

RS-232C/485 Isolation Unit Installation Guide

Thank you for purchasing Pro-face's RS-232C/485 Isolation Unit (CA3-ISO232-01/CA3-ISO485-01). This unit is designed to utilize Pro-face product, Display(Unit) serial interface connector (D-Sub 9-pin), and electrically separates the serial interface signal from the Display's chassis.

For the details of the applicable models, please refer to each Display's Hardware Manual or Pro-face Home Page.

<http://www.pro-face.com/>

Global Code

A global code is assigned to every Pro-face product as a universal model number.

For more information on product models and their matching global codes, please refer to the following URL.

<http://www.pro-face.com/product/globalcode.html>

Safety Precautions



WARNING

HAZARD OF ELECTRIC SHOCK OR EXPLOSION

- To avoid an electric shock, prior to connecting this unit to the Display's serial interface, confirm that the Display's power supply is completely turned OFF, via a breaker, or similar unit.
- Do not modify this unit. Doing so may cause a fire or an electric shock.
- Do not use this unit in an environment where flammable gases are present, since operating this unit may cause an explosion.
- Do not allow water, liquids, metal or charged particles to enter inside this unit, since they can cause either a unit malfunction or an electrical shock.

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



WARNING

UNINTENDED EQUIPMENT OPERATION OR LOSS OF CONTROL

- Do not use or store this unit in direct sunlight, in excessively dusty or dirty environments or where excessive vibration can occur.
- Do not store or use this unit where strong jolting can occur.
- Do not store or use this unit where chemicals (such as organic solvents, etc.) and acids can evaporate, or where chemicals and acids are present in the air.

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

IMPORTANT

- When disposing of this product, be sure to do so according to your country's standards for industrial waste disposal.

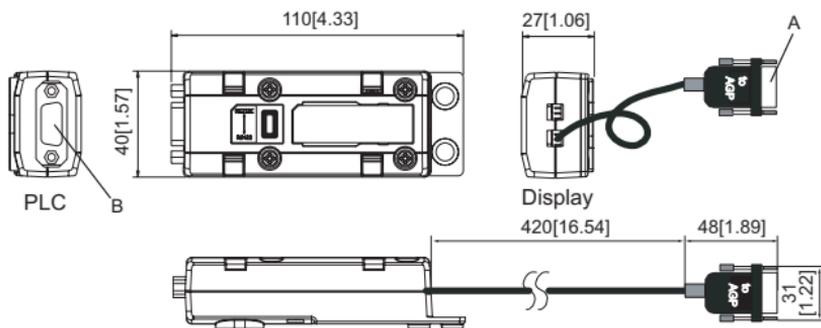
Package Contents

- (1) Isolation Unit
RS-232C Isolation Unit CA3-ISO232-01
RS-485 Isolation Unit CA3-ISO485-01
- (2) Attachment Screws (2)
- (3) Installation Guide <this document>

This product has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact your local distributor.

Dimensions

Units: mm [in.]



			RS-232C Isolation Unit	RS-485 Isolation Unit
A	Input (Display Side)	Communication Method	RS-232C	RS-485
		Interface	D-Sub 9-pin socket	D-Sub 9-pin plug
B	Output (PLC Side)	Communication Method	RS-232C / RS-422 (via DIP Switch)	RS-485 / RS-422 (via DIP Switch)
		Interface	D-Sub 9-pin plug	D-Sub 9-pin socket

General Specifications

■ Electrical Specifications

Power Supply	Rated Input Voltage	DC 5V (supplied from the Display)
	Input Voltage Limits	1.25 W or less
	Input Voltage Endurance	AC1000V 20mA 1min(When attached to the Display)
	Insulation Resistance	DC500V 10MΩ or higher(When attached to the Display)

■ Environmental Specifications

Physical Environment	Ambient Operating Temperature	0...50 °C (32...122 °F)
	Storage Temperature	-20...60 °C (-4...140 °F)
	Ambient 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
	Atmosphere	Free of corrosive gases
	Atmospheric Pressure (Operating Altitude)	800...1114 hPa (2000 m [6561 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 (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: 1000 Vp-p Pulse Width: 1 µs Rise Time: 1 ns (via noise simulator)
	Electrostatic Discharge Immunity	Contact Discharge Method: 6 kV (IEC/EN61000-4-2 Level 3)

■ External Specifications

Cooling Method	Natural air circulation
Weight	170 g (0.37 lb) or less
External Dimensions	W110 x H40 X D27 mm (W4.33 x H1.57 x D1.06 in.)

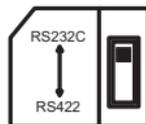
Serial Interface Specifications

■ RS-232C Isolation Unit

The RS-232C/RS-422 type.

D-Sub 9-pin plug connector's pin assignments are as follows.

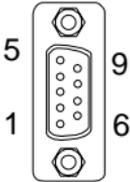
Use the DIP switch on the unit to change communication methods.



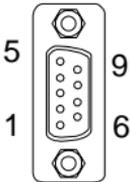
IMPORTANT

- For Display side settings please refer to “Display side settings”.

◆RS-232C

Pin Arrangement	Pin #	RS-232C		
		Signal Name	Direction	Meaning
	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	Clear to Send
	9	NC	-	No connection
	Shell	FG	-	Frame Ground

◆RS-422

Pin Arrangement	Pin #	RS-422		
		Signal Name	Direction	Meaning
	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

Unit's Connector : XM2C-0942-132L<made by OMRON>

Recommended Connector : XM2D-0901 <made by OMRON>

Recommended Cover : XM2S-0913 <made by OMRON>

Jack Screw : XM2Z-0073 <made by OMRON>

Stacking Metal Fittings require #4-40 inch screw.

IMPORTANT

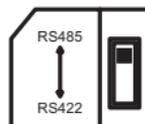
- This unit does not correspond to RS-422/485 (2 wire) communication.
- This unit does not correspond to Serial Multilink communication.

■ RS-485 Isolation Unit

The RS-485/RS-422 type.

D-Sub 9-pin socket connector's pin assignments are as follows.

The communication method is switched with a change switch.



IMPORTANT

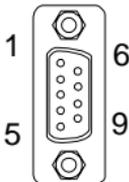
- For Display side settings please refer to “Display side settings”.
- This unit can not be used for GP4000 Series.

◆RS-485

Pin Arrangement	Pin #	RS-485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receive side: 100Ω)
	2	RDA / SDA	-	-
	3		Input / Output	Receive Data A(+) / Send Data A (+)
	4	NC	-	No connection
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% output 0.05A ^{*1}
	7	RDB / SDB	-	-
	8		Input / Output	Receive Data B(-) / Send Data B(-)
	9	TRMTX	-	Termination (Send side: 100Ω)
	Shell	FG	-	Frame Ground

*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or unit malfunctions, use only the rated current.

◆RS-422

Pin Arrangement	Pin #	RS-422		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receive side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A (+)
	4	NC	-	No connection
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% output 0.05A*1
	7	RDB	Input	Receive Data B(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Send side: 100Ω)
	Shell	FG	-	Frame Ground

*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or unit malfunctions, use only the rated current.

Unit's Connector : XM3B-0942-132L<made by OMRON>
 Recommended Connector : XM2A-0901 <made by OMRON>
 Recommended Cover : XM2S-0913 <made by OMRON>
 Jack Screw : XM2Z-0073 <made by OMRON>
 Stacking Metal Fittings require #4-40 inch screw.

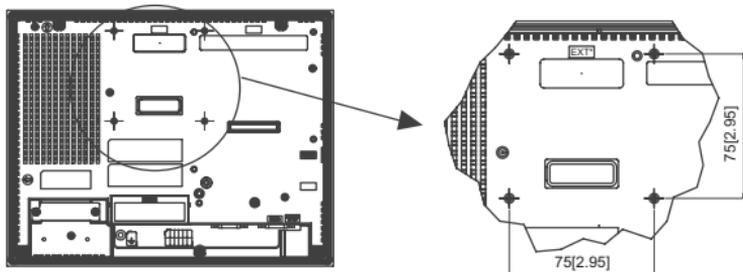
Attachment Method

NOTE

- For the GP-4200 series, attach the unit to the panel.

■ Attaching the Unit directly to the Display

When attaching the unit on the rear side of the Display, among the 4 screws shown in the diagram below, use 2 horizontally positioned or 2 vertically positioned screws to attach the unit. If the Display already has an attachment, it may restrict the direction in which you can place the unit.



1) Attach one screw to the Display's rear side.
Use a torque of 0.5 N•m to 0.6 N•m (4.4 lb-in to 5.3 lb-in).



2) Attach the unit to the Display.



3) Slide the unit in the direction of the arrow so the unit is hooked by the screw from step 1.

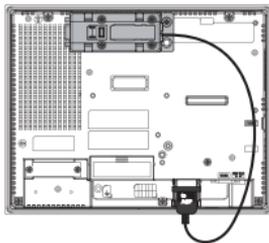


4) Fix the unit in place with another screw.
Use a torque of 0.5 N•m to 0.6 N•m (4.4 lb-in to 5.3 lb-in).

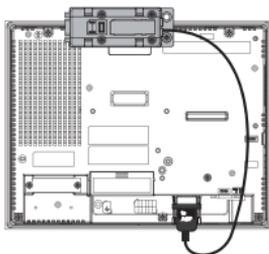


• Make sure the unit is placed inside the edges of the Display.

Correct

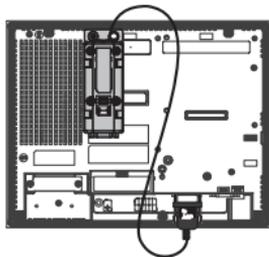


Incorrect

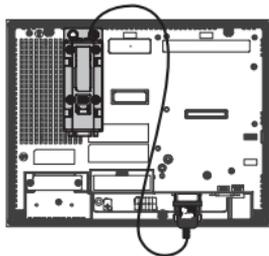


• Do not place the unit over the slits.

Correct

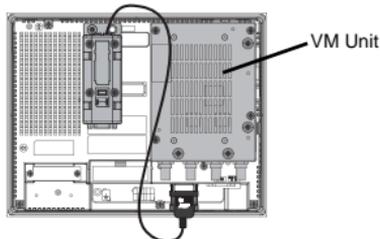


Incorrect



IMPORTANT

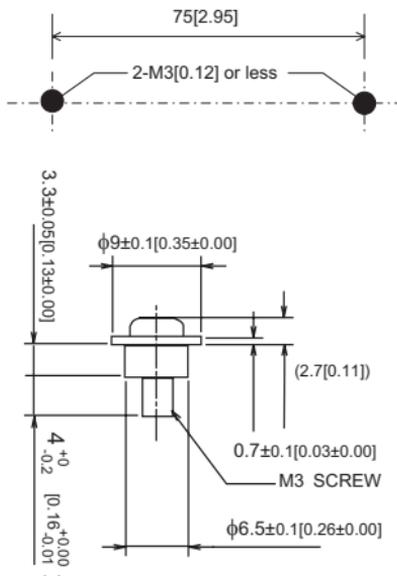
- When attaching the unit to the Display, be careful with the attachment position.
- Attach the unit to a stable surface. Do not leave the unit hanging by its cord.
- Be careful with wire placement. Overlapping cords may cause noise.
- When attaching another unit to the Display, be careful of the place for the attachment.
- If this unit and Pro-face Product, VM Unit (GP2000-VM41) are attached to AGP-35°0T at the same time, only when this unit is attached in the position as shown below, it's possible to attach the VM Unit with it at the same time.



■ Attaching the Unit to a Panel

When attaching the unit to a panel other than the Display's main unit, attach it at the two points identified in the diagram below. Drill holes suitable for screws as shown in the diagram. For attachment information, refer to "Attaching the unit directly to the Display".

Unit mm:[in.]



Display side settings

When connecting the RS-232C isolation unit, the following two settings are made in the Display's Offline mode or using the screen creation software.

- Setting the Display's communication method to RS-232C
- Setting the Serial Interface port's number 9 pin to VCC

In the case of the operation in the Offline mode, change it with [Peripheral Settings] of [Device PLC/Settings]. For the software's operation, refer to "Device/PLC Connection Manual".

CE Marking

- The CA3-ISO232-01 and CA3-ISO485-01 are a CE marked, EMC compliant products.
These units conform to EN55011 Class A and EN61000-6-2 directives.

Inquiry

If you experience difficulties or have questions about this product, please contact us any time.

You can access our support site "Otasuke Pro!" whenever you need help with a solution.

<http://www.pro-face.com/otasuke/>

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 use of this product.

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