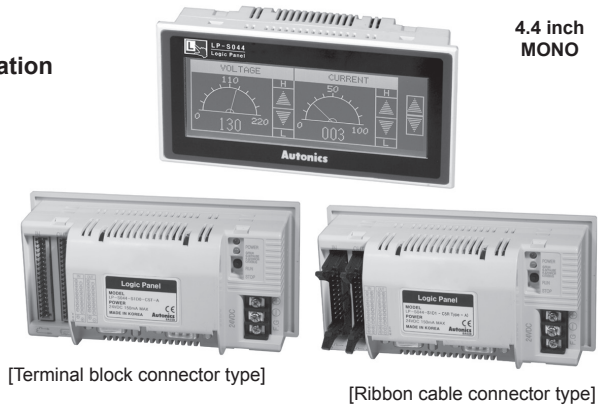


Graphic Panel + PLC Function Logic Panel LP-S044

■ 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) Smart Studio (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.



Please read "Safety Considerations" in instruction manual before using.



■ 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-S044 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 LP-S044 and system contents.

(A)	Photoelectric Sensors
(B)	Fiber Optic Sensors
(C)	Door/Area Sensors
(D)	Proximity Sensors
(E)	Pressure Sensors
(F)	Rotary Encoders
(G)	Connectors/ Connector Cables/ Sensor Distribution Boxes/ 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

■ 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							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		
	Resolution	240×80 dots		
	Display area	112.8×37.6mm		
	Color	MONO (blue, white)		
	LCD view angle	Top/Bottom/Left/Right within 30° in each direction		
	Backlight	White LED		
	Brightness	Adjustable by software		
Graphic drawing performance	Language ^{※1}	English, Korean, Japanese, Chinese, Russian, Vietnamese, Portuguese		
	Text	<ul style="list-style-type: none"> • 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 memory	384 KB		
	Number of user screen	500 pages		
	Touch switch	Width 15×Height 4 = 60		
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			
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°C			
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		
	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/s ² (approx. 30G) in each X, Y, Z direction for 3 times		
	Malfunction	100m/s ² (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: 4, waterproof rubber ring, battery (included)			
Approval				
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.

Input/Output Performance

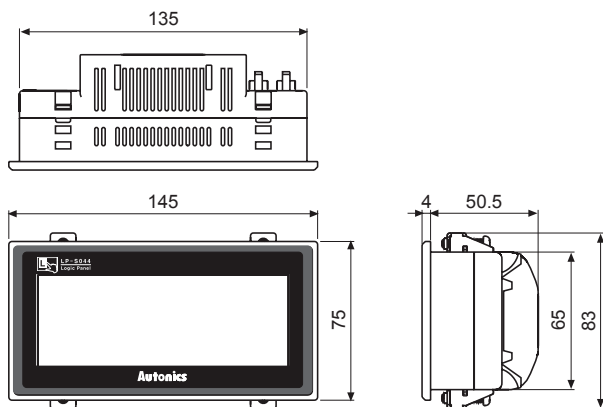
Input performance		Output performance	
Input point	16-point	Output point	16-point
Insulation method	Photo coupler insulation	Insulation method	Photo coupler insulation
Voltage range	19.2 to 28.8VDC	Voltage range	19.2 to 28.8VDC
Rated input voltage	24VDC	Rated input voltage	24VDC
Rated input current	Approx. 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

Functional Description

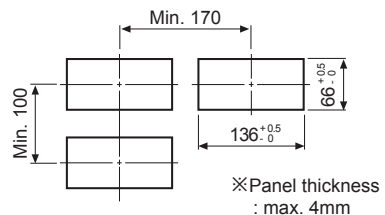
Figure display	Line, rectangle, circle, text, bitmap	
Tags	Numeral display	Displays the designated device as numerical value. (decimal, hexadecimal, octal, binary, real number)
	ASCII display	Displays the designated device value as ASCII character.
	Time display	Displays current time or date.
	Alarm 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

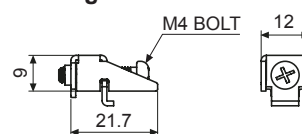
(unit: mm)



Panel cut-out



Fixing bracket



(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Connector Cables/ Sensor Distribution Boxes/ 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

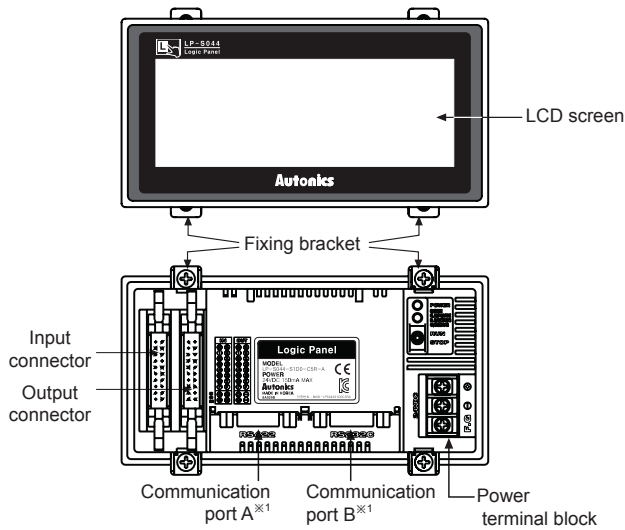
(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

(T) Software

Unit Description



※1: Communication port

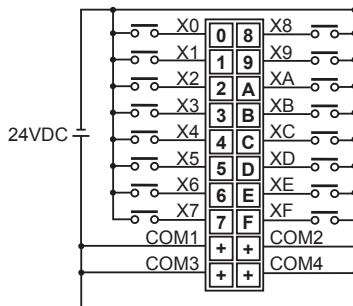
Model	Communication port	
	Port A	Port B
LP-S044-S1D0-C5T (R)	RS422	RS232C
LP-S044-S1D1-C5T (R)	RS232C-A	RS232C-B

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

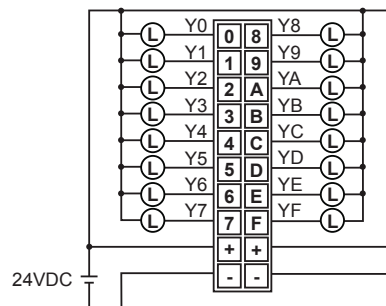
Input-Output Wiring

© LP-S044-S1D0 (1)-C5R

● Input wiring (source type input module)

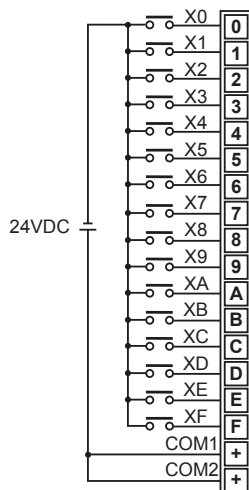


● Output wiring (sink type output module)

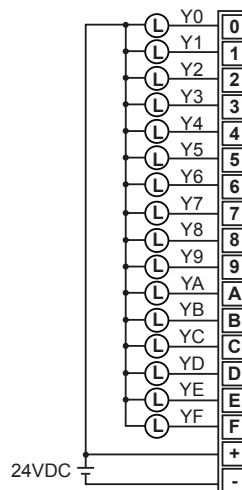


© LP-S044-S1D0 (1)-C5R

● Input wiring (source type input module)



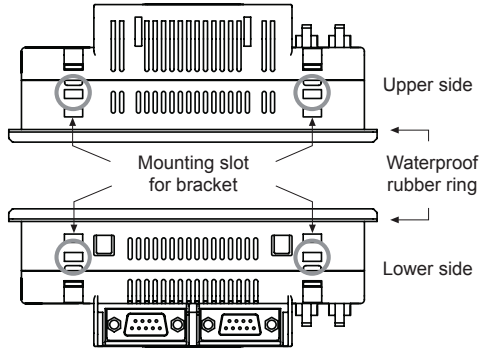
● Output wiring (sink type output module)



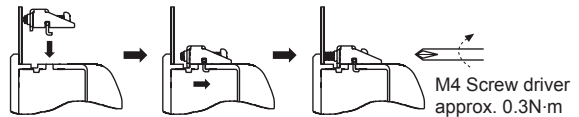
※Check the pin number of the case before wiring.

■ 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.



● Fixing bracket



■ Sold Separately

◎ 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	CJ-HPHP20-V1N□-1ANR
	OUTPUT	
ABS-H16PA (TN)-NN (Relay terminal block)	OUTPUT	CJ-HPHP20-V1N□-1APR
AFE4-H20-16LF (Sensor connector terminal block)	INPUT	CJ-HPHP20-V1N□-1BNR
	OUTPUT	CJ-HPHP20-V1N□-1APR
—	—	CJ-HP20-VP□-R (OPEN type cable)
		CJ-HP20-VP□-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".

(A) Photoelectric Sensors

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(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/
Connector Cables/
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