# LP-S044 Series

Basic Type 4.4 inch Mono LCD Logic Panel

◼ Features

● Compact structure
 : Reducing cost, 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 7μs/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-point, output 16-point (basic)
● Various expansion function
 : External interrupt, 16-key input, 7 Seg.
  time-sharing display and synchronous communication output.
● Easy software upgrade available on website
 (1) LP firmware file   (2) GP Editor (drawing program)
 (3) atLogic (logic program)   (4) Additional protocol
● Displays max. 400 characters
● Enables to save max. 500 pages of user screen
● Different devices monitoring function
 : allows to monitor and control the variables of additionally connected controllers (such as PLC) with
  external communication port
● Supports multilingual
 : Supports for Korean, Japanese, English, Chinese, Russian, Vietnamese and Portuguese.
  Additional languages will be available by firmware.
● Supports multi-font
 : It provides various bitmap and user-selected fonts.
● Various multi-communication ports
 : Both RS232 2 port and RS232/RS422 compound port are provided.
● Device monitoring function
 : It enables to monitor LP device and connected controller devices by LP without graphic design data.
● Printer and barcode reader connection
 : It enables to print alarm history connecting a printer and read barcode connecting a barcode reader.

[Terminal block connector type]   [Ribbon cable connector type]

RS232C   RS422   16 I/O

GP Editor   atLogic
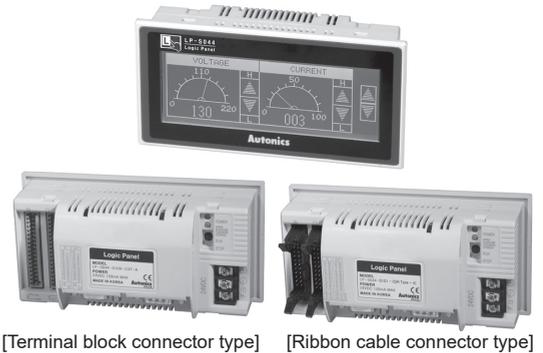
⚠ **Please read "Safety Considerations" in the instruction manual before using.**

CE ℂ

◼ 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, website).
Visit our website (www.autonics.com) to download manuals.

● **GP Editor user manual**
  It describes how to write screen data, and is about related usage of LP-S044 HMI function.
● **atLogic user manual, atLogic programming manual, LP Series command manual**
  It contains install method and usage, commands, etc of atLogic.
● **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 LP-S044 and system contents.

Basic Type 4.4 inch Mono Logic Panel

◼ Ordering Information

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

◼ Specifications

Model	LP-S044-S1D0-C5T-A	LP-S044-S1D0-C5R-A	LP-S044-S1D1-C5T-A	LP-S044-S1D1-C5R-A
I/O connector type	Terminal block connector	Ribbon cable connector	Terminal block connector	Ribbon cable connector
Power supply	24VDC⎓			
Allowable voltage range	90 to 110% of power supply			
Power consumption	Max. 3.6W			
Display performance — LCD type	4.4 inch STN Blue Negative			
Display performance — Resolution	240×80 dots			
Display performance — Display area	112.8×37.6mm			
Display performance — Color	MONO (blue, white)			
Display performance — LCD view angle	Top/Bottom/Left/Right within 30° in each direction			
Display performance — Backlight	White LED			
Display performance — Brightness	Adjustable by software			
Graphic drawing performance — Language[1]	English, Korean, Japanese, Chinese, Russian, Vietnamese, Portuguese			
Graphic drawing performance — Text	• High resolution display up to 400 letters • 6×8, 8×8 ASCII character, high definition numbers • 8×16 ASCII characters, 16×16 character by each country (1 to 8 times bigger for width, 0.5 to 5 times bigger for height)			
Graphic drawing performance — Graphic drawing memory	384KB			
Graphic drawing performance — Number of user screen	500 pages			
Graphic drawing performance — Touch switch	Width 15×Height 4 = 60			
Control performance — Command	Basic command: 28, application command: 220			
Control performance — Program capacity	8K step			
Control performance — Processing time	Average: 6 to 7μs/step			
Control performance — I/O control type	Batch processing			
Control performance — Computer control mode	Repeated-doubling method, interrupt processing			
Control performance — Device range	*Refer to LP-S044 user manual			
Serial interface	Each port of RS232C, RS422 (asynchronous method)		Two ports of RS232C (asynchronous method)	
Real-time controller	RTC embedded			
Battery life cycle	Approx. 3 years at 25℃			
Insulation 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 (50/60Hz) for 1 min			
Vibration — Mechanical	0.75mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour			
Vibration — Malfunction	0.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 min			
Shock — Mechanical	300m/s² (approx. 30G) in each X, Y, Z direction for 3 times			
Shock — Malfunction	100m/s² (approx. 10G) in each X, Y, Z direction for 3 times			
Environment — Ambient temperature	0 to 50℃, storage: -20 to 60℃			
Environment — Ambient humidity	35 to 85% RH, storage: 35 to 85% RH			
Protection structure	IP65 (front panel, IEC standard)			
Accessory	Fixing bracket: 4, waterproof rubber ring, battery (included)			
Approval	CE ⓚ			
Weight[2]	Approx. 462g (approx. 318g)			

※1: Supported language can be added.
※2: The weight includes packaging. The weight in parenthesis is for unit only.
※Environment resistance is rated at no freezing or condensation.

LP-S044 Series

◎ **Input/Output Performance**

Input performance		Output performance	
Input point	16-point	Output point	16-point
Insulation method	Photo coupler insulation	Insulation method	Photo coupler insulation
Voltage range	19.2 to 28.8VDC⎓	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	Max. 0.2VDC⎓
Response time	1ms	Response time	1ms
Common method	16-point/1COM	Common method	16-point/1COM

◼ Function

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

◼ Dimensions

(unit: mm)

● **Panel cut-out**

Min. 170
Min. 100
$66^{+0.5}_{0}$
$136^{+0.5}_{0}$

※Panel thickness
: max. 4mm

● **Fixing bracket**

M4 BOLT   12
9
21.7
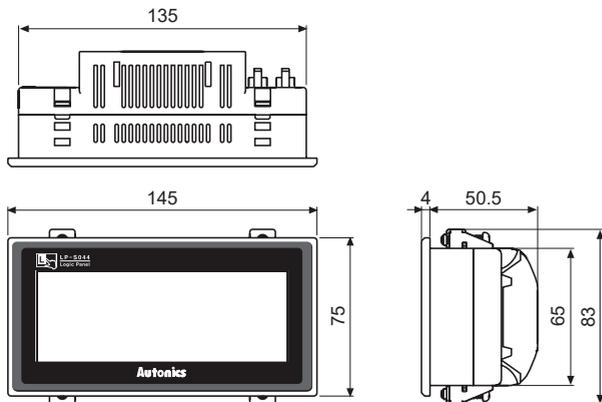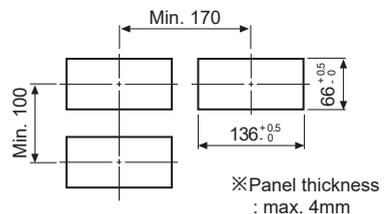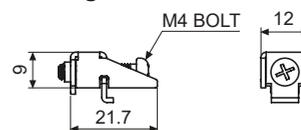
Basic Type 4.4 inch Mono Logic Panel

▣ Unit Description

LCD screen

Fixing bracket

Input connector
Output connector

Communication port A※1
Communication port B※1
Power terminal block

※1: Communication port
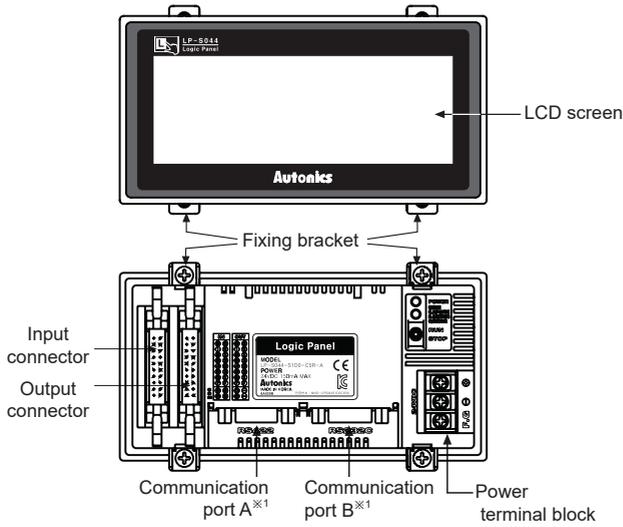
| Communication port / Model	Port A	Port B
LP-S044-S1D0-C5T (R)	RS422	RS232C
LP-S044-S1D1-C5T (R)	RS232C-A	RS232C-B

※For more information, refer to '▣ Serial Interface' of GP/LP Common Features.

▣ Input/Output Wiring
◎ LP-S044-S1D0 (1)-C5R

● **Input wiring (source type input module)**
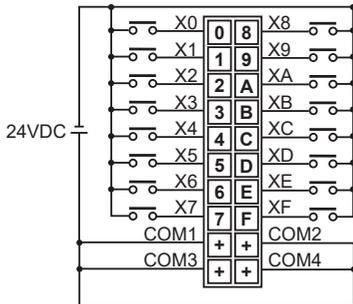
24VDC

● **Output wiring (sink type output module)**

24VDC

◎ LP-S044-S1D0 (1)-C5R

● **Input wiring (source type input module)**

24VDC

● **Output wiring (sink type output module)**

24VDC
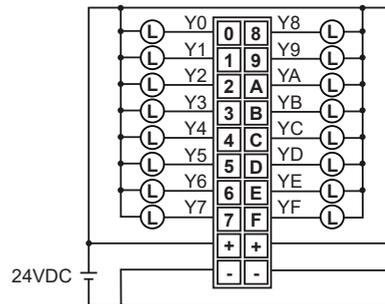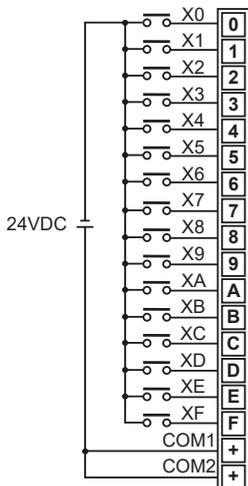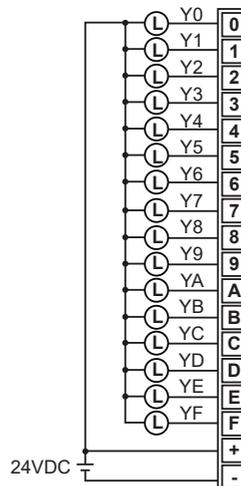
※Check the pin number of the case before wiring.

SENSORS

CONTROLLERS

MOTION DEVICES

SOFTWARE

(J) Temperature Controllers

(K) SSRs

(L) Power Controllers

(M) Counters

(N) Timers

(O) Digital Panel Meters

(P) Indicators

(Q) Converters

(R) Digital Display Units

(S) Sensor Controllers

(T) Switching Mode Power Supplies

(U) Recorders

(V) HMIs

(W) Panel PC

(X) Field Network Devices

LP-S044 Series

▣ 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 fixing bracket to 4 bracket slots and fix them with the screw of the bracket.

Upper side

Mounting slot
for bracket

Waterproof
rubber ring

Lower side

● **Fixing bracket**

M4 Screw driver
approx. 0.3N·m
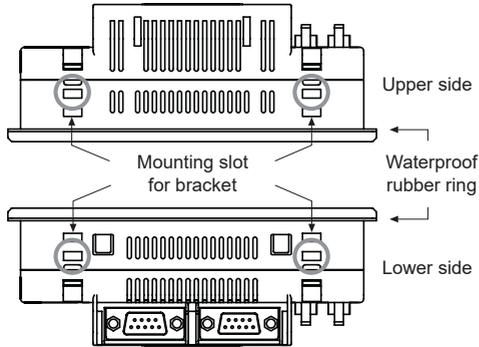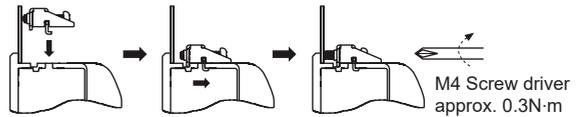
▣ Sold Separately

◎ Connector socket

Please contact to the manufacturer of the socket and cable.

	Standard product	Manufacturer
Socket	HIF3BA-20D-2.54R	Hirose Electric

◎ I/O terminal block and I/O cable

Suitable I/O terminal block	INPUT/OUTPUT	Suitable I/O cable
AFS-H20 (Interface terminal block)	INPUT	CH20-HP☐-4R
	OUTPUT	
ABS-H16PA (TN)-NN (Relay terminal block)	OUTPUT	CH20-HP☐-C1T1R
AFE4-H20-16LF (Sensor connector terminal block)	INPUT	CH20-HP☐-C1T5R
	OUTPUT	CH20-HP☐-C1T1R
—	—	CO20-HP☐-R (open type cable)
		CO20-HP☐-L (open type cable)

※It is only for ribbon cable connector (hirose connector) type.
※"☐" is cable length. (Basic specification **010**: 1m, **020**: 2m, the others are option)
※For more information, refer to **"I/O terminal block & cable catalog"**.

◎ Communication cable (RS232C, RS422 port)

Serial connection cables which connect GP/LP with PLC or other external devices are sold separately.
Refer to "GP/LP Communication Cables".

Autonics

Basic Type 4.4 inch Mono Logic Panel

▣ Serial Interface

- All devices are connectable with LP-S044 including PC, PLC, serial printer, barcode reader and dedicated connectors can be connected with both RS232C and RS422 ports.
- Use the dedicated communication cable for the each connected device.
  (Refer to the "GP/LP Communication Cables")
- For the method of wiring external devices like PLC, refer to "GP/LP communication manual".
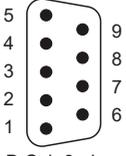
Port	NO.	Pin
RS232C 5 4 3 2 1 / 9 8 7 6 D-Sub 9-pin Male	1	Not used
	2	RXD
	3	TXD
	4	DTR
	5	SG
	6	DSR
	7	Not used
	8	Not used
	9	Not used
RS422 5 4 3 2 1 / 6 7 8 9 D-Sub 9-pin Female	1	TXD+
	2	RXD+
	3	Not used
	4	Not used
	5	SG
	6	TXD-
	7	RXD-
	8	Not used
	9	Not used
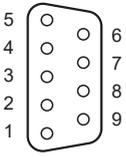
▣ Power Wiring

- 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 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.
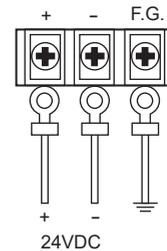
▣ Battery Replacement

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

▣ 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.
8. 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.
9. This unit may be used in the following environments.
   ①Indoors (in the environment condition rated in 'Specifications')
   ②Altitude max. 2,000m
   ③Pollution degree 2
   ④Installation category II

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