# **Giddings Lewis**

# MMC

Supported version TOP Design Studio

V4.0 or higher



# CONTENTS

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

## 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 "Gidding Lewis – MMC" is as follows:

Series	СРИ	Link I/F	Communication method	System setting	Cable
MMC		CDU Direct	RS-232C	<u>3.1 Settings example 1</u> ( <u>Page 4)</u>	5.1. Cable table 1 (Page 9)
		CPU Direct	RS-422 (4 wire)	<u>3.2 Settings example 2</u> (Page 5)	<u>5.1. Cable table 1</u> (Page 10)

### Connection configuration

• 1:1 (one TOP and one external device) connection – configuration which is possible in RS232C/422/485 communication.





# 2. External device selection

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

elect Device					
PLC select [C	OM2]				
Filter : [All]		$\sim$	5	Search :	
				Mo	del 🔿 Vendor
Vendor		Model			
SANGJI Precision Co., L	.td.	MMC S	eries		
DEVA					
OPTICON					
TOHNICHI					
Giddings & Lewis Motior	1 Control				
DELTA TAU Data Syste	ms				
KEYENCE Corporation					
Digital Electronics Corpo	oration				
HONEYWELL					
MISUMI					
PARKER HANNIEIN Cor	poration				
ATLAS COPCO					
TOSHIBA MACHINE Co.	. Itd *				
PLC Setting[ MMC	Series ]				
Alias Name	: PLC1				
Interface	: Computer Link	~		_	
Protocol	: COMM 900	Channel			Comm Manual
String Save Mode	: FIRST LEE FIL	Change			
Use Redundan	c <b>y</b>				
Operate Condition :	ND V	5 A (Soco	od)		
Change Condition .	Condition	5 - (SECO	nuj		Edit
Primary Option					
Imeout	300	msec			
Send Wait	0	msec			
Retry	5				
MMC Node Address	1				
HMI Node Address	0				
HMI Node Address	0				
HMI Node Address	0				
HMI Node Address	0				
HMI Node Address	0				

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 "Gidding Lewis".		Select "Gidding Lewis".
PLC Select an external device to connect to TOP.		Select an external device to connect to TOP.
Select "MMC".		Select "MMC".
Please check the system configuration in Chapter 1 to see if th		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.

#### 대한민국대표 터치패널 Touch Operation Panel

# 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	ТОР	External device	Remarks
Signal Level (port)	RS-232C/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

- [Project > Project Property > Device Setting > COM > "PLC1: MMC"]
  - Set the options of the Gidding Lewis communication driver in TOP Design Studio.

Project Option		×
Change HMI[H] Change PLC[C] Change PLC[C]		
PLC Setting MRC Series ]    Alias Name : PLC I   Print Nodde Setting Interface :   Computer Link Protocol :   COMM 900 String Save Mode :   Protocol : COMM 900   String Save Mode : First LH FL   Change Condition : Alias Name :   PLC : String Save Mode :   Protocol : COMM 900   String Save Mode : First LH FL   Change Condition : Theout   Change Condition : Theout   Primary Option Eait   Primary Option Theout   String Namec Set Mult   Send Wait Image   MCC Node Address Image   HMI Node Address Image	Co	mm Manual
	Apply	Close

Items	Settings	Remarks
Interface	"Computer Link"	Fixed
Protocol	"COMM 900"	Fixed
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.	
Retry	Retry attempts upon communication failure.	
MMC Node Address	Enter the MMC Node Address.	
HMI Node Address	Enter the HMI Node Address.	



### 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	ТОР	External device	Remarks
Signal Level (port)	RS-232C/		
Baud Rate	38400		
Data Bit	8		
Stop Bit	1		
Parity Bit	NONE		

 $^{\star}$  The above settings are setting  $\underline{examples}$  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]

	õ	<b></b>	PLC	×
	🔞 System	Driver(COM2)	PLC1(MMC Series) -	
Run		Interface	Computer Link 💌	
		Protocol	COMM 900 ▼	
MNC	PLC	Timeout	300 🗘 msec	
		Send Wait	0 amsec	
Viewer	$\sim$	Retry	5	
		MMC Node	1	
	Ethernet	HMI Node	0	
Screen	Int I was			
	Diagnostic			
	[System]	Diagnostic		ncel

Items	Settings	Remarks
Interface	"Computer Link"	Fined
Protocol	"Comm 900"	Fixed
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.	
Retry	Retry attempts upon communication failure.	
MMC Node Address	Enter the MMC Node Address.	
HMI Node Address	Enter the HMI Node Address.	



### **3.3 Communication diagnostics**

■ 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		Check		Remarks	
System	How to connect the sys	stem	OK	NG	1 System configuration	
configuration	Connection cable name		OK	NG	1. System configuration	
TOP	Version information		OK	NG		
	Port in use		ОК	NG		
	Driver name		OK	NG		
	Other detailed settings		OK	NG		
	Relative prefix	Project setting	OK	NG		
		Communication	01/	NG	2. External device selection	
		diagnostics	ÜK		3. Communication setting	
	Serial Parameter	Transmission	ОК	NG		
		Speed				
		Data Bit	OK	NG		
		Stop Bit	OK	NG		
		Parity Bit	OK	NG		
External device	xternal device CPU name		OK	NG		
	Communication port na	ame (module name)	OK	NG		
	Protocol (mode)	OK	NG			
	Setup Prefix	ОК	NG			
	Other detailed settings	ОК	NG	4. External device setting		
	Serial Parameter	Transmission Speed	ОК	NG	4. External device setting	
		Data Bit	OK	NG		
		Stop Bit	ОК	NG		
		Parity Bit	OK	NG		
	Check address range		ОК		6. Supported addresses	
				NG	(For details, please refer to the PLC	
					vendor's manual.)	



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



# 5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device. (The cable diagrams described in this section may differ from the external device vendor's recommendations.)

#### ■ RS-232C (1:1 connection)

ТОР				External device	
Pin	Signal	Pin	Cable connection	Signal	
arrangement*Note 1)	name	number		name	
1 5	CD	1			
$(\circ \circ)$	RD	2		SD	
	SD	3		RD	
Based on	DTR	4	•	DTR	
communication	SG	5		SG	
cable connector	DSR	6	•	DSR	
front,	RTS	7	•	RTS	
D-SUB 9 Pin male	CTS	8		CTS	
(male, convex)		9			

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

#### ■ **RS-422** (1:1 connection)

TOP				External device	
Pin	Signal	Pin	Cable connection	Signal	
arrangement*Note 1)	name	number		name	
1 5	RDA(+)	1		SDA(+)	
		2		SDB(-)	
		3		RDA(+)	
Based on	RDB(-)	4		RDB(-)	
communication	SG	5		SG	
cable connector	SDA(+)	6	•		
front,		7			
D-SUB 9 Pin male		8			
(male, convex)	SDB(-)	9			

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

### ■ **RS-485** (1:1 connection)

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

\*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.

DATA TYPE	DEVICE	LABEL	Data size	Misc.
00	BOOL	TYPE_BOOL	1	*Note 1)
01	BYTE	TYPE_BYTE	1	
02	WRD	TYPE_WORD	2	
03	DWRD	TYPE_DWORD	4	
04	LWRD	TYPE_LWORD	8	
05	ISIN	TYPE_ISINT	1	
06	USIN	TYPE_USINT	2	
07	UDIN	TYPE_UDINT	4	
08	ULIN	TYPE_ULINT	8	
09	SINT	TYPE_SINT	1	
0A	INT	TYPE_INT	2	
OB	DINT	TYPE_DINT	4	
0C	LINT	TYPE_LINT	8	
0D	REAL	TYPE_REAL	4	
0E	LREL	TYPE_LREAL	8	
OF	STR	TYPE_STRING	Variable	
10	DATE	TYPE_DATE	2	
11	DTIM	TYPE_DATETIME	4	
12	TDAY	TYPE_TIMEOFDAY	4	
13	TDUR	TYPE_TIMEDURA	4	
14	CUS1	TYPE_CUST1	User Define	*Note 2) Note 3)
15	CUS2	TYPE_CUST2	User Define	*Note 2) Note 3)
16	CUS3	TYPE_CUST3	User Define	*Note 2) Note 3)
17	CUS4	TYPE_CUST4	User Define	*Note 2) Note 3)
18	CUS5	TYPE_CUST5	User Define	*Note 2) Note 3)
19	CUS6	TYPE_CUST6	User Define	*Note 2) Note 3)
1A	CUS7	TYPE_CUST7	User Define	*Note 2) Note 3)
18	CUS8	TYPE_CUST8	User Define	*Note 2) Note 3)

\*Note 1)Bit contact

\*Note 2) Read-only (cannot be written)

\*Note 3) When using a custom device, the communication speed is improved by consecutively registering the devices.