

**Autonics**

**Logic Panel  
LP-S044**

**INSTRUCTION MANUAL**



Thank you for choosing our Autonics product.  
Please read the following safety considerations before use.

**■ Safety Considerations**

- ※ Please observe all safety considerations for safe and proper product operation to avoid hazards.
- ※ ⚠ symbol represents caution due to special circumstances in which hazards may occur.
- ⚠ Warning** Failure to follow these instructions may result in serious injury or death.
- ⚠ Caution** Failure to follow these instructions may result in personal injury or product damage.

**⚠ Warning**

- 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 fire, personal injury, or economic loss.
- Use the unit within the rated specifications.**  
Failure to follow this instruction may result in shortening the life cycle of the product or fire.
- Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow this instruction may result in fire.
- Check 'Power Wiring', 'Serial Interface', and 'Input/Output Wiring' before wiring.**  
Failure to follow this instruction may result in fire.
- In preparation for product damage, communication error, or malfunction, install external emergency stop circuit, forward/reverse interlock circuit, limit switch, emergency stop switch, or other protection circuit.**  
Failure to follow this instruction may result in fire, personal injury, or economic loss.
- Since Lithium battery is embedded in the product, do not disassemble or burn the unit.**  
Failure to follow this instruction may result in fire or explosion.
- Do not disassemble or modify the unit.**  
Failure to follow this instruction may result in fire.
- Please contact to us for battery replacement.**

**⚠ Caution**

- Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**  
Failure to follow this instruction may result in fire or explosion.
- 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.
- 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.
- Keep metal chip, dust, and wire residue from flowing into the unit.**  
Failure to follow this instruction may result in fire or product damage.
- Do not push over 2 point at the same time.**  
Failure to follow this instruction may result in malfunction.

**■ Ordering Information**

Model	LP-S044-S1D0-C5T-A	LP-S044-S1D0-C5R-A	LP-S044-S1D1-C5T-A	LP-S044-S1D1-C5R-A
Monitor size	4.4inch			
Display unit	STN LCD			
Color	MONO (blue, white)			
Power supply	24VDC			
Interface	Each port of RS232C, RS422		Two ports of RS232C	
Module	All-in-one type			
I/O composition	IN: 16-point, OUT: 16-point			
I/O connector	Terminal block connector	Ribbon cable connector	Terminal block connector	Ribbon cable connector
Expansion function	Type A			

※ The above specifications are subject to change and some models may be discontinued without notice.  
※ Be sure to follow cautions written in the instruction manual, user manual and the technical descriptions (catalog, homepage).

**■ Specifications**

● General specifications

Model	LP-S044-S1D0-C5T(R)	LP-S044-S1D1-C5T(R)
Power supply	24VDC	
Allowable voltage range	90 to 110% of power supply	
Power consumption	Max. 3.6W	
Serial interface	Each port of RS232C, RS422 (asynchronous method)	Two ports of RS232C (asynchronous method)
Real-time controller	RTC embedded	
Battery life cycle	3 years at 25°C	
Insulated resistance	Over 100MΩ (at 500VDC megger)	
Ground	3rd grounding (max.100Ω)	
Noise immunity	±0.5kV the square wave noise (pulse width: 1μs) by the noise simulator	
Dielectric strength	500VAC at 50/60Hz for 1 minute	
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 minute) in each X, Y, Z direction for 1 hour
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for 1 minute) in each X, Y, Z direction for 10 minutes
Shock	Mechanical	300m/s <sup>2</sup> (approx. 30G) in each X, Y, Z direction for 3 times
	Malfunction	100m/s <sup>2</sup> (approx. 10G) in each X, Y, Z direction for 3 times
Environment	Ambient temperature	0 to 50°C, storage: -20 to 60°C
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH
Protection structure	IP65 (front panel, IEC standard)	
Accessory	Fixing bracket : 4pcs, waterproof rubber ring, battery (included)	
Approval	CE, RoHS	
Weight*1	Approx. 462g (approx. 318g)	

※1: The weight in parenthesis is only unit weight.  
※ Environment resistance is rated at no freezing or condensation.

● Performance specifications

■ Display performance

LCD type	STN Blue Negative
Resolution	240×80 dot
Display area	112.8×37.6mm
Color	MONO (blue, white)
LCD view angle	Within each 30° of top/bottom/right/left
Backlight	White LED
Brightness	Adjustable by software

■ Graphic Drawing Performance

Language*1	Support for Korean, English, Japanese, Chinese, Russian, Vietnamese, Portuguese
Text	• High resolution display up to 400 letters
	• 6×8, 8×8 ASCII character. High quality view of numbers
Graphic drawing memory	• 8×16 ASCII characters, 16×16 regional characters (1 to 8 times bigger for width, 0.5 to 5 times bigger for height)
	384 KB
Number of user screen	500pages
Touch switch	Width 15×Height 4=60

■ Interface type

Communication interface	LP-S044-S1D0-C5T(R): each port of RS232C, RS422
LP-S044-S1D1-C5T(R):	two port of RS232C

■ Input

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

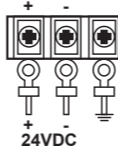
■ Control performance

Command	Basic command: 28, application command: 220
Program capacity	8K step
Processing time	Average: 6 to 7μs/step
I/O control type	Batch processing
Computer control mode	Repeated-doubling method, interrupt processing
Device range	Refer to 'LP-S044 user manual'

※1: Supported language can be added.

**■ Power 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 round 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.

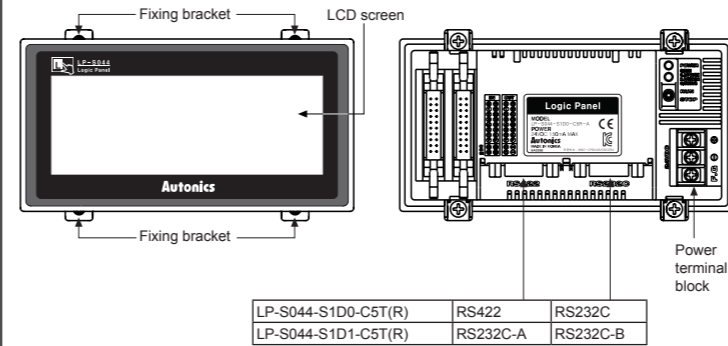


**■ Serial Interface**

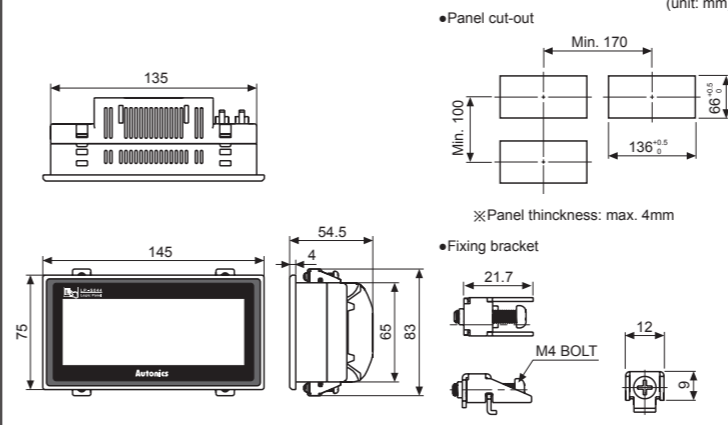
- All devices connectable into LP-S044 including PC, PLC, serial printer, barcode reader and dedicated connectors can be connected into both RS232C and RS422 ports.
- Device must be set for the port in system setting for LP-S044. For details, refer to 'LP-S044 user manual'.
- For the method of wiring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

Port	Pin	Port	Pin
RS232C RS232C-A RS232C-B	1	Non-used	RS422
	2	RXD	
	3	TXD	
	4	DTR	
	5	SG	
	6	DSR	
	7	Non-used	
	8	Non-used	
	9	Non-used	
D-Sub 9-pin Male	1	TXD+	D-Sub 9-pin Female
	2	RXD+	
	3	Non-used	
	4	Non-used	
	5	SG	
	6	TXD-	
	7	RXD-	
	8	Non-used	
	9	Non-used	

**■ Unit Description**

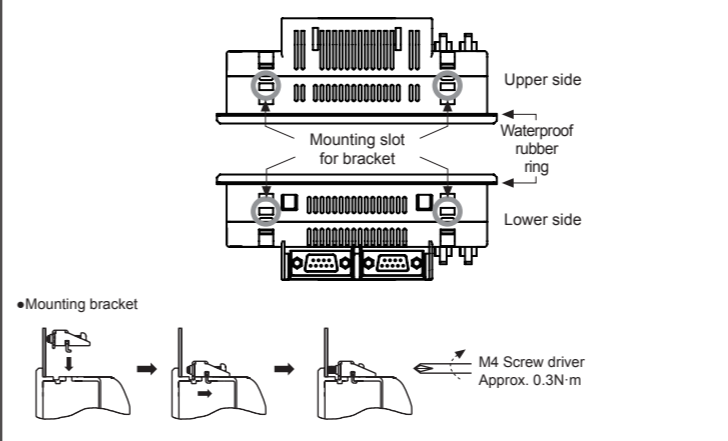


**■ Dimensions**



**■ Installation**

1. Set a waterproof rubber ring after placing the joining part of the ring under the LP-S044.
2. Adhere closely between each edge of the LP-S044 and the rings.
3. Set LP-S044 in panel.
4. Set the fix bracket to 4 bracket slots and fix them with the screw of the brackets.



**■ Software**

- Visit our homepage (www.autonics.com) to download GP Editor, SmartStudio, or firmware.
- **GP Editor**  
GP Editor is for editing shape, arrangement, default of tag data which is displayed on LP-S044 screen.
- **SmartStudio**  
SmartStudio is for writing program and debugging to LP-S044. For GP Editor, SmartStudio software, computer specification is as below.  
Operating system: Windows XP/7/8/10 (SmartStudio does not support Window XP.)

Item	Minimum specification	Recommended specification
CPU	Pentium4 or above	Pentium Dual Core
Memory	256MB	512MB
Hard disk	1GB (available space)	2GB (available space)
Resolution	1024×768	1024×768

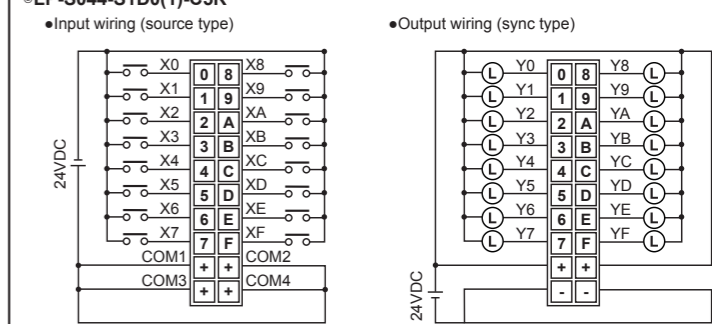
- **Firmware**  
Please refer to 'LP-S044 user manual', 'GP Editor user manual', and 'SmartStudio user manual'.

**■ Manual**

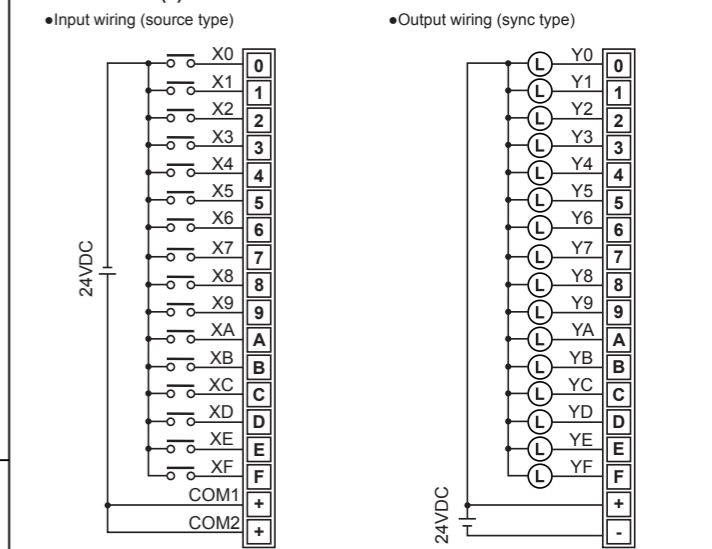
- For the detail information and instructions, please refer to user manual and user manual for communication, and be sure to follow cautions written in the technical descriptions (catalog, homepage). Visit our homepage (www.autonics.com) to download manuals.
- **GP Editor user manual**  
It describes how to write screen data, and is about related usage of LP HMI function.
- **SmartStudio user manual, SmartStudio programming manual, LP Series command manual**  
It contains install method and usage, commands, etc of SmartStudio.
- **GP, LP user manual for communication**  
It describes connection for external devices such as PLC.
- **LP-S044 user manual**  
It describes general information on the installation and usage of Logic panel and system contents.

**■ Input/Output Wiring**

● LP-S044-S1D0(1)-C5R



● LP-S044-S1D0(1)-C5T



※ Check the pin number of the case before wiring.

**■ Cable (sold separately)**

Communication cables connectable into external devices such as PLC are sold separately. Please refer to "GP, LP user manual for communication" for communication cable.

**■ Battery Replacement**

Please contact our service center to replace LP-S044 battery. It may cause an explosion or a fire when using improper battery.

**■ Cautions during Use**

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
4. 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.
5. 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.
6. Make a required space around the unit for radiation of heat, and do not block ventilation openings.
7. 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.
8. This unit may be used in the following environments.
  - ① Indoors (in the environment condition rated in 'Specifications')
  - ② Altitude max. 2,000m
  - ③ Pollution degree 2
  - ④ Installation category II

**■ Major Products**

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/Socket
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co., Nd:Yag)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate)Meters
- Display Units
- Sensor Controllers

**Autonics Corporation**  
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