

# General Features

## ■ GP (Graphic Panel)?



GP-S044

GP-S057

GP-S070

Graphic panel is HMI (Human Machine Interface) device that parameter monitors or changes via graphic interface by communication with PLCs, temperature controllers 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 controllers and users.

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 temperature, the numerical value of temperature is shown with a tag and the change in temperature for time can be monitored on the screen.

## ■ Preparation For Using GP



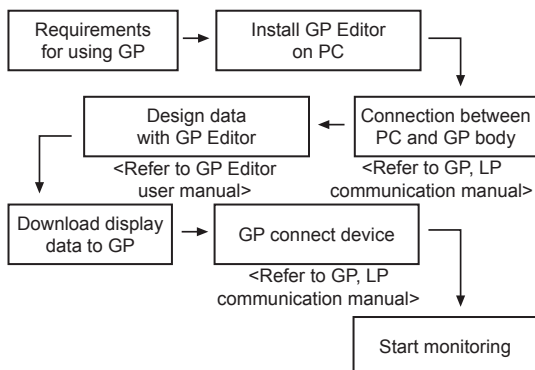
The numerical value of temperature



Graph of temperature

- 1) GP body
- 2) PC
- 3) GP Editor
  - Software for drawing GP screen
- 4) Manual
  - GP editor user manual
  - LP, GP Communication manual
  - GP-S044/S057, GP-S070 user manual
- 5) Communication cable
  - Communication cable for PC connection
  - Communication cable for controller connection
- 6) Access devices
  - (PLC or controller built in communication ports)

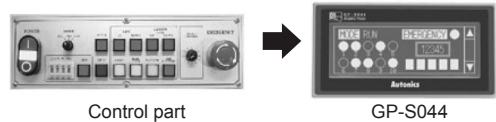
## ■ Basic Operation Flow



## ■ Advantages Of Using GP

### ◎ Simplifying complicated environment of operation and control parts

It visualizes mechanical control components such as buttons, switches and lamps so that saves cost and space and improves the preservation of devices.

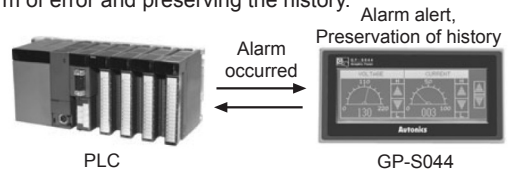


Control part

GP-S044

### ◎ Easy 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 product line with fast corresponding alarm of error and preserving the history.



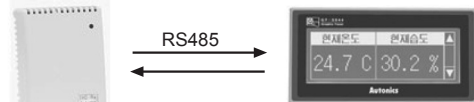
PLC

GP-S044

### ◎ Convenient setting by user

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

- 1) Temperature/Humidity without display device



- 2) Temperature controller



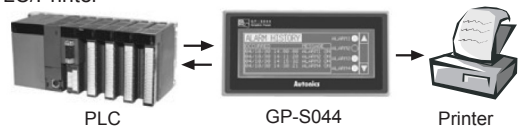
#1.....#32

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



- 2) Barcode reader/PLC



### ◎ Communication between heterogeneous controllers

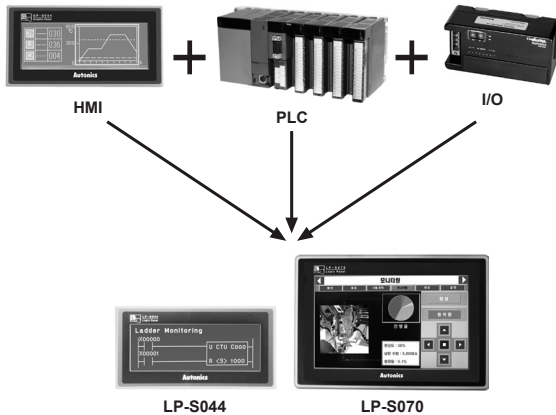


PLC

GP-S044

Thermometer/hygrometer

## ■ LP (Logic Panel)?

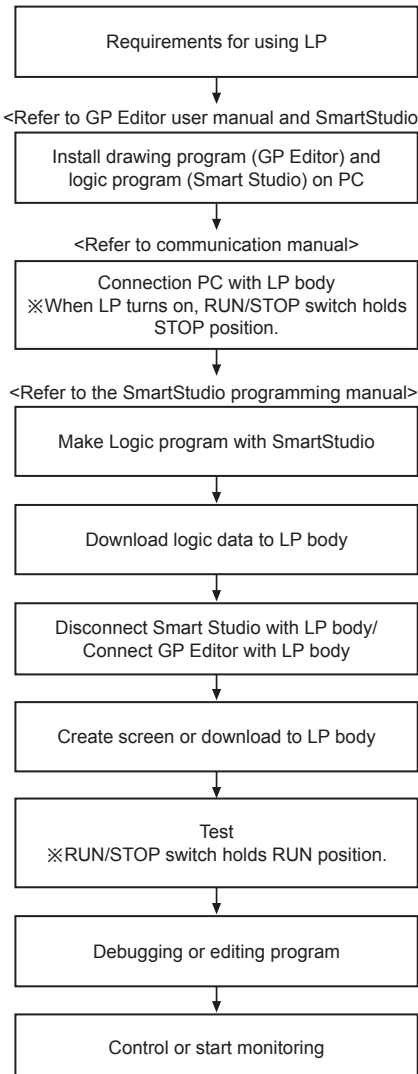


Logic Panels are designed for being used as an integrated control panel which used to consist of HMI, PLC and I/O. Through one single integrated logic panel, it realizes cost saving, reduced wire works, space saving, and easy operation. The logic panel perfectly supports serial communication and editing display with GP Editor and about 250 commands from SmartStudio, dedicated logic programs, allowing accelerating product development and designing. And also this device can control and monitor various output devices (sensors, buttons, etc.) and output devices (solenoids, lamps, motors, etc.) individually.

## ■ Preparations For Using LP

- 1) LP body
- 2) PC
- 3) Software
  - ① GP Editor
    - Software for drawing LP screen
  - ② SmartStudio
    - Software for logic program
- 4) Manual
  - GP Editor user manual
  - GP,LP Communication manual
  - SmartStudio user manual
  - SmartStudio programming manual
  - LP-S044, LP-S070 user manual
  - LP Series command 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



※Refer to the manual for details on website ([www.autonics.com](http://www.autonics.com)) resources.

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

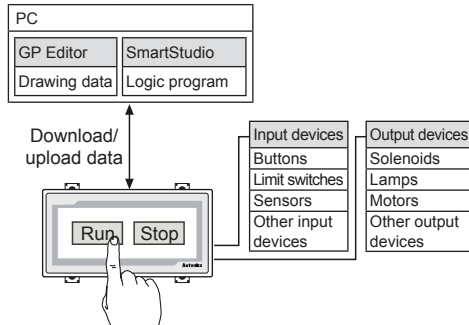
(T) Software

# General Features

## ■ System Configurations

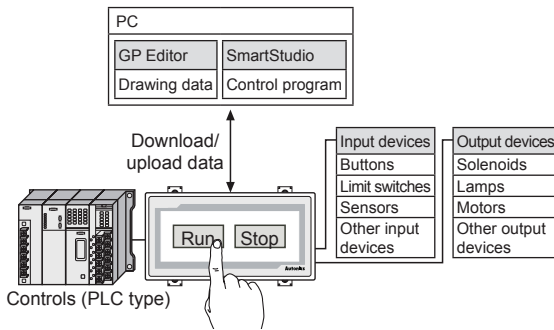
### ◎ Stand alone (LP Series)

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



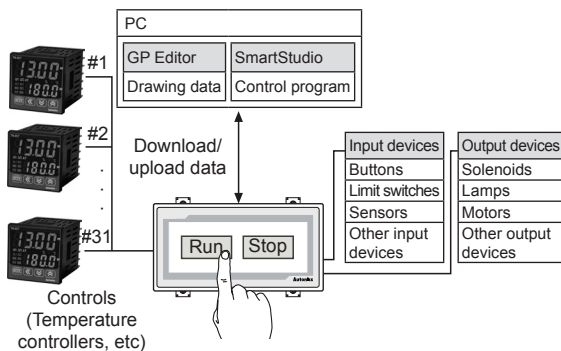
### ◎ 1:1 configuration (GP/LP Series)

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



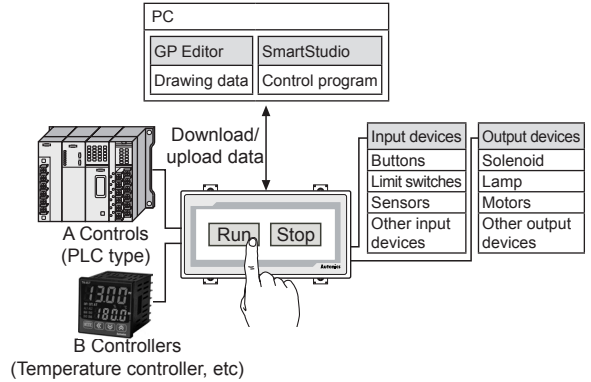
### ◎ 1:N configuration (GP/LP Series)

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)



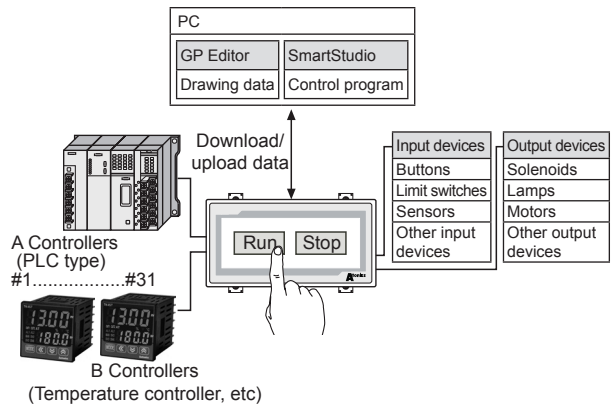
### ◎ 1:1:1 configuration (GP/LP Series)

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



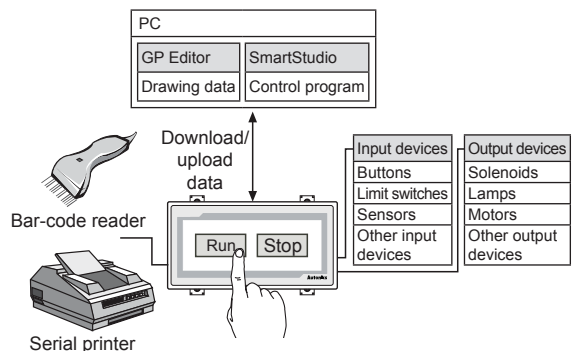
### ◎ 1:1 N configuration (GP/LP Series)

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 31 units).



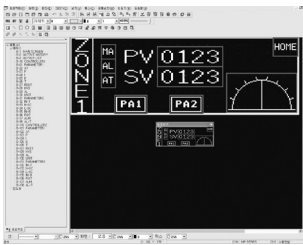
### ◎ Bar-code, printer connection (GP/LP Series)

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



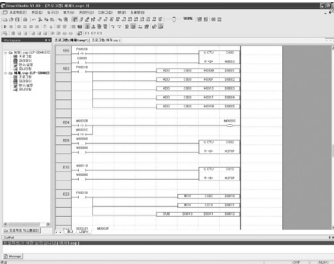
## ■ Software

### ◎ 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 transfers the data from screen to GP/LP. After download, GP/LP starts monitoring according to your screen data.

### ◎ SmartStudio (Logic program)



- Logic software is for LP Series.
- Support multi-project
  - : It is possible to open maximum 5 projects at the 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 monitor, time chart.
- Comfortable user interface
  - : It ensures easy operation with Microsoft windows layout.
- Wide range of Message windows
  - : It supports various message windows to edit and check program.
- Real time convert ladder to mnemonic
  - : Ladder and mnemonic can be written and read to edit simultaneously.

Visit our website ([www.autonics.com](http://www.autonics.com)) and download software or manuals.

< Computer specification for using software >

| Item       | Minimum requirements  |
|------------|---|
| System     | IBM PC compatible computer with Pentium Dual Core or above  |
| Operations | Microsoft Windows 98/NT/XP  |
| Memory     | 1G+   |
| Hard disk  | 5GB+ of available hard disk space   |
| VGA        | 1028×1024 or higher resolution display  |
| Others     | <ul style="list-style-type: none"> <li>• GP/LP-S044, S057: RS232C port</li> <li>• GP/LP-S070: RS232C port, USB port, ETHERNET port</li> </ul> |

## ■ Manual

### ◎ GP/LP common manual

- GP Editor 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.
- GP-S044/S057, GP-S070 user manual
  - : The manual describes installation and system organization and menus.

### ◎ LP manual

- SmartStudio manual
  - : This section describes how to install and use SmartStudio.
- Programming manual
  - : The manual has command and instruction.
- LP-S044, LP-S070 user manual
  - : The manual describes installation and system organization and menus.
- LP Series instruction manual
  - : The manual has LP installation, system configuration and instruction.

## ■ Precaution For Using

- Do not press touch panel with hard and sharp object.
- Please store the device in the recommended temperature range, or LCD panel can be damaged.
- Please check pin number shown in "Communication manual" when connect communication port
- Do not block the ventilating opening of this product.
- Do not use or store it in a place with direct ray of light or dust.
- Do not use or store it in a place with shock or vibration.
- The ground wire of GP/LP should be grounded separately.
  - : The ground resistance should be max. 100Ω, please use the wire of min. 1.25mm<sup>2</sup> dimension.
- Please check the pin number and connect to GP/LP communication port.
- Please tighten bolt on terminal block with specified tightening torque.
- 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.
- Do not inflow dust or wire dregs into the unit.
- For cleaning, do not use water or an oil-based detergent, use dry towels.
- It should be done away regarded as an industrial waste.

|     |  |
|-----|--|
| (A) | Photoelectric Sensors                  |
| (B) | Fiber Optic Sensors                    |
| (C) | Door/Area Sensors                      |
| (D) | Proximity Sensors                      |
| (E) | Pressure Sensors                       |
| (F) | Rotary Encoders                        |
| (G) | Connectors/ Sockets                    |
| (H) | Temperature Controllers                |
| (I) | SSRs / Power Controllers               |
| (J) | Counters                               |
| (K) | Timers                                 |
| (L) | Panel Meters                           |
| (M) | Tacho / Speed / Pulse Meters           |
| (N) | Display Units                          |
| (O) | Sensor Controllers                     |
| (P) | Switching Mode Power Supplies          |
| (Q) | Stepper Motors & Drivers & Controllers |
| (R) | Graphic/ Logic Panels                  |
| (S) | Field Network Devices                  |
| (T) | Software                               |

# General Features

## ■ Connectable Devices With GP/LP

| Series                           | Connectable device           | Connection type              | GP-S057 | GP/LP-S044 | GP/LP-S070 |
|----------------------------------|------------------------------|------------------------------|---------|------------|------------|
| 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<br>(Cnet integrated CPU) | MK-80S                       | Cnet                         | ○       | ○          | ○          |
|                                  | MK-120S                      | Cnet                         | ○       | ○          | ○          |
|                                  | MK-200S                      | Cnet                         | ○       | ○          | ○          |
| LS CNET<br>(For Cnet unit)       | MK-80S                       | Cnet                         | ○       | ○          | ○          |
|                                  | MK-120S                      | Cnet                         | ○       | ○          | ○          |
|                                  | MK-200S                      | Cnet                         | ○       | ○          | ○          |
|                                  | MK-300S                      | Cnet                         | ○       | ○          | ○          |
| LS XGT (For Cnet unit)           | XGK- PUS                     | Cnet                         | ○       | ○          | ○          |
| LS XGB<br>(Cnet integrated CPU)  | XBM                          | Cnet                         | ○       | ○          | ○          |
|                                  | XBC                          | Cnet                         | ○       | ○          | ○          |
| LS XGB<br>(For Cnet unit)        | XBM                          | Cnet                         | ○       | ○          | ○          |
|                                  | XBC                          | Cnet                         | ○       | ○          | ○          |
| OEMAX<br>(SAMSUNG)               | N70                          | Cnet                         | ○       | ○          | ○          |
|                                  | N70Plus                      | Cnet                         | ○       | ○          | ○          |
| 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<br>(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-C1                      | CPU direct connection loader | ○       | ○          | ○          |
|                                  | FP0R-C32                     | CPU direct connection loader | ○       | ○          | ○          |
|                                  | FP0R-T32                     | CPU direct connection loader | ○       | ○          | ○          |
|                                  | FP0R-F32                     | CPU direct connection loader | ○       | ○          | ○          |
| SIEMENS<br>SIMATIC<br>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 Devices With GP/LP

| Series                          | Connectable device  | Connection type              | GP-S057 | GP/LP-S044 | GP/LP-S070 |
|---------------------------------|---------------------|------------------------------|---------|------------|------------|
| SIEMENS<br>SIMATIC<br>S7-300    | CPU312              | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU312C             | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU313C             | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU313C-2           | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU314              | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU314C-2           | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU315-2            | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU317-2            | CPU direct connection loader | ○       | ○          | ○          |
|                                 | CPU319-3            | CPU direct connection loader | ○       | ○          | ○          |
| Allen-Bradley                   | MicroLogicx 1000    | CPU direct connection loader | ○       | ○          | ○          |
|                                 | MicroLogicx 1200    | CPU direct connection loader | ○       | ○          | ○          |
|                                 | MicroLogicx 1500    | CPU direct connection loader | ○       | ○          | ○          |
| OMRON SYSMAC C                  | CPM 1A              | CPU direct connection loader | ○       | ○          | ○          |
| OMRON<br>Temperature controller | E5AN                | Modbus                       | ○       | ○          | ○          |
|                                 | E5AR                | Modbus                       | ○       | ○          | ○          |
|                                 | E5CN                | Modbus                       | ○       | ○          | ○          |
|                                 | E5EN                | Modbus                       | ○       | ○          | ○          |
|                                 | E5ER                | Modbus                       | ○       | ○          | ○          |
| AUTONICS                        | MT Series           | Private communication        | ○       | ○          | ○          |
|                                 |                     | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | MP Series           | Private communication        | ○       | ○          | ○          |
|                                 |                     | Modbus                       | ○       | ○          | ×          |
|                                 | THD Series          | Modbus                       | ○       | ○          | ○          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | TZ Series           | Private communication        | ○       | ○          | ○          |
|                                 | TK Series           | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | TM Series           | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | CT Series           | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | DS/DA Series        | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | ARM Series          | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | LP-S044,<br>LP-S070 | CPU                          | ○       | ○          | ○          |
|                                 | DPU Series          | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
|                                 | KRN100              | Modbus                       | ○       | ○          | ×          |
| Modbus (TYPE A)                 |                     | ○                            | ○       | ○          |            |
| KRN50                           | Modbus              | ○                            | ○       | ×          |            |
|                                 | Modbus (TYPE A)     | ○                            | ○       | ○          |            |
| DELTA                           | DTB Series          | Modbus                       | ○       | ○          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
| DANFOSS                         | FC Series           | Modbus                       | ×       | ×          | ×          |
|                                 |                     | Modbus (TYPE A)              | ○       | ○          | ○          |
| UNIVERSAL                       | UNIVERSAL           | Modbus (Slave)               | ○       | ○          | ○          |
| MODBUS MASTER                   | MODBUS MASTER       | Modbus (Master)              | ○       | ○          | ○          |

※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](http://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)

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