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Part	Name	Description
F	SD Card Interface Cover/Replacement Battery Insertion Cover	For information on how to open the cover, and insert or remove the SD Card, refer to SD Card Insertion/Removal *(see page 150)*. For information on how to open the cover and replace the battery, refer to Replacing the Primary Battery *(see page 168)*.
G	Serial Interface (COM2)	GP-4501T/GP-4501TW: RS-422/485 Serial Interface. Connector: D-Sub 9 pin (plug) x 1. GP-4503T: RS-485 (isolation) Serial Interface. Connector: D-Sub 9 pin (socket) x 1.
H	Serial Interface (COM1)	RS-232C Serial Interface. Connector: D-Sub 9 pin (plug) x 1.
I	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft).

*1 Status LED operations are as shown below:

Color	Indicator	Operation Mode (Drawing)	Logic execution mode (when logic is enabled)
Green	ON	Offline	–
		In operation	RUN
	Flashing	In operation	STOP
Orange	Flashing	Software starting up.	
Red	ON	Power is turned ON.	
	Flashing	In operation	Major Error
LED fade (Green)	ON	The GP unit's "Backlight Control" is set to Standby Mode and the screen has gone blank.	
-	OFF	Power is turned OFF.	

*2 SD Card Access LED operations are as shown below.

Color	Indicator	Description
Green (Active)	ON	The SD Card is inserted.
	OFF	The SD Card is not inserted or is not being accessed.

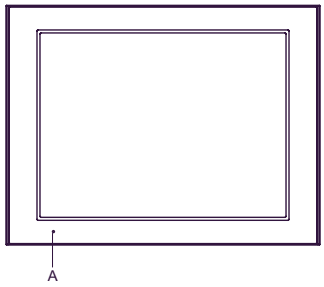
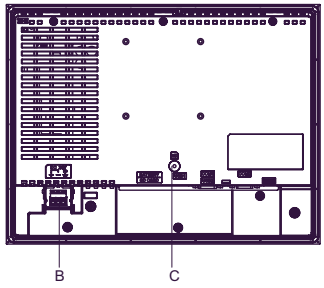
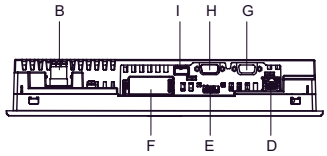
*3 Ethernet LED operations are as shown below.

	Color	Indicator	Description
	Green (Active)	Flashing	Data transmission is occurring.
		OFF	No data transmission.
	Green (Link)	ON	Data transmission is available in 10BASE-T/100BASE-TX.
		OFF	No connection or subsequent transmission failure.

GP-4600 Series Parts Identification

NOTE:

- If you are using the rear mount model, refer to Parts Identification and Functions *(see page 176)*.

Side	GP-4600 Series
Front	
Rear	
Bottom	

Part	Name	Description
A	Status LED	*1
B	Power Input Terminal Block (AC model), Power Plug Connector (DC model)	-
C	SD Card Access LED *2	This lamp lights up when SD Card is inserted. **NOTE:** Do not remove or insert the SD Card when the LED lamp is on. Doing so may damage data on the SD Card.
D	Ethernet Interface *3	Ethernet transmission interface (10BASE-T/100BASE-TX) Connector: Modular jack (RJ-45) x 1.
E	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Communication Distance: 5 m (16.4 ft) or less.

Part	Name	Description
F	SD Card Interface Cover/Replacement Battery Insertion Cover	For information on how to open the cover, and insert or remove the SD Card, refer to SD Card Insertion/Removal *(see page 150)*. For information on how to open the cover and replace the battery, refer to Replacing the Primary Battery *(see page 168)*.
G	Serial Interface (COM2)	GP-4601T: RS-422/485 Serial Interface. Connector: D-Sub 9 pin (plug) x 1. GP-4603T: RS-485 (isolation) Serial Interface. Connector: D-Sub 9 pin (socket) x 1.
H	Serial Interface (COM1)	RS-232C Serial Interface. Connector: D-Sub 9 pin (plug) x 1.
I	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft).

*1 Status LED operations are as shown below:

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Specifications

4

Overview

This chapter presents the GP unit specifications.

What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
4.1	GP-4200 Series	44
4.2	GP-4300 Series	64
4.3	GP-4400 Series	82
4.4	GP-4500 Series	97
4.5	GP-4600 Series	117

4.1 GP-4200 Series

What Is in This Section?

This section contains the following topics:

Topic	Page
Electrical Specifications	45
Environmental Specifications	46
Structural Specifications	47
Display Specifications	49
Memory, Clock, and Touch Panel	50
Interface Specifications	52
Specifications of Serial Interface COM1	53
Specifications of Serial Interface COM2	57
Dimensions	58

Electrical Specifications

Power Supply	Rated Input Voltage		24 Vdc
	Input Voltage Limits		19.2...28.8 Vdc
	Voltage Drop		2 ms or less
	Power Consumption		9.6 W or less
		When power is not supplied to external devices	5.2 W or less
		Backlight OFF (Standby Mode)	4.2 W or less
		Backlight Dimmed (Brightness: 20%)	4.3 W or less
	In-Rush Current		30 A or less
Voltage Endurance			1,000 Vac 20 mA for 1 minute (between charging and FG terminals)
Insulation Resistance			500 Vdc, 10 MΩ or more (between charging and FG terminals)

Environmental Specifications

Physical Environment	Surrounding Air Temperature	0...50 °C (32...122 °F)
	Storage Temperature	-20...60 °C (-4...140 °F)
	Surrounding Air and Storage Humidity	10%...90% RH (Non condensing, wet bulb temperature 39 °C [102.2 °F] or less)
	Dust	0.1 mg/m^3 (10^{-7} oz/ft^3) or less (non-conductive levels)
	Pollution Degree	For use in Pollution Degree 2 environment
	Corrosive Gases	Free of corrosive gases
	Atmospheric Pressure (Operating Altitude)	800...1,114 hPa (2,000 m [6,561 ft] or lower)
Mechanical Environment	Vibration Resistance	IEC/EN 61131-2 compliant 5...9 Hz Single amplitude 3.5 mm (0.14 in.) 9...150 Hz Fixed acceleration: 9.8 m/s^2 X, Y, Z directions for 10 cycles (approx. 100 min.)
	Concussion Resistance	IEC/EN 61131-2 compliant 147 m/s^2, X, Y, Z directions for 3 times
Electrical Environment	Noise immunity	Noise Voltage: 1,000 Vp-p Pulse Width: 1 μs Rise Time: 1 ns
	Electrostatic Discharge Immunity	Contact Discharge Method: 6 kV (IEC/EN 61000-4-2 Level 3)

Air quality requirements

Do not operate or store the panel where chemicals evaporate, or where chemicals are present in the air:

- Corrosive chemicals: Acids, alkalines, liquids containing salt.
- Flammable chemicals: Organic solvents.

⚠ CAUTION

INOPERATIVE EQUIPMENT

Do not allow water, liquids, metal, and wiring fragments to enter the panel case.

Failure to follow these instructions can result in injury or equipment damage.

Structural Specifications

Grounding	Functional grounding: Grounding resistance of 100Ω, 2mm^2 (AWG 14) or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
Cooling Method	Natural air circulation
Structure *1	IP65F NEMA #250 TYPE 4X/13 (on the front panel when properly installed in an enclosure)
External Dimensions	W132 x H106 x D42 mm (W5.2 x H4.17 x D1.65 in.)
Panel Cut Dimensions	W118.5 x H92.5 mm (W4.67 x H3.64 in.)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3
Weight	0.4 kg (0.9 lb) or less (main unit only)

*1 The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP unit can possibly harm the panel. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the panel for long periods of time. If the GP unit's front face protection sheet peels off, these conditions can lead to the ingress of oil into the GP unit and separate protection measures are suggested.

Also, if non-approved oils are present, they may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP unit, be sure to confirm the type of conditions that will be present in the GP unit's operating environment. If the installation gasket is used for a long period of time, or if the GP unit and its gasket are removed from the panel, the original level of protection cannot be kept. To maintain the original protection level, be sure to replace the installation gasket regularly.

*2 For dimensional tolerance, everything +1/-0 mm (+0.04/-0 in.) and R in angle are below R3 (R0.12 in.)

*3 Even if the installation wall thickness is within the recommended range for the "Panel Cut Dimensions", depending on wall's material, size, and installation location of the GP unit and other devices, the installation wall could warp. To prevent warping, the installation surface may need to be strengthened.

The front face of the panel, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification.

⚠ CAUTION

EQUIPMENT DAMAGE

Ensure that the panel is not in permanent and direct contact with oils.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS

- Store the panel in areas where temperatures are within the panel's specifications.
- Do not restrict or block the panel's rear-face ventilation slots.

Failure to follow these instructions can result in equipment damage.

NOTICE

GASKET AGING

- Inspect the gasket periodically as required by your operating environment to keep the initial IP level.
- Change the gasket at least once a year, or as soon as scratches or dirt become visible.

Failure to follow these instructions can result in equipment damage.

Display Specifications

		GP-4201T / GP-4203T	GP-4201TW
Display Type		TFT Color LCD	
Display Size		3.5”	
Resolution		320 x 240 pixels (QVGA)	
Effective Display Area		W70.56 x H52.92 mm (W2.78 x H2.08 in.)	
Display Colors		65,536 colors (No blink) / 16,384 colors (Blink)	
Backlight		White LED (Not user replaceable. When replacement is required, contact your local distributor.)	
Backlight Service Life		50,000 hours or more (continuous operation at 25 °C [77 °F] before backlight brightness decreased to 50%)	
Brightness Control		16 levels (Adjusted with touch panel or software)	8 levels (Adjusted with touch panel or software)
Language Fonts[*1]		Japanese, ASCII, Chinese (Simplified), Chinese (Traditional), Korean, Cyrillic, Thai	
Character Sizes		Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 pixel fonts Stroke font: 6...127 pixel fonts Image font: 8...72 pixel fonts	
Font Sizes		Standard font: You can expand width up to 8 times, and expand height up to 8 times.[*2]	
Text	8 x 8 pixels	40 characters per row x 30 rows	
	8 x 16 pixels	40 characters per row x 15 rows	
	16 x 16 pixels	20 characters per row x 15 rows	
	32 x 32 pixels	10 characters per row x 7 rows	

[*1] Please refer to the GP-Pro EX Reference Manual for details on font types and character codes.

[*2] You can set up other font sizes using the software.