GP2000H Series Special Purpose RS-232C Cable (GP2000H-C232-3M/GP2000H-C232-10M) Installation Guide

Thank you for purchasing Pro-face's GP2000H Series Special Purpose RS-232C Cable, hereafter referred to as the "cable"

This product is designed to provide an RS-232C type connection to an External Device/ PLC.

Please confirm that the following items are included in the cable's package.

• Installation Guide (This manual)

• GP2000H Series Special Purpose RS-232C Cable (length: 3M or 10M)

Prior to using this cable, please be sure to read this manual completely.

Safety Precautions

⚠WARNINGS

• Prior to connecting the cable, check that the GP2000H's power supply is completely turned OFF to prevent an electric shock.

• Do not modify the cable, since it may lead to a fire or electric shock.

• This cable is not appropriate for use with aircraft control devices, aerospace equipment, central trunk data transmission (communication) devices, nuclear power control devices, or medical life support equipment, due to these devices inherent requirements of extremely high levels of safety and reliability.

• When using this cable with transportation vehicles (trains, cars and ships), disaster and crime prevention devices, various types of safety equipment, non-life support related medical devices, etc. redundant and/or failsafe system designs should be used to ensure the proper degree of reliability and safety.
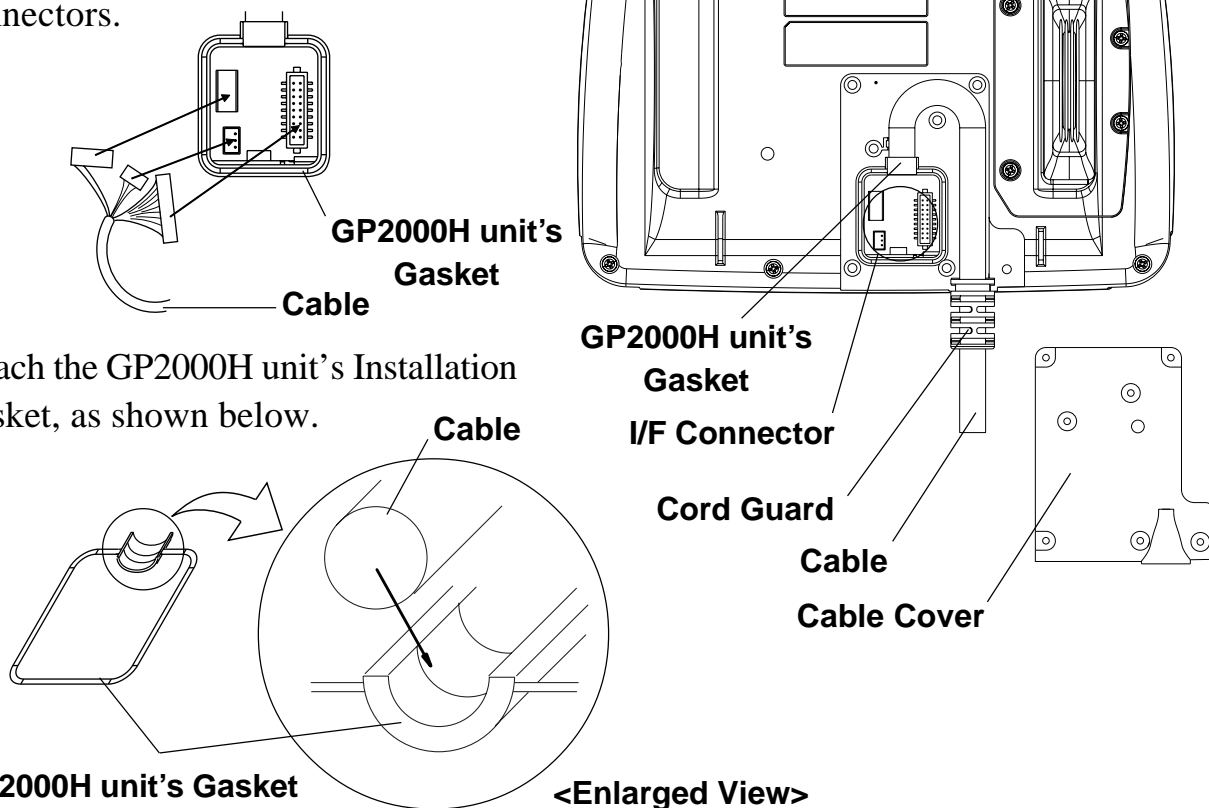
- *Since the GP2000H unit's cable combines power and signal wires, there is a possibility of excessive noise effecting the unit's communication with the External Device/PLC. To reduce the chance of this occurring, be sure to attach noise reduction devices to the External Device/PLC.*

- *When live lines are either connected or disconnected, if a difference in potential is created between the GP2000H and the connected device(s), the driver IC may be damaged. To prevent this, be sure to first connect the FG (frame ground) and SG (signal ground) wires before connecting the other signal wires.*

- *This cable is designed only for use with the GP2000H Series operator interfaces. It cannot be used with any other Pro-face units.*

\<Wiring the RS-232C Cable\>

Be sure to confirm the power supply is OFF prior to attaching this cable.

1) Unscrew the GP2000H unit's seven (7) rear face attachment screws and remove the Cable Cover.

\<GP2000H unit's Rear Face\>

2) Connect this cable's three (3) connectors to the corresponding GP2000H I/F connectors.

GP2000H unit's Gasket

Cable

3) Attach the GP2000H unit's Installation Gasket, as shown below.

Cable

GP2000H unit's Gasket

I/F Connector

Cord Guard

Cable

Cable Cover

Cable

GP2000H unit's Gasket

\<Enlarged View\>

4) Bend the cable to fit the GP2000H unit's cable channel, and adjust the cord guard so that it fits securely into the GP2000H plastic case's notch. (see above)

5) Replace the Cable Cover and secure all seven (7) attachment screws in place. Recommended screw torque is 0.5 to 0.6N•m.

   Be sure the Installation Gasket is fitted securely around the cable, as shown below.

Cable Cover's Gascket

Cable

GP2000H unit's Gasket
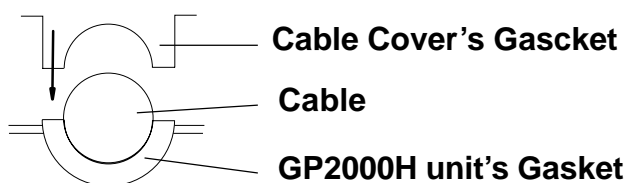
⚠️ *Important* ***Be sure the Installation Gasket and the Cable Cover are both securely attached. If they are not, the unit's specified protection level cannot be guaranteed.***

<RS-232C Cable Wiring>

The user must create the connection for the cable's host (External Device/PLC) side, depending on the devices. Refer to the following information when making the connection.

I/F	No.	Signal Name	Description	Wire Color	Wire Type	Non-GP2000H SIO Pin No.
External Device I/F	1	RESERVE	Reserved[*1]	Black/Gray	AWG22	
	2	DOUT0.C	DOUT 0(ZERO) Output	Black/White	AWG22	
	3	RESERVE	Reserved[*1]	Red/White	AWG22	
	4	DOUT1.C	DOUT 1(ONE) Output	Green/Brown	AWG22	
	5	OP.GND	OP Ground	Red/Yellow	AWG22	
	6	OP.C	OP Output	Red/Blue	AWG22	
	7	DOUT.GND	DOUT Ground[*2]	Red/Pink	AWG22	
	8	BUZZ OUT	External Buzzer Output	Black/Orange	AWG22	
	9	EMG0B	Push-Lock Switch 0B (Operates like A contact)	Red/Gray	AWG22	
	10	EMG0A	Push-Lock Switch 0A (Operates like A contact)	White/Orange	AWG22	
	11	EMG1B	Push-Lock Switch 1B (B contact)	Black/Yellow	AWG22	
	12	EMG1A	Push-Lock Switch 1A (B contact)	Green/White	AWG22	
	13	EMG2B	Push-Lock Switch 2B (B contact)	White/Blue	AWG22	
	14	EMG2A	Push-Lock Switch 2A (B contact)	Black/Blue	AWG22	
	15	ENB0B	Enable Switch 0B (A contact)	Black/Pink	AWG22	
	16	ENB0A	Enable Switch 0A (A contact)	LightGreen	AWG22	
	17	ENB1B	Enable Switch 1B (A contact)[*3]	Pink	AWG22	
	18	ENB1A	Enable Switch 1A (A contact)[*3]	SkyBlue	AWG22	
DC24V I/F	1	+24V	Power Input +24V (to GP2000H)	Black/Green	AWG22	
	2	0V	Power Input 0V (to GP2000H)	Red/Green	AWG22	
	3	FG	Frame Ground	shield		1
Serial I/F	1	RS	Request to Send	Red	AWG28	4
	2	SD	Send Data	Blue	AWG28	2
	3	CS	Clear to Send	Brown	AWG28	5
	4	RD	Receive Data	Orange	AWG28	3
	5	CD	Carrier Detect	Purple	AWG28	8
	6	ER	Enable to Receive	Gray	AWG28	20
	7	+5V	DC +5V±5% Output 0.25A (from GP2000H)[*4]	Yellow	AWG28	14
	8	SG	Signal Ground	White	AWG28	7

*1   External Device I/F lines #1 and #3 are reserved. Be sure to not connect anything to these lines.

*2   The DOUT Ground is used in common with External Buzzer Output (BUZZ OUT), DOUT 0 (Zero) Output (DOUT0.C), and DOUT 1 (One) Output (DOUT1.C).

*3   Disabled when "GP-H70 compatible mode" (set via GP2000H) is used.

*4   When connected to the GP2000H, the power used should be a maximum of 0.25A. Be sure to not exceed this level.

- *Serial I/F line #7 DC+5V Output is not protected. To prevent damage or unit malfunction, use only the designated level of current.*

  Also, when this pin is not used, be sure that it does not contact any other wires or metal. If touched, a short could occur that could cause the GP2000H to break down or malfunction.
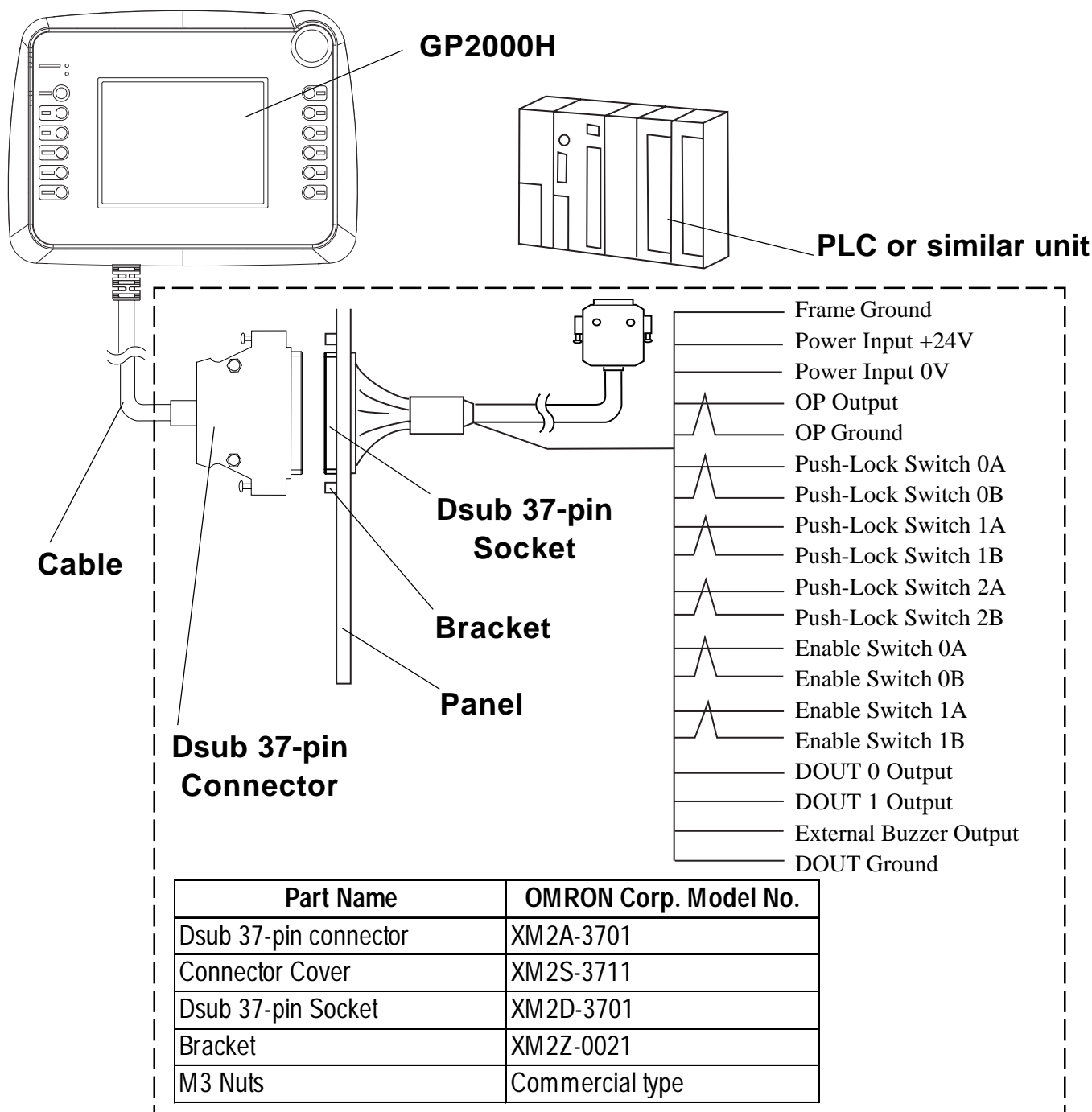
- *Be sure to connect Serial I/F line #8 (SG) to the SG terminal of your Host (External Device/PLC). If this is not done, the GP2000H circuit may be damaged.*

- *Be sure to connect the cable's shield to the Host (External Device/PLC) FG wire (frame ground).*

  This cable contains three shields, which are connected to each other.

Shield
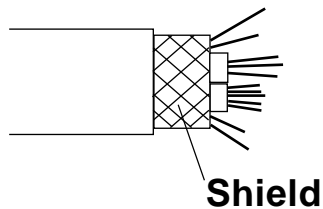
- **To connect the Conversion Adapter, the wiring diagram in the GP2000H Series RS-232C Conversion Adapter Installation Guide must be used.**

<Cable Connection Example>

GP2000H

PLC or similar unit

Part Name	OMRON Corp. Model No.
Dsub 37-pin connector	XM2A-3701
Connector Cover	XM2S-3711
Dsub 37-pin Socket	XM2D-3701
Bracket	XM2Z-0021
M3 Nuts	Commercial type

Signal list:
- Frame Ground
- Power Input +24V
- Power Input 0V
- OP Output
- OP Ground
- Push-Lock Switch 0A
- Push-Lock Switch 0B
- Push-Lock Switch 1A
- Push-Lock Switch 1B
- Push-Lock Switch 2A
- Push-Lock Switch 2B
- Enable Switch 0A
- Enable Switch 0B
- Enable Switch 1A
- Enable Switch 1B
- DOUT 0 Output
- DOUT 1 Output
- External Buzzer Output
- DOUT Ground

<Created by User>

> **Note**
>
> Please be aware that Digital Electronics Corporation shall not be held liable by the user for any damages, losses, or third party claims arising from the uses of this product.

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  GP2000H-C232-MT01-CP 2003.1   C