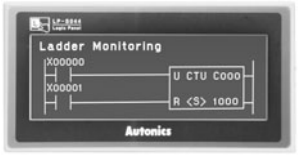
(R) Graphic Panel/ Logic Panel

NEW

Logic panel
LP-S044



NEW

Graphic panel
GP-S057

Upgrade

Graphic panel
GP-S044

General Features

▣GP(Graphic Panel)?

GP-S044

GP-S057

Graphic panel is HMI(Human Machine Interface) device that parameter monitors or changes via graphic interface by communication with PLC, temperature controller or other control units.
Graphic interface of GP is very effective to indicate value or status of parameter with visual interface that enables the communication between controller and user.
GP is able to monitor parameters virtually with LCD screen, switch screen by touching screen, set or change parameters. GP connecting with controller via serial communication method translates data and displays various control parameters with graphic .
For example, in case of the target of parameters is the temperate, the numerical value of temperature is shown with a tag and the change in temperature for time can be graphed on the screen.

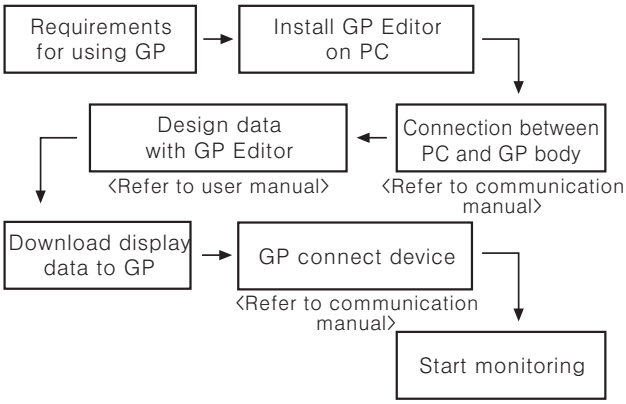
The numerical value of temperature

Graph of temperature

▣Preparation for using GP

1) GP body
2) PC
3) GP Editor
   -Software for editing the screen
4) Manual
   - GP user manual
   - Communication manual
5) Communication cable
   - Communication cable for PC connection
   - Communication cable for controller connection
6) Access devices
   (PLC or controller built in communication ports)

▣Basic operation flow



▣Advantages of using GP

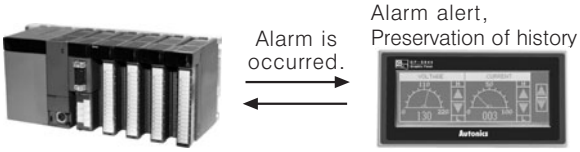
◎Complicated environment of operation and control

It graphicalizes mechanical control components such as button, switch and lamps so that saves cost and space and improves the preservation of devices.

Control part　　GP-S044

◎Setting and change of production process

It memorizes the set conditions (Recipe) of process in GP, and it sets or changes commands to PLC without PC. It enhances reliability of production line with fast corresponding alarm of error and preserving the history.

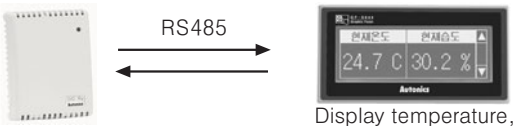


PLC　　GP-S044

◎Convenient setting by user

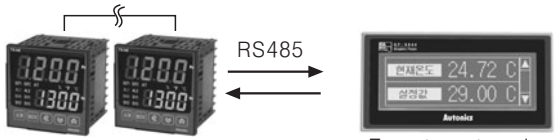
It sets complicated or non-displaying controller (Thermometer/hygrometer, temperature controller etc).

1) Temperature/Humidity without display device



Display temperature, humidity

2) Temperature controller



#1.....#32　　Easy to set and adjust parameter.

◎Effective data control

It prints alarm history of controller using printer. It reads the data from barcode reader and save it in PLC.

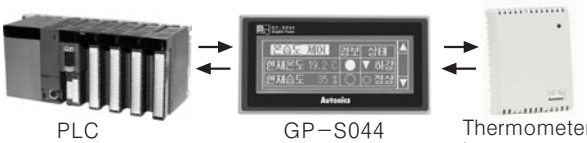
1) PLC/Printer

PLC　　GP-S044　　Printer

2) Barcode reader/PLC

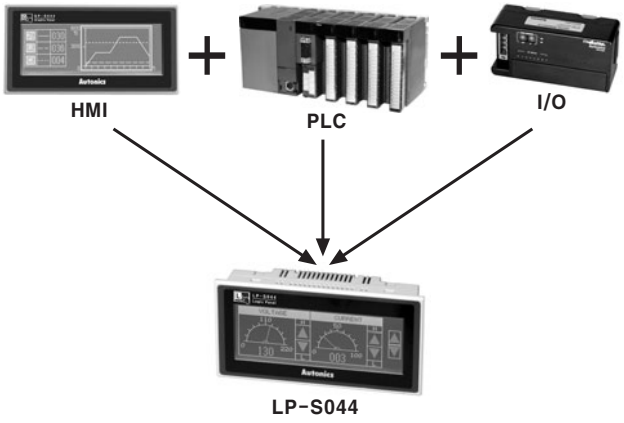
GP-S044　　PLC

◎Communication between heterogeneous controllers



PLC　　GP-S044　　Thermometer/ hygrometer

▣LP(Logic Panel)?



Logic panel is created for integrated panel in most demanding industrial environments that have been consisted of HMI, PLC and I/O. The LP through integration realizes cost down, wire reduction, space saving and enhanced user friendliness. The logic panel perfectly supports serial communication and editing display with GP Editor and about 250 commands of Smart studio invented on our own to edit PLC ladder/mnemonic, allowing accelerating product development and designing. And also this device can control and monitor various output devices (sensors, button, etc) and output devices (solenoid, lamp, motor, etc) individually.

▣Preparations for using LP

1) LP body
2) PC
3) Software
   ① GP Editor
      – Software for editing LP display
   ② Smart Studio
      – Software for logic program
4) Manual
   – GP user manual
   – Communication manual
   – Smart Studio manual
   – Program manual (Instruction)
   – LP install manual
5) Communication cable
   – Communication cable for PC connection
   – Communication cable for controller connection
6) Access device
   (PLC or controller built in communication ports)

▣Basic operation flow

Requirements for using LP

↓

〈Refer to GP user manual and Smart studio〉

Install drawing program (GP Editor) and logic program (Smart Studio) on PC

↓

〈Refer to communication manual〉

Connection PC with LP body
※When LP turns on, RUN/STOP switch holds STOP position.

↓

〈Refer to the program manual〉

Make Logic program with Smart studio

↓

Download logic data to LP body

↓

Disconnect Smart Studio with LP body/ Connect GP Editor with LP body

↓

Create screen or download to LP body

↓

Test
※RUN/STOP switch holds RUN position.

↓

Debugging or editing program

↓

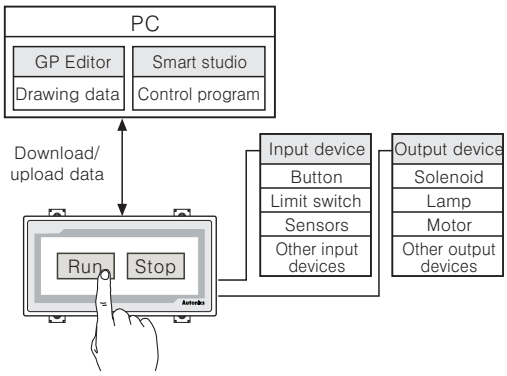
Control or start monitoring

★Refer to the manual for details on website(www.autonics.com) resources.

▣System configurations

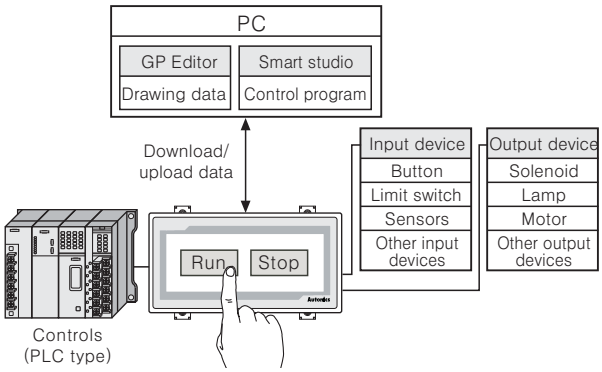
◎Stand alone(LP Series)

Stand alone system in LP series controls a variety of I/O without adding other devices and monitors and control operation element through direct touch of screen. (device, parameter, etc.).



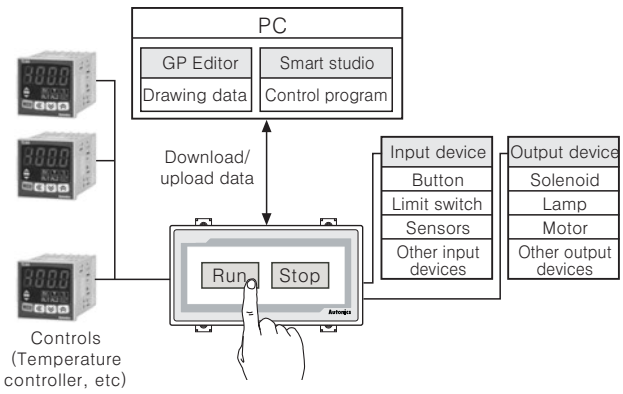
◎1:1 configuration (LP/GP Series)

The device function makes it possible to monitor the operation data (Device, parameter, etc.)



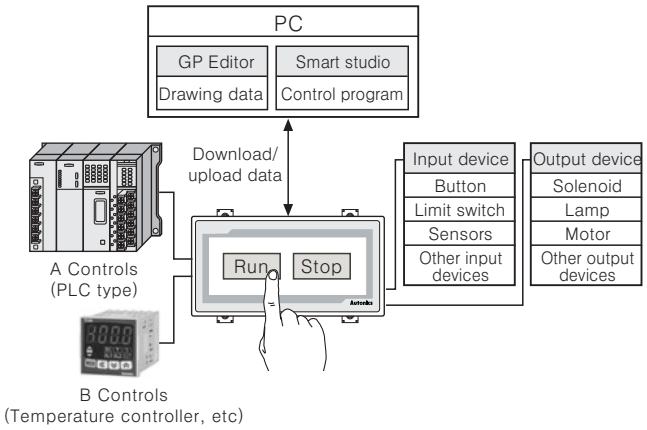
◎1:N configuration (LP/GP Series)

The device function makes it possible to monitor the operation element (device, parameter, etc.) by connecting in a 1:N configuration (Up to 32 units)



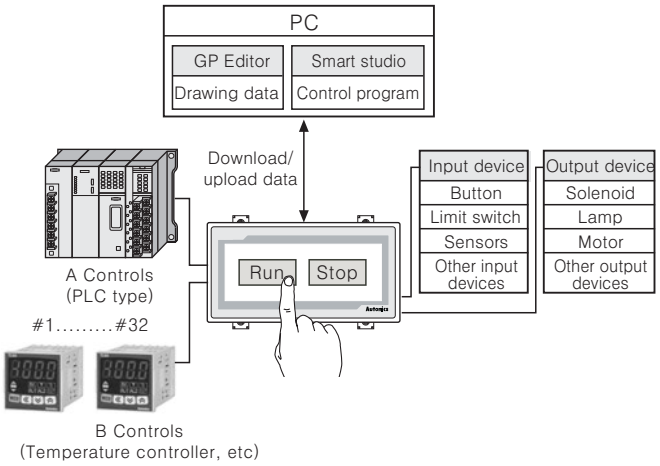
◎1:1:1 configuration (GP/LP Series)

The device function makes it possible to monitor, control and the operation element (device, parameter, etc.) between different devices using two separate communication port.



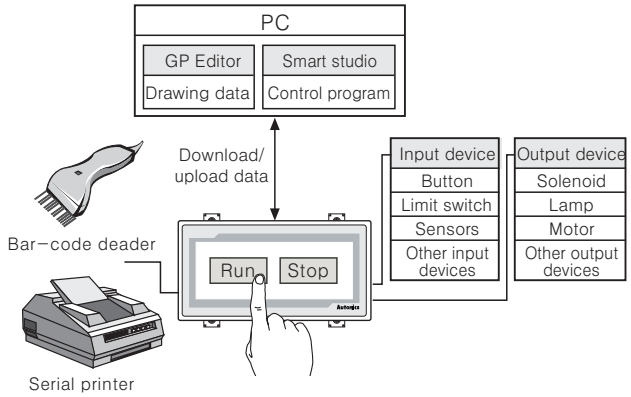
◎1:1 N configuration (GP/LP Series)

The device function makes it possible to monitor, control and the operation element (device, parameter, etc.) between different devices using two separate communication port.. In case of RS-422 port, 1:N is available only. (Up to 32 units).



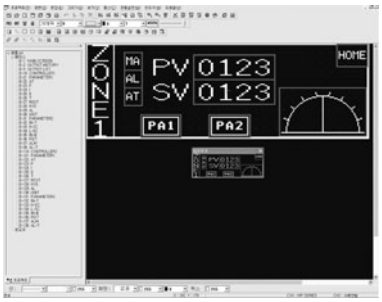
◎Bar-code, printer connection (GP/LP Series)

It can read bar-code and print a history using printer.



▣Software

◎GP Editor(Drawing program)



- ●This drawing software is for GP/LP series.
- ●GP editor is the software that allows creating a screen and designs a tag layout, and then transfer the data from screen to graphic panel. After download, graphic panel starts monitoring according to your screen data.

◎Smart Studio(Logic program)

- ●Logic software is for LP series.
- ●Support multi-project
  : It is possible to open maximum 5 projects at a same time.
- ●Easy program editing
  : Block of cell units can be edited.
  Split-screen editing is available.
  It provides various editing screens such as variable screen, describe screen, variable /describe screen, etc,.
- ●Various monitor functions
  : It provides monitor functions such as variable monitor, device monitor and system device monitor
- ●Comfortable user interface
  : It ensures easy operation with microsoft window functions applied.
- ●Wide range of Message windows
  : It supports various message windows to edit and check program.
- ●Real time convert ladder to mnemonic
  : Ladder can be written and read in mnemonic to edit simultaneously.

Visit our website (www.autonics.com) and download software or manuals.

< System requirements >

Items	Minimum requirements	Recommended requirements
OS	Windows 98/NT/XP/Vista	
Memory	512MB	1GB
Hard disk	1GB(Hard disk space)	5GB(Hard disk space)
Resolution	1024×768	1280×1024

▣Manual

◎GP/LP common manual

- ●GP user manual
  This section describes how to make screen data and use HMI function with GP Editor.
- ●Communication manual
  For more information of serial connection with external devices such as PLC, refer to manual before connecting.

◎LP manual

- ●Smart Studio manual
  This section describes how to install and use Smart studio.
- ●Programming manual
  The manual has command and instruction.
- ●LP Installation manual
  The manual has LP installation, system configuration and instruction.

▣Precaution for using

1. Do not press touch panel with hard and sharp object.
2. Please store the device in the recommended temperature range, or LCD panel can be damaged.
3. Please check pin number shown in "Communication manual" when connect communication port.
4. Do not block the ventilating opening of this product.
5. Do not use or store it in a place with direct ray of light or dust.
6. Do not use or store it in a place with shock or vibration.
7. The ground wire of GP/LP should be grounded separately. The ground resistance should be max. 100Ω, please use the wire of min. 1.25㎟ dimension.
8. Please check the pin number and connect to GP/LP communication port.
9. Please tighten bolt on terminal block with specified tightening torque.
10. When liquid crystal from the broken LCD is smeared on your skin, wash it for 15 minutes. If it is gotten in your eye, wash it for 15 minutes and contact a medical specialist for more information.
11. Do not inflow dust or wire dregs into the unit.
12. For cleaning, do not use water or an oil-based detergent, use dry towels.
13. It should be done away regarded as an industrial waste.

▣Connectable device with GP/LP

Series	Connectable device	Connection type	GP-2480 (Max. V2.7)	GP-2480(Min. V3.0)/ GP-S044/GP-S057/ LP-S044
LS Master-K	MK-10S1	CPU direct connection loader	○	○
	MK-80S	CPU direct connection loader	○	○
	MK-120S	CPU direct connection loader	○	○
	MK-200S	CPU direct connection loader	○	○
	MK-300S	CPU direct connection loader	×	○
	MK-1000S	CPU direct connection loader	×	○
LS Glofa	GM4	CPU direct connection loader	○	○
	GM6	CPU direct connection loader	○	○
	GM7U	CPU direct connection loader	×	○
LS CNET (Cnet integrated CPU)	MK-80S	Cnet	○	○
	MK-120S	Cnet	○	○
	MK-200S	Cnet	○	○
LS CNET (For Cnet unit)	MK-80S	Cnet	○	○
	MK-120S	Cnet	○	○
	MK-200S	Cnet	○	○
	MK-300S	Cnet	×	○
	MK-1000S	Cnet	×	○
LS XGB (For Cnet unit)	XGK-CPUS	Cnet	×	○
LS XGT (Cnet integrated CPU)	XBM	Cnet	×	○
	XBC	Cnet	×	○
OEMAX(SAMSUNG)	N70	CPU direct connection loader	○	○
	N70Plus	CPU direct connection loader	○	○
OEMAX FARA	NX7	CPU direct connection loader	×	○
	NX70	CPU direct connection loader	×	○
MITSUBISHI FX	FX1S	CPU direct connection loader	○	○
	FX1N	CPU direct connection loader	○	○
	FX2N	CPU direct connection loader	○	○
	FX2NC	CPU direct connection loader	○	○
	FX3U	CPU direct connection loader	×	○
MITSUBISHI Q (For Cnet unit)	Q00J	Cnet	×	○
	Q00	Cnet	×	○
	Q01	Cnet	×	○
	Q02	Cnet	×	○
	Q02H	Cnet	×	○
	Q06H	Cnet	×	○
	Q12H	Cnet	×	○
	Q25H	Cnet	×	○
NAIS FP	FP0-C10	CPU direct connection loader	○	○
	FP0-C14	CPU direct connection loader	○	○
	FP0-C16	CPU direct connection loader	○	○
	FP0-C32	CPU direct connection loader	○	○
	FPG-C24R2	CPU direct connection loader	○	○
	FPG-C32T	CPU direct connection loader	○	○
	FPG-C32T2	CPU direct connection loader	○	○
	FP0R-C10	CPU direct connection loader	×	○
	FP0R-C14	CPU direct connection loader	×	○
	FP0R-C16	CPU direct connection loader	×	○
	FP0R-C32	CPU direct connection loader	×	○
	FP0R-T32	CPU direct connection loader	×	○
	FP0R-F32	CPU direct connection loader	×	○
SIEMENS SIMATIC S7-200	CPU221	CPU direct connection loader	×	○
	CPU222	CPU direct connection loader	×	○
	CPU224	CPU direct connection loader	×	○
	CPU224XP	CPU direct connection loader	×	○
	CPU224XPsi	CPU direct connection loader	×	○
	CPU226	CPU direct connection loader	×	○

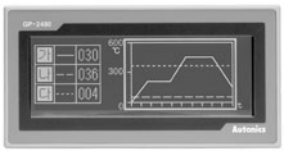
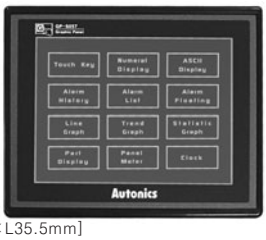
▣Connectable device with GP/LP

Series	Connectable device	Connection type	GP-2480 (Max. V2.7)	GP-2480(Min. V3.0)/ GP-S044/GP-S057/ LP-S044
Allen-Bradrey	MicroLogicx 1000	CPU direct connection loader	×	○
	MicroLogicx 1200	CPU direct connection loader	×	○
OMRON SYSMAC C	CPM1A	CPU direct connection loader	○	○
OMRON Temperature controller	E5AN	Modbus	○	○
	E5AR	Modbus	○	○
	E5CN	Modbus	○	○
	E5EN	Modbus	○	○
	E5ER	Modbus	○	○
AUTONICS	MT Series	Private communication	○	○
	MT Series	Modbus	×	○
	MP Series	Private communication	○	○
	THD Series	Modbus	○	○
	TZ/TZN Series	Private communication	○	○
	TK Series	Modbus	×	○
	TM Series	Modbus	×	○
	CT Series	Modbus	×	○
	LP-S044	CPU	×	○
KONICS	DPU Series	Modbus	×	○
	KRN50 Series	Modbus	×	○
DELTA	DTB Series	Modbus	○	○
UNIVERSAL	UNIVERSAL	Modbus(Slave)	○	○

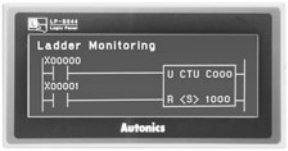
※GP/LP connectable device list will keep updated according to the upgrade of GP Editor or additional patch. It is recommended to use the latest version of Editor.
※Applicable GP/LP firmware version is determined by GP Editor version. Whole GP system goes down if non-compatible firmware version is used.
※Visit our website (www.autonics.com) to check update of latest GP Editor and GP/LP firmware and to get more detailed instructions.
※Refer to the user manual to select proper communication cable between GP and controllers. (Sold separately)

Product Overview

Graphic panel

Model		GP-S044-S1D0	GP-S044-S1D1	GP-S057-S1D0	GP-S057-S1D1
Appearances & Dimensions		Upgrade  [W145×H75×L38mm] 4.4" MONO		NEW  [W156×H132×L35.5mm] 5.7" MONO	
Power supply		24VDC ±10%			
Power consumption		3.6W(Max.)			
Serial interface		RS232C, RS422 (1each)	RS232C (2)	RS232C, RS422 (1each)	RS232C (2)
Display performance	LCD type	STN blue negative			
	Resolution	240×80 dot		320×240 dot	
	Display area	112.8×37.6mm(4.4")		119×91mm(5.7")	
Graphic drawing performance	Text	Up to 400 characters		Up to 1590 characters	
	Graphic drawing memory	512KB			
	Number of user screen	500pages			
	Touch switch	Width 15×Height 4=60		Width 16×Height 12=192	
Reference		R-8 to 10		R-11 to 13	

Logic panel

Model		LP-S044-S1DO-C5T-A	LP-S044-S1DO-C5R-A	LP-S044-S1D1-C5T-A	LP-S044-S1D1-C5R-A
Appearances & Dimensions		 [W145×H75×L54.5mm]		NEW  [Terminal block connector type]  [Ribbon cable connector type] 4.4" MONO	
Power supply		24VDC ±10%			
Power consumption		3.6W(Max.)			
Serial interface		RS232C, RS422 (1each)		RS232C (2)	
Display performance	LCD type	STN blue negative			
	Resolution	240×80 dot			
	Display area	112.8×37.6mm(4.4")			
Graphic drawing performance	Text	Up to 400 characters			
	Graphic drawing memory	384KB			
	Number of user screen	500pages			
	Touch switch	Width 15×Height 4=60			
Control performance	Command	Basic command : 28, application command : 220			
	Program capacity	8000step			
	Processing time	Average 6 to 7㎲/step			
Input/Output performance	I/O point	Input 16 points/Output 16points			
	I/O connector type	Terminal block connector	Ribbon cable connector	Terminal block connector	Ribbon cable connector
Reference		R-14 to 17			

38mm Slim design, touch screen, and better reliability
Graphic panel GP-S044

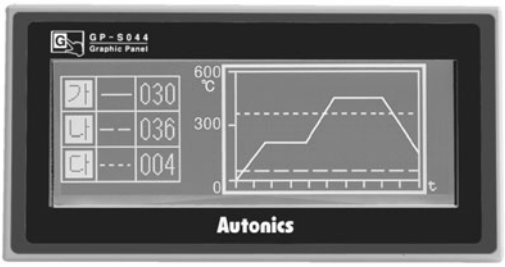
▣GP(Graphic Panel)-S044?

GP(Graphic Panel) is a function to monitor and display controller's operation on graphic screen.

※It's a replacement of GP-2480 Series - discontinued product

Upgrade

4.4"
MONO



⚠ Please read "Caution for your safety" in operation manual before using.

▣Features

- ●Display max. 400 characters
- ●Able to save max. 500 pages of user screen
- ●Easy S/W upgrade at website
  (1) GP firmware file
  (2) GP Editor(Drawing program)
  (3) Additional protocol
- ●Different Devices monitoring function
  : PLC port allows to monitor and control the variables of additionally connected controllers
- ●Multlingual support
  : Support for Korean, Japanese, English, Chinese and Russian. Additional languages will be available later on.
- ●Mult-font support
  : It provides various bitmap and user-selected fonts.
- ●Mult communication port
  : Both RS232C 2 port and RS232C/RS422 compound port provided.
- ●Device monitoring
  : It enables to monitor connectable controller device in main system without graphic design data.
- ●Printer and barcode reader connection
  : It enables to print alarm history connecting into the printer and read barcode connecting into barcode reader.
- ●Compact design
- ●Its 38mm of slim design provides space-efficient solution.
- ●Various display function
  : It displays data by various tags.

▣Ordering information

GP - S 044 - S 1 D 0

Communication port	0	RS232C, RS422 (1each)
	1	RS232C (2)
Power supply	D	24VDC
Color	1	MONO (Blue, White)
Display unit	S	STN LCD
Monitor size	044	4.4"
Series	S	S series
Itme	GP	Graphic Panel

▣Specifications

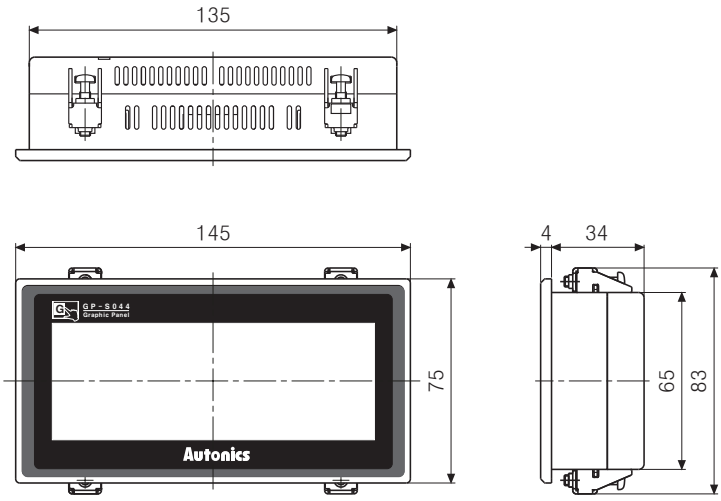
Model		GP-S044-S1D0	GP-S044-S1D1
Power supply		24VDC ±10%	
Power consumption		3.6W(Max.)	
Display performance	LCD type	STN Blue Negative	
	Resolution	240×80 dots	
	Display area	112.8mm×37.6mm	
	Color	MONO(Blue, White)	
	LCD view angle	Top/bottom/left/right 30° in each direction	
	Backlight	White LED	
	Brightness	Adjustable by software	
Graphic drawing performance	Language	English, Korean, Japanese, Chinese, Russian	
	Text	• High resolution display up to 400 letters • 6×8, 8×8 ASCII character, High quality view of numbers • 8×16 ASCII characters, 16×16 regional characters(1-8 times bigger for width, 0.5-5 times bigger for height)	
	Graphic drawing memory	512 KB	
	Number of user screen	500 pages	
	Touch switch	Width 15×Height 4 = 60	
Serial interface		RS232C, RS422 (1each)	RS232C (2)
Real-time controller		RTC embedded	
Ambient temperature		0 to 50℃(at non-freezing status)	
Storage temperature		-20 to 60℃(at non-freezing status)	
Ambient humidity		35 to 85% RH(at non-dew status)	
Insulated resistance		Min. 100MΩ(at 500VDC megger)	
Ground		3rd grounding(Max. 100Ω)	
Noise trength		The square wave noise(pulse width : 1㎲) by the noise simulator with ±500V R/S phase and repetition frequency 60Hz	
Dielectric strength		500VAC(50/60Hz) for a minute	
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for an hour	
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for 10 minutes	
Shock	Mechanical	300m/s² (30G) in X, Y, Z directions for 3 times	
	Malfunction	100m/s² (10G) in X, Y, Z directions for 3 times	
Protection ratings		IP65F for front panel	
Accessory		Fixing bracket : 4pcs, rubber waterproof ring, battery included	
Unit weight		Approx. 300g	

※Language can be customized.

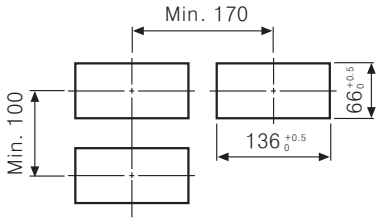
▣Functional description

Figure display		Line, rectangle, circle, text, bitmap
Tags	Numeral display	Display the designated device as numerical value. (Decimal, hexadecimal, octal, binary, real number)
	ASCII display	Display the designated device value as ASCII character.
	Time display	Display current time or date.
	Alarm history	Register alarm history.
	Alarm list	Display generated (not backed up) alarm.
	Comment display	Display the designated comment as device status or value.
	Lamp	Display lamp as device status.
	Part display	Display the designated parts as device status and value.
	Line graph	Display several device values with a graph of broken line.
	Trend graph	Display change of device value for time with a graph of broken line.
	Bar graph	Display a device value with a bar graph.
	Statistic graph	Display a ratio of several device values with pie graph.
	Panel meter	Display a device value as panel meter.
	Touch key	Screen is switched, word/bit device values are set when it touched.
	Numeral input	Configure user input value in device.
	ASCII input	Configure user input ASCII code value in device.
System information function		Monitor/control GP operation from PLC.
Recipe function		Read/Write several PLC device collectively.
Security function		Only acceptable user can observe/operate important data.
Barcode read function		Connect barcode reader, read barcode.
Floating alarm function		Warning message is floated when alarm is generated.
Time operation		Specific bit device is ON/OFF for designated day and time.
Overlap window		Available to form dynamically overlapping another base screen on the base one.
Observe status function		Change PLC device status/value of PLC when trigger is generated.

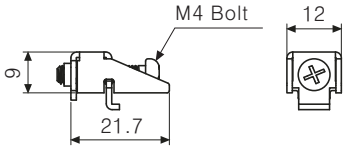
▣Dimensions



●Panel cut-out

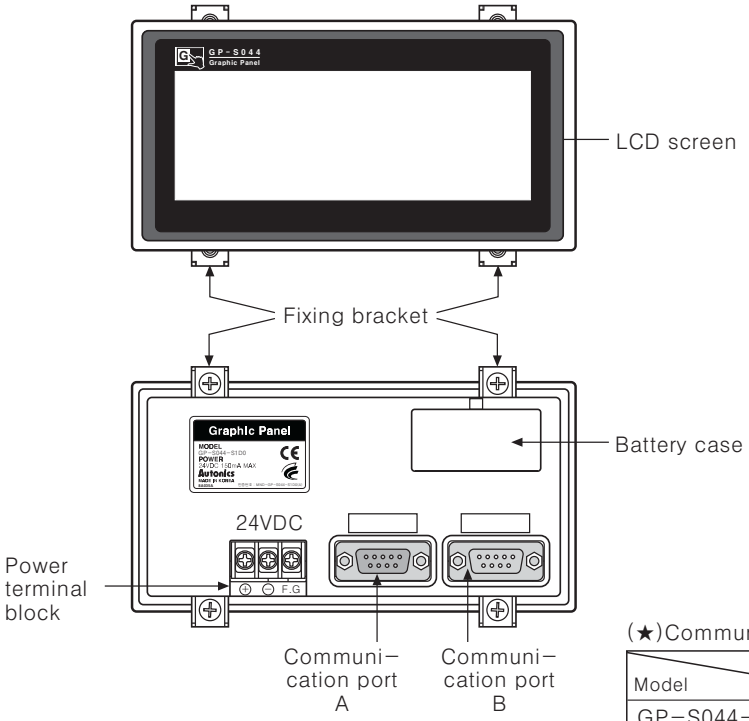


●The fixing bracket



(Unit : mm)

▣Part description



(★)Communication port

Model \ Communication port	Port A	Port B
GP-S044-S1D0	RS422	RS232C
GP-S044-S1D1	RS232C-A	RS232C-B

GP-S057

High visibility with 5.7" wide screen

Graphic touch panel GP-S057

NEW

▣GP(Graphic Panel)-S057?

GP(Graphic Panel) is a function to monitor and display controller's operation on graphic screen.

5.7"
MONO

⚠ Please read "Caution for your safety" in operation manual before using.

▣Features

- ●Display max. 1590 characters
- ●Able to save max. 500 pages of user screen
- ●Easy S/W upgrade at website
  (1) GP firmware file
  (2) GP Editor(Drawing program)
  (3) Additional protocol
- ●Different Devices monitoring function
  : PLC port allows to monitor and control the variables of additionally connected controllers
- ●Multlingual support
  : Support for Korean, Japanese, English, Chinese and Russian. Additional languages will be available later on.
- ●Mult-font support
  : It provides various bitmap and user-selected fonts.
- ●Mult communication port
  : Both RS232 2 port and RS 232/RS422 compound port provided.
- ●Device monitoring
  : It enables to monitor connectable controller device in main system without graphic design data.
- ●Printer and barcode reader connection
  : It enables to print alarm history connecting into the printer and read barcode connecting into barcode reader.
- ●Compact design
  : Saving design with 5.7 display
- ●Various display function
  : It displays data by various tags.

▣Ordering information

GP - S 057 - S 1 D 0

Communication port	0	RS232C, RS422 (1each)
	1	RS232C (2)
Power supply	D	24VDC
Color	1	MONO (Blue, White)
Display unit	S	STN LCD
Monitor size	057	5.7"
Series	S	S series
Itme	GP	Graphic Panel

▣Specifications

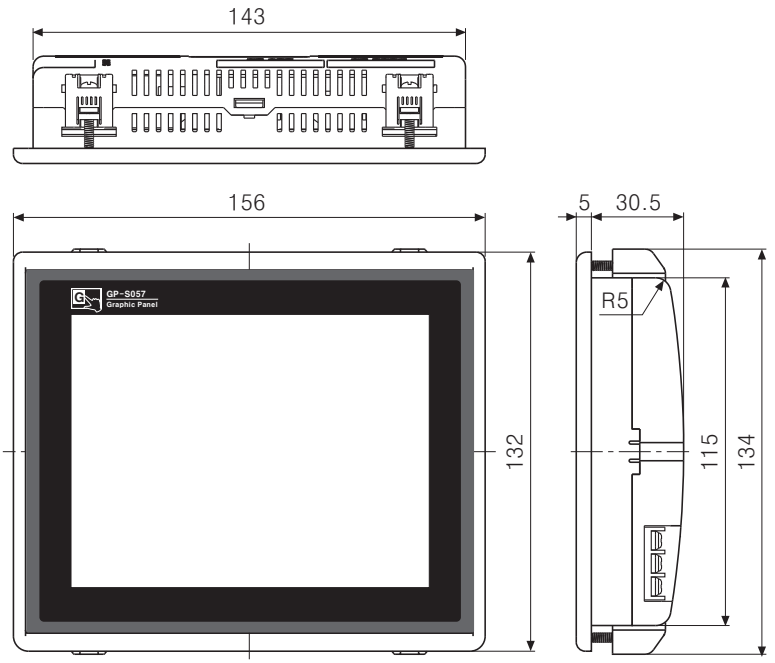
Model		GP-S057-S1D0	GP-S057-S1D1
Power supply		24VDC ±10%	
Power consumption		3.6W(Max.)	
Display performance	LCD type	STN blue negative	
	Resolution	320×240 dots	
	Display area	119mm×91mm	
	Color	MONO(Blue, White)	
	LCD view angle	Top/bottom/left/right 30° in each direction	
	Backlight	White LED	
	Brightness	Adjustable by software	
Graphic drawing performance	Language	English, Korean, Japanese, Chinese, Russian	
	Text	• Up to 1590 characters(6×8font) displayable • 6×8, 8×8 ASCII character, High quality view of numbers • 8×16 ASCII characters, 16×16 regional characters(1-8 times bigger for width, 0.5-5 times bigger for height)	
	Graphic drawing memory	512 KB	
	Number of user screen	500 pages	
	Touch switch	Width 16×Height 12 = 192	
Serial interface		RS232C, RS422 (1each)	RS232C (2)
Real-time controller		RTC embedded	
Storage temperature		0 to 50℃(at non-freezing status)	
Ambient temperature		-20 to 60℃(at non-freezing status)	
Ambient humidity		35 to 85% RH(at non-dew status)	
Insulated resistance		Min. 100MΩ(at 500VDC megger)	
Ground		3rd grounding(Max. 100Ω)	
Noise trength		The square wave noise(pulse width : 1㎲) by the noise simulator with ±500V R/S phase and repetition frequency 60Hz	
Dielectric strength		500VAC(50/60Hz) for a minute	
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for an hour	
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for 10 minutes	
Shock	Mechanical	300m/s² (30G) in X, Y, Z directions for 3 times	
	Malfunction	100m/s² (10G) in X, Y, Z directions for 3 times	
Protection ratings		IP65F for front panel	
Accessory		Fixing bracket : 4pcs, rubber waterproof ring, battery included	
Unit weight		Approx. 400g	

※Language can be customized.

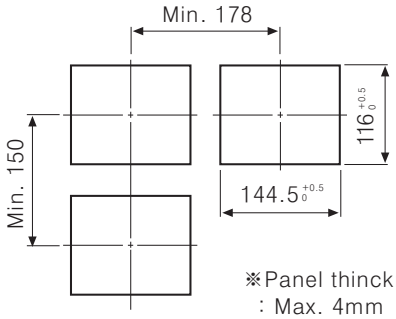
▣Functional description

Figure display		Line, rectangle, circle, text, bitmap
Tags	Numeral display	Display the designated device as numerical value. (Decimal, hexadecimal, octal, binary, real number)
	ASCII display	Display the designated device value as ASCII character.
	Time display	Display current time or date.
	Alarm history	Register alarm history.
	Alarm list	Display generated (not backed up) alarm.
	Comment display	Display the designated comment as device status or value.
	Lamp	Display lamp as device status.
	Part display	Display the designated parts as device status and value.
	Line graph	Display several device values with a graph of broken line.
	Trend graph	Display change of device value for time with a graph of broken line.
	Bar graph	Display a device value with a bar graph.
	Statistic graph	Display a ratio of several device values with pie graph.
	Panel meter	Display a device value as panel meter.
	Touch key	Screen is switched, word/bit device values are set when it touched.
	Numeral input	Configure user input value in device.
	ASCII input	Configure user input ASCII code value in device.
System information function		Monitor/control GP operation from PLC.
Recipe function		Read/Write several PLC device collectively.
Security function		Only acceptable user can observe/operate important data.
Barcode read function		Connect barcode reader, read barcode.
Floating alarm function		Warning message is floated when alarm is generated.
Time operation		Specific bit device is ON/OFF for designated day and time.
Overlap window		Available to form dynamically overlapping another base screen on the base one.
Observe status function		Change PLC device status/value of PLC when trigger is generated.

▣Dimensions

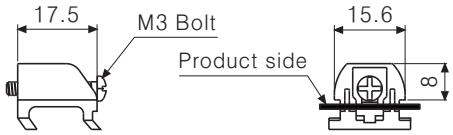


●Panel cut-out



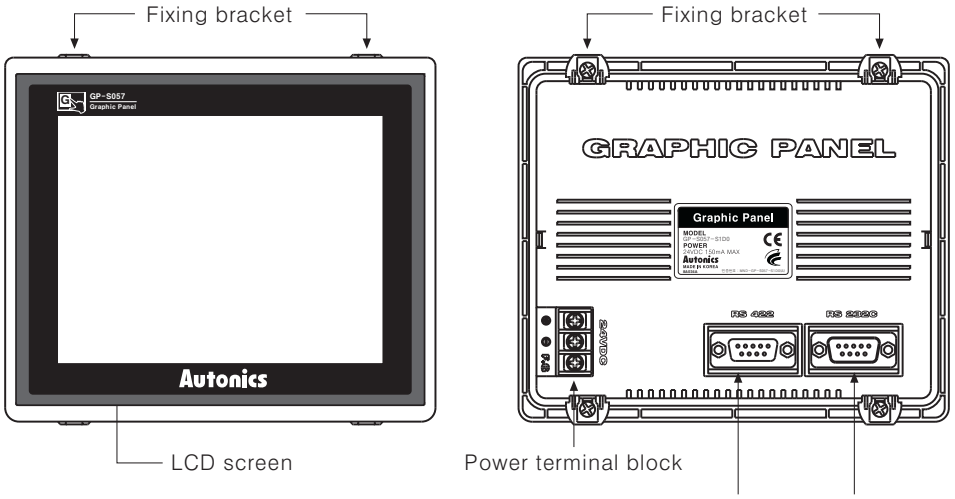
※Panel thinckness
: Max. 4mm

●The fixing bracket



(Unit : mm)

▣Part description



(★)Communication port

Model \ Communication port	Port A	Port B
GP-S057-S1D0	RS422	RS232C
GP-S057-S1D1	RS232C-A	RS232C-B

Graphic panel + PLC function Logic panel LP-S044

NEW

4.4"
MONO

▣LP(Logic Panel)-S044?

Logic panel is an integrated product with HMI(Human Machine Interface) and PLC(Programmable Logic Controller) functions.

⚠ **Please read "Caution for your safety" in operation manual before using.**

[Terminal block connector type]

[Ribbon cable connector type]

▣Features

- ●Compact structure
  : **Cost down, space saving and easy operation through PLC+HMI+Input/ output integration**
- ●Improved compatibility with logic
  : 8000-step program capacity(the average processing speed 6 to 7 μs/step)
  Basic command 28, application command 220
- ●Wide device range : Peripheral device 10K word, data device 10K word, and other various devices
- ●Sufficient external I/O : Input 16 points, output 16 points(basic)
- ●Various expansion function
  : External interrupt, 16-key input, 7 Seg. time-sharing display and synchronous communication output.
- ●Easy S/W upgrade at website
  (1) LP firmware file (2) GP Editor(Drawing program)
  (3) Smart Studio(Logic program) (4) Additional protocol
- ●Display max. 400 characters
- ●Able to save max. 500 pages of user screen
- ●Different devices monitoring function : PLC port allows to monitor and control the variables of additionally connected controllers
- ●Multilingual support
  : Support for Korean, Japanese, English, Chinese and Russian. Additional languages will be available later on.
- ●Providing various bitmap and user-selectable fonts. : It provides various bitmap and user-selected fonts.
- ●Various multiple ports : Both RS232 2 port and RS 232/RS422 compound port provided.
- ●Device monitoring function
  : LP monitor enables to monitor LP device connectable controller without graphic design data.
- ●Connect printers or barcode reader : Print an alarm history and read barcode with bar code reader.

▣Ordering information

LP - S 044 - S 1 D 0 - C 5 T - A

Expansion function type	A	Supports type A
I/O connector	T	Terminal block connector
	R	Ribbon cable connector
I/O composition	5	IN:16points, OUT:16points
Module	C	All-in one type
Communication port	0	RS232C, RS422 (1each)
	1	RS232C (2)
Power supply	D	24VDC
Color	1	MONO (Blue, White)
Display unit	S	STN LCD
Monitor size	044	4.4"
Series	S	S series
Item	LP	Logic Panel

▣Specifications

Model		LP-S044-S1D0-C5T-A	LP-S044-S1D0-C5R-A	LP-S044-S1D1-C5T-A	LP-S044-S1D1-C5R-A
Power supply		24VDC ±10%			
Power consumption		3.6W(Max.)			
Display performance	LCD type	STN Blue Negative			
	Resolution	240×80 dots			
	Display area	112.8mm×37.6mm			
	Color	MONO(Blue, White)			
	LCD view angle	Top/bottom/left/right 30° in each direction			
	Backlight	White LED			
	Brightness	Adjustable by software			
Graphic drawing performance	Language	English, Korean, Japanese, Chinese, Russian			
	Text	• High resolution display up to 400 letters • 6×8, 8×8 ASCII character, High quality view of numbers • 8×16 ASCII characters, 16×16 regional characters(1-8 times bigger for width, 0.5-5 times bigger for height)			
	Graphic drawing memory	384 KB			
	Number of user screen	500 pages			
	Touch switch	Width 15×Height 4 = 60			
Control performance	Command	Basic command : 28, application command : 220			
	Program capacity	8K step			
	Processing time	Average : 6 to 7㎲/step			
	I/O control type	Batch processing			
	Computer control mode	Repeated-doubling method, interrupt processing			
	Device range	*See manual			
Serial interface		RS232C, RS422 (1each) : Asynchronous type		RS232C (2)	
Real-time controller		RTC embedded			
Ambient temperature		0 to 50℃(at non-freezing status)			
Storage temperature		-20 to 60℃(at non-freezing status)			
Ambient humidity		35 to 85% RH(at non-dew status)			
Insulated resistance		Min. 100MΩ(at 500VDC megger)			
Ground		3rd grounding(Max. 100Ω)			
Noise trength		The square wave noise(pulse width : 1㎲) by the noise simulator with ±500V R/S phase and repetition frequency 60Hz			
Dielectric strength		500VAC(50/60Hz) for a minute			
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for an hour			
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for a minute) in each of X, Y, Z directions for 10 minutes			
Shock	Mechanical	300m/s² (30G) in X, Y, Z directions for 3 times			
	Malfunction	100m/s² (10G) in X, Y, Z directions for 3 times			
Protection ratings		IP65F for front panel			
I/O connector type		Terminal block connector	Ribbon cable connector	Terminal block connector	Ribbon cable connector
Accessory		Fixing bracket : 4pcs, rubber waterproof ring, battery included			
Unit weight		Approx. 350g			

※Language can be customized.

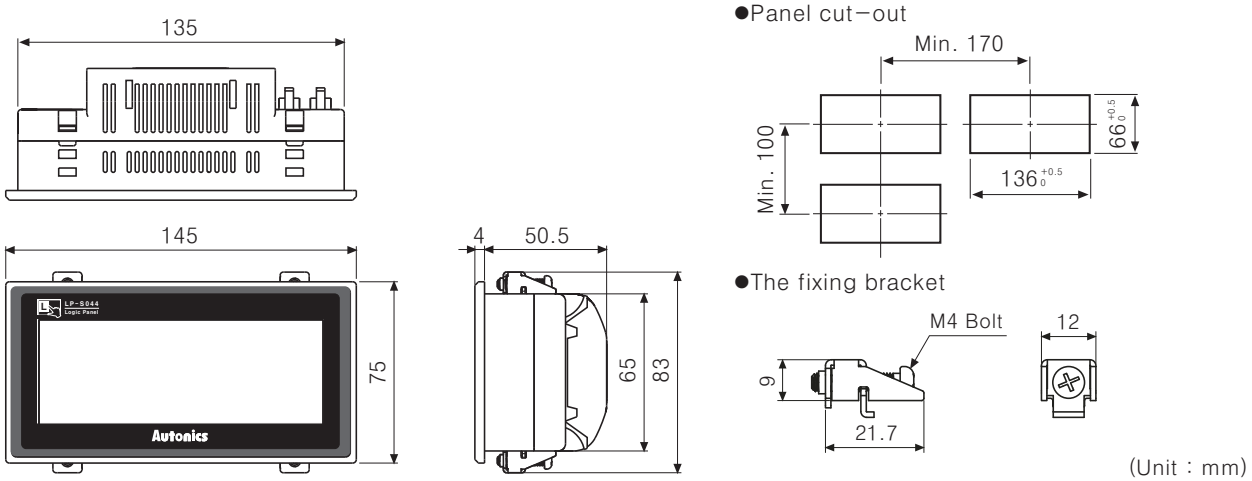
▣Input/Output performance

Input performance		Output performance	
Input point	16 points	Output point	16 points
Insulation method	Photo coupler insulation	Insulation method	Photo coupler insulation
Voltage range	DC 19.2 to 28.8V	Voltage range	DC 19.2 to 28.8V
Rated input voltage	DC 24V	Rated input voltage	DC 24V
Rated input current	Approx. 4mA	Max. load current	0.1A/1point, 1A/1COM
Input resistance	5.6kΩ	Max. voltage falling when ON	Max. DC 0.2V
Response time	1ms	Response time	1ms
Common method	16 points/1COM	Common method	16 points/1COM

▣Functional description

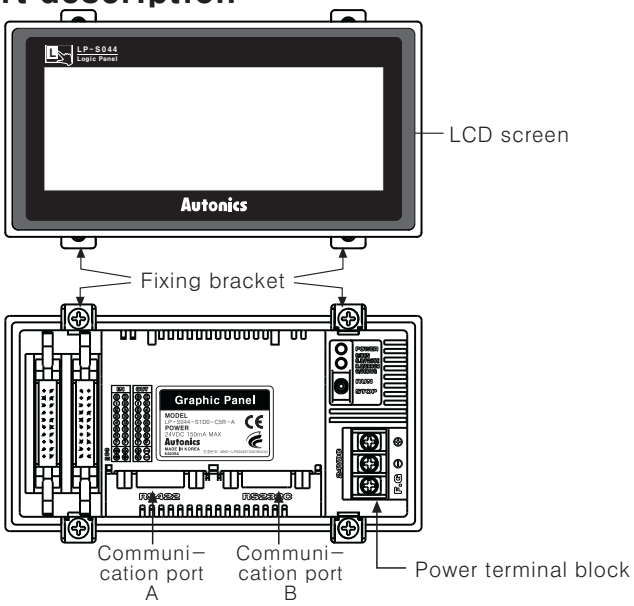
Figure display		Line, rectangle, circle, text, bitmap
Tags	Numeral display	Display the designated device as numerical value.(Decimal, hexadecimal, octal, binary, real number)
	ASCII display	Display the designated device value as ASCII character.
	Time display	Display current time or date.
	Alarm history	Register alarm history.
	Alarm list	Display generated (not backed up) alarm.
	Comment display	Display the designated comment as device status or value.
	Lamp	Display lamp as device status.
	Part display	Display the designated parts as device status and value.
	Line graph	Display several device values with a graph of broken line.
	Trend graph	Display change of device value for time with a graph of broken line.
	Bar graph	Display a device value with a bar graph.
	Statistic graph	Display a ratio of several device values with pie graph.
	Panel meter	Display a device value as panel meter.
	Touch key	Screen is switched, word/bit device values are set when it touched.
	Numeral input	Configure user input value in device.
	ASCII input	Configure user input ASCII code value in device.
System information function		Monitor/control GP operation from PLC.
Recipe function		Read/Write several PLC device collectively.
Security function		Only acceptable user can observe/operate important data.
Barcode read function		Connect barcode reader, read barcode.
Floating alarm function		Warning message is floated when alarm is generated.
Time operation		Specific bit device is ON/OFF for designated day and time.
Overlap window		Available to form dynamically overlapping another base screen on the base one.
Observe status function		Change PLC device status/value of PLC when trigger is generated.

▣Dimensions



(Unit : mm)

▣Part description



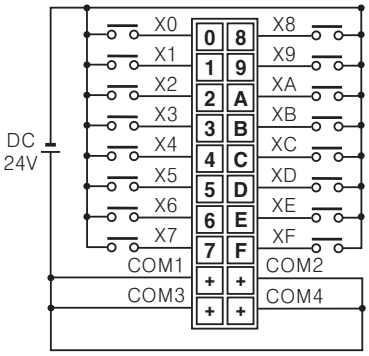
(★)Communication port

Model \ Communication port	Port A	Port B
LP-S044-S1D0-C5T(R)	RS422	RS232C
LP-S044-S1D1-C5T(R)	RS232C-A	RS232C-B

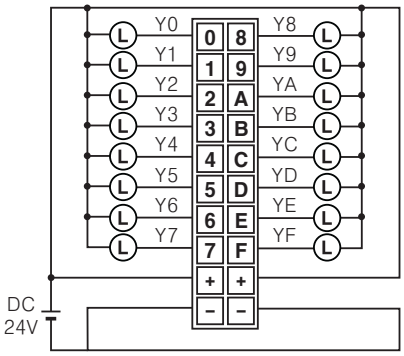
▣Input · output wiring

◎LP-S044-S1D0(1)-C5R

●Input wiring(Source type input module)

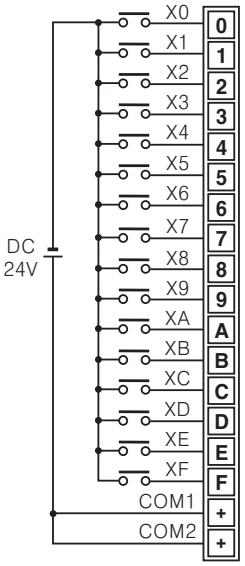


●Output wiring(Sink type output module)

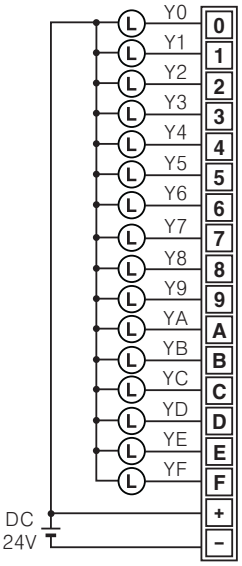


◎LP-S044-S1D0(1)-C5T

●Input wiring(Source type input module)



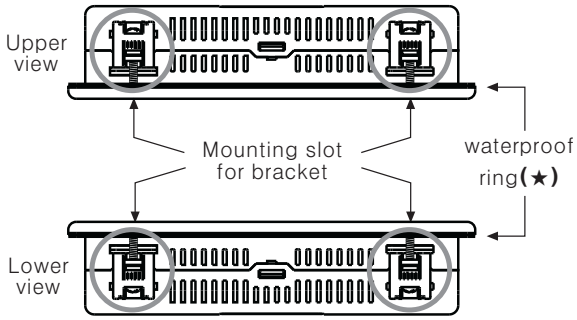
●Output wiring(Sink type output module)



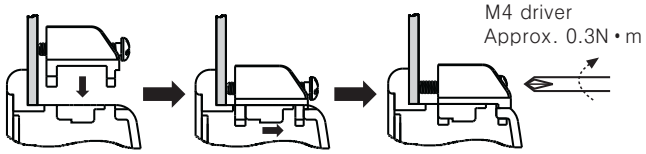
※Check the pin number of the case before wiring.

▣Installation

1. Set a rubber waterproof ring in LP.
2. Set LP in panel.
3. Set brackets in 4 bracket slots and fix them.



●Mounting bracket



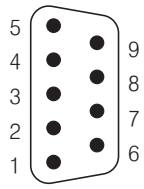
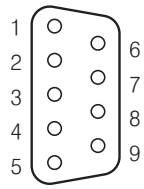
※(★)How to insert rubber waterproof ring

①After checking connection, insert rubber waterproof ring beneath the product.

②Put rubber waterproof ring in corners of GP/LP and press it down so that connection is sealed.

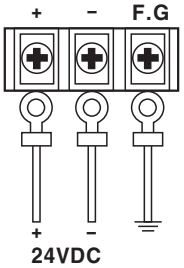
▣Serial interface

- ●All devices connectable into LP-S044 including PC, PLC, serial printer, barcode reader and dedicated connectors can be connected into both RS232C and RS422 ports.
- ●Device must be set for the port in system setting for LP-S044. For details, refer to "GP user manual".
- ●For the method of wiring external devices of PLC, refer to "Telecommunication Manual".

Port	NO.	Pin(GP-2480)	Pin(GP-S044)	Pin(GP-S057)	Pin(LP-S044)
RS232C  D-Sub 9pin male	1	Non-used	Non-used	Non-used	Non-used
	2	RXD	RXD	RXD	RXD
	3	TXD	TXD	TXD	TXD
	4	DTR	DTR	DTR	DTR
	5	SG	SG	SG	SG
	6	DSR	DSR	DSR	DSR
	7	Non-used	Non-used	Non-used	Non-used
	8	Non-used	Non-used	Non-used	Non-used
	9	Non-used	Non-used	Non-used	Non-used
RS422  D-Sub 9pin female	1	TXD+	TXD+	TXD+	TXD+
	2	RXD+	RXD+	RXD+	RXD+
	3	RTS-	Non-used	Non-used	Non-used
	4	CTS+	Non-used	Non-used	Non-used
	5	SG	SG	SG	SG
	6	TXD-	TXD-	TXD-	TXD-
	7	RXD-	RXD-	RXD-	RXD-
	8	RTS+	Non-used	Non-used	Non-used
	9	CTS-	Non-used	Non-used	Non-used

▣Power wiring

- ●For power supply, use the wire of which cross section is at least 0.75mm² and use the wire of which cross section is at least 1.25mm² for grounding.
- ●Use crimp-on type terminal with at least 3mm of internal diameter and less than 6mm of external diameter.
- ●Do not apply power before power line connection.
- ●Check power polarity.
- ●Tighten the terminal screw with 0.5 to 0.8N · m torque.
- ●Ground resistance should be less than 100Ω and ground it separately.



▣Battery replacement

Please contact out distributor to replace battery. It may cause an explosion or a fire when improper battery is used.

▣Sold separately

Transmission cables connectable into external devices such as PLC are sold separately.

GP/LP Communication Cable

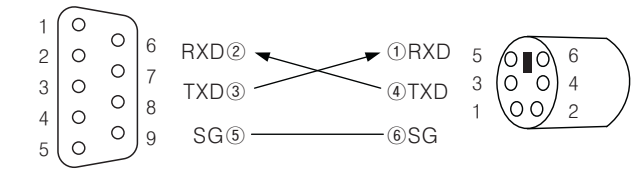
▣Ordering information

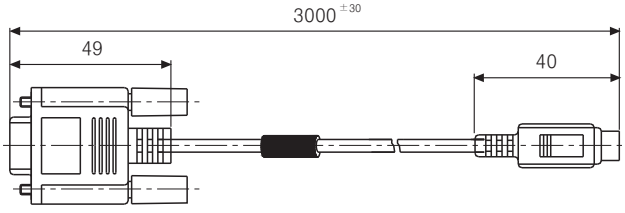
C | 3M | 5P | 00 | – | D | 9 | M | 0 | – | D | 9 | * | 0

Serial number	0	Number
Connter division	M	Male
	F	Female
	Y	Y-Terminal
	*	Cable
Conneter pin no. or wiring no.	0	Number
Connector type on device	D	D-Sub
	M	Mini-Din
	T	Terminal
	W	Wire
Serial number	0	Number
Connter division	M	Male
	F	Female
Conneter pin no.	9	Number
Connector type on GP	D	D-Sub
Serial number	00	Number
Cable thickness	5P	Φ5mm
Cable length	3M	3m
	C	Cable

▣Communication cable wiring and dimensions

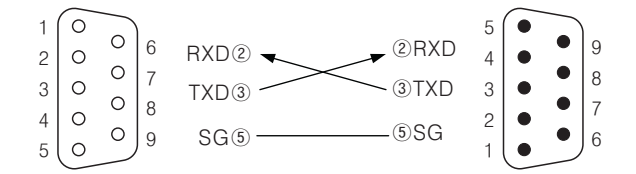
1. C3M5P00-D9F0-M6M0

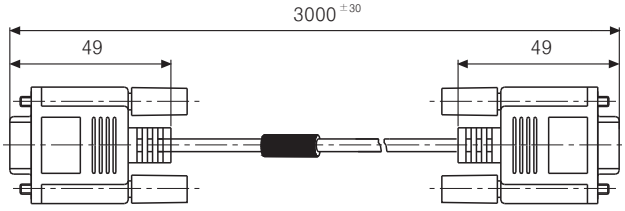




(Unit:mm)

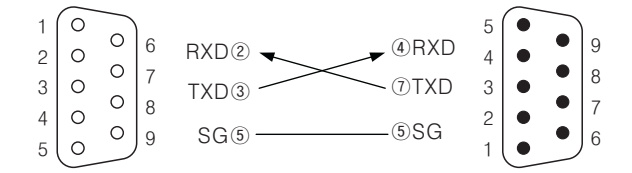
2. C3M5P01-D9F0-D9M0

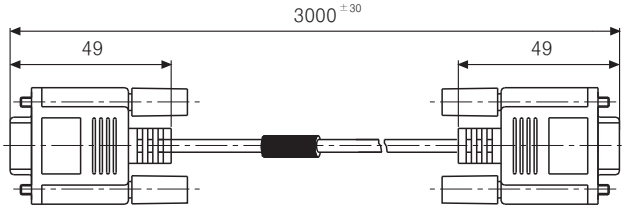




(Unit:mm)

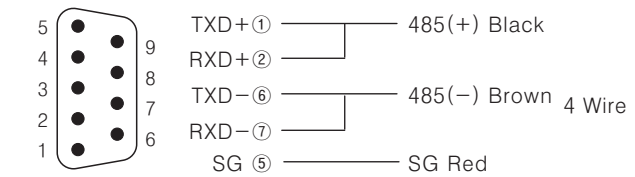
3. C3M5P02-D9F0-D9M0

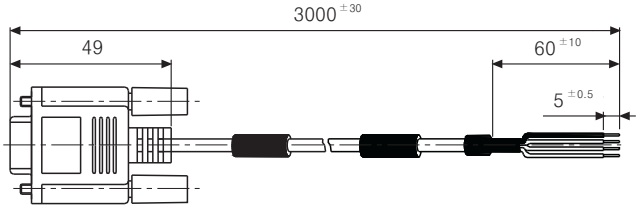




(Unit:mm)

4. C3M5P03-D9M0-W4*0

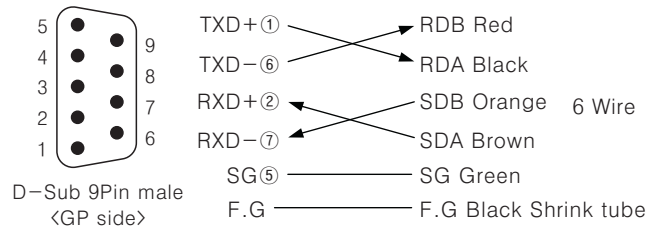


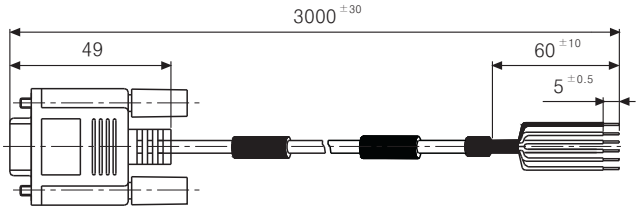


(Unit:mm)

▣Communication cable wiring and dimensions

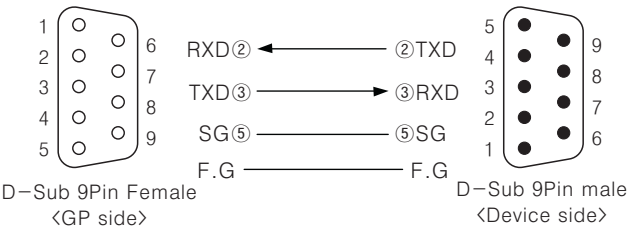
5. C3M5P04−D9M0−W6*0

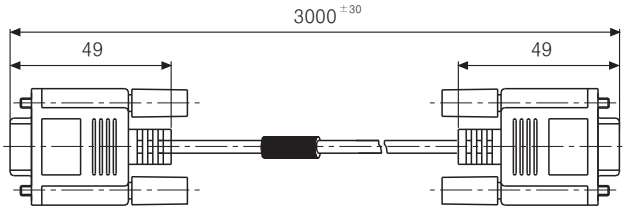




(Unit:mm)

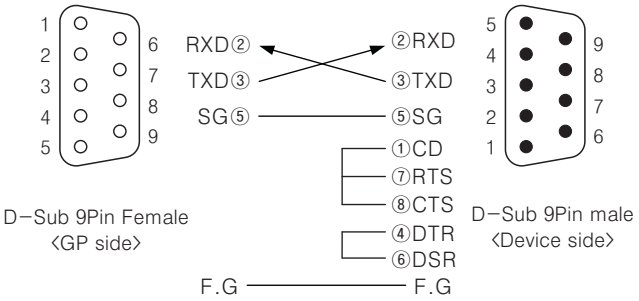
8. C3M5P07−D9F0−D9M0

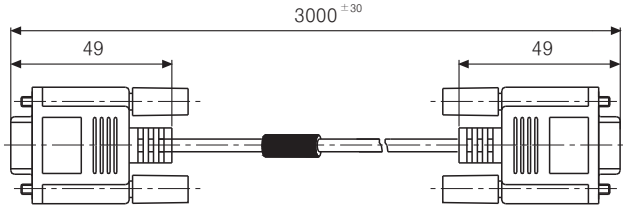




(Unit:mm)

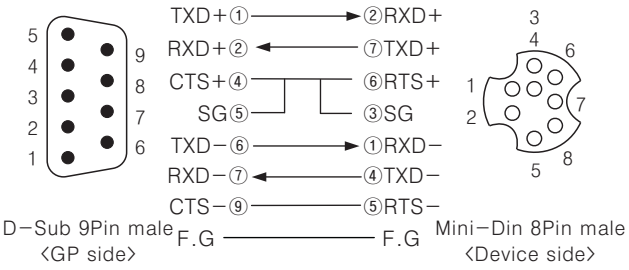
6. C3M5P05−D9F0−D9M0

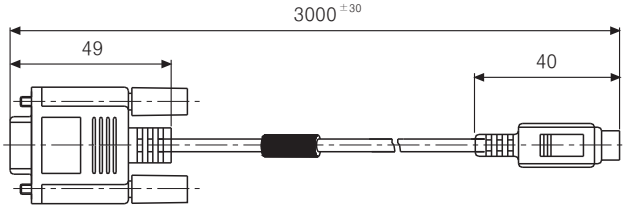




(Unit:mm)

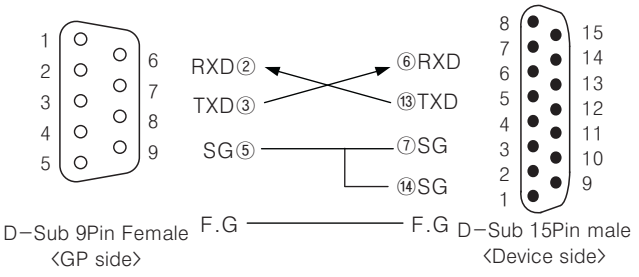
9. C3M5P08−D9F0−M8M0

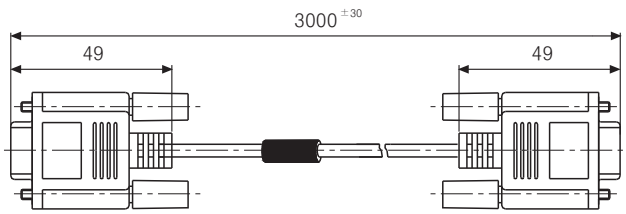




(Unit:mm)

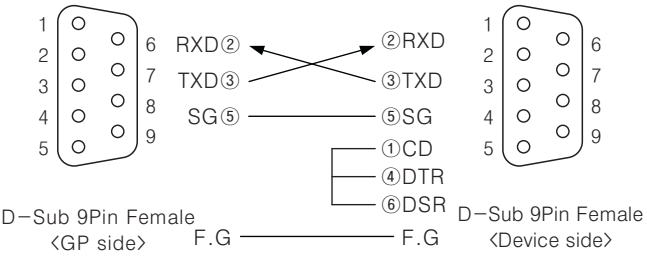
7. C3M5P06−D9F0−D15M0

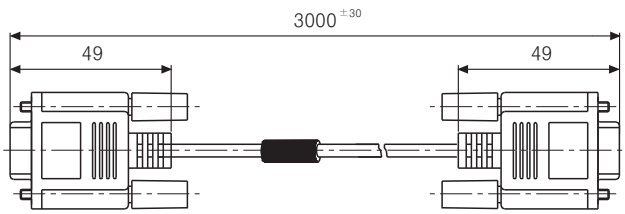




(Unit:mm)

10. C3M5P09−D9F0−D9F0



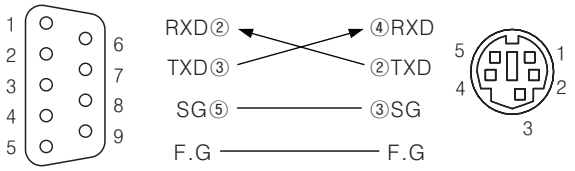


(Unit:mm)

GP/LP Communication Cable

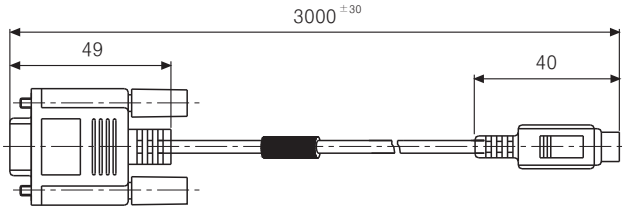
▣Communication cable wiring and dimensions

11. C3M5P10-D9F0-M5M0



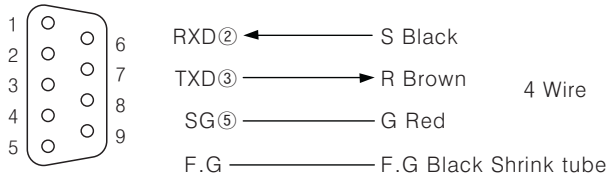
D-Sub 9Pin Female
<GP side>

Mini-Din 5Pin male
<Device side>

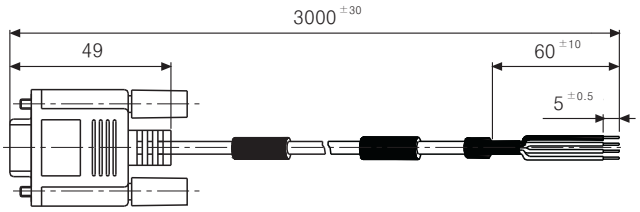


(Unit:mm)

12. C3M5P11-D9F0-W4*0

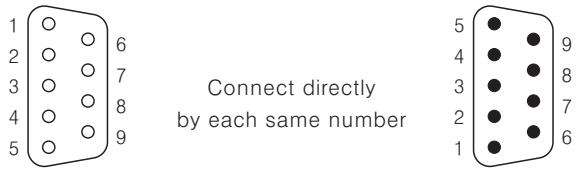


D-Sub 9Pin Female
<GP side>



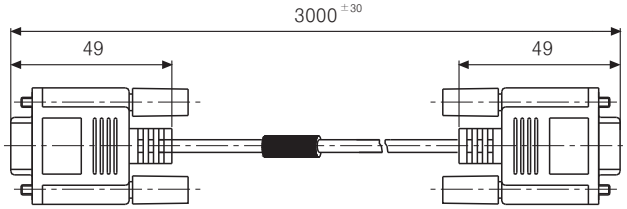
(Unit:mm)

13. C3M5P12-D9F0-D9M1



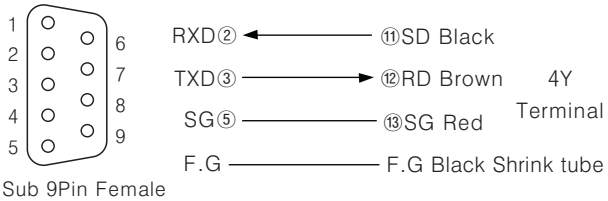
D-Sub 9Pin Female
<GP side>

D-Sub 9Pin male
<Device side>

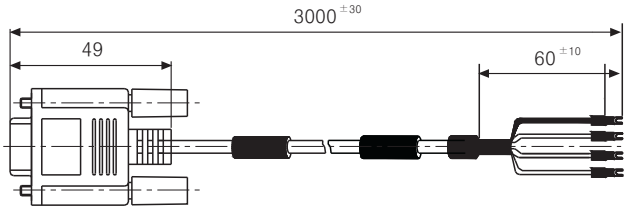


(Unit:mm)

14. C3M5P13-D9F0-T4Y0

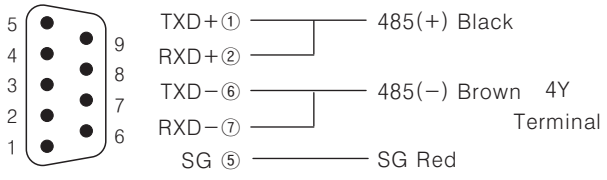


D-Sub 9Pin Female
<GP side>

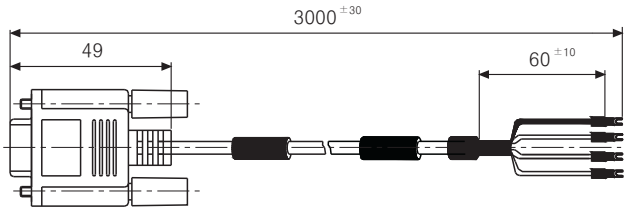


(Unit:mm)

15. C3M5P03-D9M0-T4Y0

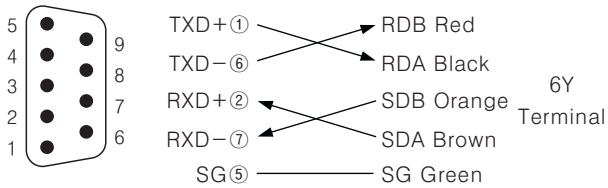


D-Sub 9Pin male
<GP side>

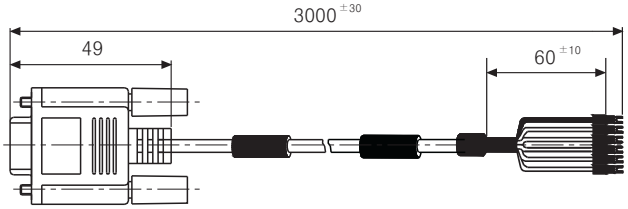


(Unit:mm)

16. C3M5P04-D9M0-T6Y0



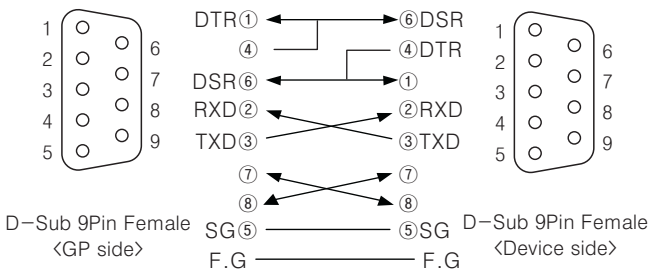
D-Sub 9Pin male
<GP side>

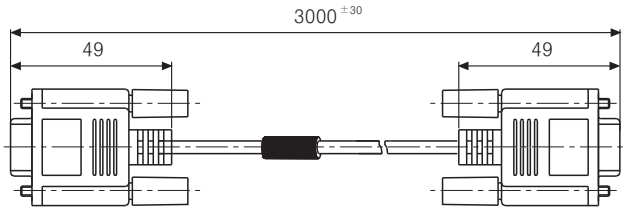


(Unit:mm)

▣Communication cable wiring and dimensions

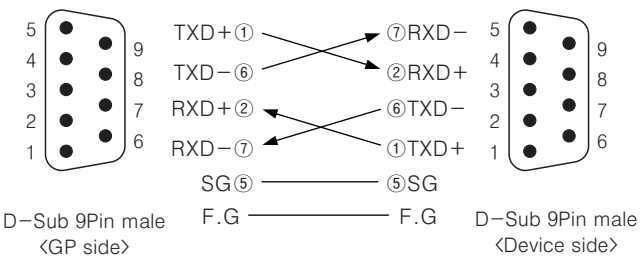
17. C3M5P14-D9F0-D9F0

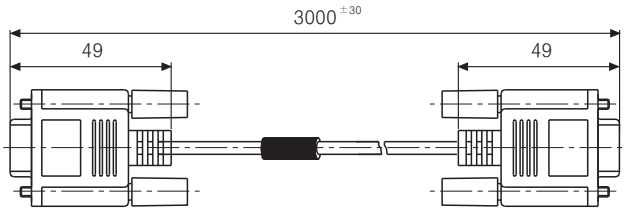




(Unit:mm)

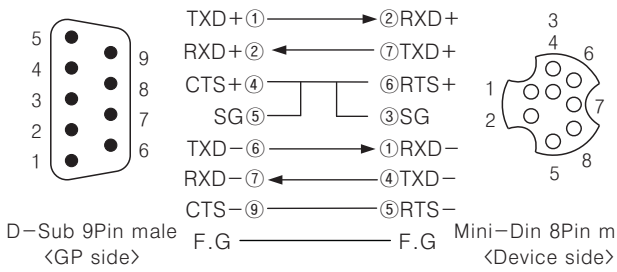
18. C3M5P15-D9M0-D9M0

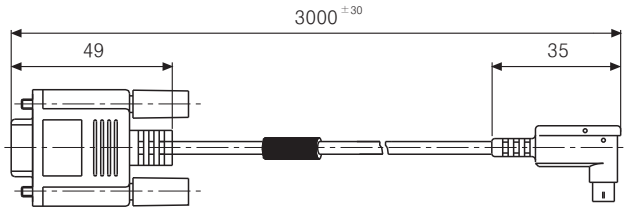




(Unit:mm)

19. C3M5P08-D9M0-M8M1





(Unit:mm)

▣Communication cable by connectable device

Series	Connectable device	Connectable module	Connection type	Communication cable model	Connection diagram no.
LS Master-K	MK-10S1	CPU	RS232C	C3M5P00-D9F0-M6M0	1
	MK-80S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-120S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-200S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-300S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	MK-1000S	CPU	RS232C	C3M5P01-D9F0-D9M0	2
LS Glofa	GM4	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	GM6	CPU	RS232C	C3M5P01-D9F0-D9M0	2
	GM7U	CPU	RS232C	C3M5P01-D9F0-D9M0	2
LS Master-K CNET	MK-80S	Cnet module(G7L-CUEB)	RS232C	C3M5P05-D9F0-D9M0	6
		Cnet module(G7L-CUEC)	RS422	C3M5P04-D9M0-T6Y0	16
	MK-120S	CPU	RS232C	C3M5P02-D9F0-D9M0	3
		CPU	RS485	C3M5P03-D9M0-W4*0	4
		Cnet module(G7L-CUEB)	RS232C	C3M5P05-D9F0-D9M0	6
		Cnet module(G7L-CUEC)	RS422	C3M5P04-D9M0-T6Y0	16
	MK-200S	CPU	RS232C	C3M5P02-D9F0-D9M0	3
		CPU	RS422	C3M5P04-D9M0-W6*0	5
		CPU	RS485	C3M5P03-D9M0-W4*0	4
		Cnet module(G6L-CUEB)	RS232C	C3M5P05-D9F0-D9M0	6
		Cnet module(G6L-CUEC)	RS422	C3M5P04-D9M0-T6Y0	16
	MK-300S	G4L-CUEA	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-T6Y0	16
	MK-1000S	G3L-CUEA	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-T6Y0	16
LS XGT CNET	XGK-CPUS	XGL-C22A	RS232C	C3M5P01-D9F0-D9M0	2
		XGL-CH2A	RS232C	C3M5P01-D9F0-D9M0	2
			RS422	C3M5P04-D9M0-T6Y0	16
		XGL-C42A	RS422	C3M5P04-D9M0-T6Y0	16

GP/LP Communication Cable

▣Communication cable by connectable device

Series	Connectable device	Connectable module	Connection type	Communication cable model	Connection diagram no.
LS XGB CNET	XBM	CPU	RS232C	C3M5P13-D9F0-T4Y0	14
			RS485	C3M5P03-D9M0-T4Y0	15
	XBC	CPU	RS232C	C3M5P13-D9F0-T4Y0	14
			RS485	C3M5P03-D9M0-T4Y0	15
OEMAX (SAMSUNG)	N70	CPU	RS232C	C3M5P06-D9F0-D15M0	7
	N70 Plus	CPU	RS232C	C3M5P07-D9F0-D9M0	8
OEMAX FARA	NX7	CPU	RS232C	C3M5P07-D9F0-D9M0	8
	NX70	CPU	RS232C	C3M5P07-D9F0-D9M0	8
MITSUBISHI FX	FX1S	CPU	RS422	C3M5P08-D9F0-M8M0	9
		RS232C module(FX1S-232-BD)	RS232C	C3M5P09-D9F0-D9F0	10
	FX1N	CPU	RS422	C3M5P08-D9F0-M8M0	9
		RS232C module(FX1N-232-BD)	RS232C	C3M5P09-D9F0-D9F0	10
	FX2NC	CPU	RS422	C3M5P08-D9F0-M8M0	9
	FX2N	CPU	RS422	C3M5P08-D9F0-M8M0	9
		RS232C module(FX2N-232-BD)	RS232C	C3M5P09-D9F0-D9F0	10
	FX3U	CPU	RS422	C3M5P08-D9M0-M8M1	19
MITSUBISHI Q	Q00J	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q00	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q01	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q02	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q02H	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q06H	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q12H	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
	Q25H	Expansion module(QJ71C24N)	RS232C	C3M5P05-D9F0-D9M0	6
			RS422	C3M5P04-D9M0-W6*0	5
		Expansion module(QJ71C24N-R2)	RS232C	C3M5P05-D9F0-D9M0	6
		Expansion module(QJ71C24N-R4)	RS422	C3M5P04-D9M0-W6*0	5
NAIS FP	FP0-C16	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0-C32	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0-T32C	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FPG-C24R2	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FPG-C32T	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FPG-C32T2	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0R-C10	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12

▣Communication cable by connectable device

Series	Connectable device	Connectable module	Connection type	Communication cable model	Connection diagram no.
NAIS FP	FP0R-C14	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0R-C16	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0R-C32	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0R-T32	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
	FP0R-F32	CPU(Tool port)	RS232C	C3M5P10-D9F0-M5M0	11
		CPU(COM port)	RS232C	C3M5P11-D9F0-W4*0	12
SIEMENS SIMATIC S7-200	CPU221	CPU	RS485	Exclusive cable for SIEMENS	*
	CPU222	CPU	RS485	Exclusive cable for SIEMENS	*
	CPU224	CPU	RS485	Exclusive cable for SIEMENS	*
	CPU224XP	CPU	RS485	Exclusive cable for SIEMENS	*
	CPU224XPsi	CPU	RS485	Exclusive cable for SIEMENS	*
	CPU226	CPU	RS485	Exclusive cable for SIEMENS	*
AllenBradley	MicroLogicx 1000	CPU	RS485	Exclusive cable for AllenBradley	*
	MicroLogicx 1200	CPU	RS485	Exclusive cable for AllenBradley	*
OMRON SYSMAC C	CPM1A	CPU	RS232C	For communicate GP, OMRON사 CQM1-CIF02	*
				For extension cable, C3M5P12-D9F0-D9M1	13
OMRON temperature controller	E5AN	Modbus	RS232C	C3M5P13-D9F0-T4Y0	14
			RS485	C3M5P03-D9M0-T4Y0	15
	E5AR	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
	E5CN	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
	E5EN	Modbus	RS232C	C3M5P13-D9F0-T4Y0	14
			RS485	C3M5P03-D9M0-T4Y0	15
	E5ER	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
Autonics	MT Series	Private communication, Modbus	RS485	C3M5P03-D9M0-W4*0	4
	MP Series	Private communication	RS485	C3M5P03-D9M0-W4*0	4
	THD Series	Modbus	RS485	C3M5P03-D9M0-W4*0	4
	TZ Series	Private communication	RS485	C3M5P03-D9M0-T4Y0	15
	TK Series	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
	TM Series	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
	CT Series	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
	LP-S044 Series	CPU	RS232C	C3M5P14-D9F0-D9F0	17
			RS422	C3M5P15-D9M0-D9M0	18
KONICS	DPU Series	Modbus	RS485	C3M5P03-D9M0-W4*0	4
	KRN50 Series	Modbus	RS485	C3M5P03-D9M0-W4*0	4
DELTA	DTB Series	Modbus	RS485	C3M5P03-D9M0-T4Y0	15
GP firmware download cable	COMPUTER	*	RS232C	C3M5P14-D9F0-D9F0	17