg si 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		

Totally Integrated Automation Portal	

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

Time Param [DB4]

Time Param	Properties									
General										
Name	Time Param	Number	4	Туре	DB					
Language	DB	Numbering	Automatic							
Information										
Title		Author		Comment						
Family		Version	0.1	User-defined						
				ID						

16	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
Static									
Naik	Time	T#13S	False	True	e	True	False		
Turun	Time		False	True	e	True	False		
Avg Moving			False	True	e	True	False		
Naik_Int	Int		False	True	e	True	False		
Turun_Int	Int	13	False	True	е	True	False		
Avg Moving_Int	Int	12	False	True	e	True	False		
✔ Local Time	DTL	DTL#1970-01-01-0 0:00:00		True	e	True	False		
YEAR	UInt		False	True	е	True	False		
MONTH	USInt		False	True	e	True	False		
DAY	USInt		False	True	e	True	False		
WEEKDAY	USInt		False	True	е	True	False		
HOUR	USInt		False	True	e	True	False		
MINUTE			False	True	e	True	False		
SECOND	USInt	0	False	True	е	True	False		
NANOSECOND	UDInt	0	False	True	Tru e	True	False		

|--|

Gerak [FC4]

Gerak Prope	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	
▼ Input				
current pos	Int			
destination	Int			
from	Int			
Output				
InOut				
Temp				
Constant				
▼ Return				
Gerak	Void			

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

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

IN

"Step Gerak". "Positioning

"Step Gerak". "Positioning

"Step Gerak". "Positioning

"Step Gerak". "Positioning

"Step"
```

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

Network 3: Ambil

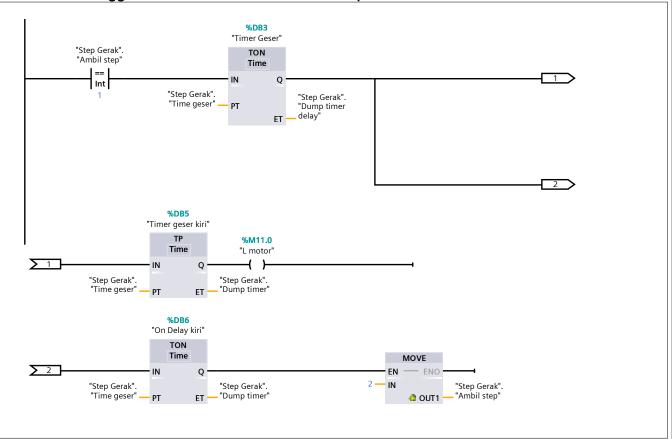
Totally Integrated **Automation Portal** "Step Gerak". "Positioning %FC3 "Step Gerak". "Pindah 1" "Step Gerak". "Pindah 2" step" "Gerak Ambil" MOVE 1 1 EN Int - EN ENO IN "Step Gerak". "Positioning __ step" d OUT1 Network 4: Positioning 1 dan 3: Pindah ke posisi horizontal yang sesuai "Step Gerak". "Positioning step" %FC7 "Gerak Geser" EN ENO Int "Step Gerak". **⊸** "Pindah 2" "Positioning_ 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 - EN ENO · FN 4 — IN "Step Gerak". "Positioning out1 — step" Network 6: Reset all, asalkan seluruh proses selesai

Totally Integrated **Automation Portal** "Step Gerak". "Pindah 1" "Step Gerak". Ambil "Step Gerak". "Pindah 2" "Step Gerak". Lepas MOVE $\dashv \vdash$ $\dashv \vdash$ EN -- ENO -"Step Gerak". "Positioning step" 0 — IN **%M10.0**"Hard Reset DB Hanger" "Step Gerak". "Pindah 1" -(R)-"Step Gerak". Ambil _(R)_ "Step Gerak". "Pindah 2" _(R)_ "Step Gerak". Lepas –(R)– "Step Gerak".Take —(R)— "Step Gerak". Release -(R)-"Step Gerak".Go —(R)—

Language LAD Numbering Automatic Information Title Author Comment Family Version 0.1 User-defined ID Name Data type Default value Comment Input Output InOut Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak *Step Gerak*. *Positioning step Gerak*. *Positioning step Gerak*. *Step Gerak*	General Name	Gerak Ambil		Number	3		Туре	FC
Information Title								1
Name								
Name Data type Default value Comment	Title			Author			Comment	
Name Data type Default value Comment Input Output InOut Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak".	Family			Version	0.1			
Input Output InOut Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak". "Positioning "Step Gerak".							טו	
Output InOut Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak".			Data typ	pe Defai	ult value	Commo	ent	
InOut Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning ""Step Gerak". "Positioning ""Step Gerak".								
Temp Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak".	·							
Constant ▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak". "Positioning "Step Gerak".								
▼ Return Gerak Ambil Void Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak".	•							
Metwork 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gerak".								
Network 1: Positioning 2: Gerakan mengambil. Dimulai dengan pindah operand dan memula step gerak "Step Gerak". "Positioning "Step Gorak"	▼ Return							
"Step Gerak". "Positioning "Step Gerak".	Gerak A	mbil	Void					

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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".
                     "prox_crane_
                       bawah"
                                                                                        (s)
                     "Step Gerak".
Turun
                                       "Step Gerak".Take
                                                             MOVE
                         4 H
                                              EN
                                                                       ENO
                                                              IN
                                                                                 "Step Gerak".
                                                                                - "Ambil step"
                                                                    d 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". --- "Ambil step" "Step Gerak". "Time geser" **–** 4 — IN "Step Gerak". - "Dump timer" PT Network 5: Gerak naik ke atas, berhenti ketika proxy atas kena. **%I12.1** "Step Gerak". "Ambil step" "prox_crane_ atas" "Step Gerak". Ambil %M11.2 "U motor" ()-Int **%I12.1** "Step Gerak". Ambil "prox_crane_ atas" (s)-"Step Gerak". Turun (R)-Network 6: reset all parameters "Step Gerak". Ambil MOVE EN - ENO "Step Gerak". — "Ambil step" - IN d OUT1 MOVE - EN -- ENO 3 -IN "Step Gerak". 🧔 OUT1 step"

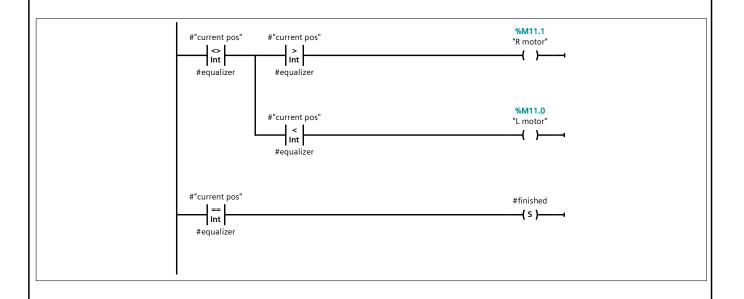
|--|

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	
✓ 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]

Gerak Lepas	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				
▼ Return				
Gerak Lepas	Void			

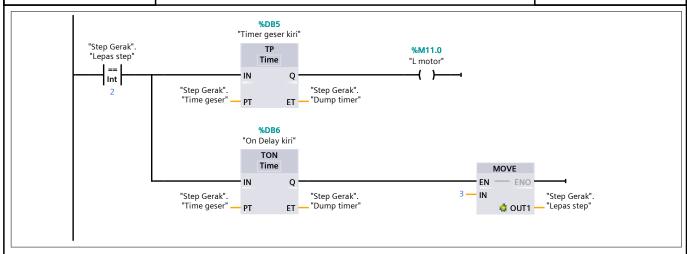
Network 1: Positioning 2: Gerakan melepas. Dimulai dengan pindah operand dan memulai step gerak

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

```
%I12.2
"Step Gerak".
                  "Step Gerak".
                                     "prox_crane_
                                                         "Step Gerak".
                                                                              %M11.3
"Lepas step"
                    Release
                                        bawah"
                                                                             "D motor"
  Int
                                        %I12.2
                                                                            "Step Gerak".
                                      "prox_crane_
                                        bawah"
                                                                               Turun
                                                                                (s)-
                                      "Step Gerak".
                                         Turun
                                                        MOVE
                                                       - IN
                                                                        "Step Gerak".
                                                            d OUT1
                                                                        - "Lepas step"
```

Network 3: Menggeser ke kiri, berhenti ketika timer padam

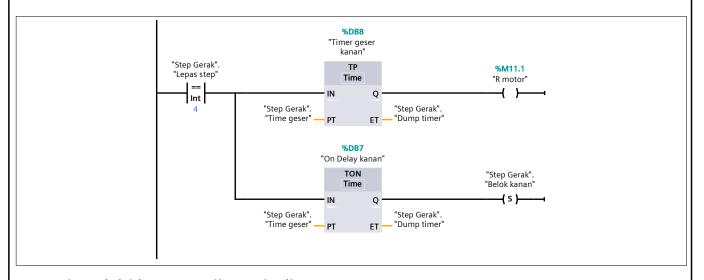
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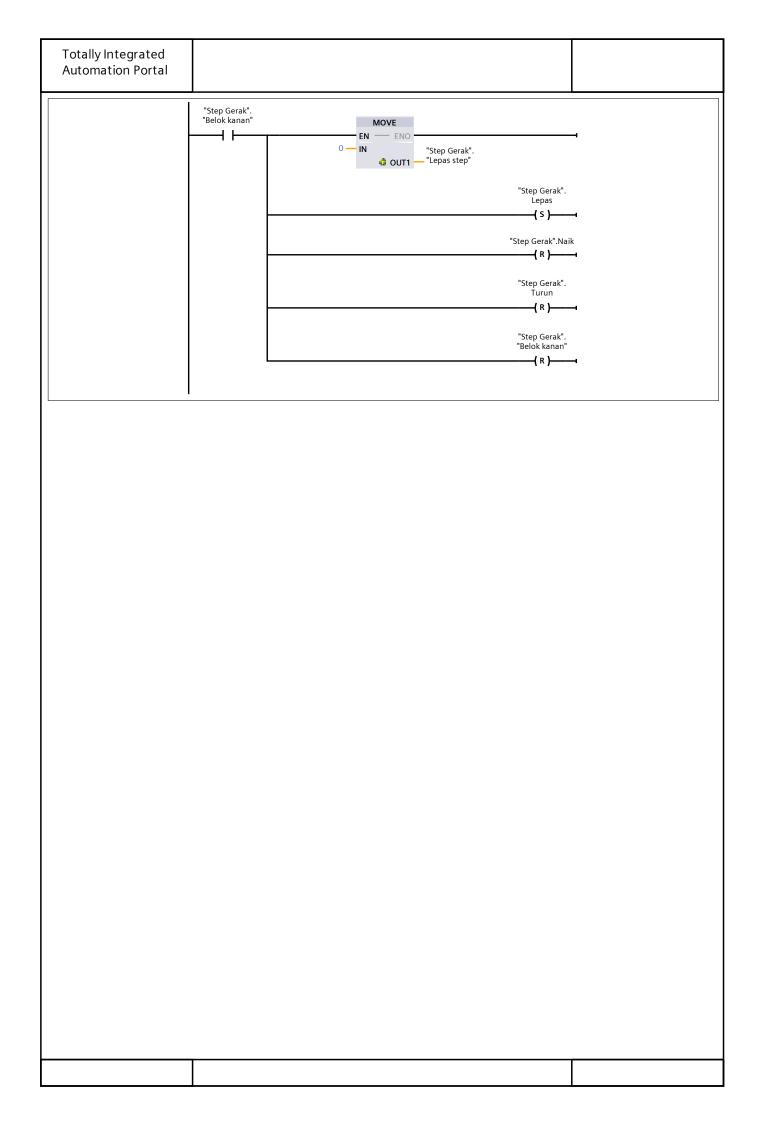
Network 4: Gerak naik ke atas, berhenti ketika proxy atas kena.

```
%I12.1
"Step Gerak".
                                                                                 %M11.2
                                       "Step Gerak".
                   "prox_crane_
"Lepas step"
                       atas"
                                          Àmbil
                                                                                "U motor"
   Int
                      %I12.1
                   "prox_crane_
                       atas"
                                                                             "Step Gerak".Naik
                                                                                  -( s )-
                 "Step Gerak".Naik
                                          MOVE
                       4 H
                                      EN ·
                                              - ENO
                                                        "Step Gerak".
                                           d OUT1 -
```

Network 5: Menggeser ke kanan, berhenti ketika timer padam



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



Repositioning General	Crane Prope	rties							
Name	Repositionin	าต Crane	<u>د</u>	Numb	er	6		Туре	FC
_anguage	LAD	<u> </u>		Numb		Automatic		71	
nformation									
Γitle				Autho				Comment	
Family				Versio	n	0.1		User-defined ID	
Name -			\-4- 4·		Dafaul	Avelue	C = 11= 11		
Vame ▼ Input		D	Oata ty	/pe	Defaul	ı value	Comr	iefit	
		1	a t						
from destinat	ion		nt nt						
	IUII	lin	IL						
Output InOut									
mout									
Tomn									
		-							
finished		В	Bool						
finished Constant		B	Bool						
finished Constant ▼ Return Reposition	oning Crane		Bool Void						
Constant Return	oning Crane	V	/oid		%FC	-7			
finished Constant ▼ Return Reposition	oning Crane		oid/oid		%FC				
finished Constant ▼ Return Reposition	oning Crane	Vi "Step Gera	oid rak".	— EN	"Gerak G	Geser" ENO	linished		-
finished Constant ▼ Return Reposition	oning Crane	"Step Gera Repositio	oid rak". ion #from -	current	"Gerak G	Geser"	inished		-
finished Constant ▼ Return Reposition	oning Crane	"Step Gera Repositio	oid rak". ion #from -		"Gerak G	Geser" ENO	inished		-
finished Constant ▼ Return Reposition	oning Crane	"Step Gera Repositio	oid rak". ion #from -	current	"Gerak G	Geser" ENO	inished		-1
finished Constant ✓ Return Reposition Network 1:	oning Crane	"Step Gera Repositio	oid rak". ion #from -	current	"Gerak G	Geser" ENO	ïnished		-
finished Constant Return Reposition Network 1:	oning Crane	"Step Gera Reposition #desti	rak". ion #from - tination -	current equalize	"Gerak G pos er	Geser" ENO	ïnished		-
finished Constant Return Reposition Network 1:	oning Crane	"Step Gera Reposition #desti	rak". ion #from - tination -	current equalize	"Gerak G pos er	Geser" ENO	inished	"Step Gerak".	-1
finished Constant ▼ Return Reposition	oning Crane	"Step Gera Reposition #desti	/oid rak*. ion #from - tination -	current equalize	"Gerak G pos er	Geser" ENO	ïnished	"Step Gerak". Reposition	•
finished Constant Return Reposition Network 1:	oning Crane	"Step Gera Repositio #desti	/oid rak*. ion #from - tination -	current equalize	"Gerak G pos er	Geser" ENO	inished		-

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PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Gerak Positioning [FB2]					
Positioning Properties					

Positioning F	roperties				
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	е	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		
▼ Static									
counter	Int	0	Non-retain	True	Tru e	True	False		
counter2	Int	0	Non-retain	True	Tru e	True	False		
▼ Temp									
run	Bool								
stoptime	DInt								
np	Int								nomor proses
hangerpos	Int								
hs_temp	Int								buat rencana tang- ki 2 priority
from_temp	Int								buat rencana tang- ki 2 priority
localtime	DInt								
Constant									

0001 REGION CRANE POSITION

```
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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.
0059
         //Bind Variabel "Destination" dengan hanger terpilih jika sudah Go
0060
         IF "Step Gerak".Go = TRUE THEN
0061
           #destination := "Hanger Data".Hanger[#counter].Destination;
0062
         END IF;
0063
0064 END REGION
0065
0066 REGION Adjust Position
0067
0068
      //Value hangerpos dipake buat mindahin crane
0069
       #Repositioning := 5;
      IF #"current pos" <> #Repositioning AND "Step Gerak".Go = FALSE THEN //kalo
0070
     beda berarti crane harus direpo
      "Step Gerak".Reposition := TRUE; //FC adjust akan nyala, tujuannya ke re-
0071
     positioning
0072
     ELSE
0073
         "Step Gerak".Reposition := FALSE;
       END_IF;
0074
0075
0076 END REGION
0077
0078 //Cek apakah kedua hanger lagi gabut atau engga
0079 IF "Hanger Data". Hanger[1]. HMI Ready = TRUE OR "Hanger Data". Hang-
     er[2].HMI Ready = TRUE THEN
0800
     #IDLE := FALSE;
0081 ELSE
0082
     #IDLE := TRUE;
0083 END IF;
0084
0085 REGION Algoritma Penentuan Take dan Release
     //Step gerak.Take
0087
     #hs_temp := #"hanger selected";
     IF "Step Gerak".Go = TRUE THEN
0088
         IF "Hanger Data". Hanger[#hs temp]. "Timer celup"["Hanger Data". Hang-
0089
     er[#hs temp]."Nomor Proses"] >= "Hanger Data".Hanger[#hs temp].Setpoint["Hang-
     er Data".Hanger[#hs temp]."Nomor Proses"] THEN
           "Step Gerak".Take := TRUE;
0090
0091
         ELSE
0092
0093
        END IF;
0094
0095
         //Step gerak.Release
0096
         "Get Local Time" (#localtime);
0097
0098
        IF "Hanger Data". Hanger[#hs temp]. Process Start Time["Hanger Data". Hang-
    er[#hs temp]."Nomor Proses"] - "Time Param".Turun Int <= #localtime THEN
0099
           "Step Gerak".Release := TRUE;
0100
0101
           "Step Gerak".Release := FALSE;
0102
          ;
0103
        END IF;
0104
     END IF;
0105
0106 END REGION
0107
0108
0109
```

Symbol "Hanger Data".Hang-	Address	Tymo	Comment
	Address	Type Bool	Comment
er[1].HMI_Ready		Воог	
"Hanger Data".Hang-		Bool	
er[2].HMI_Ready			
"Hanger Data".Hang-		Int	
er[*]."Nomor Proses"			
"Hanger Data".Hang- er[*]."Start Position"		Int	
"Hanger Data".Hang-		Time	
er[*]."Timer celup"[*]		Time	
"Hanger Data".Hang-		Int	
er[*].Destination			
"Hanger Data".Hang-		DInt	
er[*].Proc-			
ess_Start_Time[*]			
"Hanger Data".Hang-		Bool	
er[*].Ready "Hanger Data".Hang-		Time	
Hanger Data .Hang- er[*].Setpoint[*]		ime	
prox_hanger_1"	%I0.7	Bool	
"prox_hanger_2"	%I0.6	Bool	
"prox_tangki_1"	%I0.5	Bool	
"prox_tangki_2"	%10.4	Bool	
"prox_tangki_3"	%I0.3	Bool	
"prox_tangki_4"	%10.2	Bool	
"prox_tangki_5"	%IO.1	Bool	
	%I12.0	Bool	
"prox_ujung_kiri"	%10.0	Bool	
"Step Gerak".Go		Bool	
"Step Gerak".Release		Bool	
"Step Gerak".Reposition		Bool	
"Step Gerak".Take		Bool	
"Time Param".Turun_Int		Int	
#"current pos"		Int	
#"hanger selected"		Int	
#counter		Int	
#destination		Int	
#from		Int	
#hs_temp		Int	buat rencana tangki 2 priority
#IDLE		Bool	
#localtime		DInt	
#Repositioning		Int	

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Motor Otomatis [FC12]

Motor Otomatis Properties						
General						
Name	Motor Otomatis	Number	12	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:

```
%I13.0
"L Limit"
 %M11.0
                                                                                       %Q0.2
"L motor"
                                                                                     "motor_kiri"
                        -| |-
                                                                                        <del>(</del> )—
                      %l13.1
"R Limit"
                                                                                       %Q0.3
%M11.1
"R motor"
                                                                                   "motor_kanan"
                       +
                                                                                       ┨┝
                      %I13.2
"U Limit"
%M11.2
"U motor"
                                                                                       %Q0.0
                                                                                    "motor_atas"
  \dashv \vdash
                                                                                        ← )—
%M11.3
                       %I13.3
                                                                                       %Q0.1
                      "D Limit"
"D motor"
                                                                                  "motor_bawah"
  +
                        - | |-
                                                                                        <del>(</del> )-
```

|--|

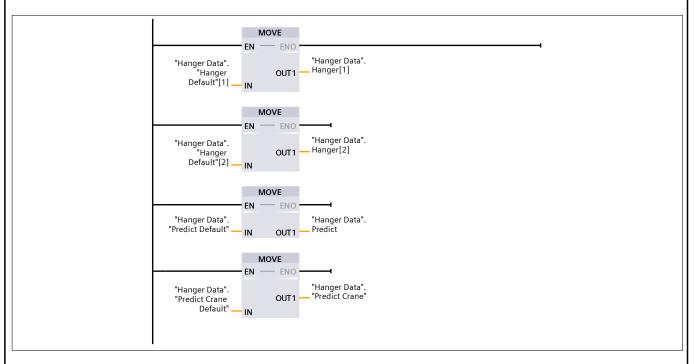
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Error Handling

Hard Reset DB [FC14]

Hard Reset D	B 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

	Ī	
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Automation Portal		
	%FC16	
	"Hard Reset DB Positioning dan Step Gerak"	
	Gerak"	
-	EN ENO	4
ļ		

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

Hard Reset DB Positioning dan Step Gerak [FC16]

Hard Reset DB Positioning dan Step Gerak Properties						
General						
Name	Hard Reset DB Position- ing dan Step Gerak	Number	16	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				
▼ 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	Check Setpoint Time	Number	8	Туре	FC		
Language	SCL	Numbering	Automatic				
Information							
Title		Author		Comment			
Family		Version	0.1	User-defined			
				ID			

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

```
0001 //Mengecek apakah seluruh setpoint sudah tidak nol atau ada yang masih nol
     karena setpoint nilai minimalnya 1 (1 menit)
0002
0003 FOR #"CNT Jml Proses" := 1 TO #"jml proses" - 1 DO
0004
      // Statement section FOR
0005
       // Kalo ada yang nol langsung exit
      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	

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

Penjadwalan CRANE [FC13]

Penjadwalan CRANE Properties						
General						
Name	Penjadwalan CRANE	Number	13	Type	FC	
Language	SCL	Numbering	Automatic			
Information						
Title		Author		Comment		
Family		Version	0.1	User-defined		
				ID		

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

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

```
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```

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

```
Totally Integrated Automation Portal
```

```
0056
         //deklarasi start/stop time dari hanger
0057
         #starttime := "Hanger Data"."Predict Crane"[#nh].Start[#CNT Pred];
0058
         #stoptime := "Hanger Data"."Predict Crane"[#nh].Stop[#CNT Pred];
0059
0060
         FOR #CNT Pembanding := 1 TO #"jml proses p" DO //dicek dengan seluruh
     crane movement hanger sebelah, start maupun stop
0061
0062
           //deklarasi start/stop time hanger sebelah
0063
           #pembanding start := "Hanger Data"."Predict Crane"[#h1].Start[#CNT Pem-
     banding + 1]; //plus satu supaya pas ngecek nomor 9 ga error (kehabisan index
0064
           #pembanding stop := "Hanger Data"."Predict Crane"[#h1].Stop[#CNT Pem-
     banding];
0065
0066
           //start perbandingan antara Crane 1 dengan Crane 1-n dari hanger satunya
0067
           //Kondisi : Cocok di sela-sela Crane satunya (diantara Crane 1 dan 2, 2
     dan 3, dst).
           IF #CNT Pembanding = #"jml proses p" THEN //khusus untuk pembanding ter-
0068
     akhir, karena stop nya infinit
0069
             IF #starttime > #pembanding stop THEN
               "Hanger Data". "Predict Crane" [#nh]. C Ready [#CNT Pred] := TRUE;
0070
0071
               EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya;
0072
             ELSE
               "Hanger Data". "Predict Crane" [#nh]. C Ready [#CNT Pred] := FALSE;
0073
0074
               ; //Lanjut cek CNT Pembanding berikutnya
0075
            END IF;
          ELSIF #CNT Pembanding < #"jml proses p" THEN //untuk pembanding yang
0076
     lain
0077
            IF #starttime > #pembanding stop AND #stoptime < #pembanding start
     THEN
0078
               "Hanger Data". "Predict Crane" [#nh]. C Ready [#CNT Pred] := TRUE;
0079
               EXIT; //keluar dari loop, lanjut cek penggunaan crane berikutnya
0800
0081
               "Hanger Data". "Predict Crane" [#nh]. C Ready [#CNT Pred] := FALSE;
0082
               ; //Lanjut cek CNT Pembanding berikutnya
0083
             END IF;
0084
           END IF;
0085
         END FOR;
0086
     END FOR;
0087
      FOR #"CNT Hasil Akhir" := 1 TO #"jml proses" DO //Hanya cek sampe nomor pro-
0088
     ses max nya aja
         IF "Hanger Data"."Predict Crane"[#nh].C Ready[#"CNT Hasil Akhir"] = TRUE
0089
0090
           #"Cek Ready" := #"Cek Ready" + 1;
0091
           IF #"Cek Ready" = #"jml proses" THEN
0092
             #Ready := TRUE;
0093
            EXIT;
0094
          END IF;
0095
         ELSE
0096
           #Ready := FALSE;
0097
          EXIT;
0098
        END IF;
0099
     END FOR;
0100
0101 END IF; //Buat IF HMI ready sebelah = FALSE
0102
```

ymbol Address Type Comment Hanger Data"."Predict Bool Irane"[*].C_Ready[*] DInt Hanger Data"."Predict DInt Irane"[*].Start[*] DInt Hanger Data"."Predict DInt Irane"[*].Stop[*] DInt Hanger Data".Hang- Int Int Int
anger Data"."Predict ane"[*].Start[1] anger Data"."Predict ane"[*].Start[*] anger Data"."Predict ane"[*].Stop[*] anger Data".Hang- int anger Data".Hang- lnt lnt
Hanger Data"."Predict rane"[*].Start[*] Hanger Data"."Predict rane"[*].Stop[*] Hanger Data".Hang- r[*]."Jml Proses" Hanger Data".Hang- Int
langer Data"."Predict rane"[*].Stop[*] langer Data".Hang- [*]."Jml Proses" langer Data".Hang- lnt
ane"[*].Stop[*] anger Data".Hang- [*]."Jml Proses" anger Data".Hang- Int
r[*]."Jml Proses" Hanger Data".Hang-
Hanger Data".Hang-
r[*]."Nomor Proses"
Hanger Data".Hang- r[*].HMI_Ready
Hanger Data".Hang- r[*].Proc- ss_Stop_Time[*]
Hanger Data".Hang- Time_Of_Day
r[*].Start_ToD Hanger Data".Hang- r[*].Stop_ToD Time_Of_Day
Fime Param"."Avg Mov- ng_Int"
Fime Param".Naik_Int Int
Fime Param".Turun_Int Int
"Cek Ready" Int
"CNT_Hasil Akhir" Int
"jml proses" Int
"jml proses_p" Int
"local time" DInt
"modifier pertama" Int
"modifier start" Int
"modifier stop" Int
CNT Int
CNT_NP Int
CNT_Pembanding Int
CNT_Pred Int
h1 Int
nh Int nomor hanger
pembanding_start DInt
pembanding_stop DInt
Ready Bool
starttime DInt
stoptime DInt

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PLC_1 [CPU 121 Penjadwalan TAN	2C AC/DC/Rly] / Program blocks / Penjadw GKI [FC11]	alan
Penjadwalan TANGKI Prop	erties	

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

			ID	
lame	Data type	Default value	Comment	
▼ Input				
nomor hanger	Int			
jml proses	Int			
▼ Output				
Ready	Bool			
▼ InOut	Booi			
	III I will			
▼ FuncTag	"Hanger"			
Timer_Start	Bool			
Timer_Reset	Bool			
▼ IEC Timer Proses	Array[09] of IEC_TIMER			
▼ IEC Timer Proses[0]	IEC_TIMER			
PT	Time			
ET	Time			
IN	Bool			
Q	Bool			
▼ IEC Timer Proses[1]	IEC_TIMER			
PT	Time			
ET	Time			
IN	Bool			
Q	Bool			
▼ IEC Timer Proses[2]	IEC_TIMER			
PT	Time			
ET	Time			
IN	Bool			
Q	Bool			
▼ IEC Timer Proses[3]	IEC_TIMER			
PT	Time			
ET	Time			
IN	Bool			
Q	Bool			
▼ IEC Timer Proses[4]	IEC_TIMER			
PT	Time			
ET	Time			
IN	Bool			
Q	Bool			
▼ IEC Timer Proses[5]	IEC_TIMER			

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Name	Data type	Default value	Comment
PT	Time		
ET	Time		
IN	Bool		
Q	Bool		
✓ IEC Timer Proses[6			
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			
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[5]	Time		
Timer celup[6]	Time		
Timer celup[7]	Time		
Timer celup[8]	Time		
Timer celup[9]	Time		
▼ Process_Start_Time	Array[09] of		
▼ 110cess_statt_title	Dint		
Proc- ess_Start_Time[0]	DInt		
Proc- ess_Start_Time[1]	DInt		
Proc- ess_Start_Time[2]	DInt		
Proc- ess_Start_Time[3]	DInt		
Proc- ess_Start_Time[4]	DInt		
Proc- ess_Start_Time[5]	DInt		
Proc- ess Start Time[6]	DInt		

ess_Start_Time[6]

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Name	Data type	Default value	Comment	
Proc- ess Start Time[DInt			

Name	Data type	Default value	Comment
Proc-	Dint		
ess_Start_Time[7]			
Proc-	Dlnt		
ess_Start_Time[8]			
Proc-	DInt		
ess_Start_Time[9]			
▼ Process_Stop_Time	Array[09] of		
_	DInt		
Proc- ess_Stop_Time[0]	DInt		
Proc-	DInt		
ess_Stop_Time[1]			
Proc-	DInt		
ess_Stop_Time[2]			
Proc-	DInt		
ess_Stop_Time[3]			
Proc-	DInt		
ess_Stop_Time[4]			
Proc-	DInt		
ess_Stop_Time[5]	DI i		
Proc- ess_Stop_Time[6]	DInt		
	Dint		
Proc- ess_Stop_Time[7]	DInt		
Proc-	DInt		
ess_Stop_Time[8]	DIIIC		
Proc-	DInt		
ess_Stop_Time[9]	Dilit		
▼ Setpoint	Array[09] of		
↓ Setpoint	Time		
Setpoint[0]	Time		
Setpoint[1]	Time		
Setpoint[2]	Time		
Setpoint[3]	Time		
Setpoint[4]	Time		
	Time		
Setpoint[5]			
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		
	Bool		
Occupancy_Ready	מסטו		
			<u>_</u>
			I

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Name	Data type	Default value	Comment
HMI_Ready	Bool		
HMI_Finish	Bool		
HMI_Reset	Bool		
Crane_Ready	Bool		
Finish Process	Bool		
Divert	Bool		
Nomor Hanger	Int		
CNT_HMI_Ready	Int		
▼ Temp			
h1	Int		
CNT_Nomor Proses	Int		
CNT_Hasil Akhir	Int		
▼ NP_Ready	Array[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		
counter prediksi	Int		
modifier pertama	Int		
modifier start	Int		
conv setpoint	DInt		
Constant			
▼ Return			
Penjadwalan TANGKI	Void		

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

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

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```
0064
           OR "Hanger Data".Hanger[#"nomor hanger"].Process Start Time[#"CNT Nomor
     Proses"] > "Hanger Data".Hanger[#h1].Process Stop Time[#"CNT Nomor Proses"] =
     TRUE THEN
           "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := TRUE;
0066
         ELSE
0067
           "Hanger Data". Predict[#"nomor hanger"]. "NP Ready"[#"CNT Nomor Pro-
     ses"] := FALSE;
0068
       END IF;
0069
0070
      //untuk proses genap
0071
      ELSIF #"CNT Nomor Proses" MOD 2 = 0 THEN
0072
         IF "Hanger Data".Hanger[#h1].Process_Stop_Time[#"CNT_Nomor Proses"] = 0
     THEN //kalo 0 berarti gaada prosesnya
           "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := TRUE;
0074
           //pertama cek dengan CNT Nomor Proses
0075
         ELSIF ("Hanger Data".Hanger[#h1].Process Start Time[#"CNT Nomor Proses"]
     >= "Hanger Data".Hanger[#"nomor hanger"].Process Stop Time[#"CNT Nomor Pro-
     ses"] = TRUE
           OR "Hanger Data". Hanger[#"nomor hanger"]. Process Start Time[#"CNT Nomor
0076
     Proses"] >= "Hanger Data".Hanger[#h1].Process Stop Time[#"CNT Nomor Proses"] =
     TRUE) THEN
0077
0078
           //lalu dengan nomor proses lain. Intinya start h < start < stop h dan
     start h < stop > stop h = FALSE
          CASE "Hanger Data".Hanger[#h1]."Jml Proses" OF //beda nomor proses = be-
0079
     da IF supaya ga kena yang nol
0800
             3: //2 doang
0081
               IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Da-
     ta".Hanger[#"nomor hanger"].Process Stop Time[#"CNT Nomor Proses"]) = TRUE
0082
                 OR ("Hanger Data".Hanger[#"nomor hanger"].Proc-
     ess Start Time[#"CNT Nomor Proses"] >= "Hanger Data".Hanger[#h1].Proc-
     ess_Stop_Time[2]) = TRUE THEN
0083
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := TRUE;
0084
               ELSE
0085
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := FALSE;
0086
              END IF;
0087
             5: //2 4
               IF ("Hanger Data".Hanger[#h1].Process_Start_Time[2] >= "Hanger Da-
0088
     ta".Hanger[#"nomor hanger"].Process Stop Time[#"CNT Nomor Proses"]) = TRUE
0089
                 OR ("Hanger Data".Hanger[#"nomor hanger"].Proc-
     ess Start Time[#"CNT_Nomor Proses"] >= "Hanger Data".Hanger[#h1].Proc-
     ess Stop Time[4]) = TRUE
0090
                 OR ("Hanger Data".Hanger[#h1].Process Stop Time[2] <= "Hanger Da-
     ta".Hanger[#"nomor hanger"].Process Start Time[#"CNT Nomor Proses"] = TRUE AND
      "Hanger Data".Hanger[#h1].Process Start Time[4] >= "Hanger Data".Hang-
     er[#"nomor hanger"].Process Stop Time[#"CNT Nomor Proses"] = TRUE) THEN
0091
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := TRUE;
0092
               ELSE
0093
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := FALSE;
0094
              END IF;
0095
0096
            7: //2 4 6
```

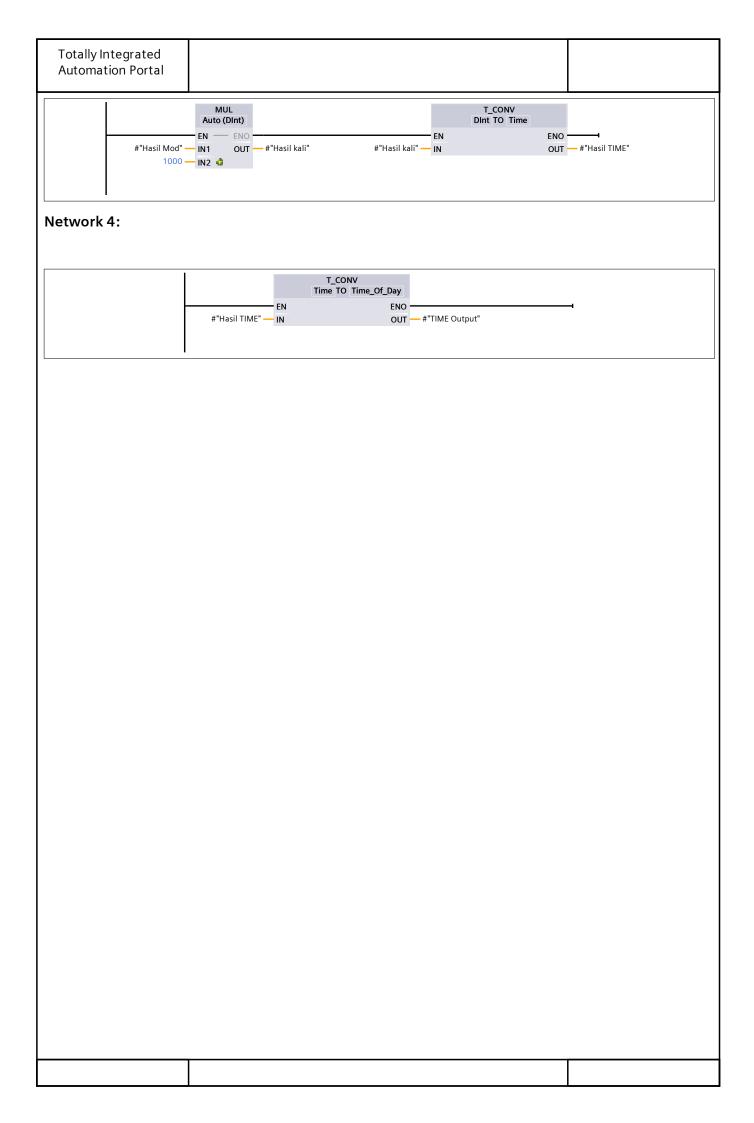
```
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```

```
0097
               IF ("Hanger Data".Hanger[#h1].Process Start Time[2] >= "Hanger Da-
     ta".Hanger[#"nomor hanger"].Process Stop Time[#"CNT Nomor Proses"]) = TRUE
                 OR ("Hanger Data".Hanger[#"nomor hanger"].Proc-
0098
     ess Start Time[#"CNT Nomor Proses"] >= "Hanger Data".Hanger[#h1].Proc-
     ess Stop Time[6]) = TRUE
0099
                 OR ("Hanger Data".Hanger[#h1].Process Stop Time[2] <= "Hanger Da-
     ta".Hanger[#"nomor hanger"].Process Start Time[#"CNT Nomor Proses"]) = TRUE
     AND ("Hanger Data".Hanger[#h1].Process Start Time[4] >= "Hanger Data".Hanger
     er[#"nomor hanger"].Process Stop Time[#"CNT Nomor Proses"]) = TRUE
0100
                 OR ("Hanger Data".Hanger[#h1].Process Stop Time[4] <= "Hanger Da-
     ta".Hanger[#"nomor hanger"].Process Start Time[#"CNT Nomor Proses"] = TRUE AND
      "Hanger Data".Hanger[#h1].Process Start Time[6] >= "Hanger Data".Hang-
     er[#"nomor hanger"].Process_Stop_Time[#"CNT_Nomor Proses"] = TRUE) THEN
0101
0102
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
     ses"] := TRUE;
0103
              ELSE
0104
0105
                 "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Nomor Pro-
    ses"] := FALSE;
0106
              END IF;
0107
              ;
0108
            ELSE //case
0109
         END CASE;
0110
       END IF;
0111
0112 END IF;
0113 END_FOR;
0114
0115 //cek hasil akhir, kecuali untuk proses RES
0116 IF "Hanger Data".Hanger[#"nomor hanger"].Proses = 6 THEN
     #Ready := TRUE;
0118 ELSE //selain proses res
      FOR #"CNT Hasil Akhir" := 1 TO #"jml proses" - 1 DO //Hanya cek sampe nomor
     proses max nya aja
       IF "Hanger Data".Predict[#"nomor hanger"]."NP Ready"[#"CNT Hasil Akhir"] =
0120
      TRUE THEN
          #"Cek Ready" := #"Cek Ready" + 1;
0121
           IF #"Cek Ready" = #"jml proses" - 1 THEN
0122
0123
            #Ready := TRUE;
0124
          END IF;
       ELSE
0125
0126
          #Ready := FALSE;
0127
          EXIT;
0128
       END IF;
0129 END FOR;
0130 END IF;
0131
```

Symbol	Address	Туре	Comment
"Hanger Data".Hang- er[*]."Jml Proses"		Int	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[2]		Dint	
"Hanger Data".Hang- er[*].Proc- ess_Start_Time[4]		Dint	

Symbol	Address	Туре	Comment
anger Data".Hang-		Dint	
*].Proc-			
_Start_Time[6]		51.1	
anger Data".Hang- [*].Proc-		DInt	
_Start_Time[*]			
langer Data".Hang-		DInt	
[*].Proc-			
s_Stop_Time[2]		D1 /	
langer Data".Hang- [*].Proc-		DInt	
s_Stop_Time[4]			
anger Data".Hang-		DInt	
r[*].Proc-			
s_Stop_Time[6]		D1 /	
langer Data".Hang- [*].Proc-		DInt	
r["].Proc- ss_Stop_Time[*]			
Hanger Data".Hang-		Int	
r[*].Proses			
Hanger Data".Pre-		Bool	
ict[*]."NP Ready"[*] Fime Param"."Avg Mo	.,	ln+	
Time Param . Avg Mo ng_Int"	v-	Int	
'Time Param".Naik_Int		Int	
 "Time Param".Turun_Ir		Int	
#"Cek Ready"		Int	
#"CNT_Hasil Akhir"		Int	
#"CNT_Nomor Proses"		Int	
"conv setpoint"		DInt	
"counter prediksi"		Int	
"jml proses"		Int	
"modifier pertama" "modifier start"		Int	
"nomor hanger"		Int Int	
FuncTag."Jml Proses"		Int	
FuncTag.Crane_Read		Bool	
FuncTag.HMI_Ready		Bool	
FuncTag.Proc-		DInt	
ess_Start_Time[0]			
FuncTag.Proc-		DInt	
ss_Start_Time[*]		DIn+	
FuncTag.Proc- ss_Stop_Time[0]		DInt	
FuncTag.Proc-		DInt	
ss_Stop_Time[*]			
FuncTag.Setpoint[*]		Time	
FuncTag.Start_ToD		Time_Of_Day	
FuncTag.Stop_ToD		Time_Of_Day	
FuncTag.Time_Ready		Bool	
h1		Int	
Ready		Bool	

	To TIME Propertie	es				
General				1.=	_	
Name	Convert INT To	IIME	Number Numbering	15 Automatic	Туре	FC
Language Information	LAD		Numbering	Automatic		
Title	Mengubah wak D/H/M/S dalam jadi H/M/S	ctu INT men-	Author		Comment	
Family			Version	0.1	User-defin	ed
Name		Data t	ype Defai	ult value	Comment	
▼ Input						
INT Inp	ut	DInt				
▼ Output						
TIME O	utput	Time_0	Of_Day			
InOut	1		_ ,			
▼ Temp						
Hasil ka	ali	DInt				
Hasil M		DInt				
Hasil TI	ME	Time				
Constant						
▼ Return						
Conver	t INT To TIME	Void				
		#"INT Input" 1	MUL Auto (Dint) EN ENO IN1 OUT	– #"Hasil kali"		
Network 2	: Modulo		Auto (DInt) EN ENO IN1 OUT	– #"Hasil kali"		 '
Network 2	: Modulo		Auto (DInt) EN ENO IN1 OUT	– #"Hasil kali"		



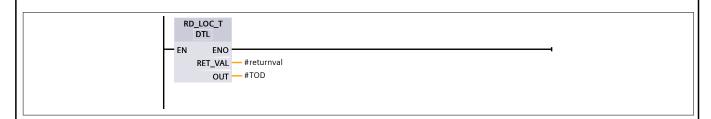
PLC_1 [CPU 1212C AC/DC/Rly] / Program blocks / Penjadwalan

Get Local Time [FC9]

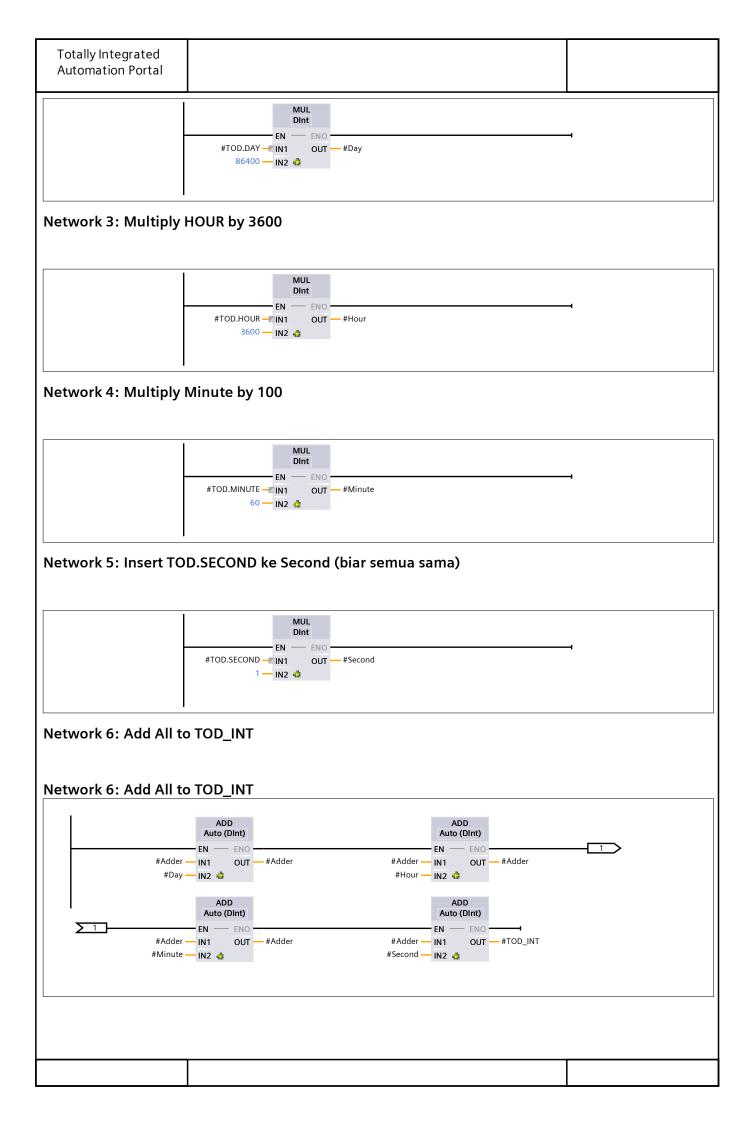
Get Local Tim	ne Properties				
General					
Name	Get Local Time	Number	9	Туре	FC
Language	LAD	Numbering	Automatic		
Information					
Title	Convert Time of Day jadi marker seconds, dalam bentuk DINT Format.	Author		Comment	
Family		Version	0.1	User-defined ID	

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

Network 1: Return TOD pake Read Local Time



Network 2: Multiply DAY by 86400



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

Time Converter to seconds [FC10]

Time Convert	ter to seconds Properties				
General					
Name	Time Converter to sec- onds	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	
▼ Input				
time input	DInt			
▼ Output				
time output	DInt			
InOut				
▼ Temp				
hour	DInt			
minute	DInt			
seconds	DInt			
time used	DInt			
Constant				
▼ Return				
Time Converter to seconds	Void			

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

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

Totally Int								
Automatio	on Portal							
DIC 1 [CPU 1212C	۸۲/۵	^/Rlv	,1 / D	oaram k	olocks I	Hanger	
	CI 0 1212C7	\C/D\	C/ IXI y]/::	ogrami	JIOCKS /	riarigei	
Hanger B	Block [FC2]							
Hanger Block	Properties							
General	Crioperties							
Name	Hanger Block		Numb	er	2		Туре	FC
Language	SCL		Numb	ering	Automatic			
Information								
Title			Autho				Comment	
Family			Versio	n	0.1		User-defined ID	
Name	·	Data ty	ne	Defaul	t value	Comm	ent	
Input		Data ty	P-0	Delaal	· raide	Commi		
Output								
▼ InOut								
▼ FuncTa		"Hange	r"					
	er_Start	Bool	-					
	er_Start er_Reset	Bool						
	Timer Proses	Array[0	91 of					
		IEC_TIM						
		IEC_TIM						
PT		Time						
ET		Time						
	IN	Bool						
Q		Bool						
▼ IEC Timer Proses[1]				_				
▼ II	EC Timer Proses[1]	IEC_TIM	1ER					

 ET

IN

Q

PT

ΕT

IN

Q

ΕT

IN

PT

 ET

IN

Q

PT

ΕT

IN Q

▼ IEC Timer Proses[2]

▼ IEC Timer Proses[3]

▼ IEC Timer Proses[4]

▼ IEC Timer Proses[5]

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

Totally Integ	rated
Automation	Portal

Name	Data type	Default value	Comment
▼ IEC Timer Proses[6]	IEC_TIMER	Delaut Value	Comment
	Time		
PT ET	Time		
	Bool		
IN O	Bool		
Q			
▼ 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[5]	Time		
Timer celup[6]	Time		
Timer celup[7]	Time		
Timer celup[8]	Time		
Timer celup[9]	Time		
▼ Process_Start_Time	Array[09] of DInt		
Proc- ess_Start_Time[0]	DInt		
Proc- ess_Start_Time[1]	DInt		
Proc- ess_Start_Time[2]	DInt		
Proc- ess_Start_Time[3]	DInt		
Proc- ess_Start_Time[4]	DInt		
Proc-	DInt		
ess_Start_Time[5]	DI .		
Proc- ess_Start_Time[6]	DInt		
Proc- ess_Start_Time[7]	DInt		
Proc- ess_Start_Time[8]	DInt		
Proc- ess_Start_Time[9]	DInt		
	!	!	· · · · · · · · · · · · · · · · · · ·

Total	ly Integ	grated
Auto	mation	Portal

Name	<u> </u>	Data type	Default value	Comment
▼ Process_	Stop Time	Data type Array[09] of	Delault value	Comment
▼ 110cess_	_stop_rime	Dint		
Proc-		DInt		
	top_Time[0]			
Proc-		DInt		
	top_Time[1]	D. .		
Proc-	top_Time[2]	DInt		
Proc-	ntop_mme[2]	DInt		
	stop_Time[3]	Dirit		
Proc-	,,	DInt		
	itop_Time[4]			
Proc-		DInt		
	top_Time[5]			
Proc-	ton Time[6]	DInt		
Proc-	top_Time[6]	DInt		
	top_Time[7]	Dilit		
Proc-		DInt		
	top_Time[8]			
Proc-		DInt		
	top_Time[9]			
▼ Setpoint	t	Array[09] of		
Catao	:n+[0]	Time Time		
	oint[0] oint[1]	Time		
	oint[2]	Time		
-	oint[3]	Time		
	oint[4]	Time		
	oint[5]	Time		
	oint[6]	Time		
	oint[7]	Time		
	oint[8]	Time		
· ·	oint[9]	Time		
Start_To		Time_Of_Day		
Stop_To		Time_Of_Day		
Start Pos		Int		
Position		Int		
Destinat	ion	Int		
Next Des	stination	Int		
Ready		Bool		
Proses		Int		
Nomor P	Proses	Int		
Jml Pros		Int		
Homeba		Int		
Setpoint		Bool		
Checker_		Bool		
Time_Re		Bool		
	ncy_Ready	Bool		
HMI_Rea		Bool		
HMI_Fin		Bool		
HMI_Res		Bool		
Crane_R		Bool		
Finish Pr	rocess	Bool		
Divert		Bool		

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Name	Data type	Default value	Comment
Nomor Hanger	Int		
CNT_HMI_Ready	Int		
▼ Temp			
CNT_Reset Crane	Int		
CNT_Reset Tank	Int		
counter	Int		dipake di FOR loop waktu
counter prediksi	Int		dipake di FOR loop prediksi start stop
counter overwrite	Int		dipake di FOR loop overwrite prediksi
counter time ready	Int		dipake di FOR loop penentuan time ready
dump output	Bool		dipake di timer
conv setpoint	DInt		dipake di FOR loop prediksi start stop
nomor proses_before	Int		
current time	DInt		dipake untuk ambil waktu di overwrite
CNT_Time_Ready	Int		dipake ngecek HMI_Ready
CNT_Nomor Proses	Int		dipake ngecek spare waktu tiap proses
CNT_Nomor_Ready	Int		dipake ngecek readiness spare waktu tiap proses
CNT_Hanger	Int		ngeloop tiap hanger
▼ NP_Ready	Array[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
counter reset	DInt		
Constant			
▼ Return			
Hanger Block	Void		

```
0001 //Cari routing berdasarkan input
0002 IF #FuncTag.Divert = FALSE THEN //kalo lagi divert, jangan dirun
"Routing Hanger" (homebase:= #FuncTag.Homebase,
0004
               proses := #FuncTag.Proses,
0005
                "nomor proses" := #FuncTag. "Nomor Proses",
               destination => #FuncTag.Destination,
0006
               "jml proses" => #FuncTag."Jml Proses",
0007
                "next destination" => #FuncTag."Next Destination");
8000
0009 END IF;
0010
0011
0012 REGION Cek Setpoint
0013 // Call Setpoint
      "Check Setpoint Time"(nh:=#FuncTag."Nomor Hanger",
0014
0015
                   "jml proses":=#FuncTag."Jml Proses",
0016
                   Ready=>#FuncTag.Setpoint Ready);
0017
                  END_REGION
0018
0019 REGION Algoritma Penentuan TIME Ready dan CRANE Ready
0020
     //Call function untuk cek kesiapan waktu, hanya ketika HMI udah bilang Ready
```

```
Totally Integrated Automation Portal
```

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

```
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Automation Portal
```

```
0069
         ELSE
0070
           #FuncTag.Ready := FALSE;
0071
         END IF; //Loncat ke cek destinasi
      END IF;
0072
0073
       //Cek Destinasi final
0074
0075
       //Apakah diangkut ke tangki berikutnya atau ke hanger station. (Checker se-
     bagai latch)
0076
      //Pengecekan dilakukan ketika sudah diangkat. Ambil pake step 4 supaya yang
     timing jalan duluan
0077
      IF "Positioning DB". "hanger selected" = #FuncTag. "Nomor Hanger" AND "Step
     Gerak"."Ambil step" = 4 AND #FuncTag.Checker Ready = FALSE
0078
        AND #FuncTag. "Finish Process" = FALSE THEN //Kalo proses kelar yaudah gau-
     sah nambahin nomor proses
0079
0800
         //Skenario A: Tangki berikutnya Kosong. Tambah nomor proses.
0081
         IF #FuncTag.Ready = TRUE AND #FuncTag.Occupancy Ready = TRUE THEN
0082
           #FuncTag."Nomor Proses" := #FuncTag."Nomor Proses" + 1;
0083
           #FuncTag.Checker Ready := TRUE;
0084
           //Skenario B: Tangki berikutnya PENUH, loncat ke kode di paling bawah
0085
0086
         ELSIF #FuncTag.Ready AND #FuncTag.Occupancy Ready = FALSE THEN
0087
           #FuncTag.Divert := TRUE;
0088
           #FuncTag.Destination := #FuncTag.Homebase; //Pindahin dulu ke Homebase.
     Kalo proses divert selesai, cek di kode paling bawah
0089
           #FuncTag.Checker Ready := TRUE;
0090
         END IF;
0091
      ELSE
0092
        ; //do nothing
0093
      END IF;
0094
0095
0096 END REGION
0097
0098
0099 REGION Algoritma Timing
     IF #FuncTag.HMI Ready = TRUE AND #FuncTag.Time Ready = TRUE THEN
0100
0101
         //run timing
         // Start timer ke-n apabila sudah mulai gerak lepas dan gerak ambil. Set-
0102
     point akan diatur nanti, di input HMI
0103
         // Waktu celup disimpan di ET
0104
0105
         // Start waktu celup jika dan hanya jika hanger tersebut selesai dilepas
     DAN bukan hasil divert. Rewrite waktu mulai.
0106
       IF "Positioning DB". "hanger selected" = #FuncTag. "Nomor Hanger" AND "Step
     Gerak"."Lepas step" = 2 AND #FuncTag.Position <> #FuncTag.Homebase THEN
0107
          #FuncTag.Timer Start := TRUE;
           #FuncTag.Checker Ready := FALSE;
0108
0109
0110
         END IF;
0111
0112
         //Stop waktu celup ketika hanger diangkat. Rewrite waktu selesai.
0113
         IF ("Positioning DB". "hanger selected" = #FuncTag. "Nomor Hanger" AND
     "Step Gerak". "Ambil step" = 3) OR #FuncTag. "Nomor Proses" = 0 THEN
0114
           #FuncTag.Timer Start := FALSE;
0115
         END IF;
0116
         //Timer nya jalan ketika timer start true.
         #FuncTaq."IEC Timer Proses"[#FuncTaq."Nomor Proses"].TONR(IN := #Func-
0117
     Tag.Timer Start, //Sesuai command di atas
```

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

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

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

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Symbol	Address	Туре	Comment	
'Hanger Data"."Predict Crane"[*].Stop[*]		DInt		
"Hanger Data".Pre- dict[*]."NP Ready"[*]		Bool		
"Occupancy_DB".occu- pancy[*]		Bool		
pancy[] "Positioning_DB"."hanger selected"		Int		
"Step Gerak"."Ambil step"		Int		
"Step Gerak"."Lepas step"	1	Int		
"Time Param"."Avg Mov- ing"		Time		
'Time Param".Turun		Time		
#"CNT_Reset Crane"		Int		
#"CNT_Reset Tank"		Int		
#"dump output"		Bool	dipake di timer	
#"nomor proses_before"		Int	aipake ai tilliei	
#counter		Int	dipake di FOR loop waktu	
#FuncTag		Block_UDT	aipake ai i Oit loop wakta	
#FuncTag."Finish Proc- ess"		Bool		
ess #FuncTag."IEC Timer Proses"[*]		IEC_Timer		
#FuncTag."Jml Proses"		Int		
#FuncTag."Next Destina-		Int		
tion" #FuncTag."Nomor Hang-		Int		
er"				
#FuncTag."Nomor Pro- ses"		Int		
#FuncTag."Start Posi- tion"		Int		
#FuncTag."Timer cel- up"[*]		Time		
#FuncTag.Check- er_Ready		Bool		
#FuncTag.Crane_Ready		Bool		
#FuncTag.Destination		Int		
#FuncTag.Divert		Bool		
#FuncTag.HMI_Finish		Bool		
#FuncTag.HMI_Ready		Bool		
#FuncTag.HMI_Reset		Bool		
#FuncTag.Homebase		Int		
#FuncTag.Occupan- cy_Ready		Bool		
#FuncTag.Position		Int		
#FuncTag.Proc- ess_Start_Time[*]		DInt		
#FuncTag.Proc- ess_Stop_Time[*]		DInt		
#FuncTag.Proses		Int		
#FuncTag.Ready		Bool		
#FuncTag.Setpoint[*]		Time		
#FuncTag.Set-		Bool		
point_Ready #FuncTag.Time_Ready		Bool		
#FuncTag.Time_Ready #FuncTag.Timer_Reset		Bool		
error race course Reset	The second secon	IDUUI	The state of the s	

Totally Integrated Automation Portal				
Symbol A	ddress	Type	Comment	
#FuncTag.Timer_Start		Type Bool		
	1			

Totally Integrated	
Automation Porta	ı

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

Routing Hanger [FC1]

Routing Hang	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			
▼ InOut				
proses	Int			
nomor proses	Int			
▼ Temp				
temps	Bool			
Constant				
▼ 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;
```

Totally Integrated Automation Portal

```
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					, istorridae						
Fitle			ed	Author				Comment		Menentukan okupansi dari setiap tangki, bero sarkan posisi hanger so dang ambil atau lepas ka pos step ambil (2), cupancy = FALSE pos step lepas (4), occ pancy = TRUE	
Family				Version	0.1			User-d ID	efined	TEITISII	AN-NYA
Name		Data type	Defa	ult value	Retain	Acces- sible 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	API	True	False		
· 							е				
pos h2		Int	0		Non-retain	True	iru e	True	False		
Output											
InOut											
▼ Static ▼ occupa	ncy	Array[09] of Bool			Non-retain	True	Tru e	True	False		
occu	pancy[0]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[1]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[2]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[3]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[4]	Bool	false		Non-retain	True	Tru e	True	False		
occu	pancy[5]	Bool	false		Non-retain	True	Tru e	True	False		
06611	pancy[6]	Bool	false		Non-retain	True	Tru	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 Tr	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
                                                                   "Positioning_
DB"."current
pos"
                                                 step"
                                                                                                                                      #occupancy[4]
                                                ==
Int
                                                                       ==
Int
                                                                                                                                           -( s )-
                                                                   "Positioning_
DB"."current
pos"
                                                                                                                                      #occupancy[5]
                                                                       ==
Int
                                                                                                                                           -( s )-
                                                                   "Positioning_
DB"."current
pos"
                                                                                                                                      #occupancy[6]
                                                                                                                                          _( s )_
                                                                       Int
                                                                   "Positioning_
DB"."current
pos"
                                                                                                                                      #occupancy[7]
                                                                                                                                           -( s )-
                                                                       Int
                                                                   "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]
                                                                      ==
Int
                                                                                                                                         -( R )-
                                                Int
                                                                  "Positioning_
DB"."current
pos"
                                                                                                                                    #occupancy[5]
                                                                      ==
Int
                                                                                                                                         -( R )-
                                                                  "Positioning_
DB"."current
pos"
                                                                                                                                    #occupancy[6]
                                                                                                                                        _( R )_
                                                                      Int
                                                                  "Positioning_
DB"."current
pos"
                                                                                                                                    #occupancy[7]
                                                                                                                                         -( R )-
                                                                      Int
                                                                  "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
                                                                                        <del>(</del> )—
                             #"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	-
Network 9: Coba algo	oritma yang lebih mudah buat nentuin okupansi	
	7	-
Network 10: Coba alg	oritma yang lebih mudah buat nentuin okupansi	
	8	•

Totally Integrated Automation Portal		
DLC 1 [CDLI 121	ac Acincinui	
PLC_1 [CPU 121 Technology object		
This folder is empty.		

PLC_1 [CPU 1212C AC/DC/Rly]

PLC tags

lcon	Name	Data type	Address	Visible in HMI en-		Comment
				gineering	HMI/OPC UA/Web API	
ŒĪ.	D Limit	Bool	%I13.3	True	True	
1	D motor	Bool	%M11.3	True	True	
1	Edge Memory Kanan	Bool	%M30.1	True	True	
•	Edge Memory Kiri	Bool	%M30.0	True	True	
ŒĪ.	Hard Reset DB Hanger	Bool	%M10.0	True	True	
(III)	hmi_atas	Bool	%M9.2	True	True	
(III)	hmi_bawah	Bool	%M9.3	True	True	
ŒĪ.	hmi_kanan	Bool	%M9.4	True	True	
ŒII	hmi_kiri	Bool	%M9.5	True	True	
1	L Limit	Bool	%I13.0	True	True	
	L motor	Bool	%M11.0	True	True	
OII	mode_manual	Bool	%M9.0	True	True	
Œ	mode_otoma- tis	Bool	%M9.1	True	True	
(वा)	motor_atas	Bool	%Q0.0	True	True	
dil .	motor_bawah	Bool	%Q0.1	True	True	
411	motor_kanan	Bool	%Q0.3	True	True	
dii	motor_kiri	Bool	%Q0.2	True	True	
1	plc_ON	Bool	%Q0.4	True	True	
1	prox_crane_at as	Bool	%l12.1	True	True	
1	prox_crane_ba wah	Bool	%l12.2	True	True	
(III)	prox_hanger_1	Bool	%10.7	True	True	
⊞	prox_hanger_2	Bool	%10.6	True	True	
OII	prox_tangki_1	Bool	%10.5	True	True	
-11	prox_tangki_2	Bool	%10.4	True	True	
•	prox_tangki_3	Bool	%10.3	True	True	
1	prox_tangki_4	Bool	%10.2	True	True	
1	prox_tangki_5	Bool	%IO.1	True	True	
₫ij	prox_ujung_ka nan	Bool	%I12.0	True	True	
TI .	prox_ujung_kir i	Bool	%10.0	True	True	
(E)	R Limit	Bool	%I13.1	True	True	
(III)	R motor	Bool	%M11.1	True	True	
4	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
III	Sys Error Reset	Bool	%M11.5	True	True	
-11	Tag_1	Bool	%M9.6	True	True	
-11	Tag_2	Bool	%M9.7	True	True	
√III	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	

tally Integrated	
ation Portal	

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

Default tag table [70]

lcon	Name	Data type	Address	Visible in HMI en-		Comment
				gineering	HMI/OPC UA/Web API	
ŒI	D Limit	Bool	%I13.3	True	True	
-11	D motor	Bool	%M11.3	True	True	
	Edge Memory Kanan	Bool	%M30.1	True	True	
1	Edge Memory Kiri	Bool	%M30.0	True	True	
ŒII	Hard Reset DB Hanger	Bool	%M10.0	True	True	
⊞	hmi_atas	Bool	%M9.2	True	True	
ŒII	hmi_bawah	Bool	%M9.3	True	True	
ŒI	hmi_kanan	Bool	%M9.4	True	True	
(III	hmi_kiri	Bool	%M9.5	True	True	
-	L Limit	Bool	%I13.0	True	True	
(II)	L motor	Bool	%M11.0	True	True	
(Ⅲ	mode_manual	Bool	%M9.0	True	True	
4 11	mode_otoma- tis	Bool	%M9.1	True	True	
ŒI	motor_atas	Bool	%Q0.0	True	True	
- III	motor_bawah	Bool	%Q0.1	True	True	
- III	motor_kanan	Bool	%Q0.3	True	True	
- TII	motor_kiri	Bool	%Q0.2	True	True	
1	plc_ON	Bool	%Q0.4	True	True	
•	prox_crane_at as		%I12.1	True	True	
Ⅲ	prox_crane_ba wah		%I12.2	True	True	
- III	prox_hanger_1	Bool	%10.7	True	True	
Œ	prox_hanger_2		%10.6	True	True	
€	prox_tangki_1	Bool	%10.5	True	True	
•	prox_tangki_2	Bool	%10.4	True	True	
(II)	prox_tangki_3	Bool	%10.3	True	True	
an a	prox_tangki_4	Bool	%10.2	True	True	
ŒĪ.	prox_tangki_5	Bool	%10.1	True	True	
4	prox_ujung_ka nan	Bool	%I12.0	True	True	
4	prox_ujung_kir i		%10.0	True	True	
1	R Limit	Bool	%I13.1	True	True	
- III	R motor	Bool	%M11.1	True	True	
4	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
III	Sys Error Reset	Bool	%M11.5	True	True	
-11	Tag_1	Bool	%M9.6	True	True	
-11	Tag_2	Bool	%M9.7	True	True	
√III	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	

Totally Integrated	
Automation Portal	

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

langer Prop	erties								
General									
Name	Hanger		Number	1			Type		UDT
_anguage			Numbering						
nformation									
Γitle			Author				Comme		
amily			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	in HMI engi- neer- ing	point	Comm	ent
Timer_Sta	art	Bool	false	True	e	True	False		
Timer_Re	set	Bool	false	True	е	True	False		
▼ IEC Timer		Array[09] of IEC_TIMER		True	e	True	False		
▼ IEC Tin ses[0]		IEC_TIMER		True	e	True	False		
PT		Time	T#0ms	True	e	True	False		
ET		Time	T#0ms	True	e	True	False		
IN		Bool	false	True	e	True	False		
Q		Bool	false	True	e	True	False		
▼ IEC Tin ses[1]		IEC_TIMER		True	е	True	False		
PT		Time	T#0ms	True	e	True	False		
ET		Time	T#0ms	True	е	True	False		
IN		Bool	false	True	е	True	False		
Q		Bool	false	True	e	True	False		
▼ IEC Tin ses[2]		IEC_TIMER	T#0	True	e	True	False		
PT		Time	T#0ms	True	e	True	False		
ET		Time	T#0ms	True	e	True	False		
IN		Bool	false	True	Tru e	True	False		

Totally Integrated Automation Portal							
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>	_	 	

false

Bool

IN

True

Tru True

e

False

Totally Integrated Automation Portal							
lame	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-	IEC_TIMER		True		True	False	
ses[8] PT	Time	T#0ms	True	e Tru e	True	False	
ET	Time	T#0ms	True		True	False	
IN	Bool	false	True		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	e	True	False	
Q	Bool	false	True	е	True	False	
▼ Timer celup	Array[09] of Time		True	e	True	False	
Timer celup[0]	Time	T#0ms	True	e	True	False	
Timer celup[1]	Time	T#0ms	True	е	True	False	
Timer celup[2]	Time	T#0ms T#0ms	True	e	True	False	
Timer celup[3] Timer celup[4]	Time Time	T#0ms	True True	е	True True	False False	
Timer celup[4] Timer celup[5]	Time	T#0ms	True	е	True	False	
Timer celup[5] Timer celup[6]	Time	T#0ms	True	e	True	False	
Timer celup[0]	Time	T#0ms	True	e	True	False	
Timer celup[8]	Time	T#0ms	True	е	True	False	
Timer celup[9]	Time	T#0ms	True	e Tru	True	False	
▼ Process_Start_Time	Array[09] of DInt		True	e Tru e	True	False	
Proc- ess_Start_Time[0]	Dint	9999999	True	_	True	False	
Proc-	DInt	0	True		True	False	

ess_Start_Time[1]

Totally Integrated Automation Portal								
lame	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro	engi- neer- ing		Comm	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		
Proc- ess_Stop_Time[5]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[6]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[7]	DInt	0	True	е	True	False		
Proc- ess_Stop_Time[8]	Dint	0	True	е	True	False		
Proc- ess_Stop_Time[9]	Dint	0	True	е	True	False		
Setpoint Setpoint Ol	Array[09] of Time Time	T#0ms	True True	e	True True	False False		
Setpoint[0] Setpoint[1]	Time	T#0ms	True	e	True	False		
Setpoint[1] Setpoint[2]	Time	T#0ms	True	e	True	False		
Setpoint[2]	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		True	False	
Ready	Bool	false	True	Tru e	True	False	
Proses	Int	0	True		True	False	
Nomor Proses	Int	0	True		True	False	
Jml Proses	Int	0	True		True	False	
Homebase	Int	0	True		True	False	
Setpoint_Ready	Bool	false	True		True	False	
Checker_Ready	Bool	false	True		True	False	
Time_Ready	Bool	false	True	_	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	

е

Totally Integrated Automation Portal								
Name	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble	in HMI engi- neer- ing		Comr	nent
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 dat	a typ	es			
NP Read	У								
NP Ready Pr	operties								
General									
Name	NP Rea	ıdy	Number	2			Type		UDT
Language			Numbering						·
Information	1								
Title			Author				Comme	ent	
Family			Version				User-de ID	fined	
Name		Data type	Default value	ble f HMI, UA/V API	rom ta- rOPC ble Veb fro M HN I/O PC UA We b	neer- ing	point	Comm	ent
▼ NP Ready	/	Array[06] of Bool		True	e	True	False		
NP Re	ady[0]	Bool	false	True	Tru e	True	False		
NP Re	ady[1]	Bool	false	True	Tru e	True	False		
NP Re	ady[2]	Bool	false	True		True	False		
NP Re	ady[3]	Bool	false	True		True	False		

True

True

True

Tru True

Tru True

Tru True

e

e

False

False

False

NP Ready[4]

NP Ready[5]

NP Ready[6]

Bool

Bool

Bool

false

false

false

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

Predict Crane

Predict Crane	Properties				
General					
Name	Predict Crane	Number	4	Туре	UDT
Language		Numbering			
Information					
Title		Author		Comment	
Family		Version		User-defined ID	
Name	Data type	Default value	Accessi- Wri Visible		ent

me	Data type	Default value	Accessi- ble from HMI/OPC UA/Web API	ta- ble fro			Comment
C_Ready	Array[010] of Bool		True		True	False	
C_Ready[0]	Bool	false	True	Tru e	True	False	
C_Ready[1]	Bool	false	True	Tru e	True	False	
C_Ready[2]	Bool	false	True	Tru e	True	False	
C_Ready[3]	Bool	false	True		True	False	
C_Ready[4]	Bool	false	True	Tru e	True	False	
C_Ready[5]	Bool	false	True	Tru e	True	False	
C_Ready[6]	Bool	false	True	Tru e	True	False	
C_Ready[7]	Bool	false	True		True	False	
C_Ready[8]	Bool	false	True		True	False	
C_Ready[9]	Bool	false	True		True	False	
C_Ready[10]	Bool	false	True	Tru e	True	False	
Start	Array[010] of DInt		True	Tru e	True	False	
Start[0]	DInt	0	True	Tru e	True	False	
Start[1]	DInt	0	True	Tru e	True	False	
Start[2]	DInt	0	True		True	False	
Start[3]	DInt	0	True	Tru e	True	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	PLC_1 [CPU 1212C AC/DC/Rly] / PLC data types					
System data types	;					
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	12C AC/DC/Rly] / Watch and f	orce 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	PLC_1 [CPU 1212C 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.		

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

PLC_1 [CPU 1212C AC/DC/Rly]

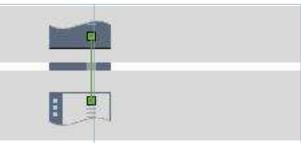
_ -	= -			
PLC_1				
General\Project inform	nation			
Name	PLC_1	Author	Asus	
Comment		Slot	1	
Rack	0			
General\Catalog inform	nation			
Short designation	CPU 1212C AC/DC/Rly	Description	Work memory 75 KB; 120/240VAC power supply with DI8 x 24VDC SINK/ SOURCE, DQ6 x relay and AI2 on board; 4 high-speed 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	AD FA 25 9D 3D 99 07 41	
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			
IP configuration	Set IP address in the project	IP address:	192.168.0.1	
Subnet mask:	255.255.255.0	Use router	False	
PROFINET interface [X	1]\Ethernet addresses\PROFINET			
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			
PROFINET interface [X	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 4	0.0.0.0	
Update interval	10sec	JCIVCI T	0.0.0.0	
CPU synchronizes the modules of the device.	No synchronization			

Totally Integrated Automation Portal						
PROFINET interface [X1]\Digital inputs\Channel0						
Channel address	10.0	Input filters	6.4 millisec			

PROFINET interface [X	1]\Digital inputs\Channel0		
	10.0	Input filters	6.4 millisec
Enable pulse catch	0	_ -	-
-	1]\Digital inputs\Channel0\		
Enable rising edge de-		RidPrefixRisingEdgeE-	49152
tection		vent	77132
Event name:	0	Hardware interrupt:	0
· · · · · · · · · · · · · · · · · · ·	•	naruware interrupt.	U
	Rising edge0		
	1]\Digital inputs\Channel0\		
Enable falling edge	0	RidPrefixFallingEdg-	49280
detection	-	eEvent	_
Event name:	0	Hardware interrupt:	0
	Falling edge0		
	1]\Digital inputs\Channel1		
Channel address	10.1	Input filters	6.4 millisec
Enable pulse catch	0		
PROFINET interface [X	1]\Digital inputs\Channel1\		
Enable rising edge de-		RidPrefixRisingEdgeE-	49153
tection		vent	
Event name:	0	Hardware interrupt:	0
· · · · · · · · · · · · · · · · · · ·	Rising edge1	aramanapu	ı-
	1]\Digital inputs\Channel1\		
	1	Dial Dua fine Falling of Jan	40281
Enable falling edge detection	0	RidPrefixFallingEdg- eEvent	49281
Event name:	0	Hardware interrupt:	0
	Falling edge1		
	1]\Digital inputs\Channel2		
Channel address	10.2	Input filters	6.4 millisec
Enable pulse catch	0		
PROFINET interface [X	1]\Digital inputs\Channel2\		
Enable rising edge de-	0	RidPrefixRisingEdgeE-	49154
tection		vent	
Event name:	0	Hardware interrupt:	0
Rising edge2	Rising edge2	•	
	1]\Digital inputs\Channel2\		
Enable falling edge		RidPrefixFallingEdg-	49282
detection		eEvent	79202
Event name:	0	Hardware interrupt:	0
	Falling edge2	naruware interrupt.	U
	1]\Digital inputs\Channel3		
	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		
	1]\Digital inputs\Channel3\		
Enable falling edge	0	RidPrefixFallingEdg-	49283
detection		eEvent	
Event name:	0	Hardware interrupt:	0
· · · · · · · · · · · · · · · · · · ·	Falling edge3		
	1]\Digital inputs\Channel4		
	10.4	Input filters	6.4 millisec
		input inters	0.4 IIIIIISEC
Enable pulse catch	0		
	1]\Digital inputs\Channel4\	n: In 6: -: : -:	10155
Enable rising edge de-	U	RidPrefixRisingEdgeE-	49156
tection	-	vent	
Event name:	0	Hardware interrupt:	0
			1
	İ		

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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
.	[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	e - 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\		1.0.1.70
Enable rising edge d	e -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	i e
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		

Totally Integrated			
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 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 possible	Partner port:	Any partner
PROFINET interface [X'	1]\Advanced options\Port [X1 P1]\Port	options\Activate	
Activate this port for	True		
use			
PROFINET interface [X'	1]\Advanced options\Port [X1 P1]\Port		
Transmission rate / duplex:	Automatic	Monitor	False
tion	True		
PROFINET interface [X	1]\Advanced options\Port [X1 P1]\Port	options\Boundaries	
End of detection of	False	End of topology dis-	False
accessible devices		covery	
main	False		
PROFINET interface [X	1]\Web server access		
Enable Web server for the IP address of this	False	The Web server must also be activated in	
interface		the properties of the PLC.	
	HSC)\HSC1\General\Enable		
	0	Enable this high	0
speed counter		speed counter	
	0	Enable this high	0
speed counter	-	speed counter	-
	0	Enable this high	0
speed counter	15C/U15C1/C	speed counter	
	HSC)\HSC1\General\Project informatio		
	HSC_1	Comment	
	HSC_2	Comment	
	HSC_3	Comment	
	HSC_4	Comment	
	HSC_5	Comment	
	HSC_6	Comment	
	HSC)\HSC1\I/O addresses\Input addres		1002.7
	1000.0	End address	1003.7
Start address	1004.0	End address	1007.7
3	0	Start address	1008.0
	1011.7	Organization block	0
	0	Start address	1012.0
	1015.7	Organization block	0
· · · · · · · · · · · · · · · ·	0	Start address	1016.0
	1019.7	Organization block	0
· · · · · · · · · · · · · · · ·	0	Start address	1020.0
	1023.7	Organization block	0
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· · · · · · · · · · · · · · · · · · ·	0	Process image	0
	/PWM)\PTO1/PWM1\General\Enable		
Enable this pulse gen-	0	Enable this pulse gen-	0

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/\dtomation or ta	1					
Pulse generators (PT	O/PWM)\PTO1/PWN	//1\General\Project in	formation			
Name	Pulse_1	•	Comment			
Name	Pulse_2		Comment			
Pulse generators (PT	O/PWM)\PTO1/PWN	/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 OBs should be inter			
Configuration time	60000ms		ruptible	- 1		
Cycle			Тартыс			
Cycle monitoring tim	ne 150ms					
Enable minimum cy-			Minimum cycle tim	e 1ms		
cle time for cyclic OE			linning cycle cill	- 11115		
Communication load						
Cycle load due to	20%					
communication						
System and clock me	emory\System mem	nory bits				
Enable the use of sys	s- 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 me		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	- I		n ':			
Activate Web server on all modules of thi	False		Permit access only with HTTPS	only True		
on an modules of thi device	S		WILLI II IPS			
Web server\Automat	ic undate					
Enable automatic up			Update interval	Os		
date	- ITUE		opuate interval	rvai Us		
Web server\User mai	nagement					
User name	9		User rights			
Everybody			oser rights			
Web server\User-def	ined web nades					
	HTML source path	Default HTML page	Files with dynamic	Web DB numb	er Fragment DB num	
•	•	1 3	content		ber	
		index.htm	.htm;.html	333	334	
Web server\Overviev	v of interfaces					
Device		Interface		Enabled web s	erver access	
PLC_1		PROFINET interface_	1	False		
 Jser interface langu	ages	_				
Assign project langu			User interface langu	lages		
English (United States			German	-		
English (United States			English			
English (United States			French			
English (United States			Spanish			
English (United States			Italian			
			Chinese (simplified)			
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Station resources - Re-	Station resc served - Col	ources - Re-	namic - Co		PLC_1 [CPU 1212C AC/DC/Rly] - Configure 68
Station resources - Re- served - Maximum	Station reso served - Cor	ources - Re-	namic - Co		PLC_1 [CPU 1212C AC/DC/Rly] - Configure
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	ecurity event	ecurity event rue econds eternal load memory	ecurity event True Length of a	connection mechanisms False Courity event Frue Length of an interval Reconds Acternal load memory	connection mechanisms False Courity event Frue Length of an interval Deconds Acternal 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							
			-							

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

DI 16x24VDC/DQ 16xRelay_1

	3 —		
DI 16x24VDC/DQ 16x	Relay_1		
General\Project infor	•		
Name	DI 16x24VDC/DQ 16xRelay_1	Author	Asus
Comment	, <u>, , , , , , , , , , , , , , , , , , </u>	Slot	2
General\Catalog info	rmation		
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 i	nformation		
Name	DI 16x24VDC/DQ 16xRelay_1	Comment	
DI 16/DQ 16\Digital ii	nputs\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 ii	nputs\Channel0		
Channel address	112.0		
DI 16/DQ 16\Digital ii	nputs\Channel1		
Channel address	112.1		
DI 16/DQ 16\Digital ii	nputs\Channel2		
Channel address	112.2		
DI 16/DQ 16\Digital ii	nputs\Channel3		
Channel address	112.3		
DI 16/DQ 16\Digital ii			
Channel address	112.4		
DI 16/DQ 16\Digital in			
Channel address	112.5		
DI 16/DQ 16\Digital in			
Channel address	112.6		
DI 16/DQ 16\Digital ii			
Channel address	112.7		
DI 16/DQ 16\Digital in	nputs\Channel8		
Channel address	113.0		
DI 16/DQ 16\Digital ii			
Channel address	113.1		
DI 16/DQ 16\Digital ii			
Channel address	113.2		
DI 16/DQ 16\Digital ii			
Channel address	113.3		
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Channel address	113.4		
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DI 16/DQ 16\Digital ii			
Channel address	113.6		
DI 16/DQ 16\Digital ii			
Channel address	113.7		
	··-·		
DI 16/DQ 16\Digital o			
	P Use substitute value		
DI 16/DQ 16\Digital o		Culturations	
Channel address	Q12.0	Substitute a value of 1 on a change from RUN to STOP.	U
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Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP. Substitute a value of 1 on a change from RUN to STOP.					
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DI 16/DQ 16\Digital outputs\Channel10					
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Substitute a value of 0 1 on a change from RUN to STOP.					
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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