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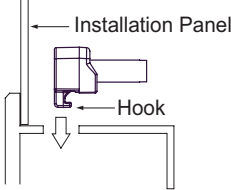
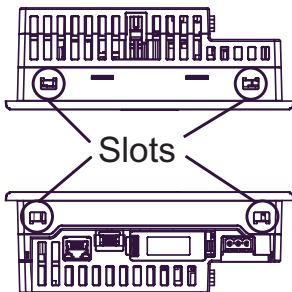
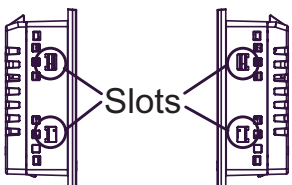
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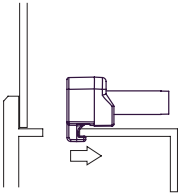
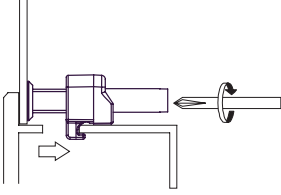
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See Also:

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

Step	Action
1	Place the GP unit on a clean and level surface with the display facing downward.
2	Check that the GP unit's gasket is seated securely into the gasket's groove, which runs around the perimeter of the GP unit frame.
3	<p>Cut a hole in the installation panel as defined by the GP unit's panel cutout dimensions.</p> <p>GP-4200 Series (see page 63) GP-4300 Series (see page 81) GP-4400 Series (see page 96) GP-4500 Series (see page 116) GP-4600 Series (see page 133)</p>
4	Insert the GP unit into the panel-cut.
5	<p>Insert the installation fasteners into the GP unit's insertion slots on the top and bottom sides (left and right sides for the GP-4200 Series). Slide the fasteners to the back. If the fasteners are not correctly attached, the GP unit may shift or fall out.</p>  <p>Installation Panel Hook</p> <p>GP-4301T</p>  <p>Slots</p> <p>GP-4201T</p>  <p>Slots</p>

Step	Action
6	<p>Insert each of the fasteners shown below. Make sure you pull the fastener back until it is flush with the rear of the attachment hole insert.</p> 
7	<p>Use a Phillips screwdriver to tighten each fastener screw and secure the GP unit in place. The necessary torque is 0.5 Nm (4.4 lb•in).</p> 

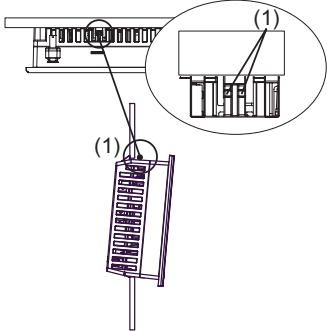
NOTICE

BROKEN ENCLOSURE

- Do not exert more than 0.5 Nm (4.4 in•lb) of torque when tightening the fastener's screws.
- Use on flat surface of a Type 1, Type 4X (Indoor Use Only) or Type 13 Enclosure.

Failure to follow these instructions can result in equipment damage.

Removal Procedure

Step	Action
1	Loosen the installation fasteners (4) from the GP unit.
2	<p>Remove the GP unit slowly from the panel while pressing the projections on the top of the GP unit.</p>  <p>1 Projections</p> <p>NOTE:</p> <ul style="list-style-type: none"> • You could damage the GP unit if you try and remove it without holding down the projections. • Watch your fingers so they do not get caught when holding down the projections.

⚠ CAUTION

RISK OF INJURY

Do not drop the GP unit when you remove it from the panel.

- Hold the GP unit in place after removing the fasteners.
- Use both hands.

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

5.2 Wiring Principles

Overview

This section presents the GP unit wiring principles.

What Is in This Section?

This section contains the following topics:

Topic	Page
Connecting the AC Power Cord	142
Connecting the DC Power Cord	144
Connecting the Power Supply	147
Grounding	149

Connecting the AC Power Cord

⚠ WARNING

EXCESSIVE ELECTROMAGNETIC INTERFERENCE

- When the functional ground (FG) terminal is connected, be sure the wire is grounded. Not grounding the GP unit can result in excessive Electromagnetic Interference (EMI). Grounding is required to meet EMC level immunity.
- Remove power before wiring the GP unit's power terminals.
- The AC model is designed to use 100 Vac to 240 Vac input. Using any other level of power can damage both the power supply and the GP unit.
- Since the GP unit is not equipped with a power switch, be sure to connect a power switch to the power supply.
- Be sure to ground the GP unit's FG terminal.

Use the following torque to tighten the terminals:

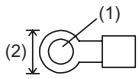
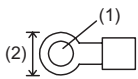
- Terminal Block: 1.4 N•m (12.4 lb•in.)
- Functional Ground (FG) Terminal: 1.4 N•m (12.4 lb•in.)

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

NOTE: The shield ground (SG) and FG terminals are connected internally in the GP unit.

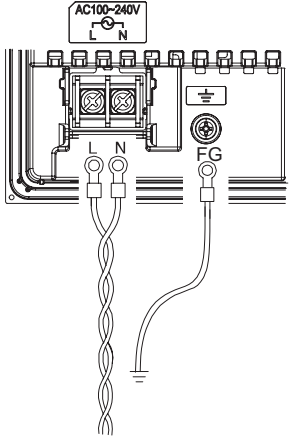
AC Power Cord Preparation

- Make sure the ground wire is either the same or heavier gauge than the power wires.
- Do not use aluminum wires in the power supply's power cord.
- Field wiring terminal marking for wire type (75°C [167 °F] copper conductors only).

	AC Power Cord	Grounding Wire
Power Cord	Double-insulated Wire 0.75 to 3.5 mm ² (18-12AWG)	0.75 to 3.5 mm ² (18-12AWG)
Recommended Ring Terminal ^{*1}	J.S.T Mfg. Co., Ltd compatible: <ul style="list-style-type: none"> • V1.25-M4 (18-16AWG) • V2-P4 (16-14AWG) • V5.5-S4 (14-12AWG) <div style="text-align: center;">  </div> <p>(1) ϕ4.3 mm (0.17 in.) or more (2) Less than 7.2 mm (0.28 in.)</p>	J.S.T Mfg. Co., Ltd compatible: <ul style="list-style-type: none"> • V1.25-M4 (18-16AWG) • V2-P4 (16-14AWG) • V5.5-S4 (14-12AWG) <div style="text-align: center;">  </div> <p>(1) ϕ4.3 mm (0.17 in.) or more (2) Less than 7.2 mm (0.28 in.)</p>

^{*1} To prevent a short circuit caused by loose screws, use a crimp-type terminal with an insulating sleeve.

How to connect the AC Power Cord

Step	Action
1	Confirm the power cord is not connected to the power supply.
2	Open the terminal strip's clear plastic cover.
3	<p>Remove screws from the L, N, and FG (functional ground) terminals. Attach the ring terminals and reinsert the screws. Check each wire to make sure the connections are correct.</p> <p>NOTE: The torque required to tighten these screws are as follows:</p> <ul style="list-style-type: none">● Terminal Block: 1.4 N·m (12.4 lb·in.)● FG (functional ground) Terminal: 1.4 N·m (12.4 lb·in.)  <p>The diagram shows a terminal strip with three main terminals labeled L, N, and FG. Above the terminals is a label 'AC100-240V' with a switch symbol and 'L' and 'N' labels. A power cord with three wires is shown. The two outer wires are twisted together and connected to the L and N terminals. The inner wire is connected to the FG terminal. A ground symbol is shown below the FG terminal.</p>
4	Close the terminal strip's clear plastic cover.

Connecting the DC Power Cord

⚠ WARNING

EXCESSIVE ELECTROMAGNETIC INTERFERENCE

- When the functional ground (FG) terminal is connected, be sure the wire is grounded. Not grounding the GP unit can result in excessive Electromagnetic Interference (EMI). Grounding is required to meet EMC level immunity.
- Remove power before wiring the GP unit's power terminals.
- The DC model uses only 24 Vdc power. Using any other level of power can damage both the power supply and the GP unit.
- Since the GP unit is not equipped with a power switch, be sure to connect a power switch to the power supply.
- Be sure to ground the GP unit's FG terminal.

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

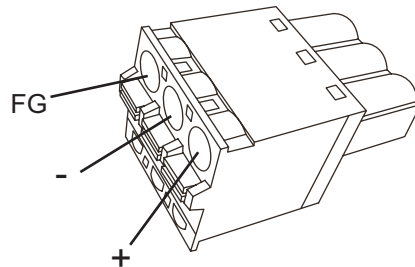
NOTE: The shield ground (SG) and FG terminals are connected internally in the GP unit.

DC Power Cord Preparation

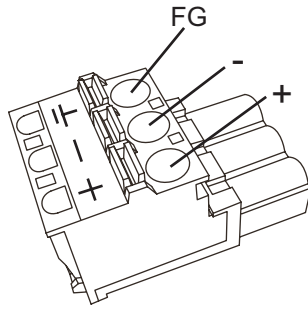
- Make sure the ground wire is either the same or heavier gauge than the power wires.
- Do not use aluminum wires in the power supply's power cord.
- If the ends of the individual wires are not twisted correctly, the wires may create a short circuit.
- Wherever possible, use wires that are 0.75 to 2.5 mm² (AWG 18 - 13) for the power cord, and twist the wire ends before attaching the terminals.
- The conductor type is solid or stranded wire.
- Field wiring terminal marking for wire type (75°C [167 °F] copper conductors only).

DC Power Supply Connector (Plug) Specifications: Spring Clamp Terminal Blocks

GP-4200 Series / GP-4300 Series / GP-4400 Series



GP-4500 Series / GP-4600 Series



Connection	Wire
+	24 Vdc
-	0 Vdc
FG	Grounded terminal connected to the panel chassis.

NOTE: The DC power supply connector (plug) for GP-4200 Series / GP-4300 Series / GP-4400 Series is PFXZCBCNDC1 (manufactured by Pro-face).

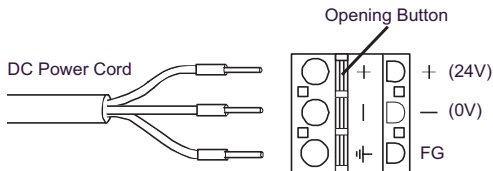
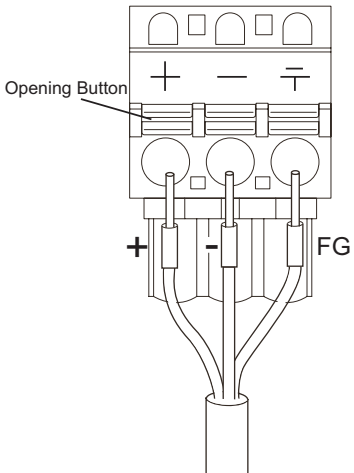
The DC power supply connector (plug) for GP-4500 Series / GP-4600 Series is PFXZCBCNDC2 (manufactured by Pro-face).

Recommended Driver	SZS 0.6x3.5 (1205053)
Recommended Pin Terminals	3201288 AI 0,75-10 GY 3200182 AI 1 -10 RD 3200195 AI 1,5 -10 BK 3202533 AI 2,5 -10 BU
Recommended Pin Terminal Crimp Tool	CRIMPFOX 6

(The above items are manufactured by Phoenix Contact.)

How to connect the DC Power Cord

Step	Action
1	Confirm the power cord is not connected to the power supply.
2	Check the rated voltage and remove the "DC24V" sticker on the DC power supply connector.
3	Remove 10 mm (0.39 in.) of the vinyl membrane off the ends of the power cord wires.
4	If using stranded wire, twist the ends. Tinning the ends with solder reduces risk of fraying and ensures good electrical transfer.
5	Push the Opening button with a small and flat screwdriver to open the desired pin hole.

Step	Action
6	<p>Insert each pin terminal into its corresponding hole. Release the Opening button to clamp the pin in place.</p> <p>GP-4200 Series / GP-4300 Series / GP-4400 Series</p>  <p>GP-4500 Series / GP-4600 Series</p> 
7	<p>After inserting all three pins, insert the power plug into the power connector on the GP unit.</p>

NOTE:

- Do not solder the wire directly to the power receptacle pin.
- To prevent the possibility of a terminal short, use a pin terminal that has an insulating sleeve.
- You can connect the DC power supply connector for GP-4200 Series, GP-4300 Series, or GP-4400 Series to GP-4500 Series or GP-4600 Series units. However, the reverse is not possible. You cannot connect the DC power supply connector for GP-4500 Series or GP-4600 Series to GP-4200 Series, GP-4300 Series, or GP-4400 Series units.

Connecting the Power Supply

Precautions

- You must use a 24 Vdc input unit with a Class 2 power supply.
- To increase the electromagnetic noise resistance, make sure you twist the ends of the power cord wires before connecting them to the power plug or ring terminal.
- The GP unit's power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
- Connect a lightning surge absorber to handle power surges.
- To reduce electromagnetic noise, make the power cord as short as possible.

⚠ WARNING

SHORT CIRCUIT, FIRE, OR UNINTENDED EQUIPMENT OPERATION

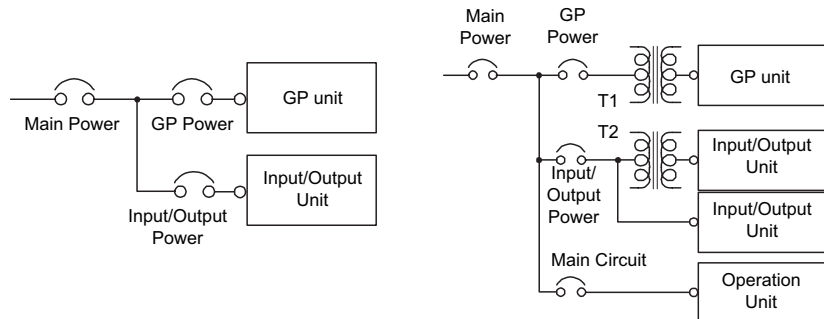
Avoid excessive force on the power cable to prevent accidental disconnection

- Securely attach power cables to the GP unit or cabinet.
- Use the designated torque to tighten the unit terminal block screws.
- Install and fasten the GP unit on installation panel or cabinet prior to connecting power supply and communication lines.

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

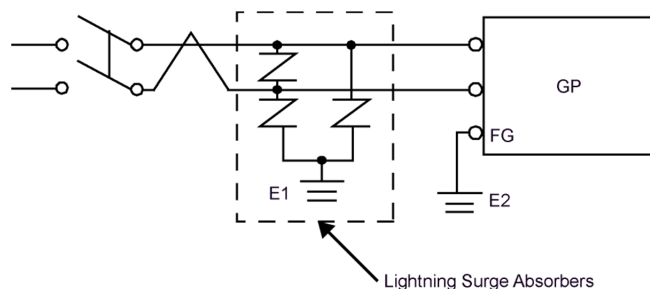
Power Supply Connections

When supplying power to the GP unit, separate the input/output and power lines, as shown.



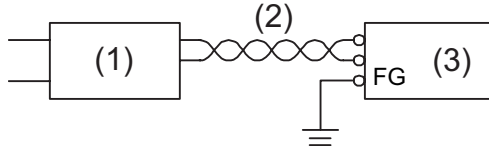
NOTE:

The following shows a lightning surge absorber connection:



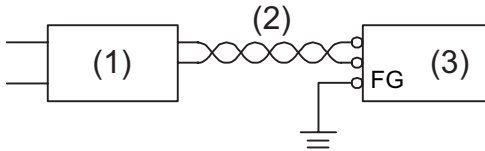
- Ground the surge absorber (E1) separately from the GP unit (E2).
- Select a surge absorber that has a maximum circuit voltage greater than that of the peak voltage of the power supply.

If the supplied voltage exceeds the GP unit range, connect a constant voltage transformer.



- 1 Constant voltage transformer
- 2 Twisted-pair cord
- 3 GP unit

Select a power supply low in noise for between the line and ground. If there is an excess amount of noise, connect an insulating transformer.



- 1 Insulating transformer
- 2 Twisted-pair cord
- 3 GP unit

NOTE: Use constant voltage and insulating transformers with capacities exceeding the Power Consumption value.