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-sub9-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.

URL

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

Essential Safety Precautions

⚠ WARNINGS

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

■ General Safety Precautions

- **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.**
- **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.**

Package Contents

Please check that the following items are included in your package.

■ **Isolation Unit**

RS-232C Isolation Unit CA3-ISO232-01

RS-485 Isolation Unit CA3-ISO485-01

■ **Installation Guide (this guide)**

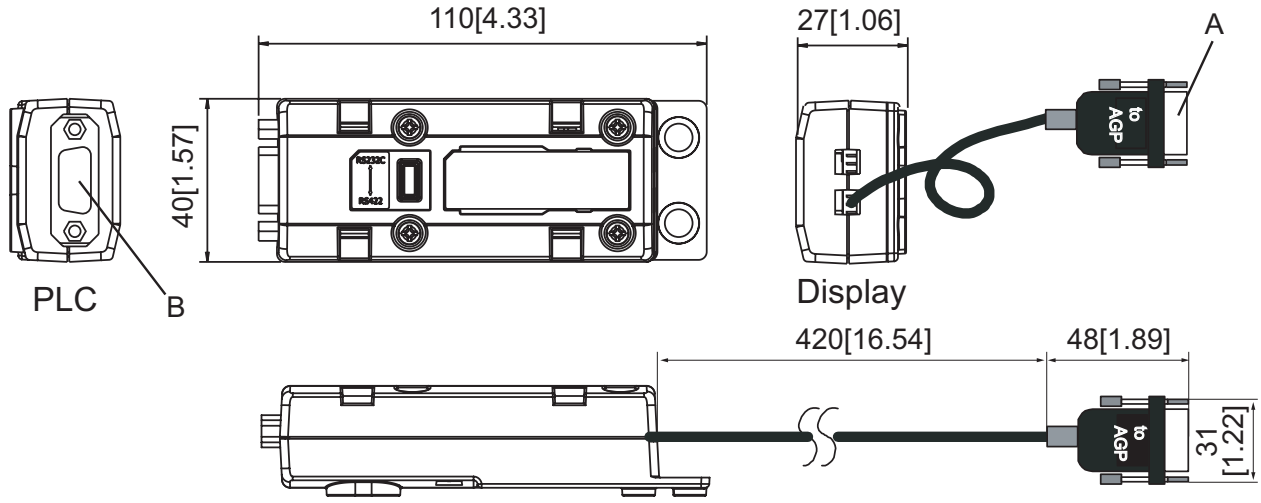
■ **Attachment Screws (2)**

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.

1 External Drawings and Dimensions

Unit 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

2 Specifications

2.1 Electrical

Item	Description
Rated Voltage	DC5V(supplied from the Display)
Power Consumption	1.25W or less
Voltage Endurance	AC1000V 20mA 1min(When attached to the Display)
Insulation Resistance	DC500V 10MΩ or higher(When attached to the Display)

2.2 Environmental

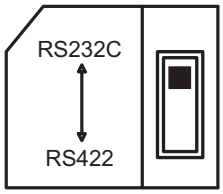
Item	Description
Ambient Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +60°C
Ambient Humidity	10%RH to 90%RH (No condensing,wet bulb temperature:39°C or less)
Storage Humidity	10%RH to 90%RH (No condensing,wet bulb temperature:39°C or less)
Dust	0.1mg/m^3 and below(non-conductive levels)
Pollution Degree	Pollution Degree 2
Atmosphere	Free of corrosive gases
Air Pressure Vibration Resistance (available altitude)	800hpa to 1114hpa(2000m above sea level or lower)
Vibration Resistance	IEC61131-2compliant 5Hz to 9Hz single-amplitude 3.5mm 9Hz to 150Hz constant-accelerated velocity 9.8m/s^2 X,Y,Z directions for 10cycles(100minutes)
Concussion Resistance	IEC61131-2 compliant(147m/s^2,XYZ directions 3times each)
Noise Immunity	Noise Voltage:1000Vp-p Pulse Duration:1μs Rise Time:1ns (via noise simulator)
Electrostatic Discharge Immunity	6kV(complies with EN 61000-4-2 level3)

2.3 Structural

Item	Description
Cooling Method	Natural air circulation
Weight	170g[0.4lb] or less
External Dimensions	W110mm[4.33in]xH40mm[1.57in]xD27mm[1.06in]

3 Serial Interface Specifications

3.1 RS-232C Isolation Unit

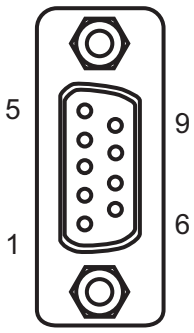


The RS-232C/RS-422 type
The communication method is switched with this unit's DIP switch.

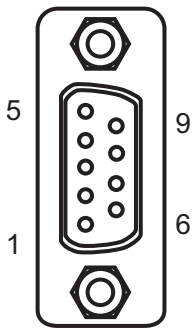
Important

- For Display side settings please refer to "5 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 DataA(+)
	2	RDB	Input	Receive DataB(-)
	3	SDA	Output	Send DataA(+)
	4	ERA	Output	Data Terminal ReadyA(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send PossibleB(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send PossibleA(+)
	9	ERB	Output	Data Terminal ReadyB(-)
	Shell	FG	-	Frame Ground

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

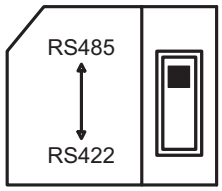
Unit's Connector : XM2C-0942-132L <made by OMRON>
Recommended Connector : XM2D-0901 <made by OMRON>
Recommended Cover : XM2S-0913 <made by OMRON>
Jack Screw : XM2Z-0073 <made by OMRON>
Stacking Metal Fittings require #4-40 inch screw.

Important

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

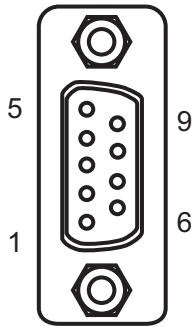
3.2 RS-485 Isolation Unit

The RS-485/RS-422 type
The communication method is switched with a change switch.

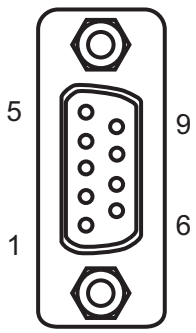


Dsub 9-pin socket connector's pin assignments are as follows.

■RS-485

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

■RS-422

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

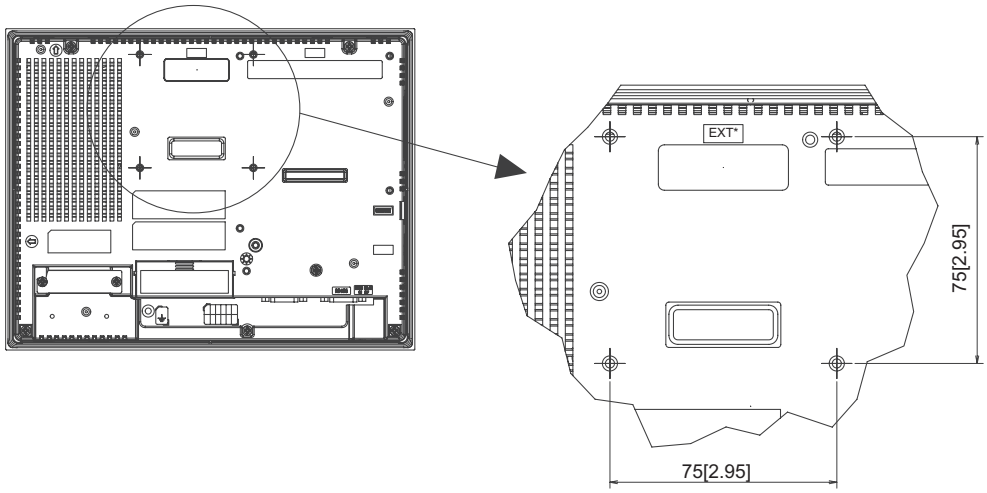
Unit's Connector : XM3B-0942-132L <made by OMRON>
Recommended Connector : XM2A-0901 <made by OMRON>
Recommended Cover : XM2S-0913 <made by OMRON>
Jack Screw : XM2Z-0073 <made by OMRON>
Stacking Metal Fittings require #4-40 inch screw.

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

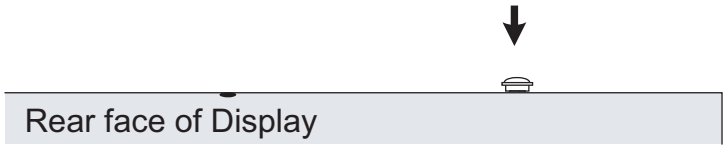
4 Attachment Method

■Attaching the unit directly to the Display

When attaching this unit to the rear side of the Display, place it on the rear side of the Display in the vertical or horizontal direction using two of the four screws as shown below and attach it there.If a different unit is attached to the Display, the attachment direction of this unit might be restricted.

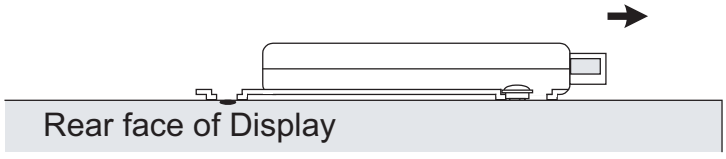


1) Attach one screw to the Display's rear face. The torque should be 0.5Nm to 0.6Nm.

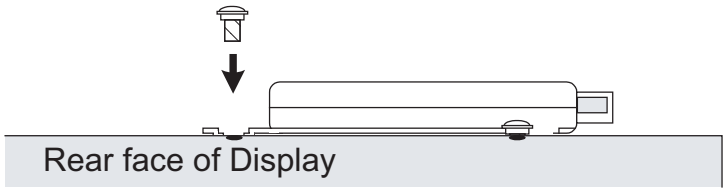


2) Attach this unit to the Display.

3) Slide the unit in the direction the arrow shows so that the unit gets caught by the attached screw of 1).



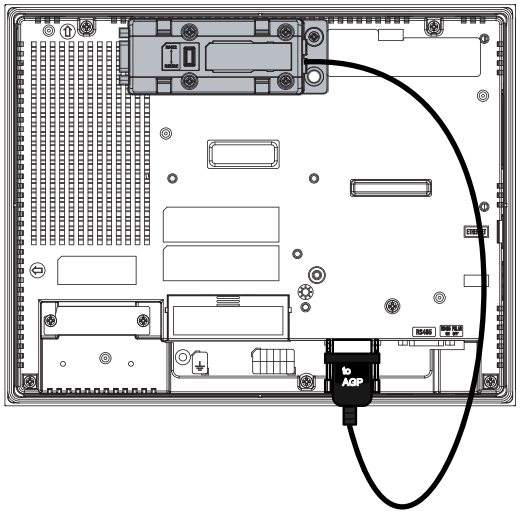
4) Fix the unit with another screw. The torque should be 0.5Nm to 0.6 Nm.



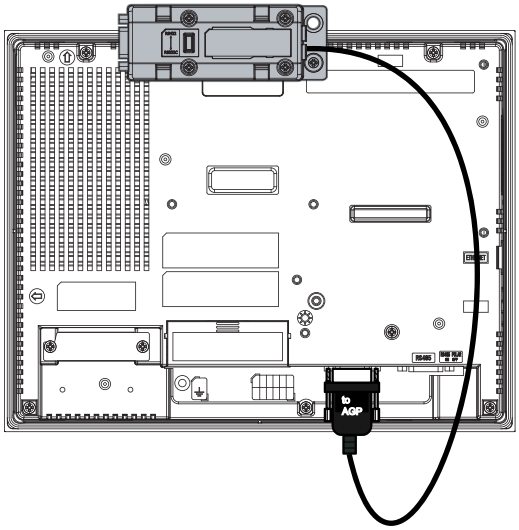
Important

- Be careful of the attachment position when attaching this unit to the Display.
- Be sure to attach this unit to a stable surface.Do not leave the unit hanging by its cord.
- Be fully careful of wiring. When cords overlap, they may cause noise.

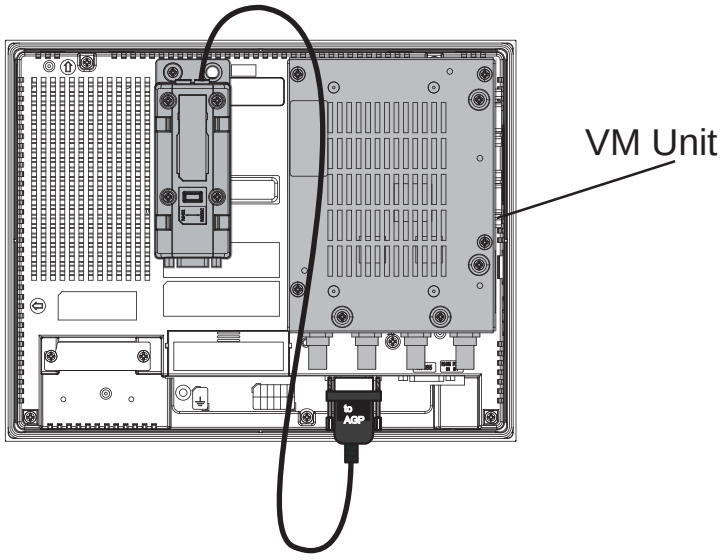
correct



Incorrect



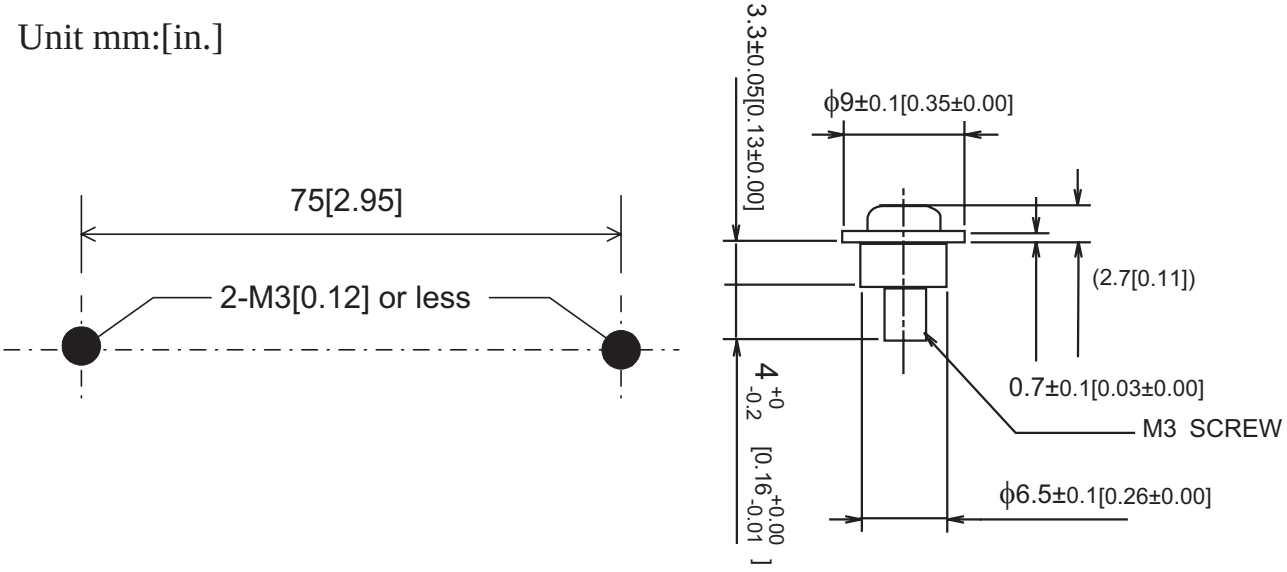
- When attaching another unit to the Display, be careful of the place for the attachment.
- If this unit and Pro-face Product, VM Unit (GP2000-VM41) are attached to AGP-35*0T at the same time,only when this unit is attached in the position as shown below, it's possible to attach the VM Unit with it at the same time.



■Attaching the unit to the panel

When attaching the unit to a panel other than the Display main unit, attach it at two points referring to the diagram below. Make holes suitable for the screws referring to the diagram below. For attaching it, refer to "■Attaching the unit directly to the Display".

Unit mm:[in.]



5 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 GP-Pro EX.

-Setting the Display's communication method to RS-232C

-Setting the COM1 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(GP-Pro EX)'s operation, refer to "GP-Pro EX Device/PLC Connection Manual".

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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