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# **PFXGP4601TAD**

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## **Pro-face Xycom GP4000**

PFXGP4601TAD

Pro-face Xycom GP-460xT GP460xT

Touch Screen Operator Interface 12.1 TFT Analog Color LCD Display 24VDC. Call Now!

**1-800-991-7026**

**[sales@axcontrol.com](mailto:sales@axcontrol.com)**

**See Also:**

<http://www.axcontrol.com/automation/pro-face/gp-4000>

## Electrical Specifications

Power Supply	Rated Input Voltage	24 Vdc
	Input Voltage Limits	19.2...28.8 Vdc
	Voltage Drop	5 ms or less
	Power Consumption	12 W or less
	When power is not supplied to external devices	8 W or less
	Backlight OFF (Standby Mode)	5 W or less
	Backlight Dimmed (Brightness: 20%)	5.5 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 M $\Omega$ or more (between charging and FG terminals)	

## Environmental Specifications

		GP-4401T	GP-4401WW
Physical Environment	Surrounding Air Temperature	0...55 °C (32...131 °F)	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 <sup>3</sup> (10 <sup>-7</sup> oz/ft <sup>3</sup> ) 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 5...9 Hz Single amplitude 3.5 mm (0.14 in.) 9...150 Hz Fixed acceleration: 9.8 m/s <sup>2</sup> X, Y, Z directions for 10 cycles (approx. 100 min)	
	Concussion Resistance	IEC/EN 61131-2 compliant 147 m/s <sup>2</sup> , 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 GP unit 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

**NOTE:**

- If you are using the rear mount model, refer to Structural Specifications (see page 182).

Grounding	Functional grounding: Grounding resistance of 100 $\Omega$ , 2 mm <sup>2</sup> (AWG 14) or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
Cooling Method	Natural air circulation
Structure <sup>*1</sup>	IP65F NEMA #250 TYPE 4X/13 (on the front panel when properly installed in an enclosure)
External Dimensions	W218 x H173 x D60 mm (W8.58 x H6.81 x D2.36 in.)
Panel Cut Dimensions	W204.5 x H159.5 mm (W8.05 x H6.28 in.) <sup>*2</sup> Panel thickness area: 1.6...5 mm (0.06...0.2 in.) <sup>*3</sup>
Weight	1.2 kg (2.6 lb) or less (main unit only)

**NOTE:** <sup>\*1</sup> 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.

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

<sup>\*3</sup> 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.

### 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-4401T	GP-4401WW
Display Type		TFT Color LCD	
Display Size		7.5"	7.0"
Resolution		640 x 480 pixels (VGA)	800 x 480 pixels (WVGA)
Effective Display Area		W153.7 x H115.8 mm (W6.05 x H4.56 in.)	W152.4 x H91.44 mm (W6.0 x H3.6 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 decreases to 50%)	
Brightness Control		16 levels (Adjusted with touch panel or software)	8 levels (Adjusted with touch panel or software)
Language Fonts <sup>*1</sup>		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 the width up to 8 times, and expand the height up to 8 times. <sup>*2</sup>	
Text	8 x 8 pixels	80 characters per row x 60 rows	100 characters per row x 60 rows
	8 x 16 pixels	80 characters per row x 30 rows	100 characters per row x 30 rows
	16 x 16 pixels	40 characters per row x 30 rows	50 characters per row x 30 rows
	32 x 32 pixels	20 characters per row x 15 rows	25 characters per row x 15 rows

<sup>\*1</sup> Please refer to the GP-Pro EX Reference Manual for details on font types and character codes.

<sup>\*2</sup> You can set up other font sizes using the software.

## Memory, Clock, and Touch Panel

### Memory

	GP-4401T	GP-4401WW
Application Memory *1	FLASH EPROM 32 MB (including the logic program area)	FLASH EPROM 16 MB (including the logic program area)
Logic Program Area	FLASH EPROM 132 KB (Equivalent to 15,000 steps)*2	
Font Area	FLASH EPROM 8 MB (when limit exceeded, uses application memory)	
Data Backup	SRAM 320 KB (Replaceable lithium battery for data backup)	SRAM 128 KB (Replaceable lithium battery for data backup)
Variable Area	SRAM 64 KB (Replaceable lithium battery for retentive variables)	None

\*1 Capacity available for user application (internal memory).

\*2 Up to 60,000 steps can be converted in software. However, this reduces application memory capacity for screen data by 1 MB.

### Clock

± 65 seconds per month (deviation at room temperature and power is OFF). Variations in operating conditions and battery life can cause clock deviations from -380 to +90 seconds per month.

For systems where this level of precision is insufficient, the user should monitor and make adjustments when required.

### Touch Panel

Touch Panel Type	Resistive Film (analog)
Touch Panel Resolution	1,024 x 1,024
Touch Panel Service Life	1 million times or more

## Interface Specifications

### Serial Interface COM1

Asynchronous Transmission	RS-232C
Data Length	7 or 8 bits
Stop Bit	1 or 2 bits
Parity	None, odd or even
Data Transmission Speed	2,400...115,200 bps
Connector	D-Sub 9 pin (plug)

### Serial Interface COM2

Asynchronous Transmission	RS-422 / RS-485
Data Length	7 or 8 bits
Stop Bit	1 or 2 bits
Parity	None, odd or even
Data Transmission Speed	2,400...115,200 bps, 187,500 bps (MPI)
Connector	D-Sub 9 pin (plug)

### USB Interface

	USB (Type A) Interface	USB (mini-B) Interface
Connector	USB 2.0 (Type A) x 1	USB 2.0 (mini-B) x 1
Power Supply Voltage	5 Vdc $\pm$ 5%	-
Maximum Current Supplied	500 mA	-
Maximum Transmission Distance	5 m (16.4 ft)	

### Ethernet Interface

Ethernet (LAN)	IEEE802.3i / IEEE802.3u, 10BASE-T/100BASE-TX
Connector	Modular jack (RJ45) x 1

### SD Card Interface

SD Card slot x 1 (maximum 32 GB SD/SDHC Card)




## Specifications of Serial Interface COM1

### Introduction

**NOTE:** For instructions on how to connect to other devices, always refer to the “GP-Pro EX Device/PLC Connection Manual”.

The serial port is not isolated. The SG (signal ground) and FG (frame ground) terminals are connected inside the GP unit.


**DANGER**

**ELECTRIC SHOCK**

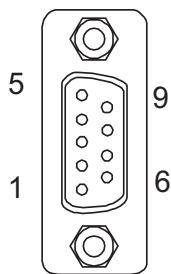
When using the SG terminal to connect an external device to the panel:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the #5 SG terminal to remote equipment when the host (PLC) unit is not isolated. Connect the #5 SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

**Failure to follow these instructions will result in death or serious injury.**

### Serial Interface COM1

**GP-4401T / GP-4401WW:** D-Sub 9 pin plug connector via an RS-232C cable.

Pin Connection	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
 <p>(GP unit side)</p>	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send possible
	9	CI(RI)/VCC	Input/-	Called Status Display +5V±5% Output 0.25A <sup>*1</sup>
	Shell	FG	-	Frame Ground (Common with SG)

**NOTE:** <sup>\*1</sup> You can switch pin #9 between RI and VCC via software.

### NOTICE

**EQUIPMENT DAMAGE**

Use only the rated current.

**Failure to follow these instructions can result in equipment damage.**

Interfit bracket is #4-40 (UNC).

Recommendations:

- Cable Connector: XM2D-0901 manufactured by OMRON Corporation.
- Cable Cover: XM2S-0913 manufactured by OMRON Corporation.
- Jack Screw (#4-40 UNC): XM2Z-0073 manufactured by OMRON Corporation.

## CAUTION

### **LOSS OF COMMUNICATION**

- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.
- Use only D-Sub 9 pin cables with a locking tab in good condition.

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

## Specifications of Serial Interface COM2

### Introduction

**NOTE:** For instructions on how to connect to other devices, always refer to the “GP-Pro EX Device/PLC Connection Manual”.

The serial port is not isolated. The SG (signal ground) and FG (frame ground) terminals are connected inside the GP unit.

**⚡ ⚠ DANGER**

**ELECTRIC SHOCK**

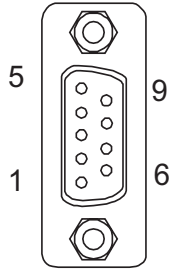
When using the SG terminal to connect an external device to the panel:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the #5 SG terminal to remote equipment when the host (PLC) unit is not isolated. Connect the #5 SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

**Failure to follow these instructions will result in death or serious injury.**

### Serial Interface COM2

GP-4401T/GP-4401WW: D-Sub 9 pin plug connector via an RS-422/485 cable.

Pin Connection	Pin No.	RS-422/RS-485		
		Signal Name	Direction	Meaning
 <p>(GP unit side)</p>	1	RDA	Input	Receive Data A (+)
	2	RDB	Input	Receive Data B (-)
	3	SDA	Output	Send Data A (+)
	4	ERA	Output	Data Terminal Ready A (+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B (-)
	7	SDB	Output	Send Data B (-)
	8	CSA	Input	Send Possible A (+)
	9	ERB	Output	Data Terminal Ready B (-)
	Shell	FG	-	Frame Ground (Common with SG)

Interfit bracket is #4-40 (UNC).

Recommendations:

- Cable Connector: XM2D-0901 manufactured by OMRON Corporation.
- Cable Cover: XM2S-0913 manufactured by OMRON Corporation.
- Jack Screw (#4-40 UNC): XM2Z-0073 manufactured by OMRON Corporation.

**⚠ CAUTION**

**LOSS OF COMMUNICATION**

- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.
- Use only D-Sub 9 pin cables with a locking tab in good condition.

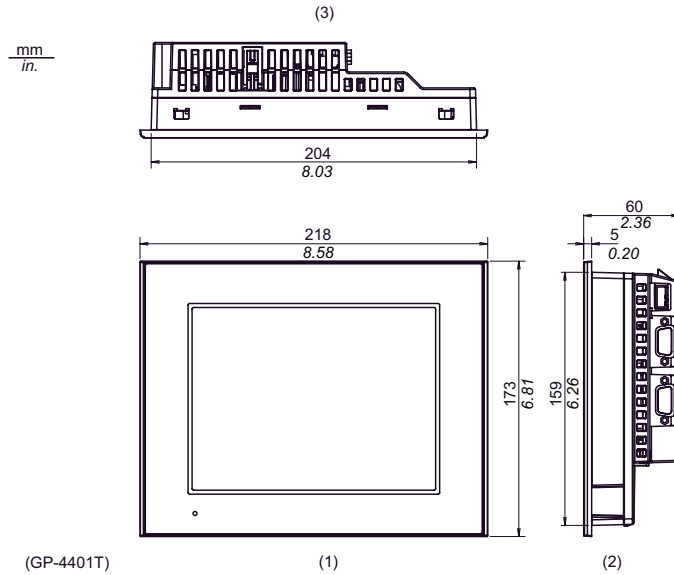
**Failure to follow these instructions can result in injury or equipment damage.**

## Dimensions

**NOTE:**

- If you are using the rear mount model, refer to Dimensions (see page 184).

### External Dimensions



- 1 Front
- 2 Right Side
- 3 Top