

# DONGBU ROBOT CO., LTD

## iM-U 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** [Page 2](#)

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

### **2. External device selection** [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 9](#)

Describes how to set up communication for external devices.

### **5. Cable table** [Page 10](#)

Describes the cable specifications required for connection.

### **6. Supported addresses** [Page 11](#)

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

# 1. System configuration

The system configuration of TOP and "DongBu Robot Co.,Ltd – iM-U Series Computer Link" is as follows.

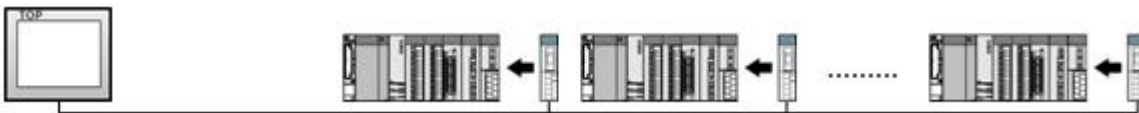
Series	CPU	Link I/F	Communication method	System setting	Cable
iM-U	All CPU	SIO1	RS-232C	<a href="#">3. TOP communication setting</a> <a href="#">4. External device setting</a>	<a href="#">5.1. Cable table</a>
			RS-422 (4 wire)		
		SIO2	RS-232C		
			RS-422 (4 wire)		

## ■ Connection configuration

- 1 : 1 (one TOP and one external device) connection – Configuration available in RS232C/422 communication.

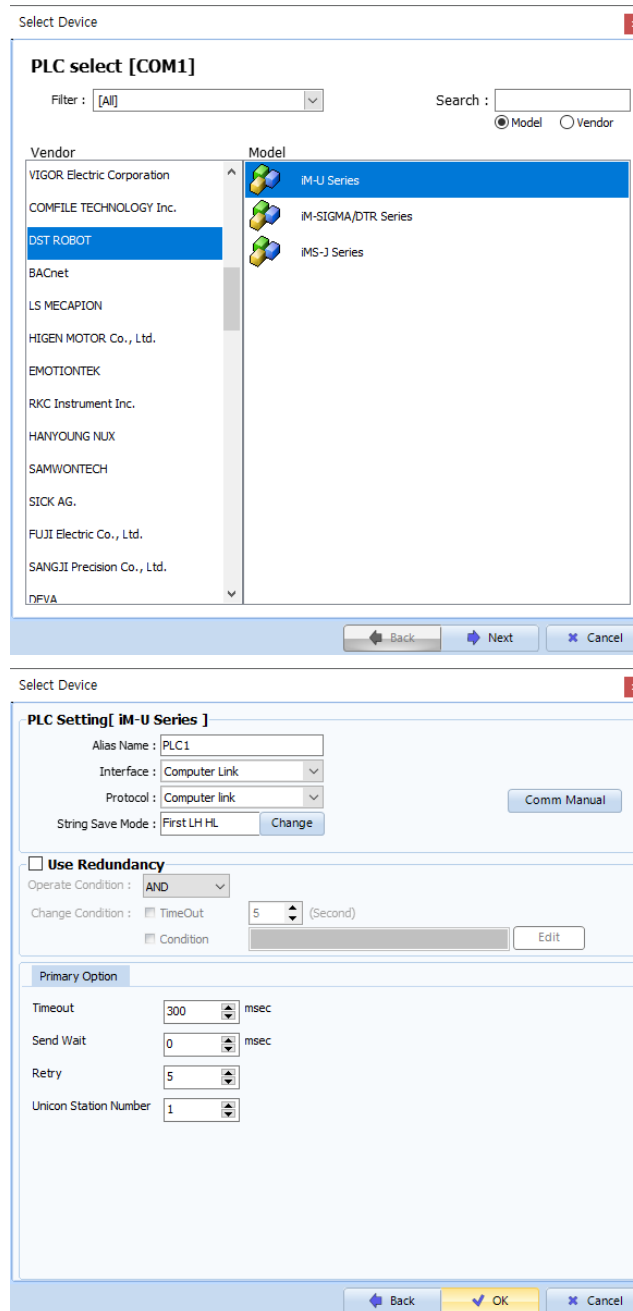


- 1 : N (one TOP and multiple external device) connection – Configuration available in RS422 communication.



## 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 "Dongbu(DASAROBOT)".					
	PLC	Select an external device to connect to TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Model</th> <th>Interface</th> <th>Protocol</th> </tr> </thead> <tbody> <tr> <td>iM-U Series</td> <td>Computer Link</td> <td>Computer Link</td> </tr> </tbody> </table> <p>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.</p>	Model	Interface	Protocol	iM-U Series	Computer Link
Model	Interface	Protocol					
iM-U Series	Computer Link	Computer Link					

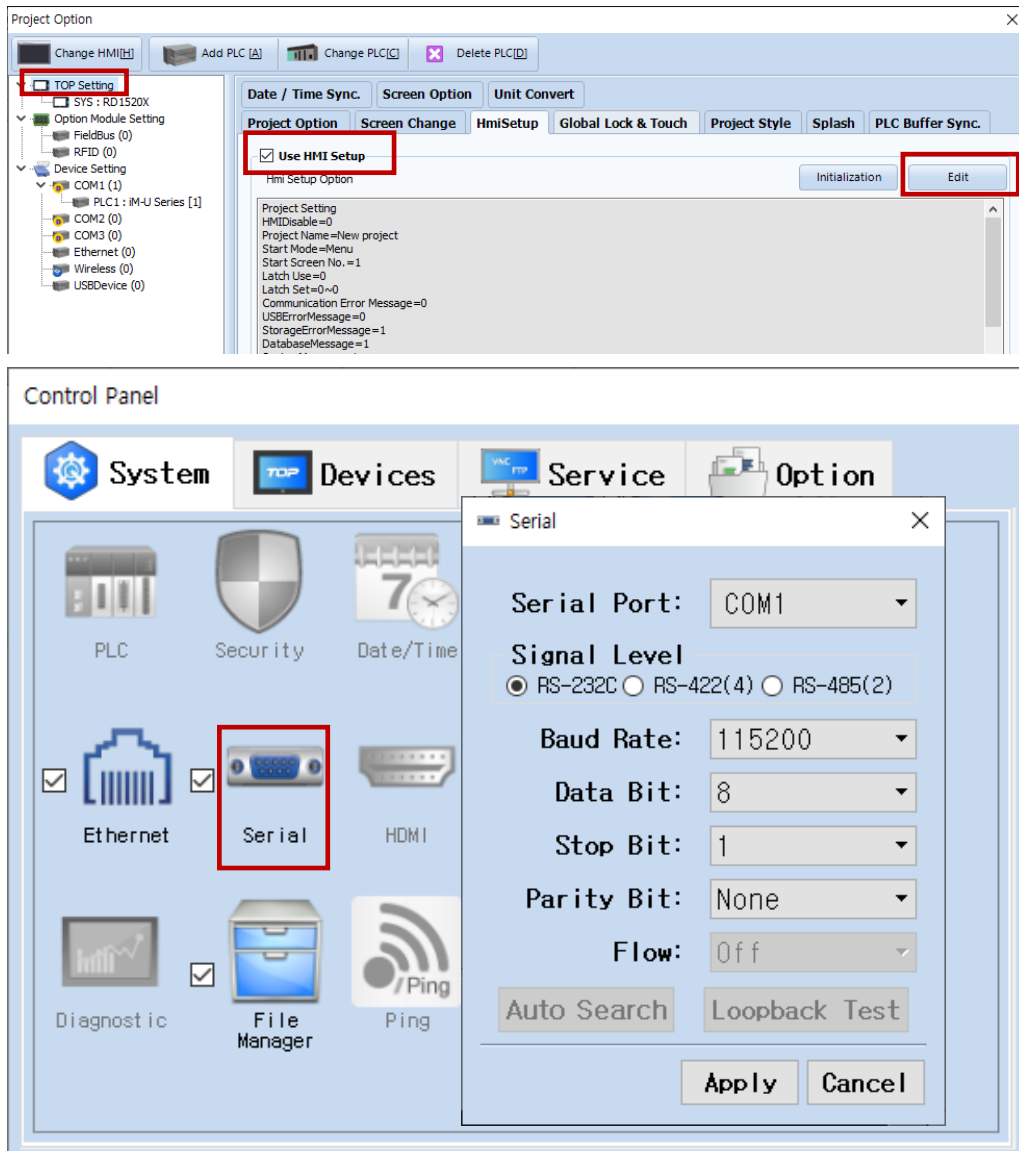
### 3. TOP communication setting

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 properties > TOP settings] → [Project option > Check "Use HMI settings" > Edit > Serial ]
- Set the TOP communication interface in TOP Design Studio.



Items	TOP		External device	Remarks
Signal Level (port)	RS-232C	RS-422	RS-232C RS-422	
Baud Rate	115200			
Data Bit	8			
Stop Bit	1			
Parity Bit	None.			

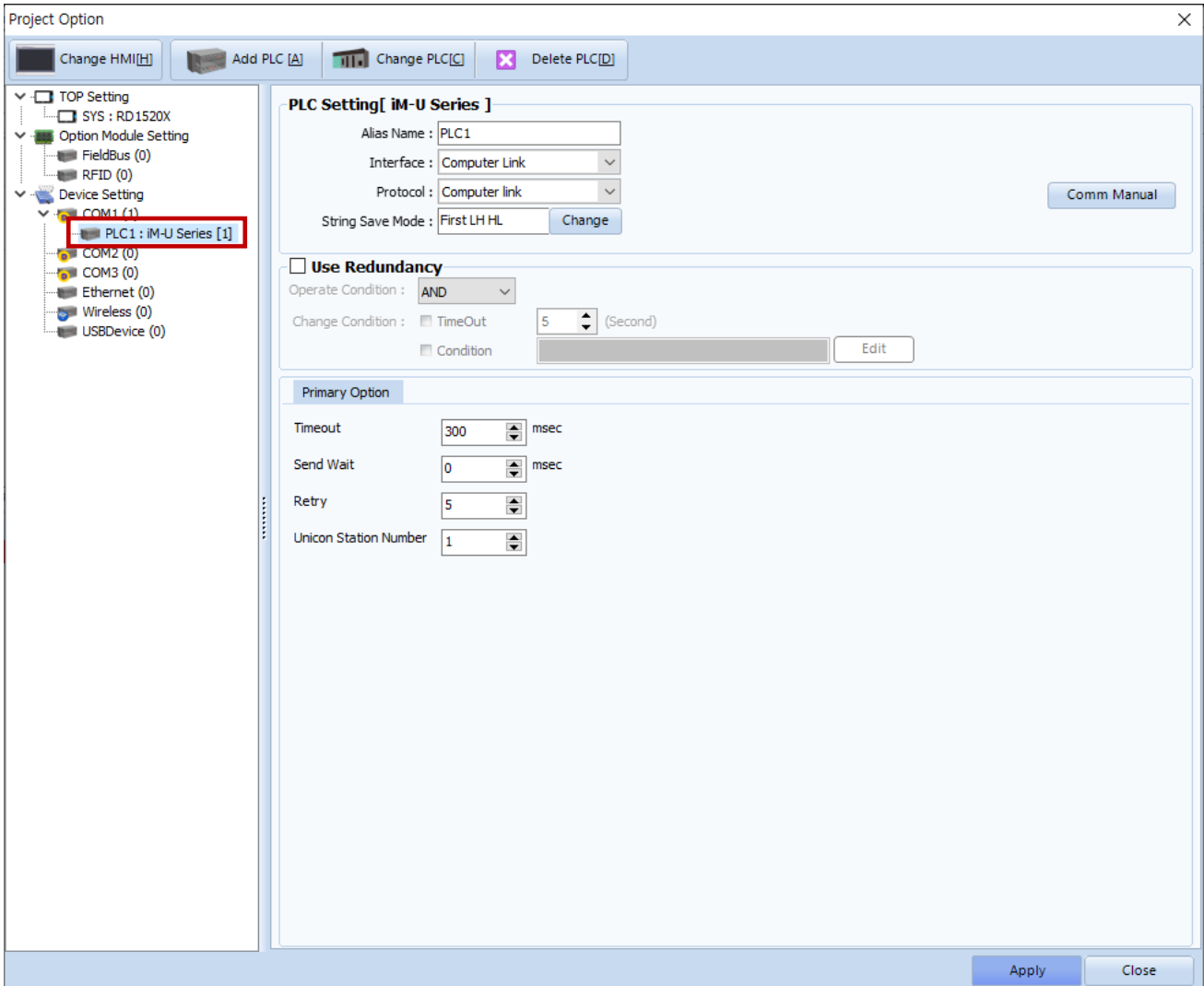
\* The above settings are examples recommended by the company.

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**

■ [ Project > Project properties > PLC settings > COM > "PLC1 : iMS-U Series"]

– Set the options of the communication driver of DongBu Robot Co.,Ltd – iM-U Series Computer Link in TOP Design Studio.



Items	Settings	Remarks
Interface	Select "Computer Link".	<a href="#">Refer to "2. External device selection".</a>
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.	
Unicon Station Number	Enter the prefix of an external device.	

### 3.2. Communication setting in TOP

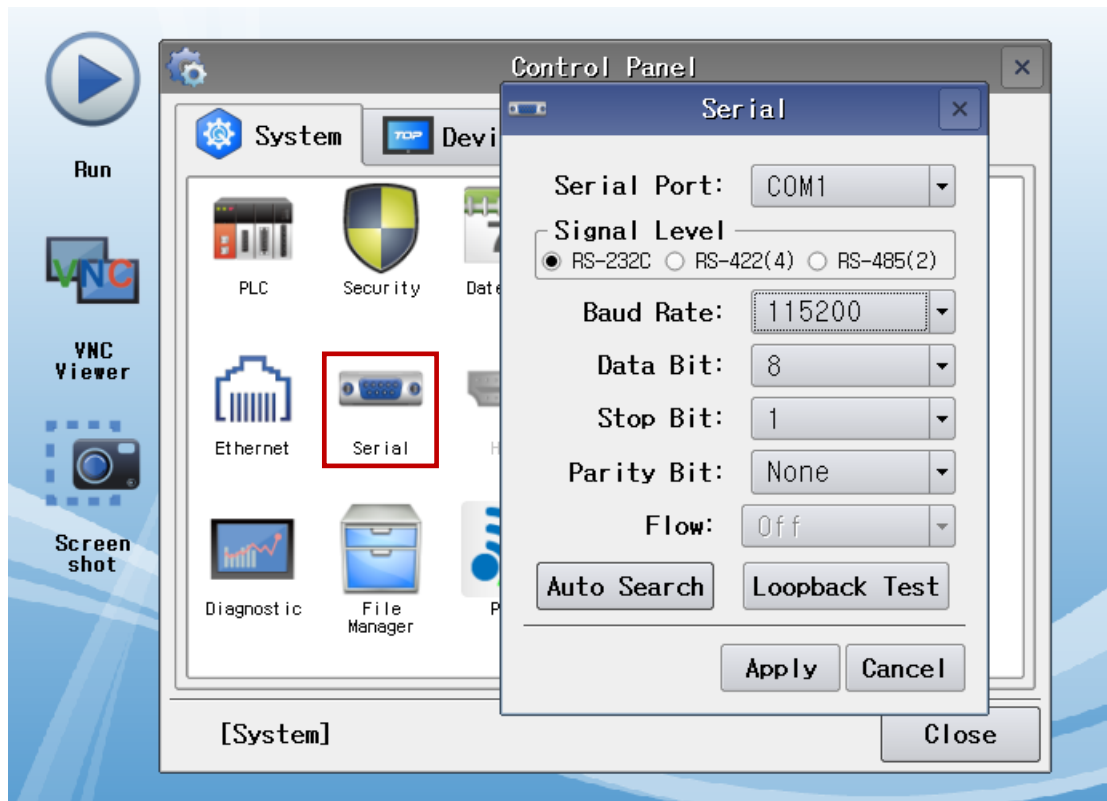
\* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- 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 ]



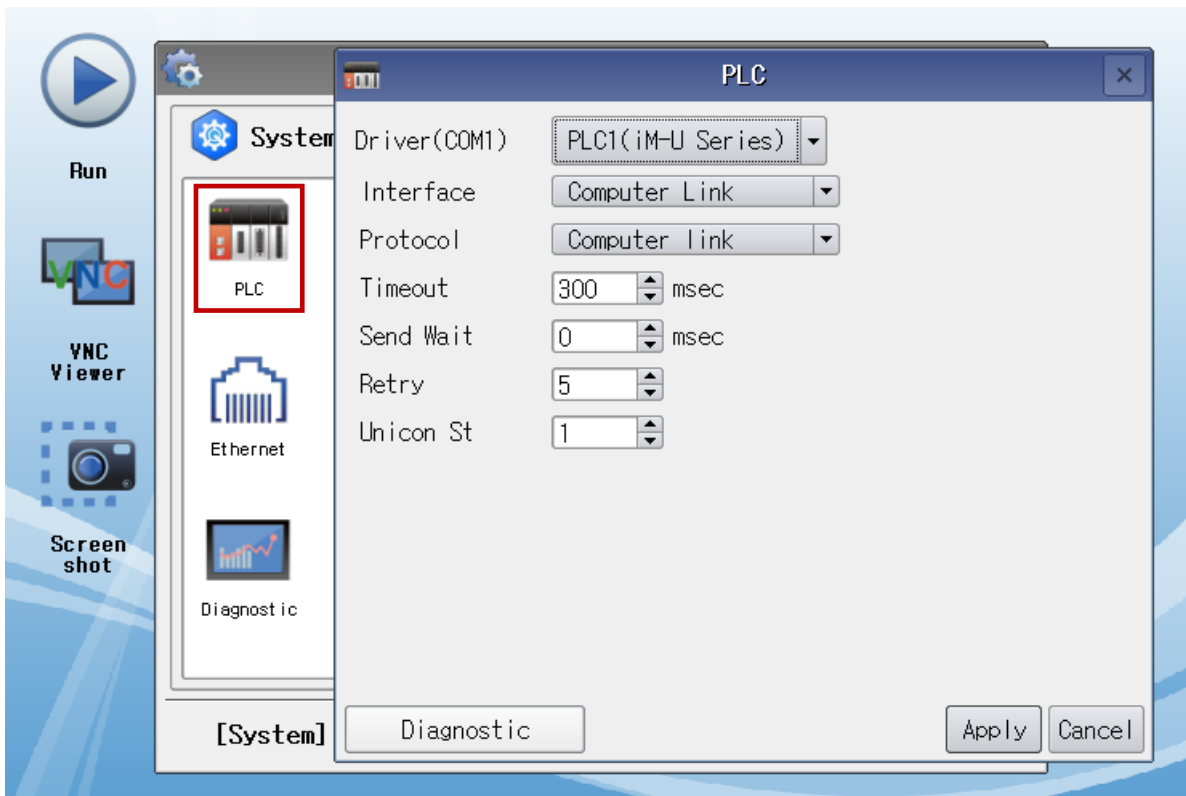
Items	TOP		External device	Remarks
Signal Level (port)	RS-232C	RS-422	RS-232C RS-422	
Baud Rate	115200			
Data Bit	8			
Stop Bit	1			
Parity Bit	None.			

\* The above settings are setting 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 "Computer Link".	<a href="#">Refer to "2. External device selection".</a>
Protocol	Select the communication protocol between the TOP and an external device.	<a href="#">Refer to "2. External device selection".</a>
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.	
Unicon Station Number	Enter the prefix of an external device.	

### 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 COM port 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.

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

- 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	<a href="#">1. System configuration</a>	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	<a href="#">2. External device selection</a> <a href="#">3. Communication setting</a>	
	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	<a href="#">4. External device setting</a>	
	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	<a href="#">6. Supported addresses</a> (For details, please refer to the PLC vendor's manual.)		



## 4. External device setting

Set as below using "Operating Loader".

For a more detailed setting method than described in this example, refer to the user manual of the external device.



Connect the Mode Pin Jumper located on iM-U Series board to RS-232/RS-422. **(1-2 Shunt) / (2-3 Shunt)**

SIO1 : Mode S2-S5

SIO2 : Mode S1-S5

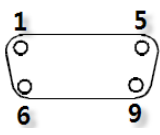
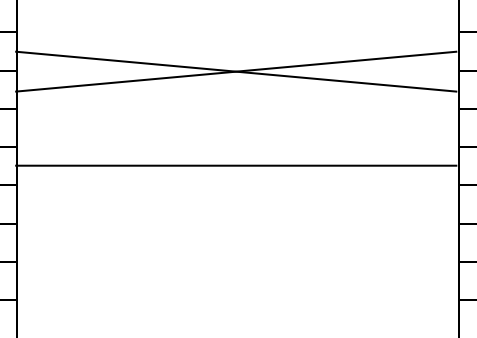
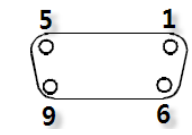
1. Set the station setting rotary switch in front of the product to "1". (SIO1 and SIO2 share the station number.)
2. Set as follows through Main > "3.Parameter Setting" > "1.Basic" > "4.Miscel".

In case of using SIO1			In case of using SIO2		
SrlBaud1	0	4800 bps	SrlBaud2	0	4800 bps
	1	9600 bps		1	9600 bps
	2	19200 bps		2	19200 bps
	3	38400 bps		3	38400 bps
	4	57600 bps		4	57600 bps
	5	115200 bps		5	115200 bps
SrlProt1	0	T-Box	SrlProt2	0	T-Box
	1	Ascii		1	Ascii
	2	Binary		2	Binary

## 5. Cable table

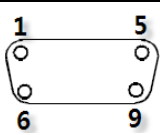
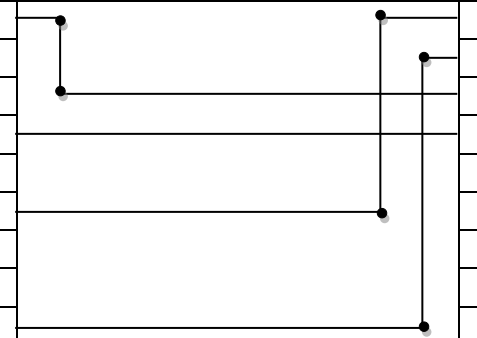
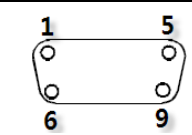
This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.  
 (The cable diagram described in this chapter may differ from the recommendations of "DongBu Robot Co.,Ltd".)

### ■ RS-232C (1:1 connection)

COM			Cable connection	PLC		
Pin arrangement* <b>Note 1)</b>	Signal name	Pin number		Pin number	Signal name	Pin arrangement* <b>Note 1)</b>
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	CD	1		1		 <p>Based on communication cable connector front, D-SUB 9 Pin female (female, concave)</p>
	RD	2		2	RD	
	SD	3		3	SD	
	DTR	4		4		
	SG	5		5	SG	
	DSR	6		6		
	RTS	7		7		
	CTS	8		8		
		9		9		

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

### ■ RS-422 (1:1 connection)

COM			Cable connection	External device			
Pin arrangement* <b>Note 1)</b>	Signal name	Pin number		Pin number	Signal name	Pin arrangement* <b>Note 1)</b>	
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	RDA	1		1	RDA	 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	
				2			RDB
				3			SDA
		RDB		4			SDB
				5			
		SDA		6			
				7			
				8			
		SDB		9			

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

### ■ RS-422 1 : N connection - Refer to 1:1 connection to connect in the following method.

TOP	Cable connection and signal direction	External device	Cable connection and signal direction	External device
Signal name		Signal name		Signal name
RDA	→	SDA	←	SDA
RDB	→	SDB	←	SDB
SDA	→	RDA	←	RDA
SDB	→	RDB	←	RDB
SG	→	SG	←	SG

## 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.

### (1) Controller status/control

Contents	Bit Address	Word Address	Remarks
Channel system status	STAT1/0.0 ~ STAT4/2.7	STAT1/0 ~ STAT4/2	*F1 *1 *4
Channel axis system status	STATA1/0/0.0 ~ STATA4/5/2.7	STATA1/0/0 ~ STATA4/5/2	*F2 *1 *5
System status information	SYS0.0 ~ SYS2.7	SYS0 ~ SYS2	*F5 *1 *6
Channel error code	——	ERR1 ~ ERR4	*F4 *1 *7
Channel error code (auxiliary)	——	ERRSUB1 ~ ERRSUB4	*F4 *1 *7
JOG move execution (CW/CCW)	JDIR1/0 ~ JDIR4/5	——	*F3 *2 *8
JOG move execution (CW)	JCW1/0 ~ JCW4/5	——	*F3 *2 *17
JOG move execution (CCW)	JCCW1/0 ~ JCCW4/5	——	*F3 *2 *18
JOG move	——	JMOV1 ~ JMOV4	*F4 *9
JOG motion	——	JMOT1 ~ JMOT4	*F4 *10
JOG speed	——	JSPD1 ~ JSPD4	*F4 *11
JOG moving speed	——	JMSPD1 ~ JMSPD4	*F4 *12
MPG ON/OFF	MPG1 ~ MPG4	——	*F4
MPG connecting axis	——	MPGA1 ~ MPGA4	*F4
ARCH	——	ARCH1 ~ ARCH4	*F4 *3 *13
Current motor position (Encoder)	——	MECD1/0 ~ MECD5	*F2 *3
Current motor position (Joint)	——	MJIT1/0 ~ MJIT4/5	*F3 *3 *14
Current motor position (XY)	——	MXY1/0 ~ MXY4/5	*F3 *3 *14
Current motor speed	——	MSPD1/0 ~ MSPD4/5	*F3 *3 *15
Alarm ON/OFF	ALM1 ~ ALM4	——	*F4 *2
Servo ON/OFF	SERVO1 ~ SERVO4	——	*F4 *2 *16

[Address format]

*F1	<b>Channel</b> <b>/information index</b>
*F2	<b>Channel</b> <b>/axis</b> <b>/information index</b>
*F3	<b>Channel</b> <b>/axis</b>
*F4	<b>Channel</b>
*F5	<b>Information index</b>

\*1      Read only                                      \*2      Write only                                      \*3      32Bit address

\*4      As for the information index, it means the bit-by-bit contents as follows.

Information index	Bit pos	Contents	Comment
0	0	Active	Indicate channel activation status.
	1	Run	Indicate that the device is running. (motion, origin, jog, etc.)
	2	PgmLoad	Indicate that the motion program has been successfully compiled to be loaded.
	3	Not decided	
	4	Not decided	
	5	ServoOn	Indicate the On/Off status of the axis.
	6	OrginOK	Indicate that origin run has been completed.
1	7	Error	Indicate that a warning has occurred in the channel.
	0	InPosition	All axes of the channel are within the range in InposRange of the parameter.
	1	InRange	All axes of the channel are within the range in InRangeL and InRangeR of the parameter.
	2	PgmRun	Indicates that motion program operation is running.
	3	StepRun	Indicates that the motion program is under step operation.

	4	DmoveRun	Indicates that a motion move is running.
	5	OrginRun	Indicates that the origin is running.
	6	JogRun	Indicates that jog is running.
	7	Not decided	
2	0	Not decided	
	1	Not decided	
	2	Not decided	
	3	Not decided	
	4	Not decided	
	5	Not decided	
	6	Not decided	
	7	Not decided	

\*5 As for the information index, it means the bit-by-bit contents as follows.

Information index	Bit pos	Contents	Comment
0	0	Ready	Indicates that the axis is ready for movement.
	1	Not decided	
	2	Not decided	
	3	CAP	Indicates that the c-phase signal of the Amp has been caught.
	4	BreakOn	Indicates the magnetic break On/Off status of the axis.
	5	DBreakOn	Indicates the electric break On/Off status of the axis.
	6	ServoOn	Indicates the servo On/Off status of the axis.
	7	Fault	Indicates whether an error of the axis module occurred or not.
1	0	DesirVel0	Indicates that the Command velocity is zero, stopped state.
	1	InPosition	Indicates the state where the axis has entered within the range in InposRange of the parameter.
	2	InRange	Indicates the state where the axis has entered within the ranges of InRangeL and InRange of the parameter.
	3	Not decided	
	4	Not decided	
	5	Not decided	
	6	Not decided	
	7	Not decided	
2	0	FLS(soft)	Indicates whether the forward limit sensor set by the software has been detected or not.
	1	RLS(soft)	Indicates whether the reward limit sensor set by the software has been detected or not.
	2	ORG(soft)	Indicates whether the orgin sensor set by the software has been detected or not.
	3	Not decided	
	4	Not decided	
	5	FLS(hard)	Indicates whether the limit sensor in the increase direction of the encoder has been detected or not.
	6	RLS(hard)	Indicates whether the limit sensor in the decrease direction of the encoder has been detected or not.
	7	ORG(hard)	Indicates whether the origin sensor on the hardware has been detected or not.

\*6 As for the information index, it means the bit-by-bit contents as follows.

Information index	Bit pos	Contents	Comment
0	0	FromEMG	Indicates the emergency stop input, which is attached to the front panel of the controller.
	1	TboxEMG	Indicates the emergency stop input of the teaching pendant.
	2	OP EMG	Indicates the emergency stop input of the Operating Box.
	3	Not decided	
	4	Not decided	
	5	Not decided	
	6	UserSeqRun	Indicates that the user sequence program is running.
	7	SysSeqRun	Indicate that the system sequence program is running.
1	0	FrontKeyR	Indicates the input of STOP/RST SW, which is attached to the front panel of the controller.
	1	FrontKeyG	Indicates the input of START/ORG SW, which is attached to the front panel of the controller.
	2	FrontKey3	Not decided
	3	FrontKey4	Not decided
	4	FrontKey5	Not decided
	5	FrontKey6	Not decided

	6	Not decided
	7	Not decided
2	0	Not decided
	1	Not decided
	2	Not decided
	3	Not decided
	4	Not decided
	5	Not decided
	6	Not decided
	7	Not decided

\*7 For detailed information, refer to the user manual of the corresponding device.

\*8 Bit operation "ON: CW direction, OFF: CCW direction". (ON operation unavailable when inverted/pressed)

\*9 Select the method when moving the jog. Setting data (word value) has the following meaning.

Data (word value)	Comment
0	Continuous Jog
1	Inch Jog

\*10 Select the method when moving the jog. Setting data (word value) has the following meaning.

Data (word value)	Comment
0	XY
1	Joint

\*11 Jog speed parameter. (Data setting range: 0 ~ 3)

JMOV setting value	Comment
0(Continuous Jog)	Refers to the values of JogSpd0 – JogSpd3
1(Inch Jog)	Refer to the values of JogSpd0 – JogSpd3 for speed and the values of JogInch0 – JogInch3 for travel distance.

\*12 Jog speed ratio value (Data setting range: 1 ~ 100, Unit: %) → Refer to JSPD setting value for detailed setting.

\*13 Unit: mm (when data is "0", ARCH OFF)

\*14 "X 0.001" operation required for data \*15 Unit: RPM

\*16 Turn the servo ON/OFF. (Reversal operation unavailable)

\*17 [Bit operation: On] move to Jog CW direction (corresponding axis) / [Bit operation: Off] Stop Jog (reversal operation unavailable)

\*18 [Bit operation: On] move to Jog CCW direction (corresponding axis) / [Bit operation: Off] Stop Jog (reversal operation unavailable)

(2) Program

Contents	Bit Address	Word Address	Remarks
Operation file ID	——	PID1 ~ PID4	*F1
Entire run	PALL1 ~ PALL4		*F1 *2 *4
Line run	PLIN1 ~ PLIN4	——	*F1 *2 *4
Stop	PSTOP1 ~ PSTOP4	——	*F1 *2 *4
Restart	PNEW1 ~ PNEW4	——	*F1 *2 *4
Reset	PRES1 ~ PRES4	——	*F1 *2 *4

[Address format]

*F1	Channel
*1 Read only	*2 Write only
*3 32Bit address	
*4 Only Bit operation > ON, Bit operation > OFF is available. On when inverted/pressed unavailable.	

(3) Sequence

Contents	Bit Address	Word Address	Remarks
Execute system sequence	SEQS	——	*2 *4
Execute user sequence	SEQU	——	*2 *4 *5
File ID	——	_SEQU_F	
User sequence file ID	——	SEQUID	*1

\*1 Read only \*2 Write only \*3 32Bit address

\*4 Bit operation "ON: Stop a program, OFF: Execute a program". (ON operation unavailable when inverted/pressed)

\*5 It is executed for the filt ID set in "\_SEQU\_F".

(4) Robot movement – 1

Contents	Bit Address	Word Address	Remarks
Robot moving speed	—	RSPD1 ~ RSPD4	*F1 *4
Stop robot movement	RSTOP1 ~ RSTOP4	—	*F1 *2
Run robot origin	RORG1 ~ RORG4	—	*F1 *2

[Address format]

*F1	<b>Channel</b>
-----	----------------

\*1 Read only   \*2 Write only   \*3 32Bit address

\*4 Range (1 ~ 100), Unit (%)  
Refer to the Ref RPM parameter value for the reference speed upon PTP moving (MPTP, MINC).  
Refer to the Basic Spd parameter value for the reference speed upon interpolation moving (MLIN, MCIR).

(5) Robot movement – 2

While the controller operates (origin execution/program execution/movement/JOG), the commands as below are not executed.

Contents		Bit Address	Word Address	Remarks			
Movement of absolute position	Coordinate value <b>*H1)</b>	JOINT-PTP	AMCA1 ~ AMCA4	—	*F1 *2 *4		
		JOINT-LINEAR	AMCB1 ~ AMCB4	—	*F1 *2 *4		
		JOINT-ARC	AMCC1 ~ AMCC4	—	*F1 *2 *4		
		JOINT-CIRCLE	AMCD1 ~ AMCD4	—	*F1 *2 *4		
		XYZ-PTP	AMCE1 ~ AMCE4	—	*F1 *2 *4		
		XYZ-LINEAR	AMCF1 ~ AMCF4	—	*F1 *2 *4		
		XYZ-ARC	AMCG1 ~ AMCG4	—	*F1 *2 *4		
		XYZ-CIRCLE	AMCH1 ~ AMCH4	—	*F1 *2 *4		
		Reference coordinate value	—	_AMC1/0 ~ _AMC2/5	*F1 *3		
		Position type variable	<b>*H2)</b>	PTP	AMLA1 ~ AMLA4	—	*F1 *2 *5
LINEAR	AMLB1 ~ AMLB4			—	*F1 *2 *5		
ARC	AMLC1 ~ AMLC4			—	*F1 *2 *5		
CIRCLE	AMLD1 ~ AMLD4			—	*F1 *2 *5		
Reference position type variable	—			_AML1 ~ _AML2	*F2		
Point file	<b>*H3)</b>	PTP	AMPA1 ~ AMPA4	—	*F1 *2 *5		
		LINEAR	AMPB1 ~ AMPB4	—	*F1 *2 *5		
		ARC	AMPC1 ~ AMPC4	—	*F1 *2 *5		
		CIRCLE	AMPD1 ~ AMPD4	—	*F1 *2 *5		
		Reference point file ID	—	_AMP_F			
		Reference point number	—	_AMP1 ~ _AMP2	*F2		
Movement of relative position	Coordinate value <b>*H4)</b>	JOINT-PTP	RMCA1 ~ RMCA4	—	*F1 *2 *4		
		JOINT-LINEAR	RMCB1 ~ RMCB4	—	*F1 *2 *4		
		XYZ-PTP	RMCE1 ~ RMCE4	—	*F1 *2 *4		
		XYZ-LINEAR	RMCF1 ~ RMCF4	—	*F1 *2 *4		
		Reference coordinate value	—	_RMC0 ~ _RMC5	*F3 *3		
		Position type variable	<b>*H5)</b>	PTP	RMLA1 ~ RMLA4	—	*F1 *2 *5
				LINEAR	RMLB1 ~ RMLB4	—	*F1 *2 *5
				Reference position type variable	—	_RML	*F2
		Point file	<b>*H6)</b>	PTP	RMPA1 ~ RMPA4	—	*F1 *2 *5
				LINEAR	RMPB1 ~ RMPB4	—	*F1 *2 *5
Reference point file ID	—			_RMP_F			
Reference point number	—			_RMP	*F2		

[Address format]

*F1	<b>Group index /data index</b>
*F2	<b>Group index</b>
*F3	<b>Data index</b>
*F4	<b>Channel</b>

☞ Continued on next page.

[Help]

*H1	<ul style="list-style-type: none"> <li>– Move the robot (axis) from the current position to the specified absolute position.</li> <li>– Refer to group 1 (data 0 ~ 5) and group 2 (data 0 ~ 5) in “_AMC” area.</li> </ul>				
*H2	<ul style="list-style-type: none"> <li>– Refer to the position value of the specified position type variable to move the robot (axis) to the absolute position.</li> <li>– Refer to group 1 and group 2 of “_AML” area.</li> </ul>				
*H3	<ul style="list-style-type: none"> <li>– Refer to the position value in the point number within the specified point file to move the robot (axis) to the absolute position.</li> <li>– Refer to group 1 and group 2 of the “_AMP_F” area (file number) and “_AMP” area (point number).</li> </ul>				
*H4	<ul style="list-style-type: none"> <li>– Compensate for the specified relative position (coordinate value) in the current position to move the robot (axis).</li> <li>– Refer to (data 0 ~ 5) of the “_RMP” area.</li> </ul>				
*H5	<ul style="list-style-type: none"> <li>– Compensate for the position value of the specified position type variable in the current position to move the robot (axis).</li> <li>– Refer to group 1 of “RML” area.</li> </ul>				
*H6	<ul style="list-style-type: none"> <li>– Compensate for the position value in the point number of the specified point file in the current position to move the robot (axis).</li> <li>– Refer to group 1 of the “_RMP_F” area (file number) and “_RMP” area (point number).</li> </ul>				
*1	Read only	*2	Write only	*3	32Bit address
*4	ON(Arm posture Right) / OFF(Arm posture Left)				
*5	Only Bit operation > ON, Bit operation > OFF is available. ON/OFF operates the same. ON operation unavailable when inverted/pressed.				

☞ Continued on next page.

(6) Variable

Contents	Bit Address	Word Address	Remarks
I/O contact	IO0.0 ~ IO998.7	IO0 ~ IO998	*F1 *4
Integer type variable	—	GINT0 ~ GINT998	*F1 *3 *4
Real type variable	—	GFLT0 ~ GFLT998	*F1 *3 *4
Position type variable (axis/position)	—	POSA0/0 ~ POSA6/998	*F2 *3 *4
[Address format]			
*F1	<b>Address</b>		
*F2	<b>Internal variable index / Address</b> 0-5: each axis position data, 6: position information data		
*1	Read only	*2 Write only	*3 32Bit address
*4	OFFSET function available for address.		

(7) File

Contents	Bit Address	Word Address	Remarks
Point file	—	PNTA0/0 ~ PNTA6/999	*F1 *3 *6
(axis/position)	Channel	_PNTA_CH	
	File ID	_PNTA_F	
Delete file ID	Run	FDLT	*2 *4
	File ID	_FDLT_F	
Copy file ID	Run	FCPY	*2 *5
	Source File ID	_FCPY_SF	
	Destination channel	_FCPY_CH	
	Destination File ID	_FCPY_DF	
[Address format]			
*F1	<b>Internal variable index / Address</b> 0-5: each axis position data, 6: position information data		
*F2	<b>File ID</b>		
*1	Read only	*2 Write only	*3 32Bit address
*4	Execute to delete the setting file IF (_FDLT_F).		
*5	Copy the Source File ID(_FCPY_SF) of the point file directory to the Destination channel (_FCPY_CH)/File ID(_FCPY_CF).		
*6	OFFSET function available for address.		

(8) Parameter

Contents	Bit Address	Word Address	Remarks
Parameter	—	PAR0/0 ~ PAR99/99	*F1 *3
Parameter version	—	PARV	*1 *3
[Address format]			
*F1	<b>Field / Index</b>		
*1	Read only	*2 Write only	*3 32Bit address