M2I Corporation

User Define Protocol

Serial Driver

Supported version   TOP Design Studio   V1.4.9.0 or higher

CONTENTS

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

1. System configuration

The system configuration of TOP and external device is as follows:

Series	CPU	Link I/F	Communication method	System setting	Cable
Supports serial connection for all devices	Serial port	RS-232C RS-422 (4wire) RS-485 (2wire)	3. TOP communication setting	User Define

■ **Connection configuration**

・1:1 connection

2. External device selection

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

Settings		Contents
TOP	Model	Check the display and process of TOP to select the touch model.
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "M2I Corporation".
	Model	Select the external device to be connected to the TOP.

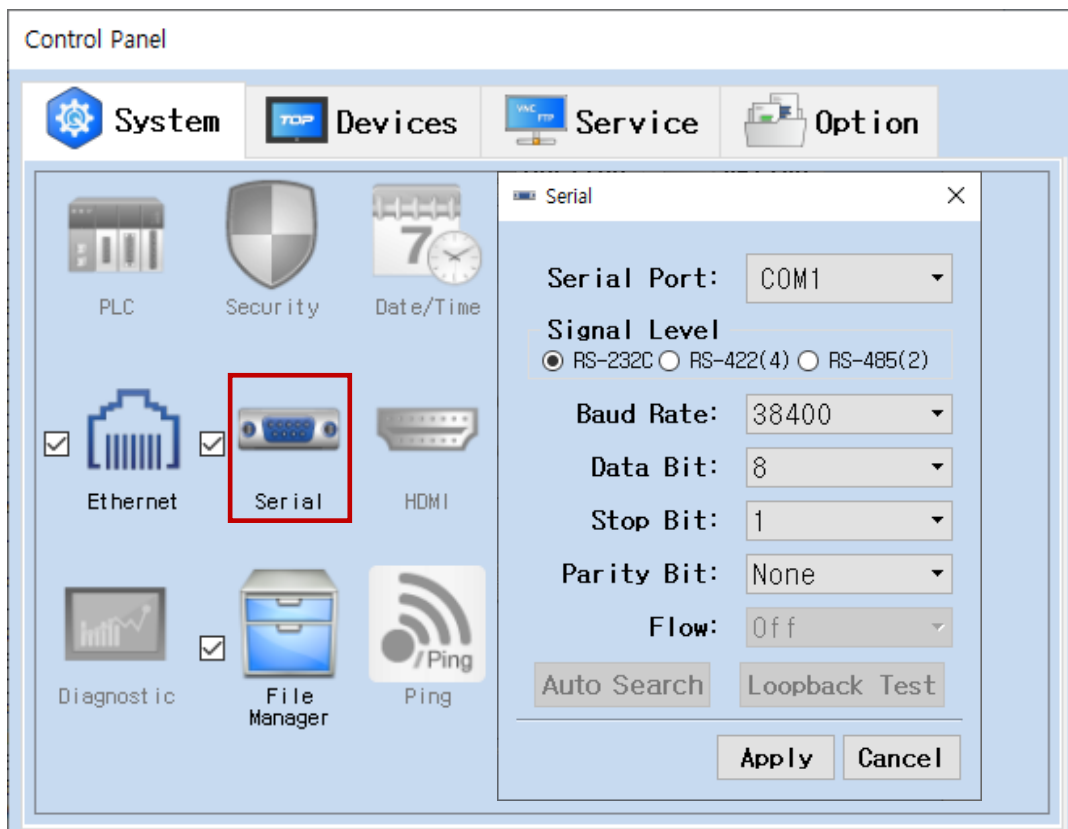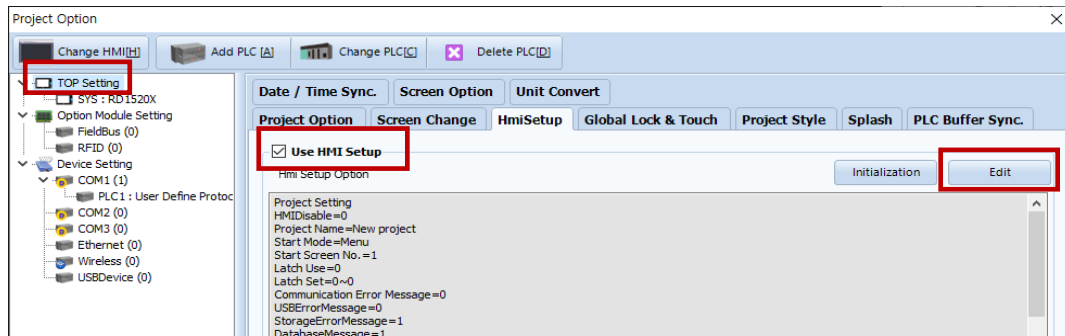| Model	Interface	Protocol
User Define Protocol	Serial	User Defined

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] → [HMI Setup > "Use HMI Setup" Check > Edit > Serial]

– Set the TOP communication interface in TOP Design Studio.

Items	TOP	External device	Remarks
Signal Level	RS-232C / RS-422 / RS-485	RS-232C / RS-422 / RS-485	
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 Settings > COM1 > "PLC1 : User Define Protocol"]
– Set the options of the User Define Protocol communication driver in TOP Design Studio.
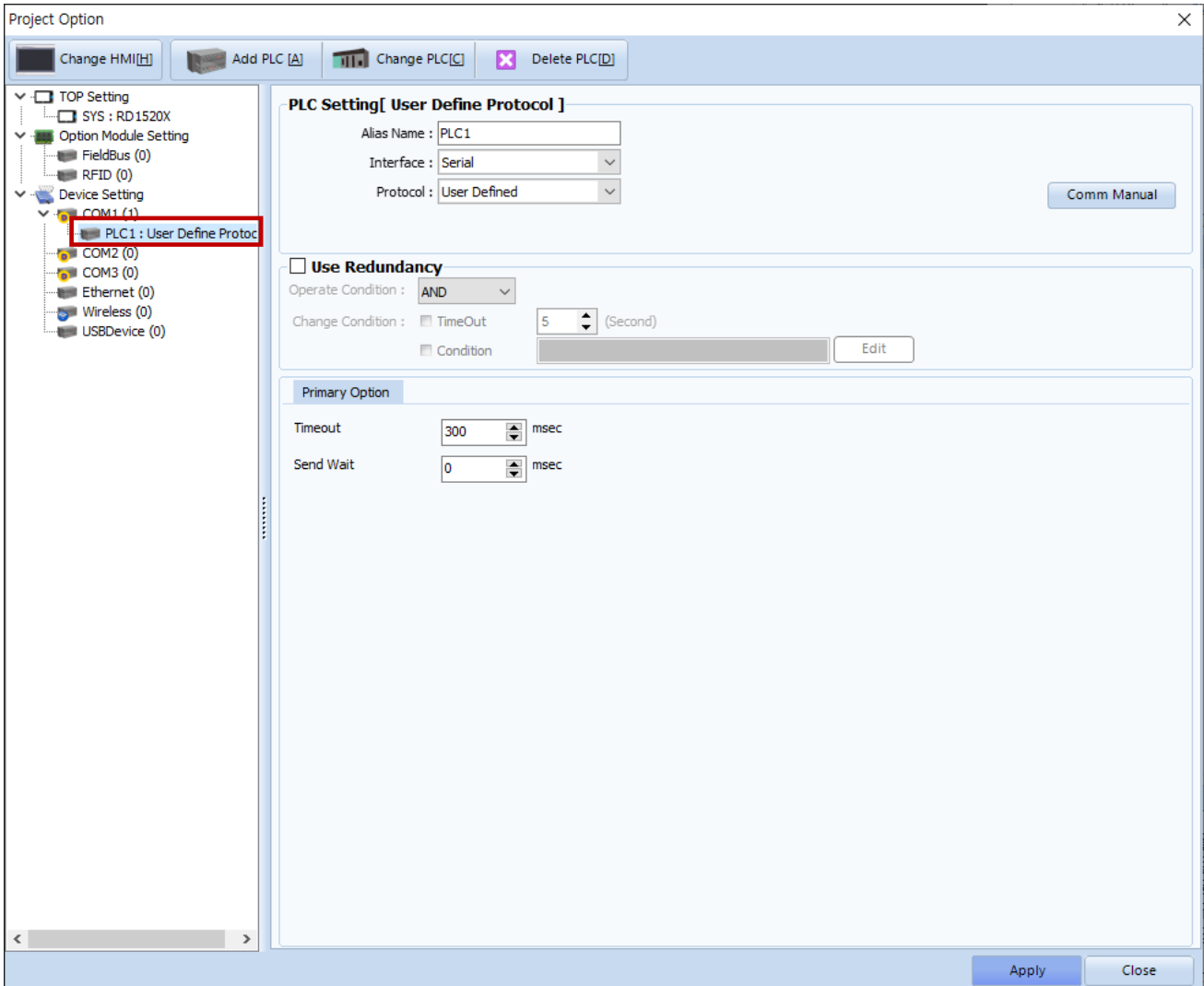
Items	Settings	Remarks
Interface	Select "Serial".	Refer to "2. External device selection".
Protocol	Select "User Defined".	
Timeout (ms)	Set the time for the TOP to wait for a response from an external device.	*Note 1)
Send Wait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	

*Note 1) This corresponds to the internal response latency of the TOP; configuration of this setting is irrelevant.

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.
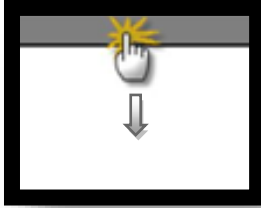
(1) Communication interface setting

■ [Main Screen > Control Panel > Serial]

Items	TOP	External device	Remarks
Signal Level	RS-232C / RS-422 / RS-485	RS-232C / RS-422 / RS-485	
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	None.		

* The above settings are examples 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

■ [Main Screen > Control Panel > PLC]

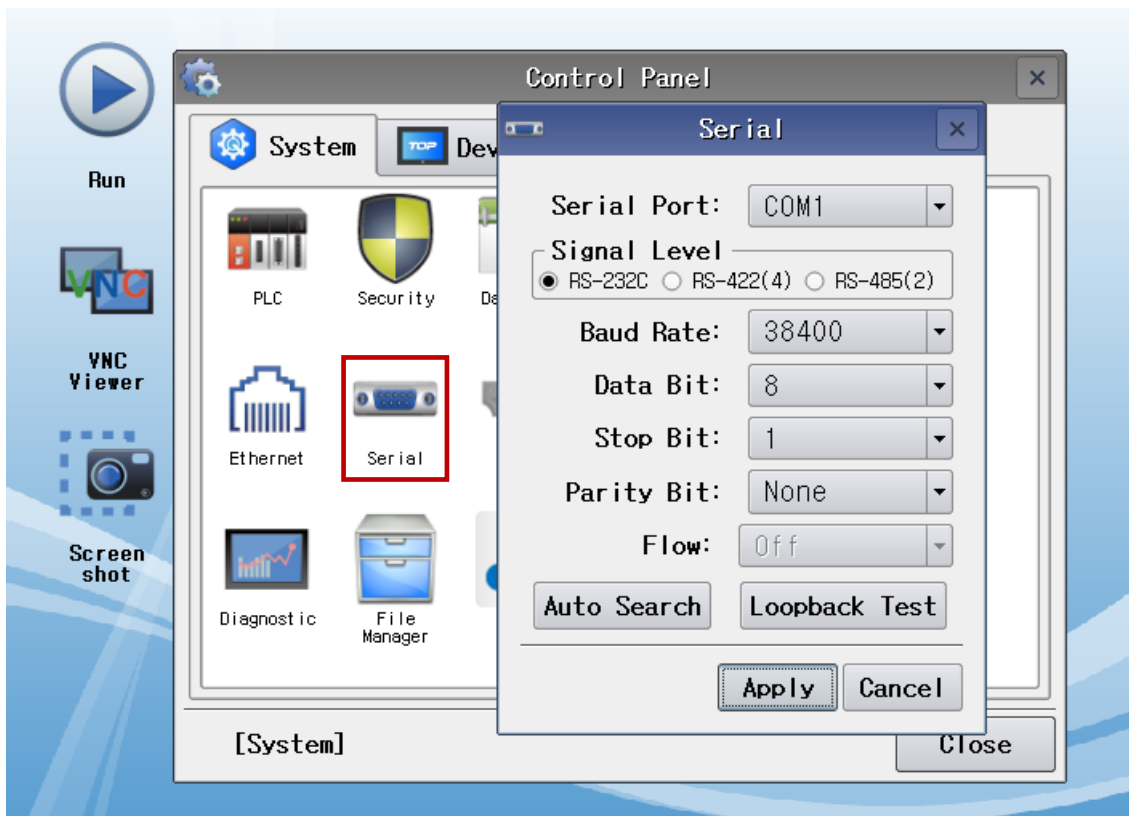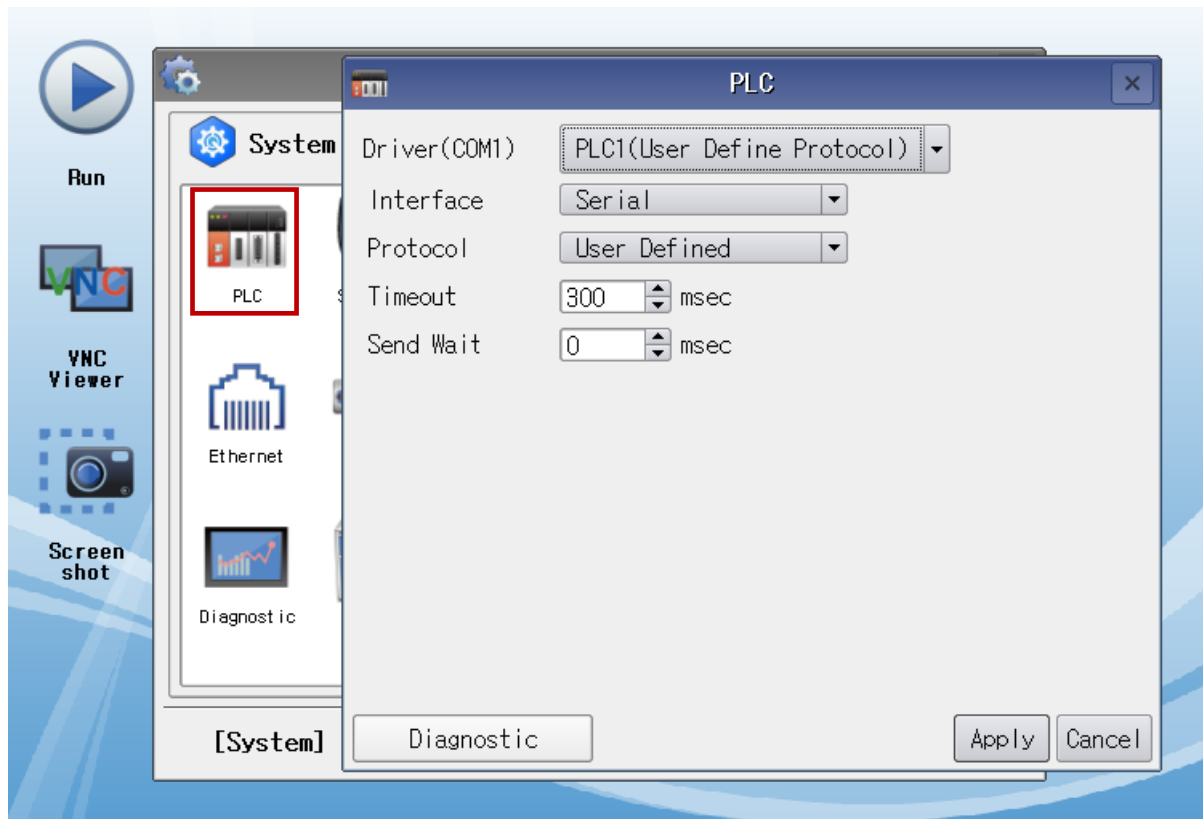

Items	Settings	Remarks
Interface	Select "Serial".	Refer to "2. External
Protocol	Select "User Defined".	device selection".
Timeout (ms)	Set the time for the TOP to wait for a response from an external device.	*Note 1)
Send Wait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	

*Note 1) This corresponds to the internal response latency of the TOP; configuration of this setting is irrelevant.

## 3.3 Communication diagnostics

※ The following driver does not support a communication diagnostics feature for its counterpart.

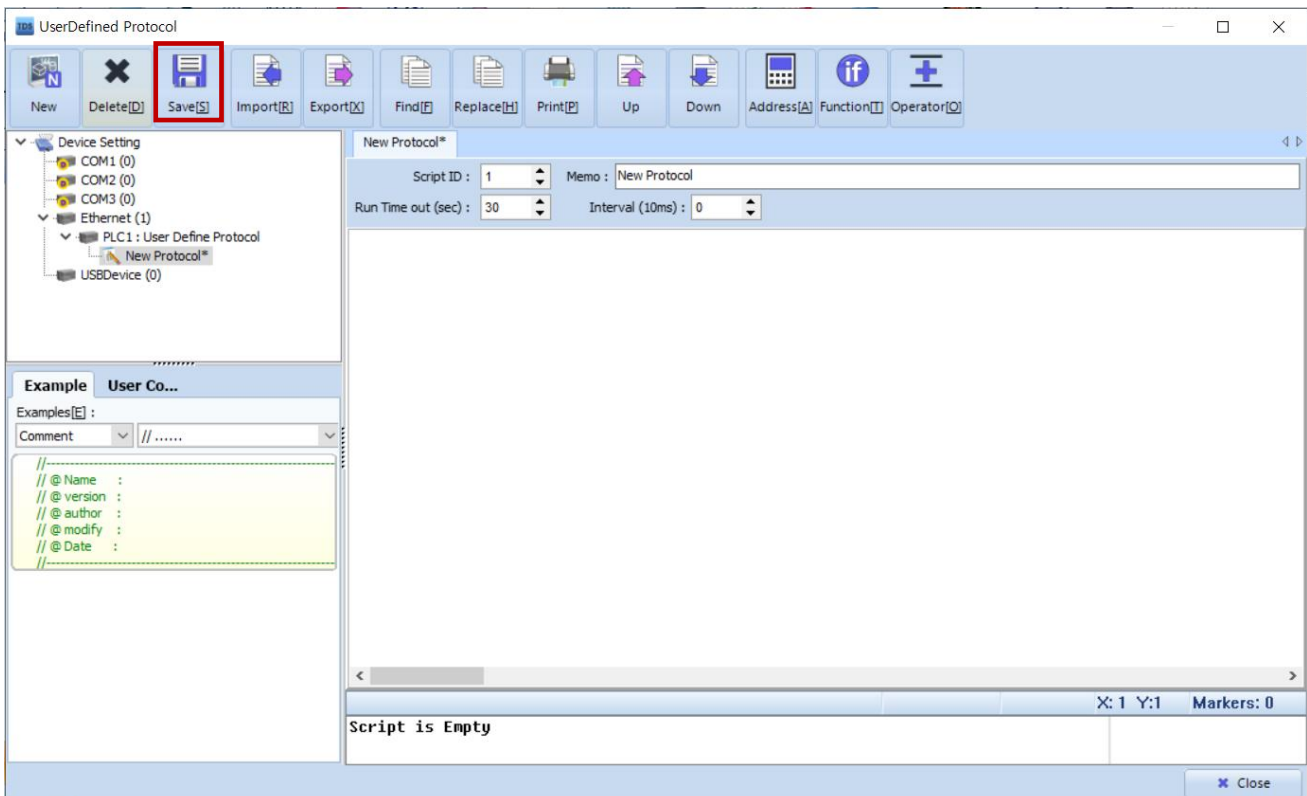# 4. External device setting

*Refer to the vendor's user manual to identically configure the communication settings of the external device to that of the TOP.

5. Script setting

Step 1. [Project > Device > COM1 > Right click "PLC1: User Define Protocol" > User Define Protocol]
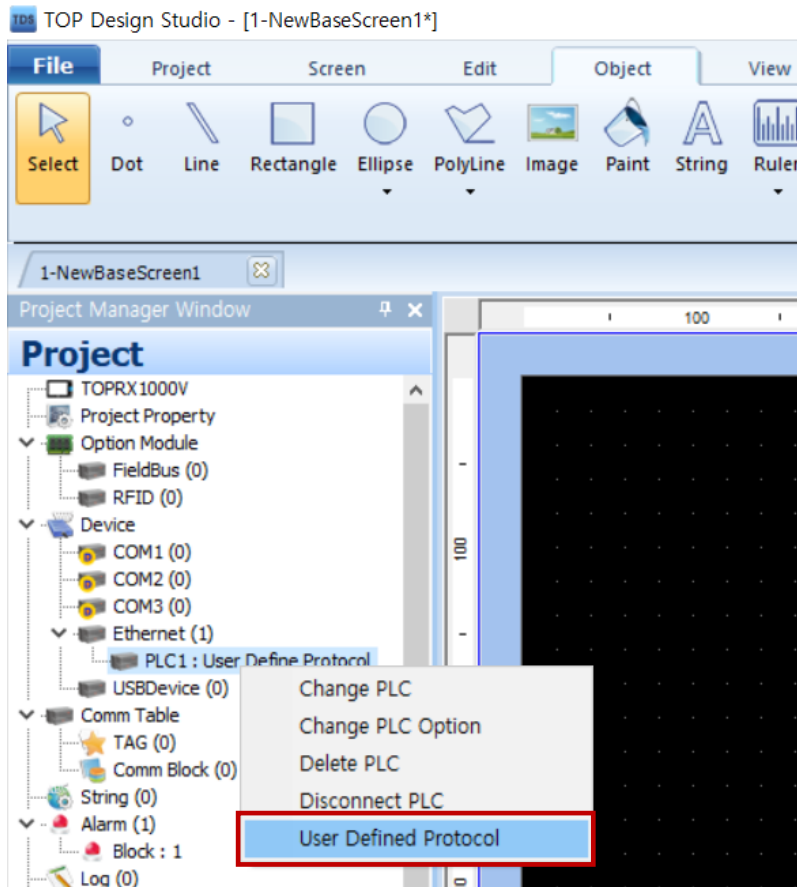
Step 2. Draft and save the appropriate script for the communication.

■ User Define protocol function

Items	Description	Remarks
CommAsciiWrite(value)	Writes the ASCII data value to the external device.	
CommAsciiRead(size)	The external device reads ASCII data according to size.	
CommReset()	Resets the communication status with the external device.	
CommWait(msec)	Configures the driver's latency. (Units are in msec)	
CommErrorMsg(value)	Displays the communication error messages that occur with the external device.	
CommErrorClear()	Deletes the communication error messages that occur with the external device.	