OMRON Industrial Automation SYSMAC CS/CJ/CP Series

ETHERNET Driver

Compatible version OS

Over 4.0



XDesignerPlus Over 4.0.0.0

CONTENTS

Thank you for using M2I's "Touch Operation Panel(M2I TOP) Series". Please read out this manual and make sure to learn connection method and process of TOP – External device"

1. System configuration Page 2

It explains device for connection, setup of, cable and structural system.

Please choose proper system referring to this point.

2. Selecting TOP model and

external devices

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Select TOP model and external device..

3. Example of system settings Page 5

It explains setup example for communication connection between the device and external terminal.

Select example according to the system you choose in "1. System structure"

4. Communication settings details Page 15

It explains the way of configuring TOP communication.

If external setup is changed, make sure to have same setup of TOP with external device by referring to this chapter.

5. Support address

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Page 4

Check available addresses to communicate with external devices referring to this chapter.



1. System configuration

System configuration of TOP and "OMRON Industrial Automation - SYSMAC CS/CJ/CP Series ETHERNET" is as below.

Series	CPU	Link I/F	Method	System settings	Cable
CS	CS1H-CPU67 CS1H-CPU66 CS1H-CPU65 CS1H-CPU64 CS1G-CPU45 CS1G-CPU44	CS1W-ETN01	Ethernet	<u>3.1 설정 예제 13.1</u> Setting Furmulas 1	
	CS1G-CPU43 CS1G-CPU42 CS1H-CPU67H CS1H-CPU66H CS1H-CPU65H CS1H-CPU63H CS1G-CPU45H CS1G-CPU44H CS1G-CPU44H CS1G-CPU42H CS1G-CPU42H CS1H-CPU67-V1 CS1H-CPU65-V1 CS1H-CPU65-V1 CS1H-CPU63-V1 CS1G-CPU44-V1 CS1G-CPU44-V1 CS1G-CPU43-V1 CS1G-CPU44-V1 CS1G-CPU42-V1 CS1G-CPU42-V1 CJ1G-CPU45 CJ1G-CPU44 CJ1M-CPU23 CJ1M-CPU23 CJ1M-CPU21 CJ1M-CPU13 CJ1M-CPU12 CJ1M-CPU11 CJ1H-CPU66H CJ1H-CPU65H	CS1W-ETN11	(UDP)	(Page 5)	
			Ethernet (UDP)	<u>3.2 Setting Examples 2</u> (Page 7)	
		CSIW-LINZI	Ethernet (TCP)	<u>3.3 Setting Examples 3</u> (Page 9)	Twisted pair cable*Caution1)
CJ1		CJ1W-ETN11	Ethernet (UDP)	<u>3.1 설정 예제 13.1</u> <u>Setting Examples 1</u> <u>(Page 5)</u>	
			Ethernet (UDP)	<u>3.2 Setting Examples 2</u> (Page 7)	
	CJ1G-CPU45H CJ1G-CPU44H CJ1G-CPU43H CJ1G-CPU42H	CJIW-EINZI	Ethernet (TCP)	<u>3.3 Setting Examples 3</u> (Page 9)	

*Caution1) Twisted pair cable

- This means STP(Shielded Twisted Pair cable) or UTP (Unshielded Twisted Pair cable) category 3,4,5.

- You can connect to other devices such as hub, transceiver depends on the configuration and in this case, use direct cable.

Continue on the next page.



Series	CPU	Link I/F	Method	System settings	Cable
CJ2	CJ2H-CPU64-EIP CJ2H-CPU65-EIP	H-CPU64-EIP H-CPU65-EIP CPU Integrated H-CPU66-EIP EtherNet/IP - H-CPU67-EIP Port H-CPU68-EIP	Ethernet (UDP)	3.4 Setting Examples 4 (Page 11)	
	CJ2H-CPU67-EIP CJ2H-CPU68-EIP		Ethernet (TCP)	3.5 Setting Examples 5 (Page 13)	
	CJ2M-CPU35 CJ2M-CPU34 CJ2M-CPU33		Ethernet (UDP)	3.2 Setting Examples 2 (Page 7)	
	CJ2M-CPU32 CJ2M-CPU31	GIW-ENV2I	Ethernet (TCP)	3.3 Setting Examples 3 (Page 9)	Twisted pair cable*Caution1)
CP1	CP1H-X□□R-A CP1H-X□□T-D CP1H-X□□T1-D		Ethernet (UDP)	3.2 Setting Examples 2 (Page 7)	
	CP1H-XA DR-A CJ1W-ETN21 CP1H-XA DT-D CP1H-XA DT1-D CP1H-Y DT-D	Ethernet (TCP)	3.3 Setting Examples 3 (Page 9)		

*Caution1) Twisted pair cable

- This means STP(Shielded Twisted Pair cable) or UTP (Unshielded Twisted Pair cable) category 3,4,5.

- You can connect to other devices such as hub, transceiver depends on the configuration and in this case, use direct cable.

Possible Connecting Configuration

• 1 : 1 connection(1 TOP and 1 External Device)



• 1 : N Connection (1 TOP and several external devices) Connection





2. Selecting TOP model and external devices

Select the external devices to connect to TOP.

	HMI / PLC Uint
Series XTOP Series Model XTOP15TX-SA/SD	Vendor OMRON Industrial Automation PLC Model SYSMAC CS/CJ/CP Series ETHERNET
	PLC
Vendor	Model
M2I Corporation 🔶	CAM Positioner Series 3F88L-160/162
MITSUBISHI Electric Corporation	SYSMAC C/CV Series HOST Link
OMRON Industrial Automation	SYSMAC CS/CJ/CP Series ETHERNET
LS Industrial Systems	SYSMAC CS/CJ/CP Series HOST Link
MODBUS Organization	V680 RFID System Series
SIEMENS AG.	
Rockwell Automation (AB)	
GE Fanuc Automation	
PANASONIC Electric Works	
YASKAWA Electric Corporation	
YOKOGAWA Electric Corporatio	
Schneider Electric Industries	
KDT Systems	
RS Automation(SAMSUNG)	
HITACHIJES	
FATEK Automation Corporation	
DELTA Electronics	
KOYO Electronic Industries	
VIGOR Electric Corporation	
Comfile Technology	
Dongbu(DASAROBOT)	
POPORTAR	

Setting details			Contents	
TOP	Series	Select the name of a TOP series that is to be connected to PLC.		
		Before downloading the settings	s, install the OS version specified	in the table below according to
		TOP series.		
		Series Version name		
		XTOP / HTOP	V4.0	
	Name	Select the model name of TOP product.		
External device	Manufacturer	Select the manufacturer of external devices to be connected to TOP.		
		Please select "OMRON Industrial Automation".		
	PLC	Select the model series of external devices to be connected to TOP.		
		Please select "SYSMAC CS/CJ/CP Series Ethernet".		
		Please check, in the "1. System configuration", if the relevant external device is available to set a		



system configuration
system configuration.



3. Example of system settings

We suggest the communication interface setting of TOP and "SYSMAC CS/CJ/CP SERIES" as below.

3.1 Setting Examples 1

Set the system as below.

Details	ТОР	"SYSMAC CS/CJ/CP SERIES"	Remark
IP Address*Caution1)Caution2)	192.168.0.50	192.168.0.51	User settings
Protocol	UDP	UDP	User settings
Port	1024	9600	User settings
Node Address	Auto set	1	User settings

*Caution1) The network address (the 3 front digits of IP, 192.168.000) TOP and external device must be identical.

*Caution2) Please do not use the same IP address in the same network.

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



- IP Address (PLC). Type the IP address that the external device was given.
- -Reading port / writing port: Choose the port number for ethernet communication.
- PLC Node Number : Node Address that set from PLC.
- TOP Node Number : TOP's Node Address that is used in Communication Protocol;.





Set as below through Rotary Switch (Ethernet Module, Front) and Ladder Software CX-ONE for communication setting. Please refer the PLC user manual for more detailed information if you need.

- 6	0
	١
/	1

Please do not use the same IP address in the same network.

1. Set the Rotary Switch which is located in front of ethernet module as below.

Details		Contents	
Unit No.		1	
NODE No.	x16 ¹	0	Select "Connection Method between PC-PLC from [Network Type]" in "[Device Type] - PLC
	x16 ⁰	1	Name". Select detailed setting information from [Setting].

2. Start [CX-Programmer]. Select CPU name that you want to use and PC-PLC communication method from [Change PLC] dialog box.

Device Name		
NewPLC1		
Device Type		
CS1G/CJ1G	•	<u>S</u> ettings
Network Type		
SYSMAC WAY	-	Settings
Comment		
		0
		ल्ली
~~ 1		10212

3. Register the slot information that ethernet communication module is installed in the project.

(1) Double Click [IO Table and Unit Setup] \rightarrow [PLC IO Table] dialog box Popup

(2) From [PLC IO Table] dialog box double click slot number that is connected the communication module from the [Main Rack] Tree,

→ [Select Unit] dialog popup

(3) Select ethernet communication module which is to use from [Communications Adapter] in [Select Unit] dialog box

(4) Input unit number in the [Add Unit] dialog box. (Input "1" for this current example.)

4. Please input ethernet setting information in [Edit Parameters] dialog box by double clicking ethernet communication module that is registered [PLC IO Table].

CS1W-ETN01 [Edit Pa	rameters]		? 🛛
Setting Mail Setup			
Broadcast	FINS/UDP Port © Default (9600) © User defined		
P. Address Sub-net Mask 255 , 255 , 0	Conversion C Auto (Static) C Combined © IP address table		
FTP Login Password	P Address Table 001 192,168,000,051	IP Router Ta	lns Del
Transfer[Unit to PC]	Transfer(PC to Unit)	ompare	<u>Beset</u>
Set D <u>e</u> taults			<u>확인</u> 쥐소

Details	Settings
FINS/UDP Port	Default (9600)
Conversion	IP address table
IP Address Table (Click Ins Key)	Insert IP Address Image: Constraint of the series of the

% Set IP address of ethernet communication module, Node Address by using IP address table.



Sub-net Mask 255.255.2		
	Sub-net Mask	255.255.255.0



3.2 Setting Examples 2

Set the system as below.

Details	ТОР	"SYSMAC CS/CJ/CP SERIES"	Remark
IP Address*Caution1)Caution2)	192.168.0.50	192.168.0.51	User settings
Protocol	UDP	UDP	User settings
Port	1024	9600	User settings
Node Address	Auto set	1	User settings

*Caution1) The network address (the 3 front digits of IP, 192.168.000) TOP and external device must be identical.

*Caution2) Please do not use the same IP address in the same network.

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

- PLC Setting	HMI Setup Sencial Buffe	er Sync						·····		
COM2 (0)	V Lise HMI Setup									
Ethernet (1)	System Setup PLC Setu	ID Dev	ice l	lanaoe	er	Interfa	ce	1		
- PLC1 : SYSMAC CS/CJ/						Net	Nor	k		
FieldBus (0)	- IP address :	192	•	168	\$	0	\$	50 🛟		
- CE Card Setting	- Subnet mask :	255	\$	255	\$	255	\$	0 🔹		
CFCard	- Gateway :	192	\$	168	\$	0	\$	1 🗘		
	- From right window	M [HM	I Se	tun s	> ch	eck I	lse	HMI Setup > Pl	C Setun 1	1
	HMI Setup Sencial Buffe	er Sync	1 50	tup >	- CH		, sc			
	V Use HMI Setup									
	System Setup PLC Setu	Dev	ice I	lanace	r II	nterfa	се	1		
		(PI	LC1)	SYSM	IAC O	CS/CJ	/CP	Series ETHERNET		
	PLC IP : 192	\$ 16	8	0	\$	51	\$	PLC Station Number :	0	\$
	Read Port : 960	0	\$					Time Out :	1000	\$ msec.
	Write Port : 960	0	\$					Wait before send :	0	¢ msec.
	TOP Port : 102	4	\$					Protocol :	UDP	×.
	External device set	tinas								
	It sets the option of c	ommur	nica	tion (drive	r for	"S		ries (Ethe	rnet)"
		onnia			PLC C	omm In	fo		100 (21110	
	IP Address (PLC) :	192	\$.1	68	¢. 0	0	\$.	51 🛟		
	Read Port (0~65535) :	9600	0.10		•					
	Write Port (0~65535) :	9600	_		\$					
	Node of PLC	1		\$						
	Node of TOP									
	V Auto									
	Manual	1	-		\$	Î				

- PLC Node Number : Node Address that has been set from PLC.
- TOP Node Number : TOP's Node Address that is used in Communication $\ensuremath{\mathsf{Protocol}}\xspace;$



Set as below through Rotary Switch (Ethernet Module, Front) and Ladder Software CX-ONE for communication setting. Please refer the PLC user manual for more detailed information if you need.



1.

Please do not use the same IP address in the same network.

Set the Rotary S	witch which	ch is located in fro	nt of ethernet module as below.
Details		Contents	
Unit No.		1	Select "Connection Method between PC-PLC from [Network Type]" in "[Device
NODE No.	x16 ¹	0	Type] - PLC Name". Select detailed setting information from [Setting].
	x16 ⁰	1	

2. Start [CX-Programmer]. Select CPU name that you want to use and PC-PLC communication method from [Change PLC] dialog box.

Device Name	
NewPLC1	
Device Type	
CJ1G-H	✓ Settings
Network Type	
SYSMAC WAY	✓ Settings
Comment	
	10
1	<u>.</u>
OK Correct	11212

3. Register the slot information that ethernet communication module is installed in the project.

(1) Double Click [IO Table and Unit Setup] ([PLC IO Table] dialog box Popup

(2) From [PLC IO Table] dialog box double click slot number that is connected the communication module from the [Main Rack] Tree, [Select Unit] dialog popup

(3) Select ethernet communication module which is to use from [Communications Adapter] in [Select Unit] dialog box

(4) Input unit number in the [Add Unit] dialog box. (Input "1" for this current example.)

4. Please input ethernet setting information in [Edit Parameters] dialog box by double clicking ethernet communication module that

is registered [PLC IO Table].

Sub-net Mask

CJ1W-ETN21(ETN21M	ode) [Edit Parameter	s]	? 🛛
Setting FINS/TCP DNS Broadcast	SMTP POP Mail FINS/UDP Port © Default (9600) © User defined	Address Mail Ser FINS/TCP Port © Default (9600 © User defined	id Mail Receive Clock Auto A▲ ▶) -
IP Address 192., 168., 000., 51 Sub-net Mask 255., 255., 255., 0	Conversion • Auto (dynamic) C Auto (Static) C Combined C IP address table	Baud Rate Auto 10BASE-T	TCP/IP keep-alive 0 min, [0: default (120)] Destination IP address Change to dynamic
FTP	IP Address Table	IP Ro	uter Table
Login Image: Comparison of C	Transfer(PC to Unit)		Ins Del
Details	Settings		
FINS/UDP Port	Default (9600))	
Conversion	Auto (dynami	c)	
Baud Rate	Auto		
IP Address	192.168.000.5	1	

255.255.255.0





3.3 Setting Examples 3

Set the system as below.

Details	ТОР	"SYSMAC CS/CJ/CP SERIES"	Remark
IP Address*Caution1)Caution2)	192.168.0.50	192.168.0.51	User settings
Protocol	ТСР	ТСР	User settings
Port	1024	9600	User settings
Node Address	Auto set	1	User settings

*Caution1) The network address (the 3 front digits of IP, 192.168.000) TOP and external device must be identical.

*Caution2) Please do not use the same IP address in the same network.

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

	HMI Setup Sencial Buffe	er Sync							•		5 -
COM2 (0)	V Use HMI Setup		4								
Ethernet (1)	System Setup PLC Setu	ID De	vice N	lanage	er	Interf	ace	Ĩ			
PLC1 : SYSMAC CS/C	<u>J/</u>					* Net	wo	rk			
FieldBus (0)	- IP address :	192	•	168	\$	0	÷	50	•		
- CF Card Setting	- Subnet mask :	255	÷	255	t	255	÷	0	÷		
CFCard	- Gateway :	192	\$	168	\$	0	\$	1	÷		
	- From right window			tun s	ch	pock		ни	[Setup > PLC	⁻ Satun 1	
	HMI Setup		1 50	tup >		ICCK	030	T HVI.		_ Setup]	
	Una LIMI Setur	я зунс									
	Use HMI Setup	De De			- 1	Interest		1			
	System Setup PLC Setu	(P	LC1)	SYSM	IAC	CS/C	J/CP	Serie	S ETHERNET		
	PLC IP : 192	2 🛟 16	8	: 0	\$	51	\$	PLC S	Station Number :	0	•
	Read Port : 960	0	\$					Time	Out :	1000	¢nsec.
	Write Port : 960	0	\$					Wait I	before send :	0	¢ msec.
	TOP Port : 102	24	\$					Proto	col ;	UDP	•
	External device cot	tings									
	It sets the option of s	ammu	nica	tion	drin	or fo	r "C	VCNA	AC CSICI Sor	ioc (Etho	rpat)"
		ommu	nica		PLC	Comm	n S Info	T SIVI	AC CS/CJ SEI	ies (Ethe	met) .
	IP Address (PLC) +	192	1	68	•	0	÷	51	÷.		
	Read Port (0~65535) :	9600	South								
	Write Port (0~65535) :	9600	_		-						
	Node of PLC	1		¢							
	Node of TOP			19							
	THE ALL OF										
	1-14 C2 Q 20 0 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C	100	6								

-Reading port / writing port: Choose the port number that will be used for ethernet communication.

- PLC Node Number : Node Address that has been set from PLC.
- TOP Node Number : TOP's Node Address that is used in Communication Protocol;.





Set as below through Rotary Switch (Ethernet Module, Front) and Ladder Software CX-ONE for communication setting. Please refer the PLC user manual for more detailed information if you need.



Please do not use the same IP address in the same network.

1. Se	et the Rotary S	witch which	ch is located in fro	nt of ethernet module as below.
	Details		Contents	
	Unit No.		1	Select "Connection Method between PC-PLC from [Network Type]" in "[Device
	NODE No.	x16 ¹	0	Type] - PLC Name". Select detailed setting information from [Setting].
		x16 ⁰	1	

2. Start [CX-Programmer]. Select CPU name that you want to use and PC-PLC communication method from [Change PLC] dialog box.

NewPLC1 Device Type CJ1G-H ▼ Settings Network Type SYSMAC WAY ▼ Settings Comment	Device Name ——			
Device Type CJ1G-H Settings Network Type SYSMAC WAY Settings Comment	NewPLC1			
CJ1G-H ▼ Settings Network Type SYSMAC WAY ▼ Settings Comment	Device Type			
Network Type SYSMAC WAY <u>Settings</u> Comment	CJ1G-H		•	<u>S</u> ettings,
SYSMAC WAY Settings	Network Type			
Comment	SYSMAC WAY		•	S <u>e</u> ttings
	Comment			
				10
	ļ			

3. Register the slot information that ethernet communication module is installed in the project.

(1) Double Click [IO Table and Unit Setup] ([PLC IO Table] dialog box Popup

(2) From [PLC IO Table] dialog box double click slot number that is connected the communication module from the [Main Rack] Tree, [Select Unit] dialog pop up

(3) Select ethernet communication module which is to use from [Communications Adapter] in [Select Unit] dialog box

(4) Input unit number in the [Add Unit] dialog box. (Input "1" for this current example.)

4. Please input ethernet setting information in [Edit Parameters] dialog box by double clicking ethernet communication module that

is registered [PLC IO Table].

CJIW-ETN2I(ETN2IM	ode) [Edit Parameter	rs]	? 🛛
Setting FINS/TCP DNS Broadcast	SMTP POP Mail FINS/UDP Port Opfault (9600) User defined	Address Mail Sen FINS/TCP Port © Default (9600 © User defined	d Mail Receive Clock Auto A
IP Address 192 , 168 , 000 , 51 Sub-net Mask 255 , 255 , 255 , 0	Conversion	Baud Rate Auto 10BASE-T	TCP/IP keep-alive TCP/IP keep-alive 0 min, [0: default (120)] Destination IP address IF Change to dynamic
FTP Login Password Port No, [0 [0: Default(21)]	IP Address Table		Iter Table
Set Defaults	Iransfer[PC to Unit]	Compare	<u></u> 확인 취소
Details	Settings		
FINS/TCP Port	Default (9600))	
Conversion	Auto (dynami	c)	
Baud Rate	Auto		
IP Address	192.168.000.5	1	
Sub-net Mask	255.255.255.0		





3.4 Setting Examples 4

Set the system as below.

Details	ТОР	"SYSMAC CS/CJ/CP SERIES"	Remark
IP Address*Caution1)Caution2)	192.168.0.50	192.168.0.51	User settings
Protocol	UDP	UDP	User settings
Port	1024	9600	User settings
Node Address	Auto set	1	User settings

*Caution1) The network address (the 3 front digits of IP, 192.168.000) TOP and external device must be identical.

*Caution2) Please do not use the same IP address in the same network.

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

	- From right windo	w [HMI	Setup	> ch	eck Us	se	HMI Setup > Dev	vice Man	ager J
COM2 (0)	HMI Setup Sepcial Buff	er Sync							
- COM1 (0)	Use HMI Setup								
	System Setup PLC Set	up Devi	ice Manag	er	Interfac	e			
FieldBus (0)					* Netw	/or	ĸ		
USB Device (0)	- IP address :	192	\$ 168	÷	0	\$	50 🗘		
CF Card Setting	- Subnet mask :	255	\$ 255	\$	255	+	0 🛟		
I CFCard	- Gateway :	192	\$ 168	\$	0	\$	1 🗘		
	- From right windo	w [HMI	Setup	> ch	eck Us	se	HMI Setup > PLC	Setup 1	
	HMI Setup Sepcial Buff	er Svnc		-					
	Svetem Setur. PLC Set	un Devi	ica Manan	er	Interfac	•	í.		
	ayatem actup	(PL	.C1) SYS	MAC	CS/CJ/(СР	Series ETHERNET		
	PLC IP : 19	2 🛟 168	3 🔹 0	\$	51	1	PLC Station Number :	0	•
	Read Port : 96	00	÷.				Time Out :	1000	≜ nsec.
	Write Port 96	00	-				Wait before send	0	≜ msec
	TOP Port 10	24	1				Protocol	UDP	•
			aca li						
l	External device se	ttings							
	It sets the option of	commun	nication	drive	er for '	"S'	YSMAC CS/CJ Ser	ies (Ethei	rnet)".
				PLU	.omm in t	0			
	IP Address (PLC) :	192	168	Q .,	0	•	51 🗘		
	Read Port (0~65535) :	9600		\$					
	Write Port (0~65535) :	9600		\$					
	Node of PLC	1		1					
	Node of TOP			alt					
	Auto								

-Reading port / writing port: Choose the port number that will be used for ethernet communication.

- PLC Node Number : Node Address that has been set from PLC.
- TOP Node Number : TOP's Node Address that is used in Communication Protocol;.



Set as below through Rotary Switch (Ethernet Module, Front) and Ladder Software CX-ONE for communication setting. Please refer the PLC user manual for more detailed information if you need.



Please do not use the same IP address in the same network.

Set the Rotary Switch which is located in front of ethernet module as below.

Dip Switch	Settings	Dip Switch	Settings	Rotary Switc	h	Settings
SW1	OFF	SW5	OFF	Unit No.		0
SW2	OFF	SW6	OFF	NODE No.	x16 ¹	0
SW3	OFF	SW7	OFF		x16 ⁰	1

SW4 | OFF | SW8 | OFF **2.** Start [CX-Programmer]. Select CPU name that you want to use and PC-PLC communication method from [Change PLC] dialog box.

Select "Connection Method between PC-PLC from [Network Type]" in "[Device Type] - PLC Name". Select detailed setting information from [Setting...].

3. Double Click [IO Table and Unit Setup] ([PLC IO Table] dialog box Popup

4. Input ethernet setting information from [Edit Parameters] dialog box by double clicking "built-in Ethernet/IP port" from [PLC IO Table] dialog box - [Built-in Port/Inner-Board] tree.

Details	Settings
IP Address	192.168.000.51
Sub-net Mask	255.255.255.0



3.5 Setting Examples 5

Set the system as below.

Details	ТОР	"SYSMAC CS/CJ/CP SERIES"	Remark
IP Address*Caution1)Caution2)	192.168.0.50	192.168.0.51	User settings
Protocol	ТСР	ТСР	User settings
Port	1024	9600	User settings
Node Address	Auto set	1	User settings

*Caution1) The network address (the 3 front digits of IP, 192.168.000) TOP and external device must be identical.

*Caution2) Please do not use the same IP address in the same network.

(1) XDesignerPlus setup

After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.

	HMI Setup Sepcial Buffer Sync											
COM1 (0) Ethernet (1) PLC1 : SYSMAC CS/CJ/												
	System Setup PL0	C Setup	De	vice	Manage	er	Interf	ace	1			
							* Net	wo	rk			
FieldBus (0)	- IP address :		192	\$	168	\$	0	\$	50	\$		
- CF Card Setting	- Subnet mask :		255	\$	255	\$	255	\$	0	\$		
CFCard	- Gateway :		192	\$	168	\$	0	\$	1	•		
	- From right wi	indow	ГНМ	II Se	tun :	> c	heck	lse	нм	I Setun > PI(⁻ Setun 1	
	HMI Setup Sencial	Buffer	Sync		, cup						s secup 1	
	V Use HMI Setup											
	System Setup PLO	C Setup	Dev	vice I	lanaor	er	Interfa	ice	1			
	Solon Botop		(P	LC1	SYSI	MAC	CS/C	I/CP	Serie	es ETHERNET		
	PLC IP :	192	\$ 16	8	0	¢	51	\$	PLC S	Station Number :	0	\$
	Read Port :	9600		\$					Time	Out :	1000	‡nsec.
	Write Port :	9600		\$					Wait	before send :	0	t nsec.
	TOP Port :	1024		\$					Proto	col :	TCP	•
	2000 4 0 C 04 C 04 C 04 C 04 C 04 C 04 C								4 6-51 GAS			
	External device	o cotti	inac									
	■ External device	e setti	ings	nica	tion	driv	vor fo	r "C	VCNA	AC CS/CL Sor	ioc (Etho	rpot)"
	External device It sets the option	e setti of co	ings ommu	nica	tion	driv PLC	/er fo	r "S nfo	YSM	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option	e setti of co	ings ommu 192	nica	tion 168	driv PLC	ver fo	r "S nfo	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655	e setti of co : :	ings mmu 192 9600	nica \$.	tion 168	driv PLC	ver fo Comm	r "S nfo ¢,	YSM 51	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655	e setti of co : : : : : : : : : : : : : : : : : : :	ings mmu 192 9600 9600	nica \$.	tion 168	driv PLC ÷.	ver fo Comm	r "S nfo \$,	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655	e setti of co : : : : : : : : : : : : : : : : : : :	ings ommu 192 9600 9600	nica \$.	tion 168	driv PLC ÷.	ver fo Comm	r "S nfo \$	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655 Node of PLC	e setti of co : : : : : : : : : : : : : : : : : : :	ings ommu 192 9600 9600	nica \$.	tion 168	driv PLC \$ \$	ver fo Comm	r"S nfo \$	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655 Node of PLC Node of TOP	e setti of co : : : : : : : : : : : : : : : : : : :	ings ommu 192 9600 9600	nica \$	tion 168	driv PLC \$	ver fo Comm	r "S nfo	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655 Node of PLC Node of TOP	e setti of co : : : : : : : : : : : : : : : : : : :	ings ommu 192 9600 9600	nica \$	tion 168	driv PLC \$ \$	ver fo Comm 0	r "S nfo \$.	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".
	■ External device It sets the option IP Address (PLC) : Read Port (0~655 Write Port (0~655 Node of PLC Node of TOP I Auto	e setti of co : : : : : : : : : : : : : : : : : : :	ings ommu 192 9600 9600	nica ¢.	tion 168	driv PLC •	ver fo Comm	r "S nfo	YSM.	AC CS/CJ Ser	ies (Ethe	rnet)".

- TOP Node Number : TOP's Node Address that is used in Communication Protocol;.



Set as below through Rotary Switch (Ethernet Module, Front) and Ladder Software CX-ONE for communication setting. Please refer the PLC user manual for more detailed information if you need.



Please do not use the same IP address in the same network.

Set the Rotary Switch which is located in front of ethernet module as below.

Dip Switch	Settings	Dip Switch	Settings	Rotary Switch		Settings
SW1	OFF	SW5	OFF	Unit No.		0
SW2	OFF	SW6	OFF	NODE No.	x16 ¹	0
SW3	OFF	SW7	OFF		x16 ⁰	1
	0.55	0.140	0.55			

2. Start [CX-Programmer]. Select CPU name that you want to use and PC-PLC communication method from [Change PLC] dialog box. Select "Connection Method between PC-PLC from [Network Type]" in "[Device Type] - PLC Name". Select detailed setting information from [Setting...].

3. Double Click [IO Table and Unit Setup] ([PLC IO Table] dialog box Popup

4. Input ethernet setting information from [Edit Parameters] dialog box by double clicking "built-in Ethernet/IP port" from [PLC IO Table] dialog box - [Built-in Port/Inner-Board] tree.

Details	Settings
IP Address	192.168.000.51
Sub-net Mask	255.255.255.0



4. Communication settings details

Communication settings are available at XDesignerPlus or TOP main menu. Communication settings must be identical with the external devices.

4.1 XDesignerPlus settings details

Select [Project > Project property] to show the below window.



Communication Interface Settings

Details	Contents
IP Address	Setup the IP address that TOP receives in the network.
Subnet mask	Input subnet mask of network
Gateway	Input subnet mask of network
PLC IP address	Input IP address that external device gets received.
Read Port / Write Port	Choose port number that will be used for ethernet communication of external device.
TOP port	Port number will be automatically setup if ethernet communication with external device
PLC address [0~65535]	Address of other device. Select between [0 - 65535].
Ethernet time out	Set up TOP's waiting time from external device at [0 - 99] x 100mSec.
Delay time of transmission	Set up TOP's waiting time between response receiving - next command request transmission



[x1 mSec]	from external device at [$0 - 5000$] x 1 mSec.
Protocol	Choose the protocol type that are authorized to use following devices and setup port number.



4.2 TOP main menu setup item

- When a buzzer is on during the power reset, touch 1 spot at the upper LCD to move to "TOP Management Main" display.

Set up driver interface at TOP according to below Step1 → Step2.
 (Press "TOP ethernet setup" in Step 1 to change setup at Step 2.)



Step 1. [PLC setup] .Setup driver interface.

PLC setup	
PLC IP: 192.168.0.51	Communication Interface
Protocol : UDP	Settings
PLC Read Port : 9600	
PLC Read Port : 9600	
TOP Port : 1024	
PLC address : 1	
Timeout : 1000 [mSec]	
Delay time of transmission : 0 [mSec]	
TOP IP : 192 . 168 . 0 . 50	
TOP Ethernet setting communication diagnosis	

Step 1-Reference. Details Contents PLC IP It is an IP address that external device was given. Protocol Choose the protocol type that are authorized to use following devices and setup port number. PLC Read Port It is the port address that will be used for ethernet of external device. PLC Write Port It is the port address that will be used for ethernet of external device. TOP port Port number will be automatically setup if ethernet communication with external device PLC address [0~65535] Address of other device. Select between [0 - 65535]. Set up TOP's waiting time from external device at [0 - 5000] x 1mSec. Timeout [x1 mSec] Delay Time before Set up TOP's waiting time between response receiving - next command request transmission from external device at [0 - 5000] x 1 mSec. transmitting [x1 mSec] TOP IP Setup the IP address that TOP receives in the network.

Step 2. [PLC Setup] > [TOP Ethernet Setup] - Setup the serial parameter of correspond port.

Port Settings	
* Ethernet Communication	Ethernet Port
+ Network setting	Communication Interface
- MAC : 00 - 15 - ID - 00 - 30 - 52 (each device has different address)	Settings
- IP Address : 192. 168 . 0 . 50	
- Subnet mask : 255 255 . 255 . 0	
- Gateway : 192 168 . 0 . 1	
Step 2-Reference.	

	•				
Details Contents					
MAC Physical official address in the network.					
	IP Address	Setup the IP address that TOP receives in the network.			
	Subnet mask	An address that divides the network ID and host ID regarding of IP address.			
	Gateway	An address that connects a network to another network.			



4.3 Communication diagnosis

- TOP Confirming interface setting condition between external devices
- Move to Menu by clicking the top side of LCD screen as resetting the power of TOP.
- [Main Menu>Communication setting] Confirm if detail in number 20~24 is identical as setup information of "Setup exercise 1".
- PLC Setup > Click the button in "Communication diagnosis" of TOP Ethernet.
- Diagnostics dialog box will pop up on the screen, you can judge by following information that are shown on box no. 3 section.

OK!	Communication setting succeeded			
Time Out Error!	Communication setting error			
	- Error in the setting situation of Cable and TOP / External device			
	(reference : Communication Diagnosis sheet)			

Communication Diagnosis Sheet

- Please refer to the information below if you have a problem between external devices and communication connection.

Details			Contents				Con	firm
TOP	Version Information	I	xDesignerPlus :		O.S :			
	Name of Driver						ОК	NG
	External device information	IP Address					ОК	NG
	(xDesignerPlus	Subnet mask					ОК	NG
	Project setting)	Gateway					ОК	NG
	TOP Information	Protocol	UDP/IP			TCP/IP	OK	NG
	(Main Device Menu Setting)	IP Address					ОК	NG
		Subnet mask					ОК	NG
		Gateway					ОК	NG
	Other specified setting info						ОК	NG
System configuration	System Connection	Method	1:1	1:	N	N:1	ОК	NG
	Name of cable (Hul	o usage)	Direct (Use Hub)	Cr	oss (No Hub)	ОК	NG
External device	Name of CPU						ОК	NG
	Name of communic	ation device					ОК	NG
	Protocol(mode)						ОК	NG
	Other specified sett	ing info					ОК	NG
	IP Address		(Local)		(Destinat	ion)	ОК	NG
	Port number		(Local)		(Destinat	ion)	ОК	NG
	Subnet mask						ОК	NG
	Gateway						ОК	NG
	Address range conf	irm (other docs)					ОК	NG



5. Support address

Devices that are usable with TOP is as below.

There might be difference in the range of device (address) by type / series of CPU module TOP series supports the maximum address range that external device series use Please refer each CPU module user manual carefully for devices that you desired to use to prevent not getting out of range.

6.1 CS1/CJ1 Series

Device	Bit Address	Word Address	32 Bits	Remarks
Channel I/O	CIO0000.00 -CIO6143.15	CIO0000 -CIO6143	L/H	
Internal Auxiliary Relay	W000.00 - W511.15	W000 - W511		
Special Auxiliary Relay	A000.00 - A959.15	A000 – A959		* caution1)
Latch Relay	H000.00 - H511.15	H000 – H511		
Timer	T0000 – T4095			* caution2)
(Time up flag)				
Counter	C0000 – C4095			
(Count up flag)				
Timer		T0000 – T4095		
(Current value)				
Counter		C0000 – C4095		
(Current value)				
Data Memory	D00000.00 - D32767.15	D00000 - D32767		* caution3)
Extension Data Memory	E00000.00 - EC32767.15	E00000 – EC32767		*caution4caution5)
(E0 – EC)				
Extension Data Memory		EM00000 – EM32767		*caution5caution6)
(Current Bank)				

*caution1) A000 - A447 Range : Not authorized data writing.

*caution2) not authorized writing

*caution3) Do not use it because "D device" range is utilized as a system setting range depends on which communication card that the user uses.

Types of Communication Card	Not authorized Using Range
Communication Unit : CS1W-SCU21	D30000 – D31599
Communication Board : CS1W-SCU21/41	D32000 – D32767

*caution4) Depends on CPU type, the range of address is different and it is possible to use up to 13 Bank(E0 - EC) x 32767 word max.

*caution5) CJM1 series does not contain Extension data memory part.

*caution6) CJ1 series does not contain Current Bank EM part.

Solution Continue on the next page.



Device	Bit Address	Word Address	32 Bits	Remarks
Channel I/O	CIO0000.00 -CIO6143.15	CIO0000 –CIO6143	L/H	*
				caution1)
Internal Auxiliary Relay	W000.00 - W511.15	W000 - W511		
Special Auxiliary Relay	A000.00 - A1471.15	A000 - A1471		*
	A10000.00 - A11535.15	A10000 – A11535		caution2)
Latch Relay	H000.00 - H511.15	H000 – H511		
Timer	T0000 – T4095			*
(Time up flag)				caution3)
Counter	C0000 – C4095			*
(Count up flag)				caution3)
Timer		T0000 – T4095		
(Current value)				
Counter		C0000 – C4095		
(Current value)				
Data Memory	D00000.00 - D32767.15	D00000 – D32767		*
				caution1)
Extension Data Memory	E00000.00 - EC32767.15	E00000 – EC32767		*
(E0 – EC)				caution4)
Extension Data Memory		EM00000 – EM32767		
(Current Bank)				

*caution1) Do not use it because it is utilized as a system setting range depends on which communication card that the user uses.

Types of Communication Card	Not authorized Using Range		
Channel I/O	CIO1500 – CIO1899		
Data Memory	D30000 – D31599		

*caution2) A000 - A447 and A10000 - A11535 Range : Not authorized writing

*caution3) not authorized writing

*caution4) Depends on CPU type, the range of address is different and it is possible to use up to 13 Bank(E0 - EC) x 32767 word max.

6.3 CP1 Series

Device	Bit Address	Word Address	32 Bits	Remarks
Channel I/O	CIO0000.00 -CIO6143.15	CIO0000 -CIO6143	L/H	
Internal Auxiliary Relay	W000.00 - W511.15	W000 – W511		
Special Auxiliary Relay	A000.00 – A959	A000 – A959		*caution1)
Latch Relay	H000.00 – H511.15	H000 – H511		
Timer	T0000 – T4095			*caution2)
(Time up flag)				
Counter	C0000 – C4095			*caution2)
(Count up flag)				
Timer		T0000 – T4095]	
(Current value)				

TOP	대한민국대표 터치패널 Touch Operation Panel	

Counter		C0000 – C4095	
(Current value)			
Data Memory	D00000.00 - D32767.15	D00000 – D32767	

*caution1) A000 - A447 Range : Not authorized data writing.

*caution2) not authorized writing