LS MECAPION Co., Ltd.
ANYPACK Servo Drive Series
Computer Link Driver

Supported version TOP Design Studio V1.0 or higher

CONTENTS

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".

1. System configuration

The system configuration of TOP and "LS MECAPION Co., Ltd. – ANYPACK Servo Drive Series Computer Link" is as follows:

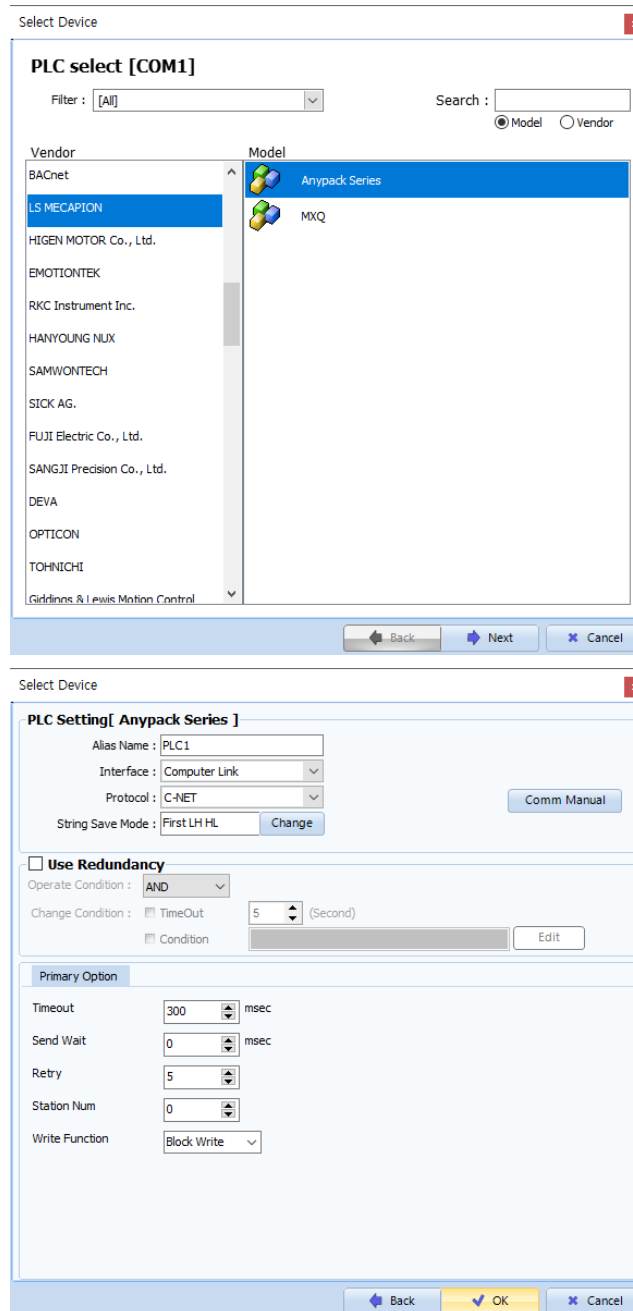| Series	CPU	Link I/F	Communication method	System setting	Cable
APD	APD–VS☐☐ APD–VP☐☐ APD–VK☐☐ APD–VN☐☐	CN3 Port on CPU unit	RS–232C	3. TOP communication setting 4. External device setting	5. Cable table

■ **Connection configuration**

・1:1 (one TOP and one external device) connection – configuration which is possible in RS232C communication.

2. External device selection

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

Settings		Contents
TOP	Model	Check the TOP display and process to select the touch model.
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "LS MECAPION (Metronix)".
	PLC	Select an external device to connect to TOP.

Model	Interface	Protocol
Anypack Series	Computer Link	C-NET

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.
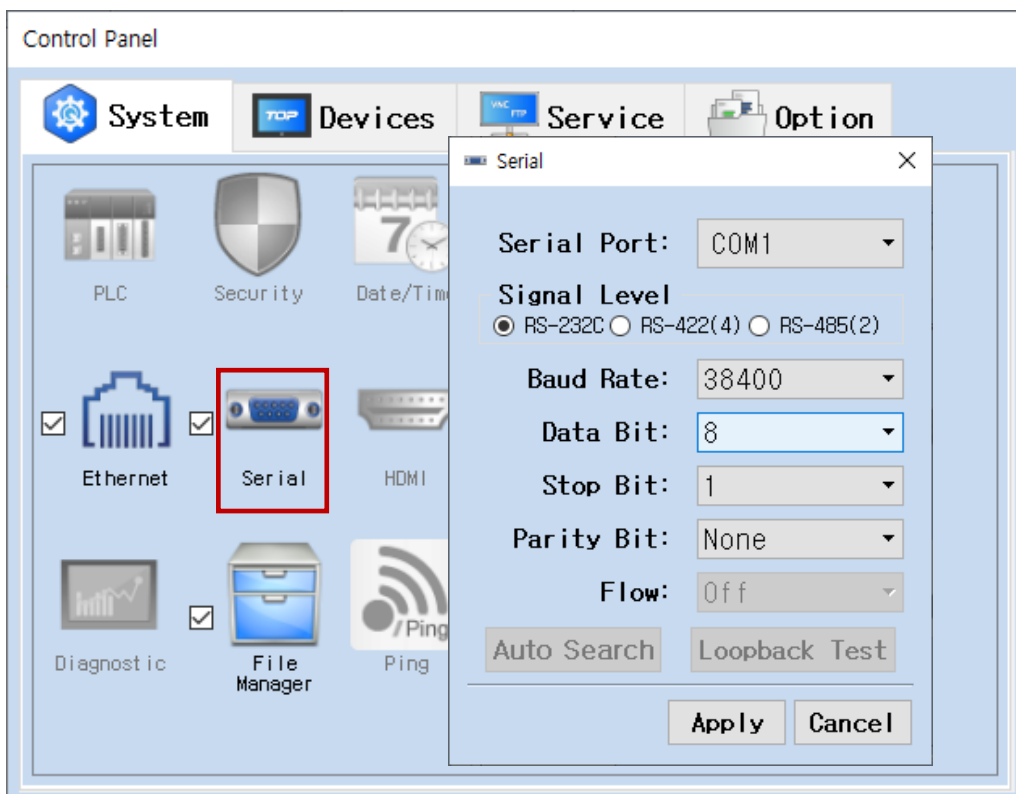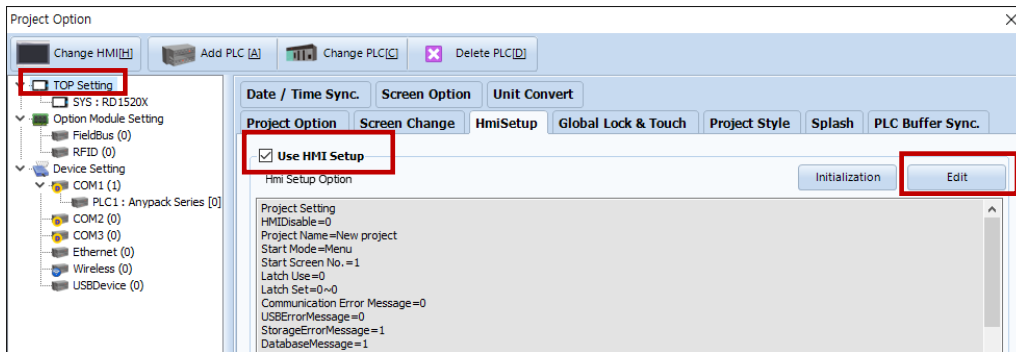
3. TOP communication setting

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 > Serial]

 – Set the TOP communication interface in TOP Design Studio.

Items	TOP	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	None.		

 * The above settings are <u>examples</u> recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

■ [Project > Project Property > Device Setting > COM1 > "PLC1 : Anypack Series"]

– Set the options of the LS MECAPION Co., Ltd. – ANYPACK Series Computer Link communication driver in TOP Design Studio.

Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an 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.	
Station Num	Enter the prefix of an external device.	
Write Function	Configure the write command.	

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 <u>drag</u> it down. Touch "EXIT" in the pop-up window to go to the main screen.

(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]

Items	TOP	External device	Remarks
Signal Level (port)	RS-232C	RS-232C	
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	None.		

* The above settings are <u>examples</u> recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device. (COM3 supports only RS-485.)
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

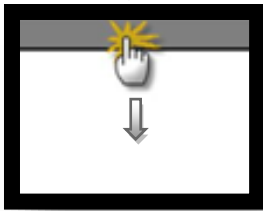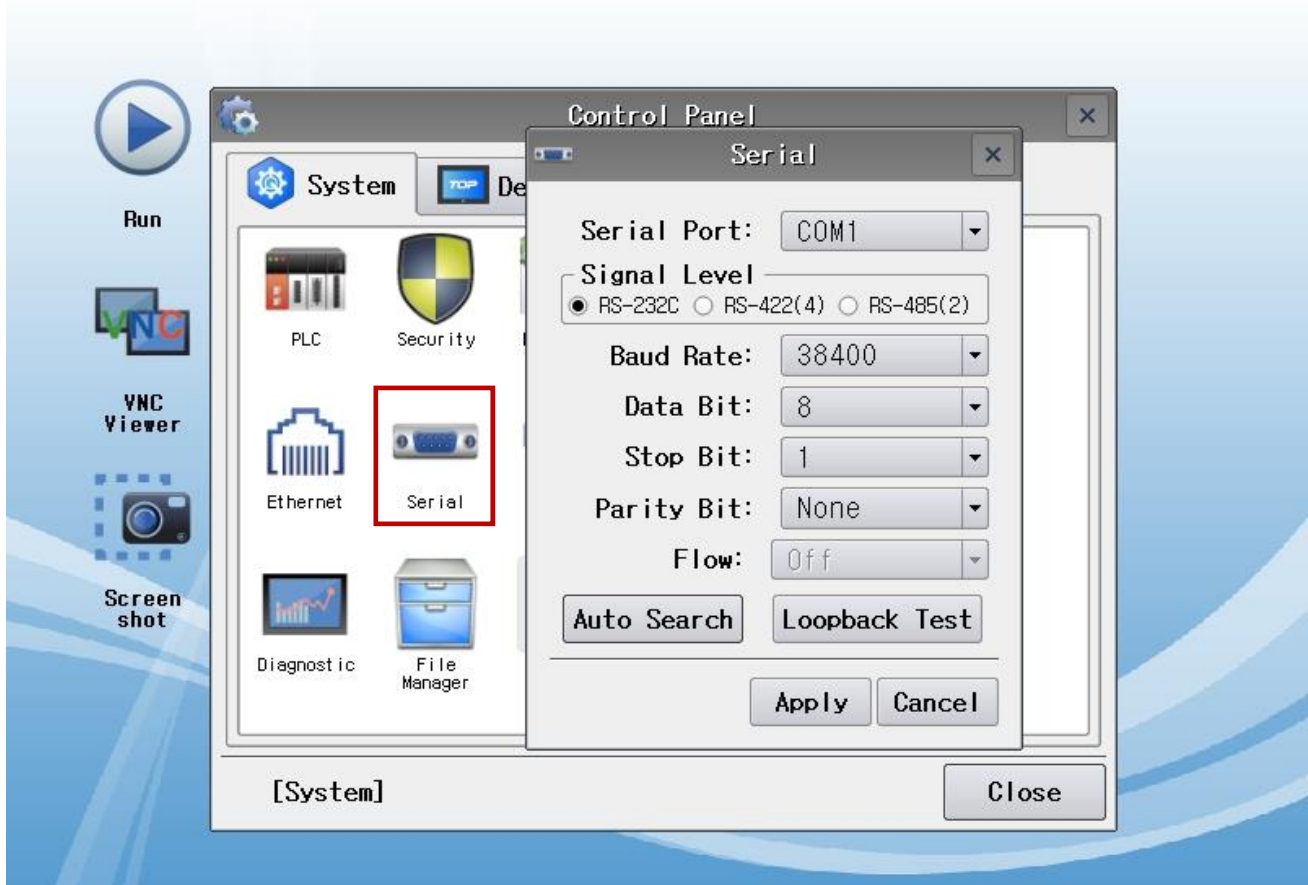■ [Main Screen > Control Panel > PLC]

Items	Settings	Remarks
Interface	Select "Computer Link".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an 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.	
Station Num	Enter the prefix of an external device.	
Write Function	Configure the write command.	

3.3 Communication diagnostics

■ Check the interface setting status between the TOP and an 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 port (COM1/COM2) settings you want to use in [Control Panel > Serial] 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.

OK	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		Check		Remarks
System configuration	How to connect the system		OK	NG	1. System configuration
	Connection cable name		OK	NG	
TOP	Version information		OK	NG	2. External device selection 3. Communication setting
	Port in use		OK	NG	
	Driver name		OK	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	
		Communication diagnostics	OK	NG	
	Serial Parameter	Transmission Speed	OK	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
External device	CPU name		OK	NG	4. External device setting
	Communication port name (module name)		OK	NG	
	Protocol (mode)		OK	NG	
	Setup Prefix		OK	NG	
	Other detailed settings		OK	NG	
	Serial Parameter	Transmission Speed	OK	NG	
		Data Bit	OK	NG	
		Stop Bit	OK	NG	
		Parity Bit	OK	NG	
	Check address range		OK	NG	6. Supported addresses (For details, please refer to the PLC vendor's manual.)

4. External device setting

Refer to the manual of the external device and configure the servo drive system parameters as follows.

■ System Parameter **[PE–202]** : Transmission speed configuration
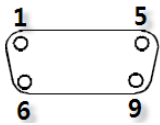
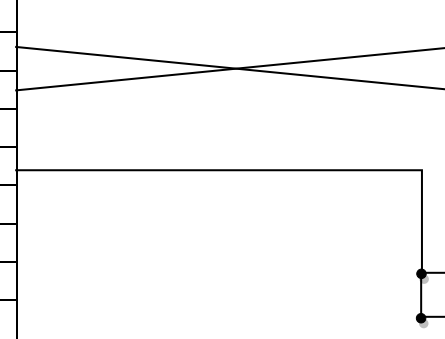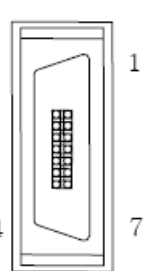| Items	Settings	Contents
[PE–202]	2	38400 [bps]

■ System Parameter **[PE–202]** : Transmission speed configuration

Items	Settings	Contents
[PE–207]	0	Prefix (Station ID) "0" configuration

5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.

(The cable diagram described in this section may differ from the recommendations of "LS MECAPION Co., Ltd.")

■ **RS-232C** (1:1 connection)

COM Port			Cable connection	Servo Drive (CN3 port)		
Pin arrangement*Note 1)	Signal name	Pin number		Pin number	Signal name	Pin arrangement*Note 1)
Based on communication cable connector front, D-SUB 9 Pin male (male, convex)	CD	1				10114-3000VE(3M)
	RD	2		5	RXD	
	SD	3		6	TXD	
	DTR	4		7		
	SG	5		8		
	DSR	6		9		
	RTS	7		10		
	CTS	8		11	SG	
		9		12	SG	

*Note 1) The pin arrangement is as seen from the connecting side of the cable connection connector.

6. 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.

⚠️ – For address input, enter the **"Communication Code"** listed in the description in the external device manual.

Communication Code	MENU		Unit	Initial value
	CODE	NAME	Min	Max
100	PE-501	Export range for completed positioning	Pulse	100
		Inposition	0	99999

– For external device (MD) data size, **32 bits** is standard.

Device	Bit address	Double word address	Remarks
Menu Data	MD0000.00 – MD9999.31	MD0000.00 – MD9999.31	