

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 0.8 N·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.
- When changing the battery, contact Autonics service center to change it. Using unauthentic battery may result in fire or product damage.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation category II

Cautions during Wiring

- Do not apply power before power line connection.
- Check power polarity.
- For power supply, use the wire of which cross section is at least 0.75 mm² and use the wire of which cross section is at least 1.25 mm² for grounding.
- Use ring crimp terminal with at least 3 mm of internal diameter and less than 6 mm of external diameter.
- Tighten the terminal screw with 0.5 to 0.8 N·m torque.
- Ground resistance should be less than 100 Ω 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 website 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, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

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 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 (≈ 382 g)	≈ 489 g (≈ 644 g)	≈ 520 g (≈ 706 g)	≈ 1.07 kg (≈ 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

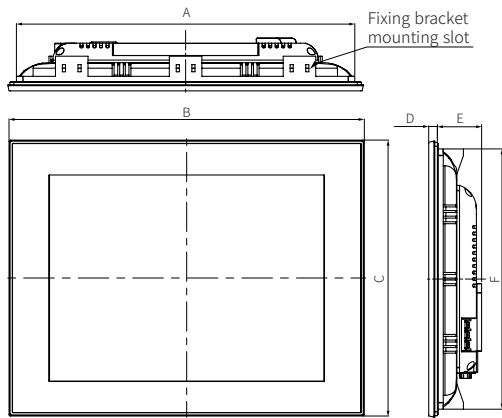
Supportive interface can be different up to model. For the detailed information, please refer to 'Ordering Information'.

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 noise simulator ± 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 ² (approx. 15 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s ² (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)

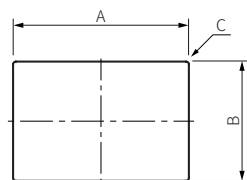
Dimensions

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



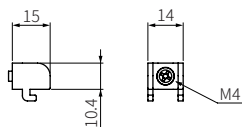
	A	B	C	D	E	F
4.6 inch	135	143.5	75.5	6.5	36	67
5.7 inch	160	168.5	128.5	6.5	36	120
7.0 inch	185	194	134	6.5	28.5	125
10.4 inch	260	273	212	7.2	34	200

- Panel cut-out



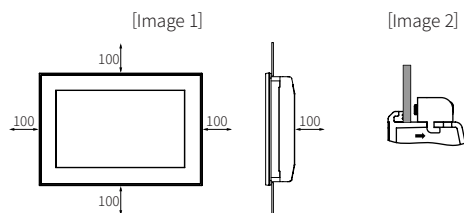
	A	B	C
4.6 inch	135.5 ^{+1.1} ₀	67.5 ^{+1.1} ₀	≤ 4-R3
5.7 inch	160.5 ^{+1.0} ₀	120.5 ^{+1.0} ₀	≤ 4-R3
7.0 inch	186 ^{+1.1} ₀	126 ^{+1.0} ₀	≤ 4-R3
10.4 inch	260.5 ^{+1.1} ₀	200.5 ^{+1.0} ₀	≤ 4-R3

- 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
		1 N/A			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
D-sub 9 Pin Male		9 N/A	D-sub 9 Pin Female		9 N/A

USB port

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

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)