# PS-3711A Series Installation Guide

### Caution

Be sure to read the "Warning/Caution Information" on the attached sheet before using the product.

## **Package Contents**

- (1) PS-A Unit (1)
- (2) English and Japanese Installation Guides (one of each) <This Guide>
- (3) Warning/Caution Information (1)
- (4) Installation Gasket (1) (attached to the PS-A unit)
- (5) Installation Fasteners (Set of 4 x 2)



(6) USB Cable Clamp (2 ports) (2)



(7) Power Connector (1)



### IMPORTANT

Be careful when installing the PS-A not to damage the built-in HDD. This unit has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, please contact your local PS-A distributor immediately.

When you order a PS-A unit built to your specifications, that PS-A package should

include each optional item's Installation Guide. Please use that guide to check the contents of each optional item's package.

### **About the Manual**

For the detailed information on PS-A series, refer to the following manuals.

- PS-3710A/PS-3711A Series Hardware Manual
- PS-3710A/PS-3711A Series Reference Manual
- API Reference Manual Manual can be downloaded from Pro-face Home Page.

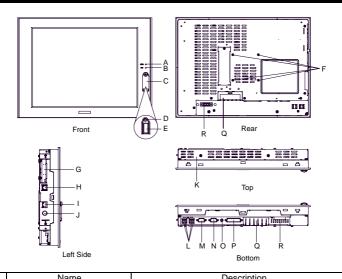
URL

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

## NOTE

 The drivers and utilities for PS-A can be downloaded from Pro-face Home Page.

## **Part Names and Functions**



|    | Name                          |                       |       | Description   |
|----|-------------------------------|-----------------------|-------|---|
|    |                               | LED                   |       | PS-A Status   |
|    |                               | Green (               | lit)  | Normal Operation (power is on)                      |
| ١. | Power LED/RAS Status Lamp     | reen (blir            | king) | Soft OFF state                                      |
| Α  | (POWER)                       | Orange                | (lit) | System Monitor Error<br>Touch Panel Self Test Error |
|    |                               | Orange/F<br>(blinkin  |       | Backlight burnout is detected                       |
|    |                               | Not lit               |       | Power is OFF  |
|    |                               |                       |       |   |
| В  | IDE Access Lamp               | LED                   |       | PS-A Status   |
|    | •                             | Green                 | (lit) | Currently using IDE I/F                             |
| С  | Front Cover                   | _                     |       |   |
| D  | Hardware Reset Switch (RESET) | Used to restart PS-A. |       |   |

|   |                                    |   | 1 port. Complies with USB 2.0. Uses a "TYPE-A" connector.   |                 |  |  |
|---|------------------------------------|---|---|-----------------|--|--|
| Е | USB Interface (USB)                |   | Power supply voltage  | 5 VDC ±5%       |  |  |
|   |                                    |   | Output current  | 500mA (max.)    |  |  |
|   |                                    |   | The maximum communication distance  | 5m              |  |  |
| F | Arm Insertion Hole Location        | ٧   | ESA 75mm  |                 |  |  |
| G | PCMCIA Interface (PCMCIA)          | P<br>C  | ports.  CMCIA Type II, Type III can be availa corresponding to CARD BUS. Excluding VIDEO ZOOM, SOUND fun      |                 |  |  |
| Н | Ethernet Interface (LAN1)          | Т   | 10BASE-T/100BASE-TX Auto Changeover.<br>This interface uses an RJ-45 type modular jack<br>connector (8 pins). |                 |  |  |
| I | Ethernet Interface (LAN2)          | 10BASE-T/100BASE-TX/1000BASE-T Auto<br>Changeover. This interface uses an RJ-45 type<br>modular jack connector (8 pins).            |   |                 |  |  |
| J | PS/2 Keyboard Interface (KEYBOARD) | Α   | A mini DIN 6 pin (socket) is used.  |                 |  |  |
| K | Rear Cover                         | T-  | _   |                 |  |  |
|   |                                    |   | ports. Complies with USB 2.0. Uses a onnector.  | a "TYPE-A"      |  |  |
| L | USB Host Interface (USB)           |   | Power supply voltage  | 5 VDC ±5%       |  |  |
|   |                                    | IE  | Output current  | 500mA (max.)    |  |  |
|   |                                    | ΙĽ  | The maximum communication distance  | 5m              |  |  |
| М | Serial Interface (COM2)            |   | S-232C/RS-422/RS-485 Changeover<br>Changeover. Dsub 9-pin plug type.  | , RI/+5V        |  |  |
| Ν | Serial Interface (COM1)            | R   | S-232C, RI/+5V Changeover. Dsub 9   | -pin plug type. |  |  |
| 0 | Speaker Output Interface (SPEAKER) | 1 port. (standard type AUDIO jack)  |   |                 |  |  |
| Р | RAS Interface (RAS)                | D   | 9-sub 25-pin plug type.   |                 |  |  |
| Q | CF Card Interface Cover            | CF card interface is under the cover. Type II-compliant slot. IDE-type connection.*1 CF card (Type I / II -compliant) is available. |   |                 |  |  |
| R | Power Plug                         | -   | _   |                 |  |  |

<sup>\*1</sup> Since an IDE-type connection is used, the unit is not hot-swappable. When inserting/removing the CF card, be sure that power is turned OFF.

## IMPORTANT |

 When attaching peripheral units to the PS-A, be sure the PS-A's power cord is disconnected from the main power supply.

## **General Specifications**

### ■ Electrical Specifications

| Supply            | Input Voltage      | DC24V  |
|-------------------|--------------------|--|
|                   | Rated Voltage      | DC19.2 to 28.8V  |
| Power             | Power Consumption  | 90VA or less   |
| Voltage Endurance |                    | AC1000V 20mA for 1minute (between charging and FG terminals)   |
| Ins               | ulation Resistance | DC500V 10M $\Omega$ (min.) (between charging and FG terminals) |

### ■ Environmental Specifications

|          | Surrounding Air     | 0 to 50°C :without HDD   |
|----------|---------------------|--|
|          | Temperature         | 5 to 45°C :with HDD  |
|          | Storage Temperature | -20 to +60°C   |
| Physical |                     | 10 to 90% RH (Not condensing, wet bulb temperature: 39°C or less. Wet bulb temperature without HDD: 29°C or less.) |
| Ą.       | Storage Humidity    | 10 to 90% RH (Not condensing, wet bulb temperature:39°C or less. Wet bulb temperature without HDD: 29°C or less.)  |
|          | Dust                | Free of dust   |
|          | Pollution Degree    | For use in Pollution Degree 2 environment  |

### IMPORTANT

- When using any of the PS-A's optional devices, be sure to check that device's specifications for any special conditions or cautions that may apply to its use.
- Be aware that not only does the Hard Disk have a fixed lifetime, but that accidents can always occur. Therefore, be sure to back up your Hard Disk's data regularly, or prepare another Hard Disk unit that can be used for backup.
- The Hard Disk lifetime given here may be reduced due to unforeseen environmental factors, however, generally speaking, the disk should last for 20,000 hours (of operation) or approximately 5 years, whichever comes first at an operating temperature of 20°C and 333 hours of operation per month. (HDD access frequency of 20% or less)
- Using the Hard Disk in an environment that is excessively hot and/or humid will shorten the disk's usage lifetime. A wet bulb temperature of 29°C or less is recommended. This is equivalent to the following data.

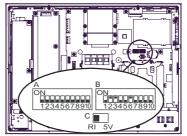
| Temperature | at 35°C               | at 40°C               |
|-------------|-----------------------|-----------------------|
| Humidity    | no higher than 64% RH | no higher than 44% RH |

In order to extend the lifetime of the hard disk, Pro-face recommends you set the Windows® 2000's [Control panel]-[Power Management option]-[Turn off hard disks] selection or the Windows® XP's [Control panel]-[Performance and Maintenance]-[Power Management option]-[Turn off hard disks] selection to turn the hard disk off when the unit is not being operated. A setting of 5 minutes is recommended.

## **Switches**

The following switch settings corresponding to Serial Interfaces and some system features need to be signified. To set the switches which are on the PS-A's circuit board, remove the PS-A's Rear Cover. Please refer to "Installations", "4.Removal/Attachment the Rear Cover".

The location of the switchies



Inside of the rear

| Switch<br>Location | Switch Name              | Compatible<br>I/F | Factory<br>Settings | Description  |
|--------------------|--------------------------|-------------------|---------------------|--|
| А                  | Serial Mode<br>Select SW | COM2              |                     | 10-point dip switch. Designates COM2 communication settings. For Serial Mode Select SW details, see Table (2). |
| В                  | System Set SW            | -                 | See<br>Table (1)    | 10-point dip switch. For System Set SW and the factory settings details, see Table (1).                        |
| С                  | RI/+5V<br>Changeover SW  | COM1              | RI                  | Changes # 9 pin (RI <> +5V).   |

| Switch<br>No. | Description   | ON       | OFF      | Factory<br>Settings | Notes  |
|---------------|---|----------|----------|---------------------|--|
| 1             | Cancellation function of pushing two points on the touch panel 1.   | Enabled  | Disabled | OFF                 | The middle point is not considered to be touched when the SW is ON. It is considered to be touched when the SW is OFF. |
| 2             | Changes PIO/DMA of CF card.   | PIO+DMA  | PIO      | ON                  |  |
| 3             | Changes PIO/DMA of CF card.   | PIO+DMA  | PIO      | ON                  |  |
| 4             | Sets up an enabled/<br>disabled state for the<br>port execution control<br>function of the front<br>reset switch. | Disabled | Enabled  | OFF                 | The hardware switch is unavailable when the SW is ON. But, it is available to enter switch from the Soft OFF*2 state.  |

| Switch<br>No. | Description   | ON              | OFF            | Factory<br>Settings | Notes   |
|---------------|---|-----------------|----------------|---------------------|---|
| 5             | Able to change a<br>Master/Slave setting<br>for CF card slot.                                       | Master          | Slave          | OFF                 |   |
| 6             | Sets up an enabled/<br>disabled state for the<br>front USB port<br>execution control<br>function.*3 | Enabled         | Disabled       | ON                  | The front USB port is available when the SW is ON. It is unavailable when the SW is OFF.  |
| 7             | Used for the system.  | Reserved        | Reserved       | OFF                 |   |
| 8             | Used for the system.  | Reserved        | Reserved       | OFF                 |   |
| 9             | Implements the logical inversion operation for RAS output.  | Normal<br>Close | Normal<br>Open | OFF                 | RAS output is a CLOSE state when the SW and the system is ON. When the SW is OFF, it is the opposite. The RAS Output keeps Normal OPEN when the Soft OFF 2 state occurs or the power turns OFF. |
| 10            | Used for the system.  | Reserved        | Reserved       | OFF                 |   |

Table 1) System Set Switch

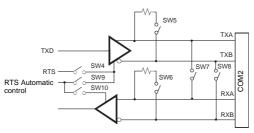
- \*1 When two points are pushed, it is considered that middle point between the two points is touched according to the nature of the analog resistive touch panel. When the switch, etc. is set on the middle point, it will be enabled and may operate. To prevent such a switch from malfunction in case of pushing two points, turn ON the SW No.1in advance, then the middle point will be disabled to be touched.
- \*2 The Soft OFF refers to the state that Windows® has been shut down and the power is provided only for the electric circuit to boot system. This Soft OFF State is different from what is System Standby set by Windows®.
- \*3 The Setting up an enabled/Disabled state for USB port execution control function is available for only Windows® 2000 and Windows® XP. Make sure to disable the function of the setting when other OS used.

| Switch No. | Description                         | ON   | OFF  | RS-232C | _          | RS-485                   |
|------------|-------------------------------------|--|--|---------|------------|--------------------------|
| 1          | Used by the system.                 | No Connection                                    | No Connection  | OFF*1   | OFF*1      | OFF*1                    |
| 2          | Changes COM2's communication method | RS-422/RS-485                                    | RS-232C  | OFF     | ON         | ON                       |
| 3          | Changes COM2's communication method | RS-422/RS-485                                    | RS-232C  | OFF     | ON         | ON                       |
| 4          | Changes TX data's output mode       | TX data output is controlled via the RTS signal. | TX data output is<br>NOT controlled<br>via the RTS<br>signal. (normally<br>output) | OFF     | ON/<br>OFF | ON/<br>OFF <sup>*3</sup> |

| Switch<br>No. | Description   | ON  | OFF                           | RS-232C | RS-422 | RS-485                   |
|---------------|---|---|-------------------------------|---------|--------|--------------------------|
| 5             | Switches the TX<br>termination<br>resistance ON/OFF | Inserts termination resistance of 220 $\Omega$ between TXA and TXB. | No termination                | OFF     | ON     | ON/<br>OFF<br>*2         |
| 6             | Switches the RX<br>termination<br>resistance ON/OFF | Inserts termination resistance of $220\Omega$ between RXA and RXB.  | No termination                | OFF     | ON     | ON/<br>OFF <sup>*2</sup> |
| 7             | Switches the shorting of TXA and RXA ON or OFF      | Shorts TXA and<br>RXA<br>(RS-485 mode)                              | No shorting<br>(RS-422 mode)  | OFF     | OFF    | ON                       |
| 8             | Switches the shorting of TXB and RXB ON or OFF      | Shorts TXB and<br>RXB<br>(RS-485 mode)                              | No shorting<br>(RS-422 mode)  | OFF     | OFF    | ON                       |
| 9             | RTS Automatic control mode                          | The data is automatically   | The data is not automatically | OFF     | OFF    | ON/<br>OFF <sup>*3</sup> |
| 10            | (enabled only when<br>RS-485 mode)                  | controlled via the RTS signal.                                      | the RTS signal.               | OFF     | OFF    | ON/<br>OFF*3             |

Table 2) Serial Mode Select Switch

Serial Mode Select Switches (SW4 to SW10) operate as shown in the circuit diagram below.



<sup>\*1</sup> Be sure to keep the settings, "OFF".

 $<sup>^{\</sup>star}2$  If you use the termination resistance, base your settings on the connection specifications.

<sup>\*3</sup> To control TX output driver via RTS automatically, set ON. Be sure to set SW No.4 OFF. To control TX output driver via RTS signal, set OFF. Be sure to set SW No.4 ON.

## **External Interfaces**

### IMPORTANT

- This PS-A unit's serial port is not isolated. When the host (PLC) unit is also not isolated, and to reduce the risk of damaging the RS-232C/RS-422/RS-485 circuit, be sure to connect the #5 SG (Signal Ground) terminal.
- Serial Interface (COM1, COM2)

Interfit Bracket #4-40 (Inch screw thread)

## **♦**COM1

| Pin |              | RS-232C   |
|-----|--------------|---|
| #   | Signal Name  | Meaning   |
| 1   | CD           | Carrier Detect  |
| 2   | RD(RXD)      | Receive Data  |
| 3   | SD(TXD)      | Send Data   |
| 4   | ER(DTR)      | Data Terminal Ready   |
| 5   | GND          | Signal Ground   |
| 6   | DR(DSR)      | Data Set Ready  |
| 7   | RS(RTS)      | Request to Send   |
| 8   | CS(CTS)      | Clear to Send   |
| 9   | CI(RI)/+5V*1 | Called status display/<br>+5V Output<br>(Switching available) |
| FG  | FG           | Frame Ground<br>(Common with SG)                              |

<sup>\*1</sup> To change the RI/+5V setting of #9 pin, open the PS-A unit's rear cover and set slide switch to the desired position. Please refer to "Switches" for details.

### **◆**COM2

COM2 can be changed to either RS-232C, RS-422 or RS-485. (The factory setting is RS-232C.) To change this setting, open the PS-A unit's rear cover and set slide switch on the circuit board to the desired position. Please refer to "Switches" for details.

| Pin | RS-232C     |                               |  |
|-----|-------------|-------------------------------|--|
| #   | Signal Name | Meaning                       |  |
| 1   | CD          | Carrier Detect                |  |
| 2   | RD(RXD)     | Receive Data                  |  |
| 3   | SD(TXD)     | Send Data                     |  |
| 4   | ER(DTR)     | Data Terminal Ready           |  |
| 5   | GND         | Signal Ground                 |  |
| 6   | DR(DSR)     | Data Set Ready                |  |
| 7   | RS(RTS)     | Request to Send               |  |
| 8   | CS(CTS)     | Clear to Send                 |  |
| 9   | CI(RI)      | Called status display         |  |
| FG  | FG          | Frame Ground (Common with SG) |  |

| Pin | RS-422      |                    |  |
|-----|-------------|--------------------|--|
| #   | Signal Name | Meaning            |  |
| 1   | RDA         | Receive Data A (+) |  |
| 2   | RDB         | Receive Data B (-) |  |
| 3   | SDA         | Send Data A (+)    |  |
| 4   | NC          | No Connection      |  |
| 5   | GND         | Signal Ground      |  |
| 6   | NC          | No Connection      |  |
| 7   | SDB         | Send Data B (-)    |  |
| 8   | NC          | No Connection      |  |

| Pin | RS-422      |                               |  |
|-----|-------------|-------------------------------|--|
| #   | Signal Name | Meaning                       |  |
| 9   | NC          | No Connection                 |  |
| FG  | FG          | Frame Ground (Common with SG) |  |

| Pin RS-485 |             | RS-485                           |
|------------|-------------|----------------------------------|
| #          | Signal Name | Meaning                          |
| 1          | DATA +      | Send/Receive Data(+)             |
| 2          | DATA -      | Send/Receive Data(-)             |
| 3          | NC          | No Connection                    |
| 4          | NC          | No Connection                    |
| 5          | GND         | Signal Ground                    |
| 6          | NC          | No Connection                    |
| 7          | NC          | No Connection                    |
| 8          | NC          | No Connection                    |
| 9          | NC          | No Connection                    |
| FG         | FG          | Frame Ground<br>(Common with SG) |

### IMPORTANT

- Be sure to connect pin number 5 (GND) of COM1 and COM2 (RS-232C) to the host unit's Signal Ground terminal.
- Be sure to confirm what settings will be used by the other device and set the slide switches accordingly. Failure to do so can result in a unit malfunction or damage.
- Whenever changing the PS-A switches, be sure to first turn the PS-A's power supply OFF. Failure to do so can cause a PS-A malfunction.
- · Connect the FG terminal line to the shell.
- FG and SG terminals are internally connected in the PS-A. When connecting to another device, be sure not to create an SG shorting loop in your system.

### ■ RAS Interface

### IMPORTANT

 Be sure to use only the rated voltage level when using the No. 2, 15 [+5V] and No.3 [+12V] for external power output. Failure to do so can lead to a unit malfunction or accident.

Interfit Bracket #4-40(Inch screw thread)

| Pin<br># | Signal<br>Name                   | Meaning  |
|----------|----------------------------------|--|
| 1        | GND                              | Ground   |
| 2        | +5V                              | Output Current:100mA<br>or less (with a total of 2<br>pin and 15 pin)<br>Output Voltage: 5V±5% |
| 3        | +12V                             | Output Current: 100mA<br>or less<br>Output Voltage: 12V±5%                                     |
| 4        | NC                               | =  |
| 5        | RST(+)                           | Reset in(+)  |
| 6        | DIN0(+)                          | Data in 0(+)   |
| 7        | DOUT2(-)<br>(UPS<br>Shutdown(-)) | Data out 2(-)<br>(UPS Shutdown(-))   |
| 8        | DOUT2(+)<br>(UPS<br>Shutdown(+)) | Data out 2(+)<br>(UPS Shutdown(+))   |
| 9        | DOUT0(-)                         | Data out 0(-)  |
| 10       | DOUT0(+)                         | Data out 0(+)  |
| 11       | RST(-)                           | Reset in(-)  |
| 12       | DIN0(-)                          | Data in 0(-)   |
| 13       | DIN1(+)                          | Data in 1(+)   |
| 14       | GND                              | Ground   |
| 15       | +5V                              | Output Current:100mA<br>or less (with a total of 2<br>pin and 15 pin)<br>Output Voltage: 5V±5% |
| 16       | DIN2(+)                          | Data in 2(+)   |
| 17       | DIN2(-)                          | Data in 2(-)   |

| Pin<br># | Signal<br>Name | Meaning       |
|----------|----------------|---------------|
| 18       | DIN3(+)        | Data in 3(+)  |
| 19       | DOUT1(-)       | Data out 1(-) |
| 20       | DOUT1(+)       | Data out 1(+) |
| 21       | DOUT3(-)       | Data out 3(-) |
| 22       | DOUT3(+)       | Data out 3(+) |
| 23       | DIN3(-)        | Data in 3(-)  |
| 24       | DIN1(-)        | Data in 1(-)  |
| 25       | NC             | -             |
|          |                |               |

### NOTE

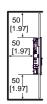
 For the circuit diagram, refer to "PS-3710A/ PS-3711A Series Reference Manual".

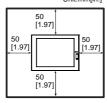
## Installations

### 1. Installation Requirements

 For easier maintenance, operation, and improved ventilation, be sure to install the PS-A at least 50mm [1.97 in.] away from adjacent structures and other equipment.

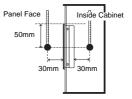
Unit:mm[in.]





Be sure that the surrounding air temperature and the ambient humidity are within their designated ranges. (Surrounding air temperature: with HDD 5 to 45 °C without HDD 0 to 50 °C, Ambient humidity: 10 to 90%RH, Wet bulb temperature: 39°C or less, with HDD: 29°C or less)
 When installing the PS-A on the panel of a cabinet or enclosure, "Surrounding air tem-

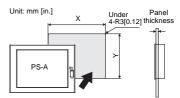
perature" indicates both the panel face and cabinet or enclosure's internal temperature.



 Be sure that heat from surrounding equipment does not cause the PS-A to exceed its standard operating temperature.

### PS-A Installation

(1) Create a Panel Cut following the dimensions in the table below.



| PS-A | Х  | Y  | Panel<br>thickness            |
|------|--|--|-------------------------------|
|      | 383.5 <sup>+1</sup> <sub>-0</sub><br>[15.10 <sup>+0.04</sup> <sub>-0</sub> ] | 282.5 <sup>+1</sup> <sub>-0</sub><br>[11.12 <sup>+0.04</sup> <sub>-0</sub> ] | 1.6[0.06]<br>to<br>10.0[0.39] |

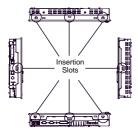
(2) Confirm that the installation gasket is attached to the PS-A unit and then place the PS-A unit into the Panel from the front.

## **IMPORTANT**

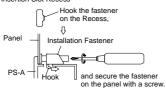
 It is strongly recommended that you use the installation gasket, since it absorbs vibration in addition to repelling water.

For the procedure for replacing the installation gasket, refer to "PS-3710A/PS-3711A Series Hardware Manual".

(3) Insert each fastener's hook into the slot and tighten it with a screwdriver. Insert the installation fasteners securely into the insertion slot recess. There are eight insertion slots.



Insertion Slot Recess



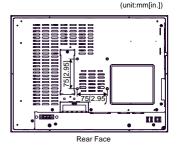
### IMPORTANT

- Tightening the screws with too much force can damage the PS-A unit.
- The necessary torque is 0.5N•m.
- Be sure to insert installation fasteners in the recessed portion of an installation fasteners hole. If the fasteners are not correctly attached, the PS-A unit may shift or fall out of the panel.

### Attach the PS-A unit to an Arm.

To attach the PS-A unit to an Arm or to the wall, insert the attachment screws for a commercial-type arm or wall mount adaptor into the holes in the PS-A's rear face. (Holes specifications: VESA 75mm)

For detailed attachment instructions, please refer to that product's installation guide. The VESA Arm Attachment Hole dimensions are signifies as follows;



Arm Attachment Screw Holes (VESA 75mm).

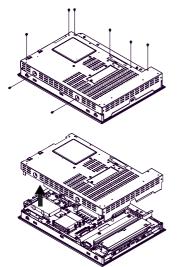
Attach the four (4) M4 attachment screws. (Screw length: 6mm or less.) The torque required for these screws is 0.7 to 0.8 N•m.

## Removal/Attachment the Rear Cover

## **IMPORTANT**

- Use a screwdriver to loosen or tighten the screws. Be sure not to tighten screws too tightly, since it may damage the unit.
- Be careful when removing or inserting any screws that they do not fall inside the PS-A.

Unscrew the eight (8) attachment screws used to hold the Rear Cover in place, and remove the Rear Cover. The torque of the rear cover required for these screws is 0.5 to 0.6 N•m.



## Wiring

## **M**WARNING ■

- To avoid an electric shock, prior to connecting the PS-A unit's power cord terminals to the power terminal block, confirm that the PS-A unit's power supply is completely turned OFF, via a breaker, or similar unit.
- Any other power level can damage both the PS-A and the power supply.
- Since the PS-A unit has no power ON/ OFF switch, be sure to attach a breaker-type switch to its power cord.
- When the FG terminal is connected, be sure the wire is grounded.
- Wiring the DC type power supply cable
- Power Cord Specifications Use copper conductors only.

| Power Cord          | 0.75 to 2.5mm <sup>2</sup><br>[0.0009 to 0.0097 inch <sup>2</sup> ] |  |
|---------------------|---|--|
| Diameter            | (18 - 12 AWG)   |  |
| Conductor<br>Type   | Simple or Stranded Wire*1   |  |
| Conductor<br>Length |   |  |

<sup>\*1</sup> If the Conductor's end (individual) wires are not twisted correctly, the end wires may either short against each other, or against an electrode.

## ■ Power Connector (Plug) Specifications

| FG                  | +  | 24V  |
|---------------------|----|--|
|                     | 1  | 0V   |
| Insertion Direction | FG | Grounding<br>Terminal<br>connected<br>to the PS-A<br>chassis |

## NOTE

 The power connector (plug) is GMVSTBW2.5-3-STF-7.62 made by Phoenix Contact.

When connecting the Power Cord, use the following items when performing wiring. (Items are made by Phoenix Contact.)

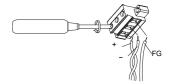
| Recommended<br>Driver                     | SZF 1-0.6x3.5<br>(1204517)  |
|---|---|
| Recommended<br>Pin Terminals              | AI 0.75-8GY (3200519)<br>AI 1-8RD (3200030)<br>AI 1.5-8BK (3200043)<br>AI 2.5-8BU (3200522) |
| Recommended<br>Pin Terminal<br>Crimp Tool | CRIMPFOX ZA 3<br>(1201882)  |

## ■ Connecting the PS-A Power Cord

- (1) Confirm that the power is not supplied to the PS-A unit.
- Loosen three screws in the center of the Power Connector.
- (3) Strip the power cord, twist the conductor's wire ends, insert them into the pin terminal and crimp the terminal. Attach the terminal to the Power Connector.

### MPORTANT

- Use a flat-blade screwdriver (Size 0.6 x 3.5) to tighten the terminal screws.
   The torque required to tighten these screws is 0.5 to 0.6 Nom [5-7Lboln.].
- . Do not solder the cable connection.



(4) Attach the Power Connector to the PS-A and fix it to the PS-A main unit with right/left tightening screws.

## 2. Power Supply Cautions

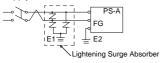
- Input and Output signal lines must be separated from the power control cables for operational circuits.
- To improve the noise resistance, be sure to twist the ends of the power cord wires before connecting them to the Power connector (Plug).
- The PS-A unit's power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), or input/output signal lines.
- To reduce noise, make the power cord as short as possible.
- If the supplied voltage exceeds the PS-A unit's range, connect a voltage transformer.
- Between the line and the ground, be sure to use a low noise power supply. If there is an excess amount of noise, connect a noise reducing transformer.
- The temperature rating of field installed conductors: 75°C only.

### IMPORTANT

- Use voltage and noise reducing transformers with capacities exceeding Power Consumption value.
- Must be used with a Class 2 Power Supply. (24VDC)
- Connect a surge absorber to handle power surges.

## **IMPORTANT**

 Be sure to ground the surge absorber (E1) separately from the PS-A unit (E2). Select a surge absorber that has a maximum circuit voltage greater than that of the peak voltage of the power supply.



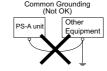
### Grounding Cautions

- Be sure to create an exclusive ground for the Power Cord's FG terminal. Use a grounding resistance of  $100\Omega$ , a wire of  $2mm^2$  or thicker, or your country's applicable standard.
- The SG (signal ground) and FG (frame ground) terminals are connected internally in the PS-A unit.
  - When connecting the SG line to another device, be sure that the design of the system/connection does not produce a shorting loop.
- The grounding wire should have a cross sectional area greater than 2mm<sup>2</sup>. Create the connection point as close to the PS-A unit as possible, and make the wire as short, as possible. When using a long grounding wire, replace the thin wire with a thicker wire, and place it in a duct.



### Common Grounding (OK)





## 4. Input/Output Signal Line Cautions

- All PS-A Input and Output signal lines must be separated from all operating circuit (power) cables.
- If this is not possible, use a shielded cable and ground the shield.
- To improve noise immunity, it is recommended to attach a ferrite core to the power cord.

# To prevent the USB cable from coming off

- Attaching the USB Cable Clamp
- Place the PS-A unit face-down on a flat surface as shown below. Your PS-A unit has four USB connectors.

Upper USB Interface



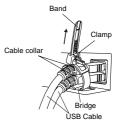
Lower USB Interface

## NOTE

- When using two or more USB ports, be sure to first connect one USB cable to the lower USB connector, and then connect the second USB cable to the upper USB connector.
- When using only one of the USB ports, be sure to use the lower USB connector. This allows you to securely clamp the USB cable in the cable clamp.
- (2) As shown, insert the USB Cable Clamp's band through the Bridge. Pass the USB cables through the Cable Clamp's band and securely tighten the clamp band around the cables

### NOTE

- Be sure the clamp is securely holding the USB cable's plug and collar.
- Be sure the clamp is positioned as shown below, with the clamp pointing upwards not to the side. This is to keep the clamp from interfering with nearby connectors and their cables.



## ■ Removing the USB Cable Clamp

 To remove the clamp from the USB cables, push down on the clamp strap's clip to release it while pulling up on the clamp.



## **UL/CSA Approval**

The following units are UL/CSA listed products: (UL File No.E220851, CSA File No.219866)

| Product Model No. | UL/CSA Regis-<br>tration Model No. |
|-------------------|------------------------------------|
| PS3711A-T41-24V   | 3580301-11                         |

These products conform to the following standards:

### ■ UL508

Industrial Control Equipment

■CSA-C22.2 No.142-M1987

Process Control Equipment

### <Cautions>

Be aware of the following items when building the PS-A into an end-use product:

- The PS-A unit's rear face is not approved as an enclosure. When building the PS-A unit into an end-use product, be sure to use an enclosure that satisfies standards as the end-use product's overall enclosure.
- · The PS-A unit must be used indoors only.
- Install and operate the PS-A with its front panel facing outwards.
- If the PS-A is mounted so as to cool itself naturally, be sure to install it in a vertical panel. Also, it's recommended that the PS-A should be mounted at least 50mm away from any other adjacent structures or machine parts. The temperature must be checked on the final product in which the PS-A is installed.
- For use on a flat surface of a Type 4X (Indoor Use Only) and/or Type 12 Enclosure.
- Type 4X (Indoor Use Only) and/or 12 Enclosure, when the hatch for Front USB Port is secured by screw.

Type 1 Enclosure, when the hatch for Front USB Port is open.

## **CE Marking**

 PS3711A-T41-24V units are CE marked, EMC directives compliant products. These units also conform to EN55011 Class A and EN61000-6-2 directives.

## Inquiry

Do you have any questions about difficulties with this product? Please access our site anytime that 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 uses of this product.

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