IDEC IZUMI

MicroSmart Series

FC3/FC4A/FC5A Ethernet Driver

Supported version

TOP Design Studio V1.4.4 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Refer to this section to check the addresses which can communicate with an external device.



1. System configuration

The system configuration of TOP and "IDEC MicroSmart" is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
MicroSmart Series	FC3/FC4A/FC5A	Port on CPU unit	Ethernet (TCP)	3.1 Settings example	Twisted pair cable <mark>*Note 1)</mark>

*Note 1) Twisted pair cable

- Refer to STP (Shielded Twisted Pair Cable) or UTP (Unshielded Twisted Pair Cable) Category 3, 4, 5.

- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

Connection configuration

• 1:1 connection (one TOP and one external device) connection





2. External device selection

■ Select a TOP model and a port, and then select an external device.

					x
DLC soloct [F	thornot]				
FLC Select [L	ulenietj			. —	
Filter : [All]		~	5	Search : mic	
					lodel Overldor
Vendor	N	lodel			
	(MicroSr	mart Series		
			Back	🔷 📫 Next	X Cancel
Coloct Davice					_
					^
-PLC Setting[Mici	Normant Series		Rind TD + Auto		
Alids India	E thornot		binu IP : Auto	~	
Protoco	: Ethernet	Ť		ſ	Comm Manual
String Save Mode	i : Eulemet	~			Comm Manual
Suring Save Mode	Einst I H HI	Change			
-	e : First LH HL	Change			
Use Redundar	e : First LH HL	Change			
Use Redundar	e : First LH HL	Change			
Use Redundar Operate Condition : Change Condition :	e : First LH HL CY AND TimeOut	Change	nd)		
Operate Condition :	E : First LH HL CY AND V TimeOut 4 Condition	Change 5 🗘 (Seco	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option	E: First LH HL	Change	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP	E: First LH HL KCY AND Condition	Change	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP	E : First LH HL KCY AND TimeOut Condition 192 () 168	Change 5 \$ (Seco	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol	E: FrstLHHL KCY AND TimeOut 192 158 TCP V	Change	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port	E : FrstLH HL KCY AND → TimeOut 192 ↓ 158 TCP → 2101 ↓	Change	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout	ErstLHHL KCy AND	Change 5 (Seco	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	ErstLH HL KCy AND	Change 5 (Seco	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	ErstLH HL KCy AND	Change 5 (Seco 1 5 sec sec	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	ErstLH HL KCy AND	Change 5 (Seco 1 5 sec sec	nd)		Edit
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Operate Condition : Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	:: First LH HL KCy AND	Change 5 (Seco 6) 1 (Seco sec	nd)		Edit
Operate Condition : Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	:: First LH HL KCy AND	Change 5 (Seco 6) 1 (Seco sec	nd)		Edit
Use Redundar Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port Timeout Send Wait	:: : First LH HL KCy AND	Change 5 (Seco 5 1 5 sec sec	nd)		Edit

Settings		Contents			
ТОР	Model	Check the TOP display and process to select the touch model.			
External device	Vendor	lor Select the vendor of the external device to be connected to TOP. Select "IDEC"			
	PLC	Select an external device to cor	Select an external device to connect to TOP.		
		Model	Interface	Protocol	
MicroSmart Ethernet N			MicroSmartProtocol		
		Please check the system config connect is a model whose syste	guration in Chapter 1 to see if em can be configured.	the external device you want to	



3. TOP communication setting

The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Ethernet]



Items	ТОР	External device	Remarks
IP Address*Note 1) Note 2)	192.168.0.50	192.168.0.51	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, <u>192</u>. <u>168</u>. <u>0</u>. 0) should match.

*Note 2) Do not use duplicate IP addresses over the same network.

* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.



(2) Communication option setting

- [Project > Project Property > Device Setting > ETHERNET > "PLC1 : MicroSmart"]
 - Set the options of the MicroSmart communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Kadd PL	C [A] TI Change PLC[C] Z Delete PLC[D]	
Charge Hinter TOP Setting SYS: RD 1210S Option Module Setting FieldBus (0) RFID (0) COM2 (0) COM2 (0) COM3 (0) Fibernet (1) Fibernet (1) USBDevice (0)	PLC Setting[MicroSmart Series] Alias Name : LC1 Interface : Ethernet Protocol : Ethernet Protocol : Ethernet Operate Condition : Image Condition	Comm Manual
		Close

* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External
Protocol	Select "Ethernet".	device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet protocol TCP between the TOP and an external device.	Fixed
Port	Enter 	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external	
	device and sending the next command request.	



3.2. Communication setting in TOP

* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]

	6	Ethernet ×	×
Run	🔯 System	PortEthernet Port : ETH1 • 0 •	Detion
VNC Viewer	PLC Se	Link Speed : Auto MAC Address : 00:15:1D:05:38:C5 IP Address : 192.168.0.50 Subnet Mask : 255.255.255.0 Gateway : 192.168.0.1 Default Gateway	Sound
	Ethernet	DNS (1) : DNS (2) :	₩i-Fi
Screen shot	Diagnostic M	Ethernet Primary IP : 192.168.0.50 Cable Status : ETH1 Connected Bridge Mode : Use Bridge	MRAM Analysis
	[System]	Check duplicate Apply Cancel	Close

Items	ТОР	External device	Remarks
IP Address*Note 1) Note 2)	192.168.1.118	192.168.1.5	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, 192.168.1.0) should match.

*Note 2) Do not use duplicate IP addresses over the same network.

 \ast The above settings are $\underline{examples}$ recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.



(2) Communication option setting

■ [Main Screen > Control Panel > PLC]

	õ	1001	PLC	×	
	🔯 System	Driver(ETH)	PLC1(MicroSmart Series) -		
Run		Interface	Ethernet 💌		
		Protocol	Ethernet 🔹		
VNC	PLC	Bind IP	Auto 💌		
VNC		IP	192 - 168 - 1 - 5 -		
Viewer		Ethernet	TCP 💌		
	Ethernet	Port	2101 🖨		
		Timeout	1000 🖨 msec		
Screen	word	Send Wait	0 🖨 msec		
shot					
	Diagnostic				
	[System]	Diagnostic	Ping Test	Apply Cancel	

* The above settings are examples recommended by the company.

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External
Protocol	Select "Ethernet".	device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	Selects the Ethernet protocol TCP between the TOP and an external device.	Fixed
Port	Enter 2101 , which is the Ethernet communication port number of the	
	external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external	
	device and sending the next command request.	



3.3 Communication diagnostics

■ Check the interface setting status between the TOP and external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check if the ETH port settings you want to use in [Control Panel > Ethernet] are the same as those of the external device.
- Diagnosis of whether the port communication is normal or not
- Touch "Communication diagnostics" in [Control Panel > PLC].
- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

ОК	Communication setting normal
Time Out Error	Communication setting abnormal
	- Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Conte	nts	Check		Remarks	
System	How to connect the sys	stem	OK	NG	1 Custom configuration	
configuration	Connection cable name		OK	NG	1. System configuration	
ТОР	Version information Port in use Driver name		OK	NG		
			OK	NG		
			OK	NG		
	Other detailed settings	OK	NG			
	Relative prefix	Project setting	OK	NG	2. External device selection	
		Communication diagnostics	ОК	NG	3. Communication setting	
	Ethernet port setting	IP Address	OK	NG		
		Subnet Mask	OK	NG		
		Gateway	OK	NG		
External device	CPU name		OK	NG		
	Communication port na	OK	NG			
	Protocol (mode)	OK	NG			
	Setup Prefix	OK	NG	4 External device cotting		
	Other detailed settings	OK	NG	4. External device setting		
	Ethernet port setting	IP Address	OK	NG		
		Subnet Mask	OK	NG		
		Gateway	OK	NG		
	Check address range		ОК	NG	<u>5. Supported addresses</u> (For details, please refer to the PLC vendor's manual.)	



4. External device setting

Set as below using "IDEC PLC Series" "MicroSmart".

For more detailed setting method than that described in this example, refer to the PLC user manual.

Do not us Run the WINDLDR	e duplicate IP addresses over the same network.
Select ETHERNET a	t communication settings.
Communication Set	tings
Port	Ethernet Communication Settings
C Serial Port	IP Address Settings
Ethernet	Connection Settings
	Web Server Unit Serial Port Settings
	Baud Rate: 9600 V
	Data Bits: 7
	Parity: Even
	Stop Bits: 1
	Baw TCP/IP connection (For HG 3F/4F Ethernet Pass-Through)
	Timeout: 6000 ÷ x 10 msec
	Enable TCP/IP Packets Settings The maximum data size:
	Time delay between packets: 10 msec
	OK Cancel <u>D</u> efault <u>H</u> elp

4. Select IP Address settings.

IP address	Port No.	MAC address	Comment		New
				-	<u>E</u> dit
put IP address			×		<u>D</u> elete
P address:	0.0	. 0 . 0			Search Web Server Unit
			UK		Configure Web Server Unit
Port No:	2101		Cancel		
MAC address:			Clear		
Comment:					
	1			ns.	

5. Select "New" and configure the port and IP.



5. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be careful not to deviate from the address range supported by the device you want to use.

Device	Contents	Bit Address	Word Address	Remarks
Х	Input	0000 ~ 0627	0000 ~ 0062	
Y	Output	0000 ~ 0627	0000 ~ 0062	
М	Internal Relay	0000 ~ 2557	0000 ~ 0254	
	Special Internal Relay	8000 ~ 8317	0800 ~ 0830	
R	Shift Register	0000 ~ 0255	0000 ~ 0240	
TS	Timer(Preset Value)	-	0000 ~ 0255	
TN	Timer(Current Value)	-	0000 ~ 0255	
CS	Counter(Preset Value)	-	0000 ~ 0255	
CN	Counter(Current Value)	-	0000 ~ 0255	
D	Data Register	0000.00 ~ 1999.15	0000 ~ 1999	
	Special Data Register	8000.00 ~ 8199.15	8000 ~ 8199	
	Extended Data Register	2000.00 ~ 7999.15	2000 ~ 7999	

Does not support Extra Data Register.