# Delta Tau Data System Inc. PMAC Series CRUISER SERIES Ethernet Driver

Supported version TOP Design Studio V1.0 or higher



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We would like to thank our customers for using M2I's "Touch Operation Panel (M2I TOP) Series". Read this manual and familiarize yourself with the connection method and procedures of the "TOP and external device".

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2. External device selection

### Page 2

Describes the devices required for connection, the setting of each device, cables, and configurable systems.

#### Page 3

Select a TOP model and an external device.

### **3.** TOP communication setting Page 4

Describes how to set the TOP communication.

### 4. External device setting Page 7

Describes how to set up communication for external devices.

### 5. Supported addresses

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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 "PMAC – **CRUISER**" is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
PMAC	CRUISER	CPU built-in ETH	Ethernet (TCP/UDP)	3. TOP communication setting 4.1. External device setting 1	Twisted pair cable <sup>*Note 1)</sup>

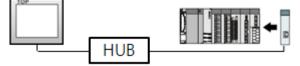
\*Note 1) Twisted pair cable

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

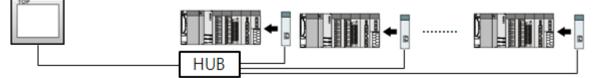
- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

■ Connectable configuration

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



• 1:N connection (one TOP and multiple external devices) connection





# 2. External device selection

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

elect Device					
PLC select [Et	hernet]				
Filter : [All]		$\sim$	5	Search : pm	
					Vendor
Vendor		Model			
DELTA TAU Data System	s	🌮 рма	C Series		
		~			
			Back	🔷 Next	X Cancel
elect Device			<b>Back</b>	Next	X Cancel
PLC Setting[ PMAC				Next	
PLC Setting[ PMAC Alias Name :	PLC1			Next	
PLC Setting[ PMAC Alias Name : Interface :	PLC1 Ethernet			~	
PLC Setting[ PMAC Alias Name : Interface : Protocol :	PLC1 Ethernet TURBO PMAC	~		~	
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PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode :	PLC1 Ethernet TURBO PMAC First HL HL	~		~	
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PLC Setting[ PMAC Alias Name : Interface : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option IP Ethernet Protocol	PLC1 Ethernet TURBO PMAC First HL HL Y JD Condition 192 16 TCP	Change	Bind IP : Auto	× (co	mm Manual
PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port	PLC1 Ethernet TURBO PMAC First HL HL V V TimeOut Condition 192 () 16 TCP ~ 102 ()	Change 5 \$ \$ (Se 8 \$ 0	Bind IP : Auto	× (co	mm Manual
PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : M Change Condition : M Change Condition : P Imary Option IP Ethernet Protocol Port Timeout	PLC1 Ethernet TURBO PMAC First HL HL V V D Condition 192 (16) TCP 102 (10) 300) (10)	Change 5 Change 8 0 msec	Bind IP : Auto	× (co	mm Manual
PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : Change Condition : Primary Option IP Ethernet Protocol Port	PLC1 Ethernet TURBO PMAC First HL HL V V D Condition 192 (16) TCP 102 (10) 300) (10)	Change 5 \$ \$ (Se 8 \$ 0	Bind IP : Auto	× (co	mm Manual
PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : M Change Condition : M Change Condition : P Imary Option IP Ethernet Protocol Port Timeout	PLC1 Ethernet TURBO PMAC First HL HL V V D Condition 192 (16) TCP 102 (10) 300) (10)	Change 5 Change 8 0 msec	Bind IP : Auto	× (co	mm Manual
PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : M Change Condition : M Change Condition : P Imary Option IP Ethernet Protocol Port Timeout	PLC1 Ethernet TURBO PMAC First HL HL V V D Condition 192 (16) TCP 102 (10) 300) (10)	Change 5 Change 8 0 msec	Bind IP : Auto	× (co	mm Manual
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PLC Setting[ PMAC Alias Name : Interface : Protocol : String Save Mode : Use Redundanc Operate Condition : M Change Condition : M Change Condition : P Imary Option IP Ethernet Protocol Port Timeout	PLC1 Ethernet TURBO PMAC First HL HL V V D Condition 192 (16) TCP 102 (10) 300) (10)	Change 5 Change 8 0 msec	Bind IP : Auto	× (co	mm Manual

Settings		Contents				
ТОР	Model	Check the TOP displa	Check the TOP display and process to select the touch model.			
External device	Vendor		elect the vendor of the external device to be connected to TOP. elect " <b>Delta Tau Data System Inc</b> ".			
	PLC	Select an external de	vice to connect to TOP.			
		Model	Interface	Protocol		
		PMAC	ETHERNET	PMAC PROTOCOL		
		Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.				



## 3. TOP communication setting

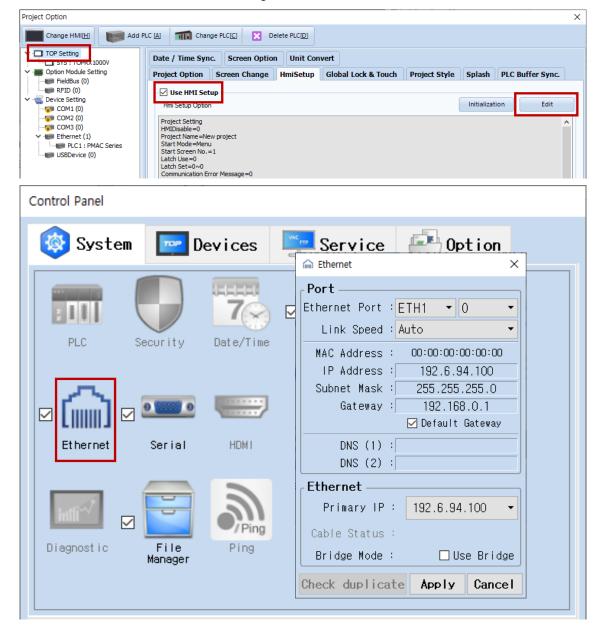
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

### 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]

- Set the TOP communication interface in TOP Design Studio.



Items	ТОР	External device	Remarks
IP Address*Note 1) Note 2)	192.6.94.100	192.6.94.5	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

\* 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

#### External device connection manual for TOP Design Studio



- [ Project > Project Property > Device Setting > ETHERNET
  - Set the options of the PMAC Series Ethernet communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Keller Add F	PLC [A] TIT Change PLC[C] Delete PLC[D]	
<ul> <li>TOP Setting</li> <li>SYS : TOPRX1000V</li> <li>Option Module Setting</li> <li>FieldBus (0)</li> <li>FIED (0)</li> <li>COM1 (0)</li> <li>COM2 (0)</li> </ul>	PLC Setting[ PMAC Series ]         Alias Name : PLC1       Bind IP : Auto          Interface : Ethernet          Protocol : TURBO PMAC          String Save Mode : First HL HL       Change	nual
COM3 (0) Ethernet (1) PLC1 : PMAC Series USBDevice (0)	Change Condition : TimeOut 5 (Second)	
	Primary Option       IP     192       Ethernet Protocol     TCP       Port     102       Timeout     300       Send Wait     0	

Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External
Protocol	Select the communication protocol between the TOP and an external device.	device selection".
IP	Enter the IP address of the external device.	
Ethernet Protocol	Ethernet Protocol Selects the Ethernet Protocol between the TOP and an external device.	
Port	Port Enter 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	Contents		Ch	eck	Remarks
System	How to connect the system		OK	NG	1. Contains and Francistics
configuration	Connection cable name		OK	NG	1. System configuration
ТОР	Version information		OK	NG	
	Port in use		OK	NG	
	Driver name		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 name (module name)		OK	NG	
	Protocol (mode)		OK	NG	
	Setup Prefix		OK	NG	4. External device cetting
	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		OK	NG	<u>5. Supported addresses</u> (For details, please refer to the PLC vendor's manual.)



# 4. External device setting

Configure the communication settings of the external device by referring to the vendor's user manual.



# 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 take caution to not deviate from the address range supported by the device you want to use.

Device	Bit Address	Word Address	32 Bit	Remarks
I-Device	10000.00 - 18191.15	10000 - 18191		R/W
P-Device	P0000.00 - P8191.15	P0000 - P8191		R/W) Note 1
Q-Device	Q0000.00 - Q8191.15	Q0000 - Q8191		R/W
M-Device	M0000.00 - M8191.15	M0000 - M8191		R/W
POS	-	0		R
VEL	-	0		R
FEL	-	0	32BIT	R
JOG	-	0-4		W
J:	-	0		W
J=	-	0		W
J۸	-	0		W
RUN		0		W
HLT	-	0		W
К		0		W

Note 1) P P-Device is FLOAT DATA