

Graphic Panel, Logic Panel



USER MANUAL For COMMUNICATION



Thank you very much for selecting Autonics products. For your safety, please read the following before using.

Preface

Thank you very much for selecting Autonics products.

Please familiarize yourself with the information contained in the **Safety Precautions** section before using this product.

This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.

User Manual Guide

- Please familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.
- This manual may not be edited or reproduced in either part or whole without permission.
- A user manual is not provided as part of the product package. Please visit our home-page (www.autonics.com) to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice. Upgrade notice is provided through our homepage.
- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our homepage.

User Manual Symbols

Symbol	Description	
Note	Supplementary information for a particular feature.	
Å Warning	Failure to follow instructions can result in serious injury or death.	
A Caution	Caution Failure to follow instructions can lead to a minor injury or product damage	
Ex.	An example of the concerned feature's use.	
×1	Annotation mark.	

Safety Precautions

- Following these safety precautions will ensure the safe and proper use of the product and help prevent accidents and minimize hazards.
- Safety precautions are categorized as Warnings and Cautions, as defined below:

🛕 Warning	Warning	Cases that may cause serious injury or fatal accident if instructions are not followed.
A Caution	Caution	Cases that may cause minor injury or product damage if instructions are not followed.



 In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.

It may cause a fire, human injury or property loss.

 In case using the GP, LP touch switch for controlling, do not use the switch as emergency switches or those related to safety that may cause physical injury or property damage in the event of a malfunction.

It may cause a fire, human injury or property loss.

 In the event of defect or malfunction in GP, LP an alternative circuit must be constructed on the exterior.

It may cause a fire, human injury or property loss.

 Construct an emergency power-off circuit, safety circuit, or interlock circuit on the exterior of GP,LP.

It may cause a fire, human injury or property loss.

- If an error occurs on the watchdog timer of LP, the logic program will shut down automatically, so an alternative circuit must be constructed on the exterior.
 It may cause a fire, human injury or property loss.
- The overall system operation may malfunction due to an input error resulting from a failure in input signal detection; so an alternative circuit must be constructed on the exterior. It may cause a fire, human injury or property loss.
- For output signals that may cause a serious accident if the output section is damaged, a
 detection circuit and alternative circuit must be constructed on the exterior.
 It may cause a fire, human injury or property loss.
- In case controlling other devices through GP, LP communication, and there is a possibility of malfunction due to communication error, an alternative circuit must be constructed. It may cause a fire, human injury or property loss.
- When switching the mode to RUN mode please make sure that supply power to LP, I/O unit and load first. If not, output error or malfunction may be caused. It may cause a fire, human injury or property loss.
- Before supplying power to LP, configure the circuit which is for supplying power to I/O unit and load at first. After starting LP program, if power is supplied to I/O unit and load, it may

cause malfunction and output error. It may cause a fire, human injury or property loss.

- Do not use the product in an area or an environment not specified in the manual.
 It may cause a fire, human injury or property loss.
- Do not connect, inspect or repair when power is on.
 It may cause a fire or give an electric shock.
- Do not disassemble the product. Please contact us if it is required. It may cause a fire or give an electric shock.
- Please use the rectified power with insulation trans.
 It may cause a fire or give an electric shock.
- Do not use the power exceeded the rated voltage.
 It may cause a fire or give an electric shock.
- This product uses lithium battery, do not disassemble or burn up. It may cause an explosion or a fire.
- Wire properly after checking power terminal polarity. It may cause a fire or a malfunction.



- Please read all notes and cautions related to installation and wiring in the manual.
 If this is not observed, electrical shock or malfunction may occur.
- Make sure the ground wire of Graphic Panel is wired separately from the ground wires of other devices. Ground resistance must be less than 100Ω, and a lead wire of which sectional area is over 1.25mm² should be used.
 If this is not observed, electrical shock or malfunction may occur.
- When connecting GP, LP ports and constructing input/output, check the pin number and terminal block before connecting.
 It may cause a fire or a malfunction.
- Please tighten bolt on terminal block with specified tightening torque.
 It may cause a short circuit, fire or a malfunction.
- Do not press the surface of the touch panel with sharp or hard objects. The touch panel may be damaged.
- Keep GP, LP at the specified temperature.
 If stored at a temperature beyond the specification, damage may occur.
- Do not inflow dust or wire dregs into the unit. It may cause a fire or a malfunction.
- Do not use in an area with excessive humidity or temperature.
 It may cause malfunction, or its useful life may be shortened.
- Do not close ventilating opening of this product.
 Malfunction may occur due to temperature increase.
- Keep the product out of direct sunlight or excessive dust.
 It may cause malfunction, or its useful life may be shortened.
- Do not use or store in a place with shock or vibration.
 It may cause malfunction, or its useful life may be shortened.

- When liquid crystal from the broken LCD is smeared with skin, wash it for 15 minutes. If it is gotten in the eye, wash it for 15 minutes and contact with the medical specialist for more information.
- In cleaning unit, do not use water or an oil-based detergent and use dry towels.
 It may cause an electric shock or a fire.
- Please separate as an industrial waste when disuse this unit.
- To change the battery, contact the store or an authorized technician.
- The manufacturer is not liable for damages that occur due to causes for which the manufacturer is not responsible, damages that occur due to an extraordinary situation, secondary damages, compensation for accidents, damages occurring on other products, compensation for other processes, and damage and loss of opportunity to the user due a malfunction of the product, regardless of the predictability of the accident.

******The specifications and dimensions of this manual are subject to change without any notice.

%This inner device of user manual for communication is based on GP. If you use LP, refer to "LP user manual" for inner device of LP.

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1 Product Overview

GP and LP series which is connected with various controllers including PLC, temperature controller displays and monitors the operation of control variable by LCD screen visually as grahpic interface device.

You can switch the screen and set or edit the variable value by touching LCD screen. The variable value with various data type is displayed by graphic object(tag) drawn from GP Editor which is dedicated software for GP, LP screen. Connected with barcode reader and printer, etc. GP, LP realize numerous application by utilizing interface.

1.1 Features

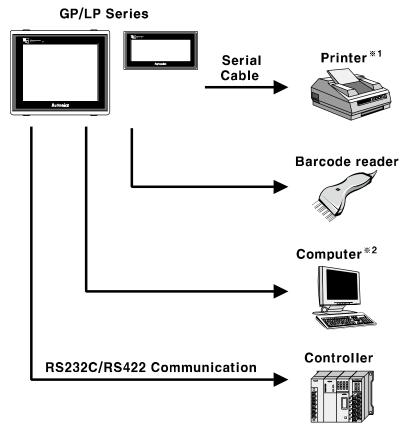
- Responds to various connection type
 - It supports to connect with several PLCs and controllers.
 - It supports to connect with barcode reader for product lines or on-site that use barcodes.
 - It supports to print for alarm history.
- Friendly compatible with controller
 - High compatibility monitoring function with PLC including monitoring device, changing device value, multi monitoring function between heterogeneous controllers.
 - Easy to display the cause of PLC system alarm including alarm history, total number of alarm, history printing, detail indication of alarm.

1.2 System organization

GP, LP is able to communicate with various controllers including PLC, multi meter, pulse meter, temperature & humidity sensor and temperature controller.

GP,LP and controllers can execute RS-232C/RS-422(RS-485) communication, and please refer to the each controller section for more information about module or adapter to convert communication.

The following is the system organization for connecting with GP, LP.



×1. Printer supports serial communication.

Printer is able to directly connect with GP/LP to be available serial communication both RS232C, RS422.You can print only alarm history by GP, LP. For more details, refer to '3.5 Other communication'.

%2. Personal Computer transmits written data to GP, LP.

It is required to use dedicated transmitting cable(sold separately) to transmit the data(User can create.).

GP Editor which is dedicated drawing software program creates data. Visit our homepage (www.autonics.com) to download GP Editor.

The below is computer specification requried to use software.

Operating system: Windows98/NT/XP

Item	Minimum specifications	Recommended specification
CPU	Pentium 4 or above	Pentium Dual Core
Memory	512 MB	1GB
Hard disk	1 GB (Free space)	5GB (Free space)
Resolution	1024 × 768	1280 × 1024

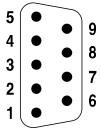
1.3 Communication

1.3.1 RS232C

(1) Transmission standard

No.	Item		Description
1	Communic	ation method	Full Duplex
2	Synchrono	us method	Asynchronous
3	Communication distance		Approx. 15m
4	Connection type		1:1
5	Baud rate		300/600/1200/3200/4800/9600/19200/38400/57600bps
	Dete	Data length	7, 8 bit
6	6 format	Parity	None, Odd, Even
		Stop bit	1, 2 bit

(2) Connector pin number and signal name



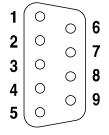
No	Signal name	No	Signal name
1	-	6	DSR
2	RXD	7	-
3	TXD	8	-
4	DTR	9	-
5	SG		

1.3.2 RS422

(1) Transmission standard

No.	Item		Description
1	Communica	tion method	Full Duplex
2	Synchronou	s method	Asynchronous
3	Communication distance		Approx. 15m
4	Connection type		1:1
5	Baud rate		300/600/1200/3200/4800/9600/19200/38400/57600bps
	Data	Data length	7, 8 bit
6	2 4 44	Parity	None, Odd, Even
	format	Stop bit	1, 2 bit

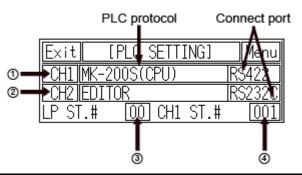
(2) Connector pin number and signal name



				GP-S044, GP-S057, GP-S070 LP-S044, LP-S070			
No	Signal name	No	Signal name	No	Signal name	No	Signal name
1	TXD+	6	TXD-	1	TXD+	6	TXD-
2	RXD+	7	RXD-	2	RXD+	7	RXD-
3	RTS-	8	RTS+	3	-	8	-
4	CTS+	9	CTS-	4	-	9	-
5	SG			5	SG		

1.3.3 Mono type

This menu displays connected device to RS232C, RS422 port of GP/LP. You can designate station and connected port by each channel.



No	Function	Operation			
		Displays connected device and connect port for CH1.			
	CH1	Touch this to select one from downloaded protocol in GP Editor, EDITOR,			
1	configuration	PRINTER, BARCODE, UNIVERSAL, or DEFAULT protocol (MK-			
	line	200S(CPU)) and designate connect port. (Select between RS232C/RS422			
		or RS232C-A / RS232C-B).			
		Displays connected device and connect port for CH2.			
		Touch this to select one from downloaded protocol in GP Editor, EDITOR,			
	CH2	PRINTER, BARCODE, UNIVERSAL, or DEFAULT protocol and designate			
2	configuration	connect port. (Select between RS232C/RS422 or RS232C-A / RS232C-			
	line	В).			
		Depending on CH1 designation, CH2 is changed automatically as no use,			
		and if CH1 is SLAVE, MONITOR does not appear.			
	GP station	Touch this and decimal (DEC) input key pad for station appears.			
3	configuration	Station set range: 0 to 31			
	touch key				
	CH1 station	Touch this and decimal (DEC) input key pad for station appears.			
(4)	configuration	Station set range: 0 to 255			
4	-	Communication is available only when the station of CH1 is set as			
	touch key	connected device station.			

5	1	2	
Ex t	[PLC SETTING]	Menu	Exit MK-200S(CPU) Menu
CH1 MK-	200S(CPU)	R\$422	B/R 9600bps
<u>CH2</u> EDI	TOR	<u>R\$232C</u>	DATA <u>(8BIT)</u> STOP <u>(1BIT)</u>
LP ST.#	00 CH1 ST.‡	ŧ <u>001</u>	PARITY NONE F/C XON/XOFF
6	3	4	

(1) In case of using only CH1 configured in GP Editor

No	ltem	Operation with touching
		Rotates in order as downloaded protocol in GP Editor
1	Displays CH1 protocol	\rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow
		UNIVERSAL \rightarrow DEFAULT protocol (MK-200S(CPU))
	Displays CH1 connect port	Each of RS422 / RS232C interface type:
0	(Designates automatically as	RS422 PORT ↔ RS232C PORT
2		Two ports of RS232C interface type:
	non-using port in ④)	RS232C A PORT ↔ RS232C B PORT
	Displays CH2 protocol	Rotates in order as No Use \rightarrow EDITOR \rightarrow PRINTER
3	(as EDITOR for default)	\rightarrow BARCODE
	Displays CH2 connect port	Each of RS422 / RS232C interface type:
	Displays CH2 connect port (Designates automatically as non-using port in ②)	RS422 PORT ↔ RS232C PORT
4		Two ports of RS232C interface type:
		RS232C A PORT ↔ RS232C B PORT
56	Communication configuration by each channel	Moves communication configuration setting window for selected connected device. You can designate baudrate, data bit, parity, stop bit, and flow control for each channel.
		If CH2 is as NoUse, it is not able to communication
		configuration.

5	Φ	2	
Exit	[PLC \$ETTING]	Menu	Exit MK-200S_CPU_Cnet Menu
CH1 No	Use 🕴	RS422	B/R 9600bps
CH2 MK-	<u>200S_CPU_Cnet</u>	RS232C	DATA 8BIT STOP 1BIT
LP[ST.#	<u> 00</u> °CH1 ST.#	001	PARITY EVEN F/C XON/XOFF
6	3	4	

(2) In case of using only CH2 configured in GP Editor

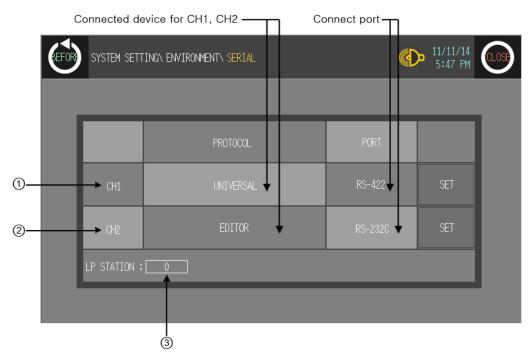
No	Item	Operation with touching
1	Displays CH1 protocol	Rotates in order as NoUse \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow UNIVERSAL \rightarrow DEFAULT protocol (MK-200S(CPU)
	Displays CH1 connect port (Designates automatically as non-using port in ④)	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT
2		Two ports of RS232C interface type: RS232C A PORT ↔ RS232C B PORT
3	Displays CH2 protocol (as downloaded protocol for default)	Rotates in order as downloaded protocol in GP Editor \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE
	Displays CH2 connect port (Designates automatically as non-using port in ②)	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT
4		Two ports of RS232C interface type: RS232C A PORT ↔ RS232C B PORT
56	Communication configuration by each channel	Moves communication configuration setting window for selected connected device. You can designate baudrate, data bit, parity, stop bit, and flow control for each channel. If CH1 is as NoUse, it is not able to communication configuration.

(3) CH1/ CH2 details configuration

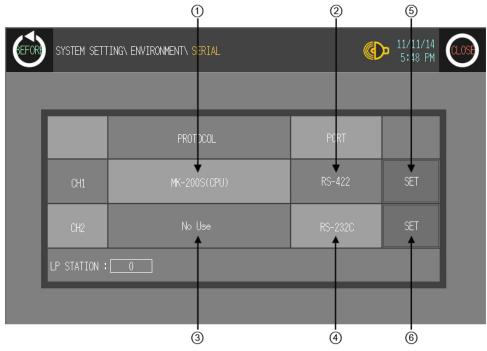
© BAT © BAT © BAT BAT BAT BAT	96000bps A 8BIT STOP III BIT NONE F/C XITY NONE F/C XITY NONE F/C XITY BIT STOP III EDITOR Menu R 115200bps A BIT STOP IBIT RITY EVEN F/C XON/XOFF B/R 9600bps DATA BIT STOP IBIT PARITY
B/F DA1 PAF	A <u>BBIT</u> STOP <u>IBIT</u>
No	Function and operation
1	 Designate the device to be connected for CH1, CH2. CH1, CH2 protocol: Communication mode for set PLC by GP and GP Editor by each port. EDITOR: I/O mode for downloading user-designed or PLC programming data from GP Editor or SmartStudio. PRINTER: Print mode for printing alarm history of GP. Refer to '3.5.3 PRINTER communication configuration'. BARCODE: Input mode for reading data from barcode. Refer to '3.5.2 Barcode reader communication configuration '. UNIVERSAL: It is general-purpose communication. GP/LP support Modbus slave communication. MK-200S(CPU): Default protocol of GP/LP. It is available to communication with LS MK-200S. MONITOR: Available only in CH2. Monitoring mode for PLC which is connected to GP/LP from PC directly. GP/LP is as transmitter by transmitting data from PC to PLC and data from PLC to PC. In case of MITSUBISHI FX-series, editor mode is available for monitoring. NoUse: Displayed only not using appropriate CH.
2	Touch this, detailed configuration screen for designated operation mode appears.
3 to 7	 Designate detailed configuration for designated operation mode. Baudrate: Designate baud rate. Supports 300/600/1200/2400/4800/9600/19200/38400/57600/115200bps Data: Designate data bit. Supports 7 bit, or 8 bit. Stop bit: Designate stop bit. Supports 1 bit, or 2 bit. Parity: Designate parity type. Supports even, odd, or none parity. Flow control: Designate data flow control. Supports XON/ XOFF, or DSR/DTR.

1.3.4 Color type

This menu displays connected device to RS232C, RS422 port of GP/LP. You can designate station and connected port by each channel.

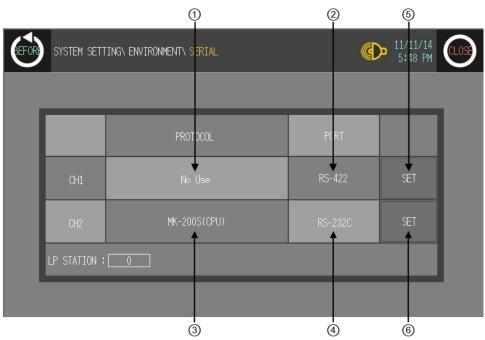


No	Function	Operation
1	CH1 configuration	Displays connected device and connect port for CH1. Touch this to select one from downloaded protocol in GP Editor, EDITOR, PRINTER, BARCODE, UNIVERSAL, or DEFAULT protocol and designate connect port. (Select between RS232C/RS422 or RS232C-A / RS232C-B). Depending on CH1 setting, CH2 may be changed as 'No Use'.
2	CH2 configuration	Displays connected device and connect port for CH2. Touch this to select one from downloaded protocol in GP Editor, EDITOR, PRINTER, BARCODE, UNIVERSAL, or DEFAULT protocol and designate connect port. (Select between RS232C/RS422 or RS232C-A / RS232C-B). If CH1 is SLAVE, MONITOR does not appear.
3	GP station configuration touch key	Touch this and input key pad for station appears. Station set range: 0 to 31



(1) In case of using only CH1 configured in GP Editor

No	Item	Operation with touching
1	Displays CH1 protocol	Rotates in order as downloaded protocol in GP Editor \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow UNIVERSAL \rightarrow DEFAULT protocol
2	Displays CH1 connect port (Designates automatically as non-using port in ④)	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT Two ports of RS232C interface type: RS232C A PORT ↔ RS232C B PORT
3	Displays CH2 protocol (as EDITOR for default)	Rotates in order as EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow MONITOR \rightarrow UNIVERSAL \rightarrow No Use
4	Displays CH2 connect port (Designates automatically as non-using port in ②)	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT Two ports of RS232C interface type: RS232C A PORT ↔ RS232C B PORT
56	Communication configuration by each channel	Moves communication configuration setting window for selected connected device. You can designate baudrate, data bit, parity, stop bit, and flow control for each channel. If CH1 is as NoUse, it is not able to communication configuration.



(2) In case of using only CH2 configured in GP Editor

No	Item	Operation with touching
1	Displays CH1 protocol	Rotates in order as NoUse \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow UNIVERSAL \rightarrow DEFAULT protocol.
	Displays CH1 connect port	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT
2	(Designates automatically as non-using port in ④)	Two ports of RS232C interface type: RS232C A PORT ↔ RS232C B PORT
3	Displays CH2 protocol (as downloaded protocol for default)	Rotates in order as downloaded protocol in GP Editor \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE
4	Displays CH2 connect port (Designates automatically as non-using port in ②)	Each of RS422 / RS232C interface type: RS422 PORT ↔ RS232C PORT Two ports of RS232C interface type:
		RS232C A PORT ↔ RS232C B PORT
56	Communication configuration by each channel	Moves communication configuration setting window for selected connected device. You can designate baudrate, data bit, parity, stop bit, and flow control for each channel. If CH1 is as NoUse, it is not able to communication configuration.

	EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	٢	11/11/14 5:55 PM		
			PROTOCOL	PORT			
1)—		CH1	MK-200S(CPU)	RS-422	SET 🗲		-2
		CH2	FX1N_Tool V1.0M	RS-232C	SET 🛶	μ	
		LP STATION :	0				

(3) CH1/ CH2 details configuration

SYSTEM SETTI	NG\ ENVIRONMENT\ SERIAL\ SERIAL S	PECIFICATION	() 11/11/14 5:55 PM
	CH1		
3	BAUD RATE	115200	
	DATA LENGTH	8	
5	PARITY	NONE	
6	STOP	1	
0	FLOW CONTROL	XON/XOFF	

No	Function and operation		
1	 Designate the device to be connected for CH1, CH2. CH1, CH2 protocol: Communication mode for set PLC by GP and GP Editor by each port. EDITOR: I/O mode for downloading user-designed data from GP Editor PRINTER: Print mode for printing alarm history of GP Refer to '3.5.3 PRINTER communication configuration'. BARCODE: Input mode for reading data from barcode Refer to '3.5.2 Barcode reader communication configuration '. MONITOR: Available only in CH2. Monitoring mode for PLC which is connected to GP from PC directly. GP is as transmitter by transmitting data from PC to PLC and data from PLC to PC. In case of MITSUBISHI FX-series, editor mode is available for monitoring. NoUse: Displayed only not using appropriate CH. 		

No	Function and operation		
2	Touch this, detailed configuration screen for designated operation mode appears.		
3 to 7	 Designate detailed configuration for designated operation mode. Baudrate: Designate baud rate. Supports 300/600/1200/2400/4800/9600/19200/38400/57600/115200bps Data: Designate data bit. Supports 7 bit, or 8 bit. Stop bit: Designate stop bit. Supports 1 bit, or 2 bit. Parity: Designate parity type. Supports even, odd, or none parity. Flow control: Designate data flow control. Supports XON/ XOFF, or DSR/DTR. 		

1.4 Link device

Generally GP/LP monitors directly PLC device of CH1. To link PLC device of CH1 and GP/LP connect device (by saving monitored PLC device value to specified GP/LP connect device), link devie menu is needed.

Mono type must use link device with CH2 to communicate 1:N.

Color type is able to monitor directly PLC device of each channel (CH1,CH2). Therefore, color type does not use link device and is able to communicate 1:N without CH1, CH2 division. However, PLC which supports station is only able to communicate 1:N.

Select [Common]-[Link Device] of GP Editor menu, 'Link Device Setting' dialog box appears.

CH1								
CH1 G	roup : LS MA	ASTER-	K SERI	ES		CH1 Inner Lir	nk 🥑	Device
CH1 Ty	/pe : MK-20	0S_To	ol		MASTER	INTERNAL	U	W200
CH2								
CH2 G	roup : MITSL	BISHI	FX SER	ES		CH2 Inner Li	nk⑦	Device
CH2 Ty	pe : FX2N	Tool			MASTER	INTERNAL		W300
No								
	Bit/Word	Ch	St	Device	Count	Read/Write	a	Add
NO				D400	10		-	
1	Word	1		D100	10	Write		
1 2	Word Word	1	-	D110	10	Write	10	Edit
1 2 3	Word Word Word	1	-	D110 D120	10 10	Write Read	-	
1 2 3 4	Word Word Word Word	1 1 1	-	D110 D120 (8) D130	10 10 5	Write Read Read	10 11	Edit Delete
1 2 3 4 5	Word Word Word Word Word	1 1 1	-	D110 D120 (8) D130 D135	10 10 5 5	Write Read Read Read	1	Delete
1 2 3 4	Word Word Word Word	1 1 1	-	D110 D120 (8) D130	10 10 5	Write Read Read	1	Delete
1 2 3 4 5 6	Word Word Word Word Word Word	1 1 1 1 2	-	D110 D120 8 D130 D135 D0	10 10 5 5 10	Write Read Read Read Read	1	Delete
1 2 3 4 5 6 7	Word Word Word Word Word Word Word	1 1 1 1 2 2	- - - - 000	D110 D120 8 D130 D135 D0 D10	10 10 5 5 10 10	Write Read Read Read Read Read	1	Delete
1 2 3 4 5 6 7 8	Word Word Word Word Word Word Word Word	1 1 1 2 2 2	- - - - 000 000	D110 D120 (8) D130 D135 D0 D10 D10 D20	10 10 5 5 10 10 10	Write Read Read Read Read Read Read	1)	Delete Delete All UP
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	11	Delete Delete All
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	1)	Delete Delete All UP
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	1)	Delete Delete All UP
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	1)	Delete Delete All UP
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	1)	Delete Delete All UP
1 2 3 4 5 6 7 8 9	Word Word Word Word Word Word Word Word	1 1 1 1 2 2 2 2 2	- - - - 000 000 000	D110 D120 8 D130 D135 D0 D10 D20 D30	10 10 5 5 10 10 10 5	Write Read Read Read Read Read Read Write	1)	Delete Delete All UP

No	Link Device	Description
1	GP/LP Type	Displays GP/LP model type.
2	CH1 Group	Displays CH1 group.
3	СН1 Туре	Display PLC type of CH1 group.
4	CH1 Inner Link Device	Designate lead word address of GP/LP for communication with CH1
(5)	CH2 Group	Displays CH2 group.
6	CH2 Type	Displays PLC type of CH2 group.

Autonics

No	Link Device	Description				
7	CH2 Inner Link Device	Designate lead word address of GP/LP for communication with CH2.				
8	Link Device Setting Status	Displays bit/word, channel, station, start device, count, read/write of CH1/CH2 to communicate with GP/LP				
9	Add	Adds link device settings. 'Link Device' dialog box appears. Link Device Bit / Word Word I I I I I I I I I I I I I I I I I I I				
10	Edit	Edit the selected item on (8) among set link device				
(1)	Delete	Delete the selected item on (8) among set link device				
(12)	Delete All	Delete all of set link device				
13	UP	Moves up all items of set link device.				
14)	DOWN	Moves down all items of set link device.				

Displays table for link device setting of set between GP/LP and CH GP/LP and CH2. Link Device Connect Diagram CH1 Link Device Stat Link Device CH1 Link Device CH1 Link Device UW220 (UW200) D100 Write 10 Word - UW220 (UW200) D100 Write UW220 (UW200) D100 Word - UW220 (UW200) D130 Read UW235 (UW235) D135
(3) Linked Status CH2 Link Device CH2 Device Stat Link Device O UW300 (UW300) D10 Read 0 UW310 (UW310) D20 Read 0 UW320 0 UW320 0 UW320 0 UW320 0 UW325 0 UW325 UW325 UW325 UW325 UW325

GP/LP	CH1 station	Communication direction	CH1 PLC
Autonics			
GP/LP series	%1		MK-200S
UW200 to UW209	-	(Write) →	D100 to D109
UW210 to UW219	-	(Write) →	D110 to D119
UW220 to UW229	-	(Write) →	D120 to D129
UW230 to UW234	-	(Read) ←	D130 to D134
UW235 to UW239	-	(Read) ←	D135 to D139

※1. Mono type(GP-S044, GP-S057, LP-S044) is able to communicate 1:1 for CH1, and does not support multi station selection. It is fixed as the station of GP/LP and displays '-'. Color type(GP-S070, LP-S070) is able to communicate 1:1, 1:N for without CH1, CH2 division, and supports multi station selection. It is able to designate station. If PLC of connected with CH2 does not support station, it displays '-' and 1:N communication does not execute.

GP/LP	CH2 station	Communication direction	CH2 PLC
Autorics			
GP/LP series	※1		FX-2N
UW300 to UW309	-	(Read) ←	D0 to D9
UW310 to UW319	-	(Read) ←	D10 to D19
UW320 to UW329	-	(Read) ←	D20 to D29
UW330 to UW334	-	(Write) →	D30 to D34
UW335 to UW339	-	(Write) →	D35 to D39

※1. Mono type(GP-S044, GP-S057, LP-S044)) is able to communicate 1:1, 1:N for CH2 and supports multi station selection. If PLC of connected with CH2 does not support station, , it displays '-' and 1:N communication does not execute.

Color type(GP-S070, LP-S070) is able to communicate 1:1, 1:N for without CH1, CH2 division, and supports multi station selection. If PLC of connected with CH2 does not support station, it displays '-' and 1:N communication does not execute.

In this case, UW(i) is i_{st} GP device, Dk(i) is i_{st} CH1 device.

(1) CH1 inner link device: UW(i)

Link device setting

- Start Device: D1(i), Bit/Word: Word, Numbers: A, Read/Write: Write
- Start Device: D2(i), Bit/Word: Word, Numbers: B, Read/Write: Read
- Start Device: D3(i), Bit/Word: Word, Numbers: C, Read/Write: Read
- Start Device: D4(i), Bit/Word: Word, Numbers: D, Read/Write: Read
- Start Device: D5(i), Bit/Word: Word, Numbers: E, Read/Write: Write

Inner link device (Word)	Communication	CH1	
	direction	Device	
First A units of device from UW (i)	(Write) \rightarrow	D1(i) to D1(i+A-1)	
B units of device from the next	(Read)	D2(i) to D2(i+B-1)	
C units of device from the next	(Read)	D3(i) to D3(i+C-1)	
D units of device from the next	(Read)	D4(i) to D4(i+D-1)	
E units of device from the next	(Write) \rightarrow	D5(i) to D5(i+E-1)	

(2) CH1 inner link device: UW (i)

Link device setting

- Start Device: D1(i), Bit/Word: Word, Numbers: A, Read/Write: Write
- Start Device: D2(i), Bit/Word: Bit, Numbers: B, Read/Write: Read
- Start Device: D3(i), Bit/Word: Word, Numbers: C, Read/Write: Read
- Start Device: D4(i), Bit/Word: Bit, Numbers: D, Read/Write: Read
- Start Device: D5(i), Bit/Word: Word, Numbers: E, Read/Write: Write

Inner link device (Word)	Communication	CH1
	direction	Device
First A units of device from UW (i)	(Write) \rightarrow	D1(i) to D1(i+A-1)
[(B+16-1)/16] units of device from	(Read)	D2(i) to D2(i+[(B+16-1)/16]-1)
the next	(Reau)	D2(I) (0 D2(I+[(D+10-1)/10]-1)
C units of device from the next	(Read)	D3(i) to D3(i+C-1)
[(D+16-1)/16] units of device from	(Read)	$D_{4}(i)$ to $D_{4}(i+1)(D+16, 1)(161, 1)$
the next	(INEAU)	D4(i) to D4(i+[(D+16-1)/16]-1)
E units of device from the next	(Write) \rightarrow	D5(i) to D5(i+E-1)

Inner link device is always word. When CH1 link device is set as bit, it is linked as below. 1 to 16 units of CH1 bit device \leftrightarrow 1 unit of GP word device

17 to 32 units of CH1 bit device \leftrightarrow 2 units of GP word device



- CH1 inner link device: UW(30)
- Link device setting
 - Start Device: K(0), Bit/Word: Word, Numbers: 5, Read/Write: Write
 - Start Device: M(0), Bit/Word: Word, Numbers: 3, Read/Write: Write
 - Start Device: D(0), Bit/Word: Word, Numbers: 4, Read/Write: Read
 - Start Device: D(10), Bit/Word: Word, Numbers: 6, Read/Write: Write

GP/LP		Communicati	CH1	
Inner link device (Word)	Numbers	on direction	Device	Numbers
UW(30) to UW(34)	5	(Write) \rightarrow	K(0) to K(4)	Word 5
UW(35) to UW(37)	3	(Write) \rightarrow	M(0) to M(2)	Word 3
UW(38) to UW(41)	4	(Read)	D(0) to D(3)	Word 4
UW(42) to UW(47)	6	(Write) \rightarrow	D(10) to D(15)	Word 6



- CH1 GP connect device: UW(30)
- Link device setting
 - Start Device: K(0), Bit/Word: Word, Numbers: 5, Read/Write: Write
 - Start Device: M(0), Bit/Word: Word, Numbers: 3, Read/Write: Read
 - Start Device: P(10), Bit/Word: Bit, Numbers: 20, Read/Write: Read
 - Device: D(10), Bit/Word: Word, Numbers: 6, Read/Write: Write

GP/LP		Communicat	CH1	
Inner link device (Word)	Numbers	ion direction	Device	Numbers
UW(30) to UW(34)	5	(Write) \rightarrow	K(0) to K(4)	Word 5
UW(35) to UW(37)	3	(Write) →	M(0) to M(2)	Word 3
UW(38)	1	(Read)	P(10) to P(13)	Bit 4
UW(39) to UW(44)	6	(Write) \rightarrow	D(10) to D(15)	Word 6

* If numbers is set over than usable numbers, maximum range numbers is used.

CH2 device is monitored indirectly with linked GP device. CH2 link device setting is same as CH1 data link and is able to connect multi devices and to set several stations. In this case, UW(i) is GP i_{st} device, N_Dk(i) is that station is N, and i_{st} of D1 CH2 device.

- CH2 inner link device: D(i)
- Set for station and inner device

(3) Station N

- Start Device: N_D1(i), Bit/Word: Word, Numbers: A_N
- Start Device: N-D2(i), Bit/Word: Word, Numbers: B_N
- Start Device: N-D3(i), Bit/Word: Word, Numbers: C_N
- Start Device: N-D4(i), Bit/Word: Word, Numbers: D_N
- Start Device: N-D5(i), Bit/Word: Word, Numbers: E_N

GP/LP	Communic	CH2	
Inner link device (Word)	ation direction	Station	Device
First A ₀ units of device from D(i)	Read/Write		0_D1(i) to 0_D1(i+A ₀ -1)
B ₀ units of device from the next	Read/Write		0_D2(i) to 0_D2(i+B ₀ -1)
C ₀ units of device from the next	Read/Write	0	0_D3(i) to 0_D3(i+C ₀ -1)
D ₀ units of device from the next	Read/Write		0_D4(i) to 0_D4(i+D ₀ -1)
E ₀ units of device from the next	Read/Write		0_D5(i) to 0_D5(i+E ₀ -1)
A ₁ units of device from the next	Read/Write		1_D1(i) to 1_D1(i+A ₁ -1)
B1units of device from the next	Read/Write		1_D2(i) to 1_D2(i+B ₁ -1)
C1units of device from the next	Read/Write	1	1_D3(i) to 1_D3(i+C ₁ -1)
D ₁ units of device from the next	Read/Write		1_D4(i) to 1_D4(i+D1-1)
E1units of device from the next	Read/Write		1_D5(i) to 1_D5(i+E1-1)
A ₃₁ units of device from the next	Read/Write		31_D1(i) to 31_D1(i+A ₃₁ -1)
B ₃₁ units of device from the next	Read/Write		31_D2(i) to 31_D2(i+B ₃₁ -1)
C ₃₁ units of device from the next	Read/Write	31	31_D3(i) to 31_D3(i+C ₃₁ -1)
D ₃₁ units of device from the next	Read/Write]	31_D4(i) to 31_D4(i+D ₃₁ -1)
E ₃₁ units of device from the next	Read/Write		31_D5(i) to 31_D5(i+E ₃₁ -1)

If Bit/Word setting is Bit, CH1 link device has same link structure as bit's and communicates with GP/LP.



- CH2 inner link device:UW(30)
- Set for station and link device

(4) Station 1

- Start Device: K(0), Bit/Word: Word, Numbers:5, Read/Write: Write
- Start Device: M(0), Bit/Word: Bit, Numbers:3, Read/Write: Write
- Start Device: D(0), Bit/Word: Word, Numbers:4, Read/Write: Read
- Start Device: D(10), Bit/Word: Word, Numbers:6, Read/Write: Write

(5) Station 3

- Start Device: K(10), Bit/Word: Bit, Numbers:2, Read/Write: Read
- Start Device: M(16), Bit/Word: Word, Numbers:5, Read/Write: Write

(6) Station 11

- Start Device: D(20), Bit/Word: Word, Numbers:7, Read/Write: Read
- Start Device: D(30), Bit/Word: Word, Numbers:2, Read/Write: Write
- Start Device: M(32), Bit/Word: Bit, Numbers:4, Read/Write: Write

GP/LP	Communicat	CH2			
Inner link device	Numbers	ion direction	Station	Device	Numbers
UW(30) to UW(34)	5	(Write) \rightarrow		K(0) to K(4)	Word 5
UW(35)	1	(Write) \rightarrow	1	M(0) to M(3)	Bit 3
UW(36) to UW(39)	4	(Read)		D(0) to D(3)	Word 4
UW(40) to UW(45)	6	(Write) \rightarrow		D(10) to D(15)	Word 6
UW(46)	1	(Read)		K(10) to K(11)	Bit 2
UW(47) to UW(51)	5	(Write) →	3	M(16) to M(20)	Word 5
UW(52) to UW(58)	7	(Read)		D(20) to D(26)	Word 7
UW(59) to UW(61)	2	(Write) →	11	D(30) to D(31)	Word 2
UW(62)	1	(Write) \rightarrow	11	M(32) to M(35)	Bit 4

1.5 Connectable device

Connectable PLC with GP, LP is constantly being update.

Series	Connectable device	Communication connection type	GP-2480 (Below V2.70)	GP-2480 (Above V3.00)	GP-S057	GP/LP- S044	GP/LP- S070
LS Master-K	MK-10S1	CPU direct Loader	0	0	0	0	0
	MK-80S	CPU direct Loader	0	0	0	0	0
	MK-120S	CPU direct Loader	0	0	0	0	0
	MK-200S	CPU direct Loader	0	0	0	0	0
	MK-300S	CPU direct Loader	×	0	0	0	0
	MK-1000S	CPU direct Loader	×	0	0	0	0
LS Glofa	GM4	CPU direct Loader	0	0	0	0	0
	GM6	CPU direct Loader	0	0	0	0	0
	GM7U	CPU direct Loader	×	0	0	0	0
LS CNET (Embedded Cnet CPU)	MK-80S	Cnet	0	0	0	0	0
	MK-120S	Cnet	0	0	0	0	0
	MK-200S	Cnet	0	0	0	0	0
	MK-80S	Cnet	0	0	0	0	0
	MK-120S	Cnet	0	0	0	0	0
LS CNET (with Cnet Unit)	MK-200S	Cnet	0	0	0	0	0
	MK-300S	Cnet	×	0	0	0	0
	MK-1000S	Cnet	×	0	0	0	0
LS XGT (Using Cnet Unit)	XGK-CPUS	Cnet	×	0	0	0	0
LS XGB (Embedded Cnet CPU)	XBM	Cnet	×	0	0	0	0
	XBC	Cnet	×	0	0	0	0
LS XGB (Using Cnet Unit)	XBM	Cnet	×	0	0	0	0
	ХВС	Cnet	×	0	0	0	0
OEMAX (Ex SAMSUNG)	N70	CPU direct Loader	0	0	0	0	0
	N70Plus	CPU direct Loader	0	0	0	0	0
OEMAX FARA	NX7	CPU direct Loader	×	0	0	0	0
	NX70	CPU direct Loader	×	0	0	0	0
MITSUBISHI FX	FX1S	CPU direct Loader	0	0	0	0	0
	FX1N	CPU direct Loader	0	0	0	0	0
	FX2N	CPU direct Loader	0	0	0	0	0
	FX2NC	CPU direct Loader	0	0	0	0	0
	FX3U	CPU direct Loader	×	0	0	0	0

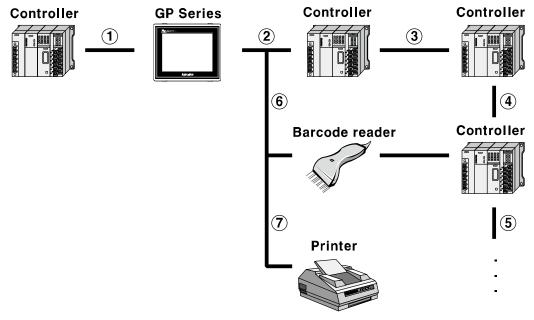
Series	Connectable device	Communication connection type	GP-2480 (Below V2.70)	GP-2480 (Above V3.00)	GP-S057	GP/LP- S044	GP/LP- S070
MITSUBISHI Q(with Cnet Unit)	Q00J	Cnet	×	0	0	0	0
	Q00	Cnet	×	0	0	0	0
	Q01	Cnet	×	0	0	0	0
	Q02	Cnet	×	0	0	0	0
	Q02H	Cnet	×	0	0	0	0
	Q06H	Cnet	×	0	0	0	0
	Q12H	Cnet	×	0	0	0	0
	Q25H	Cnet	×	0	0	0	0
NAIS FP	FP0-C10	CPU direct Loader	0	0	0	0	0
	FP0-C14	CPU direct Loader	0	0	0	0	0
	FP0-C16	CPU direct Loader	0	0	0	0	0
	FP0-C32	CPU direct Loader	0	0	0	0	0
	FPG-C24R2	CPU direct Loader	0	0	0	0	0
	FPG-C32T	CPU direct Loader	0	0	0	0	0
	FPG-C32T2	CPU direct Loader	0	0	0	0	0
	FP0R-C10	CPU direct Loader	×	0	0	0	0
	FP0R-C14	CPU direct Loader	×	0	0	0	0
	FP0R-C16	CPU direct Loader	×	0	0	0	0
	FP0R-C32	CPU direct Loader	×	0	0	0	0
	FP0R-T32	CPU direct Loader	×	0	0	0	0
	FP0R-F32	CPU direct Loader	×	0	0	0	0
SIEMENS SIMATIC S7-200	CPU221	CPU direct Loader	×	0	0	0	0
	CPU222	CPU direct Loader	×	0	0	0	0
	CPU224	CPU direct Loader	×	0	0	0	0
	CPU224XP	CPU direct Loader	×	0	0	0	0
	CPU224XPsi	CPU direct Loader	×	0	0	0	0
	CPU226	CPU direct Loader	×	0	0	0	0
SIEMENS SIMATIC S7-300	CPU312	CPU direct Loader	×	×	0	0	0
	CPU312C	CPU direct Loader	×	×	0	0	0
	CPU313C	CPU direct Loader	×	×	0	0	0
	CPU313C-2	CPU direct Loader	×	×	0	0	0
	CPU314	CPU direct Loader	×	×	0	0	0
	CPU314C-2	CPU direct Loader	×	×	0	0	0
	CPU315-2	CPU direct Loader	×	×	0	0	0

Series	Connectable device	Communication connection type	GP-2480 (Below V2.70)	GP-2480 (Above V3.00)	GP-S057	GP/LP- S044	GP/LP- S070
	CPU317-2	CPU direct Loader	×	×	0	0	0
	CPU319-3	CPU direct Loader	×	×	0	0	0
	MicroLogix 1000	CPU direct Loader	×	0	0	0	0
Allen-Bradley	MicroLogix 1200	CPU direct Loader	×	0	0	0	0
	MicroLogix 1500	CPU direct Loader	×	0	0	0	0
OMRON SYSMAC C	CPM1A	CPU direct Loader	0	0	0	0	0
	E5AN	Modbus	0	0	0	0	0
	E5AR	Modbus	0	0	0	0	0
OMRON temperature	E5CN	Modbus	0	0	0	0	0
controller	E5EN	Modbus	0	0	0	0	0
	E5ER	Modbus	0	0	0	0	0
		Dedicated communication	0	0	0	0	0
	MT Series	Modbus	×	0	0	0	×
		Modbus(TYPE A) ^{⊮1}	×	×	0	0	0
	MP Series	Dedicated communication	0	0	0	0	0
	THD Series	Modbus	0	0	0	0	×
		Modbus(TYPE A) ^{∞1}	×	×	0	0	0
	TZ Series	Dedicated communication	0	0	0	0	0
		Modbus	×	0	0	0	×
AUTONICS	TK Series	Modbus(TYPE A) ^{≍1}	×	×	0	0	0
		Modbus	×	0	0	0	×
	TM Series	Modbus(TYPE A) ^{×1}	×	×	0	0	0
		Modbus	×	0	0	0	×
	CT Series	Modbus(TYPE A) ^{≍1}	×	×	0	0	0
	DS/DA Series	Modbus(TYPEA)	×	×	0	0	0
	ARM Seriese	Modbus(TYPEA)	×	×	0	0	0
	LP-S044, LP-S070	CPU	×	0	0	0	0
		Modbus	×	0	0	0	×
	DPU Series	Modbus(TYPE A) ^{×1}	×	×	0	0	0
KONICS		Modbus	×	0	0	0	×
	KRN50	Modbus(TYPE A) ^{×1}	×	×	0	0	0
		Modbus	0	0	0	0	×
DELTA	DTB Series	Modbus(TYPE A) ^{×1}	×	×	0	0	0
DANFOSS	FC Series	Modbus	×	×	×	×	×

Series		Communication	(Below	GP-2480 (Above V3.00)	GP-S057		GP/LP- S070
		Modbus(TYPE A) ^{∞1}	×	×	0	0	0
UNIVERSAL	UNIVERSAL	Modbus(Slave)	0	0	0	0	0
	MODBUS MASTER	Modbus(Master) ^{∞1}	×	×	0	0	0

%1. Modbus(TYPE A) supports every GP/LP series except GP-2480 series.

1.6 Applicable connection type



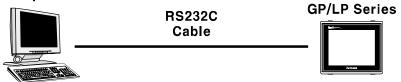
Communication	Description
 1:1 communication 	It is able to communicate between a GP/LP and a PLC or controller. For
	more details, refer to '3.2 1:1 communication'.
	It is able to communicate between GP or LP and PLC or controller by
(1) (2) Heterogeneous	connecting heterogeneous PLC to each port of GP/LP. For more
communication	details, refer to '3.4 Heterogeneous communication'.
2 3 4 5 1:N	
communication	It is able to communicate between a GP or LP and the number 'N' of
12345	PLCs or controllers. For more details, refer to '3.3 1:N communication'.
1:1:N communication	
16	CD I D is able to connect with boroade reader to read information from
Communication with	GP, LP is able to connect with barcode reader to read information from
barcode reader	the barcode. For more details, refer to '3.5 Other communication'.
1 7 Communication	GP, LP is able to connect with printer to print out alarm history list. For
with printer	more details, refer to '3.5 Other communication'.

2 GP Editor Data Download

You can download created data from GP Editor which is drawing software in PC to GP, LP.

2.1 System organization

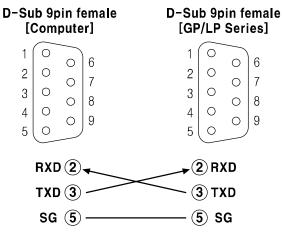
Computer



GP, LP are basically supported by RS-232C communication and RS-422 communication is also available only with RS232/422 converter.

It is required to use dedicated transmitting cable(sold separately) to transmit the data. You can create the cable, refer to below.

The below is a diagram and pin arrangement for RS-232C cable to transmit data.



2.2 Communication configuration

There are two configurations to transmitting data. First is GP Editor configuration, and second is GP, LP configuration.

2.2.1 GP Editor configuration

This manual describes basic communication configuration of GP Editor and serial communication. For more details, refer to 'GP Editor user manual'.

Through GP Editor which is dedicated drawn software, you can download the data to GP/LP.

To download data editing in GP Editor to PLC, you should designate as following.

- 1st Install GP Editor and opeate this program.
- 2nd 'Project Select' dialog appears. Select 'New' to create a new project.

Project Select	K
New	
Open	
Display this window when program is started.	

3rd 'GP/PLC Type' dialog box appears. Designate CH1 group and type, CH2 group and type and click 'OK'.

GP/PLC Type	×
GP/LP Type() LP-S070 T9D6 (800 X 480)	
_ CH1	
CH1 Group2 LS MASTER-K SERIES	
CH1 Type 3 MK-200S_Tool MASTER	
- CH2	
CH2 Ground AUTONICS COUNTER/TIMER SERIES	
CH2 Type 6 CT6M-2P_Mod MASTER	
OK Cancel	

No	ltem	m Description	
1	GP/LP Type	Designate GP/LP model type by pull-down menu.	
2	CH1 Group	Designate PLC group of CH1 by pull-down menu.	
3	СН1 Туре	Designate PLC type of CH1 for ② by pull-down menu.	
(4)	CH2 Group	Designate PLC group of CH2 by pull-down menu.	
(5)	СН2 Туре	Designate PLC type of CH2 for ④ by pull-down menu.	

4th 'Project Auxiliary Property' dialog box appears. Designate the desired setting and click 'OK'.

Project Auxiliary Property	X		
Basic Key Window Language Serial Port Setup Menu Key			
Configure Key Window / Cursor Display Operate for screen switching :			
Display Cursor Only			
☑ Call key window when detecting touch			
☐ Application of serial port, setup, menu key, configuration			
Image Color 🛛 💌			
Form			
Horizontal Virtical			
OK Cancel			

5th Draw the data to download for GP/LP.

For further details of drawing, refer to 'GP Editor user manual'.

6th After completing data input, select [Communication]-[Download] of menu. 'Monitor Data Download' dialog box appears.

Monitor Data Download		X
Configuration Base Wind	low Other	
Tag All Data	C Selected Data	
🔽 Protocol download		
Project Title :		
Project ID :	51524029	
GP/LP Type :	LP-S070 T9D6 (800 X 480)	
Download Close	①Setting Size: 0,4KB Size: 0,4KB	Sector: 3

7th Click ① 'Setting' button and 'Option' dialog box appears.

8th Designate the connected communication port of PC to GP/LP and synchronize baud rate between GP/LP and GP Editor. Click 'OK'.

Option)				X
File	Browse Co	ommunicatio	on		
_					
	Serial		C Ethernet	C USB	
		Port :	COM1	•	
		Baudrate :	115200	💌 (bps)	
			1110200	(0p0)	
				OK	Cancel

Baudrate default is 115200 bps at GP/LP and GP Editor.

9th Click 'Download' and 'Data Transmission' dialog box appears and displays download processing statues when communication configuration is correctly synchronized.

Data Transmission	X
Do not cut the power.	
79%	
55%	
image files 2 downloading	
6.0KB / 10.8KB	
Cancel	

10th After completing download, 'Success to download' message appears.

GP Editor	
(į)	Success to download!
[OK

If there is communication setting error or other error, communication is not available. After the time, GP Editor displays communication error message.

GP Edito	u 🔀
(į)	Time out, Fail to retry
[ОК

2.2.2 GP, LP configuration

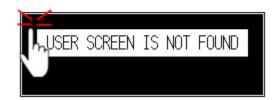
This chaper is described by each of RS422/RS232C serial interface type.

For more details, refer to 'GP Editor user manual'.

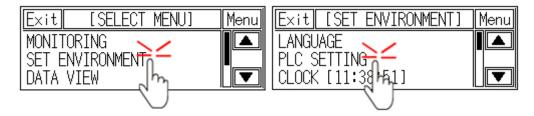
2.2.2.1 Mono type

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH2 protocol is set as 'EDITOR' and CH2 connection port is set as 'RS232C' as default. (For donwloading drawn data of GP Editor to GP/LP, use 'RS232C' port. In case of using RS232/422 converter, you can download it with RS422 port.)

Exit	[PLC SETTING]	Menu
CH1	UNIVERSAL	RS422
CH2	EDITOR	RS232C
LP ST	.# 00 CH1 ST.#	001

4th If it is not configured as 'EDITOR' for CH2 protocol, touch protocol display item to set 'EDITOR' as following figure.

Protocol display rotates in order as No Use \rightarrow EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow MONITOR with touching.

Exit [PLC SETTING] [Menu]	Exit [PLC SETTING]	Menu
CH1 MK-200S(CPU) RS422 CH2 No Use RS232C	CH1 MK-200S(CPU) CH2 EDITOR	RS422 RS232C
LP ST.# []A. CH1 ST.# [001]	LP ST.# 00 CH1 ST.#	001

5th If it is not configured as 'RS232C' for CH2 connect port even though 'EDITOR' for CH2 protocol is configured, touch connect port display item to set 'RS232C' as following figure.

Connect port display rotates in order as RS422↔RS232C with touching.

Exit [PLC SETTING] [Menu]	Exit [PLC SETTING] Menu
CH1 MK-200S(CPU) RS232C	CH1MK-200S(CPU) RS422
	[LF SI.# [UU] CHI SI.# [UU]]

6th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor.

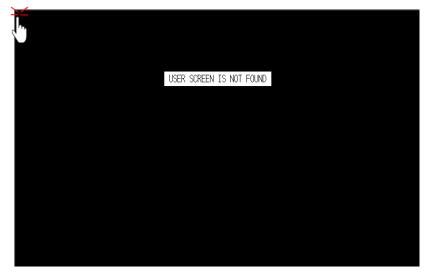
Touch 'Menu', current setting values are saved and it returns to previous menu.

Touch 'Exit', current setting values are saved and it returns to user screen.

2.2.2.2 Color type

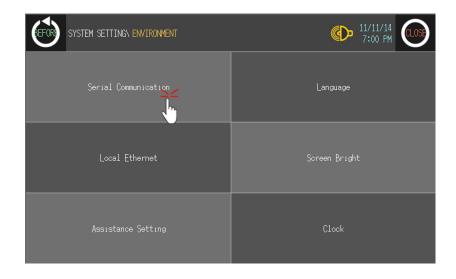
1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(LOS) 11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter



3rd CH2 protocol is set as 'EDITOR' and CH2 connection port is set as 'RS232C' as default. (For donwloading drawn data of GP Editor to GP/LP, use 'RS232C' port. In case of using RS232/422 converter, you can download it with RS422 port.)

(EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 7:00 PM	
		PROTOCOL.	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :	0			

4th If it is not configured as 'EDITOR' for CH2 protocol, touch protocol display item to set 'EDITOR' as following figure. Protocol display rotates in order as No Use→EDITOR→ PRINTER→BARCODE→MONITOR with touching.

(EFOR	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	11/11/14 7:01 PM	
	_				
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	No Us	RS-232C	SET	
	LP STATION :				
(FOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 7:01 PM	
	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 7:01 PM	
	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 7:01 PM	••••
	CH1			11/11/14 7:01 PM SET	
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL EDITOR	PORT RS-422	SET	

5th If it is not configured as 'RS232C' for CH2 connect port even though 'EDITOR' for CH2 protocol is configured, touch connect port display item to set 'RS232C' as following figure.

Connect port display rotates in order as RS422↔RS232C of two communication connector with touching.

(FOR	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	()	• 11/11/14 7:01 PM	
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-232C	SET	
	CH2	EDITOR	RS-422	SET	
	LP STATION :				
(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	()	11/11/14 7:01 PM	
(For	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	٩	▶ 11/11/14 7:01 PM	
	SYSTEM SETT	TINGN ENVIRONMENTN SERIAL PROTOCOL	PORT	11/11/14 7:01 PM	
	CH1			11/11/14 7:01 PM SET	•••
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL EDITOR	PORT RS-422	SET	

 6th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor.
 Touch 'BEFORE', current setting values are saved and it returns to previous menu.

Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

3 PLC Communication

3.1 Communication configuration

For communicating GP/LP with PLC, you should designate detail configuration as following before communicating. This chapter is described by LS Master-K200 and Autonics CT6M-2P as example.

3.1.1 GP Editor configuration

Through GP Editor which is dedicated drawn software, you can download the data to GP/LP.

To download data editing in GP Editor to PLC, you should designate connected PLC group, type, and communication type.

(1) GP/PLC type configuration

GP/PLC Type	<
GP/LP Type① LP-S070 T9D6 (800 X 480)	
CH1	
CH1 Group LS MASTER-K SERIES	
CH1 Type (3) MK-200S_Tool MASTER	
CH2	
CH2 Type 6 CT6M-2P_Mod MASTER	
OK Cancel	

No	Item	Description
1	GP/LP Type	Designate GP/LP model type by pull-down menu.
2	CH1 Group	Designate PLC group of CH1 by pull-down menu.
3	CH1 Type	Designate PLC type of CH1 for ② by pull-down menu.
4	CH2 Group	Designate PLC group of CH2 by pull-down menu.
(5)	CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.

(2) Data drawing by GP Editor

- Mono type: CH1 generally monitors directly PLC device of set CH1. (Supports 1:1 communication.) CH2 designates the set data register and communicated PLC by 'Link Device' (Supports 1:N communication for same type)
- Color type: Without CH1, CH2 division, it supports both 1:1 and 1:N communication. (For more details, refer to 'GP Editor user manual'.)

Download drawn data to GP/LP (Select [Communication]-[Download] of menu.). Drawn data, PLC protocol of CH1, CH2 are downloaded to GP/LP.

3.1.2 **GP, LP configuration**

3.1.2.1 Mono type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

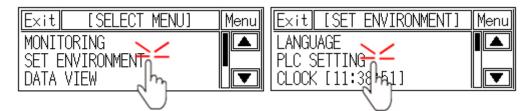
After downloading drawn data from GP Editor: After downloading PLC protocol of CH1, CH2 which is designated from GP Editor to GP/LP, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH1 protocol is set as following the designated PLC from GP Editor.

CH1 is designated as LS MASTER-K200 and CH2 is designated as AUTONICS CT6M-2P from GP Editor.

GP/PLC Type	×
GP/LP Type : LP-S044 S1D0 (240 X 80)	
CH1 Group : LS MASTER-K SERIES	
CH1 Type : MK-200S_Tool MASTER	
CH2 Group : AUTONICS COUNTER/TIMER SERIES	
CH2 Type : CT6M-2P_Mod MASTER	
OK Cancel	

4th After downloading CH1 protocol is set as downloaded protocol 'LS MASTER K200' and CH2 protocol is set as 'EDITOR'.

Touch protocol display item of CH2 to set as downloaded protocol 'AUTONICS CT6M-2P'.

Exit [PLC SETTING] [Mer	u Exit [PLC SETTING] Menu
CH1 MK-2005_Tool RS422	CH1_MK-2005_Too1 RS422
CH2 EDITOR RS232	C CH2 CT6M-2P_Mod RS232C
<u>ובף אד. ד נ</u> ואן כאז אד. ד <u>וס</u>	<u>)1</u> LP_SI.# <u>[UU]</u> CH1_SI.# <u>[UU1</u>

5th To communicate between GP/LP and LS Master-K200 for CH1, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of LS Master-K200, it uses CPU module RS232C port. Set connect port item of CH1 as 'RS232C'. Connect port display rotates in order as RS422↔RS232C with touching.

115	EXIT	<u>i plu setti</u>	.NG]	Menu	Exit	[PLC_SETTING]	Menu
	CH1 MK-2	2005_Tool		R\$422	CH1	MK-200S_Tool	RS232C
	CH2 EDIT	OR		RS2 R2C	CH2	EDITOR	RS422
	LP ST.#	00 CH1	ST.#	91	LP ST	.# <u>00</u> CH1 ST.	# 001

6th Synchronize the station of between GP/LP and LS Master-K200. Touch CH1 station item and input key pad appears. Enter the same station of LS Master-K200.

Exit [PLC SETTING]	Menu
CH1 MK-2	00S_Too1	RS232C
CH2 EDIT	OR	RS422
LP ST.#	00 CH1 ST.#	-XA
		h

Exit [1	CLR
CH1 MK-20	0	1	2	3	
CH2 EDITO	4	5	6	7	▼
LP ST.#	8	9	-	ΒS	(ENT)

7th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and LS Master-K200. The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'CH1' and detailed configuration screen is switched. Designate detailed configuration.

Exit [PLC SETTING]	Menu	Exit	MK-200)S_Too	1 Menu
G11 MK-2005_Tool	RS232C	B/R [9600bps		
[] HR EDITOR	RS422	DATA	8BIT	STOP	2BIT
🖳 JT.# 🔟 CH1 ST.#	001	PARIT'	Y NONE	F/C	XON/XOFF

8th To communicate between GP/LP and Autonics CT6M-2P for CH2, designate the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of Autonics CT6M-2P, it uses RS422 port. Set connect port item of CH2 as 'RS422'. Connect port display rotates in order as RS422↔RS232C with touching.

Exit	[PLC SETTING]	Menu
CH1	MK-200S_Tool	RS232C
CH2	CT6M-2P_Mod	RS422
LP ST	.# 00 CH1 ST.#	001

9th Synchronize the station of between GP/LP and Autonics CT6M-2P. The station of CH2 is set from link device of GP Editor. (Refer to '1.4 Link device'.)

Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and Autonics CT6M-2P.

The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'CH2' and detailed configuration screen is switched. Designate detailed configuration.

Exit [PLC SETTING] [Menu]	Exit CT6M-2P_Mod Menu
CH1_MK-2005_Too1 RS232C	B/R 38400bps
CT6M-2P_Mod RS422	DATA <u>(8BIT)</u> STOP <u>(1BIT)</u>
LF ST.# 00 CH1 ST.# 001	PARITY EVEN F/C XON/XOFF

10th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor.

Touch 'Menu', current setting values are saved and it returns to previous menu.

Touch 'Exit', current setting values are saved and it returns to user screen.

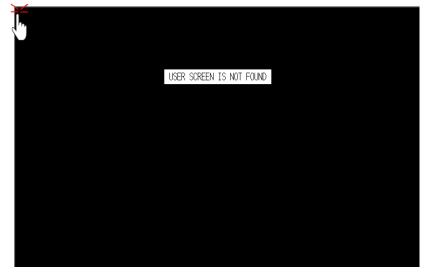
3.1.2.2 Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

After downloading drawn data from GP Editor: After downloading PLC protocol of CH1, CH2 which is designated from GP Editor to GP/LP, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(L03) 11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics.	Parameter



3rd CH1 protocol is set as following the designated PLC from GP Editor.

CH1 is designated as LS MASTER-K200 and CH2 is designated as AUTONICS CT6M-2P from GP Editor.

GP/PLC Type
GP/LP Type : LP-S070 T9D6 (800 X 480)
CH1 Group : LS MASTER-K SERIES
CH1 Type : MK-200S_Tool MASTER
CH2
CH2 Group : AUTONICS COUNTER/TIMER SERIES
CH2 Type : CT6M-2P_Mod MASTER
OK Cancel

4th After downloading CH1 protocol is set as downloaded protocol 'LS MASTER K200' and CH2 protocol is set as 'EDITOR'.

Touch protocol display item of CH2 to set as downloaded protocol 'AUTONICS CT6M-2P'.

(FOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 7:16 PM	CLOSE
		PROTOCOL	PORT		
	CH1	MK-2005_Tool V1.0M	RS-422	SET	
	CH2	EDITOP <	RS-232C	SET	
	LP STATION :				
(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	(11/11/14 7:15 PM	
(SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 7:15 PM	
	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 7:15 PM	
	CH1			> 11/11/14 7:15 PM	
		PROTOCOL.	PORT		
(FOI)	CH1	PROTOCOL MK-2005_Tool V1.0M CT6M-2P_Mod V1.0M	PORT RS-422	SET	

5th To communicate between GP/LP and LS Master-K200 for CH1, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of LS Master-K200, it uses CPU module RS232C port. Set connect port item of CH1 as 'RS232C'. Connect port display rotates in order as RS422↔RS232C with touching.

FOR SYSTEM SETTIN	IG\ ENVIRONMENT\ SERIAL	¢.	▶ 11/11/14 7:17 PM
	PROTOCOL	PORT	
CH1		RS-422	SET
CH2	CT6M-2P_Mod V1.0M	RS-232C	SET
LP STATION :	0		
	VG\ ENVIRONMENT\ SERIAL	()	> 11/11/14 7:44 PM
	NG\ ENVIRONMENT\ SERIAL	٩	• 11/11/14 7:44 PM
	NG\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 7:44 PM
CH1			> 11/11/14 7:44 PM
	PROTOCOL	PORT	

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and LS Master-K200.

The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'SET' and designate detailed configuration.

(EFOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 7:17 PM	ISE
		PROTOCOL	PORT		
	CH1		RS-232C	SE	
	CH2	CT6M-2P_Mod V1.0M	RS-422	SET	
	LP STATION :	0			
(EFOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL\ SERIAL SPEC	IFICATION 🤇	▶ 11/11/14 7:44 PM	ISE
		CH1			
		BAUD RATE	115200		
		DATA LENGTH	8		
		PARITY	EVEN		
		STOP	1		
		FLOW CONTROL	X0N/X0FF		

7th To communicate between GP/LP and Autonics CT6M-2P for CH2, designate the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of Autonics CT6M-2P, it uses RS422 port. Set connect port item of CH2 as 'RS422'. Connect port display rotates in order as RS422↔RS232C with touching.

GEFOR	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	()	11/11/14 7:44 PM	CLOSE
		PROTOCOL.	PORT		
	CH1	MK-200S_Tool V1.0M	RS-232C	SET	
	CH2	CT6M-2P_Mod V1.0M	RS-422	SET	
	LP STATION :				

8th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and Autonics CT6M-2P.

The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'SET' and designate detailed configuration.

9th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor. Touch 'BEFORE', current setting values are saved and it returns to previous menu.

Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

3.2 1:1 communication

It is able to communicate between a GP/LP and a PLC or controller. Mono type, 1:1 communication is available from both CH1, and CH2. Tags (numeral input/display, ASCII input/display) are available to communicate from only CH1, CH2 is available from link device. (Refer to 'GP Editor user manual' or '1.4 Link device' of this manual.) Color type, 1:1 communication is available from both CH1, and CH2. Tags (numeral input/display, ASCII input/display) are available to communicate from both CH1 and CH2 as different from mono type.

This chapter is described 1:1 communication by LS Master-K200 as example.

3.2.1 Communication configuration

3.2.2 GP Editor configuration

1st Designate GP/LP and PLC type.

GP/PLC Type	×
GP/LP Type() GP-SD44_S1D0_(240 X 80)	
CH1]
CH1 Group2 LS MASTER-K SERIES	
CH1 Type 3 MK-200S_Tool MASTER	
CH2	
CH2 Group() NoUse	
CH2 Type 6 NoUse	
OK	

Item	Description	Note
①GP/LP	Designate GP/LP model type by pull-	
Туре	down menu.	
②CH1	Designate PLC group of CH1 by pull-	
Group	down menu.	This chapter is described by LS Master-K200 as
ЭCH1 Туре	Designate PLC type of CH1 for ② by pull-down menu.	example.
④CH2		For mono tuno 1:1
Group	Designate PLC group of CH2 by pull- down menu.	For mono type, 1:1 communication is not available from CH2. It does
5CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.	not matter which PLC is selected.

2nd Draw the data for GP/LP from GP Editor.

(For more details, refer to 'GP Editor user manual'.)

3rd Download drawn data to GP/LP. (Select [Communication]-[Download] of menu.) Drawn data, PLC protocol of CH1 are downloaded to GP/LP.

3.2.3 GP, LP configuration

3.2.3.1 Mono type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

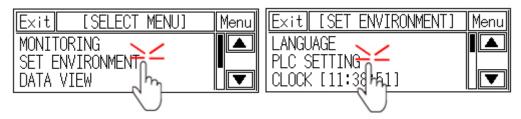
After downloading drawn data from GP Editor: After downloading PLC protocol of CH1, CH2 which is designated from GP Editor to GP/LP, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH1 protocol is set as following the designated PLC from GP Editor.

Exit	[PLC_SETTING]	Menu
CH1	MK-2005_Tool	RS422
CH2	EDITOR	RS232C
LP ST	.# 00 CH1 ST.#	001

4th To communicate between GP/LP and LS Master-K200 for CH1, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of LS Master-K200, it uses CPU module RS232C port. Set connect port item of CH1 as 'RS232C'. Connect port display rotates in order as RS422↔RS232C with touching.

Exit [PLC SETTING] Menu	Exit [PLC SETTING] [Menu]
CH1 MK-200S_Too1 RS122	CH1_MK-200S_Too1RS232C
LP ST.# 00 CH1 ST.#	LP ST.# 00 CH1 ST.# 001

B

ΕN

5th Synchronize the station of between GP/LP and LS Master-K200. Touch CH1 station item and input key pad appears. Enter the same station of LS Master-K200.

Exit [PLC SETTING] [Menu]	Exit [_
CH1_MK-2005_Too1 RS232C	CH1 MK-20	0	L
CH2 EDITOR RS422	CH2 EDIT(4	L
LP ST.# 00 CH1 ST.# 🕀 🖪	LP ST.#	8	
ل الم			

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and LS Master-K200. The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default.)

Touch 'CH1' and detailed configuration screen is switched. Designate detailed configuration.

Exit [PLC SETTING] Me	J Exit MK-2005_Tool Me	enu
RS23	B/R 9600bps	
L UK I.# 100 CH1 ST.# 10	DATA <u>(8BIT)</u> STOP <u>(2E</u> DARITY NONE) F/C (XON/XC	FF

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor to communicate with LS Master-K200.

Touch 'Menu', current setting values are saved and it returns to previous menu. Touch 'Exit', current setting values are saved and it returns to user screen.

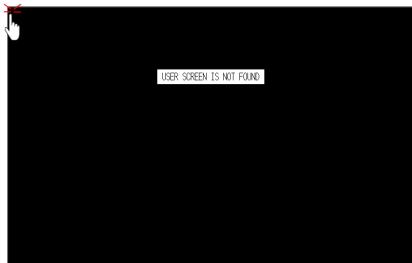
3.2.3.2 Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

After downloading drawn data from GP Editor: After downloading PLC protocol of CH1, CH2 which is designated from GP Editor to GP/LP, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter

REFOR SYSTEM SETTING ENVIRONMENT	(11/11/14 7:00 PM
Serial Communication	Language
Local Ethernet	Screen Bright
Assistance Setting	Clock

3rd CH1 protocol is set as following the designated PLC from GP Editor.

(FOR	SYSTEM SETT	'ING' ENVIRONMENT' SERIAL	¢.	11/11/14 8:42 PM	
		PROTOCOL	PORT		
	CH1	MK-2005_Tool V1.0M	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :			[

4th To communicate between GP/LP and LS Master-K200 for CH1, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')

In case of LS Master-K200, it uses CPU module RS232C port. Set connect port item of CH1 as 'RS232C'. Connect port display rotates in order as RS422↔RS232C with touching.

SYSTEM SET	TING\ ENVIRONMENT\ SERIAL	¢.	> 11/11/14 8:42 PM	CLOSE
_				
	PROTOCOL	PORT		
CH1	MK-2005_Tool V1.0M	RS-422	SET	
CH2	EDITOR	RS-232C	SET	
LP STATION	:			
<hr/>	TING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 8:42 PM	CLOS
	TING\ ENVIRONMENT\ SERIAL	۲	▶ 11/11/14 8:42 PM	
	TING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 8:42 FM	
			11/11/14 8:42 PM SET	
SYSTEM SET	PROTOCOL	PORT		
SYSTEM SET	PROTOCOL MK-2005_Tool V1.0M EDITOR	PORT RS-232C	SET	

5th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and LS Master-K200.

The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'SET' and designate detailed configuration.

(FOR)	SYSTEM SETT:	ING\ ENVIRONMENT\ SERIAL			٩	11/11/14 8:43 PM	
		PROTOCOL		PORT			
	CH1	MK-2005_Tool V1.0M		RS-232C		SET	
	CH2	EDITOR		RS-422		SET	
	LP STATION :	0					
(EFOR)	SYSTEM SETT.	NG\ ENVIRONMENT\ SERIAL\ SERIAL S	SPECIF	ICATION	٩	11/11/14 8:43 PM	
			_	_	1		
		CH1 BAUD RATE		115200			
		DATA LENGTH		8			
		PARITY		NONE			
		STOP		1			
		FLOW CONTROL		X0N/X0FF			

6th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor to communicate with LS Master-K200.

Touch 'BEFORE', current setting values are saved and it returns to previous menu. Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

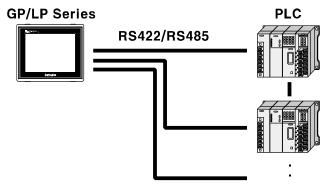
3.3 1:N communication

It is able to communicate between a GP or LP and the number 'N' of PLCs or controllers. All of connected PLCs for 1:N communication have to be same type, have RS422(or RS485) port and able to set the station for 1:N communication.

In case of mono type, 1:N communication is available by link device of CH2. In case of color type, 1:N communication is available by setting PLC station and device directly from tag (numeral input/display, ASCII input/display) of CH1, CH2 and by by link device.

3.3.1 System organization

The following figure displays 1:N communication organization for a GP/LP and the number 'N' of PLCs or controllers.



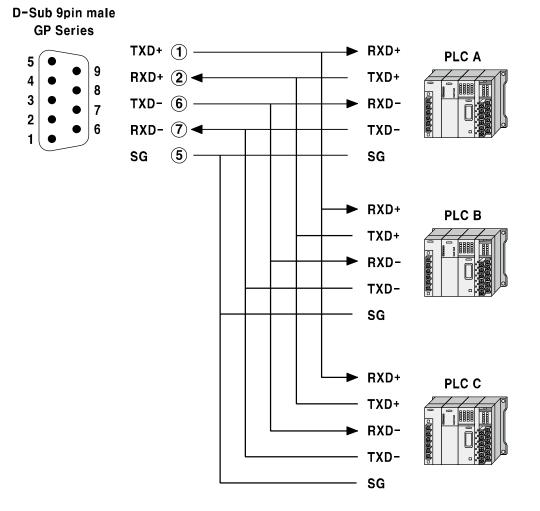
GP/LP communicates with PLC by RS422(or RS485) communication. (RS232C serial communication is not available for 1:N communication.).

For 1:N communication, the communication stations of connected PLC should not be overlapped.

The number 'N' of PLCs as one group is available only set one PLC type from GP Editor, you have to organize be same type PLC to communicate.

Note

The maximum number of connectable PLCs are the number of sepcified PLC station. For system stablity, please set under 16 stations.



The below is RS422 communication connection diagram for 1:N communication.

3.3.2 Communication configuration

This chapter is described 1:N communication by CT6M-2P of Autonics's counter/timer series as example.

3.3.2.1 GP Editor configuration

1st Designate GP/LP and PLC type.

GP/PLC Type	×
GP/LP Type() GP-S044 S1D0 (240 X 80)	
_ CH1	
CH1 Group2 NoUse	
CH1 Type 🗿 NoUse	
_ CH2	
CH2 Type 6 CT6M-2P_Mod MASTER	
OK	

Item	Description	Note
①GP/LP Type	Designate GP/LP model type by pull- down menu.	
②CH1 Group	Designate PLC group of CH1 by pull- down menu.	For mono type, 1:1 communication is not
3CH1 Type	Designate PLC type of CH1 for ② by pull-down menu.	available from CH2. It does not matter which PLC is selected.
④CH2 Group	Designate PLC group of CH2 by pull- down menu.	This chapter is described by CT6M-2P
⑤CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.	of Autonics's counter/timer series as example.

2nd Select [Common]-[Link Deivce] and 'Link Device Setting' dialog box appears. Designate the station of connected PLC to CH2 and connect device.

Link Device Setting								
GP/LP Type : GP-S044 S1D0 (240 X 80) Linked Status								
CH1								
CH1 Group : NoUse						CH1 Inner Link	Device	
CH1 T	ype : NoUse	•						
CH2								
CH2 Group : AUTONICS COUNTER/TIMER SERIES CH2 Inner Link Device								
CH2 Type : CT6M-2P_Mod					MASTER	INTERNAL	UW200	
Link Device Setting								
No	Bit/Word	Ch	St	Device	Count	Read/Write	Add	
1	Word	2	000	CT30101	5	Read	Edit	
2	Word Word	2	009 010	CT31001 CT40151	10	Read Read	Edit	
4	Word	2	016	CT40054	10	Write	Delete	
5	Word	2	031	CT40001	5	Write	Delete All	
							UP	
							DOWN	
OK Cancel								

Communication operates as below table.

GP/LP	Communica tion direction	CH2 PLC station	CH2 PLC	
Autoniks				
GP/LP series			CT6M-2P	
UW200 to UW209	(Read) ←	1	CT30105 to CT30114	
UW210 to UW219	(Read) ←	9	CT31001 to CT31010	
UW220 to UW224	(Read) ←	10	CT40151 to CT40156	
UW225 to UW229	(Write) →	31	CT40001 to CT40010	
UW230 to UW239	(Write) →	16	CT40054 to CT40063	

In case of mono type, 1:N communication configuration is available only from link device. For more details, refer to '1.4 Link device'.

In case of color type, it is available by setting PLC station and device directly from tag (numeral input/display, ASCII input/display) of CH1, CH2 and by by link device.

3rd Draw the data to download for GP/LP from GP Editor.In case of mono type: Supports 1:N communication by CH2.

In case of color type: Supports 1:N communication by CH1, CH2 without division. (For more details, refer to 'GP Editor user manual'.)

4th Download drawn data to GP/LP (Select [Communication]-[Download] of menu.). Drawn data, PLC protocol of CH1 are downloaded to GP/LP.

3.3.2.2 GP, LP configuration

(1) Mono type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

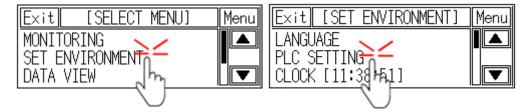
After downloading drawn data from GP Editor: After downloading PLC protocol (CT6M-2P) of CH2, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].

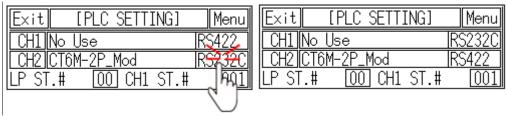


3rd CH2 protocol is set as CT6M-2P as PLC type from GP Editor but downloaded CT6M-2P protocol is not applied directly. (Communicates with EDITOR from CH2). Touch protocol display item of CH2 to set CT6M-2P.

Exit [PLC SETTING] [Menu]	[Exit] [PLC SETTING] [Menu]
CH1 No Use RS422	CH1 No Use RS422
IL CH2 IEDITOR	CH2 CT6M-2P_Mod RS232C
LP SI.# [[]Ph_CH1 SI.# [001]	LPST.# 00 CH1ST.# 001

4th To communicate between GP/LP and CT6M-2P for CH2, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device'.)

In case of CT6M-2P, it uses Modbus RS485(RS422) port. Set connect port item of CH2 as 'RS422'. Connect port display rotates in order as RS422↔RS232C with touching.



- 5th Synchronize the station of between GP/LP and CT6M-2P. The station of CH1 is available to set from GP/LP. CH2 is set from link device of GP Editor. (Refer to '1.4 Link device'.) Enter the same station of CT6M-2P. For more details, refer to 'GP Editor user manual'.
- 6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and CT6M-2P. The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'CH2' and detailed configuration screen is switched. Designate detailed configuration.

[Exit] [PLC SETTING] [Menu]	Exit CT6M-2P_Mod Menu
CH1 No Use RS232C	B/R 38400bps
CT6M-2P_Mod RS422	DATA <u>(BBIT)</u> STOP <u>(IBIT)</u>
LP & 00 CH1 ST. # 001	PARITY EVEN F/C XON/XOFF

 7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with CT6M-2P.
 Touch 'Menu', current setting values are saved and it returns to previous menu.

Touch 'Exit', current setting values are saved and it returns to user

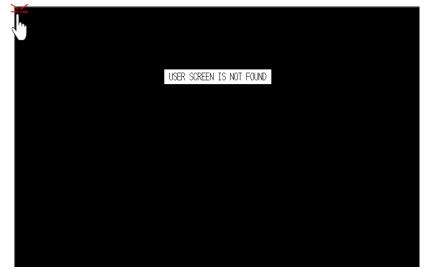
(2) Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor. (Refer to '3.1.2.2 Color type'.)

After downloading drawn data from GP Editor: After downloading PLC protocol of CH1, CH2 which is designated from GP Editor to GP/LP, it starts communication between the specified PLC and GP/LP through communication configuration.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(LOS) 11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter



3rd CH2 protocol is set as CT6M-2P as PLC type from GP Editor but downloaded CT6M-2P protocol is not applied directly. (Communicates with EDITOR from CH2). Touch protocol display item of CH2 to set CT6M-2P.

(EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	11/11/14 8:50 PM	
	_				
		PROTOCOL	PORT		
	CH1	No Use	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :				
GEFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	11/11/14 8:50 PM	
(FOR	SYSTEM SETT	TING\ ENVIRONMENT\ SERIAL	()	11/11/14 8:50 PM	
(FOR	SYSTEM SETT	TINGN ENVIRONMENTN SERIAL PROTOCOL	PORT	▶ 11/11/14 8:50 PM	
(F)	CH1			▶ 11/11/14 8:50 PM	
		PROTOCOL.	PORT		
	CH1	PROTOCOL No Use CT6M-2P_Mod V1.0M	PORT RS-422	SET	

4th To communicate between GP/LP and CT6M-2P, designate the connect port for the specific PLC and use the dedicated cable.(Refer to '4 Communication Cable By Device'.) In case of CT6M-2P, it uses Modbus RS485(RS422) port. Set connect port item of CH2 as 'RS422'. Connect port display rotates in order as RS422↔RS232C with touching.

SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢.	> 11/11/14 8:50 PM
	PROTOCOL	PORT	
CH1		RS-422	SET
CH2	CT6M-2P_Mod V1.0M	RS-232	SET
LP STATION :			
LP STATION :	0		_
	O ING\ ENVIRONMENT\ SERIAL		▶ 11/11/14 8:50 PM
			▶ 11/11/14 8:50 PM
		PORT	▶ 11/11/14 8:50 PM
	ING\ ENVIRONMENT\ SERIAL	_	> 11/11/14 8:50 PM SET
SYSTEM SETT	ING'\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	

5th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and CT6M-2P. The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'SET' and detailed configuration screen is switched. Designate detailed configuration.

/14 PM CLOSE
×<
/14 PM 0L05F
T

6th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with CT6M-2P.

Touch 'BEFORE', current setting values are saved and it returns to previous menu. Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

3.4 Heterogeneous communication

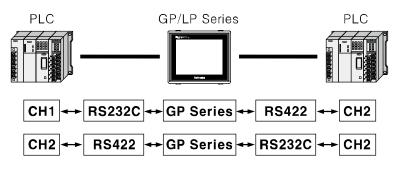
3.4.1 System organization

It is able to communicate between GP or LP and PLC or controller by connecting heterogeneous PLC to each port RS232C and RS422 of GP/LP.

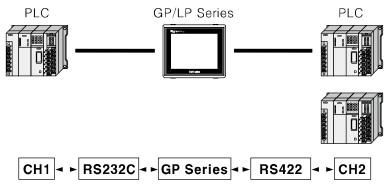
GP/LP transits communicates between CH1 and CH2 by the designated inner link device.

Heterogeneous communication is available by the following system organization such as $CH1(1)\leftrightarrow GP(1)\leftrightarrow CH2(1)$ or $CH1(1)\leftrightarrow GP(1)\leftrightarrow CH2(N)$.

[Heterogeneous 1:1:1 communication]







CH1 should be one device. If CH2 has one deivce, RS232C or RS422 communication is available as above figure. If CH2 has N devices, RS422 or RS485 communicatin is available.

If CH2 has N devices, PLCs are connected with GP through RS422(or RS485) port. Each connected PLC should have its station (individual ID) to avoid communication conflicts. PLCs have to be same type.

🖉 Note

The number 'N' of PLCs should be available to communicate with RS422 or RS485 port and they should be same type.

3.4.2 Communication configuration

This chapter is described by LS MASTER K200 and MITSUBISHI FX2N as example.

3.4.2.1 GP Editor configuration

1st Designate GP/LP and PLC type.

GP/PLC Type	×
GP/LP Type() GP-S044 S1D0 (240 X 80)	
CH1 Group2 LS MASTER-K SERIES	
CH1 Type 3 MK-200S_Tool MASTER	
CH2	
CH2 Group@ MITSUBISHI FX SERIES	
CH2 Type 6 FX2N_Tool MASTER	
OK Cancel	

Item	Description
①GP/LP Type	Designate GP/LP model type by pull-down menu.
②CH1 Group	Designate PLC group of CH1 by pull-down menu.
3CH1 Туре	Designate PLC type of CH1 for ② by pull-down menu.
④CH2 Group	Designate PLC group of CH2 by pull-down menu.
5CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.

2nd Draw the data to download for GP/LP from GP Editor.

Autonics

3rd Designate each link device of CH1, CH2.

For heterogeneous communication, you should designated ① CH1 inner link device and ② CH2 inner link device as same.

Click ③Add and desigante CH1, CH2 connect device to communicate. Desiganted link devices are displayed on ④ as list.

	roup : LS MA	ASTER	-K SER	IES		CH1 Inner Link	Device
H1 Ty	ype : MK-20				MASTER		-
H2							
	roup : MITSL	JBISHI	FX SEF	RIES		CH2 Inner Link	Device
H2 Ty	ype : FX2N_	Tool			MASTER	2 INTERNAL	UW300
1	Word	1		D100 D110	10	Write	Edit
No 1	Bit/Word Word	Ch	St	Device D100	Count 10	Read/Write Write	3 Add
2		1					Edit
4	Word Word	1	-	D120	10 5	Write Read	Delete
5	Word	1	-	(4) D140	5	Read	
6	Word Word	2	000	D0 D10	1	Read Read	Delete Al
8	Word	2	000	D10	10	Read	
9	Word	2	000	D30	5	Write	UP
10	Word	2	000	D35	5	Write	DOWN
							-

CH1 PLC	Communica tion direction	GP/LP	Communica tion direction	CH2 PLC
		Rosen Internation		
MK-200S		GP/LP series		FX2N
D100 to D109	(Write) ←	UW200 to UW209	(Read) ←	D0 to D9
D110 to D119	(Write) ←	UW210 to UW219	(Read) ←	D10 to D19
D120 to D129	(Write) ←	UW220 to UW229	(Read) ←	D20 to D29
D130 to D134	(Read) \rightarrow	UW230 to UW234	(Write) →	D30 to D34
D135 to D139	(Read) \rightarrow	UW235 to UW239	(Write) →	D35 to D39

Communication operates as below table. (For more details, refer to '1.4 Link device')

4th Download drawn data to GP/LP (Select [Communication]-[Download] of menu.). Drawn data, PLC protocol of CH1, CH2 are downloaded to GP/LP.

3.4.3 GP, LP configuration

3.4.3.1 Mono type

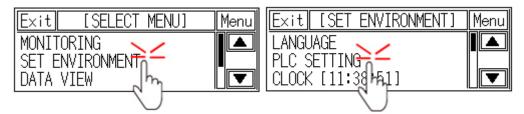
Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor. (Refer to '3.1.2.1 Mono type'.)

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH1 protocol is set as LS MASTER K200 as PLC type from GP Editor. CH1 is designated as LS MASTER-K200 and CH2 is designated as MITSUBISHI FX2N from GP Editor.

Exit	[PLC SETTING]	Menu
CH1	MK-2005_Too1	RS422
CH2	EDITOR	RS232C
LP ST	.# 00 CH1 ST.#	001

4th CH2 protocol is set as MITSUBISHI FX2N as PLC type from GP Editor but

downloaded MITSUBISHI FX2N protocol is not applied directly. (Communicates with EDITOR from CH2).

Touch protocol display item of CH2 to set MITSUBISHI FX2N.

Exit [PLC SETTING] [Menu]	Exit [PLC SETTING]	Menu
CH1_MK-2005_Too1 RS422	CH1_MK-200S_Too1	RS422
CH2 EDITOR RS232C	<u>CH2</u> FX2N_T <u>oo1</u>	<u>RS232C</u>
LP ST.# [] ALCH1 ST.# [001]	LP ST.# 00 CH1 ST.#	001

5th To communicate between GP/LP and LS MASTER K200 for CH1, MITSUBISHI FX2N for CH2, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device') In case of LS MASTER K200 of CH1, it uses CPU module RS422 port. In case of MITSUBISHI FX2N for CH2, it uses CPU module RS232 and RS232/422 converter should be used. If two of RS232C serial interface type, connect RS232/422 converter at each RS232C A, or RS232C B port.

Exit	[PLC SETTING]	Menu
CH1	MK-2005_Tool	R\$422
CH2	FX2N_Too1	RSARE
LP ST	.# 00 CH1 ST.#	1891
		ŢΫ́

6th Synchronize the station of between GP/LP and connected devices.

The station of CH1 is available to set from GP/LP. CH2 is set from link device of GP Editor. (Refer to '1.4 Link device'.) For more details, refer to 'GP Editor user manual'.

Exit [PLC SETTING] [Mer	nu	Exit [1	CLR
CH1_MK-200S_Too1 RS422	2	CH1 MK-20	0	1	2	3	
CH2 FX2N_Tool RS23	2C	CH2 FX2N	4	5	- 6	7	▼
LP ST.# 00 CH1 ST.# 🕀	91	IPST#	8	9	_	ΒS	ENT
	h						

7th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and connected devices by each CH1, CH2.

The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'CH1' or 'CH2' and detailed configuration screen is switched. Designate detailed configuration by each channel.

Exit [PLC SETTING] [Menu]	Exit MK-2005_Tool Menu
CHIMK-2005_Tool RS232C	B/R 9600bps DATA ODIT STOP DODIT
L, J.# 00 CH1 ST.# 001	DATA <u>8BIT</u> STOP <u>2BIT</u> PARITY NONE F/C <u>XON/XOFF</u>
Exit [PLC SETTING] [Menu]	Exit FX2N_Tool Menu
CH1 MK-2005_Too1 RS232C	B/R 38400bps
LF ST.# 00 CH1 ST.# 001	DATA <u>8BIT</u> STOP <u>1BIT</u> PARITY EVEN F/C XON/XOFF

8th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with connected devices.
Touch 'Menu', current setting values are saved and it returns to previous menu.
Touch 'Exit', current setting values are saved and it returns to user

3.4.3.2 Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(L03) 11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter



3rd CH1 protocol is set as LS MASTER K200 as PLC type from GP Editor. CH1 is designated as LS MASTER-K200 and CH2 is designated as MITSUBISHI FX2N from GP Editor.

(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢.	▶ 11/11/14 9:32 PM	
		PROTOCOL.	PORT		
	CH1	MK-2005_Tool V1.0M	RS-422	SET	
	CH2	FX2N_Tool V1.0M	RS-232C	SET	
	LP STATION :			1()	

CH2 protocol is set as MITSUBISHI FX2N as PLC type from GP Editor but downloaded MITSUBISHI FX2N protocol is not applied directly. (Communicates with EDITOR from CH2).

Touch protocol display item of CH2 to set MITSUBISHI FX2N.

PROTOCOL.	PORT				
PROTOCOL	PORT				
MK-2005_Tool V1.0M	RS-422	SET			
EDITO	RS-232C	SET			
ENVIRONMENT\ SERIAL	¢.	▶ 11/11/14 9:32 PM	CLOSE		
PROTOCOL	PORT				
MK-200S_Tool V1.0M	RS-422	SET			
FX2N_Tool V1.0M	RS-232C	SET			
LP STATION : 0					
	ENVIRONMENT\ SERIAL PROTOCOL MK-2005_Tool V1.0M	ENVIRONMENT'SERIAL	0 0 ENVIRONMENT\ SERIAL Il/11/14 9:32 PM PROTOCOL PORT MK-200S_Tool V1.0M RS-422 SET		

4th To communicate between GP/LP and LS MASTER K200 for CH1, MITSUBISHI
FX2N for CH2, desigante the connect port for the specific PLC and use the dedicated cable. (Refer to '4 Communication Cable By Device')
In case of LS MASTER K200 of CH1, it uses CPU module RS232 port. In case of MITSUBISHI FX2N for CH2, it uses CPU module RS232 and RS232/422 converter should be used. If two of RS232C serial interface type, connect each RS232C A, or RS232C B port.

5th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and connected devices by each CH1, CH2. The communicate specification of downloaded PLC to GP/LP is set as default of the connected PLC and communication is available directly. (Only when the communicate specification of connected PLC is set as default)

Touch 'SET' of CH1 or CH2 and detailed configuration screen is switched. Designate detailed configuration by each channel.

(EFOR)	SYSTEM SETT	SYSTEM SETTING\ ENVIRONMENT\ SERIAL			
		PROTOCOL	PORT		
	CH1		RS-422	SET C	
	CH2	FX2N_Tool V1.0M	RS-232C	SET	
	LP STATION :				
BEFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL\ SERIAL SPE	CIFICATION	() 11/11/14 9:32 PM	CLOSE
				1	
		CH1			
		BAUD RATE	115200		
		DATA LENGTH			
		PARITY	EVEN		
		STOP	1		
		FLOW CONTROL	X0N/X0FF		

FOR SYSTEM SET	ING\ ENVIRONMENT\ SERIAL	(11/11/14 9:33 PM	Q
_				
	PROTOCOL	PORT		
CH1	MK-200S_Tool V1.0M	RS-422	SET	
CH2	FX2N_Tool V1.0M	RS-232C	SET	
LP STATION :			\bigcirc	
LP STATION :				
	O ING\ ENVIRONMENT\ SERIAL\ SERIAL S	SPECIFICATION (11/11/14 9:33 PM	0
		SPECIFICATION (11/11/14 9:33 PM	
	ING\ ENVIRONMENT\ SERIAL \ SERIAL \	SPECIFICATION (11/11/14 9:33 PM	Q
	ING\ ENVIRONMENT\ SERIAL SERIAL SERIAL SERIAL CH2		11/11/14 9:33 PM	(
	ING\ ENVIRONMENT\ SERIAL SERIAL S CH2 BAUD RATE	115200	11/11/14 9:33 PM	Q
	ING\ ENVIRONMENT\ SERIAL SERIAL : CH2 BAUD RATE DATA LENGTH	115200 8	11/11/14 9:33 PM	Cu

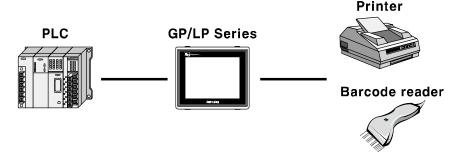
6th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with connected devices CH1(LS MASTER K200), CH2(MITSUBISHI FX2N).

Touch 'BEFORE', current setting values are saved and it returns to previous menu. Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

Other communication 3.5

3.5.1 System organization

GP, LP is able to connect with barcode reader and printer to communicate, system organization is as following.



3.5.2 **Barcode reader communication configuration**

Basic communication for PLC↔GP/LP↔Barcode reader is by RS232C communication for barcode reader to GP/LP, by RS422 for PLC to GP/LP. GP/LP is designed for any RS232C, RS422 communication. With RS232/422 converter, the

opposite case is also available. Download data after designating barcode setting (Select [Common]-[System Information] and

[Common]-[Barcode] of menu) to GP/LP and designate barcode setting from GP/LP. For more details, refer to 'GP Editor user manual'.

No	Item	Description			
1	Baudrate	300,600,1200,3200,4800,9600,19200,38400,57600bps			
		Data length 7, 8 bit			
2	Data type	Parity	None, Odd, Even		
		Stop bit 1, 2 bit			
3	Flow control	DSR/DTR, XON/XOFF			

The following table is for basic communication configuration of barcode.

3.5.2.1 **GP Editor configuration**

Download data after designating barcode setting (Select [Common]-[System Information] and [Common]-[Barcode] of menu) to GP/LP. For more details, refer to 'GP Editor user manual'.

3.5.2.2 GP, LP configuration

(1) Mono type

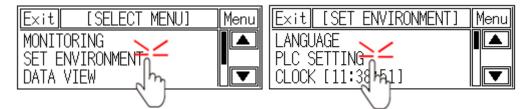
Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH2 protocol is set as 'EDITOR' as basic configuration.

Exit	[PLC SET	TING]	Menu
CH1	UNIVERSAL		RS232C
CH2	EDITOR		RS422
LP ST	.# <u>00</u> C⊢	1 ST.#	001

4th Touch protocol display item to set 'BARCODE' as following figure.

Protocol display rotates in order as EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow MONITOR with touching.

Exit	[PLC SETTING]	Menu
CH1	UNIVERSAL	RS232C
CH2	EDITOR	RS422
LP ST	.# [[ኡિ.CH1 ST.#	001

nu	Exit	[PLC SETTING]	Menu
20	CH1	JNIVERSAL	RS232C
2	CH2	BARCODE	RS422
01	LP ST	.# <u>00</u> CH1 ST.‡	1 001

5th Designate connect port for communicating GP/LP and barcode reader. Connect port display rotates in order as RS422↔RS232C with touching.

Exit	[PLC SETTING]	Menu
CH1 U	INIVERSAL	RS422
CH2 B	ARCODE	R\$ <u>234</u>
LP ST.	# 00 CH1 ST.#	[NQ1]
		61

nu	Exit [PLC SETTING]	Menu
	CH1 UNIVERSAL	<u>RS232C</u> RS422
Į	LP ST.# 00 CH1 ST.#	001

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and barcode reader.

Touch 'CH2' and detailed configuration screen is switched. Designate detailed configuration.

Exit [PLC SETTING]	Menu	Exit	BAR	CODE	Menu
CHIUNIVERSAL CHIBARCODE LFINT.# 00 CHIST.#	<u>RS422</u> RS232C [001]	B/R [DATA PARIT	9600bps 8BIT Y NONE	STOP F/C	<u>1BIT</u> XON/XOFF

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with barcode reader.

Touch 'Menu', current setting values are saved and it returns to previous menu.

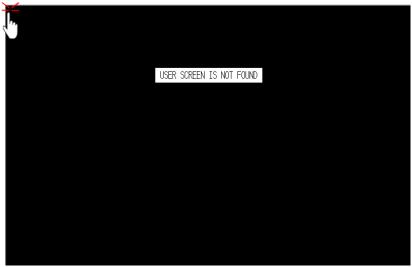
Touch 'Exit', current setting values are saved and it returns to user

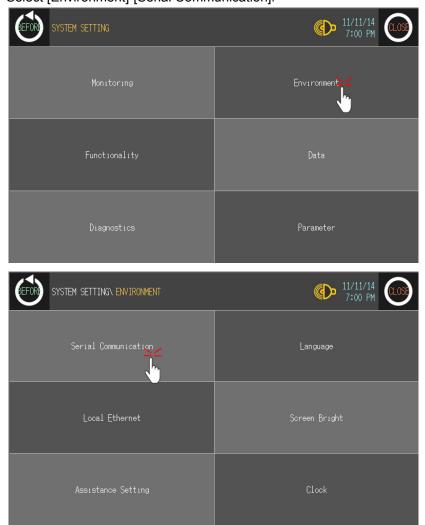
(2) Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.





2nd Select [Environment]-[Serial Communication].

3rd CH2 protocol is set as 'EDITOR' as basic configuration.

(For	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:39 PM	
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :				

4th Touch protocol display item to set 'BARCODE' as following figure. Protocol display rotates in order as EDITOR→PRINTER→BARCODE→MONITOR with touching.

(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢.	▶ 11/11/14 9:40 PM	
	_				
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	EDITO	RS-232C	SET	
	LP STATION :				
(FOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:40 PM	
(for	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:40 PM	0.033
	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 9:40 PM	
	CH1			11/11/14 9:40 PM SET	
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL BARCODE	PORT R\$-422	SET	

5th Designate connect port for communicating GP/LP and barcode reader. Connect port display rotates in order as RS422↔RS232C with touching.

(EFOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	9:40 PM	
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	BARCODE	RS-232	SET	
	LP STATION :				
(EFOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	9:40 PM	
) SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	(9:40 PM	
	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 9:40 PM	
	CH1			▶ 11/11/14 9:40 PM	
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL BARCODE	PORT RS-232C	SET	

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and barcode reader.

Touch 'SET' and detailed configuration screen is switched. Designate detailed configuration.

(efor		ING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 9:40 PM	
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-232C	SET	
	CH2	BARCODE	RS-422	SEl	
	LP STATION :	0			
(EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL\ SERIAL SPI	ECIFICATION	▶ 11/11/14 9:40 PM	CLOSE
		CH2			
		BAUD RATE	9600		
		DATA LENGTH	8		
		PARITY	NONE		
		PARITY	NONE		

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with barcode reader.
Touch 'BEFORE', current setting values are saved and it returns to previous menu.
Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

3.5.3 PRINTER communication configuration

Basic communication for PLC \leftrightarrow GP/LP \leftrightarrow PRINTER is same as barcode reader communication's. PLC and PRINTER are available to both RS232C and RS422 communication and printer through GP/LP is able to print alarm history. The other words, if there are alarm history in downloaded data from GP Editor, and saved alarm history by communicating GP/LP and PLC, you can print out alarm history through GP/LP and printer.

3.5.3.1 GP, LP configuration for printer

Without printer configuration in GP Editor, download data and designate printer in GP/LP. The following table is for basic communication configuration of printer.

No	Item	Description	
1	Baudrate	300,600,1200,3200,4	800,9600,19200,38400,57600 bps
		Data length	7, 8 bit
2	Data type	Parity	None, Odd, Even
		Stop bit	1, 2 bit
3	Flow control	DSR/DTR, XON/XOF	F

3.5.3.2 GP, LP configuration

(1) Mono type

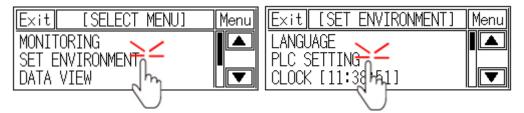
Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH2 protocol is set as 'EDITOR' as basic configuration.

Exit	[PLC SETTING]	Menu
CH1	UNIVERSAL	RS422
CH2	EDITOR	RS232C
LP ST	.# 00 CH1 ST.#	001

4th Touch protocol display item to set 'PRINTER' as following figure.

Protocol display rotates in order as EDITOR \rightarrow PRINTER \rightarrow BARCODE \rightarrow MONITOR with touching.

Exit [PLC SETTING]	Menu Exit	[PLC SETTING]	Menu
CH1 UNIVERSAL RS	<u>3422 CH1 U</u>	INIVERSAL	RS422
LP ST.# []A. CH1 ST.#	001 LP ST.	.# 00 CH1 ST.#	001

5th Designate connect port for communicating GP/LP and printer. Connect port display rotates in order as RS422↔RS232C with touching.

Exit [PLC SETTING] [Menu]	Exit [PLC SETTING] [Menu]
CH1 UNIVERSAL RS422	CH1 UNIVERSAL RS232C
CH2 PRINTER RSP 22C	CH2 PRINTER RS422
LP ST.# 00 CH1 ST.# AQ1	LP ST.# [00] CH1 ST.# [001]
()	

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and printer.

Touch 'CH2' and detailed configuration screen is switched. Designate detailed configuration.

Exit [PLC SETTING] [Menu]		Menu
CH1UNIVERSAL RS422 CH2PRINTER RS232C LP FT.# 00 CH1 ST.# 001	B/R <u>9600bps</u> DATA <u>8BIT</u> STOP [PARITY <u>NONE]</u> F/C [XON/	<u>1BIT</u> XOFF

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor.

Touch 'Menu', current setting values are saved and it returns to previous menu.

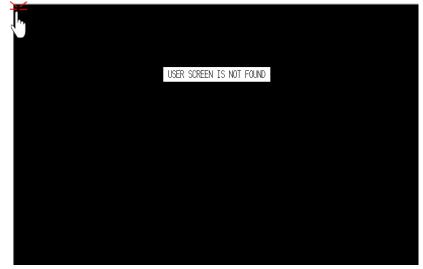
Touch 'Exit', current setting values are saved and it returns to user

(2) Color type

Before downloading drawn data from GP Editor: Synchronize communication configurations of between GP/LP and GP Editor.

1st After downloading drawn data from GP Editor, enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	(11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter
EFOR SYSTEM SETTING ENVIRONMENT	(11/11/14 7:00 PM
SYSTEM SETTING\ ENVIRONMENT	Language

SYSTEM SETTING	NENVIRONMENTN SERIAL	٩	▶ 11/11/14 9:45 PM
	PROTOCOL	PORT	
CH1	UNIVERSAL	RS-422	SET
CH2	EDITOR	RS-232C	SET
LP STATION :	0		<u>[(]</u>

3rd CH2 protocol is set as 'EDITOR' as basic configuration.

4th Touch protocol display item to set 'PRINTER' as following figure. Protocol display rotates in order as EDITOR→PRINTER→BARCODE→MONITOR with touching.

SYSTEM S	ETTING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:45 PM	CLOSE
	PROTOCOL	PORT		
CH1	UNIVERSAL	RS-422	SET	
CH2	EDITO	RS-232C	SET	
	N :			
	ETTING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 9:45 PM	CLOS
	ETTING\ ENVIRONMENT\ SERIAL	(▶ 11/11/14 9:45 PM	CLOS
	ETTING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 9:45 PM	
			▶ 11/11/14 9:45 PM SET	
SYSTEM S	PROTOCOL	PORT		
SYSTEM S CH1	PROTOCOL UNIVERSAL PRINTER	PORT RS-422	SET	

5th Designate connect port for communicating GP/LP and printer. Connect port display rotates in order as RS422↔RS232C with touching.

(EFOR) S	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:45 PM	
		PROTOCOL.	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	PRINTER	RS-232	SET	
LF	P STATION :				
(EFOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/14 9:45 PM	
	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	۷	11/11/14 9:45 PM	
	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/14 9:45 PM	
	SYSTEM SETT CH1			11/11/14 9:45 PM	
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL PRINTER	PORT RS-232C	SET	

6th Synchronize communicate specifications (baudrate, data bit, stop bit, parity, flow control) of between GP/LP and printer.

Touch 'SET' and detailed configuration screen is switched. Designate detailed configuration.

(FOR	SYSTEM SETT:	(C) 11/11/14 9:46 PM			
		PROTOCOL	PORT		
	CH1	UNIVERSAL	RS-232C	SET	
	CH2	PRINTER	RS-422	SET	
	LP STATION :	0			
BEFORE					
	SYSTEM SETT:	NG\ ENVIRONMENT\ SERIAL\ SERIAL S	PECIFICATION	(C) 11/11/14 9:46 PM	CLOSE
	SYSTEM SETT:	ING\ ENVIRONMENT\ SERIAL\ SERIAL S	PECIFICATION	(11/11/14 9:46 PM	
	SYSTEM SETT.	ING\ ENVIRONMENT\ SERIAL\ SERIAL S	PECIFICATION	() 11/11/14 9:46 PM	
	SYSTEM SETT:		PECIFICATION	() 11/11/14 9:46 PM	
	SYSTEM SETT.	CH2	_	11/11/14 9:46 PM	
	SYSTEM SETT.	CH2 BAUD RATE	9600	11/11/14 9:46 PM	
	SYSTEM SETT.	CH2 BAUD RATE DATA LENGTH	9600	11/11/14 9:46 PM	
	SYSTEM SETT.	CH2 BAUD RATE DATA LENGTH PARITY	9600 8 NONE	11/11/14 9:46 PM	

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor.
Touch 'BEFORE', current setting values are saved and it returns to previous menu.
Touch 'CLOSE', current setting values are saved and it returns to user screen after exiting system setting menu.

3.6 System signal

3.6.1 System signal 1 (GP/LP \leftarrow PLC)

System signal 1 [UW15]															
F	Е	D	С	В	А	9	8	7	6	5	4	3	2	1	0
1 Wc	ord														

It is allocated in GP/LP inner word device UW15(UB150 to UB15F).

 Bit 0 (UB150): It clears all alarm histories (history and the number of occurring time) when this bit is rising trigger of OFF→ON.

Alarm history clear function is available when the bit device of 'Erase History' in common setting of alarm history turns ON and it operated separately regardless of this bit.

- Bit 1 (UB151): After this bit is OFF→ON, backlight is turned off when set time in system environment settings is passed. When OFF this bit again or touch any part on GP/LP screen, backlight is turned ON. The setting of backlight is operated when this bit is ON, and it is not when this bit is OFF status.
- Bit 2 (UB152): This bit is able to select for user whether display error message for connection with CH1 on GP/LP screen or not. An error message is not displayed on GP/LP screen when this bit is OFF and an error message is displays when this bit is ON.
- Bit 3 (UB153): This bit is able to select for user whether display error message for connection with CH2 on GP/LP screen or not. It operates same as bit 2(UB152).
- Bit 4 (UB154): It processes data from barcode reader as invalid data when it is ON. Input is invalid.
- Bit 5 (UB155): When this bit is ON, barcode input reading is completed and barcode reader is ready to receive new data. It switches signal of barcode input data writing completion from GP, LP to PLC as OFF.
- Bit 6 (UB156)
- Bit 7 (UB157): Numeral input complete bit (bit4 of system signal2) is OFF when this bit is ON.
- Bit 8 (UB158)
- Bit 9 (UB159)
- Bit A (UB15A)
- Bit B (UB15B)
- Bit C (UB15C)
- Bit D (UB15D)
- Bit E (UB15E)
- Bit F (UB15F)

3.6.2 System signal 2 (GP/LP \rightarrow PLC)

System signal 2 [UW4]															
F	Е	D	С	В	А	9	8	7	6	5	4	3	2	1	0
1 W	ord														

It is allocated in GP, LP inner word device UW4(UB40 to UB4F).

- Bit 0 (UB40): This bit is ON while any of alarm monitor bit is ON.
- Bit 1 (UB41)
- Bit 2 (UB42)
- Bit 3 (UB43)
- Bit 4 (UB44): This bit turns ON when numeral input is completed. This bit is OFF when (bit7 of system signal 1) is ON.
- Bit 5 (UB45)
- Bit 6 (UB46)
- Bit 7 (UB47)
- Bit 8 (UB48): It turns ON when writing of barcode input data is completed from GP, LP to PLC.
- Bit 9 (UB49)
- Bit A (UB4A)
- Bit B (UB4B)
- Bit C (UB4C): It turns ON when battery voltage is low status.
- Bit D (UB4D)
- Bit E (UB4E)
- Bit F (UB4F)

3.6.3 System signal 3 (GP/LP \leftarrow PLC)

Syste	System signal 3 [UW17]													
F	F E D C B A 9 8 7 6 5 4 3 2 1 0												0	
1 W	ord													

It is allotted in GP, LP inner word device UW17(UB170 to UB17F).

- Bit 0 (UB170): Buzzer turns ON when this bit is changed from OFF to ON. Buzzer turns OFF when this bit is changed from ON to OFF. Buzzer turns OFF when user touches the screen, this bit maintains ON status.
- Bit 1 (UB171)
- Bit 2 (UB172)
- Bit 3 (UB173)
- Bit 4 (UB174): Backlight turns OFF when this bit is changed from OFF to ON. Backlight turns ON when this bit is changed from ON to OFF. Backlight turns ON when user touches the screen, this bit maintains ON status.
- Bit 5 (UB175): It prints alarm when this bit is changed from OFF to ON.
- Bit 6 (UB176)
- Bit 7 (UB177)
- Bit 8 (UB178)
- Bit 9 (UB179)
- Bit A (UB17A)
- Bit B (UB17B)
- Bit C (UB17C)
- Bit D (UB17D)
- Bit E (UB17E)
- Bit F (UB17F)

3.6.4 System signal 4 (GP/LP \rightarrow PLC)

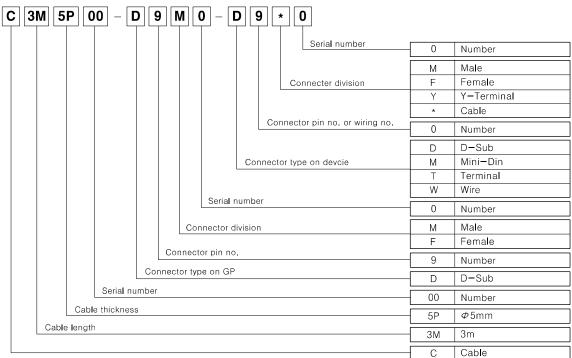
System signal 4 [UW5]															
F	Е	D	С	В	А	9	8	7	6	5	4	3	2	1	0
1 W	ord														

It is allotted in GP, LP inner word device UW5 (UB50 to UB5F).

- Bit 0 (UB50): It turns ON during printing an alarm.
- Bit 1 (UB51)
- Bit 2 (UB52)
- Bit 3 (UB53)
- Bit 4 (UB54)
- Bit 5 (UB55): It turns ON when 0.5 sec of clock occurs. (Only for GP)
- Bit 6 (UB56): It turns ON when 1 sec of clock occurs. (Only for GP)
- Bit 7 (UB57): It turns ON when 2 sec of clock occurs. (Only for GP)
- Bit 8 (UB58): It turns ON when a frame error of communication port1 occurs.
- Bit 9 (UB59): It turns ON when a parity error of communication port1 occurs.
- Bit A (UB5A): It turns ON when an overrun error of communication port1 occurs.
- Bit B (UB5B)
- Bit C (UB5C): It is ON when a frame error of communication port2 occurs.
- Bit D (UB5D): It turns ON when a parity error of communication port2 occurs.
- Bit E (UB5E): It turns ON when an overrun error of communication port2 occurs.
- Bit F (UB5F)

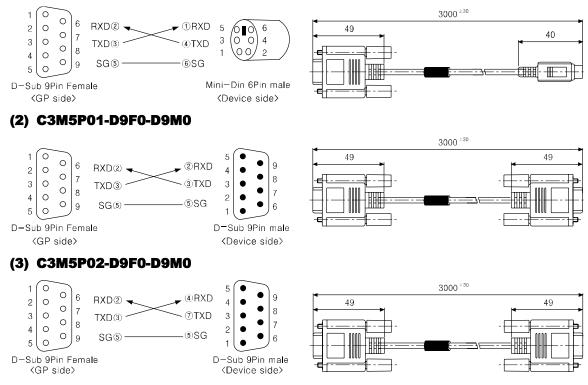
4 Communication Cable By Device

4.1 Ordering information



4.2 Cable wiring and dimensions

(1) C3M5P00-D9F0-M6MO

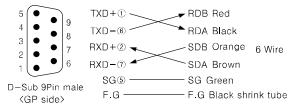


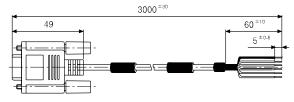
(4) C3M5P03-D9M0-W4*0



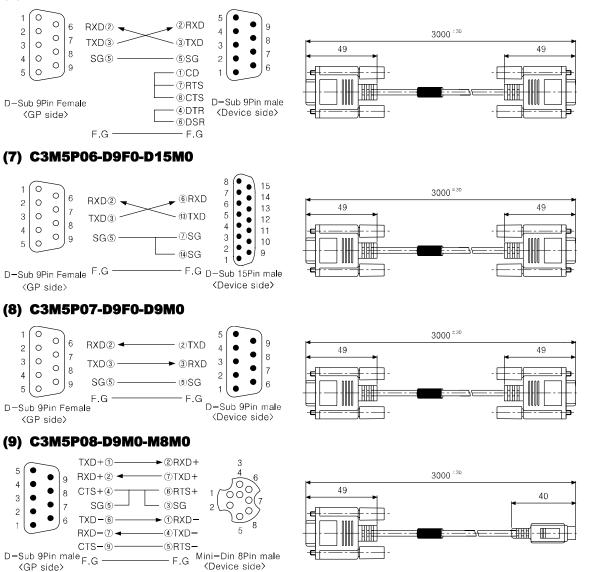


(5) C3M5P04-D9M0-W6*0

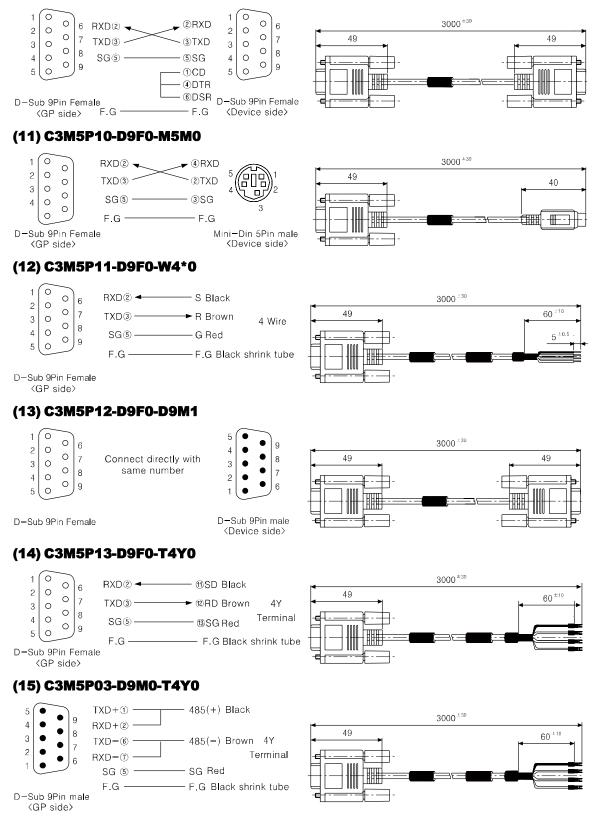




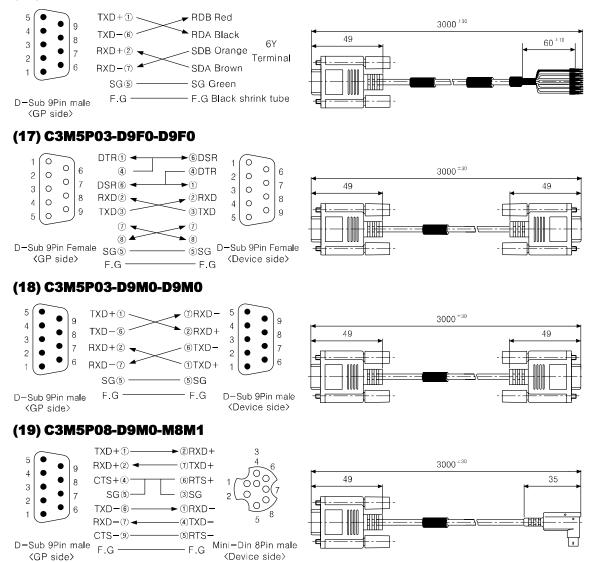
(6) C3M5P05-D9F0-D9M0



(10) C3M5P09-D9F0-D9F0



(16) C3M5P04-D9M0-T6Y0



4.3 Communication cable by connectable device

Series	Connectable device	Connection module	Communication connection type	Communication cable model name	Communica tion cable wiring number
	MK-10S1	CPU	RS232C	C3M5P00-D9F0-M6M0	1
	MK-80S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-120S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
LS Master-K	MK-200S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-300S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-1000S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-200S CPU RS232C MK-300S CPU RS232C MK-1000S CPU RS232C MK-1000S CPU RS232C GM4 CPU RS232C GM6 CPU RS232C GM7U CPU RS232C GM7U CPU RS232C MK-80S Cnet(G7L- CUEB) RS232C CPU RS232C CPU MK-80S CPU RS232C CPU RS232C CPU MK-120S CPU RS232C CPU RS422 CPU CPU RS232C CPU CPU RS422 CPU MK-120S CPU RS422 CPU RS422 CPU CPU RS422 CPU CPU RS422 CPU CPU RS422 CPU		RS232C	C3M5P01-D9F0-D9M0	2
LS Glofa	GM6	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	GM7U	CPU	RS232C	C3M5P01-D9F0-D9M0	2
		``	RS232C	C3M5P05-D9F0-D9M0	6
	MIK-805		RS422	C3M5P04-D9M0-T6Y0	16
		,	RS232C	C3M5P02-D9F0-D9M0	3
	MK-120S	CPU	RS485	C3M5P03-D9M0-W4*0	4
		``	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-T6Y0	16
	MK-200S	CPU	RS232C	C3M5P02-D9F0-D9M0	3
LS Master-K		CPU	RS422	C3M5P04-D9M0-W6*0	5
CNET		CPU	RS425	C3M5P03-D9M0-W4*0	4
			RS232C	C3M5P05-D9F0-D9M0	6
		Cnet(G7L- CUEC)	RS422	C3M5P04-D9M0-T6Y0	16
	MIK 2000		RS232C	C3M5P05-D9F0-D9M0	6
	MK-300S	G4L-CUEA	RS422	C3M5P04-D9M0-T6Y0	16
	MK-1000S	G3-CUEA	RS232C	C3M5P05-D9F0-D9M0	6
	WIX-10003	G3-CUEA	RS422	C3M5P04-D9M0-T6Y0	16
		Cnet(XGL- C22A)	RS232C	C3M5P01-D9F0-D9M0	2
LS XGT CNET		Cnet(XGL-	RS232C	C3M5P01-D9F0-D9M0	2
LS AGT CIVET	XGK-CPUS	CH2À)	RS422	C3M5P04-D9M0-T6Y0	16
		Cnet(XGL- C42A)	RS422	C3M5P04-D9M0-T6Y0	16
	VDM	,	RS232C	C3M5P11-D9F0-W4*0	12
LS XGB CNET	ХВМ	Cnet	RS485	C3M5P03-D9M0-W4*0	4
	¥7.0		RS232C	C3M5P13-D9F0-T4Y0	14
	XBC	Cnet	RS485	C3M5P03-D9M0-T4Y0	15

Series	Connectable device	Connection module	Communication connection type	Communication cable model name	Communica tion cable wiring number
	N70	CPU	RS232C	C3M5P06-D9F0-D15M0	7
UEMAX	N70Plus	CPU	RS232C	C3M5P07-D9F0-D9M0	8
OEMAX	NX7	CPU	RS232C	C3M5P07-D9F0-D9M0	8
FARA	NX70	CPU	RS232C	C3M5P07-D9F0-D9M0	8
		CPU	No. No. RS232C C 3M5P06-D9F0-D9M0 RS232C C 3M5P07-D9F0-D9M0 RS232C C 3M5P07-D9F0-D9M0 RS232C C 3M5P07-D9F0-D9M0 RS232C C 3M5P07-D9F0-D9M0 RS232C C 3M5P08-D9M0-M8M0 32- RS422 C 3M5P08-D9M0-M8M1 32- RS422 C 3M5P04-D9M0-W6*0 1 RS422 C 3M5P04-D9M0-W6*0 1 RS422 C 3M5P04-D9M0-W6*0 1 RS422 C 3M5P04-D9M0-W6*0 1 RS422 C 3M5P04-D9M0-W6*0 1	9	
Series device module connection type model name OEMAX N70 CPU RS232C C3M5P06-D9F0-D9F0-D15M OEMAX NX7 CPU RS232C C3M5P07-D9F0-D9M0 OEMAX NX7 CPU RS232C C3M5P07-D9F0-D9M0 FARA NX7 CPU RS232C C3M5P07-D9F0-D9M0 FX1N FX1S RS232C C3M5P09-D9F0-D9F0 FX1N RS232C C3M5P09-D9F0-D9F0 FX2N RS232C C3M5P09-D9F0-D9F0 FX2N RS232C C3M5P09-D9F0-D9F0 FX3U CPU RS422 C3M5P09-D9F0-D9F0 BD) FX3U CPU RS422 C3M5P09-D9F0-D9F0 FX1U CPU RS422 C3M5P09-D9F0-D9F0 G001 Extension module QJ71C24N RS422 C3M5	FX1S	(FX1S-232-	RS232C	C3M5P09-D9F0-D9F0	10
	9				
	C3M5P09-D9F0-D9F0	10			
FX	Image: section of the sectio	9			
		CPU	RS422	C3M5P08-D9M0-M8M0	9
	FX2N	module (FX2N-232-	RS232C	C3M5P09-D9F0-D9F0	10
	FX3U	CPU	RS232C C3M5P07-D9F0-D9M0 RS232C C3M5P07-D9F0-D9M0 RS232C C3M5P07-D9F0-D9M0 RS422 C3M5P08-D9M0-M8M0 32- RS232C C3M5P09-D9F0-D9F0 RS422 C3M5P08-D9M0-M8M0 32- RS232C C3M5P08-D9M0-M8M0 32- RS422 C3M5P04-D9M0-M6*0 n RS232C C3M5P05-D9F0-D9M0 n RS422 C3M5P05-D9F0-D9M0	C3M5P08-D9M0-M8M1	19
			RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
	Q00J	module QJ71C24N-	RS232C	C3M5P05-D9F0-D9M0	6
		module QJ71C24N-	RS422	C3M5P04-D9M0-W6*0	5
			RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
MITSUBISHI	Q00	module QJ71C24N-	RS232C	C3M5P05-D9F0-D9M0	6
Q		module QJ71C24N-	RS422	C3M5P04-D9M0-W6*0	5
			RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
	Q01	module QJ71C24N-	RS232C	C3M5P05-D9F0-D9M0	6
		module QJ71C24N-	RS422	C3M5P04-D9M0-W6*0	5
	002		RS232C	C3M5P05-D9F0-D9M0	6
	QUZ		RS422	C3M5P04-D9M0-W6*0	5

Series	Connectable device	Connection module	Communication connection type	Communication cable model name	Communica tion cable wiring number
		Extension module QJ71C24N- R2	RS232C	C3M5P05-D9F0-D9M0	6
		QJ71C24N- R4	RS422	C3M5P04-D9M0-W6*0	5
		Extension module	RS232C	C3M5P05-D9F0-D9M0	6
		QJ71C24N	RS422	C3M5P04-D9M0-W6*0	5
	Q02H	Extension module QJ71C24N- R2	RS232C	C3M5P05-D9F0-D9M0	6
		Extension module QJ71C24N- R4	RS422	C3M5P04-D9M0-W6*0	5
		Extension module	RS232C	C3M5P05-D9F0-D9M0	6
		QJ71C24N	RS422	C3M5P04-D9M0-W6*0	5
	Q06H	Extension module QJ71C24N- R2	RS232C	C3M5P05-D9F0-D9M0	6
		Extension module QJ71C24N- R4	RS422	C3M5P04-D9M0-W6*0	5
		Extension	RS232C	C3M5P05-D9F0-D9M0	6
		module QJ71C24N	RS422	C3M5P04-D9M0-W6*0	5
	Q12H	Extension module QJ71C24N- R2	RS232C	C3M5P05-D9F0-D9M0	6
		Extension module QJ71C24N- R4	RS422	C3M5P04-D9M0-W6*0	5
		Extension	RS232C	C3M5P05-D9F0-D9M0	6
		module QJ71C24N	RS422	C3M5P04-D9M0-W6*0	5
	Q25H	Extension module QJ71C24N- R2	RS232C	C3M5P05-D9F0-D9M0	6
		Extension module QJ71C24N- R4	RS422	C3M5P04-D9M0-W6*0	5
		CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
NAIS FP	FP0-C16	CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FP0-C32	CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FP0-T32C	CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FPG-C24R2	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		• • • •		•	•

Series	Connectable device	Connection module	Communication connection type	Communication cable model name	Communica tion cable wiring number
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPÚ(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FPG-C32T	CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FPG-C32T2	CPÚ(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPÚ(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FP0R-C10	CPU (COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FP0R-C14		RS232C	C3M5P11-D9F0-W4*0	12
			RS232C	C3M5P10-D9F0-M5M0	11
	FPUR-C16	port) CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPÚ(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FPUR-C32	CPÚ(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	CF FP0B-T32 po		RS232C	C3M5P10-D9F0-M5M0	11
	FPUR-132	CPÚ(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
		CPÚ(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
	FP0R-F32	CPÚ(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	CPU221	CPU	PPI	Dedicated cable for SIEMENS	-
	CPU222	CPU	PPI	Dedicated cable for SIEMENS	-
SIEMENS	CPU224	CPU	PPI	Dedicated cable for SIEMENS	-
ST/200	CPU224XP	CPU	PPI	Dedicated cable for SIEMENS	-
	CPU224XPsi	CPU	PPI	Dedicated cable for SIEMENS	-
FP0R-C16 FP0R-C32 FP0R-C32 FP0R-T32 FP0R-F32 FP0R-F32 CPU221 CPU221 CPU224 CPU224XP CPU224XP CPU224XP CPU224XP CPU224XP CPU224XP CPU224 CPU312 CPU312 CPU312 CPU313C-2 CPU314C-2 CPU314C-2 CPU315-2 CPU319-3		CPU	PPI	Dedicated cable for SIEMENS	-
	CPU312	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU312C	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU313C	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU313C-2	CPU	MPI	Dedicated cable for SIEMENS	-
SIEMENS SIMATIC S7-300	CPU314	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU314C-2	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU315-2	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU317-2	CPU	MPI	Dedicated cable for SIEMENS	-
	CPU319-3	CPU	MPI	Dedicated cable for SIEMENS	-
Allen-Bradley	•	CPU	RS232C	Dedicated cable for Allen- Bradley	-

Series	Connectable device	Connection module	Communication connection type	Communication cable model name	Communica tion cable wiring number
	MicroLogix 1200	CPU	RS232C	Dedicated cable for Allen- Bradley	-
	MicroLogix 1500	CPU	RS232C	Dedicated cable for Allen- Bradley	
OMRON		CPU	BS332C	Bradley 32C Bradley 32C Dedicated cable for Allen- Bradley 32C For communicating GP, CQM1-CIF02 of OMRON 32C For extension cable, C3M5P12-D9F0-D9M1 32C C3M5P13-D9F0-T4Y0 85 C3M5P03-D9M0-T4Y0 85 C3M5P03-D9M0-W4*0 85 C3M5P03-D9M0-W4*0 85 C3M5P03-D9M0-W4*0 85 C3M5P14-D9M0-T4Y0 85 C3M5P14-D9M0-T4Y0	
SYSMAC C	OFMIA	CFU	132320		13
	TEAN	CDLL direct	RS232C	C3M5P13-D9F0-T4Y0	14
	ESAN	CPU direct	RS485	C3M5P03-D9M0-T4Y0	15
	NicroLogix 1200CPURS232CDedicated cable for Allen- BradleyMicroLogix 1500CPURS232CDedicated cable for Allen- Bradley1500CPURS232CDedicated cable for Allen- Bradley1500CPURS232CDedicated cable for Allen- Bradley1500CPURS232CCOM1-CIF02 of OMRON For extension cable, C3M5P12-D9F0-D9M11500CPU directRS232CC3M5P03-D9M0-T4Y01500E5ARCPU directRS485C3M5P03-D9M0-T4Y01500E5CNCPU directRS485C3M5P03-D9M0-T4Y01500E5ERCPU directRS485C3M5P03-D9M0-T4Y01510E5ERCPU directRS485C3M5P03-D9M0-T4Y01520E5ERCPU directRS485C3M5P03-D9M0-T4Y01520E5ERCPU directRS485C3M5P03-D9M0-T4Y01520E5ERCOM portRS485C3M5P03-D9M0-W4*01710SeriesCOM portRS485C3M5P03-D9M0-W4*0172SeriesCOM portRS485C3M5P14-D9M0-T4Y0172SeriesCOM portRS485C3M5P14-D9M0-T4Y0172SeriesCOM portRS485C3M5P14-D9M0-T4Y0172SeriesCOM portRS485C3M5P14-D9M0-T4Y0174SeriesCOM portRS485C3M5P14-D9M0-T4Y0174SeriesCOM portRS485C3M5P14-D9M0-T4Y0174SeriesCOM portRS485C3M5P14-D9M0-T4Y0174<	15			
OMRON temperature	E5CN	CPU direct	RS485	C3M5P03-D9M0-T4Y0	15
controller			RS232C	C3M5P13-D9F0-T4Y0	14
	E5EN	CPU direct	RS485	C3M5P03-D9M0-T4Y0	15
			RS485	C3M5P03-D9M0-T4Y0	15
	MT series	COM port	RS485	C3M5P03-D9M0-W4*0	4
	MP seires	COM port	RS485	C3M5P03-D9M0-W4*0	4
	THD seires	COM port	RS485	C3M5P03-D9M0-W4*0	4
AUTONICS	TZ series	COM port	RS485	C3M5P14-D9M0-T4Y0	15
	TK series	COM port	RS485	C3M5P14-D9M0-T4Y0	15
AUTONICS	TM series	COM port	RS485	C3M5P14-D9M0-T4Y0	15
	CT series	COM port	RS485	C3M5P14-D9M0-T4Y0	15
	TK seriesCOM portRS485C3M5P14-D9M0-T4Y0TM seriesCOM portRS485C3M5P14-D9M0-T4Y0CT seriesCOM portRS485C3M5P14-D9M0-T4Y0		4		
		COM port	RS485	C3M5P03-D9M0-W4*0	4
	LP-S044,	CDU	RS232C	C3M5P16-D9F0-D9F0	17
	LP-S070	CPU	RS422	C3M5P17-D9M0-D9M0	18
KONICE	DPU series	COM port	RS485	C3M5P03-D9M0-W4*0	4
NUNICS	KONICS KRN50 COM por		RS485	C3M5P03-D9M0-W4*0	4
DELTA	DTB series	COM port			15
DANFOS	FC 200	COM port	RS-485	C3M5P03-D9M0-T4Y0	15
GP firmware download cable	COMPUTER	-	RS232C	C3M5P14-D9F0-D9F0	17

5 Universal (General-purpose communication)

Universal indicates general purpose of communication, Modbus Slave communication is supported in GP/LP.

5.1 System organization

Microcomputer using as host unit is able to execute slave communicate with GP/LP through RS-232C or RS-422(RS-485) communication port. Host unit read and write inner register(UB, UW) of GP/LP as communication commander. Host unit as master transmits command to GP/LP and GP/LP as slave executes designated operation according to transmitted command and sends respond message.

The following is the system organization for connecting with GP/LP and host unit.





GP Series

%For connect cable information, refer to '1.3 Communication'.

The following table is for basic communication configuration of host unit.

No	Item	Description		Note
1	Communication	RTU		Not used
	mode			
2	Baudrate	38400 bps		Fixed
		Data length	8 bit	Fixed
3	Data type	Parity	None	Fixed
		Stop bit	1 bit	Fixed
4	Station	1 to 31		Designate this in GP/LP

5.2 Universal 1:1 communication

Universal 1:1 indicates communication between one host unit and one GP/LP to monitor GP/LP status.(It is able to extend.)



5.2.1 GP Editor configuration

Universal communication is available only by CH1.

1st Designate GP/LP and PLC type.

GP/PLC Type	×
GP/LP Type() GP-S044 S1D0 (240 X 80)	
CH1	
CH1 Group AUTONICS UNIVERSAL	
CH1 Type 3 UNIVERSAL SLAVE	
CH2	
CH2 Group(4) NoUse	
CH2 Type 6 NoUse	
OK Cancel	

Item	Description
①GP/LP Type	Designate GP/LP model type by pull-down menu.
②CH1 Group	Designate PLC group of CH1 by pull-down menu.
3CH1 Туре	Designate PLC type of CH1 for ② by pull-down menu.
④CH2 Group	Designate PLC group of CH2 by pull-down menu.
5CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.

2nd Select [Communication]-[Download] of menu and download data.

Note

UNIVERSAL communication is executed by configuration of GP/LP download after additional configuration in EDITOR, because "UNIVERSAL" is saved in GP/LP.

5.2.2 GP, LP configuration

5.2.2.1 Mono type

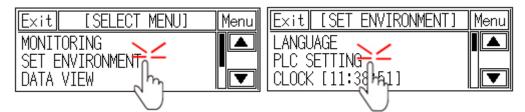
You should desigante CH1 protocol as 'UNIVERSAL' and set communication configuration for CH1 in GP/LP.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH1 protocol is set as 'UNIVERSAL' and CH1 connection port is set as 'RS422' as

default.

Exit	[PLC SETTING]	Menu
CH1	UNIVERSAL	RS422
CH2	EDITOR	RS232C
LP ST	.# 00 CH1 ST.#	001

4th If it is not configured as 'UNIVERSAL' for CH1 protocol, touch protocol display item to set 'UNIVERSAL' as following figure.

Protocol display rotates in order as UNIVERSAL→MK-200S(CPU)→No Use→

PRINTER→BARCODE with touching.

Exit	[PLC S	ETTING]	Menu	Exit	[PLC_SETT	ING] Menu
CH1 M	K-2005 🕅	Ĥ)	RS422	CH1 L	INIVERSAL	RS422
CH2 E	DITOR	h	RS232C	CH2 E	DITOR	RS232C
LP ST.	# _0₹	H1 ST.#	001	LP ST.	# 00 CH1	ST.# 001

5th Synchronize CH1 connect port display item with touching.

Exit [PLC SETTING] [Menu] [Exit] [PLC SETTING] [Me	nu
CH1/UNIVERSAL RS422 CH1/UNIVERSAL RS23	2C
CH2 EDITOR RS2 RC CH2 EDITOR RS42	2
PST.# 🔟 CH1ST.# 🔨 🛄 LPST.# 🔟 CH1ST.# 🛈	01

E

6th Synchronize the station of between GP/LP and host unit.

Touch CH1 station item and input key pad appears. Enter the same station and setting range is 1 to 31.

Exit [PLC SETTING]	Menu	Exit [1	CLR
CH1 UNIVERSAL IR:	S422	CH1 UNIVE	0	1	2	3	
CH2 EDITOR	<u>5232C</u>	CH2 EDITO	4	<u> </u>	6		
LP ST.# HPD-CH1 ST.#	001	LP ST.#	ŏ	y j	-	ВЭ	ENI
لهرام							

7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with host unit.

Touch 'Menu', current setting values are saved and it returns to previous menu.

Touch 'Exit', current setting values are saved and it returns to user screen.

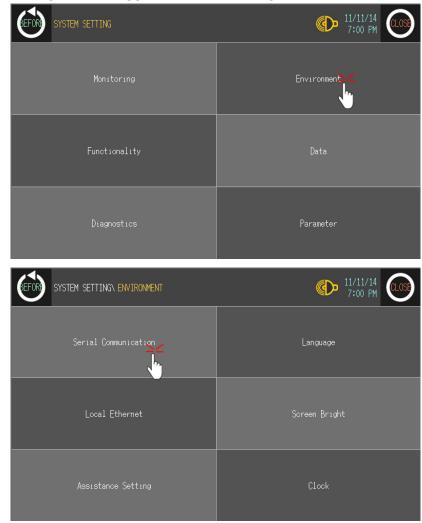
5.2.2.2 Color type

You should desigante CH1 protocol as 'UNIVERSAL' and set communication configuration for CH1 in GP/LP.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.





2nd Select [Environment]-[Serial Communication].

3rd CH1 protocol is set as 'UNIVERSAL' and CH1 connection port is set as 'RS422' as default.

EFOR		ING\ ENVIRONMENT\ SERIAL	¢	11/11/15 8:23 AM	CLOSE
		PROTOCOL.	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :			A	

4th If it is not configured as 'UNIVERSAL' for CH1 protocol, touch protocol display item to set 'UNIVERSAL' as following figure.

Protocol display rotates in order as UNIVERSAL \rightarrow MK-200S(CPU) \rightarrow No Use \rightarrow PRINTER \rightarrow BARCODE with touching.

(FOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/15 8:24 AM	
		PROTOCOL	PORT		
	CH1	MK-200S(CPU	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :				
(EFOR	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	(▶ 11/11/15 8:24 AM	
		PROTOCOL	PORT		
	CH1	PROTOCOL	PORT RS-422	SET	
	CH1 CH2			SET SET	
	_	UNIVERSAL	RS-422		

SYSTEM SETTING	ENVIRONMENT\ SERIAL	¢.	> 11/11/15 8:24 AM
	PROTOCOL	PORT	
CH1	UNIVERSAL	RS-422	SET
CH2	EDITOR	RS-232C	SET
LP STATION :			
	<u> </u>		
	NENVIRONMENT\ SERIAL	¢	▶ 11/11/15 8:24 AM
		¢	▶ 11/11/15 8:24 AM
		PORT	▶ 11/11/15 8:24 AM
	NENVIRONMENT\ SERIAL	_	> 11/11/15 8:24 AM
SYSTEM SETTING	ENVIRONMENT' SERIAL	PORT	

5th Synchronize CH1 connect port display item with touching.

6th Synchronize the station of between GP/LP and host unit.

Touch the station item and input key pad appears. Enter the same station and setting range is 1 to 31.

(FOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL		٢	▶ 11/11/15 8:24 AM	CLOSE
		PROTOCOL	PO	RT		
	CH1	UNIVERSAL	RS-2	32C	SET	
	CH2	EDITOR	RS-	422	SET	
	LP STATION :					
(EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL		¢	11/11/15 8:24 AM	
(for	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL		۲	11/11/15 8:24 AM	CLOSE
	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL PROTOCOL	PO	_	▶ 11/11/15 8:24 AM	
	CH1	PROTOCOL	P0 RS-2	RT	11/11/15 8:24 AM	
		PROTOCOL	RS-2	RT		
	CH1	PROTOCOL UNIVERSAL EDITOR	RS-2	RT 32C	SFT	CLR

 7th After completing communication configuration, you should exit system setting menu and switch user screen to communicate GP Editor with host unit.
 Touch 'BEFORE', current setting values are saved and it returns to previous menu.

Touch 'CLOSE', current setting values are saved and it returns to user screen.

5.3 Universal 1:1:1 communication

Universal 1:1:1 indicates communication between one host unit, one GP/LP and one PLC which is connected to GP/LP.



(Micro Computer etc.)

GP/LP Series

PLC

5.3.1 **GP Editor configuration**

When CH1 group is set as 'AUTONICS UNIVERSAL', CH1 type is set automatically as 'UNIVERSAL'. At CH2 configuration, designate PLC group and type to be connected to GP/LP.

Designate GP/LP and PLC type.	
GP/PLC Type	×
GP/LP Type() GP-S044 S1D0 (240 X 80)	
CH1 Group2 AUTONICS UNIVERSAL	
CH1 Type 3 UNIVERSAL SLAVE	
CH2	
CH2 Group	
CH2 Type 6 MK-2005_Tool MASTER	
OK Cancel	

1st Designate GP/LP and PLC type

Item	Description
①GP/LP Type	Designate GP/LP model type by pull-down menu.
②CH1 Group	Designate PLC group of CH1 by pull-down menu. In this chapter, it is set as 'AUTONICS UNIVERSAL'.
	Designate PLC type of CH1 for ② by pull-down menu.
③CH1 Туре	When ②CH1 Group is set as 'AUTONICS UNIVERSAL', it is set automatically as 'UNIVERSAL'.
④CH2 Group	Designate PLC group of CH2 by pull-down menu.
5CH2 Type	Designate PLC type of CH2 for ④ by pull-down menu.

2nd Draw PLC data to communicate with CH2.

CH2 designates communicating PLC with desiganted data register by link device. (For more details, refer to 'GP Editor user manual'.)

3rd Select [Communication]-[Download] of menu and download drawn data to GP/LP.

🖉 Note

Do not designate GP connect device and link device setting of CH1. In this communication, GP/LP is as master and host unit is as slave. Therefore it is not able to communicate between GP/LP and host unit.

5.3.2 GP, LP configuration

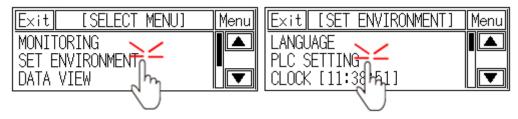
5.3.2.1 Mono type

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd CH1 protocol is set as 'UNIVERSAL' and CH1 connection port is set as 'RS422' as default.

[Exit] [PLC SETTING]	Menu
CH1 UNIVERSAL	RS422
CH2 EDITOR	RS232C
LP ST.# 00 CH1 ST.#	001

4th If it is not configured as 'UNIVERSAL' for CH1 protocol, touch protocol display item to set 'UNIVERSAL' as following figure.

Protocol display rotates in order as UNIVERSAL→MK-200S(CPU)→No Use→

 $\mathsf{PRINTER} \rightarrow \mathsf{BARCODE}$ with touching.

it	[PLC_SE	ETTING]	Menu	Exit] [Pl	LC SETTI	[NG]	Menu
H1 M	<u>/K-2005(CP</u>	θ	RS422	CH1	UNIVER	:SAL		RS422
H2 [E	EDITORh	h	RS232C	CH2	EDITOR			<u>RS232C</u>
ST	.# <u>1005</u>	<u>,11 ST.#</u>	001	LP S	T.# [<u>00</u> CH1	ST.#	001

5th Touch protocol display item of CH2 to set 'MK-200S' as following figure.

Exit [PLC SETTING] [Menu]	Exit [PLC SETTING] [Menu
CH1UNIVERSAL RS422	CH1 UNIVERSAL RS422
CH2 EDITOR	CH2 MK-2005_Too1 RS232C
LP ST.# [] ALCH1 ST.# [001]	LP ST.# 00 CH1 ST.# 001
\sim	

- [PLC_SETTING] Exit [PLC SETTING] Menu Menu Exit CH1 UNIVERSAL IRS2320 CH1 UNTVERSA RS422 <u>CH2 MK-200S</u> Μk 200S 001 001 CH1 ST.# LP ST.# CH1 ST.# <u>PA1</u> 001 # 001 00. SI
- 6th Synchronize CH1 and CH2 connect port display item with touching.

7th Synchronize the station of between GP/LP and host unit.

Touch the station item and input key pad appears. Enter the same station and setting range is 1 to 31.

Exit [PLC SETTING] [Menu]	Exit [0	CLR
CH1 UNIVERSAL RS422	CH1 UNIVE	0	1	2	3	
CH2_MK-2005_Joo1 RS232C	CH2 MK-20	4	5	6	7	▼
LP ST.# 🕂 🔂 CH1 ST.# 🛛 🛛 🛛	LP ST.#	8	9	-	ΒS	ENT
2 hr						

8th After completing communication configuration, you should exit system setting menu and switch user screen to 1:1:1 communication.

Touch 'Menu', current setting values are saved and it returns to previous menu.

Touch 'Exit', current setting values are saved and it returns to user screen.

5.3.2.2 Color type

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication].

SYSTEM SETTING	() 11/11/14 7:00 PM
Monitoring	Environment
Functionality	Data
Diagnostics	Parameter
SYSTEM SETTING ENVIRONMENT	(11/11/14 7:00 PM
Serial Communication	Language
Serial Communication	Language Screen Bright

3rd CH1 protocol is set as 'UNIVERSAL' and CH1 connection port is set as 'RS422' as default.

(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	11/11/15 8:33 AM	
		PROTOCOL.	PORT		
	CH1	UNIVERSAL	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :			1	

4th If it is not configured as 'UNIVERSAL' for CH1 protocol, touch protocol display item to set 'UNIVERSAL' as following figure.

Protocol display rotates in order as UNIVERSAL \rightarrow MK-200S(CPU) \rightarrow No Use \rightarrow PRINTER \rightarrow BARCODE with touching.

(FOR)	SYSTEM SETT	TING\ ENVIRONMENT\ SERIAL	¢	11/11/15 8:34 AM	CLOSE
		PROTOCOL	PORT		
	CH1	MK-2005(CPU>	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :				
(EFOR)	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	11/11/15 8:34 AM	
	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/15 8:34 AM	
	SYSTEM SETT	TINGN ENVIRONMENTN SERIAL	PORT	▶ 11/11/15 8:34 AM	
	SYSTEM SETT			11/11/15 8:34 AM SET	
		PROTOCOL.	PORT		
	CH1	PROTOCOL UNIVERSAL EDITOR	PORT RS-422	SET	

- 5th Touch protocol display item of CH2 to set 'MK-200S' as following figure.

SYSTEM SETTIN	G\ENVIRONMENT\SERIAL	(> 11/11/15 8:37 AM	C
_				
	PROTOCOL	PORT		
CH1	UNIVERSAL	RS-422	SET	
CH2	MK-2005_Tool V1.0M	RS-232C	SET	
LP STATION :	0			
SYSTEM SETTIN	G\ ENVIRONMENT\ SERIAL	۲	11/11/15 8:39 AM	(cla
SYSTEM SETTIN	G\ ENVIRONMENT\ SERIAL	¢	▶ 11/11/15 8:39 AM	C
SYSTEM SETTIN	G\ ENVIRONMENT\ SERIAL PROTOCOL	PORT	▶ 11/11/15 8:39 AM	
SYSTEM SETTIN			> 11/11/15 8:39 AM	
	PROTOCOL	PORT		

6th Synchronize CH1 and CH2 connect port display item with touching

7th Synchronize the station of between GP/LP and host unit.

Touch the station item and input key pad appears. Enter the same station and setting range is 1 to 31.

GEFOR	SYSTEM SETT		11/11/15 8:39 AM				
					_		
		PROTOCOL		PORT			
	CH1	UNIVERSAL			C	SET	
	CH2				2	SET	
	LP STATION :						
(EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL				11/11/15 8:39 AM	
(FOR	SYSTEM SETT	'ING\ ENVIRONMENT\ SERIAL			٩	11/11/15 8:39 AM	0.057
EFOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL PROTOCOL		PORT		11/11/15 8:39 AM	
	CH1			PORT RS-232		9 11/11/15 8:39 AM SET	
(FOR		PROTOCOL	0	RS-232	C.	SET	CLR
	CH1 CH2	PROTOCOL UNIVERSAL MK-2005_Too1 V1.0M	0	RS-232	c. 2	SFT	
	CH1	PROTOCOL UNIVERSAL MK-2005_Too1 V1.0M		RS-232	C.	SET	CLR

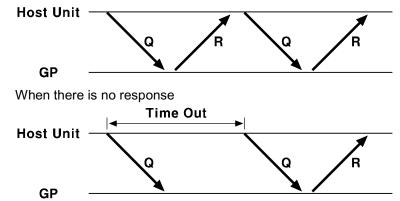
8th After completing communication configuration, you should exit system setting menu and switch user screen to 1:1:1 communication.

Touch 'BEFORE', current setting values are saved and it returns to previous menu. Touch 'CLOSE', current setting values are saved and it returns to user screen.

5.4 Universal protocol

Modbus RTU is a standard. It communicates with host unit as master, GP/LP as slave. In host unit, it transmits Query to GP/LP, GP/LP executes designated operation according to received command and send response. When it receives Query of master and slave does not respond ecause of detection of error including parity, CRC or communication error, master re-transmits Query as timeout.

Normal communication



X For more details, refer to general modbus protcol manual.

5.4.1 Available address

It uses UB, UW device as GP/LP inner memory.

Tuno	Device	Range	Enable	
Туре	Device	Start	End	read/write
Bit	Coil	UB150	UB4095F	Write
ы	Input status	UB0	UB4095F	Read
Word	Input register	UW0	UW6047	Read
vvoru	Holding register	UW15	UW6047	Write

5.4.2 Available function code

There are several functions for using Modbus. Available functions in GP/LP general-purpose communication are four as below.

Code	Function	Read/Write	Description
01	Read Coils	Read	Read the appropriate address
15	Force Multiple Coils	Write	Write the appropriate address
03	Read Holding Register	Read	Read the appropriate address
16	Force Multiple Register	Write	Write the appropriate address

Additional function code will be upgraded.

5.4.3 Communication frame organization

5.4.3.1 Query master part

Station	Function code Data area			
Station	Function code	Data area	L	Н
1	2	3	4	

Item	Description
①Station	It is slave station (HEX) receiving a message from master. Setting range is 0 to 255. If it is 0, it is broadcast query which sends message to every slave.
②Function code (HEX)	Slave executes designated function according to function code. Available set code is 01(Read Coils), 15(Force Multiple Coils), 03(Read Holding Register) and 16(Force Multiple Register).
③Data area (HEX)	Transmit data related with function code. Data organization consists of (Upper 1byte) + (Lower 1byte) of the appropriate address. The length of area is variable and it is able to communicate without data.
④CRC(HEX)	It is error check area. It calculates using CRC-16 code. It consists of 2btye. (Lower 1byte of CRC) + (Upper 1byte of CRC)

(1) Read Coils(Func01-01H)

Slave Address	s Function (starting address)		No. of Points (the number of data)		Error Check (CRC16)		
(station)	(command)	Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	Lo(lower)	Hi(upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

(2) Force Multiple Coils(Func15-0FH)

Slave Address	Function	Starting Address (starting address)		No. of Coils (the number of data)		Byte Count (the number of data	
(station)	(command)	Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	byte)	
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	

Data (data)	Data (data)	Data (data)	Data (data)		r Check RC16)
(data)	(data)	(data)	(data)	Lo(lower)	Hi(upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

(3) Read Holding Registers(Func03-03H)

Slave Address	Function (command)	Starting Address (starting address)		No. of Points (the number of data)		Error Check (CRC16)	
(station)	(command)	Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	Lo(lower)	Hi(upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

Slave Address Function		Starting Address (starting address)		No. of Points (the number of register)		Byte Count (the number of data	
(station)	(command)	Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	byte)	
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	

(4) Preset Multiple Registers(Func16-10H)

Data(data)		Data	(data)	Error Check (CRC16)		
Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	Lo(lower)	Hi(upper)	
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	

5.4.3.2 Response slave part

Station Function		ode Data area		CRC				
Otation		uc	Data arca	L	Н			
1	2		3	4				
Item		Des	cription					
①Station It			It is slave station (HEX) for confirmation about Query.					
②Function	code (HEX)		Transmits same function code sent by Master for confirmation about Query.					
③Data area (HEX) Tr			Transmits data related with function code. The length is variable.					
④CRC(HE)	X)		error check area. It ca nsists of 2btye. (Lowe		•			

(1) Read Coils(Func01-01H)

Slave Address (station)	Function (command)	Byte Count (the number of data byte)	Data (data)	Data (data)	Data (data)	Data (data)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

Error Check (CRC16)				
Lo(lower)	Hi(upper)			
1Byte	1Byte			

(2) Force Multiple Coils(Func15-0FH)

Slave Address	Address Function		Starting Address (starting address)		of Coil per of coil)	Error Check (CRC16)	
(station) (comman	(command)	Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	Lo(lower)	Hi(upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

(3) Read Holding Registers(Func03-03H)

	Byte Count	Data		Data		Data		
Slave Address (station)	Function (command)	(the number of data byte)	Hi (upper)	Lo (lower)	Hi (upper)	Lo (lower)	Hi (upper)	Lo (lower)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

Error Check				
(CRC16)				
Lo(lower)	Hi(upper)			
1Byte 1Byte				

Slave Address (station)	Function (command)	Starting Address (starting address)		No. of Reg (the numbe register)		Error Check (CRC16)	
		Hi(upper)	Lo(lower)	Hi(upper)	Lo(lower)	Lo(lower)	Hi(upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

(4) Preset Multiple Registers(Func16-10H)

5.4.3.3 Error

Station	Function co	ada	Error code	CRC			
Station	FUNCTION CO	Jue	Endrode	L	Н		
1	2		3	4			
Item		Des	cription				
①Station		It is s	It is slave station (HEX) for confirmation about Query.				
②Function cc	ode (HEX)	trans	It is transmitted when Slave cannot process requirement of Master. It transmits after set the most upper bit of function code Master transmitted as 1.				
③Error code ^{≭1} (HEX) Trar			Transmits the specific error code.				
④CRC(HEX)			s error check area. It calculates using CRC-16 code. consists of 2btye. (Lower 1byte of CRC) + (Upper 1byte of CRC).				

%Error code value

Code	Name	Description			
01	Negative function	Operation function code not supported			
	Negative function	to slave			
02	Negative function	Address not existing in slave			
03	Negative data	Data which cannot be written in slave			

5.5 Universal function example

5.5.1 01(Read Coils)

It reads contents of successive coil. There is no Broadcast (Station designation of Slave as 0). Available address is 000000 to 65535, it accords slave UB00000 to UB4095F.

Ex.

When reading 5 register data from UB0180 to UB0184 of GP/LP with station no.31

GP, LP	
Station	Data
UB0180	ON
UB0181	OFF
UB0182	OFF
UB0183	ON
UB0184	ON

Query

Station	Function code	Start address		The number of read register		CRC	
0x1F	0x01	0x01	0x20	0x00	0x05	0xFF	0X81
				ē	0		0

1 2 3	④ ⑤ ⑥ ⑦ ⑧					
Item	Description					
①Station	Slave station is 31, 31=(HEX)0X1F					
②Function code	01					
③Start address upper byte	Start address is UB180.					
④Start address lower byte	UB180(288) = Upper(Hex)0x01 + Lower(Hex)0x20					
⑤The number of read register						
upper byte	Total number of byte on data area					
The number of read register	Total number of data to write: 5, 5 = (Hex)0x05					
lower byte						
⑦CRC lower byte						
®CRC upper byte						

Note

How to calculate integer 0 type address by UB address value of GP/LP

Displays as bleow after divided integer type address value by 16.

Device	Address/16	Quotient	Remainder(displays hexadecimal)	
display	UB	Decimal	Hexadecimal(4bit)	

Autonics



When calcuating 3000 address as UB

Device	Address/16	Quotient	Remainder(displays hexadecimal)
display	3000	187	8

Therefore, address valud 3000 corresponds to UB 1878.

Response

	Station	Function code	The number of data byte	The number of data byte Data CRC		
	0x1F	0x01	0x01	0x19	0x96	0x6A
-	1	2	3	4	5	7

Item	Description			
1)Station	Station of slave			
②Function code	01			
③The number of	Total number of byte on data area			
data byte	Total number of data to write: $5 \text{ word} = 1 \text{ byte. } 1 = (\text{Hex})0x01$			
④Data				
	Lower byte			
⑤, ⑦CRC	Upper byte			

5.5.2 15(Force Multiple Coils)

It writes contents of successive coil. When designating (Broadcast) slave station as 0, it writes in same address of slave.

Available address is 000240 to 65535, it accords slave UB00150 to UB4094F of GP/LP.



In case of writing next data in UB1000 to UB1004 of GP with station no. 05

Station	Data
UB1000	OFF(0)
UB1001	ON(1)
UB1002	OFF(0)
UB1003	ON(1)
UB1004	ON(1)

Query

Stati on	Function code	Start addre	ess	The number of register		The number of data byte	Alterna tion data	CRC	
0x05	0x0F	0x0 6	0x4 0	0x00	0x05	0x01	0x1A	0xEE	0xC7
1	2	3	4)	5	6	0	8	9	10

Item	Description
①Station	Slave station is 05, 05 = (Hex)0x05
②Function code	15. 15 = (Hex)0x0F
③Start address upper byte	Start address is UB1000.
④Start address lower byte	UB1000(1600)=Upper(Hex)0x06 + Lower(Hex)0x40
⑤The number of register upper byte	Total number of data to write
The number of register lower byte	5 = Upper(Hex)0x00 + Lower(Hex)0x05
	Total number of byte on data area
⑦The number of data byte	Total number of data to write: 5.
	It is 5bit, it displays as 1byte. 1 = (Hex)0x01
	Data value to write on UB1000
®CRC lower byte	-
<pre> @CRC upper byte </pre>	-

Autonics

Response

Station	Function code	Start address		The number of register		CRC	
0x05	0x0F	0x06	0x06 0x40		0x05	0x95	0x10
1	2	3 (6	7	8

Item	Description
①Station	Slave station is 05, 05 = (Hex)0x05
②Function code	15. 15 = (Hex)0x0F
③Start address upper byte	Start address is UB1000.
④Start address lower byte	1000 = Upper(Hex)0x06 + Lower(Hex)0x40
⑤The number of register upper byte	Total number of data to write
The number of register lower byte	5 = Upper(Hex)0x00 + Lower(Hex)0x05
⑦CRC lower byte	-
⑧CRC upper byte	-

5.5.3 03(Read holding register)

It reads contents of successive holding register. There is no Broadcast(Station designation of Slave as 0). Available address is 00000 to 06047, it accords slave UW0000 to UW6047 of GP/LP.



In case of reading 5 register data from UW0000 to UW0004 of GP/LP with station no.31

GP/LP							
Station	Data(DEC)	Data(HEX)					
UW0000	10	H000A					
UW0001	20	H0014					
UW0002	30	H001E					
UW0003	40	H0028					
UW0004	50	H0032					

Query

Station	Function code	Start addr	ess	The number of read register		CRC	
0x1F	0x03	0x00	0x00	0x00	0x05	0xE6	0x71
1	2	3	4	5	6	7	8

Item	Description					
①Station	Slave station is 31, 31=(HEX)0X1F					
②Function code	03					
③Start address upper byte	It conforms 0000					
④Start address lower byte						
⑤the number of read register upper byte	Total 5.5=upper(HEX)0X00+lower(HEX)0X05					
©the number of read register lower byte						
⑦CRC lower byte						
®CRC upper byte						

The Function Station number of Data 1 Data 2 Data 3 code data byte 0x1F 0x03 0x00 0x0A 0x00 0x14 0x00 0x1E 0x0A (5) \bigcirc 9 1 2 3 (4) 6 (8) Data 4 Data 5 CRC 0x00 0x00 0x00 0x32 0x8F 0xD6 (10) (11) (12) (13) (14) (15) Description Item (1)Station Slave station ②Function code 03 The total number of byte of data area. 3 the number of data byte Total 5Word=10byte Upper byte of UW0000 4, 60 Data1 Lower byte of UW0000 Upper byte of UW0001 6, ⑦Data2 Lower byte of UW0001 Upper byte of UW0002 ⑧, ⑨Data3 Lower byte of UW0002 Upper byte of UW0003 10, 11Data4 Lower byte of UW0003 Upper byte of UW0004 12, 13 Data5 Lower byte of UW0004

Lower byte

Upper byte

Response

14, 15CRC

5.5.4 16(Preset multiple register)

It writes contents of successive holding register. When designating(Broadcast) slave station as 0, it writes in same address of slave.

Available address is 00015 to 06047, it accords slave UW0015 to UW6047 of GP/LP.



In case of writing next data in UW100 to UW104 of GP/LP with station no.05.

Data(DEC)	Data(HEX)
123	H007B
234	H00EA
345	H0159
456	H01C8
567	H0237

Query

Stati on	Function code	Start address		The number of register		The number of data byte	mber Alternation data data 1	
0x05	0x10	0x00	0x64	0x00	0x05	0x0A	0x00	0x7B
1	2	3	4	5	6	\overline{O}	8	9

Altern data 2		Alterna data 3	ation	Alternation data 4		Alternation data 5		CRC	
0x00	0xEA	0x01	0x59	0x01	0xC8	0x02	0x37	0xA6	0xC9
10	11)	(12)	(13)	(14)	(15)	16	17	18	19

Item	Description		
①Station	Slave station is 05, 05 = (Hex)0x05		
②Function code	16. 16 = (Hex)0x10		
	Start address is UW100.		
③Start address upper byte	100 = upper (Hex)0x00 + lower (Hex)0x64		
④Start address lower byte			
The number of register upper bute	The total number of data to write.		
⑤The number of register upper byte	5 = upper (Hex)0x00 + lower (Hex)0x05		
The number of register lower byte			
⑦The number of data byte	The total number of byte of data area. The total number of data to write: 5 Word = 10 byte. 10 = (Hex)0x0A		
	Upper byte value of data to write in UW100		
	Lower byte value of data to write in UW100		
Matternation data 2 upper byte	Upper byte value of data to write in UW101		
MAlternation data 2 lower byte	Lower byte value of data to write in UW101		
	Upper byte value of data to write in UW102		
Instantion data 3 lower byte	Lower byte value of data to write in UW102		

Item	Description
Alternation data 4 upper byte	Upper byte value of data to write in UW103
GAlternation data 4 lower byte	Lower byte value of data to write in UW103
Maternation data 5 upper byte	Upper byte value of data to write in UW104
⑦Alternation data 5 lower byte	Lower byte value of data to write in UW104
®CRC lower byte	
@CRC upper byte	

Response

Statio n	Function code	Start address		The number of register		CRC	
0x05	0x10	0x00	0x64	0x00	0x05	0x40	0x51
1	2	3	4)	(5)	6	\overline{O}	8

Item	Description
①Station	Slave station is 05, 05 = (Hex)0x05
②Function code	16. 16 = (Hex)0x10
	Start address is UW100.
③Start address upper byte	100 = upper (Hex)0x00 + lower (Hex)0x64
④Start address lower byte	
The number of register upper bute	The total number of data to write.
⑤The number of register upper byte	5 = upper (Hex)0x00 + lower (Hex)0x05
The number of register lower byte	
⑦CRC lower byte	
⑧CRC upper byte	

5.5.5 Exception response

It transmits function code response after set the most upper bit of function code master transmitted as 1.



In case of reading 5 data of input register UW0000 to UW0004 with station no.5.

Query

Station	Function code	Start add	dress	The numb read regis		CRC	
0x05	0x04	0x00	0x00	0x00	0x05	0x31	0x8D
1	2	3	4	5	6	0	8

Item	Description
①Station	Slave station is 05, 05 = (Hex)0x05
②Function code	04. It is not available code.
③Start address upper byte	0000 is a real address for 30001.
④Start address lower byte	
⑤The number of read register	
upper byte	
⑥The number of read register	
lower byte	
⑦CRC lower byte	
⑧CRC upper byte	

Response

Station	Function code	Error code	CRC	
0x05	0x84	0x01	0x83	0x06
1	2	3	4	5

Item	Description
①Station	Slave station is 05, 05 = (Hex)0x05
②Function code	84. The top bit is 1 in function code 04 transmitted by master.
③Error code	01. Operation function code error not supported to slave.
④CRC lower byte	
⑤CRC upper byte	

6

Connectable PLC

Series	Connect device	Connect module	Connect type	Communication cable model name	No
	MK-10S1	CPU	RS-232C	C3M5P00-D9F0-M6M0	1
LS Master-K	MK-80S/120S/200S /300S/1000S	CPU	RS-232C	C3M5P01-D9F0-D9M0	2
LS Glofa	GM4, GM6, GM7U	CPU	RS-232C	C3M5P01-D9F0-D9M0	2
	MK-80S	Cnet module(G7L-CUEB)	RS-232C	C3M5P05-D9F0-D9M0	6
	WIR-003	Cnet module (G7L-CUEC)	RS-422	C3M5P04-D9M0-T6Y0	16
		CPU	RS-232C	C3M5P02-D9F0-D9M0	3
	MK-120S	CPU	RS-485	C3M5P03-D9M0-W4*0	4
	WIR-1203	Cnet module (G7L-CUEB)	RS-232C	C3M5P05-D9F0-D9M0	6
		Cnet module (G7L-CUEC)	RS-422	C3M5P04-D9M0-T6Y0	16
		CPU	RS-232C	C3M5P02-D9F0-D9M0	3
LS Master-K CNET		CPU	RS-422	C3M5P04-D9M0-W6*0	5
	MK-200S	CPU	RS-422	C3M5P03-D9M0-W4*0	4
		Cnet module (G7L-CUEB)	RS-232C	C3M5P05-D9F0-D9M0	6
		Cnet module (G7L-CUEC)	RS-422	C3M5P04-D9M0-T6Y0	16
	MK-300S	G4L-CUEA	RS-232C	C3M5P05-D9F0-D9M0	6
			RS-422	C3M5P04-D9M0-T6Y0	16
	MK-1000S		RS-232C	C3M5P05-D9F0-D9M0	6
	WIK-10003	G3-CUEA	RS-422	C3M5P04-D9M0-T6Y0	16
		XGL-C22A	RS-232C	C3M5P01-D9F0-D9M0	2
		XGL-CH2A	RS-232C	C3M5P01-D9F0-D9M0	2
LS XGT CNET	XGK-CPUS	AGE-CHZA	RS-422	C3M5P04-D9M0-T6Y0	16
		XGL-C42A	RS-422	C3M5P04-D9M0-T6Y0	16
		0.157	RS-232C	C3M5P11-D9F0-W4*0	12
	XBM	CNET	RS-485	C3M5P03-D9M0-W4*0	4
LS XGB CNET			RS-232C	C3M5P13-D9F0-T4Y0	14
	XBC	CNET	RS-485	C3M5P03-D9M0-T4Y0	15
	N70	CPU	RS-232C	C3M5P06-D9F0-D15N	7
OEMAX	N70Plus	CPU	RS-232C	C3M5P07-D9F0-D9M0	8
OEMAX FARA	NX7, NX70	CPU	RS-232C	C3M5P07-D9F0-D9M0	8
		CPU	RS-422	C3M5P08-D9M0-M8M0	9
MITSUBUSHI	FX1S, FX1N, FX2N	RS-232C module (FX1N- 232-BD)	RS-232C	C3M5P09-D9F0-D9F0	10
FX	FX2NC	CPU	RS-422	C3M5P08-D9M0-M8M0	9
	FX3U	CPU	RS-422	C3M5P08-D9M0-M8M1	19
MITSUBUSHI Q	Q00J, Q00, Q01,	Extension module	RS-232C	C3M5P05-D9F0-D9M0	6

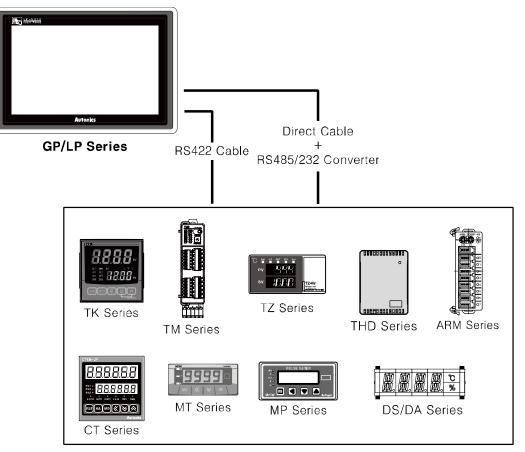
Series	Connect device	Connect module	Connect type	Communication cable model name	No
	Q02, QO2H, Q06H	QJ71C24N	RS-422	C3M5P04-D9M0-W6*0	5
	Q12H, Q25H	Extension module QJ71C24N-R2	RS-232C	C3M5P05-D9F0-D9M0	6
		Extension module QJ71C24N-R4	RS-422	C3M5P04-D9M0-W6*0	5
	FP0-C16/C32/T32C	CPU(Tool port)	RS-232C	C3M5P10-D9F0-M5M0	11
NAIS FP	FPG-C24R2/C32T /C32T2 FP0R-C10/C14/C16/ C32/T32/F32	CPU(COM port)	RS-232C	C3M5P11-D9F0-W4*0	12
SIEMENS SIMATIC S7-200	CPU221, CPU222, CPU224, CPU224XP, CPU224XPsi, CPU226	CPU	PPI	Dedicated cable for SIEMENS	-
SIEMENS SIMATIC S7-300	CPU312, CPU312C, CPU313C, CPU313C- 2, CPU314, CPU314C- 2, CPU315-2, CPU317- 2, CPU319-3	CPU	MPI	Dedicated cable for SIEMENS	
Allen-Bradley	MicroLogix 1000/1200/1500	CPU	RS-232C	Dedicated cable for Allen-Bradley	-
OMRON	CPM1A	CPU	RS-232C	For communicating GP CQM1-CIF0 of OMRON	-
SYSMAC C			K3-232C	For extension cable, C3M5P12-D9F0-D9M1	13
OMRON		Madhua	RS-232C	C3M5P13-D9F0-T4Y0	14
temperature	E5AN, E5EN	Modbus	RS-485	C3M5P03-D9M0-T4Y0	15
controller	E5AR, E5CN, E5ER	Modbus	RS-485	C3M5P03-D9M0-T4Y0	15
	MT series	Dedicated communication,Modbus	RS-485	C3M5P03-D9M0-W4*0	4
	MP seires	Dedicated communication	RS-485	C3M5P03-D9M0-W4*0	4
	THD seires	Modbus	RS-485	C3M5P03-D9M0-W4*0	4
	TZ series	Dedicated communication	RS-485	C3M5P03-D9M0-T4Y0	15
AUTONICS	TK , TM, CT series	Modbus	RS-485	C3M5P03-D9M0-T4Y0	15
	DS/DA Series	Modbus	RS-485	C3M5P03-D9M0-W4*0	4
	Remote I/O ARM Series	Modbus	RS-485	C3M5P03-D9M0-W4*0	4
			RS-232C	C3M5P03-D9F0-D9F0	17
	LP-S044	CPU	RS-422	C3M5P03-D9M0-D9M0	18
KONICS	DPU series, KRN50	Modbus	RS-485	C3M5P03-D9M0-W4*0	4
DELTA	DTB series	Modbus	RS-485	C3M5P03-D9M0-T4Y0	15
DANFOS	FC Series	Modbus	RS-485	C3M5P03-D9M0-T4Y0	15
GP firmware download cable	Computer	-	RS-232C	C3M5P14-D9F0-D9F0	17

Connectable device is upgraded cotinuously according GP Editor version and Patch. Before using, please check version on our website(www.autonics.com) and it is recommended to use the latest version.

6.1 Autonics product

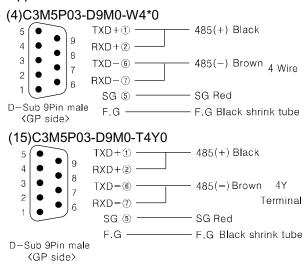
GP/LP is able to communicate with Autonics multi panel meter(MT series), pulse meter(MP series), temperature/humidity sensor(THD-RT series) and temperature controller(TZ), counter/timer(CT series), display unit (DS/DA series), and digital remote I/O (ARM series).

6.1.1 System organization



Autonics MT, MP, THD-RT, TZ, TM, TK, CT, DS/DA, ARM sereis execute RS485 commnication and RS422 communication is available when connecting cable as below. It executes also RS232C communication with RS485/232 converter.

Applied cable



PLC type		Communication method	Default baudrate(bps)
	МТ		
	MT(MODBUS)		
	MP		
	THD-RT(MODBUS)		
Autonion	TZ	RS485/422	9600
Autonics	TM(MODBUS)	R3403/422	9600
	TK(MODBUS)		
	CT(MODBUS)		
	DS/DA(MODBUS)		
	Remote I/O ARM(MODBUS)		

Note

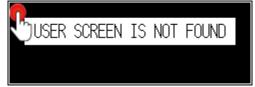
It should be set same between baudrate, station of Autonics controllers and the baudrate, station of GP/LP. Refer to each product's user manual for communication configuration and station of each product.

Be sure that Autonics controller has devided read/write device for using device. Especially in the case of using CH2, refer to '3.3 1:N communication'.

6.1.2 Station configuration in GP/LP

1st Enter system setting menu.

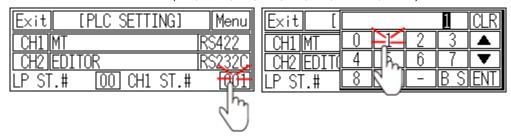
Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd Touch CH1 station, station input key pad appears. Enter the same station of the station which is set from MP(MT, THD, TZ, TM, TK, CT, DS/DA, ARM).



4th Touch 'ENT' to save the station and touch 'Menu' or 'Exit' to exit system setting meun.

6.1.3 Available device

6.1.3.1 MT series

Available device and displayed parameter of Autonics MT series are as following. Available device is only for MT series.

(1) Not Modbus communication type in MT series

Tupo	Device	Mark	Range	
Туре	Device	WAIK	Start	End
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
\A/ord	Word device area	MT	MT0	MT0
Word	GP/LP inner word memory	UW	UW0	UW6047

Device	Description	Enable read/write
MT0	Present value	Read

(2) Modbus communication type in MT series (MT4N)

1) Modbus (MT4N_Mod)

Tuno	Device	Mark	Range	
Туре	Device	IVIAIK	Start	End
Bit	Bit device area	МТ	MT10001	MT10001
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	MT	MT30001	MT30004
Word	Word device area	MT	MT30101	MT30109
Word	Word device area	MT	MT30118	MT30125
	GP/LP inner word memory	UW	UW0	UW6047

Device	Description	Enable Read/Write
MT30001	Present value	Read
MT30002	Dot setting value	Read
MT30003	Max. signal input	Read
MT30004	Min. signal input	Read
MT30101	Product number H	Read
MT30102	Product number L	Read
MT30103	Hardware version	Read
MT30104	Software version	Read
MT30105	Model name1	Read
MT30106	Model name2	Read
MT30107	Model name3	Read
MT30108	Model name4	Read
MT30109	Model name5	Read
MT30118	Coil start address	Read
MT30119	Coil quantity	Read
MT30120	Input start address	Read
MT30121	Input quantity	Read
MT30122	Holding REG start	Read

Device	Description	Enable Read/Write
	address	
MT30123	Holding REG quantity	Read
MT30124	Input REG start address	Read
MT30125	Input REG quantity	Read

2) Modbus TYPE A (MT4N_Mod_A)

Type	Device	Mark	Range	
Туре	Device	Wark	Start	End
Bit	Bit device area	1	100001	100001
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	3	300001	300004
	Word device area	3	300101	300109
Word	Word device area	3	300118	300125
	GP/LP inner word	UW	UW0	UW6047
	memory			

Device	Description	Enable Read/Write
300001	Present value	Read
300002	Dot setting value	Read
300003	Max. signal input	Read
300004	Min. signal input	Read
300101	Product number H	Read
300102	Product number L	Read
300103	Hardware version	Read
300104	Software version	Read
300105	Model name1	Read
300106	Model name2	Read
300107	Model name3	Read
300108	Model name4	Read
300109	Model name5	Read
300118	Coil start address	Read
300119	Coil quantity	Read
300120	Input start address	Read
300121	Input quantity	Read
300122	Holding REG start address	Read
300123	Holding REG quantity	Read
300124	Input REG start address	Read
300125	Input REG quantity	Read

(3) Modbus communication type in MT series (MT4W, MT4Y)

1) Modbus (MT4W_Mod, MT4Y_Mod)

Type	Device		Mark Range		9		
Туре	Device		Wark	Start		End	
Bit	Bit device area		MT	MT100)01	MT10001	
Bit	GP/LP inner bit memory		UB	UB0		UB6047F	
	Word device area		MT	MT300)01	MT30004	
Word	GP/LP inner word		UW	UW0		UW6047	
	memory		011	0000		000047	
Device Description				Enable read	/write		
MT200	-	Procentivelue			Boad		

Device	Description	Ellable leau/write
MT30001	Present value	Read
MT30002	Dot setting value	Read
MT30003	Max. signal input	Read
MT30004	Min. signal input	Read

2) Modbus TYPE A (MT4W_Mod_A., MT4Y_Mod_A)

Type	Device	Mark	Range		
Туре	Device	Wark	Start	End	
Bit	Bit device area	1	100001	100001	
Bit	GP/LP inner bit memory	UB	UB0	UB6047F	
	Word device area	3	300001	300004	
Word	GP/LP inner word	1.15.47			
	memory	UW	UW0	UW6047	

Device	Description	Enable read/write
300001	Present value	Read
300002	Dot setting value	Read
300003	Max. signal input	Read
300004	Min. signal input	Read

6.1.3.2 MP

Available device and displayed parameter of Autonics MP series are as following. Available device is only for MP series.

Type Device		Ma	rk	Range		
Туре	Device	5	Mark		Start	End
Bit	GP/LP	inner bit memory	UB		UB0	UB6047F
Word	Word d	levice area (32bit)	MP	1	MP0	MP11
vvora	GP/LP	inner word memory	UW	/	UW0	UW6047
Device	Code	Description		Enable	read/write	
MP0	P0	Present value		Read		
MP1	C0	Compare setting value(HH)		Read/W	rite	
MP2	C1	Compare setting value(H)		Read/W	rite	
MP3	C2	Compare setting value(L)			rite	
MP4	C3	Compare setting value(LL)		Read/W	rite	
MP5	K0	Peak value (Max.)		Read		
MP6	K1	Peak value (Min.)		Read		
MP7	X0	Prescale value X.Ain		Read/W	rite	
MP8	X1	Prescale value X.Bin		Read/W	rite	
MP9	Y0	Prescale value Y.Ain		Read/W	rite	
MP10	Y1	Prescale value Y.Bin		Read/Write		
MP11	R0	Max./Min. value rese	t	Write		

🖉 Note

In MP device, downloaded data type have to be set as 32 bit for numeral display/input, ASCII display/input of GP Editor to get accurate parameter value and to read/write right.

Numeral Input Property	
Basic Form Trigger Other	
Shape	Frame : 265 V Plate : 0 V Color : 255 V
Device CH1 MP10 Number with	n sign 💽 💽 32bit
Project,	DK Cancel Apply

6.1.3.3 THD-RT(Modbus)

Available device and displayed parameter of Autonics THD-RT series are as following. Available device is only for TH series.

Туро	Device	Mark	Range		
Туре			Start	End	
Bit	GP/LP inner bit memory	UB	UB0	UB6047F	
	Word device area	TH	TH30001	TH30002	
Word	Word device area	TH	TH30101	TH30125	
Word	GP/LP inner word memory	UW	UWO	UW6047	
Device	Description	Enable	e read/write		
TH30001	Temperature value	Read			
TH30002	Humidity value	Read			
	Blank	-			
TH30101	Product number H	Read			
TH30102	Product number L	Read			
TH30103	Hardware version	Read			
TH30104	Software version	Read			
TH30105	Model name 1	Read			
TH30106	Model name 2	Read			
TH30107	Model name 3	Read			
TH30108	Model name 4	Read			
TH30109	Model name 5	Read			
TH30110	Model name 6	Read			
TH30111	Model name 7	Read			
TH30112	Model name 8	Read			
TH30113	Model name 9	Read			
TH30114	Model name 10	Read			
TH30115	Reserved area	Read			
TH30116	Reserved area	Read			
TH30117	Reserved area	Read			
TH30118	Coil start address	Read			
TH30119	Coil quantity	Read			
TH30120	Input start address	Read			
TH30121	Input quantity	Read			
TH30122	Holding REG start address	Read			
TH30123	Holding REG quantity	Read			
TH30124	Input REG start address	Read			
TH30125	Input REG quantity	Read			

(1) Modbus (THD-RT_Mod)

	Moddus TYPE A(THD-RT_Mod_A)			Range		
Туре	Device	Mark	Start	End		
Bit	GP/LP inner bit memor	y UB	UB0	UB6047F		
	Word device area 3		300001	300002		
Word	Word device area	3	300101	300125		
vvoru	GP/LP inner word	UW	UWO			
	memory	000	000	UW6047		
Device	Description		Enable rea	ad/write		
300001	Temperature valu	e	Read			
300002	Humidity value		Read			
	Blank		-			
300101	Product number H	ł	Read			
300102	Product number L		Read			
300103	Hardware version		Read			
300104	Software version		Read			
300105	Model name 1		Read			
300106	Model name 2		Read			
300107	Model name 1		Read			
300108	Model name 2		Read			
300109	Model name 3		Read			
300110	Model name 4		Read			
300111	Model name 5		Read			
300112	Model name 6		Read			
300113	Model name 7		Read			
300114	Model name 8		Read			
300115	Model name 9		Read			
300116	Model name 10		Read			
300117	Reserved area		Read			
300118	Coil start address		Read			
300119	Coil quantity		Read			
300120	Input start address	S	Read			
300121	Input quantity		Read			
300122	Holding REG start	taddress	Read			
300123	Holding REG qua	ntity	Read			
300124	Input REG start ad	ddress	Read			
300125	Input REG quantit	y	Read			

(2) Modbus TYPE A(THD-RT_Mod_A)

6.1.3.4 TZ

Available device and displayed parameter of Autonics TZ series are as following. Available device is only for TZ series.

Tune	Device	Mark	Range	
Туре	Device		Start	End
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
Mord	Word device area	ΤΖ	TZ0	TZ1
Word	GP/LP inner word memory	UW	UW0	UW6047

Device	Description	Enable read/write
TZ0	Present value	Read
TZ1	Setting value	Read/Write

6.1.3.5 TM

For available device for Autonics TM, refer to 'TM user manual for communication'.

(1) Modbus (TM_Mod)

Type	Device	Mark	Range	
Туре	Device		Start	End
Dit	Bit device area	ТМ	Refer to TM device ta	
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	ТМ	Refer to TM device table	
Word	GP/LP inner word	UW	UW0	UW6047
	memory			

(2) Modbus TYPE A(TM_Mod_A)

Tuno	Device	Mark	Range	
Туре	Device	WIAIK	Start	End
	Bit device area 0 Refer to TM de		evice table	
Bit	Bit device area	1	Refer to TM d	evice table
	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	3	Refer to TM device tab	
Word	Word device area	4	Refer to TM device table	
	GP/LP inner bit memory	UW	UW0	UW6047

6.1.3.6 TK

For available device for Autonics TK, refer to 'TK user manual for communication'.

(1)	Modbus	(TK_	Mod)
-----	--------	------	------

Tuno	Device	Mark	Range	
Туре		IVIAI K	Start	End
Dit			Refer to TK device table	
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	ТК	Refer to TK device table	
Word	GP/LP inner word	UW	UW0	UW6047
	memory			

(2) Modbus TYPE A (TK_Mod_A)

Туре	Device	Mark	Range	
Type	Device	Wark	Start	End
	Bit device area	0	Refer to TK de	evice table
Bit	Bit device area	1	Refer to TK de	evice table
	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	3	Refer to TK device table	
\\/ord	Word device area	4	Refer to TK device table	
Word	GP/LP inner word	1.15.47		1 10 4 4 7
	memory	UW	UW0	UW6047

6.1.3.7 CT

For available device for Autonics CT, refer to 'CT user manual for communication'.

(1) Modbus (CT_Mod)

Tuno	ype Device Mark	Mork	Range	
туре		Start	End	
Dit	Bit device area	СТ	Refer to CT de	evice table
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
\A/ard	Word device area	СТ	Refer to CT de	evice table
Word	GP/LP inner word memory	UW	UW0	UW6047

(2) Modbus TYPE A(CT_Mod_A)

Tuno	Device	Mark	Mark Range	
Туре	Device	Wark	Start	End
	Bit device area 0 Refer to CT de		evice table	
Bit	Bit device area	1	Refer to CT de	evice table
	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area		Refer to CT de	evice table
Word	Word device area	4	Refer to CT device table	
	GP/LP inner word memory	UW	UW0	UW6047

6.1.3.8 DS/DA

For available device for Autonics display unit DS/DA series, refer to 'CT user manual for communication'.

Tuno	pe Device		Range	
Туре	Device	Mark	Start	End
Bit	GP/LP inner bit memory	UB	UB0 UB6047F	
	Word device area	3	Refer to DS/DA device table	
Word	Word device area	4	Refer to DS/DA device tabl	
	GP/LP inner word memory	UW	UW0	UW6047

6.1.3.9 Remote I/O ARM

For available device for Autonics remote I/O ARM series, refer to 'CT user manual for communication'.

Tupo	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Bit device area	0	Refer to ARM device table	
Bit	Bit device area	area 1 Refer to ARM dev		evice table
	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	3	Refer to ARM device tabl	
Word	Word device area	4	Refer to ARM device table	
	GP/LP inner word memory	UW	UW0 UW6047	

6.1.4 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.1.3 Available device'.

6.1.4.1 MT series

(1) Modbus

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit memory	
\A/ord	MT	Data register	
Word	UW	GP/LP inner word memory	

(2) Modbus TYPE A

Туре	Mark	Device	Note
Dit	1	Bit device area	
Bit	UB	GP/LP inner bit memory	
M/a ral	3	Word device area	
Word	UW	GP/LP inner word memory	

6.1.4.2 MP series

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit memory	
	MP16	Data register	16bit
Word	MP32	Data register	32bit
	UW	GP/LP inner word memory	

6.1.4.3 THD-RT(MOD)

(1) Modbus

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit memory	
	TH	Word device area	
Word UW		GP/LP inner word memory	

(2) Modbus TYPE A

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit memory	
	3	Word device area	
Word	UW	GP/LP inner word memory	

6.1.4.4 TZ series

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit memory	
	TZ	Data register	
Word	UW	GP/LP inner word memory	

6.1.4.5 TM series

(1) Modbus

Туре	Mark	Device Note		
Bit	ТМ	Bit device area		
	UB	GP/LP inner bit memory		
	ТМ	Word device area		
Word	UW	GP/LP inner word memory		

(2) Modbus TYPE A

Туре	Mark	Device Note	
	0	Bit device area	
Bit	1	Bit device area	
	UB	GP/LP inner bit memory	
Word	3	Word device area	
	4	Word device area	
	IR	Data register	
	UW	GP/LP inner word memory	

6.1.4.6 TK series

(1) Modbus

Туре	Mark	Device No	
D:4	ТК	Bit device area	
Bit	UB	GP/LP inner bit memory	
	ТК	Word device area	
Word	UW	GP/LP inner word memory	

(2) Modbus TYPE A

Туре	Mark	Device Not			
	0	Bit device area			
Bit	1	Bit device area			
	UB	GP/LP inner bit memory			
	3	Word device area			
Word	4	Word device area			
	UW	GP/LP inner word memory			

6.1.4.7 CT series

(1) Modbus

Туре	Mark	Device	Note
D.1	СТ	Bit device area	
Bit	UB	GP/LP inner bit memory	
	СТ	Word device area	
Word	UW	GP/LP inner word memory	

(2) Modbus TYPE A

Туре	Mark	Device	Note
	0	Bit device area	
Dit	1	Bit device area	
Bit	UB	GP/LP inner bit memory	
	3	Word device area	
Word	4	Word device area	
	UW	GP/LP inner word memory	

6.1.4.8 DS/DA Serise

Туре	Mark	Device Not	
Bit	UB	GP inner bit memory	
Word	3	Word device area	
	4	Word device area	
	UW	GP/LP inner word memory	

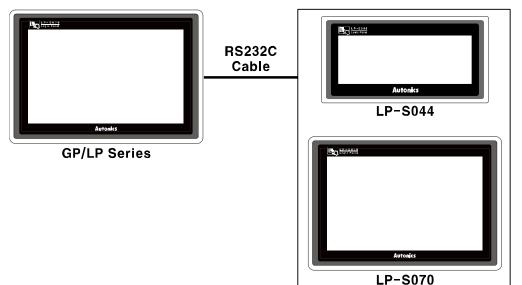
6.1.4.9 Remote I/O ARM Serise

Туре	Mark	Device Note		
	0	Bit device area		
Bit	1	Bit device area		
	UB	GP inner bit memory		
	3	Word device area		
Word	4	Word device area		
	UW	GP/LP inner word memory		

6.2 Autonics LP series PLC connection

GP/LP is able to connect with Autonics LP series.

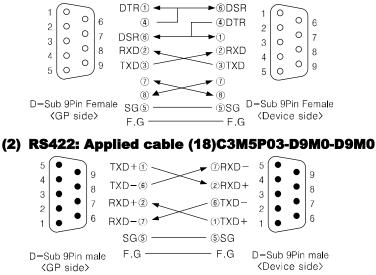
6.2.1 System organization



Autonics LP sereis executes RS-232C commnication. It executes also RS-422 communication with RS-232/422 converter.

PLC type		Communication method	Communication type	Baudrate (bps)
Autonics LP	LP-S044	RS-232C	CDU direct/Looder)	Selectable from 300
series	LP-S070	RS422	CPU direct(Loader)	to 115200

(1) RS232C: Applied cable (17)C3M5P03-D9F0-D9F0



6.2.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

X		00	0		0	
①Device name		2	②Word address (Bit address	
Туре	1		2		3	
	Х		Decimal		Hexadecimal	
	Y		Decimal		Hexadecimal	
	М		Decimal		Hexadecimal	
	F		Decimal		Hexadecimal	
Bit	L		Decimal		Hexadecimal	
	S		Bit address (Deci	ima	al)	
	Т		Bit address (Deci	ima	al)	
	С		Bit address (Decimal)			
	UB		Decimal		Hexadecimal	
	x		Word address		None	
	~		(Decimal)		None	
	Y		Word address		None	
			(Decimal)		None	
	м		Word address		None	
			(Decimal)		None	
	F		Word address		None	
Word	1		(Decimal)		None	
VVOIG			Word address		None	
	L		(Decimal)		None	
	Т		Word address (Decimal)		imal)	
	С		Word address (D	ec	imal)	
	D		Word address (D	ec	imal)	
	R		Word address (D	ес	imal)	
	UW		Word address		None	
	5.0		(Decimal)		None	

Ex.

Word X1 = Bit X10 to X1F , Word UW10 = UB100 to UB10F

6.2.2.1 LP-S044

Туре	Device	Mark	Range		
туре	Device	IVIAIN	Start	End	
	Input relay	Х	X0	X255F	
	Output relay	Y	Y0	Y255F	
	Inner auxiliary relay	М	M0	M9999F	
	Status relay	S	S0	S25599	
Bit	Special relay	F	F0	F255F	
DIL	Link relay	L	L0	L255F	
	Timer contact [10ms]	Т	Т0	T127	
	Timer contact [100ms]	Т	T128	T255	
	Counter contact [16bit]	С	C0	C255	
	GP bit device	UB	UB0	UB6047F	
	Input register	Х	X0	X255	
	Output register	Y	Y0	Y255	
	Inner auxiliary register	М	M0	M9999	
	File register	R	R0	R3999	
	Special register	F	F0	F255	
Word	Link register	L	LO	L255	
	Timer present value [10ms]	Т	Т0	T127	
	Timer present value [100ms]	Т	T128	T255	
	Counter present value [16bit]	С	C0	C255	
	Data register	D	D0	D9999	
	GP word device	UW	UW0	UW6047	

6.2.2.2 LP-S070

Turne	Device	Mark	Range	Range		
Туре	Device	Wark	Start	End		
	Input relay	Х	X0	X255F		
	Output relay	Y	Y0	Y255F		
	Inner auxiliary relay	М	MO	M9999F		
	Status relay	S	S0	S25599		
Bit	Special relay	F	F0	F300F		
DIL	Link relay	L	L0	L255F		
	Timer contact [10ms]	Т	Т0	T127		
	Timer contact [100ms]	Т	T128	T255		
	Counter contact [16bit]	С	C0	C255		
	GP bit device	UB	UB0	UB6047F		
	Input register	Х	X0	X255		
	Output register	Y	Y0	Y255		
	Inner auxiliary register	М	M0	M9999		
	File register	R	R0	R3999		
	Special register	F	F0	F300		
Word	Link register	L	L0	L255		
	Timer present value [10ms]	Т	Т0	T127		
	Timer present value [100ms]	Т	T128	T255		
	Counter present value [16bit]	С	C0	C255		
	Data register	D	D0	D9999		
	GP word device	UW	UW0	UW6047		

6.2.3 Monitorable device in GP/LP

GP/LP is able to monitor LP and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

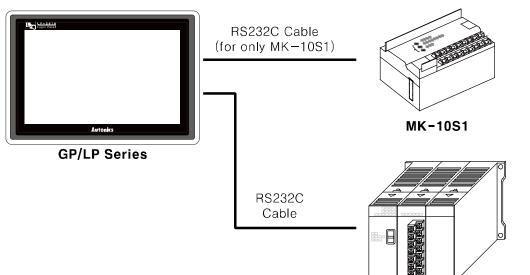
The following is avilable device list of this menu, and available range is same as '6.2.2 Available device'.

Туре	Mark	Device	Note
	Х	Input relay	
	Y	Output relay	
	М	Inner auxiliary relay	
	F	Special relay	
Bit	S	Status relay	
	L	Link relay	
	Т	Timer contact	
	С	Counter contact	
	UB	GP/LP inner bit memory	
	Х	Input register	
	Y	Output register	
	М	Inner auxiliary register	
	F	Special register	
Word	L	Link register	
vvora	Т	Timer present value	
	С	Counter present value	
	D	Data register	16bit
	R	File register	
	UW	GP/LP inner word memory	

6.3 LS Master-K series PLC connection

GP/LP is able to communicate with LS Master-K series.

6.3.1 System organization



MK-80S/120S/200S/300S/1000S

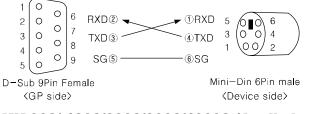
LS Master-K sereis executes RS232C commnication. If PLC has imbeded RS422 loader port or you use RS232/422 converter, RS422 communication is also available.

PLC type		Communication method	Communication type	Baud rate (bps)
LS Mostor	MK-10S1			9600
LS Master K	MK-80S/120S/200S/ 300S/1000S	RS232C	CPU direct(Loader)	38400

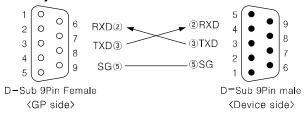
RS232C cable is different by connected PLC type.

The following is RS232C cable diagram and pin arrangement by connected PLC type.

(1) K10S1 (Applied cable (1)C3M5P00-D9F0-M6MO)



(2) MK-80S/ 120S/200S/300S/1000S (Applied cable (2)C3M5P01-D9F0-D9M0)



6.3.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

Bit device; P, M, K, F, L are not used as general word at PLC. However, it is able to switch into word UW device binding 16 units in GP/LP.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal' '.

Refer to below bit/word available device organization and use the device.

Р		00	0
1 Device name		② Word address	③ Bit address
Туре ①		2	3
	Р	Decimal	Hexadecimal
	М	Decimal	Hexadecimal
	К	Decimal	Hexadecimal
Bit	F	Decimal	Hexadecimal
DIL	L	Decimal	Hexadecimal
	Т	Bit address(Decimal)	
	С	Bit address(Decimal)	
	UB	Decimal	Hexadecimal
	Ρ	Word address	None
		(Decimal)	none
	м	Word address	None
	101	(Decimal)	None
	к	Word address	None
		(Decimal)	None
Word	1	Word address	None
		(Decimal)	None
	Т	Word address (Decimal)
	С	Word address (Decimal)
	D	Word address (Decimal)
	UW	Word address	None
		(Decimal)	

Ex.

Word P1 = Bit P10 to P1F , Word UW10 = UB100 to UB10F

6.3.2.1 MK-10S1

Туре	Device	Mark	Range	Range		
Type	Device	IVIAI K	Start	End		
	Input relay	Р	P0	P0F		
	Output relay	Р	P10	P1F		
	Inner auxiliary relay	М	M0	M15F		
	Memory protection relay	К	К0	K7F		
Bit	Special relay	F	F0	F15F		
DIL	Link relay	L	LO	L7F		
	Timer contact[10ms]	Т	T32	T47		
	Timer contact[100ms]	Т	то	T31		
	Counter contact[16bit]	С	C0	C15		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	Р	P0	-		
	Output relay	Р	P1	-		
	Inner auxiliary relay	М	MO	M15		
	Memory protection relay	К	К0	K7		
	Special relay	F	F0	F15		
Word	Link relay	L	LO	L7		
	Timer present value[10ms]	Т	T32	T47		
	Timer present value[100ms]	Т	ТО	T31		
	Counter present value[16bit]	С	C0	C15		
	Data register	D	D0	D63		
	GP/LP inner word memory	UW	UW0	UW6047		

6.3.2.2 MK-80S

Туре	Device	Mark	Range	Range		
туре	Device	IVIAIK	Start	End		
	Input relay	Р	P0	P15F		
	Output relay	Р	P0	P15F		
	Inner auxiliary relay	М	M0	M191F		
	Memory protection relay	К	К0	K31F		
Bit	Special relay	F	F0	F63F		
ы	Link relay	L	LO	L63F		
	Timer contact[10ms]	Т	T192	T255		
	Timer contact[100ms]	Т	ТО	T191		
	Counter contact[16bit]	С	C0	C255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	Р	P0	P15		
	Output relay	Р	P0	P15		
	Inner auxiliary relay	М	MO	M191		
	Memory protection relay	К	К0	K31		
	Special relay	F	F0	F63		
Word	Link relay	L	LO	L63		
word	Timer present value[10ms]	Т	T192	T255		
	Timer present value[100ms]	Т	то	T191		
	Counter present value[16bit]	С	C0	C255		
	Data register	D	D0	D4499		
	Special register	D	D4500	D4999		
	GP/LP inner word memory	UW	UW0	UW6047		

6.3.2.3 MK-120S

Туре	Device	Mark	Range		
Type	Device	IVIAIK	Start	End	
	Input relay	Р	P0	P63F	
	Output relay	Р	P0	P63F	
	Inner auxiliary relay	М	M0	M191F	
	Memory protection relay	К	К0	K31F	
Bit	Special relay	F	F0	F63F	
ЫЦ	Link relay	L	LO	L63F	
	Timer contact[10ms]	Т	T192	T255	
	Timer contact[100ms]	Т	то	T191	
	Counter contact[16bit]	С	C0	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	Р	P0	P63	
	Output relay	Р	P0	P63	
	Inner auxiliary relay	М	M0	M191	
	Memory protection relay	К	К0	K31	
	Special relay	F	FO	F63	
Word	Link relay	L	LO	L63	
vvora	Timer present value[10ms]	Т	T192	T255	
	Timer present value[100ms]	Т	то	T191	
	Counter present value[16bit]	С	C0	C255	
	Data register	D	D0	D4499	
	Special register	D	D4500	D4999	
	GP/LP inner word memory	UW	UW0	UW6047	

6.3.2.4 MK-200S

Туре	Device	Mark	Range			
Type	Device	IVIAIK	Start	End		
2.1	Input relay	Р	P0	P31F		
	Output relay	Р	P0	P31F		
	Inner auxiliary relay	М	MO	M191F		
	Memory protection relay	К	K0	K31F		
	Special relay	F	FO	F63F		
Bit	Link relay	L	LO	L63F		
	Timer contact[10ms]	Т	T192	T255		
	Timer contact[100ms]	Т	то	T191		
	Counter contact[16bit]	С	C0	C255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	Р	P0	P31		
	Output relay	Р	P0	P31		
	Inner auxiliary relay	М	MO	M191		
	Memory protection relay	К	K0	K31		
	Special relay	F	F0	F63		
Word	Link relay	L	LO	L63		
vvoru	Timer present value[10ms]	Т	T192	T255		
	Timer present value[100ms]	Т	то	T191		
	Counter present value[16bit]	С	C0	C255		
	Data register	D	D0	D4499		
	Special register	D	D4500	D4999		
	GP/LP inner word memory	UW	UW0	UW6047		

6.3.2.5 MK-300S

Turne	Davias		Mark	Range	
Туре	Device	T	Mark	Start	End
		CPU OS version	Р	P0	P63F
	Input relay	3.X or above	1		
	input relay	CPU OS version	Р	P0	P31F
Bit		2.X or above	· ·		
		CPU OS version	Р	P0	P63F
	Output relay	3.X or above	· · · · · · · · · · · · · · · · · · ·		
		CPU OS version 2.X or above	Р	P0	P31F
	Inner auxiliary	relay	Μ	M0	M191F
	Memory protect	ction relay	К	К0	K31F
	Special relay		F	F0	F63F
	Link relay		L	LO	L63F
	Timer contact[10ms]	Т	T192	T255
	Timer contact[100ms]	Т	ТО	T191
	Counter contact	ct[16bit]	С	C0	C255
	GP/LP inner bi	it memory	UB	UB0	UB6047F
		CPU OS version	Р	P0	P63
	Input relay	3.X or above	Г	FU	F 05
		CPU OS version	Р	P0	P31
		2.X or above	1	10	
		CPU OS version	Р	P0	P63
	Output relay	3.X or above			
	Output relay	CPU OS version	Р	P0	P31
		2.X or above	1		
Word	Inner auxiliary	relay	М	M0	M191
volu	Memory protect	ction relay	К	К0	K31
	Special relay		F	F0	F63
	Link relay		L	LO	L63
	Timer present	value[10ms]	Т	T192	T255
	Timer present	value[100ms]	Т	ТО	T191
	Counter prese	nt value[16bit]	С	C0	C255
	Data register		D	D0	D4499
	Special registe	er	D	D4500	D4999
	GP/LP inner w	ord memory	UW	UW0	UW6047

6.3.2.6 MK-1000S

Туре	Device	Mark	Range	Range		
туре	Device	IVIAI K	Start	End		
Bit	Input relay	Р	P0	P63F		
	Output relay	Р	P0	P63F		
	Inner auxiliary relay	М	MO	M191F		
	Memory protection relay	К	K0	K31F		
	Special relay	F	F0	F63F		
ы	Link relay	L	L0	L63F		
	Timer contact[10ms]	Т	T192	T255		
	Timer contact[100ms]	Т	Т0	T191		
	Counter contact[16bit]	С	C0	C255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	Р	P0	P63		
	Output relay	Р	P0	P63		
	Inner auxiliary relay	М	MO	M191		
	Memory protection relay	К	K0	K31		
	Special relay	F	F0	F63		
Word	Link relay	L	L0	L63		
vvoru	Timer present value[10ms]	Т	T192	T255		
	Timer present value[100ms]	Т	то	T191		
	Counter present value[16bit]	С	C0	C255		
	Data register	D	D0	D9499		
	Special register	D	D9500	D9999		
	GP/LP inner word memory	UW	UW0	UW6047		

6.3.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.3.2 Available device'.

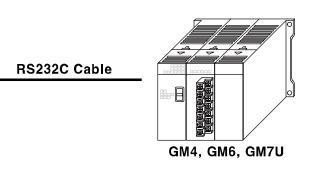
Туре	Mark	Device	Note
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
Bit	F	Special relay	
	Т	Timer contact	
	С	Counter contact	
	UB	GP/LP inner bit memory	
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
	F	Special relay	
Word	Т	Timer present value	
	С	Counter present value	
	D16	Data/File/Special register	16bit
	D32	Data/File/Special register	32bit type combining designated number of device and next number of device
	UW	GP/LP inner word memory	

6.4 LS Glofa PLC connection

GP/LP is able to communicate with LS Glofa series.

6.4.1 System organization



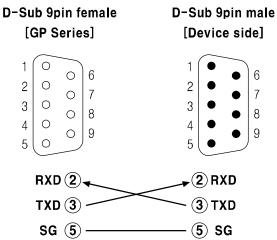


GP/LP Series

LS Glofa sereis executes RS232C commnication. If PLC has imbeded RS422 loader port or you use RS232/422 converter, RS422 communication is also available.

PLC type		Communication method	Communication type	Baudrate (bps)
	GM4			
LS Glofa	GM6	RS232C	CPU direct(Loader)	38400
	GM7U			

The following is RS232C cable diagram and pin arrangement.



6.4.2 Available device

Display method for variable in GP/LP is used by direct display method for variable. Bit device uses IX, QX, MX only, word device uses IW, QW, MW only. Device range is different depending on PLC model.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal' '.

Refer to below bit/word available device organization and use the device.

IX	1	2	1	F
 (1) 	2	3	(4)	(5)

- ① Device name
- 2 Base number
- ③ Slot number
- ④ The number of I/O card point
- 5 Bit address

мх	121	F
(1)	(2)	(3)

- ① Device name
- 2 Quotient of base number(Device contact number/16)
- ③ Remainder of (Device contact number/16)

Туре	1	2	3	(4)	5	Note
	IX	Octonal	Octonal	Quaternary	Hexadecimal	Bit address 0 to F
Bit	QX	Octonal	Octonal	Quaternary	Hexadecimal	Bit address 0 to F
ы	MX	Decimal			Hexadecimal	Bit address 0 to F
	UB	Decimal			Hexadecimal	Bit address 0 to F
	IW	Word address			None	
Word	QW	Word address			None	
vvord	MW	Word address(Decimal)			None	
	UW	Word address(Decimal)			None	

6.4.2.1 Structure differences of use device for GP/LP and GMWIN

(1) Input/Output relay of bit device structure

- I/O bit device structure for GMWIN
 %[Device name] [Base number]. [Slot number]. [(The number of I/O card point X 16)+Bit address]
- I/O bit device structure for GP [Device name] [Base number] [Slot number] [The number of I/O card point] [Bit address (Hexadecimal)]

Ex.

Output device; Base number=2, Slot number=1, The number of I/O card point=2, Bit address=10 %QX 2.1.42 (GMWIN) ► QX 2.1.2 A (GP)

(2) Inner relay of bit deivce structure

- Inner relay of bit device structure for GMWIN %[Device name] [Bit address (Decimal)]
- I/O bit device structure for GP
 [Device name] [Quotient of base number(Bit address/16) (Decimal)] [Remainder of (Bit address/16) (Hexadecimal)]

Ex.

1000th inner relay

Remainder of 1002/16 = 10 = A

6.4.2.2 GM4

Tuno	Device	Mark	Range	
Туре	Device		Start	End
	Input relay	IX	IX0	IX773F*1
Bit	Output relay	QX	QX0	QX773F ^{*1}
DIL	inner auxiliary relay	MX	MX0	MX8191F
	GP/LP inner bit memory	UB	UB0	UB6047F
Word	Input relay	IW	IWO	IW773
	Output relay	QW	QW0	QW773
	Inner auxiliary relay	MW	MW0	MW8191
	GP/LP inner word memory	UW	UW0	UW6047

%1. Actual PLC supports from 0 to 31 bases, but GP/LP supports from 0 to 7 bases.

6.4.2.3 GM6

Tune	Device	Mark	Range	
Туре	Device		Start	End
	Input relay	IX	IX0	IX173F
Bit	Output relay	QX	QX0	QX173F
ы	Inner auxiliary relay	MX	MX0	MX4095F
	GP/LP inner bit memory	UB	UB0	UB6047F
	Input relay	IW	IW0	IW173
Manal	Output relay	QW	QW0	QW173
Word	Inner auxiliary relay	MW	MW0	MW4095
	GP/LP inner word memory	UW	UW0	UW6047

6.4.2.4 GM7U

Tune	Device	Mark	Range	
Туре	Device		Start	End
	Input relay	IX	IX0	IX173F
Bit	Output relay	QX	QX0	QX173F
DIL	Inner auxiliary relay	MX	MX0	MX4095F
	GP/LP inner bit memory	UB	UB0	UB6047F
	Input relay	IW	IW0	IW173
Word	Output relay	QW	QW0	QW173
vvora	Inner auxiliary relay	MW	MW0	MW4095
	GP/LP inner word memory	UW	UW0	UW6047

6.4.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

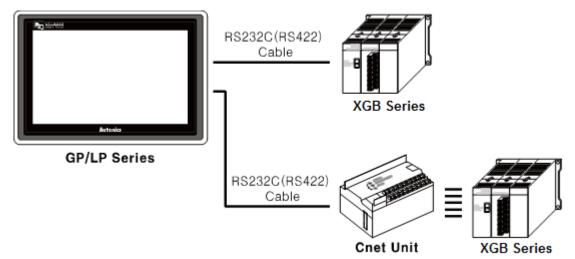
The following is avilable device list of this menu, and available range is same as '6.4.2 Available device'.

Туре	Mark	Device	
	IX	Input relay	
Bit	QX	Output relay	
DIL	MX	Inner auxiliary relay	
	UB	GP/LP inner bit memory	
	IW	Input relay	
Word	QW	Output relay	
vvora	MW	Inner auxiliary relay	
	UW	GP/LP inner word memory	

6.5 LS XGB Series PLC communication connection

GP/LP is able to communicate with LS XGB series PLC and Cnet.

6.5.1 System organization



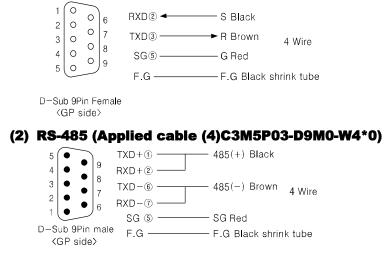
It executes Cnet communication with GP/LP connecting directly with PLC CPU or using Cnet Unit.

It is able to execute Cnet communication differenting pin number of Loarder port in CPU and connecting Cnet Unit.

CPU model Communication Communication PLC type Baudrate(bps) name method type XBC-DR□□H RS232C XBC-DN□□H 19200 LS XGB XGB CPU direct XBM-DN□□S RS485 XBM-DR□□S

6.5.1.1 When using embedded Cnet CPU,

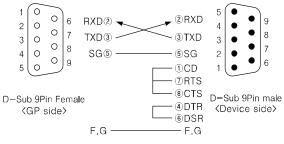




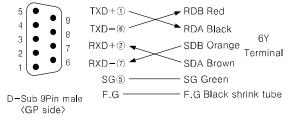
6.5.1.2 When using Cnet Unit,

PLC type		Unit model name	Communication method	Baudrate(bps)
	ХВМ	XBL-C21A	RS232C	
		XBL-C41A	RS422	10200
LS XGB CNET	VDC	XBL-C21A	RS232C	19200
	XBC	XBL-C41A	RS422	

(1) Cnet Unit RS-232C(Applied cable (6)C3M5P05-D9F0-D9M0)



(2) Cnet Unit RS-422(Applied cable (16)C3M5P04-D9M0-T6Y0)



6.5.2 Communication configuration

Communication configuration when using Cnet,

In XG-PD program, configure Cnet to LS XGB series.

(For more information, please refer to the manual from LSIS.)

1st Select [File]-[New File] and 'New Project' dialog box opens.

Select the CPU kind.

New Project		
Project <u>n</u> ame: File <u>l</u> ocation:	TEST C:\ <g5000\test< th=""><th>OK Cancel</th></g5000\test<>	OK Cancel
PLC Series ○XGK ⊙X CPU kind:	Select Folder GB OXGI OXGE GBXBCH	
Project <u>c</u> omment:		

2nd At the Project window, right-click '00: Embedded Cnet' the last of Test items and click 'Module Settings' from pop-up menu. 'Standard Settings – Cnet' dialog box appears.

🔀 TEST - XG-PD
File Edit View Online EDS Tools Window Help
▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶ ▶
Project window × ×
Parameter check ↓ Used address
Ready

	Channel 1		Channel 2	
Туре:	RS232C	~	RS485	
Speed:	19200	~	19200	/
Data bit:	8	*	8	/
Stop bit:	1	*	1	/
Parity bit:	NONE	~	NONE	-
Modem type:	Null Modem	~	Null Modem	-
Modem Initialization:				
Station Number:	0		0	7
Time continues				
Time settings	1		1	7
(0-50)(*100ms)				
Delay time: (0-255)(*10ms)	0		0	٦
Waiting time:				
(0-255)(*10ms)	1		1	
Active mode				
Channel 1:	XGT server		 Modbus Settings 	
Channel 2:	XGT server		 Modbus Settings 	

3rd Configure the settings as same as the communication setting of GP/LP.

4th Connect the unit and Cnet Unit with communication cable.

6.5.3 Available device

Available device of LS XGB Cnet

(1) XBM Series

Turne	Device	Mark	Range			
Туре	Device	Mark	Start	End		
	Input relay	Р	P0	P127F		
	Output relay	Р	P0	P127F		
	Inner auxiliary relay	М	M0	M255F		
	Memory protection relay	К	К0	K2559F		
Bit	Special relay	F	F0	F255F		
	Link relay	L	LO	L1279		
	Timer contact	Т	то	T255		
	Counter contact	С	C0	C255		
	GP inner bit memory	UB	UB0	UB6047F		
	Input relay	Р	P0	P127		
	Output relay	Р	P0	P127		
	Inner auxiliary relay	М	M0	M255		
	Memory protection relay	К	K0	K255		
	Special relay	F	F0	F2559		
Word	Timer present value	Т	Т0	T255		
word	Counter present value	С	C0	C255		
	Data register	D	D0	D5119		
	Analog data register	U	U00.00	U07.31		
	Communication data register	Ν	N0	N3935		
	File register (Flash)	Z	Z0	Z127		
	GP inner word memory	UW	UW0	UW6047		

(2) XBC Series

Type Device	Device	Mark	Range		
туре	Device	Mark	Start	End	
	Input relay	Р	P0	P1023F	
	Output relay	Р	P0	P1023F	
	Inner auxiliary relay	М	M0	M1023F	
	Memory protection relay	К	К0	K4095F	
Bit	Special relay	F	F0	F1023F	
	Link relay	L	LO	L2047F	
۲ ر	Timer contact	Т	ТО	T1023	
	Counter contact	С	C0	C1023	
	GP inner bit memory	UB	UB0	UB6047F	
	Input relay	Р	P0	P1023	
	Output relay	Р	P0	P1023	
	Inner auxiliary relay	М	M0	M1023	
	Memory protection relay	К	К0	K4095	
	Special relay	F	F0	F1023	
Word	Timer present value	Т	ТО	T1023	
vvord	Counter present value	С	C0	C1023	
	Data register	D	D0	D10239	
	Analog Data register	U	U00.00	U0A.31	
	Communication data register	N	N0	N5119	
	File register (Flash)	Z	Z0	Z127	
	GP inner word memory	UW	UW0	UW6047	

6.5.4 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is available device list of this menu, and available range is same as '6.5.3 Available device'.

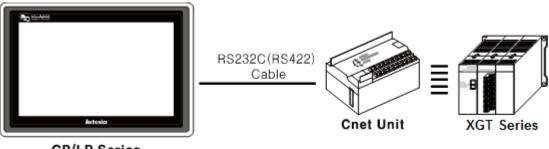
Туре	Mark	Device	Note
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	к	Memory protection relay	
Bit	F	Special relay	
	Т	Timer contact	
	С	Counter contact	
	GP inner bit memory		
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
	Т	Timer present value	
Word	С	Counter present value	
	D16	Data/File/Special register	16bit
	D32	Data/File/Special register	32bit form combining the designated number
	0.52	Data/File/Special register	device and the next number device
	UW	GP inner word memory	

LS XBM Series / XBC Series of XGB Cnet

6.6 LS XGT Series PLC communication connection

GP/LP is able to communicate with LS XGT series PLC.

6.6.1 System organization



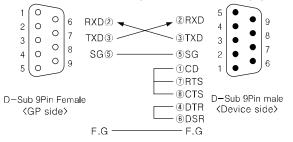
GP/LP Series

It executes Cnet communication with GP/LP using Cnet Unit.

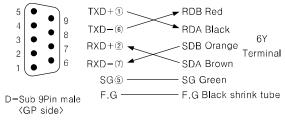
6.6.1.1 When using Cnet Unit,

PLC type		Unit model	Communication	Baudrate(bps)
		name	method	
		XGL-C22A	RS232C	10000
			RS232C	
LS XGT CNET	XGK-CPUS	XGL-CH2A	RS422	19200
		XGL-C42A	RS422	

(1) Cnet Unit RS-232C(Applied cable (6)C3M5P05-D9F0-D9M0)



(2) Cnet Unit RS-422(Applied cable (16)C3M5P04-D9M0-T6Y0)



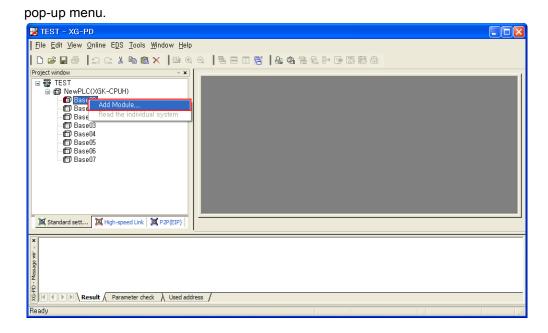
6.6.2 Communication configuration

In XG-PD program, configure Cnet to LS XGT seires. (For more information, please refer to the manual from LSIS.)

1st Select [File]-[New File] and 'New Project' dialog box opens.

Select the CP	U kind.		
New Project			
Project <u>n</u> ame: File <u>l</u> ocation:	TEST C:\XG5000\T	EST	OK Cancel
- PLC Series		Select Folde	er
	×G <u>B</u> ○×GI	⊖xg <u>r</u>	
CPU kind:	XGK-CPUH	~	
Project <u>c</u> omment:			
			<u> </u>
			~

2nd At the Project window, select the configured PLC and right-click 'Add Module' from



3rd Communication Module Setting dialog box apperas. Select Type as 'Cnet'.

Communi	cation Module Sett 🔀
Туре:	
	Cnet 👻
Base:	00
Slot:	00 💌
	OK Cancel

4th At the Project window, double-click the added communication module and 'Standard

Settings - Cnet' dialog box appears.

Project window	- x
🖃 🏧 TEST	
🖬 🗂 NewPLC(XGK-CPUH)	
🚊 🔟 Base00	
🛄 🔁 00: Cnet	
🗇 Base01	
🗂 Base02	
🗂 Base03	
🗂 Base04	
🗂 Base05	
🗇 Base06	
D Base07	

5th Configure the settings as same as the communication setting of GP/LP.

Communication se	ttings			
	Channel 1		Channel 2	
Туре:	RS232C	*	RS232C	*
Speed:	9600	*	9600	~
Data bit:	8	*	8	~
Stop bit:	1	~	1	*
Parity bit:	NONE	~	NONE	~
Modem type:	Null Modem	*	Null Modem	*
Modem Initialization:				
Initialization: Station Number:	0		0	
Time and				
Time settings	1		1	
(0-50)(*100ms)				
Delay time:			0	
(0-255)(*10ms)	0		U	
Waiting time: (0-255)(*10ms)	1		1	
Active mode				
Channel 1:	LIGT			
	XGT server		Modbus Set	tings
Channel 2:	XGT server		Modbus Set	tings

6th Connect the unit and Cnet Unit with communication cable.

6.6.3 Available device

Turk	Decise	Marila	Range		
Туре	Device	Mark	Start	End	
	Input relay	Р	P0	P2047F	
	Output relay	Р	P0	P2047F	
	Inner auxiliary relay	М	M0	M2047F	
	Memory protection relay	К	К0	K2047F	
Bit	Special relay	F	F0	F2047F	
ы	Timer contact[1ms]	Т	T1500	T2047	
	Timer contact[10ms]	Т	T1000	T1499	
	Timer contact[100ms]	Т	ТО	Т999	
	Counter contact[16bit]	С	C0	C2047	
	GP inner bit memory	UB	UB0	UB6047F	
	Input relay	Р	P0	P2047	
	Output relay	Р	P0	P2047	
	Inner auxiliary relay	М	M0	M2047	
	Memory protection relay	К	К0	K2047	
	Special relay	F	F0	F2047	
	Link relay	L	LO	L11263	
	Timer present value[1ms]	Т	T1500	T2047	
	Timer present value[10ms]	Т	T1000	T1499	
Word	Timer present	Т	ТО	Т999	
vvoru	value[100ms]				
	Counter present	С	C0	C2047	
	value[16bit]				
	Data register	D	D0	D32767	
	File register	R	R0	R32767	
	Communication data	N	N0	N21503	
	register				
	File register(Flash)	ZR	ZR0	ZR65535	
	GP inner word memory	UW	UW0	UW6047	

6.6.4 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

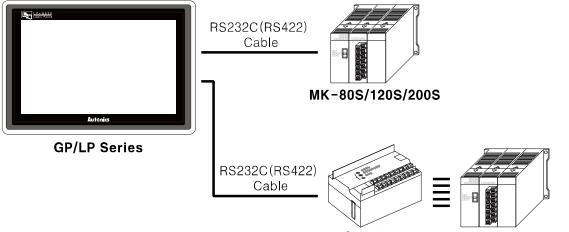
The following is available device list of this menu, and available range is same as '6.6.3 Available device'.

Туре	Mark	Device	Note
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
Bit	F	Special relay	
	Т	Timer contact	
	С	Counter contact	
	UB	GP inner bit memory	
	Р	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
	Т	Timer present value	
	С	Counter present value	
Word	D16	Data/File/Special register	16bit
	D32	Data/File/Special register	32bit form combining the designated number device and the next number device
	R	File register	
	UW	GP inner word memory	

6.7 LS Cnet communication connection

GP/LP is able to communicate with LS Cnet.

6.7.1 System organization



Cnet Unit MK-80S/120S/200S

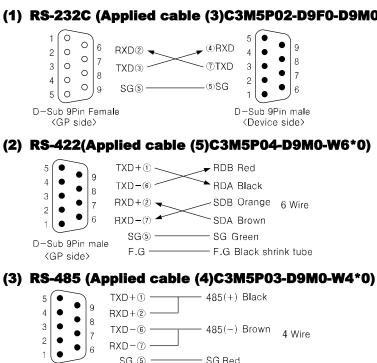
It executes Cnet communication with GP/LP connecting directly with PLC CPU or using Cnet Unit.

It is able to execute Cnet communication differing pin number of Loader port in CPU and connecting Cnet Unit.

PLC type		CPU model name	Communication type	Communication method	Baudrate (bps)
		K7M-DR10S			
		K7M-DR20S			
	MK- 80S	K7M-DR30S		RS232C	
	003	K7M-DR40S			
		K7M-DR60S			
		K7M-			
LS		DR□□U	CPU direct		19200
Master-K	MK-	K7M-	CFU direct	RS232C	19200
	120S	DT□□U		RS485	
		K7M-			
		DRT□□U			
	MK-	K3P-07AS		RS232C	
	200S	K3P-07BS		RS422	
	2003	K3P-07CS		RS232C	

6.7.1.1 When using embedded Cnet CPU,

(1) RS-232C (Applied cable (3)C3M5P02-D9F0-D9M0)



D-Sub 9Pin male F.G — F.G Black shrink tube

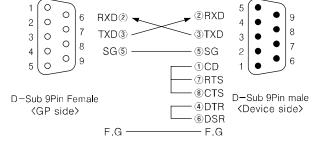
<GP side>

6.7.1.2 When using Cnet Unit,

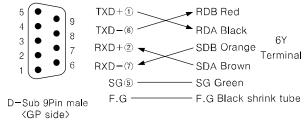
PLC type		Unit model name	Communication method	Baudrate (bps)
	14/4 000		RS232C	
	MK-80S	G7L-CUEC	RS422	
	MK-120S	G7L-CUEB	RS232C	
LS Master-K		G7L-CUEC	RS422	19200
LS Master-K	MK-200S	G6L-CUEB	RS232C	
		G6L-CUEC	RS422	
	MK-300S	G4L-CUEA	RS232C, RS422	
	MK-1000S	G3L-CUEA	RS232C, RS422	

In case of K7M-DR10S CPU of MK-80S, Cnet Unit cannot be connetable.

(1) Cnet Unit RS-232C(Applied cable (6)C3M5P05-D9F0-D9M0)



(2) Cnet Unit RS-422(Applied cable (16)C3M5P04-D9M0-T6Y0)



6.7.2 Communication configuration

6.7.2.1 Communication configuration when using embedded Cnet CPU

Communication configuration for using embedded Cnet CPU is set from the dedicated ladder program (KGL for Window) and communication configuration method is as following.

- 1st Connect the dedicated ladder program and set PLC as connectable status.
- 2nd From the workspace window of the ladder program, select [Parameter] and desigante

	the	items	as	below.	
--	-----	-------	----	--------	--

Item	Setting	Note
Station	User-defined	0 to 31(Current station is only 0)
Stop bit	1	Fixed
Data bit	8	Fixed
Parity	None	Fixed
Baudrate	19200	Fixed

6.7.2.2 Communication configuration when using Cnet Unit

Configuration LS Master-K seires Cnet

Communication configuration for using Cnet Unit is set from Cnet Frame Editor and communication configuration method is as following. (You can download the program from LSIS website.)

- 3rd Connect PC and lodder port in PLC CPU with RS232C cable.
- 4th Execute Cnet Frame Editor.
- 5th Select [Online]-[Connect] of menu and set the status to communication with PLC.
- 6th Select [Online]-[Read] of menu, 'Read' dialog box appears. Designate slot number and click 'Read'. From the right slot of CPU slot number starts with 1.
- 7th At 'Read' dialog box, click 'Close' and read data from Cnet Unit is displayed at communication channel and basic parameter of current frame editor.
- 8th When displayed data is same as following table, exit the program. If displayed data is not same as following table, set items as following table and select [Online]-[Write]. Designate slot number and click 'Write'. If there is no error, click 'Close'. Re-try 4th process and check the data is set correctly. If there is no error, exit the program.

Item	Description	Note
Station	User-defined	0 to 31(Current station is only 0)
Stop bit	1	Fixed
Data bit	8	Fixed
Parity	None	Fixed
Baudrate	19200	Fixed

9th Turn OFF PLC power and turn ON again.

10th Connect GP and Cnet Unit with communication cable and start communication.

6.7.3 Available device

It is same as LS Master-K series's. For more details, refer to '6.3 LS Master-K series PLC connection'.

The available device of Cnet from LS Master-K is same as that of LS Master-K series. For more details, refer to '6.3 LS Master-K series PLC connection'.

6.7.4 Monitorable device in GP/LP

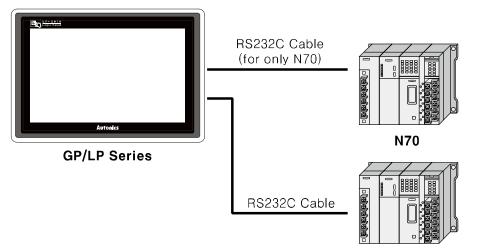
GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

6.8 OEMAX PLC(Samsung PLC) connection

GP/LP is able to communicate with Samsung FARA N series and N plus series.

6.8.1 System organization



N70Plus, NX7, NX70

Samsung FARA sereis executes RS232C commnication. If PLC has imbeded RS422 loader port or you use RS232/422 converter, RS422 communication is also available.

PLC type		Communication method	Communication type	Baudrate (bps)
	N70	RS232C	CPU direct(Loader)	19200
	N70plus	RS232C	CPU direct(Loader)	38400
Samsung FARA	NX7	RS232C	CPU direct(Loader)	38400
	NX70	RS232C	CPU direct(Loader)	38400

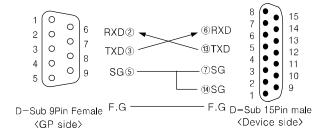
Note

Be sure that the baudrate of each PLC should be set same as above table. You can designate baudrate by dip switch of each PLC CPT module.

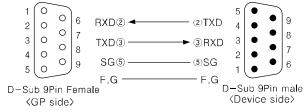
RS232C cable connection is different depending on PLC type.

The following is RS232C cable diagram and pin arrangement for N70 and N70plus.

(1) Connect PLC is N70 (Applied cable: (7)C3M5P06-D9F0-D15M0)



(2) Connect PLC is N70plus, NX7, NX70 (Applied cable (8)C3M5P07-D9F0-D9M0)



6.8.2 Available device

Be sure that device address of N70 and N70plus are different structure.

6.8.2.1 FARA N70

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

Х		00	0	
① Device r	name	② Word address	3 E	Bit address
Туре	1	2		3
	Х	Decimal		Hexadecimal
	Y	Decimal		Hexadecimal
	R	Decimal		Hexadecimal
Bit	L	Decimal		Hexadecimal
	Т	Bit address(Decimal		
	С	Bit address(Decimal)		
	UB	Decimal		Hexadecimal
	WX	Word address(Decin	nal)	None
	WY	Word address(Decin	nal)	None
	WR	Word address(Decin	nal)	None
	WL	Word address(Decin	nal)	None
Word	EV	Word address(Decimal)		
	SV	Word address(Decimal)		
	DT	Word address(Decimal)		
	Ld	Word address(Decin	nal)	
	UW	Word address(Decin	nal)	None

Autonics

Tuna	Device	Mark	Range			
Туре	Device	Mark	Start	End		
	Input relay	Х	X0	X127F		
	Output relay	Y	Y0	Y127F		
	Inner auxiliary relay	R	R0	R97F		
	Special relay	R	R9000	R910F		
Bit	Link relay	L	LO	L127F		
DIL	Timer contact[10ms]	Т	то	T199		
	Timer contact[100ms]	Т	то	T199		
	Timer contact[1000ms]	Т	то	T199		
	Counter contact[16bit]	С	C200	C255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	WX	WX0	WX127		
	Output relay	WY	WY0	WY127		
	Inner auxiliary relay	WR	WR0	WR97		
	Link relay	WL	WL0	WL127		
	Timer present value[10ms]	EV	EV0	EV199		
	Timer present value[100ms]	EV	EV0	EV199		
	Timer present value[1000ms]	EV	EV0	EV199		
	Timer setting value[10ms]	SV	SV0	SV199		
Word	Timer setting value[100ms]	SV	SV0	SV199		
	Timer setting value[1000ms]	SV	SV0	SV199		
	Counter present value[16bit]	EV	EV200	EV255		
	Counter setting value[16bit]	SV	SV200	SV255		
	Data register	DT	DT0	DT2047		
	File register	FL	FL0	FL22524		
	Special register	DT	DT9000	DT9255		
	Link register	Ld	Ld0	Ld255		
	GP/LP inner word memory	UW	UW0	UW6047		

6.8.2.2 FARA N70 Plus

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

Bit device; R, M, K, F, L are not used as general word at PLC. However, it is able to switch into word UW device binding 16 units in GP/LP.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

R	00	0
---	----	---

Туре	1	2	3	Note
	R	Decimal	Decimal(0 to 15)	R##.## of '.' is not used
	М	Decimal	Decimal(0 to 15)	M##.## of '.' is not used
	к	Decimal	Decimal(0 to 15)	K##.## of '.' is not used
Bit	F	Decimal	Decimal(0 to 15)	F##.## of '.' is not used
	L	Decimal	Decimal(0 to 15)	L##.## of '.' is not used
	тс	Bit address(Decimal)	ddress(Decimal)	
	UB	Decimal	Hexadecimal	
	R	Word address(Decimal)	None	
	М	Word address(Decimal)	None	
	К	Word address(Decimal)	None	
	F	Word address(Decimal)	None	
M/and	L	Word address(Decimal)	None	
Word	PV	Word address(Decimal)	rd address(Decimal)	
	SV	Word address(Decimal)		
	W	Word address(Decimal)		
	SR	Word address(Decimal)		
	UW	Word address(Decimal)	None	

① Device name ② Word address ③ Bit address

Autonics

Ex.

Word R1 = Bit R100 to R115 , Word UW10 = UB100 to UB10F

There is difference for mark of bit R, M, K, F, L between general mark and GP/LP mark. General mark is displayed as R##.##, GP/LP mark is displayed without middle of distinguisher. For example, R10.10 is displayed as 'R1010' in GP/LP.

Be sure that GP/LP does not use distinguisher, it uses virtual distinguisher cutting two digits from the backward of input bit R, M, K, F, L address.

Tuna	Device	Mark	Range	Range		
Туре	Device	Mark	Start	End		
	Input relay	R	R0	R12715		
	Output relay	R	R0	R12715		
	Inner auxiliary relay	М	MO	M12715		
	Memory protection relay	К	К0	K12715		
Bit	Special relay	F	F0	F1515		
DIL	Link relay	L	LO	L6315		
	Timer contact[10ms]	тс	TC0	TC63		
	Timer contact[100ms]	тс	TC64	TC255		
	Counter contact[16bit]	тс	TC0	TC255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	R	R0	R127		
	Output relay	R	R0	R127		
	Inner auxiliary relay	М	MO	M127		
	Memory protection relay	К	K0	K127		
	Special relay	F	F0	F15		
	Link relay	L	LO	L63		
	Timer present value[10ms]	PV	PV0	PV63		
Word	Timer present value[100ms]	PV	PV63	PV255		
	Timer setting value[10ms]	SV	SV0	SV63		
	Timer setting value[100ms]	SV	SV64	SV255		
	Counter present value[16bit]	PV	PV0	PV255		
	Counter setting value[16bit]	SV	SV0	SV255		
	Data register *1	W	WO	W2047		
	Special register	SR	SR0	SR511		
	GP/LP inner word memory	UW	UW0	UW6047		

(Ex) Bit R1 = R0.01 , Bit M10 = M0.10 , Bit K101 = K1.01

※1. Depending on CPU type, that range is fluid.

In case of CPL9215A, the range is W0 to W2047. In case of CPL9216A, the range is W0 to W4095.

6.8.2.3 FARA NX7

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

Bit device; R, M, K, F, L are not used as general word at PLC. However, it is able to switch into word UW device binding 16 units in GP/LP.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal".

Refer to below bit/word available device organization and use the device.

R 00 0	
--------	--

Туре	1	2	3	Note
	R	Decimal	Decimal(0 to 15)	R##.## of '.' is not used
	М	Decimal	Decimal(0 to 15)	M##.## of '.' is not used
	к	Decimal	Decimal(0 to 15)	K##.## of '.' is not used
Bit	F	Decimal	Decimal(0 to 15)	F##.## of '.' is not used
	L	Decimal Decimal(0 to 15)		L##.## of '.' is not used
	тс	Bit address(Decimal)		
	UB	Decimal	Hexadecimal	
	R	Word address(Decimal) None		
	М	Word address(Decimal) None		
	К	Word address(Decimal) None		
	F	Word address(Decimal)	None	
\A/and	L	Word address(Decimal)	None	
Word	PV	Word address(Decimal)		
	SV	Word address(Decimal)		
	W	Word address(Decimal)		
	SR	Word address(Decimal)		
	UW	Word address(Decimal)	None	

①Device name ②Word address ③Bit address

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Ex.

Word R1 = Bit R100 to R115 , Word UW10 = UB100 to UB10F

There is difference for mark of bitR, M, K, F, L between general mark and GP/LP mark. General mark is displayed as R##.##, GP/LP mark is displayed without middle of distinguisher. For example, R10.10 is displayed as 'R1010' in GP/LP.

Be sure that GP/LP does not use distinguisher, it uses virtual distinguisher cutting two digits from the backward of input bit R, M, K, F, L address.

Туре	Device	Mark	Range			
туре	Device	Wark	Start	End		
	Input relay	R	R0	R3115		
	Output relay	R	R0	R3115		
	Inner auxiliary relay	М	MO	M12715		
	Memory protection relay	К	K0	K12715		
Bit	Special relay	F	FO	F1515		
DIL	Link relay	L	LO	L6315		
	Timer contact[10ms]	тс	TC0	TC63		
	Timer contact[100ms]	тс	TC64	TC255		
	Counter contact[16bit]	тс	TC0	TC255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	R	R0	R127		
	Output relay	R	R0	R127		
	Inner auxiliary relay	М	MO	M127		
	Memory protection relay	К	К0	K127		
	Special relay	F	F0	F15		
	Link relay	L	LO	L63		
	Timer present value[10ms]	PV	PV0	PV63		
Word	Timer present value[100ms]	PV	PV63	PV255		
	Timer setting value[10ms]	SV	SV0	SV63		
	Timer setting value[100ms]	SV	SV64	SV255		
	Counter present value[16bit]	PV	PV0	PV255		
	Counter setting value[16bit]	SV	SV0	SV255		
	Data register *1	W	W0	W2047		
	Special register	SR	SR0	SR511		
	GP/LP inner word memory	UW	UW0	UW6047		

(Ex) Bit R1 = R0.01 , Bit M10 = M0.10 , Bit K101 = K1.01

×1. Depending on CPU type, that range is fluid.

In case of CPL9215A, the range is W0 to W2047. In case of CPL9216A, the range is W0 to W4095

6.8.2.4 FARA NX70 (CPU70)

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point

Bit device; R, M, K, F, L are not used as general word at PLC. However, it is able to switch into word UW device binding 16 units in GP/LP.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'

Refer to below bit/word available device organization and use the device.

Х		00 0		0	
1 Device na	ame	②Word address ③Bit a		address	
Туре	1	2		3	
	Х	Decimal		Hexadecimal	
	Y	Decimal		Hexadecimal	
	R	Decimal		Hexadecimal	
Bit	L	Decimal		Hexadecimal	
	Т	Bit address(Decima	l)		
	С	Bit address(Decimal) Decimal			
	UB			Hexadecimal	
	WX	Word address(Deci	mal)	None	
	WY	Word address(Deci	mal)	None	
	WR	Word address(Deci	mal)	None	
	WL	Word address(Deci	mal)	None	
Word	EV	Word address(Deci			
	SV	Word address(Deci	Word address(Decimal)		
	DT	Word address(Deci			
	Ld	Word address(Decimal)			
	UW	Word address(Deci	mal)	None	

Ex.

Word R1 = Bit R100 to R115, Word UW10 = UB100 to UB10F There is difference for mark of bit R, M, K, F, L between general mark and GP/LP mark. General mark is displayed as R##.##, GP/LP mark is displayed without middle of distinguisher. For example, R10.10 is displayed as 'R1010' in GP/LP.

Be sure that GP/LP does not use distinguisher, it uses virtual distinguisher cutting two digits from the backward of input bit R, M, K, F, L address.

Туре	Device	Mark	Range			
Type	Device	INIAI K	Start	End		
	Input relay	Х	X0	X127F		
	Output relay	Y	Y0	Y127F		
	Inner auxiliary relay	R	R0	R97F		
	Special relay	R	R9000	R910F		
Bit	Link relay	L	LO	L127F		
DIL	Timer contact[10ms]	Т	ТО	T199		
	Timer contact[100ms]	Т	то	T199		
	Timer contact[1000ms]	Т	то	T199		
	Counter contact[16bit]	С	C200	C255		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	WX	WX0	WX127		
	Output relay	WY	WY0	WY127		
	Inner auxiliary relay	WR	WR0	WR97		
	Link relay	WL	WL0	WL127		
	Timer present value[10ms]	EV	EV0	EV199		
	Timer present value[100ms]	EV	EV0	EV199		
	Timer present value[1000ms]	EV	EV0	EV199		
	Timer setting value[10ms]	SV	SV0	SV199		
Word	Timer setting value[100ms]	SV	SV0	SV199		
	Timer setting value[1000ms]	SV	SV0	SV199		
	Counter present value[16bit]	EV	EV200	EV255		
	Counter setting value[16bit]	SV	SV200	SV255		
	Data register	DT	DT0	DT2047		
	File register	FL	FL0	FL22524		
	Special register	DT	DT9000	DT9255		
	Link register	Ld	Ld0	Ld255		
	GP/LP inner word memory	UW	UW0	UW6047		

Bit R1 = R0.01 , Bit M10 = M0.10 , Bit K101 = K1.01

×1. Depending on CPU type, that range is fluid.

In case of CPL9215A, the range is W0 to W2047. In case of CPL9216A, the range is W0 to W4095.

6.8.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.6.2 Available device'.

Mark Device Note Туре Х Input relay Y Output relay Inner auxiliary relay, Special R Bit relay Т Timer contact С Counter contact UB GP/LP inner bit memory WX Input relay WY Output relay Inner auxiliary relay, Special WR relay WL Link relay ΕV Timer present value Word SV Counter setting value DT16 16bit Data/File/Special register 32bit type combining designated number DT32 Data/File/Special register of device and next number of device FL File register UW GP/LP inner word memory

6.8.3.1 FARA N70 / FARA NX70(CPU 70)

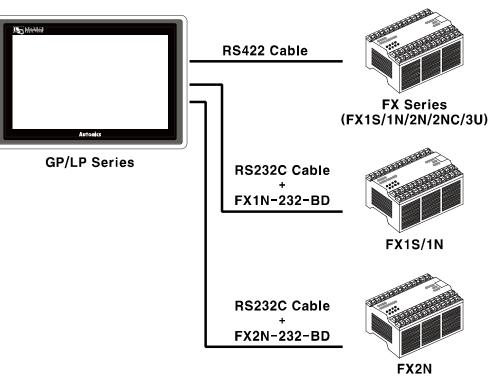
Туре	Mark	Device	Note
	R	Input/Output relay	
	М	Inner auxiliary relay	
D:4	К	Memory protection relay	
Bit	F	Special relay	
	тс	Counter/Counter contact	
	UB	GP/LP inner bit memory	
	R	Input/Output relay	
	М	Inner auxiliary relay	
	К	Memory protection relay	
	F	Special relay	
	PV	Timer/Counter present value	
Word	SV	Timer/Counter setting value	
	W16	Data/File/Special register	16bit
	W32	Data/Fila/Spacial register	32bit type combining designated number
	VV3Z	Data/File/Special register	of device and next number of device
	SR	Special register	
	UW	GP/LP inner word memory	

6.8.3.2 FARA N70 Plus / FARA NX7

6.9 MITSUBISHI PLC

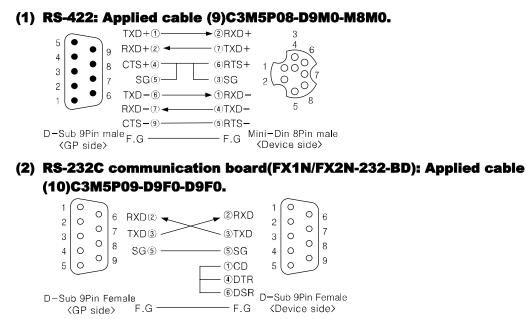
GP/LP is able to communicate with MITSUBISHI FX series.

6.9.1 System organization



FX sereis executes RS422 commnication and it executes also RS232C communication with RS232/422 converter or RS232C communication board (FX1N-232-BD, FX2N-232-BD).

PLC type		Communication method	Communication type
		RS422	CPU direct(Loader)
	FX1S	RS232C	Communication board(FX1N-232-BD)
	FX1N	RS422	CPU direct(Loader)
MITSUBISHI FX		RS232C	Communication board(FX1N-232-BD)
	FX2N	RS422	CPU direct(Loader)
		RS232C	Communication board(FX2N-232-BD)
	FX2NC	RS422	CPU direct(Loader)
	FX3U	RS422	CPU direct(Loader)



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6.9.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

Bit device; X, Y, M, S are not used as general word at PLC. However, it is able to use as word in GP/LP. M, S device are able to switch into word UW device binding 16 unit, X, Y device are able to switch into word UW device binding 8 unit.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'

Refer to below bit/word available device organization and use the device.

-

х		00	0		
① Device name		② Word address ③ Bit address		<u>.</u>	
Туре	1	2		3	Note
	Х	Bit address(Octona	I)		
	Y	Bit address(Octona	I)		
	М	Bit address(Decima	l)		
Bit	S	Bit address(Decima	l)		
	Т	Bit address(Decimal)			
	С	Bit address(Decimal)			
	UB	Decimal		Hexadecimal	
	Х	Word address(Octo	nal)	None	multiple 8 of bit
	Y	Word address(Octo	rd address(Octonal) None		multiple 8 of bit
	М	Word address		multiple 16 of bit	
Word	S	Word address			multiple 16 of bit
vvora	Т	Word address	Word address		
	С	Word address	Word address		
	D	Word address			
	UW	Word address(Deci	mal)	None	

% The address of word M, S is multiple of 16, it is same with M0,M16,M32,...

Ex.

Example of Bit/Word usage

- Word X1 = Bit X10 to X17 , Word M0 = Bit M00 to M15 , UW10 = UB100 to UB10F

6.9.2.1 FX1S

Turne	Davias	Marile	Range		
Туре	Device	Mark	Start	End	
	Input relay	Х	X0	X17	
	Output relay	Y	Y0	Y15	
	Inner auxiliary relay	М	MO	M383	
	Memory protection relay	М	M384	M511	
	Special relay	М	M8000	M8255	
	Status relay	S	S0	S127	
D:4	Timer contact[1ms]	Т	T63	-	
Bit	Timer contact[10ms]	Т	T32	T62	
	Timer contact[100ms]	Т	то	T31	
	Counter contact[16bit]	С	C0	C31	
	Counter contact[32b 1 phase 1count]	С	C235	C245	
	Counter contact[32b 1 phase 2count]	С	C246	C250	
	Counter contact[32b 2 phase 2count]	С	C251	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	Х	X0	X1	
	Output relay	Y	Y0	Y1	
	Inner auxiliary relay	М	MO	M368	
	Memory protection relay	М	M384	M496	
	Special relay	М	M8000	M8240	
	Status relay	S	S0	S112	
	Timer present value[1ms]	Т	T63	-	
	Timer present value[10ms]	Т	T32	T62	
	Timer present value[100ms]	Т	то	T31	
\A/and	Counter present value[16bit]	С	C0	C31	
Word	Counter present value[32b 1 phase	с	C235	C245	
	1count]				
	Counter present value[32b 1 phase	С	C246	C250	
	2count]				
	Counter present value[32b 2 phase 2count]	С	C251	C255	
	Data register	D	D0	D255	
	File register	D	D1000	D2499	
		-	D8000	D8255	
	Special register				
	GP/LP inner word memory	UW	UW0	UW6047	

6.9.2.2 FX1N

Type	Device	Mark	Range		
Туре	Device	Wark	Start	End	
	Input relay	Х	X0	X177	
	Output relay	Y	Y0	Y177	
	Inner auxiliary relay	М	M0	M383	
	Memory protection relay	М	M384	M1535	
	Special relay	М	M8000	M8255	
	Status relay(Memory protection)	S	S0	S999	
	Timer contact[1ms]	Т	T246	T249	
	Timer contact[10ms]	Т	T200	T245	
	Timer contact[100ms]	Т	то	T199	
Bit	Timer contact[100ms](Memory protection)	т	T250	T255	
	Counter contact[16bit]	С	C0	C199	
	Counter contact[32bit]	С	C200	C234	
	Counter contact[32b 1 phase 1count]	С	C235	C245	
	Counter contact[32b 1 phase 2count]	с	C246	C250	
	Counter contact[32b 2 phase 2count]	с	C251	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	х	X0	X17	
	Output relay	Y	Y0	Y17	
	Inner auxiliary relay	М	MO	M368	
	Memory protection relay	М	M384	M1520	
	Special relay	М	M8000	M8240	
	Status relay	S	S0	S976	
	Timer present value[1ms]	Т	T246	T249	
Word	Timer present value[10ms]	Т	T200	T245	
vvoru	Timer present value[100ms]	Т	Т0	T199	
	Timer present				
	value[100ms](Memory	Т	T250	T255	
	protection)				
	Counter present value[16bit]	С	C0	C199	
	Counter present value[32bit]	С	C200	C234	
	Counter present value[32b 1 phase 1count]	с	C235	C245	

Tuno	Device	Mark	Range		
Туре	Device	Wark	Start	End	
	Counter present value[32b 1 phase 2count]	С	C246	C250	
	Counter present value[32b 2 phase 2count]		C251	C255	
	Data register	D	D0	D7999	
	File register		D1000	D7999	
	Special register	D	D8000	D8255	
	GP/LP inner word memory	UW	UW0	UW6047	

6.9.2.3 FX2N

Туре	Device	Maula	Range	
		Mark	Start	End
	Input relay	Х	X0	X267
	Output relay	Y	Y0	Y267
	Inner auxiliary relay	М	M0	M3071
	Special relay	М	M8000	M8255
	Status relay	S	S0	S899
	Annunciator	S	S900	S999
	Timer contact[1ms]	Т	T246	T249
	Timer contact[10ms]	Т	T200	T245
	Timer contact[100ms]	Т	Т0	T199
Bit	Timer contact[100ms](Memory protection)	Т	T250	T255
	Counter contact[16bit]	С	C0	C199
	Counter contact[32bit]	С	C200	C234
	Counter contact[32b 1 phase 1count]	С	C235	C245
	Counter contact[32b 1 phase 2count]	С	C246	C250
	Counter contact[32b 2 phase 2count]	С	C251	C255
	GP/LP inner bit memory	UB	UB0	UB6047F
Word	Input relay	Х	X0	X26
	Output relay	Y	Y0	Y26
	Inner auxiliary relay	М	M0	M3056
	Special relay	М	M8000	M8240
	Status relay	S	S0	S976
	Timer present value[1ms]	Т	T246	T249
	Timer present value[10ms]	Т	T200	T245
	Timer present value[100ms]	Т	Т0	T199
	Timer present value [100ms](Memory protection)	т	T250	T255
	Counter present value[16bit]	С	C0	C199
	Counter present value[32bit]	С	C200	C234
	Counter present value[32b 1 phase 1count]	С	C235	C245
	Counter present value[32b 1 phase 2count]	С	C246	C250

Туре	Device	Mark	Range	
			Start	End
	Counter present value[32b 2	С	C251	C255
	phase 2count]			
	Data register	D	D0	D7999
	File register	D	D1000	D7999
	Special register	D	D8000	D8255
	GP/LP inner word memory	UW	UW0	UW6047

6.9.2.4 FX2NC

Turne	Device	Mark	Range	
Туре		Mark	Start	End
	Input relay	Х	X0	X267
	Output relay	Y	Y0	Y267
	Inner auxiliary relay	М	MO	M3071
	Special relay	М	M8000	M8255
	Status relay	S	S0	S899
	Annunciator	S	S900	S999
	Timer contact[1ms]	Т	T246	T249
	Timer contact[10ms]	Т	T200	T245
	Timer contact[100ms]	Т	Т0	T199
Bit	Timer contact[100ms](Memory protection)	т	T250	T255
	Counter contact[16bit]	С	C0	C199
	Counter contact[32bit]	С	C200	C234
	Counter contact[32b 1 phase 1count]	С	C235	C245
	Counter contact[32b 1 phase 2count]	С	C246	C250
	Counter contact[32b 2 phase 2count]	С	C251	C255
	GP/LP inner bit memory	UB	UB0	UB6047F
	Input relay	Х	X0	X26
	Output relay	Y	Y0	Y26
	Inner auxiliary relay	М	MO	M3056
	Special relay	М	M8000	M8240
	Status relay	S	S0	S976
	Timer present value[1ms]	Т	T246	T249
	Timer present value[10ms]	Т	T200	T245
	Timer present value[100ms]	Т	ТО	T199
Word	Timer present value [100ms](Memory protection)	т	T250	T255
	Counter present value[16bit]	С	CO	C199
	Counter present value[32bit]	C	C200	C234
	Counter present value[32b 1 phase 1count]	С	C235	C245
	Counter present value[32b 1 phase 2count]	С	C246	C250

Туре	Device	Mark	Range	
			Start	End
	Counter present value[32b 2	с	C251	C255
	phase 2count]	Ŭ	0201	
	Data register	D	D0	D7999
	File register	D	D1000	D7999
	Special register	D	D8000	D8255
	GP/LP inner word memory	UW	UWO	UW6047

6.9.2.5 FX3U

Tures	Device	Merile	Range	
Туре		Mark	Start End	
	Input relay	Х	X0	X367
	Output relay	Y	Y0	Y367
	Inner auxiliary relay	М	MO	M7679
	Special relay	М	M8000	M8511
	Status relay	S	S0	S899
	Annunciator	S	S900	S999
	Timer contact[1ms]	Т	T256	T511
	Timer contact[1ms]	т	T246	T240
	Integration type	Т	T246	T249
	Timer contact[10ms]	Т	T200	T245
Bit	Timer contact[100ms]	Т	то	T199
טונ	Timer contact[100ms]	т	T250	T255
	Integration type		1250	1255
	Counter contact[16bit]	С	C0	C199
	Counter contact[32bit]	С	C200	C234
	Counter contact[32b 1 phase	с	C235	C245
	1count]	C	0235	6245
	Counter contact[32b 1 phase	с	C246	C250
	2count]	C	6240	0250
	Counter contact[32b 2 phase	С	C251	C255
	2count]		0251	
	GP/LP inner bit memory	UB	UB0	UB6047F
	Input relay	Х	X0	X36
	Output relay	Y	Y0	Y36
	Inner auxiliary relay	М	MO	M7648
	Special relay	М	M8000	M8496
	Status relay	S	S0	S976
	Timer present value[1ms]	Т	T256	T511
Word	Timer present value[10ms]	Т	T200	T245
vvoiu	Timer present value[100ms]	Т	то	T199
	Timer present value	т	T250	T255
	[100ms](Memory protection)	Т	T250	T255
	Counter present value[16bit]	С	C0	C199
	Counter present value[32bit]	С	C200	C234
	Counter present value[32b 1	с	C225	C245
	phase 1count]		C235	C245

Type	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Counter present value[32b 1 phase 2count]	с	C246	C250
	Counter present value[32b 2 phase 2count]	с	C251	C255
	Data register	D	D0	D7999
File register Special register	File register	D	D1000	D7999
	Special register	D	D8000	D8511
	GP/LP inner word memory	UW	UW0	UW6047

6.9.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status.

Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.7.2 Available device'.

Туре	Mark	Device	Note
	х	Input relay	
	Y	Output relay	
	М	Inner auxiliary relay, Special	
Bit	IVI	relay	
DIL	S	Status relay	
	Т	Timer contact	
	С	Counter contact	
	UB	GP/LP inner bit memory	
	Х	Input relay	
	Y	Output relay	
	м	Inner auxiliary relay, Special	Multiple of 16 (NO M16 M22)
		relay	Multiple of 16 (M0, M16, M32,)
	S	Status relay	Multiple of 16 (S0, S16, S32,)
Word	Т	Timer present value	
	С	Counter present value	
	D16	Data/File/Special register	16bit
	D32	Data/File/Special register	32bit type combining designated number of device and next number of device
	UW	GP/LP inner word memory	

6.10 MITSUBISHI Q series PLC connection

GP/LP is able to communicate with MITSUBISHI Q series.

6.10.1 System organization

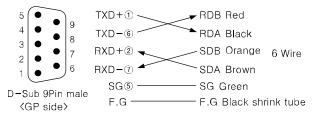
The following table is for system organization of this protocol.

PLC Communication module		Cable	GP/LP	
		\leftrightarrow	E Sinner	
Q00J/Q00/Q01	QJ71C24N	RS-232C		
Q02/Q02H/Q06H	02/Q02H/Q06H QJ71C24N-R2		GP/LP series	
/Q12H/Q25H	QJ71C24N-R4	RS-422 / RS-485		

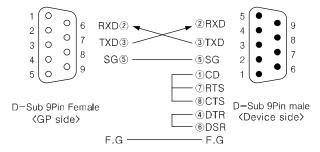
PLC type			Program capacity	The number of I/O point
	Basic model	Q00J	8K	245 points
		Q00	8K	1024 points
		Q01	14K	1024 points
		Q02	28K	4096 points
MITSUBISHI Q		Q02H	28K	4096 points
	High performance model	Q06H	60K	4096 points
	houer	Q12H	124K	4096 points
		Q25H	252K	4096 points

Serial communication module type	Communication channel
QJ71C24N	RS-232 1CH, RS-422/485 1CH
QJ71C24N-R2	RS-232 2CH
QJ71C24N-R4	RS-422/485 2CH

(1) RS-422: Applied cable (5)C3M5P04-D9M0-W6*0



(2) RS-232C: Applied cable (6)C3M5P05-D9F0-D9M0



6.10.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

х	00	0
1 Device name	② Word address	③ Bit address

Туре	1	2	3	
	Х	Bit address(Hexadecimal)		
	Y	Bit address(Hexadecimal)		
	М	Bit address(Decimal)		
	L	Bit address(Decimal)		
Bit	SM	Bit address(Decimal)		
DIL	В	Bit address(Hexadecimal)		
	F	Bit address(Decimal)		
	TS	Bit address(Decimal)		
	CS	Bit address(Decimal)		
	UB	Decimal	Hexadecimal	
	W	Word address		
	TN	Word address		
Word	CN	Word address		
vvoru	D	Word address		
	SD	Word address		
	UW	Word address(Decimal)	None	

Ex.

UW10 = UB100 to UB10F

6.10.2.1 Q00J / Q00 / Q01

Туре	Device	Mark	Range	Range	
туре		Wark	Start	End	
	Input relay	Х	X0	X7FF	
	Output relay	Y	Y0	Y7FF	
	Auxiliary relay	М	MO	M8191	
	Special relay	SM	SM0	SM1023	
Bit	Latch relay	L	LO	L2047	
ы	Facility error detecting relay	F	F0	F1023	
	Link relay	В	B0	B07FF	
	Timer contact	TS	TS0	TS511	
	Counter contact	CS	CS0	CS511	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Data register	D	D0	D11135	
	Special register	SD	SD0	SD1023	
\A/ard	Link register	W	W0	W7FF	
Word	Timer present value	TN	TN0	TN511	
	Counter present value	CN	CN0	CN511	
	GP/LP inner word memory	UW	UWO	UW6047	

6.10.2.2 Q02 / Q02H / Q06H / Q12H / Q25H

Туре	Device	Mark	Range	
Type		IVIAIK	Start	End
	Input relay	Х	X0	X1FFF
	Output relay	Y	Y0	Y1FFF
	Auxiliary relay	М	MO	M8191
	Special relay	SM	SM0	SM2047
D:4	Latch relay	L	LO	L8191
Bit	Facility error detecting relay	F	F0	F2047
	Link relay	В	B0	B01FFF
	Timer contact	TS	TS0	TS2047
	Counter contact	CS	CS0	CS2047
	GP/LP inner bit memory	UB	UB0	UB6047F
	Data register	D	D0	D12287
	Special register	SD	SD0	SD2047
Word	Link register	W	W0	W1FFF
word	Timer present value	TN	TN0	TN2047
	Counter present value	CN	CN0	CN2047
	GP/LP inner word memory	UW	UW0	UW6047

6.10.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.8.2 Available device'.

Туре	Mark	Device	
	Х	Input relay	
	Y	Output relay	
	М	Auxiliary relay	
	SM	Special relay	
Bit	L	Latch relay	
DIL	F	Facility error detecting relay	
	В	Link relay	
	TS	Timer contact	
	CS	Counter contact	
	UB	GP/LP inner bit memory	
	D	Data register	
	SD	Special register	
Word	W	Link register	
word	TN	Timer present value	
	CN	Counter present value	
	UW	GP/LP inner word memory	

6.10.4 MELSEC Q series PLC configuration

6.10.4.1 DX-Developer parameter configuration

(1) I/O assignment

I/O assignment of parameter configuration is to set the type of various module mounted on base module, I/O signal range, and Q series switch.

ltem		Description for setting	
	Туре	Set as 'Intelli'	
	Model Name	Set the mounted module name (QJ71C24N/QJ71C24N-	
	woder Name	R2)	
I/O	Points	Set as 32 points	
assignment	Start XY	Set the lead I/O signal of target module	
assignment	Switch Setting	Set baudrate, transmission specification, communication	
		protocol	
		In case of multi CPU system, set the management CPU of	
	Detailed setting	Q series C24	

	Slot	Type	Model name	P	oints	StartXY	-	
0	PLC	DI 0	•			ordievi		Switch setting
1	0(*-0)		•		-		-	Detailed a where
2	1(*-1)		-		+			Detailed setting
3	2(*-2)	1	-	8	-			
4	3(*-3)		•		-			
5	4(*-4)		•		-			
6	5(*-5)		•		-			
Ĺ	ssigning. eaving th	the I/O addre 's setting bla	I ess is not necess nk will not cause :	ary as the C an error to c	CPU doe occur,	s it autor	atically,	
L	Assigning Leaving th Le setting(is setting bia	ess is not necess nk will not cause :	ary as the C an error to c	CPU doe occur,	s it autor	natically,	- Base mode
L	e setting(*)	ess is not necess nk will not cause Power model name	ary as the C an error to c Extension c		s it autor	natically,	Base mode -
Bas	e setting(*)					Tatically,	
Bas M	e setting(*)					Tatically,	 Auto
Bas M Ext.E	e setting(Bas ain	*)					-I Tatically,	 Auto C Detail
Bas M Ext.E	e setting(Bas ain Base1	*)					-1 Tatically,	 Auto

(2) Switch setting

						Inpu	ıt format	HEX,	_
	Slot	Туре	Model name	Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	•]
0	PLC	PLC							T.
1	0(*-0)	Intelli.	QJ71C24N	OBE6	0001	OBE6	0001	0000	
2	1(*-1)								
3	2(*-2)								
4	3(*-3)								
5	4(*-4)								
6	5(*-5)								
7	6(*-6)								
8	7(*-7)				0				
9	8(*-8)								
10	9(*-9)				0				
11	10(*-10)								
12	11(*-11)				<u>]</u>				
13	12(*-12)								
14	13(*-13)								
15	14(*-14)								-

Switch setting description

Switch No.	Description	Note	
	B15 to b8	B7 to b0	
Switch 1		CH1 transmission	
	CH1 baudrate setting	setting	
Switch 2	CH1 communication protocol	Should be set as 1	
	B15 to b8	B7 to b0	
Switch 3	CH2 boudrate patting	CH2 transmission	
	CH2 baudrate setting	setting	
Switch 4	CH2 communication protocol type setting		Should be set as 1
Switch 5	Station setting		

Transmission setting - CH1(Switch 1), CH2(Switch 3)

Bit	Description	OFF(0)	ON(1)	Note
B0	Operation setting	Separate	Link	CH1 should be set as OFF
B1	Data bit	7	8	Set as 8
B2	Parity bit	No	Yes	Set as yes
B3	Odd/Even parity	Odd	Even	Set as odd
B4	Stop bit	1	2	Set as 1
B5	Checksum code	No	Yes	Set as yes
B6	RUN write	Restriction	Allowance	Set as allowance
B7	Setting change	Restriction	Allowance	Set as allowance

Transmission speed setting

Baudrate(bps)	Bit unit	Baudrate (bps)	Bit unit	
Baddrate(bp3)	B15 to B8	Baddrate (bp3)	B15 to B8	
50	0Fh	14400	06h	
300	00h	19200	07h	
600	01h	28800	08h	
1200	02h	38400	09h	
2400	03h	57600	0Ah	
4800	04h	115200	0Bh	
9600	05h	230400	0Ch	

If two interfaces connect to correspondence device respectively, the sum of communication speed for both interfaces should be set 115,200bps or less(For QJ71C24N(-R2/R4), 230,400bps or less).

If only one interface connects to correspondence device, the communication speed for this interface can be set the maximum 115,200bps.(For QJ71C24N(-R2/R4), available to set maximum 230400bps).

In this case, please set the communication speed for the other interface to 300bps.

6.10.5 GP/PLC type configuration in GP Editor

6.10.5.1 Basic Model CPU

For using Q00J / Q00 / Q01 CPU, select [MITSUBISHI Q SERIES]–[QBasic_EXT_MC].

GP/PLC Type	×
GP/LP Type : LP-S044 S1D0 (240 X 80)	
CH1 Group : MITSUBISHI Q SERIES	
CH1 Type : QBasic_EXT_MC MASTER	
CH2 CH2 Group : NoUse	
CH2 Type : NoUse	
OK Cancel	

6.10.5.2 High Performance Model CPU

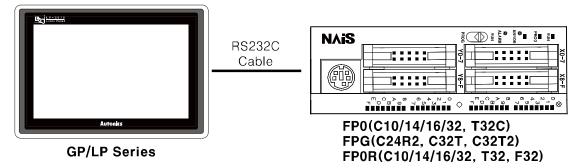
For using Q02 / Q02H / Q06H / Q12H / Q25H CPU, select [MITSUBISHI Q SERIES]– [QHighP_EXT_MC].

GP/PLC Type	X
GP/LP Type : LP-S044 S1D0 (240 X 80)	
CH1 Group : MITSUBISHI Q SERIES	[
CH1 Type : OHighP_EXT_MC MASTER	
CH2	
CH2 Group : NoUse	
CH2 Type : NoUse	
OK Cancel	

6.11 Nais PLC connection

GP/LP is able to communicate with Nais FP series.

6.11.1 System organization



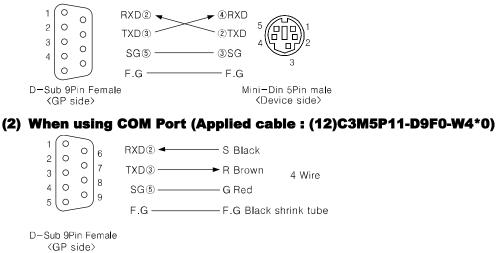
FP sereis executes RS232C commnication. By Tool Port, it is connected with GP/LP. It executes also RS-422 communication with RS-232/422 converter.

PLC type)		Communication method	Communication type	Baudrate (bps)
		FP0-C10			
		FP0-C14			0600
	FP0	FP0-C16	- RS232C	CPU direct(Loader)	9600
		FP0-C32			
		FP0-T32C			
	FP Sigma	FPG-C24R2			
Nais FP		FPG-C32T			19200
INAIS FP		FPG-C32T2			
		FP0R-C10			9600
		FP0R-C14			
	FP0R	FP0R-C16			
	FFUR	FP0R-C32			
		FP0R-T32			
		FP0R-F32			

%Select 'FP0-C16(CPU)' in GP Editor, you can use FP0-C10/C14/C16.

The below is a diagram and pin arrangement for RS-232C cable. It is able to connect with GP/LP with Tool Port or COM Port of PLC.

(1) When using Tool Port (Applied cable : (11)C3M5P10-D9F0-M5M0)



6.11.1.1 PLC communication configuration(When using Tool Port)

PLC communication configuration is available to set or edit from the dedicated ladder program (FPSOFT or FPWIN GR).

(1) When using **FPSOFT**

- 1st After connect the ladder program and PLC, maintain communication status.
- 2nd Select [Option]-[PLC Configuration] of menu in the ladder software.
- 3rd 'PLC Configuration' dialog box appears. Select 'Program port' in the left Topics box.
- 4th Select as below at the right 'No.414 RS232 Baudrate' item.

In case PLC is FP0 series, select '1:9600bps'.

In case PLC is FP Sigma series, select '1:19200bps'.

5th Click 'OK' and dialog box for downloading appears. Click 'OK' and baudrate is

changed.

PLC Configuration		×
Memory Size & Hold Dn/Dff Act Dn Error & Time Out Input Set Optional port Program port	Program port Set Tool Port: No. 410 Station: 1 (1-32) No. 411 Tool Port Format Data Length: + 8bit 7bit Tool Port Modem Connection Enable No. 414 RS232 Baudrate 0.9600bps • Computer Link 1 (1-32)	
Program port	<u></u> Cancel <u></u> efault <u></u> ploadHelp	<u>'</u>

(2) When using FPWIN GR

- 1st After connect the ladder program and PLC, maintain communication status.
- 2nd Select [Option]-[PLC Configuration] of menu in the ladder software.
- 3rd 'PLC Configuration' dialog box appears. Select 'Tool Port' tab.
- 4th Select as below at the 'No.414 Baudrate Setting' item.

In case PLC is FP0 series, select '9600bps'.

In case PLC is FP Sigma series, select '19200bps'.

5th Click 'OK' and dialog box for downloading appears. Click 'OK' and baudrate is changed.

Hold/Non-hold 1 Hold/Non-hold 2 Action on Error Time Link High Speed Counter Interrupt Input Tool Port COM1 Port COM2 Port <u>QK</u> No.410 Unit No. Image: Communication Format Ima

6.11.1.2 PLC communication configuration(When using COM Port)

PLC communication configuration is available to set or edit from the dedicated ladder program (FPSOFT or FPWIN GR).

(1) When using **FPSOFT**

- 1st After connect the ladder program and PLC, maintain communication status.
- 2nd Select [Option]-[PLC Configuration] of menu in the ladder software.
- 3rd 'PLC Configuration' dialog box appears. Select 'Optional port' in the left Topics box.

Memory Size & Hold On/Off	
Act On Error & Time Out Input Set Optional port Program port	No.412 Com Port Selection: Unused Computer Link General No.413 Com Port Send Form:
	Data: 🔿 7bit 🔶 8bit Parity: 🔷 None 🔶 Odd 🔷 Even
	Stop: 🔹 1bit 🔿 2bit Header: 🔄 NO STX 🔷 STX
	Terminator: 🔶 CR 🔿 CR+LF 🔷 None 🔷 ETX
	No. 414 Com Port Baudrate
	No.416 Com Port Modern Connection
	General Link:
	No.417 Receive Buffer Head Address: 0 (0- 6143) No.418 Receive Buffer Capacity: 6144

- 4th Select 'Computer Link' at the 'No.412 Com Port Selection' item.
- 5th Select as below at the 'No.414 Com Port Baudrate' item.

In case PLC is FP0 series, select '1:9600bps'.

In case PLC is FP Sigma series, select '0:19200bps'.

- 6th Click 'OK' and dialog box for downloading appears. Click 'OK' and baudrate is changed.
- 7th After completing configuration, PLC model should be RUN status once to use COM Port.

(2) When using FPWIN GR

- 1st After connect the ladder program and PLC, maintain communication status.
- 2nd Select [Option]-[PLC Configuration] of menu in the ladder software.
- 3rd 'PLC Configuration' dialog box appears. Select 'COM1 Port' tab.
- 4th Select 'Computer Link' at the 'No.412 Comm. Mode'.
- 5th Select as below at the 'No.414 Baudrate' item. In case PLC is FP0 series, select '9600bps'.

In case PLC is FP Sigma series, select '19200bps'.

- 6th Click 'OK' and dialog box for downloading appears. Click 'OK' and baudrate is changed.
- 7th After completing configuration, PLC model should be RUN status once to use COM Port.

PLC Configuration - Untitle1	X
PLC Configuration – Untitle 1 Hold/Non-hold 1 Hold/Non-hold 2 Action on Error Time Link High Speed Counter Interrupt Input Tool Port COM1 Port COM2 Port No.410 Unit No. Image: Computer Link Modem Enabled Image: Computer Link Modem Enabled No.412 Communication Format No.415 Baudrate Image: Char. Bit: 8 Bits Terminator: CR Image: Char. Bit: 9600 bps Image: Char. Bit: Image: Char. Bit:	K ancel Bead PLC Initialize Help
No.417 Buffer capacity setting for data received of [2048] serial data communication mode [0 - 2048]	

6.11.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

X 00 0

Туре	1	2	3	
	х	Decimal	Hexadecimal	
	Y	Decimal	Hexadecimal	
	R	Decimal	Hexadecimal	
Bit	L	Decimal	Hexadecimal	
	Т	Bit address(Decimal)		
	С	Bit address(Decimal)		
	UB	Decimal	Hexadecimal	
	WX	Word address(Decimal)	None	
	WY	Word address(Decimal)	None	
	WR	Word address(Decimal)	None	
Word	WL	Word address(Decimal)	None	
vvord	EV	Word address(Decimal)		
	SV	Word address(Decimal)		
	DT	Word address(Decimal)		
	UW	Word address(Decimal)	None	

6.11.2.1 FP0-C10/14/16

Tuna	Device	Mark	Range		
Туре	Device	IVIAIK	Start	End	
	Input relay	Х	X0	X12F	
	Output relay	Y	Y0	Y12F	
	Inner auxiliary relay	R	R0	R62F	
	Special relay	R	R9000	R903F	
Bit	Timer contact[1ms]	Т	то	Т99	
Dit	Timer contact[10ms]	Т	то	Т99	
	Timer contact[100ms]	Т	то	Т99	
	Timer contact[1000ms]	Т	то	Т99	
	Counter contact[16bit]	С	C100	C143	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	WX	WX0	WX12	
	Output relay	WY	WY0	WY12	
	Inner auxiliary relay	WR	WR0	WR62	
	Special relay	WR	WR900	WR903	
	Timer present value[1ms]	EV	EV0	EV99	
	Timer present value[10ms]	EV	EV0	EV99	
	Timer present value[100ms]	EV	EV0	EV99	
	Timer present value[1000ms]	EV	EV0	EV99	
Word	Timer setting value[1ms]	SV	SV0	SV99	
	Timer setting value[10ms]	SV	SV0	SV99	
	Timer setting value[100ms]	SV	SV0	SV99	
	Timer setting value[1000ms]	SV	SV0	SV99	
	Counter present value[16bit]	EV	EV100	EV143	
	Counter setting value[16bit]	SV	SV100	SV143	
	Data register	DT	DT0	DT1659	
	Special register	DT	DT9000	DT9111	
	GP/LP inner word memory	UW	UW0	UW6047	

6.11.2.2 FP0-C32

T	Device	Marila	Range	Range		
Туре	Device	Mark	Start	End		
	Input relay	Х	X0	X12F		
	Output relay	Y	Y0	Y12F		
	Inner auxiliary relay	R	R0	R62F		
	Special relay	R	R9000	R903F		
Bit	Timer contact[1ms]	Т	ТО	Т99		
Dit	Timer contact[10ms]	Т	ТО	Т99		
	Timer contact[100ms]	Т	ТО	Т99		
	Timer contact[1000ms]	Т	ТО	Т99		
	Counter contact[16bit]	С	C100	C143		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	WX	WX0	WX12		
	Output relay	WY	WY0	WY12		
	Inner auxiliary relay	WR	WR0	WR62		
	Special relay	WR	WR900	WR903		
	Timer present value[1ms]	EV	EV0	EV99		
	Timer present value[10ms]	EV	EV0	EV99		
	Timer present value[100ms]	EV	EV0	EV99		
	Timer present value [1000ms]	EV	EV0	EV99		
Word	Timer setting value[1ms]	SV	SV0	SV99		
	Timer setting value[10ms]	SV	SV0	SV99		
	Timer setting value[100ms]	SV	SV0	SV99		
	Timer setting value[1000ms]	SV	SV0	SV99		
	Counter present value [16bit]	EV	EV100	EV143		
	Counter setting value[16bit]	SV	SV100	SV143		
	Data register	DT	DT0	DT6143		
	Special register	DT	DT9000	DT9111		
	GP/LP inner word memory	UW	UW0	UW6047		

6.11.2.3 FP0-T32C

Tuna	Device	Mark	Range		
Туре	Device	IVIAIK	Start	End	
	Input relay	Х	X0	X12F	
	Output relay	Y	Y0	Y12F	
	Inner auxiliary relay	R	R0	R62F	
	Special relay	R	R9000	R903F	
Bit	Timer contact[1ms]	Т	то	Т99	
Dit	Timer contact[10ms]	Т	то	Т99	
	Timer contact[100ms]	Т	то	Т99	
	Timer contact[1000ms]	Т	то	Т99	
	Counter contact[16bit]	С	C100	C143	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	WX	WX0	WX12	
	Output relay	WY	WY0	WY12	
	Inner auxiliary relay	WR	WR0	WR62	
	Special relay	WR	WR900	WR903	
	Timer present value[1ms]	EV	EV0	EV99	
	Timer present value[10ms]	EV	EV0	EV99	
	Timer present value[100ms]	EV	EV0	EV99	
	Timer present value[1000ms]	EV	EV0	EV99	
Word	Timer setting value[1ms]	SV	SV0	SV99	
	Timer setting value[10ms]	SV	SV0	SV99	
	Timer setting value[100ms]	SV	SV0	SV99	
	Timer setting value[1000ms]	SV	SV0	SV99	
	Counter present value[16bit]	EV	EV100	EV143	
	Counter setting value[16bit]	SV	SV100	SV143	
	Data register	DT	DT0	DT16382	
	Special register	DT	DT90000	DT90111	
	GP/LP inner word memory	UW	UW0	UW6047	

6.11.2.4 FPG-C24R2

Tune	Device	Mark	Range	Range		
Туре	Device	wark	Start	End		
	Input relay	Х	X0	X73F		
	Output relay	Y	Y0	Y73F		
	Inner auxiliary relay	R	R0	R97F		
	Special relay	R	R9000	R910F		
	Link relay	L	LO	L63F		
Bit	Timer contact[1ms]	Т	то	T1007		
	Timer contact[10ms]	Т	то	T1007		
	Timer contact[100ms]	Т	то	T1007		
	Timer contact[1000ms]	Т	то	T1007		
	Counter contact[16bit]	С	C1008	C1023		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	WX	WX0	WX73		
	Output relay	WY	WY0	WY73		
	Inner auxiliary relay	WR	WR0	WR97		
	Special relay	WR	WR900	WR910		
	Link relay	WL	WL0	WL63		
	Timer present value[1ms]	EV	EV0	EV1007		
	Timer present value[10ms]	EV	EV0	EV1007		
Word	Timer present value[100ms]	EV	EV0	EV1007		
	Timer present value [1000ms]	EV	EV0	EV1007		
	Timer setting value[1ms]	SV	SV0	SV1007		
	Timer setting value[10ms]	SV	SV0	SV1007		
	Timer setting value[100ms]	SV	SV0	SV1007		
	Timer setting value[1000ms]	SV	SV0	SV1007		
	Counter present value[16bit]	EV	EV1008	EV1023		
	Counter setting value[16bit]	SV	SV1008	SV1023		
	Data register	DT	DT0	DT32764		
	Special register	DT	DT90000	DT90259		
	GP/LP inner word memory	UW	UW0	UW6047		

6.11.2.5 FPG-C32T

Tuno	Device	Mark	Range		
Туре	Device	IVIA I K	Start	End	
	Input relay	Х	X0	X31F	
	Output relay,	Y	Y0	Y31F	
	Inner auxiliary relay	R	R0	R97F	
	Special relay	R	R9000	R910F	
	Link relay	L	LO	L63F	
Bit	Timer contact[1ms]	Т	то	T1007	
	Timer contact[10ms]	Т	ТО	T1007	
	Timer contact[100ms]	Т	то	T1007	
	Timer contact[1000ms]	Т	ТО	T1007	
	Counter contact[16bit]	С	C1008	C1023	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	WX	WX0	WX31	
	Output relay	WY	WY0	WY31	
	Inner auxiliary relay	WR	WR0	WR97	
	Special relay	WR	WR900	WR910	
	Link relay	WL	WL0	WL63	
	Timer present value[1ms]	EV	EV0	EV1007	
	Timer present value[10ms]	EV	EV0	EV1007	
	Timer present value[100ms]	EV	EV0	EV1007	
Word	Timer present value [1000ms]	EV	EV0	EV1007	
	Timer setting value[1ms]	SV	SV0	SV1007	
	Timer setting value[10ms]	SV	SV0	SV1007	
	Timer setting value[100ms]	SV	SV0	SV1007	
	Timer setting value[1000ms]	SV	SV0	SV1007	
	Counter present value[16bit]	EV	EV1008	EV1023	
	Counter setting value[16bit]	SV	SV1008	SV1023	
	Data register	DT	DT0	DT32764	
	Special register	DT	DT90000	DT90259	
	GP/LP inner word memory	UW	UW0	UW6047	

6.11.2.6 FPG-C32T2

T	Device	Mark	Range	Range		
Туре	Device	Mark	Start	End		
	Input relay	Х	X0	X73F		
	Output relay	Y	Y0	Y73F		
	Inner auxiliary relay	R	R0	R97F		
	Special relay	R	R9000	R910F		
	Link relay	L	LO	L63F		
Bit	Timer contact[1ms]	Т	то	T1007		
	Timer contact[10ms]	Т	ТО	T1007		
	Timer contact[100ms]	Т	то	T1007		
	Timer contact[1000ms]	Т	то	T1007		
	Counter contact[16bit]	С	C1008	C1023		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	WX	WX0	WX73		
Word	Output relay	WY	WY0	WY73		
	Inner auxiliary relay	WR	WR0	WR97		
	Special relay	WR	WR900	WR910		
	Link relay	WL	WL0	WL63		
	Timer present value[1ms]	EV	EV0	EV1007		
	Timer present value[10ms]	EV	EV0	EV1007		
	Timer present value[100ms]	EV	EV0	EV1007		
	Timer present value [1000ms]	EV	EV0	EV1007		
	Timer setting value[1ms]	SV	SV0	SV1007		
	Timer setting value[10ms]	SV	SV0	SV1007		
	Timer setting value[100ms]	SV	SV0	SV1007		
	Timer setting value[1000ms]	SV	SV0	SV1007		
	Counter present value[16bit]	EV	EV1008	EV1023		
	Counter setting value[16bit]	SV	SV1008	SV1023		
	Data register	DT	DT0	DT32764		
	Special register	DT	DT90000	DT90259		
	GP/LP inner word memory	UW	UW0	UW6047		

6.11.2.7 FPOR-C10/C14/C16

Туре	Device	Mark	Range		
туре		Wark	Start	End	
	Input relay	Х	X0	X109F	
	Output relay	Y	Y0	Y109F	
	Inner auxiliary relay	R	R0	R255F	
	Special relay	R	R9000	R913F	
Bit	Timer contact[1ms]	Т	ТО	T1023	
ы	Timer contact[10ms]	Т	то	T1023	
	Timer contact[100ms]	Т	ТО	T1023	
	Timer contact[1000ms]	Т	то	T1023	
	Counter contact[16bit]	С	C100	C1023	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	WX	WX0	WX109	
	Output relay	WY	WY0	WY109	
	Inner auxiliary relay	WR	WR0	WR255	
	Special relay	WR	WR900	WR913	
	Timer present value[1ms]	EV	EV0	EV1024	
	Timer present value[10ms]	EV	EV0	EV1024	
	Timer present value[100ms]	EV	EV0	EV1024	
Word	Timer present value [1000ms]	EV	EV0	EV1024	
word	Timer setting value[1ms]	SV	SV0	SV1024	
	Timer setting value[10ms]	SV	SV0	SV1024	
	Timer setting value[100ms]	SV	SV0	SV1024	
	Timer setting value[1000ms]	SV	SV0	SV1024	
	Counter present value[16bit]	EV	EV100	EV1024	
	Counter setting value[16bit]	SV	SV100	SV1024	
	Data register	DT	DT0	DT12315	
	Special register	DT	DT90000	DT90439	
	GP/LP inner word memory	UW	UW0	UW6047	

6.11.2.8 FP0R-C32/F32/T32

Tuno	Device	Mark	Range		
Туре	Device	IVIAIK	Start	End	
	Input relay	Х	X0	X109F	
	Output relay	Y	Y0	Y109F	
	Inner auxiliary relay	R	R0	R255F	
	Special relay	R	R9000	R913F	
Bit	Timer contact[1ms]	Т	ТО	T1023	
Dit	Timer contact[10ms]	Т	ТО	T1023	
	Timer contact[100ms]	Т	ТО	T1023	
	Timer contact[1000ms]	Т	ТО	T1023	
	Counter contact[16bit]	С	C100	C1023	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input relay	WX	WX0	WX109	
	Output relay	WY	WY0	WY109	
	Inner auxiliary relay	WR	WR0	WR255	
	Special relay	WR	WR900	WR913	
	Timer present value[1ms]	EV	EV0	EV1024	
	Timer present value[10ms]	EV	EV0	EV1024	
	Timer present value[100ms]	EV	EV0	EV1024	
	Timer present value[1000ms]	EV	EV0	EV1024	
Word	Timer setting value[1ms]	SV	SV0	SV1024	
	Timer setting value[10ms]	SV	SV0	SV1024	
	Timer setting value[100ms]	SV	SV0	SV1024	
	Timer setting value[1000ms]	SV	SV0	SV1024	
	Counter present value[16bit]	EV	EV100	EV1024	
	Counter setting value[16it]	SV	SV100	SV1024	
	Data register	DT	DT0	DT32765	
	Special register	DT	DT90000	DT90439	
	GP/LP inner word memory	UW	UW0	UW6047	

6.11.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.9.2 Available device'.

Туре	Mark	Device	Note
	Х	Input relay	
	Υ	Output relay	
	R	Inner auxiliary relay, Special	
Bit		relay	
DIL	L	Link relay	In case of FP Sigma series
	Т	Timer contact	
	С	Counter contact	
	UB	GP/LP inner bit memory	
	WX	Input relay	
	WY	Output relay	
	WR	Inner auxiliary relay, Special	
	VVIN	relay	
	WL	Link relay	In case of FP Sigma series
Word	EV	Timer present value	
	SV	Counter setting value	
	DT16	Data/File/Special register	16bit
	DT32	Data/File/Special register	32bit type combining designated number of device and next number of device
	UW	GP/LP inner word memory	

6.12 OMRON SYSMAC C PLC connection

GP/LP is able to communicate with Omron SYSMAC C series.

6.12.1 System organization



GP/LP Series

SYSMAC C sereis executes RS232C commnication with GP/LP by Tool Port. It executes also RS-422 communication with RS-232/422 converter.

PLC type		Communication method	Communication type	Baudrate (bps)
SYSMAC C	CPM1A	RS232C	CPU direct(Loader)	9600

PLC communication configuration for baudrate is set from the dedicated ladder program (CX-Programmer).

Configuration is as below.

- 1st Connect the dedicated ladder program and set PLC as connectable status.
- 2nd From the workspace window of the ladder program, select 'Setting' item.
- 3rd 'PLC Settings' dialog box appears. Select 'Peripheral Port' tab. Click 'Standard

(9600;1,7,2,E)' of 'Communication Settings' item.

😽 PLC Settings - NewPLC1	
<u>File Options H</u> elp	
Startup Cycle Time Interrupt/Refresh Error Settings Peripheral Port High Si Communications Settings • Standard (9500 11.7.2,E) • Custom Baud Format • I.7.1,E • Host Link • Host Link • O • • +10 • 10 • • • • • • • • • • • • • • •	peed Counter Link Words LR00 to LR15
	CPM1(CPM1A)-CPU10 Offline

Communication cable connected with GP/LP is loader connection cable(CQM1-CIF02) of OMRON.

If PLC mode is Run, PLC device is available only monitor from GP/LP, and every device status is not able to change. (PLC specification) For changing PLC device status from GP/LP, set PLC mode to Program or Monitor.

6.12.2 Available device

Г

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

IR		00)	0		
1 Device name 2		2	Word address ③ Bit address			
Туре	1		2		3	Note
	IR		Decimal		Decimal	Bit address 0 to 15
	HR		Decimal		Decimal	Bit address 0 to 15
	SR		Decimal		Decimal	Bit address 0 to 15
Bit	AR		Decimal		Decimal	Bit address 0 to 15
	LR		Decimal		Decimal	Bit address 0 to 15
	TC		Bit address(Deci	mal)		
	UB		Decimal		Hexadecimal	
	IR		Word	None		
			address(Decimal)		None	
	HR		Word		None	
			address(Decimal)		None	
	SR		Word		None	
			address(Decimal)			
Word	AR		Word		None	
, viola	/		address(Decimal)			
	LR		Word		None	
			address(Decimal)		Nono	
	тс		Word address(Decimal)			
	DM		Word address(De	ecimal)		
	UW		Word		None	
			address(Decimal	l)		

6.12.2.1 CPM1A

6 Connectable PLC

Turne	Device	Mark	Range	Range		
Туре	Device	Mark	Start	End		
	Input relay	IR	IR0	IR915		
	Output relay	IR	IR1000	IR1915		
	Inner auxiliary relay *1	IR	IR20000	IR23115		
	Memory protection relay	HR	HR0	HR1915		
	Special relay	SR	SR23200	SR25515		
Bit	Special relay 2	AR	AR0	AR1515		
	Link relay	LR	LR0	LR1515		
	Timer contact[10ms]	TC	TC0	TC127		
	Timer contact[100ms]	TC	TC0	TC127		
	Counter contact[16bit]	TC	TC0	TC127		
	GP/LP inner bit memory	UB	UB0	UB6047F		
	Input relay	IR	IR0	IR9		
	Output relay	IR	IR10	IR19		
	Inner auxiliary relay	IR	IR200	IR231		
	Memory protection relay	HR	HR0	HR19		
	Special relay	SR	SR232	SR255		
\A/a val	Special relay 2	AR	AR0	AR15		
Word	Link relay	LR	LR0	LR15		
	Timer present value[10ms]	TC	TC0	TC127		
	Timer present value[100ms]	тс	TC0	TC127		
	Counter present value	тс	TC0	TC127		
	Data register*2	DM	DM0	DM6655		
	GP/LP inner word memory	UW	UW0	UW6047		

※1. The relay of PLC IR20000 to IR23115 range is work area. This range relay opeate similar as inner auxiliary relay of other PLCs, GP/LP assigns these as inner auxiliary relay.

%2. Available data register range

No.	Range		Note
NO.	Start	End	Note
1	DM0	DM999	Enable read, write
2	DM1000	DM1021	Save error code and time
3	DM1022	DM1023	Enable read, write
4	DM6144	DM6599	Enable only read
5	DM6600	DM6655	Enable only read

For further details of this function, refer to the specific PLC manual.

6.12.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

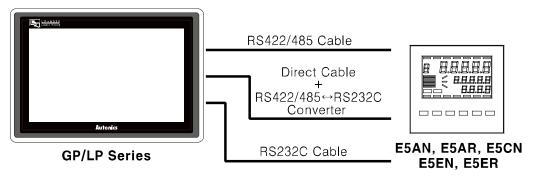
The following is avilable device list of this menu, and available range is same as '6.10.2 Available device'.

Туре	Mark	Device	Note
	IR	Input relay, output relay, inner auxiliary relay	
	HR	Memory protection relay	
	SR	Special relay	
Bit	AR	Special relay	
	LR	Link relay	
	тс	Timer/Counter contact	
	UB	GP/LP inner bit memory	
	IR	Input relay, output relay, inner auxiliary relay	
	HR Memory protection relay		
	SR	Special relay	
	AR Special relay		
	LR	Link relay	
Word	тс	Timer/Counter present value	
	DM16	Data register	16bit
	DM32	Data register	32bit type combining designated number of device and next number of device
	UW	GP/LP inner word memory	

6.13 OMRON temperature controller connection

GP/LP is able to communicate with Omron temperature controller E5XX series.

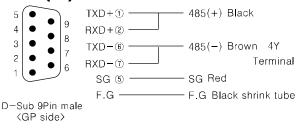
6.13.1 System organization



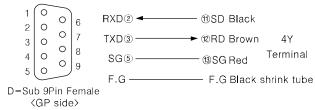
Omron E5XX sereis executes RS485 commnication. It executes also RS232C commnication with RS485/232 converter. E5AN and E5EN support RS232C communication without converter depending on the model.

Controller type	Communication method	Communication type
E5AN	RS485, RS232C	CPU direct(Loader)
E5AR	RS485	CPU direct(Loader)
E5CN	RS485	CPU direct(Loader)
E5EN	RS485, RS232C	CPU direct(Loader)
E5ER	RS485	CPU direct(Loader)

(1) RS-485 communication with GP/LP(E5AN, E5AR, E5CN): Applied cable (15) C3M5P03-D9M0-T4Y0



(2) RS-232C communication with GP/LP(E5AN, E5EN): Applied cable (14)C3M5P13-D9F0-T4Y0



6.13.2 Communication configuration

The below table is for communication configuration of Omron E5XX series with GP/LP.

No.	Item	Description	Description	
4	Communication	Modbus RTU		
1	mode			
2	Baudrate	9600 bps		Fixed
	Data type	Data length	8 bit	Fixed
3		Parity	NONE	Fixed
		Stop bit	1 bit	Fixed
4	Station	0 to 31		Selectable

(1) Omron E5XX series communication configuration

Designate communication configuration for Omron E5XX series. For more details, refer to 'Omron E5XX series user manual'.

- 1st At operation level, press front button in 3 sec and it moves to input initial configuration level.
- 2nd At input initial configuration level, press button, it moves to communication configuration level.

At each menu, press keys to set.

3rd Press Rey and it moves to other menus and press Rev also to set as same method.

Display status	Description	Setting value	Note
PSEL	Select protocol	ñād	Modbus
U-nō	Communication station	0 to 99	Enable to set as user-defined
6P5	Baudrate	9.6	9.6 kbps
LEn	Communication data length	8	8bit
5626	Stop bit	1	1bit
РгЕУ	Parity	nānE	NONE
5646	Waiting time of transmission	-	Display only when 우5EL is ር 모두

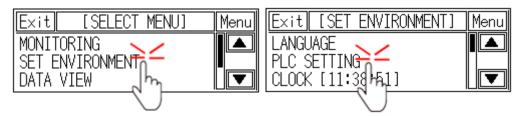
(2) GP/LP communication configuration

As above configuration, GP/LP also should be set for the station as below.

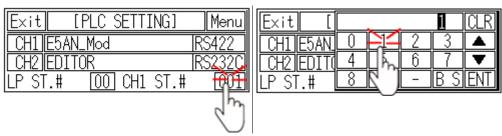
- 1st Enter system setting menu. Touch left-upper point as default position of system
 - setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd Touch CH1 station, station input key pad appears. Enter the same station of the station which is set from E5XX series.



Touch 'ENT' to save the station and touch 'Menu' or 'Exit' to exit system setting meun.

6.13.3 Available device

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

UB	00	0
a a .	a	

Device name
 Word address
 Bit address

Туре	1	2	3	
Bit	UB	Decimal Hexadecima		
	М	Word address(Decimal)		
Word	D	Word address(Hexadecimal)		
	UW	Word address(Decimal) None		

6.13.3.1 E5AN, E5CN, E5EN

Tuno	Device	Mark	Range		
Туре	Device	Wark	Start	End	
Bit	GP/LP inner bit memory	UB	UB0	UB6047F	
Word	Operation command device ^{**1}	М	M0	M0	
	Variable device ^{×2}	D	D0	D3FFF	
	GP/LP inner word memory	UW	UW0	UW6047	

6.13.3.2 E5AR, E5ER

Type	Device	Mark	Range	
Туре	Device		Start	End
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
Word	Operation command device *1	М	M0	M0
	Variable device ^{x2}	D	D0	DFFFF
	GP/LP inner word memory	UW	UW0	UW6047

%1. It is used device when operating command. Enter the specific value, it executes the below table operation.

%2. Device address is same as each variable of temperature controller. For further details of

each variable	, refer to the	each product	manual.
---------------	----------------	--------------	---------

Command value (DEC)	Executing operation		Note
00000	Communication Write	Stops communication write	
00001		Allows communication write	
00256	DUNICTOD	RUN	
00257	RUN/STOP	STOP	
00512	Multi SP	Target value 0	

Command value (DEC)	Command description	Executing operation	Note
00513		Target value 1	
00514		Target value 2	
00515		Target value 3	
00768		Stops AT	
00769	AT	Executes AT	Available when it
00769			is STOP
01024	Write mode	Backup write mode	
01025	while mode	Write mode RAM	
01280	Preserves RAM DATA	Preserves RAM DATA	
01536	Soft reset	Soft reset	
01792	Executes setting area 1	Executes setting area 1	
02048	Executes protect level	Executes protect level	
02304		AUTO mode	
02305	AUTO/ MANUAL	MANUAL mode	
02816		Initial default of setting value	
02817	Initializes setting value	Initial setting service value	
04352	Storto program	Start reset program	
04353	Starts program	Starts program	

6.13.4 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.11.3 Available device'.

Туре	Mark	Device	Note
Bit	UB	GP/LP inner bit	
		memory	
Word	М	Operation command	
		device	
	DM16	Variable Device	16bit
	DM32	Variable Device	32bit type combining designated number of
			device and next number of device
	UW	GP/LP inner word	
		memory	

6.14 SIEMENS S7 series connection

GP/LP is able to communicate with SIEMENS S7 series.

6.14.1 System organization



GP/LP Series

SIEMENS S7-200 uses PPI(Point to point interface) communication of SIEMENS and SIEMENS S7-300 uses MPI(Mutil point interface) communication of SIEMENS.

It executes RS232C communication with dedicated cable of SIEMENS. It executes also RS-422 communication with RS-232/422 converter.

PLC type		Communication method	Communication type	Baudrate (bps)
S7 series	200	PPI	CPU direct(Loader)	9600
	300	MPI	CPU direct(Loader)	38400

6.14.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

I		00	0			
① Device name		② Word address	3 B	it address		
Туре	1	2		3		Note
	1	Decimal		Octonal		S7-200 / S7-300
	Q	Decimal		Octonal		S7-200 / S7-300
	V	Decimal		Octonal		S7-200
Bit	М	Decimal		Octonal		S7-200 / S7-300
ы	SM	Decimal		Octonal		S7-200
	Т	Bit address(Decimal)				
	С	Bit address(Decimal)				
	UB	Decimal		Hexadecimal		
	IW	Word address(Deci	mal)	None		S7-200 / S7-300
	QW	Word address(Deci	mal)	None		S7-200 / S7-300
	VW	Word address(Decin	mal)	None		S7-200
Word	MW	Word address(Deci	mal)	None		S7-200 / S7-300
word	SM	Word address(Deci	mal)			S7-200(Special register)
	Т	Word address(Deci	mal)		S7-200(Counter setting value)	
	С	Word address(Deci	mal)			S7-200(Timer present value)
	UW	Word address(Decir	mal)	None		

F Ex.

Word I0 = Bit I0 to I17 , Word UW10 = UB100 to UB10F

6.14.2.1 \$7-200

(1) CPU 221 type

Туре	Device	Mark	Range		
туре	Device	IVIAIN	Start	End	
	Input relay	Ι	10	1157	
	Output relay	Q	Q0	Q157	
	Inner relay	V	V0	V20477	
Bit	Auxiliary relay	М	M0	M317	
ы	Special relay	SM	SM0	SM1857	
	Timer contact	Т	Т0	T255	
	Counter contact	С	C0	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input register	IW	IWO	IW14	
	Output register	QW	QW0	QW14	
	Inner register	VW	VW0	VW2046	
Word	Auxiliary register	MW	MW0	MW30	
word	Special register	SM	SM0	SM184	
	Timer present value	Т	Т0	T255	
	Counter present value	С	C0	C255	
	GP/LP inner word memory	UW	UW0	UW6047	

(2) CPU 222 type

Туре	Device	Mark	Range		
Type	Device	Wark	Start	End	
	Input relay	1	10	1157	
	Output relay	Q	Q0	Q157	
	Inner relay	V	V0	V20477	
Bit	Auxiliary relay	М	M0	M317	
ы	Special relay	SM	SM0	SM2997	
	Timer contact	Т	ТО	T255	
	Counter contact	С	C0	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input register	IW	IWO	IW14	
	Output register	QW	QW0	QW14	
	Inner register	VW	VW0	VW2046	
Word	Auxiliary register	MW	MW0	MW30	
word	Special register	SM	SM0	SM298	
	Timer present value	Т	ТО	T255	
	Counter present value	С	C0	C255	
	GP/LP inner word memory	UW	UW0	UW6047	

(3) CPU 224 type

Type	Device	Mark	Range		
Туре	Device	WIATK	Start	End	
	Input relay	I	10	1157	
	Output relay	Q	Q0	Q157	
	Inner relay	V	V0	V81917	
Bit	Auxiliary relay	М	M0	M317	
ы	Special relay	SM	SM0	SM5497	
	Timer contact	Т	то	T255	
	Counter contact	С	C0	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input register	IW	IWO	IW14	
	Output register	QW	QW0	QW14	
	Inner register	VW	VW0	VW8190	
Word	Auxiliary register	MW	MW0	MW30	
word	Special register	SM	SM0	SM548	
	Timer present value	Т	ТО	T255	
	Counter present value	С	C0	C255	
	GP/LP inner word memory	UW	UW0	UW6047	

(4) CPU 224XP, 224XPsi, 226 type

Turne	Davias	Mark	Range		
Туре	Device	Mark	Start	End	
	Input relay	I	10	1157	
	Output relay	Q	Q0	Q157	
	Inner relay	V	V0	V102397	
Bit	Auxiliary relay	М	M0	M317	
ы	Special relay	SM	SM0	SM5497	
	Timer contact	Т	то	T255	
	Counter contact	С	C0	C255	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Input register	IW	IWO	IW14	
	Output register	QW	QW0	QW14	
	Inner register	VW	VW0	VW10238	
	Auxiliary register	MW	MW0	MW30	
Word	Special register	SM	SM0	SM548	
	Timer present value	Т	то	T255	
	Counter present value	С	C0	C255	
	GP/LP inner word memory	UW	UWO	UW6047	

6.14.2.2 **\$7-300**

(1) CPU 312 type

Turne	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Input relay	1	10	110237
Dit	Output relay	Q	Q0	Q10237
Bit	Auxiliary relay	М	M0	M2557
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW1022
	Output register	QW	QW0	QW1022
Word	Auxiliary register	MW	MW0	MW254
	GP/LP INNER WORD	UW		UW6047
	MEMORY	000	UW0	

(2) CPU 312C type

Tuno	Device	Mark	Range	
Туре	Device	wark	Start	End
	Input relay	I	10	110237
Dit	Output relay	Q	Q0	Q10237
Bit	Auxiliary relay	М	M0	M2557
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW1022
	Output register	QW	QW0	QW1022
Word	Auxiliary register	MW	MW0	MW254
	GP/LP INNER WORD	1.15.47		
	MEMORY	UW	UW0	UW6047

(3) CPU 313C type

Tuno	Device	Mark	Range		
Туре	Device	IVIAI K	Start	End	
	Input relay	1	10	110237	
Dit	Output relay	Q	Q0	Q10237	
Bit	Auxiliary relay	М	M0	M2557	
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F	
	Input register	IW	IW0	IW1022	
	Output register	QW	QW0	QW1022	
Word	Auxiliary register	MW	MW0	MW254	
	GP/LP INNER WORD	UW		UW6047	
	MEMORY	000	UW0		

(4) CPU 313C-2 type

Tuno	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Input relay	I	10	120477
Bit	Output relay	Q	Q0	Q20477
DIL	Auxiliary relay	М	M0	M2557
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW2046
)A/and	Output register	QW	QW0	QW2046
Word	Auxiliary register	MW	MW0	MW254
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

(5) CPU 314 type

Tuno	Device	Mark	Range	
Туре	Device	IVIAIK	Start	End
	Input relay	1	10	110237
Dit	Output relay	Q	Q0	Q10237
Bit	Auxiliary relay	М	M0	M2557
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW1022
\A/ard	Output register	QW	QW0	QW1022
Word	Auxiliary register	MW	MW0	MW254
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

(6) CPU 314C-2 type

Tuno	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Input relay	I	10	120477
Bit	Output relay	Q	Q0	Q20477
DIL	Auxiliary relay	М	M0	M2557
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW2046
\A/ard	Output register	QW	QW0	QW2046
Word	Auxiliary register	MW	MW0	MW254
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

(7) CPU 315-2 type

Tuno	Device	Mark	Range	
Туре	Device	IVIAIN	Start	End
	Input relay	1	10	120477
Bit	Output relay	Q	Q0	Q20477
DIL	Auxiliary relay	М	M0	M20477
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW2046
\A/a val	Output register	QW	QW0	QW2046
Word	Auxiliary register	MW	MW0	MW2046
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

(8) CPU 317-2 type

Tuno	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Input relay	I	10	181917
D:4	Output relay	Q	Q0	Q81917
Bit	Auxiliary relay	М	M0	M40957
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW8190
Word	Output register	QW	QW0	QW8190
vvora	Auxiliary register	MW	MW0	MW4094
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

(9) CPU 319-3 type

Tuno	Device	Mark	Range	
Туре	Device	IVIAIK	Start	End
	Input relay	1	10	181917
Dit	Output relay	Q	Q0	Q81917
Bit	Auxiliary relay	М	M0	M81917
	GP/LP INNER BIT MEMORY	UB	UB0	UB6047F
	Input register	IW	IW0	IW8190
\A/ord	Output register	QW	QW0	QW8190
Word	Auxiliary register	MW	MW0	MW8190
	GP/LP INNER WORD MEMORY	UW	UW0	UW6047

6.14.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select

to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.12.2 Available device'.

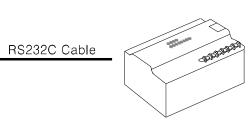
Туре	Mark	Device	Note
	I	Input relay	Read only
	Q	Output relay	Write only
	V	Inner relay	Variable memory
Bit	М	Auxiliary relay	Bit memory
DIL	SM	Special relay	Special memory(Read only)
	Т	Timer contact	
	С	Counter contact	
	UB	GP/LP inner bit memory	
	IW	Input register	Read only
	QW	Output register	Write only
	VW	Inner register	Variable memory
Word	MW	Auxiliary register	Bit memory
vvord	SM	Special register	Special memory(Read only)
	Т	Timer present value	
	С	Counter present value	
	UW	GP/LP inner word memory	

6.15 Allen Bradley MicroLogix series connection

GP/LP is able to communicate with Allen-Bradley MicroLogix series.

6.15.1 System organization





GP/LP Series

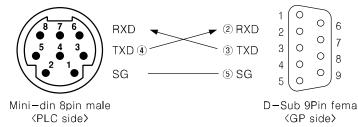
MicroLogix 1000, 2000

Allen-Bradley MicroLogix sereis executes RS232C commnication. If PLC has imbeded RS422 loader port or you use RS232/422 converter, RS422 communication is also available.

PLC type		Communication method	Communication type	Baudrate (bps)
	1000	RS232C	CPU direct(Loader)	9600
MicroLogix	1200	RS232C	CPU direct(Loader)	19200
	1500	RS232C	CPU direct(Loader)	19200

RS232C cable is different by connected PLC type.

The following is RS232C cable diagram and pin arrangement by connected PLC type.



6.15.2 Available device

Device range is different depending on PLC model. Even though same type PLC, there is difference according to the number of I/O contact point.

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

Т

1		00	0	0		
① Device name ② Word address ③ Bit address						
Туре	1	2	3	Format	File No	Note
	Ι	Hexadecimal	Hexadecimal	EESSd	1	Input
	0	Hexadecimal	Hexadecimal	EESSd	0	Output
	S2	Decimal	Hexadecimal	EEEd	2	Status
Bit	B3	Decimal	Hexadecimal	EEEd	3	Binary
	TD	Decimal		EEEd	4	Timer.DN
	CD	Decimal		EEEd	5	Counter.DN
	UB	Decimal	Hexadecimal			
	Ι	Hexadecimal		EESS	1	Input
	0	Hexadecimal		EESS	0	Output
	S2	Decimal		EEE	2	Status
	B3	Decimal		EEE	3	Binary
Word	TS	Decimal		EEE	4	Timer.PRE
word	CS	Decimal		EEE	5	Counter.PRE
	TP	Decimal		EEE	4	Timer.ACC
	СР	Decimal		EEE	5	Counter.ACC
	N7	Decimal		EEE	7	INTEGER
	UW	Decimal				

Format

E: Element, S : Sub Element, d : Bit Position

Ex.

Word I1 = Bit I10 to I1F , Word UW10 = UB100 to UB10F

6.15.2.1 MicroLogix 1000

Tuno	Device	Mark	Range		
Туре	Device	Wark	Start	End	
	Input relay	I	10	I 1F	
	Output relay	0	00	OF	
	Status relay	S2	S2 0	S2 32F	
Bit	Inner relay	B3	B3 0	B3 31F	
	Timer contact	TD	TD 0	TD 39	
	Counter contact	CD	CD 0	CD 31	
	GP/LP inner bit memory	UB	UB 0	UB 6047F	
	Input register	Ι	10	11	
	Output register	0	00	00	
	Status register	S2	S2 0	S2 32	
	Inner register	B3	B3 0	B3 31	
\A/a.ud	Timer setting value	TS	TS 0	TS 39	
Word	Counter setting value	CS	CS 0	CS 31	
	Timer present value	TP	TP 0	TP 39	
	Counter present value	СР	CP 0	CP 31	
	Data register	N7	N7 0	N7 104	
	GP/LP inner word memory	UW	UW 0	UW 6047	

6.15.2.2 MicroLogix 1200

Tuno	Device	Mark	Range	
Туре	Device	Wark	Start	End
	Input relay	I	10	I 3F
	Output relay	0	00	O 3F
	Status relay	S2	S2 0	S2 65F
Bit	Inner relay	B3	B3 0	B3 F
	Timer contact	TD	TD 0	TD 0
	Counter contact	CD	CD 0	CD 0
	GP/LP inner bit memory	UB	UB 0	UB 6047F
	Input register	I	10	13
	Output register	0	00	O 3
	Status register	S2	S2 0	S2 65
	Inner register	B3	B3 0	B3 0
Word	Timer setting value	TS	TS 0	TS 0
vvord	Counter setting value	CS	CS 0	CS 0
	Timer present value	TP	TP 0	TP 0
	Counter present value	СР	CP 0	CP 0
	Data register	N7	N7 0	N7 0
	GP/LP inner word memory	UW	UW 0	UW 6047

6.15.2.3 MicroLogix 1500

Tuno	Device	Mark	Range		
Туре	Device	IVI AT K	Start	End	
	Input relay	I	I 00000	IFFFF	
	Output relay	0	O 00000	O FFFFF	
	Status relay	S2	S2 0	S2 65F	
Bit	Inner relay	B3	B3 0	B3 255F	
	Timer contact	Т	Т 0	T 255	
	Counter contact	С	C 0	C 255	
	GP/LP inner bit memory	UB	UB 0	UB 6047F	
	Input register	I	I 0000	I FFFF	
	Output register	0	O 0000	O FFFF	
	Status register	S2	S2 0	S2 65	
	Inner register	B3	B3 0	B3 255	
Word	Timer setting value	TS	TS 0	TS 255	
vvord	Counter setting value	CS	CS 0	CS 255	
	Timer present value	TP	TP 0	TP 255	
	Counter present value	СР	CP 0	CP 255	
	Data register	N7	N7 0	N7 255	
	GP/LP inner word memory	UW	UW 0	UW 6047	

6.15.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

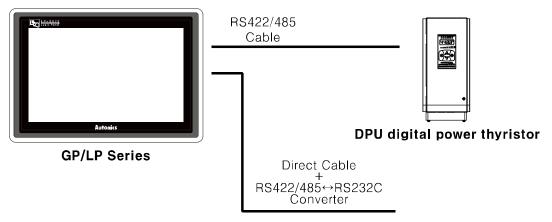
The following is avilable device list of this menu, and available range is same as '6.13.2 Available device'.

Туре	Mark	Device
	I	Input relay
	0	Output relay
	S2	Status relay
Bit	B3	Inner relay
	TD	Timer contact
	CD	Counter contact
	UB	GP/LP inner bit memory
	I	Input register
	0	Output register
	S2	Status register
	B3	Inner register
Word	TS	Timer setting value
vvora	CS	Counter setting value
	TP	Timer present value
	СР	Counter present value
	N7	Data register
	UW	GP/LP inner word memory

6.16 KONICS Product connection

GP/LP is able to communicate with KONICS digital power thyristor unit DPU series and recorder KRN50.

6.16.1 System organization

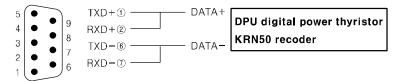


KRN50 recoder

KONICS DPU sereis executes RS485 commnication and it executes also RS232C communication with RS232/422 converter.

Controller type	Communication method	Communication type
DPU	RS485	CPU direct(Loader)
KRN50	RS485	CPU direct(Loader)

Wire as below for communicating GP/LP and RS485.



D-Sub 9Pin male ⟨GP side⟩

The below table is for communication configuration of digital power thyristor unit DPU seires with GP/LP.

No	Item	Description		Note
1	Communication mode	Modbus RTU		
2	Baudrate	38400 bps(Default value of DPU)		Selectable
		Data length	8bit	Selectable
3	Data type	Parity	EVEN	Selectable
		Stop bit	1bit	Selectable
4	Station	0 to 31		Selectable

No	Item	Description	Description	
1	Communication mode	Modbus RTU		
2	Baudrate	9600 bps (Default value of KRN50)		Selectable
		Data length 8bit		Selectable
3	Data type	Parity None		Selectable
		Stop bit	2bit	Selectable
4	Station	0 to 31		Selectable

The below table is for communication configuration of recorder KRN50 with GP/LP.

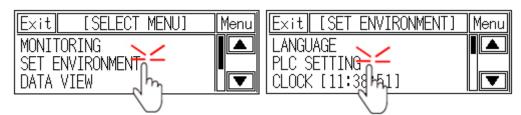
As above configuration, GP/LP also should be set for the station as below.

(1) KONICS DPU series

1st Enter system setting menu. Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd Touch CH1 station, station input key pad appears. Enter the same station of the station which is set from DPU series.

Exit [PLC SETTING]	Menu	Exit
CH1 DPU_Mod	RS422	CH1
CH2 EDITOR	RS2 <u>32C</u>	CH2
LP ST.# 00 CH1 ST.#	t t t t t t t t t t t t t t t t t t t	LP S
	Jm	
	$\langle \rangle$	

Exit [1	CLR
CH1 DPU_N	0)/	2	3	
CH2 EDITO	4	<u> </u>	6	7	▼
LP ST.#	8	[2]	_	ΒS	[ENT]
		~			

- 4th Touch 'ENT' to save the station and touch 'Menu' or 'Exit' to exit system setting meun.
- 5th For recorder KRN50, please designate the configuration as same method.

6.16.2 Available device

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

UB		00	0		
1 Device	① Device name ② Word address ③ Bit address				
Туре	1	2		3	
Bit	UB	Decimal		Hexadecimal	
Word	DP	Word address(Hexa	adecim	al)	
vvoru	UW	Word address(Deci	mal)	None	

6.16.2.1 DPU digital power thyristor unit

(1) Modbus (DPU_Mod)

т	who	Device	Mark	Range		
•	уре			Start	End	
В	Bit	GP/LP inner bit memory	UB	UB0	UB6047F	
		Word device area	DP	DP30001	DP30005	
10	Word	Word device area	DP	DP30101	DP30125	
v		Word device area	DP	DP40001	DP40043	
		GP/LP inner word memory	UW	UW0	UW6047	

Device	Description	Enable read/write
DP30001	Output voltage	Read
DP30002	Load current	Read
DP30003	Electric power	Read
DP30004	Load resistance	Read
DP30005	Power frequency	Read
DP30101	Product number H	Read
DP30102	Product number L	Read
DP30103	Hardware version	Read
DP30104	Software version	Read
DP30105	Model name1	Read
DP30106	Model name2	Read
DP30107	Model name3	Read
DP30108	Model name4	Read
DP30109	Model name5	Read
DP30110	Model name6	Read
DP30111	Model name7	Read

Device	Description	Enable read/write
DP30112	Model name8	Read
DP30113	Model name9	Read
DP30114	Model name10	Read
DP30115	Reserved	Read
DP30116	Reserved	Read
DP30117	Reserved	Read
DP30118	Reserved	Read
DP30118	Coil start address	Read
DP30119	Coil quantity	Read
DP30120	Input start address	Read
DP30121	Input quantity	Read
DP30122	Holding REG start address	Read
DP30123	Holding REG quantity	Read
DP30124	Input REG start address	Read
DP30125	Input REG quantity	Read
Device	Description	Enable read/write
DP40001	Reference value	Read/Write
DP40002	Start time	Read/Write
DP40003	Start limit	Read/Write
DP40004	Soft start time	Read/Write
DP40005	Output high limit	Read/Write
DP40006	Output low limit	Read/Write
DP40007	Remote Sp1 value	Read/Write
DP40008	Remote Sp2 value	Read/Write
DP40009	Remote Sp3 value	Read/Write
DP40010	Remote Sp4 value	Read/Write
DP40011	Remote Sp5 value	Read/Write
DP40012	Remote Sp6 value	Read/Write
DP40013	Slow up time	Read/Write
DP40014	Slow stop time	Read/Write
DP40015	CL value	Read/Write
DP40016	OC value	Read/Write
DP40017	OC time	Read/Write
DP40018	OV value	Read/Write
DP40019	OV time	Read/Write
DP40020	Load detector alarm value	Read/Write
DP40021	Select display regular value	Read/Write
DP40022	Bar display mode	Read/Write

Device	Description	Enable read/write	
DP40023	Control integer KP value	Read/Write	
DP40024	Control integer KI value	Read/Write	
DP40025	Output control mode	Read/Write	
DP40026	Event input 1 mode	Read/Write	
DP40027	Event input 2 mode	Read/Write	
DP40028	Event input 3 mode	Read/Write	
DP40029	Auto ref input selector	Read/Write	
DP40030	Select load resistance display	Read/Write	
	direction		
DP40031	Operation status 0x000	Read/Write	
DP40032	Output gradient setting (%)	Read/Write	
DP40033	When input is 0%, output quantity	Read/Write	
	setting(%)		
DP40034	Input correction	Read/Write	
DP40035	Input gradient correction	Read/Write	
DP40036	Overcurrent alarm output setting	Read/Write	
DP40037	Current alarm output setting	Read/Write	
DP40038	Overvoltage alarm output setting	Read/Write	
DP40039	Fuse break alarm output setting	Read/Write	
DD40040	Frequency error alarm output	Read/Write	
DP40040	setting	Read/white	
DP40041	Heatsink overheating alarm output	Read/Write	
	setting		
DP40042	Element error alarm output setting	Read/Write	
DP40043	Heater break alarm output setting	Read/Write	

Tune	Device	Mark	Range	
Туре	Device	Wark	Start	Start
Bit	GP/LP inner bit memory	UB	UB0	UB6047F
	Word device area	3	300001	300005
Word	Word device area	3	300101	300125
vvoru	Word device area	4	400001	400043
	GP/LP inner word memory	UW	UW0	UW6047

(2) Modbus TYPE A (DPU_Mod_A)

Device	Description	Enable
	-	read/write
300001	Output voltage	Read
300002	Load current	Read
300003	Electric power	Read
300004	Load resistance	Read
300005	Power frequency	Read
300101	Product number H	Read
300102	Product number L	Read
300103	Hardware version	Read
300104	Software version	Read
300105	Model name1	Read
300106	Model name2	Read
300107	Model name3	Read
300108	Model name4	Read
300109	Model name5	Read
300110	Model name6	Read
300111	Model name7	Read
300112	Model name8	Read
300113	Model name9	Read
300114	Model name10	Read
300115	Reserved	Read
300116	Reserved	Read
300117	Reserved	Read
300118	Reserved	Read
300118	Coil start address	Read
300119	Coil quantity	Read
300120	Input start address	Read
300121	Input quantity	Read
300122	Holding REG start address	Read
300123	Holding REG quantity	Read
300124	Input REG start address	Read

Device	Description	Enable read/write
300125	Input REG quantity	Read
Device	Description	Enable read/write
400001	Reference value	Read/Write
400002	Start time	Read/Write
400003	Start limit	Read/Write
400004	Soft start time	Read/Write
400005	Output high limit	Read/Write
400006	Output low limit	Read/Write
400007	Remote Sp1 value	Read/Write
400008	Remote Sp2 value	Read/Write
400009	Remote Sp3 value	Read/Write
400010	Remote Sp4 value	Read/Write
400011	Remote Sp5 value	Read/Write
400012	Remote Sp6 value	Read/Write
400013	Slow up time	Read/Write
400014	Slow stop time	Read/Write
400015	CL value	Read/Write
400016	OC value	Read/Write
400017	OC time	Read/Write
400018	OV value	Read/Write
400019	OV time	Read/Write
400020	Load detector alarm value	Read/Write
400021	Select display regular value	Read/Write
400022	Bar display mode	Read/Write
400023	Control integer KP value	Read/Write
400024	Control integer KI value	Read/Write
400025	Output control mode	Read/Write
400026	Event input 1 mode	Read/Write
400027	Event input 2 mode	Read/Write
400028	Event input 3 mode	Read/Write
400029	Auto ref input selector	Read/Write
400030	Select load resistance display direction	Read/Write
400031	Operation status 0x000	Read/Write
400032	Output gradient setting (%)	Read/Write
400033	When input is 0%, output quantity setting(%)	Read/Write
400034	Input correction	Read/Write
400035	Input gradient correction	Read/Write
400036	Overcurrent alarm output setting	Read/Write

Device	Description	Enable read/write
400037	Current alarm output setting	Read/Write
400038	Overvoltage alarm output setting	Read/Write
400039	Fuse break alarm output setting	Read/Write
400040	Frequency error alarm output setting	Read/Write
400041	Heatsink overheating alarm output setting	Read/Write
400042	Element error alarm output setting	Read/Write
400043	Heater break alarm output setting	Read/Write

6.16.2.2 KRN50 recorder

(1) Modbus (KRN50_Mod)

Device	Description		Enable read/write
KR1	Starts/Stops record	Starts/Stops record	
KR2	At power ON, starts/stops	record	Read/Write
KR3	When recording, whether	printing setting list or not	Read/Write
KR4	Initializes setting value (Pa	arameter initialization) *1	Read/Write
KR5	Memo function(Memo)		Read/Write
KR11	DI-1 input terminal function	า	Read/Write
KR12	DI-2 input terminal function	า	Read/Write
KR51	Paper feed function		Read/Write
KR52	Paper list print function		Read/Write
KR101	CH 1 display mode		Read/Write
KR102	CH 2 display mode		Read/Write
KR103	Display standard mode ^{*1}		Read/Write
Device	Description	Description	
KR10001	Paper status		Enable read/write
KR10101	CH1 AL1 status		Read
KR10102	CH1 AL2 status		Read
KR10103	CH2 AL1 status		Read
KR10104	CH2 AL2 status		Read
KR10301	Digital input 1 status(DI1-	Status)	Read
KR10302	Digital input 2 status(DI2-	Status)	Read
Device	Description		Enable read/write
KR30001	CH1-present value (PV)		Read
	CH1	Bit position	Read
	Unit	15 to 10	Read
	Unit group	9 to 4	Read
KR30002	Status	3 to 2	Read
	Decimal point position of display value	1 to 0	Read

Device	Description		Enable read/write
KR30003	CH2-present value(PV)		Read
	CH2	Bit position	Read
	Unit	15 to 10	Read
KD20004	Unit group	9 to 4	Read
KR30004	Status	3 to 2	Read
	Decimal point position of	1 to 0	Read
KR30101	display value Serial No H		Read
KR30102	Serial No L		Read
KR30103	Software version		Read
KR30104	Hardware version		Read
KR30105	Model name1		Read
KR30106	Model name2		Read
KR30107	Model name3		Read
KR30108	Model name4		Read
KR30109	Model name5		Read
KR30110	Model name6		Read
KR30111	Model name7		Read
KR30112	Model name8		Read
KR30113	Model name9		Read
KR30114	Model name10		Read
KR30118	Coil start address	Coil start address	
KR30119	Coil quantity		Read
KR30120	Input start address		Read
KR30121	Input quantity		
KR30122	Holding REG start address	Holding REG start address	
KR30123	Holding REG quantity		Read
KR30124	Input REG start address		Read
KR30125	Input REG quantity		Read
Device	Description		Enable read/write
KR40001	Communication station		Read/Write
KR40002	Baudrate		
KR40003	Parity bit		
KR40004	Stop bit		
KR40005	Respond time		
KR40006	Allows/Restricts commur	nication write	Read/Write Read/Write
KR40052	Year		Read/Write
KR40053	Month		Read/Write
KR40054			Read/Write

Device	Description	Enable read/write
KR40055	Hour	Read/Write
KR40056	Minute	Read/Write
KR40057	Second	Read/Write
DP40013	Slow up time	Read/Write
DP40014	Slow stop time	Read/Write
DP40015	CL value	Read/Write
DP40016	OC value	Read/Write
DP40017	OC time	Read/Write
DP40018	OV value	Read/Write
DP40019	OV time	Read/Write
KR40066	Lock setting	Read/Write
KR40067	Backlight turn ON method	Read/Write
KR40070	Using reserved record function or not	Read/Write
KR40071	Record start hour	Read/Write
KR40072	Record start minute	Read/Write
KR40073	Record end hour	Read/Write
KR40074	Record end minute	Read/Write
KR40080	Record mode	Read/Write
KR40081	Record speed	Read/Write
KR40082	Digital memo cycle	Read/Write
KR40083	Record cycle	Read/Write
KR40084	Record font	Read/Write
KR40085	When alarming, record speed	Read/Write
KR40101	CH1 alarm output 1 operation mode	Read/Write
KR40102	CH1 alarm output 1 option	Read/Write
KR40103	CH1 alarm output 1 low limit setting value	Read/Write
KR40104	CH1 alarm output 1 high limit setting value	Read/Write
KR40105	CH1 alarm output 2 operation mode	Read/Write
KR40106	CH1 alarm output 2 option	Read/Write
KR40107	CH1 alarm output 2 low limit setting value	Read/Write
KR40108	CH1 alarm output 2 high limit setting value	Read/Write
KR40109	CH1 alarm output hysteresis	Read/Write
KR40110	CH2 alarm output 1 operation mode	Read/Write
KR40111	CH2 alarm output 1 option	Read/Write
KR40112	CH2 alarm output 1 low limit setting value	Read/Write
KR40113	CH2 alarm output 1 high limit setting value	Read/Write
KR40114	CH2 alarm output 2 operation mode	Read/Write
KR40115	CH2 alarm output 2 option	Read/Write
KR40116	CH2 alarm output 2 low limit setting value	Read/Write

Device	Description	Enable read/write
KR40117	CH2 alarm output 2 high limit setting value	Read/Write
KR40118	CH2 alarm output hysteresis	Read/Write
KR42001 to 16	User unit font0	Read/Write
KR42017 to 32	User unit font1	Read/Write
KR42033 to 48	User unit font2	Read/Write
KR42049 to 64	User unit font3	Read/Write
KR42065 to 80	User unit font4	Read/Write
KR42081 to 96	User unit font5	Read/Write
KR42097 to 112	User unit font6	Read/Write
KR420113 to		
128	User unit font7	Read/Write
KR420129 to		
144	User unit font8	Read/Write
KR420145 to	Liese unit fanto	Deed
160	User unit font9	Read/Write
KR40301	CH1 use/recording or not	Read/Write
KR40302	CH1 input specification	Read/Write
KR40303	CH1 temperature unit	Read/Write
KR40304	CH1 graph low limit scale value	Read/Write
KR40305	CH1 graph high limit scale value	Read/Write
KR40306	CH1 low limit input value	Read/Write
KR40307	CH1 high limit input value	Read/Write
KR40308	None	Read/Write
KR40309	CH1 low limit scale display value	Read/Write
KR40310	CH1 high limit scale display value	Read/Write
KR40311	CH1 decimal point position of scale	Read/Write
KR40312	CH1 record display unit	Read/Write
KR40313	CH1 temperature unit	Read/Write
KR40314		Deed
KR40315	CH1 CH name	Read/Write
KR40319	CH2 use/recording or not	Read/Write
KR40320	CH2 input specification	Read/Write
KR40321	CH2 temperature unit	Read/Write
KR40322	CH2 graph low limit scale value	Read/Write
KR40323	CH2 graph high limit scale value	Read/Write
KR40324	CH2 low limit input value	Read/Write
KR40325	CH2 high limit input value	Read/Write
KR40326	None	Read/Write
KR40327	CH2 low limit scale display value	Read/Write

Device	Description	Enable read/write
KR40328	CH2 high limit scale display value	Read/Write
KR40329	CH1 decimal point position of scale	Read/Write
KR40330	CH2 record display unit	Read/Write
KR40331	CH2 input correction	Read/Write
KR40332	CH2 CH name	Deed/Write
to 40333	CH2 CH hame	Read/Write
KR50001		
to 52048	User logo	

(2) Modbus TYPE A (KRN50_Mod_A)

Device	Description	Enable read/write
000001	Starts/Stops record	Read/Write
000002	At power ON, starts/stops record	Read/Write
000003	When recording, whether printing setting list or not	Read/Write
000004	Initializes setting value (Parameter initialization) *1	Read/Write
000005	Memo function(Memo)	Read/Write
000011	DI-1 input terminal function	Read/Write
000012	DI-2 input terminal function	Read/Write
000051	Paper feed function	Read/Write
000052	Paper list print function	Read/Write
000101	CH 1 display mode	Read/Write
000102	CH 2 display mode	Read/Write
000103	Display standard mode ^{*1}	Read/Write

Device	Description	Enable read/write
100001	Paper status	Read/Write
100101	CH1 AL1 status	Read/Write
100102	CH1 AL2 status	Read/Write
100103	CH2 AL1 status	Read/Write
100104	CH2 AL2 status	Read/Write
100301	Digital input 1 status(DI1-Status)	Read/Write
100302	Digital input 2 status(DI2-Status)	Read/Write

Device	Description		Enable read/write
300001	CH1- present value (PV)	CH1- present value (PV)	
	CH1	Bit position	Read
	Unit	15 to 10	Read
300002	Unit group	9 to 4	Read
	Status	3 to 2	Read
	Decimal point position of	4.15.0	Deed
	display value	1 to 0	Read
300003 CH2- present value (PV)		Read	

Device	Description		Enable read/write
	CH2	Bit position	Read
300004	Unit	15 to 10	Read
	Unit group	9 to 4	Read
300004	Status	3 to 2	Read
	Decimal point position of	1 to 0	Read
	display value	1.00	Redu
300101	Serial No H		Read
300102	Serial No L		Read
300103	Software Version		Read
300104	Hardware Version		Read
300105	Model Name1		Read
300106	Model Name2		Read
300107	Model Name3		Read
300108	Model Name4		Read
300109	Model Name5		Read
300110	Model Name6		Read
300111	Model Name7		Read
300112	Model Name8		Read
300113	Model Name9		Read
300114	Model Name10		Read
300118	Coil Start Address		Read
300119	Coil Quantity		Read
300120	Input Start Address		Read
300121	Input Quantity		Read
300122	Holding REG Start Address	Holding REG Start Address	
300123	Holding REG Quantity		Read
300124	Input REG Start Address		Read
300125	Input REG Quantity		Read
Device	Description		Enable read/write
400001	Communication station		Read/Write
400002	Baudrate		Read/Write
400003	Parity bit		Read/Write
400004	Stop bit		Read/Write
400005	Respond time		Read/Write
400006	Allows/Restricts communica	Allows/Restricts communication write	
400052	Year F		Read/Write
			Read/Write
400053	Month		Reau/White
400053 400054	Day		Read/Write

Device	Description	Enable read/write
400056	Minute	Read/Write
400057	Second	Read/Write
400066	Lock setting	Read/Write
400067	Backlight turn ON method	Read/Write
400070	Using reserved record function or not	Read/Write
400071	Record start hour	Read/Write
400072	Record start minute	Read/Write
400073	Record end hour	Read/Write
400074	Record end minute	Read/Write
400080	Record mode	Read/Write
400081	Record speed	Read/Write
400082	Digital memo cycle	Read/Write
400083	Record cycle	Read/Write
400084	Record font	Read/Write
400085	When alarming, record speed	Read/Write
400101	CH1 alarm output 1 operation mode	Read/Write
400102	CH1 alarm output 1 option	Read/Write
400103	CH1 alarm output 1 low limit setting value	Read/Write
400104	CH1 alarm output 1 high limit setting value	Read/Write
400105 CH1 alarm output 2 operation mode		Read/Write
400106	CH1 alarm output 2 option	Read/Write
400107	CH1 alarm output 2 low limit setting value	Read/Write
400108	CH1 alarm output 2 high limit setting value	Read/Write
400109	CH1 alarm output hysteresis	Read/Write
400110	CH2 alarm output 1 operation mode	Read/Write
400111	CH2 alarm output 1 option	Read/Write
400112	CH2 alarm output 1 low limit setting value	Read/Write
400113	CH2 alarm output 1 high limit setting value	Read/Write
400114	CH2 alarm output 2 operation mode	Read/Write
400115	CH2 alarm output 2 option	Read/Write
400116	CH2 alarm output 2 low limit setting value	Read/Write
400117 CH2 alarm output 2 high limit setting value		Read/Write
400118 CH2 alarm output hysteresis		Read/Write
402001 to	User unit font0	Read/Write
16		
402017 to 32	User unit font1	Read/Write
402033 to 48	User unit font2	Read/Write

Device	Description	Enable read/write	
402049 to			
64	User unit font3	Read/Write	
402065 to			
80	User unit font4	Read/Write	
402081 to			
96	User unit font5	Read/Write	
402097 to	User unit font6	Read/Write	
112		Read/white	
402113 to	User unit font7	Read/Write	
128		Read/ White	
402129 to	User unit font8	Read/Write	
144		Read/ White	
402145 to	User unit font9	Read/Write	
160			
400301	CH1 use/recording or not	Read/Write	
400302	CH1 input specification	Read/Write	
400303	CH1 temperature unit	Read/Write	
400304	CH1 graph low limit scale value	Read/Write	
400305	CH1 graph high limit scale value	Read/Write	
400306 CH1 low limit input value		Read/Write	
400307 CH1 high limit input value		Read/Write	
400308	400308 None		
400309 CH1 low limit scale display value		Read/Write	
400310 CH1 high limit scale display value		Read/Write	
400311	CH1 decimal point position of scale	Read/Write	
400312	CH1 record display unit	Read/Write	
400313	CH1 temperature unit	Read/Write	
400314	CH1 CH name	Read/Write	
400315		Read/ White	
400319	CH2 use/recording or not	Read/Write	
400320 CH2 input specification		Read/Write	
400321 CH2 temperature unit		Read/Write	
400322 CH2 graph low limit scale value		Read/Write	
400323 CH2 graph high limit scale value		Read/Write	
400324	400324 CH2 low limit input value		
400325	CH2 high limit input value	Read/Write	
400326	None	Read/Write	
400327	CH2 low limit scale display value	Read/Write	
400328	CH2 high limit scale display value	Read/Write	

Device	Description	Enable read/write
400329	CH1 decimal point position of scale	Read/Write
400330	CH2 record display unit	Read/Write
400331	CH2 input correction	Read/Write
400332 to	CH2 CH name	Deed/M/rite
400333	Ch2 Ch hame	Read/Write
450001 to		
452048	User Logo	

6.16.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.14.2 Available device'.

6.16.3.1 DPU digital power thyristor unit

(1) Modbus

	Туре	Mark	Device
	Bit	UB	GP/LP inner bit memory
	Word	DP	Word device area
		UW	GP/LP inner word memory

(2) Modbus TYPE A

Туре	Mark	Device
Bit	UB	GP/LP inner bit memory
	3	Word device area
Word	4	Word device area
	UW	GP/LP inner word memory

6.16.3.2 KRN50 recorder

(1) Modbus

Туре	Mark	Device		
D:4	KR	Bit device area		
Bit	UB	GP/LP inner bit memory		
)A/and	KR	Word device area		
Word	UW	GP/LP inner word memory		

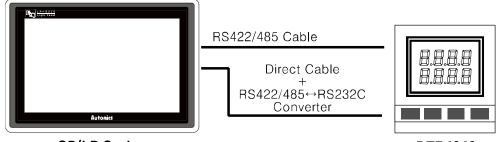
(2) Modbus TYPE A

Туре	Mark	Device		
	0	Bit device area		
Bit	1	Bit device area		
	UB	GP/LP inner bit memory		
	3	Word device area		
Word	4	Word device area		
	UW	GP/LP inner word memory		

6.17 DELTA temperature controller connection

GP/LP is able to communicate with DELTA temperature controller DTB series.

6.17.1 System organization



GP/LP Series

DTB4848

DELTA DTB series executes RS485 commnication. and it executes also RS232C communication with RS232/422 converter.

Controller type	Communication method	Communication type
DTB4848	RS485	CPU direct(Loader)

RS-485 communication with GP/LP (Applied cable: (15) C3M5P03-D9M0-T4Y0)

5	TXD+1)	- 485(+) Black
4	RXD+@	
$3 \bullet \bullet 8 7$	TXD-6	– 485(–) Brown 4Y
2 • 6	RXD-1	Terminal
	SG (5)	- SG Red
	F.G ———	- F.G Black shrink tube
D−Sub 9Pin mal ⟨GP side⟩	e	

The below table is for communication configuration of DELTA DTB series with GP/LP.

No	Item	Description		Note
1	Communication mode	Modbus RTU		
2	Baudrate	9600 bps	9600 bps	
	Data type	Data length	8bit	Fixed
3		Parity	NONE	Fixed
		Stop bit	1bit	Fixed
4	Station	CH1	1 to 247	Selectable
		CH2	0 to 31	Selectable

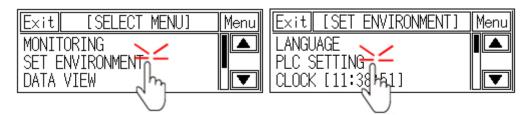
As above configuration, GP/LP also should be set for the station as below.

1st Enter system setting menu.

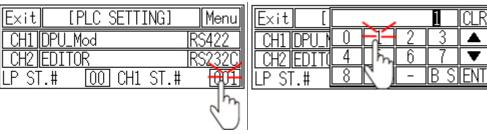
Touch left-upper point as default position of system setting menu.



2nd Select [SET ENVIRONMENT]-[PLC SETTING].



3rd Touch CH1 station, station input key pad appears. Enter the same station of the station which is set from DTB series.



4th Touch 'ENT' to save the station and touch 'Menu' or 'Exit' to exit system setting meun.

6.17.2 Available device

UB device is as GP/LP inner bit memory, only in GP/LP it is able to use same as general inner device of PLC.

It is able to switch into word UW device binding 16 units. However it is related with functional area and it may cause serious error. Be sure to use only within user area UW30 to UW2047 (when not using recipe, UW30 to UW6047).

For further information of GP/LP inner memory, refer to '3.6 System signal'.

Refer to below bit/word available device organization and use the device.

UB		00	0		
① Device name		② Word address ③ Bit address		'	
Туре	1	2		3	
Dit	М	Hexadecimal		Hexadecimal	
Bit	UB	Decimal		Hexadecimal	
Word	D	Word address(Hexadecimation		al)	
word	UW	Word address(Deci	mal)	None	

6.17.2.1 DTB4848

(1) Modbus (DTB_Mod)

Туре	Device	Mark	Range	
	Device	Wark	Start	End
Bit	Bit device area ^{×1}	М	M810	M818
	GP/LP inner bit memory	UB	UB0	UB6047F
Word	Word device area ^{x2}	D	D1000	D20BF
	GP/LP inner word memory	UW	UW0	UW6047

- ※1. It is used device when operating command. Enter the specific value, it executes the below table operation.
- ※2. Device address is same as each variable of temperature controller. For further details of each variable, refer to the each product manual.

Device	Command value	Command description	Excuting operation	Note
M040	0	Communication Write	Stops communication write	Default
M810	1	Communication Write	Allows communication write	
M044	0	Colort % / %	°F	
M811 1	1	Select °C / °F	°C	Default
M040	0	DECIMAL POINT	Refer to temperature	
M812	1	SELECTION	controller manual	
0			Stops AT	
M813 1	1	AT Setting	Executes AT	Default
N044	0		Stops control	
M814	1	Control setting	Executes control	Default
	0		RUN	Default
M815	1	STOP setting	STOP	

Device	Command value	Command description	Excuting operation	Note
M816	0	Tomporarily STOD Softing	RUN	Default
101010	1	Temporarily STOP Setting	STOP	
M047	0	Valve feedback	Feedback	Default
M817	1	Setting Status	Feedback Function	
M040	0	Auto-tuning Valve feedback	Stop AT	Default
M818	1	Status	Start AT	

(2) Modbus TYPE A(DTB_Mod_A)

Tuno	Device	Mark	Range		
Туре	Device	Wark	Start	Start	
Bit	Bit device area	1	100810	100818	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Word device area	4	401000	4020BF	
Word	GP/LP inner word memory	UW	UW0	UW6047	

Device	Command value	Command description	Excuting operation	Note
	0		Stops communication write	default
100810	4	Communication Write	Allows communication	
	1		write	
100811	0	Select ℃ / °F	°F	
100811	1		°C	default
400040	0	Desired asist selection	Refer to temperature	
100812	1	Decimal point selection	controller manual	
400040	0	AT Catting	Stops AT	
100813	1	AT Setting	Executes AT	default
400044	0		Stops Control	
100814	1	CONTROL Setting	Executes Control	default
400045	0		RUN	default
100815	1	STOP setting	STOP	
100816	0	Temporarily STOP	RUN	default
100816	1	Setting	STOP	
100017	0	Valve feedback	Feedback	default
100817	1	Setting Status	Feedback Function	
100818	0	Auto-tuning Valve	Stop AT	default
100010	1	feedback Status	Start AT	

6.17.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.15.2 Available device'.

(1) Modbus

Туре	Mark	Device Note						
D:4	M Bit device area							
Bit	UB	GP/LP inner bit memory						
)A/and	D Word device area 16bit							
Word	UW	GP/LP inner word memory						

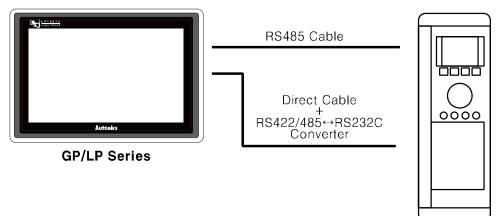
(2) Modbus TYPE A

Туре	Mark	Device Note					
D:4	1						
Bit	UB	GP/LP inner bit memory					
	4	Word device area	16bit				
Word	UW	GP/LP inner word memory					

6.18 DANFOS FC Series

GP/LP is able to communicate with FC200 of DANFOS.

6.18.1 System organization

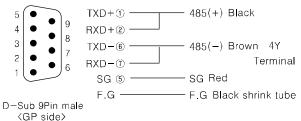


FC200

DANFOS FC200 executes RS485 communication and it executes also RS232C communication with RS485/232 converter.

Controller type	Communication method	Communication type	
DANFOS FC200	RS485	CPU direct (Loader)	

RS-485 communication with GP/LP (Applied cable: (15) C3M5P03-D9M0-T4Y0)



The below table is for communication configuration of DANFOS FC200 with GP/LP.

No	Item	Description	Note		
1	Communication	Modbus RTU			
I	mode	MOUDUS KTO			
2	Baudrate	9600 bps	9600 bps		
		Data length	8bit	Fixed	
3	Data type	Parity	NONE	Fixed	
		Stop bit	1bit	Fixed	
4	Station	CH1	1 to 247	Calastable	
4	Station	CH2	0 to 31	Selectable	

As above configuration, GP/LP also should be set for the station as below.

1st Enter system setting menu.

Touch left-upper point as default position of system setting menu.



2nd Select [Environment]-[Serial Communication] and check that the protocol is downloaded.

(FOR)	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	¢	11/11/29 5:08 PM	CLOSE
		PROTOCOL	PORT		
	CH1	FC200_Mod_A V1.0M	RS-422	SET	
	CH2	EDITOR	RS-232C	SET	
	LP STATION :				

3rd Touch 'BEFORE' or 'CLOSE' to exit system setting menu.

6.18.2 Available device

Available deivice of DANFOS FC200 and displayable parameter are as below.

Туре	Device	Mark	Range		
туре	Device	Mark	Start	End	
Bit	Bit device area 0 GP/LP inner bit memory UB	0	000001	000065	
ы	GP/LP inner bit memory	UB	UB0	UB6047F	
	Word device area	4	400001	400990	
	Word device area	4	401000	401990	
	Word device area	4	402000	402990	
	Word device area	4	403000	403990	
\\/ord	Word device area	4	404000	404990	
Word	Word device area	4	449000	449990	
	Word device area	4	450000	450000	
	Word device area	4	450010	450010	
	Word device area	4	450210	450210	
	GP/LP inner word memory	UW	UW0	UW6047	

6.18.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

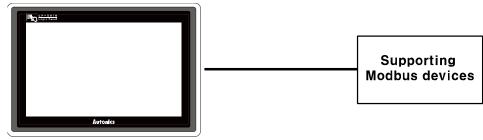
The following is avilable device list of this menu, and available range is same as '6.16.2 Available device'.

Туре	Mark	Device Note						
D:4	0	Bit device area						
Bit	UB	GP/LP inner bit memory						
Mard	4 Word device area							
Word	UW	GP/LP inner word memory						

6.19 Modbus Master

GP/LP supports Modbus Master function and is able to connect with other Modbus Slave devices.

6.19.1 System organization



GP/LP Series

Modbus Master protocol is available to communicate with all product which supports Modbus.

Communication configuration of Modbus Master protocol should be synchronized with to be connected product's communication configuration.

🖉 Note

Modbus Master protocol supports Modbus Master01, Modbus Master02, Modbus Master03 type and each type has their own charateriestics.

Туре	Characteristics			
Modbus Master01	Supports single write, multi write Supporting function: 1, 2, 3, 4, 5, 6, 15, 16			
Modbus Master02	Supports only single write Supporting function: 1, 2, 3, 4, 5, 6			
Modbus Master03	Supports only multi write Supporting function: 1, 2, 3, 4, 15, 16			

6.19.2 Available device

Available devcie of Modbus Master and displayable parameter are as below.

Tuno	Device	Mark	Range		
Туре	Device	IVIAIN	Start	End	
	Bit device area	0	000001	065536	
-	Bit device area	1	100001	165536	
	GP/LP inner bit memory	UB	UB0	UB6047F	
	Word device area	3	300001	365536	
Word	Word device area	4	400001	465536	
	GP/LP inner bit memory	UW	UW0	UW6047	

Note

Device address is for Modbus Master protocol is 1 based protocol address(Start address: 1). The below example is for TM series of Autonics product.

Following table is part of memory map(using 0 based protocol address) for TM series.

No (Add	No (Address)			Parameter	Description	
TM2		TM4		Falameter	Description	
31001	(03E8)	31001	(03E8)	CH1 Present Value	Present measured value	
31002	(03E9)	31002	(03E9)	CH1 Dot	Decimal point position of sensor	
31003	(03EA)	31003	(03EA)	CH1 Unit	Sensor temperature unit	
31004	(03EB)	31004	(03EB)	CH1 Set Value	Present controlled temperature setting value	
31005	(03EC)	31005	(03EC)	CH1 Heating_MV	Heating control value	

Dot line area is for device address, solid line area is for protocol address.

To read CH1 PresentValue of TM2 from TM2_Mod protocol, it uses device address (31001). For Modbus Master protocol, it uses protocol address (03E8) plus 1. Device address of Modbus Master protocol is displayed with decimal. Therefore, protocol address value as 0x03E9 which is 0x03E8 plus 1 of CH1 PresentValue is converted decimal value as 1001 and it is used as device address. (Converting description is as below table.)

Use device address		Convert address				Use protocol address		
030 0000		(He	(Hexadecimal→Decimal)			Use protocol address		
Protocol	TM2_Mod	→	Protocol address [Hexadeci mal]+1	→	Protocol address [Decimal]	→	Protocol	Modbus Master
Device	ТМ		Read word		Read word		Device	3
Address	31001		0x03E8+1		1000		Address	01000

Note

Used device address on Modbus Master protocol uses the value of protocol address (in case of 0 base) plus 1. Device address of Modbus Master protocol uses decimal value.

6.19.3 Monitorable device in GP/LP

GP/LP is able to monitor PLC device and change the status. Enter system setting menu of GP/LP and select [Monitoring]-[Device Monitor]-[DEVICE]. Select to be monitored device and you can change the status.

The following is avilable device list of this menu, and available range is same as '6.17.2 Available device'.

Туре	Mark	Device	Note
	1	Read-only register	Modbus function 0x02
Bit	0 Read, write register		Modbus function 0x01, 0x05,0x0F
	UB	GP/LP inner bit memory	
	3	Read-only register	Modbus function 0x03
Word	4	Read, write register	Modbus function 0x06, 0x10
	UW	GP/LP inner word memory	



Device monitoring from GP/LP-S070 displays from input start data to 16 data at once. In case of Modbus Master protocol, if the number of devices from connected product is smaller than the number of displayed devices in monitoring, you cannot check the device status by device monitoring. In this case, you should draw data on the user screen and check the data status.



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- 41-5, Yongdang-dong, Yangsan-si, Gyeongnam, 626-847, Korea
 Overseas Business Dept. Bildg. 402 3rd FL, Bucheon Techno Park, 193, Yakdae-dong, Wonmi-gu, Bucheon-si, Gyeonggi-do, 420-734, Korea Tel: 82-32-610-2730/ Fax: 82-32-329-0728 / E-mail: sales@autonics.com
 Brazil Autonics do Brasil Comercial Importadora Exportadora Ltda Tel: 55-11-3055-1660 / Fax: 55-11-3055-1661/ E-mail: vendas@autonics.com.br
 China Autonics electronic(Jiaxing) Corporation Tel: 86-573-8216-1900 / Fax: 86-573-8216-1917 / E-mail: china@autonics.com
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- Indonesia PT. Autonics Indonesia Tel: 62-21-6586-6740 / Fax: 62-21-6586-6741 / E-mail: autonics@cbn.net.id Japan Autonics Japan Corporation
- Tel: 81-3-5730-0568 / Fax: 81-3-5730-0569 / E-mail: ja@autonicsjp.co.jp Malaysia Mal-Autonics Sensor Sdn. Bhd. Tel: 60-3-7805-7190(Hunting) / Fax: 60-3-7805-7193 / E-mail: malaysia@autonics.com
- Mexico Autonics Mexico Sales Office Tel: 52-55-5207-0019 / Fax: 52-55-5207-0099 / E-mail: ventas@autonics.com Russia Autonics Corp. Russia Representative Office Tel/Fax: 7-495-745-2343 E-mail: russia@autonics.com

- Turkey Autonics Otomasyon Ticaret Ltd. Sti. Tel: 90-212-222-0117 (PBX) / Fax: 90-212-222-0108 / E-mail: info@autonics.com.tr USA Autonics USA, Inc.
- Tel: 1-847-680-8160 / Fax: 1-847-660-8155 / E-mail: sales@autonicsusa.net Vietnam Autonics Vietnam Representative Office Tel: 84-8-3925-6563 / Fax: 84-8-3925-6564 / E-mail: vietnam@autonics.com