

# Color LCD Graphic Panel



## GP-A Series PRODUCT MANUAL

**For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.**

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Features

- Equipped with TFT LCD for realizing True color
- Horizontal/Vertical installation according to environment
- Available to monitor device of the connected controllers even without user screen data
- Using user screen drawing program 'atDesigner'
  - : More variety functions, objects and library image
  - : Intuitive user interface
  - : Multilingual table function: switching language of user screen by touching a button
- Various communication interface: RS232C, RS422, Ethernet, CAN

### Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

**⚠ Warning** Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**  
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**  
Failure to follow this instruction may result in explosion or fire.
- 03. Use the unit within the rated specifications.**  
Failure to follow this instruction may result in fire or shortening the life cycle of the product.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow this instruction may result in fire.
- 05. Check 'Power Wiring' and 'Serial Interface' before wiring.**  
Failure to follow this instruction may result in fire.
- 06. In preparation for product damage, communication error, or malfunction, install external limit switch, emergency stop switch, or other protection circuit.**  
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 07. Since Lithium battery is embedded in the product, do not disassemble or burn the unit.**  
Failure to follow this instruction may result in fire.
- 08. Do not disassemble or modify the unit.**  
Failure to follow this instruction may result in fire.
- 09. Please contact to us for battery replacement.**  
Using an unauthentic battery may result in fire or product damage.

**⚠ Caution** Failure to follow instructions may result in injury or product damage.

- 01. Use dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow this instruction may result in electric shock or fire.
- 02. When connecting the power input, use AWG 23 cable or over and tighten the terminal screw with a tightening torque of 0.5 to 0.8N·m.**  
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- 03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**  
Failure to follow this instruction may result in fire or product damage.
- 04. Do not touch the front LCD screen over 2 points at the same time.**  
Failure to follow this instruction may result in malfunction.
- 05. Do not put any heavy object on the front screen.**  
Failure to follow this instruction may result in malfunction due to deformation of LCD and touch panel.

## Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- Operate the product after supplying power to the product, input/output equipment, and load. If operate product before supplying power, it may result in output error or malfunction.
- Use a USB cable within 2 m.
- Keep away from high voltage lines or power lines to prevent inductive noise. Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Make a required space around the unit for radiation of heat, and do not block ventilation openings.
- Do not push the touch panel with a hard and sharp object or push the panel with excessive force. It may result in fire or malfunction.
- When skin is smeared with liquid crystal from the broken LCD, rinse with running water for over 15 minutes. If it gets into the eyes, rinse eyes with running water for over 15 minutes and contact a doctor.
- This unit may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000m
  - Pollution degree 2
  - Installation category II

## Cautions during Wiring

- For power supply, use the wire of which cross section is at least 0.75mm<sup>2</sup> and use the wire of which cross section is at least 1.25mm<sup>2</sup> for grounding.
- Use ring crimp 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 0.6N.m torque.
- Ground resistance should be less than 100Ω and ground it separately.

## Product Components

- Graphic panel + built in battery
- 4.6 / 5.7 / 7.0 inch: 4 fixing brackets
- 10.4 inch: 6 fixing brackets, CAN connector
- Sold separately: communication cable

## Manual

For the detailed information and instructions, please refer to the manuals, and be sure to follow cautions written in the technical descriptions.

Visit Autonics web site to download manuals.

- GP-A Series user manual  
It describes general information about installation and system of GP-A Series.
- atDesigner user manual  
It describes how to design user screen and how to use HMI function.
- GP/LP user manual for communication  
It describes how to connect with external devices such as PLC.

## Ordering Information

This is only for reference.

For selecting the specific model, follow the Autonics web site.

GP - A ① - T ② D ③

### ① Screen size

046: 4.6 inch  
057: 5.7 inch  
070: 7.0 inch  
104: 10.4 inch

### ② Display color

8: 262,144 color  
9: 16,777,216 color

### ③ Interface

| Model               | ③ | RS232C | RS422 | CAN | Micro SD | USB Host | USB Device | Ethernet |
|---------------------|---|--------|-------|-----|----------|----------|------------|----------|
| GP-A<br>046/057/070 | 6 | 1      | 1     | -   | -        | 1        | 1          | 1        |
|                     | 7 | 2      | -     | -   | -        |          |            |          |
| GP-A104             | 8 | 1      | 1     | 1   | 1        | 1        | 1          | 1        |
|                     | 9 | 2      | -     | 1   | 1        |          |            |          |

## Specifications

|  | GP-A046                        | GP-A057                        | GP-A070                        | GP-A104                        |
|--|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Screen size                            | 4.6 inch                       | 5.7 inch                       | 7.0 inch                       | 10.4 inch                      |
| LCD type                               | TFT Color LCD                  |                                |                                |                                |
| Resolution                             | 800×320 pixel                  | 640×480 pixel                  | 800×480 pixel                  | 800×600 pixel                  |
| Display area                           | 108×43.2 mm                    | 115.2×86.4 mm                  | 154.4×93.44 mm                 | 211.2×158.4 mm                 |
| Display color                          | 16,777,216 color               | 262,144 color                  | 16,777,216 color               | 16,777,216 color               |
| LCD view angle (top/bottom/left/right) | Within 75°/70°/80°/80° of each | Within 70°/70°/80°/80° of each | Within 50°/60°/65°/65° of each | Within 60°/70°/80°/70° of each |
| Backlight                              | White LED                      |                                |                                |                                |
| Luminance adjustment                   | Adjustable by software         |                                |                                |                                |
| Touch                                  | Resistive type (4-wire)        |                                |                                |                                |
| Approval                               | CE                             |                                |                                |                                |
| Unit weight (packaged)                 | ≈ 272 g<br>(≈ 382 g)           | ≈ 489 g<br>(≈ 644 g)           | ≈ 520 g<br>(≈ 706 g)           | ≈ 1.07 kg<br>(≈ 1.62 kg)       |

|                      |                                |
|----------------------|--------------------------------|
| Serial interface     | RS232C, RS422                  |
| USB interface        | USB Host, USB Device(USB2.0)   |
| Ethernet interface   | IEEE802.3(U), 10/100Base-T     |
| CAN interface        | 24V CAN transceiver            |
| External storage     | Micro SD up to 32GB (FAT16/32) |
| Real-time controller | RTC embedded                   |
| Battery life cycle   | 3 years at 25°C                |

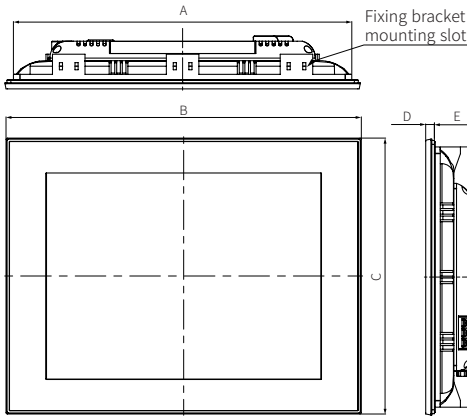
Supportive interface can be different up to model. For the detailed information, please refer to 'Ordering Information'.

|                        |                        |
|------------------------|------------------------|
| Language               | Korean, English        |
| Text                   | Bitmap and vector font |
| Memory for user screen | 64MB                   |
| Number of user screen  | 100 pages              |

|                         |   |
|-------------------------|---|
| Power supply            | 24 VDC≒   |
| Allowable voltage range | 90 to 110% of power supply  |
| Power consumption       | 4.6 inch: ≤ 4.8 W, 5.7 / 7.0 inch: ≤ 7.2 W, 10.4 inch: ≤ 8.0 W                            |
| Insulated resistance    | ≥ 100 MΩ (500 VDC≒ megger) (between all terminals and case)                               |
| Ground                  | 3rd grounding (≤ 100 Ω)   |
| Noise immunity          | The square wave noise (pulse width: 1μs) by the noisesimulator ± 0.5 kV                   |
| Dielectric strength     | 500 VAC~ 50/60 Hz for 1 minute (between all terminals and case)                           |
| Vibration               | 0.75 double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 1 hour    |
| Vibration (malfunction) | 0.5 double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes |
| Shock                   | 147 m/s <sup>2</sup> (approx. 15 G) in each X, Y, Z direction for 3 times                 |
| Shock (malfunction)     | 100 m/s <sup>2</sup> (approx. 10 G) in each X, Y, Z direction for 3 times                 |
| Ambient temperature     | 0 to 50°C, storage: -20 to 60°C (a non freezing or condensation environment)              |
| Ambient humidity        | 35 to 85%RH, storage: 35 to 85%RH (a non freezing or condensation environment)            |
| Protection structure    | IP65 (front panel, IEC standard)  |

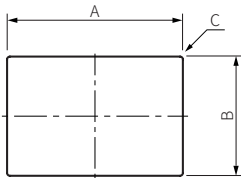
## Dimensions

- Unit: mm, For the detailed dimensions of the product, follow the Autonics web site.



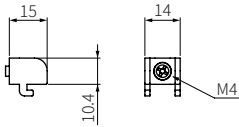
|                  | A   | B     | C     | D   | E    | F   |
|------------------|-----|-------|-------|-----|------|-----|
| <b>4.6 inch</b>  | 135 | 143.5 | 75.5  | 6.5 | 36   | 67  |
| <b>5.7 inch</b>  | 160 | 168.5 | 128.5 | 6.5 | 36   | 120 |
| <b>7.0 inch</b>  | 185 | 194   | 134   | 6.5 | 28.5 | 125 |
| <b>10.4 inch</b> | 260 | 273   | 212   | 7.2 | 34   | 200 |

- Panel cut-out



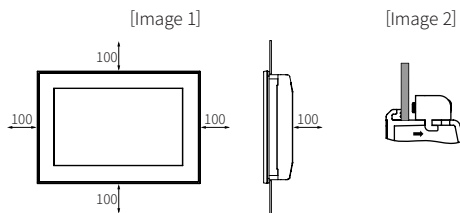
|                  | A                                  | B                                  | C      |
|------------------|------------------------------------|------------------------------------|--------|
| <b>4.6 inch</b>  | 135.5 <sup>+1.1</sup> <sub>0</sub> | 67.5 <sup>+1.1</sup> <sub>0</sub>  | ≤ 4-R3 |
| <b>5.7 inch</b>  | 160.5 <sup>+1.0</sup> <sub>0</sub> | 120.5 <sup>+1.0</sup> <sub>0</sub> | ≤ 4-R3 |
| <b>7.0 inch</b>  | 186 <sup>+1.1</sup> <sub>0</sub>   | 126 <sup>+1.0</sup> <sub>0</sub>   | ≤ 4-R3 |
| <b>10.4 inch</b> | 260.5 <sup>+1.1</sup> <sub>0</sub> | 200.5 <sup>+1.0</sup> <sub>0</sub> | ≤ 4-R3 |

- Fixing bracket



## Installation

- Set the product in panel. (panel thickness: ≤ 4mm)  
When installing GP-A104 on panel, make 100mm of space from upper, lower, right, left side of the product on the panel and back side of panel. It is for preventing effect of electromagnetic waves and heat from other controllers. [Image 1]
- Set fixing brackets in the fixing bracket mounting slots. [Image 2]
- Tighten the fixing bracket with M4 Screw driver and tightening torque is 0.5 to 0.6N·m.



## Software

Visit Autonics web site to download software.

- atDesigner  
atDesigner is for editing project file.

Recommended computer specification for atDesigner is as below.

| Item             | Recommended spec            |
|------------------|-----------------------------|
| Operating system | Windows 7/10                |
| CPU              | Intel Core i5-2nd gen. 2500 |
| Memory           | 8GB                         |
| Hard disk        | 8GB free space              |
| Resolution       | 1920×1080                   |

- Firmware  
Please refer to 'GP-A Series user manual' for firmware upgrade.

## Interface

Interface is different up to the model.

For the detailed information about each interface, refer to the GP-A Series user manual and GP/LP user manual for communication.

### Serial port (RS232C/RS422)

| RS232C               |              | RS422 |                        |   |      |
|----------------------|--------------|-------|------------------------|---|------|
| Port                 | Pin function | Port  | Pin function           |   |      |
| <br>D-sub 9 Pin Male | 1            | N/A   | <br>D-sub 9 Pin Female | 1 | TXD+ |
|                      | 2            | RXD   |                        | 2 | RXD+ |
|                      | 3            | TXD   |                        | 3 | N/A  |
|                      | 4            | DTR   |                        | 4 | N/A  |
|                      | 5            | SG    |                        | 5 | SG   |
|                      | 6            | DSR   |                        | 6 | TXD- |
|                      | 7            | N/A   |                        | 7 | RXD- |
|                      | 8            | N/A   |                        | 8 | N/A  |
|                      | 9            | N/A   |                        | 9 | N/A  |

### USB port

| Type       | Port | Function  |
|------------|------|---|
| USB Host   |      | <ul style="list-style-type: none"> <li>Coping data between storage and GP</li> <li>Firmware upgrade</li> <li>Connecting external device (bar-code reader, printer, etc.)</li> <li>External memory: max. 32GB (supported file system: FAT16, FAT32)</li> </ul> |
| USB Device |      | <ul style="list-style-type: none"> <li>atDesigner project upload/download</li> </ul>  |

Use a USB cable within 2 m.

### Ethernet port

It is available to upload/download project file by connecting PC and atDesigner, and monitor PLC which supports Ethernet communication protocol.

### CAN port

| Number | Color | Function  | Configuration |
|--------|-------|-----------|---------------|
| 1      | Black | 24VDC≐(-) |               |
| 2      | Blue  | CAN_L     |               |
| 3      | None  | SHIELD    |               |
| 4      | White | CAN_H     |               |
| 5      | Red   | 24VDC≐(+) |               |

### Micro SD

External memory: max. 32GB (supported file system: FAT16, FAT32)