

GP2000H Series RS-422 Conversion Adapter (GP2000H-AP422) Installation Guide

Thank you for purchasing Pro-face's GP2000H Series RS-422 type Conversion Adapter, hereafter referred to as the "Adapter"

Using this adapter allows the user to convert the GP2000H series I/F connector to a terminal block.

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

- Installation Guide (This manual)
- GP2000H RS-422 type Conversion Adapter

Prior to using this adapter, please be sure to read this manual Completely.

UL/c-UL(CSA) Approval

The GP2000H-AP422 are UL60950 approved product (UL file no. E171486) that can be easily built into your product. When applying for UL approval for a product that includes one of this Adapter, please be sure to pay special attention to the fact that all products with built-in Adapter require UL inspection of the combination of the Adapter and the product.

The Adapter components conform to the following standards:

UL60950 Third Edition, dated December 1, 2000 (Standard for Safety of Information Technology Equipment, including Electrical Business Equipment)

CAN/CSA-C22.2 No. 60950-00 (Standard for Safety of Information Technology Equipment, including Electrical Business Equipment)

GP2000H-AP422 (UL Registration Model: 3080028-22)

CE Marking

The GP2000H-AP422 is CE marked , EMC compliant products. This Adapter also conform to EN55011 Class A, EN61000-6-2 directives.

For detailed CE marking information, please contact your local Adapter distributor.

<Cable Connection Information>

Dsub 37 pin Connector:

This connector connects to GP2000H series units. Use the separately sold RS-422 option cable (GP2000H-D422-3M or GP2000H-D422-10M) to connect the two.

10-Line Terminal Block:

Connect HOST (Device/PLC) to these terminals. The lines/cable connected here must be created by the User.

22-Line Terminal Block:

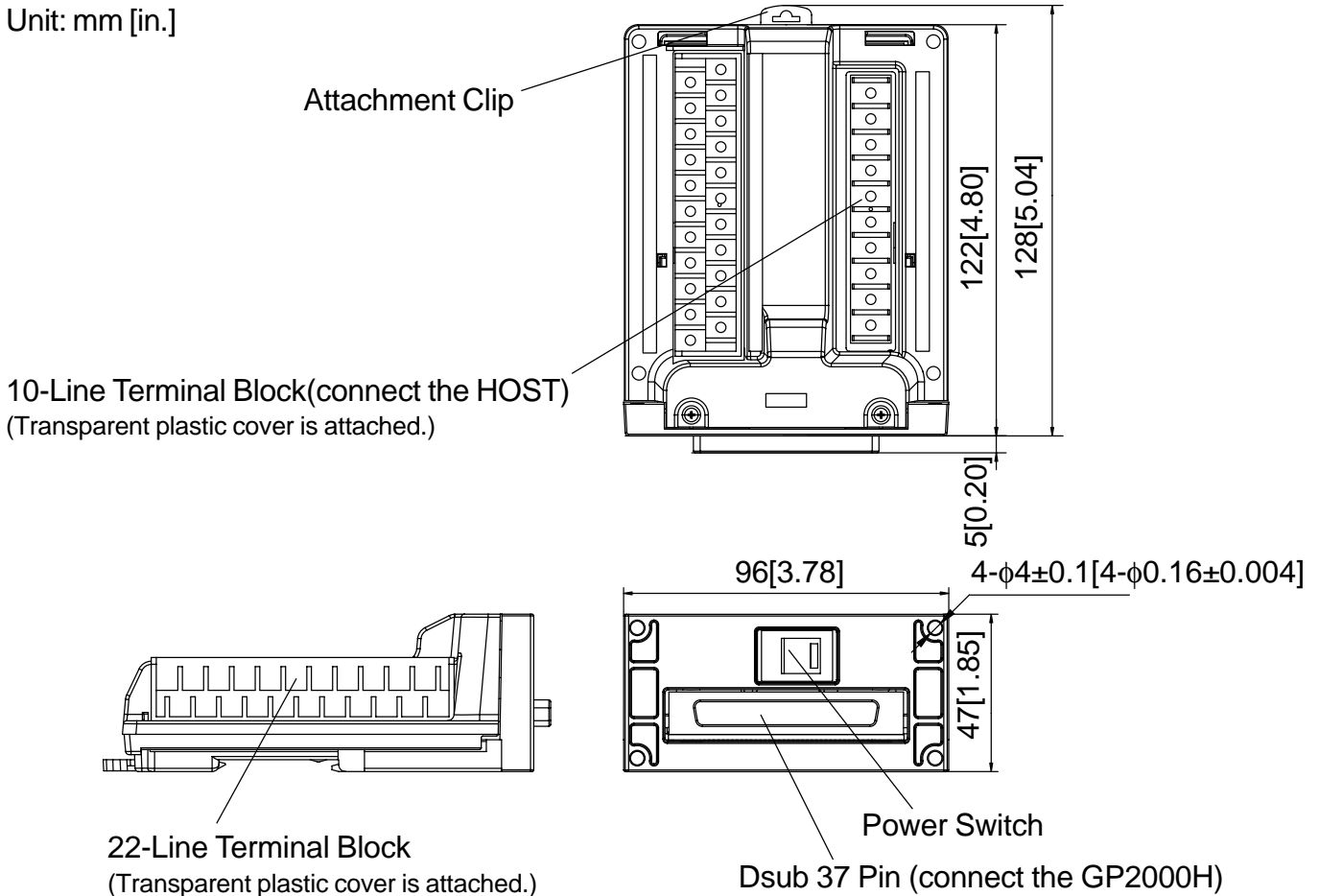
Connect external output (DOUT, etc.) or power lines to these terminals. The lines/cable connected here must be created by the User.



- **Prior to attaching the Dsub 37 pin cable to this adapter's connector, be sure to turn the adapter's power switch OFF.**
- **Be sure to remove the Conversion adapter from its installation panel when connecting the 10-Line Terminal Block wires or 22-Line Terminal Block wires. This is to prevent possible damage to the Conversion Adapter.**
- **Be sure to always attach the Terminal Block's transparent plastic cover. Failure to do so could result in an electric shock.**

<Dimensions>

Unit: mm [in.]



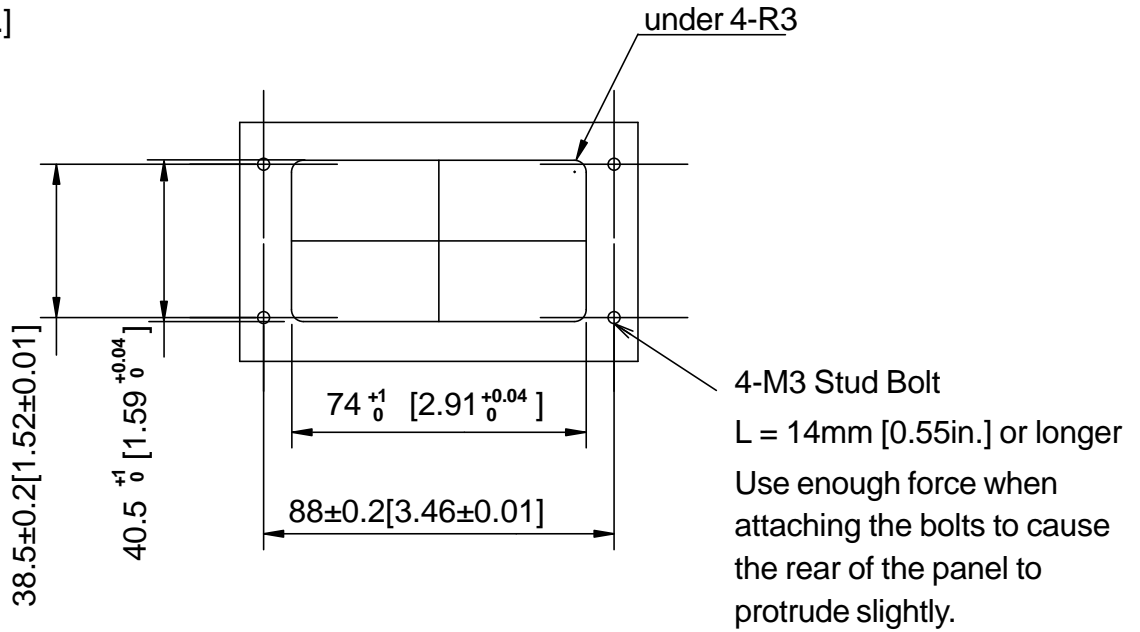
<Recommended Installation Method>

Be sure to install the Conversion adapter from inside the panel.

Use stud bolts 14mm [0.55in.] or longer, and secure them in place using M3 nuts. The necessary torque is 0.5 to 0.6 N•m. The drawing shown here is with the recommended connector and cover in place.

The size and depth of the attachment screw installation holes will vary depending on the type of Dsub 37 pin connector used and the thickness of the panel.

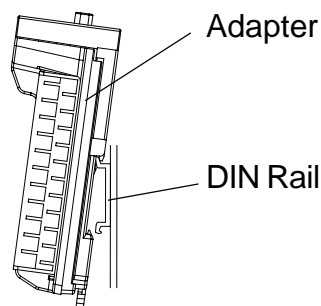
Unit:mm[in.]



■ Attaching the Adapter on a 35mm DIN Rail

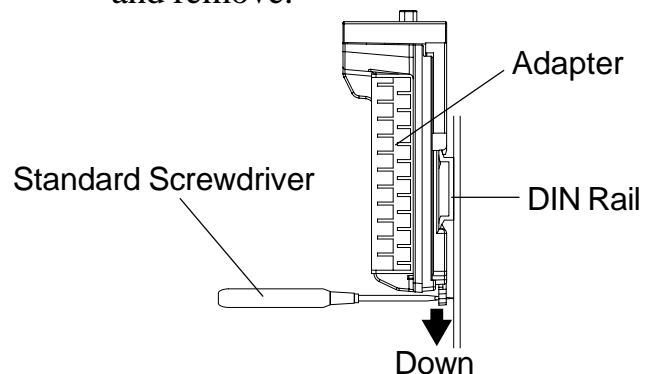
• Attachment

Place the unit's curved, top lip over the top of the DIN rail, and then tilt the unit down until the bottom face attachment clip clicks into place.



• Removal

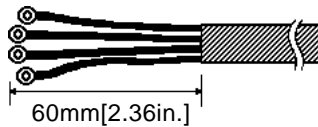
Use a standard screwdriver to force the unit's attachment clip down until the bottom of the adapter is freed from the rail. Next, tilt the adapter up and remove.



- **When attaching this adapter to a DIN rail, be sure to fix the cable in place so that the cable connected is supported and does not place a weight load on the connector. If the cable's weight is not supported, it may eventually damage the adapter or the DIN rail.**



- If wire length is a problem, please use the NC (Not Connected) terminal for connecting the shield (earth) wire, etc.
- The recommended length of the wire ends is as shown below.



- Ring terminal attachment rings should be no more than 0.8mm [0.03in.] thick. If two ring terminals are attached to the same terminal, the combined thickness will be too much and the clear plastic cover cannot be attached.

The JST company's V2-MS3 (round type) Ring terminals, or similar types are recommended.

- To avoid a short caused by loose ring terminals, be sure to use ring terminals with insulating sleeve.
- The necessary torque is 0.5 to 0.6N•m.

<Serial Interface>



- The connector signals used in this document are based on the use of Pro-face's optional RS-422 cable. (GP2000H-D422-3M or GP2000H-D422-10M) For detailed signal information, please refer to the separately sold GP2000H Series User Manual.



- Use rough metric type M2.6 x 0.45p threads to hold the cable's set (fastening) screws in place.

Dsub 37 pin socket-type connector (connect the GP2000H)

Pin No.	Signal Name	Description
1	FG	Frame Ground
2	FG	Frame Ground
3	NC	Not Connected
4	ERB	Enable Receive B
5	CSB	Clear to Send B
6	+5V	DC +5V±5% Output 0.25A (from GP2000H)*1
7	SDB	Send Data B
8	RDB	Receive Data B
9	NC	Not Connected
10	RESERVE	Reserved ^{*2}
11	RESERVE	Reserved ^{*2}
12	OP.GND	OP Ground
13	DOUT.GND	DOUT Ground ^{*3}
14	EMG0B	Push-Lock Switch 0B (Operates like A contact)
15	EMG1B	Push-Lock Switch 1B (B contact)
16	EMG2B	Push-Lock Switch 2B (B contact)
17	ENB0B	Enable Switch 0B (A contact)
18	ENB1B	Enable Switch 1B (A contact) ^{*4}
19	0V	Power Input 0V (to GP2000H)
20	FG	Frame Ground
21	NC	Not Connected
22	NC	Not Connected
23	ERA	Enable Receive A
24	CSA	Clear to Send A
25	SG	Signal Ground
26	SDA	Send Data A
27	RDA	Receive Data A
28	DOUT0.C	DOUT 0 Output
29	DOUT1.C	DOUT 1 Output
30	OP.C	OP Output
31	BUZZ OUT	External Buzzer Output
32	EMG0A	Push-Lock Switch 0A (Operates like A contact)
33	EMG1A	Push-Lock Switch 1A (B contact)
34	EMG2A	Push-Lock Switch 2A (B contact)
35	ENB0A	Enable Switch 0A (A contact)
36	ENB1A	Enable Switch 1A (A contact) ^{*4}
37	+24V	Power Input +24V (to GP2000H)

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

*2 Pins #10 and #11 are reserved. Be sure to not connect anything to these pins.

*3 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).

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

Recommended Connector: Dsub 37 pin plug XM2A-3701<made by OMRON Corp.>

Recommended Cover: Dsub 37 pin Cover XM2S-3711<made by OMRON Corp.>

Recommended Screw: Jack Screw XM2Z-0071<made by OMRON Corp.>



- **Pin #6 DC+5V Output is not protected. To prevent damage or unit malfunction, use only the designated level of current.**
- **Be sure to connect line #25 (SG) to the SG terminal of your Host (Device/PLC).**

10-Line Terminal Block (connect the HOST)

Pin No.	Signal Name	Description
1	FG	Frame Ground
2	SG	Signal Ground
3	SDB	Send Data B
4	SDA	Send Data A
5	RDB	Receive Data B
6	RDA	Receive Data A
7	CSA	Clear to Send A ^{*1}
8	ERA	Enable Receive A ^{*1}
9	CSB	Clear to Send B ^{*1}
10	ERB	Enable Receive B ^{*1}

*1 Wires #7 (CSA) and #8 (ERA), and wires #9 (CSB) and #10 (ERB) are shorted together with shorting clips at the factory.

Recommended Ring Terminal: V2-MS3<made by JST>



Be sure to connect line #2 (SG) to the SG terminal of your Host (Device/PLC).

22-Line Terminal Block

Pin No.	Signal Name (Drawing Name)	Description
1	DOUT0.C (DO0)	DOUT 0 Output
2	RESERVE	Reserved ^{*1}
3	DOUT1.C (DO1)	DOUT 1 Output
4	RESERVE	Reserved ^{*1}
5	OP.C (OP)	OP Output
6	OP.GND (OPG)	OP Ground
7	BUZZ OUT (BZ)	External Buzzer Output
8	DOUT.GND (DOG)	DOUT Ground ^{*2}
9	EMG0A (EM0A)	Push-Lock Switch 0A (Operates like A contact)
10	EMG0B (EM0B)	Push-Lock Switch 0B (Operates like A contact)
11	EMG1A (EM1A)	Push-Lock Switch 1A (B contact)
12	EMG1B (EM1B)	Push-Lock Switch 1B (B contact)
13	EMG2A (EM2A)	Push-Lock Switch 2A (B contact)
14	EMG2B (EM2B)	Push-Lock Switch 2B (B contact)
15	ENB0A (ENOA)	Enable Swith 0A (A contact)
16	ENB0B (ENOB)	Enable Swith 0B (A contact)
17	ENB1A (EN1A)	Enable Swith 1A (A contact) ^{*3}
18	ENB1B (EN1B)	Enable Swith 1B (A contact) ^{*3}
19	+24V (+24V)	Power Input +24V
20	0V (0V)	Power Input 0V
21	NC (NC)	Not Connected
22	FG (FG)	Frame Ground

*1 Pins #2 and #4 are reserved. Be sure to not connect anything to these pins.

*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.

Recommended Ring Terminal: V2-MS3<made by JST>

Fuse Type:FGMB125V2A <Fuji Terminal Industry Co. LTD> equivalent



- Make all power lines thick wires (Max.:2mm²) and twist all cable ends.
- When connecting the FG line to the installation panel's frame, use exclusive grounding to minimize the effect of surrounding noise.

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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