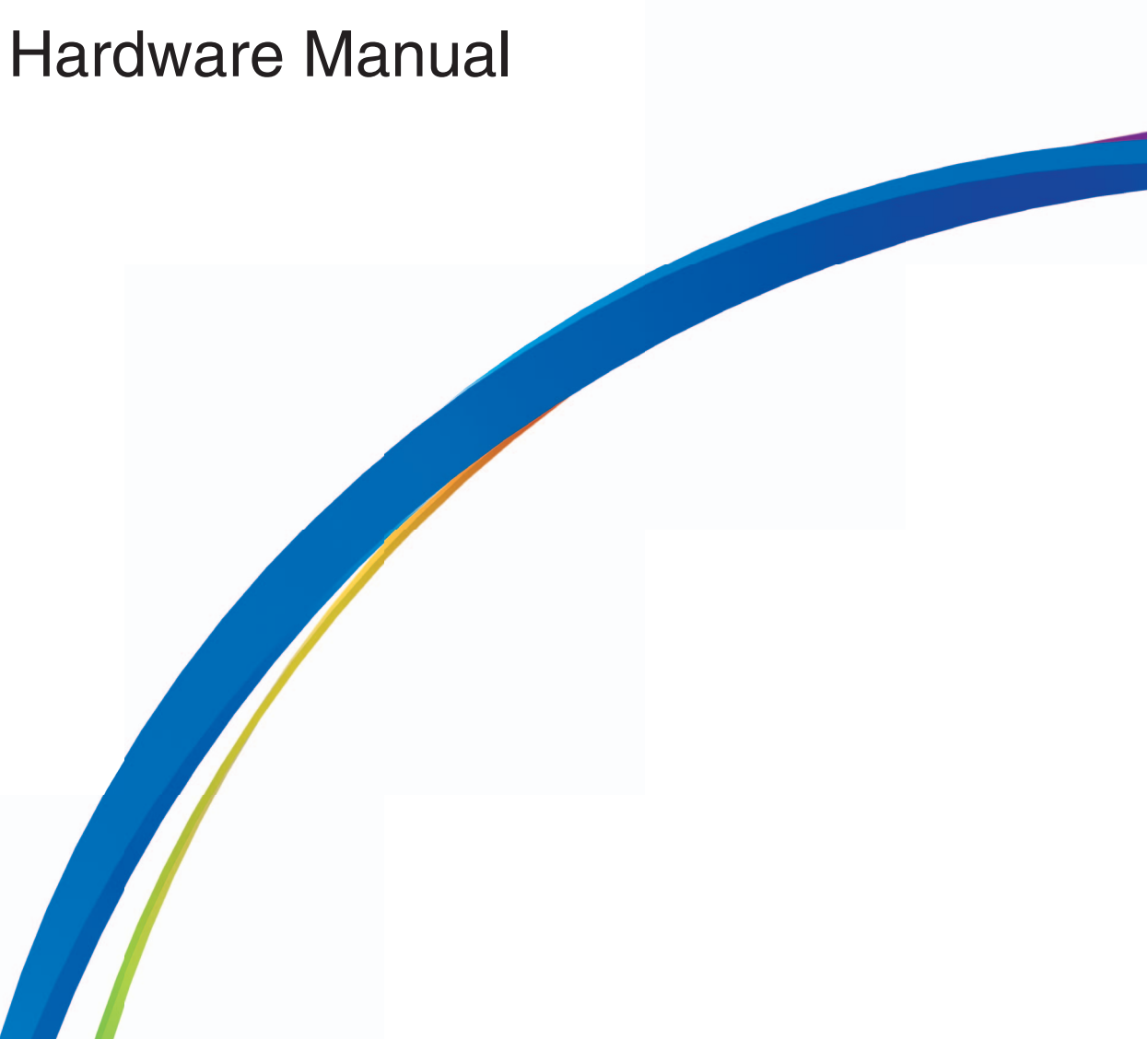


# PROFIBUS DP Slave / MPI Unit and CANopen Slave Unit Hardware Manual

A decorative graphic consisting of several overlapping curved lines in shades of blue and yellow, sweeping from the bottom left towards the top right of the page.

---

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Pro-face nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information that is contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Pro-face software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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# Safety Information



## Important Information

### NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

### **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

### PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Pro-face for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.



# About the Book



## At a Glance

### Document Scope

This manual describes how to use this product.

### Validity Note

This documentation is valid for this product.

The technical characteristics of the device(s) described in this manual also appear online at <http://www.pro-face.com>.

The characteristics presented in this manual should be the same as those that appear online. In line with our policy of constant improvement we may revise content over time to improve clarity and accuracy. In the event that you see a difference between the manual and online information, use the online information as your reference.

### Registered Trademarks

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Product names used in this manual may be the registered trademarks owned by the respective proprietors.

### Related Documents

You can download the manuals related to this product, such as the software manual, from our support site at <http://www.pro-face.com/trans/en/manual/1001.html>.

### Product Related Information

In the event this product does not run properly due to whatever reason, it may be difficult or impossible to identify a function. Functions that may present a hazard if not immediately executed, such as a fuel shut-off, must be provided independently of this product. The machine's control system design must take into account the operator being unable to control the machine or making mistakes in the control of the machine.

## WARNING

### UNINTENDED EQUIPMENT OPERATION

The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.

Follow all local and national safety standards.

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

For additional information, refer to NEMA ICS 1.1 (latest edition), "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control" and to NEMA ICS 7.1 (latest edition), "Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems" or their equivalent governing your particular location.





# Chapter 1

## Overview

---

### What Is in This Chapter?

This chapter contains the following topics:

| Topic                                                                             | Page |
|-----------------------------------------------------------------------------------|------|
| Package Contents                                                                  | 10   |
| Certifications and Standards                                                      | 11   |
| Federal Communication Commission Radio Frequency Interference Statement - For USA | 13   |
| Hazardous Location Installation - For USA and Canada                              | 14   |
| European (CE) Compliance and KC Markings                                          | 16   |

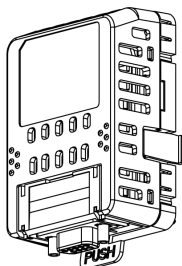
## Package Contents

### Package Contents

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

Verify all items listed here are present in your package:

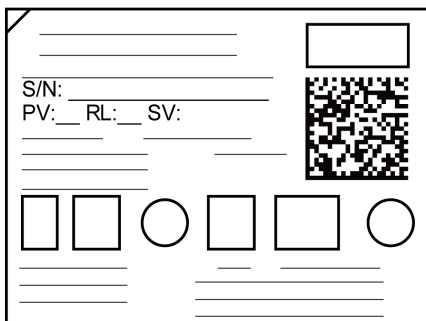
1



- 1 One of the following products: 1
  - PROFIBUS DP Slave/MPI Unit (model number: PFXZCDEUPF1)
  - CANopen Slave Unit (model number: PFXZCDEUCA1)
- 2 Installation Guide: 1
- 3 Chinese RoHS flyer: 1

### Revision

You can identify the product version (PV), revision level (RL), and the software version (SV) from the product level.



## Certifications and Standards

Some products are not subject to certification and standards. And some products have not received their certification and standards but are scheduled for assessment.

The certifications and standards listed below may include those that are not yet acquired for this product. For the latest certifications and standards that this product has acquired, please check the product marking or the following URL.

<http://www.pro-face.com/trans/en/manual/1002.html>

### Agency Certifications

Pro-face submitted this product for independent testing and qualification by third-party listing agencies. These agencies have certified this product as meeting the following standards.

- Underwriters Laboratories Inc., UL 508 and CSA C22.2 N°142, Industrial Control Equipment
- Underwriters Laboratories Inc., ANSI/ISA 12.12.01 and CSA C22.2 N°213, Electrical Equipment for Use in Class I, Division 2 Hazardous (Classified) Locations
- IECEx/ATEX for use in zones 2/22
- EAC certification (Russia, Belarus, Kazakhstan)

### Compliance Standards

Europe:

CE

- Directive 2014/35/EU (Low Voltage)
- Directive 2014/30/EU (EMC)
  - Programmable Controllers: EN 61131-2
  - EN61000-6-4
  - EN61000-6-2
- Directive 2014/34/EU (ATEX)
  - EN60079-0
  - EN60079-15
  - EN60079-31

Australia:

RCM

- EN61000-6-4

Korea:

KC

- KN11
- KN61000-6-2

### Qualifications Standards

Pro-face voluntarily tested this product to additional standards. The additional tests performed, and the standards under which the tests were conducted, are specifically identified in General Specifications (*see page 26*).

## **Hazardous Substances**

This product is a device for use in factory systems. When using this product in a system, the system should comply with the following standards in regards to the installation environment and handling:

- WEEE, Directive 2012/19/EU
- RoHS, Directive 2011/65/EU and 2015/863/EU
- RoHS China, Standard GB/T 26572
- REACH regulation EC 1907/2006

## Federal Communication Commission Radio Frequency Interference Statement - For USA

### FCC Radio Interference Information

This product has been tested and found to comply with the Federal Communications Commission (FCC) limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial, industrial or business environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause or be subject to interference with radio communications. To minimize the possibility of electromagnetic interference in your application, observe the following two rules:

- Install and operate this product in such a manner that it does not radiate sufficient electromagnetic energy to cause interference in nearby devices.
- Install and test this product to ensure that the electromagnetic energy generated by nearby devices does not interfere with the operation of this product.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this product.

### **WARNING**

#### **ELECTROMAGNETIC / RADIO INTERFERENCE**

Electromagnetic radiation may disrupt the operation of this product leading to unintended equipment operation. If electromagnetic interference is detected:

- Increase the distance between this product and the interfering equipment.
- Reorient this product and the interfering equipment.
- Reroute power and communication lines to this product and the interfering equipment.
- Connect this product and the interfering equipment to different power supplies.
- Always use shielded cables when connecting this product to a peripheral device or another computer.

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

## Hazardous Location Installation - For USA and Canada

### General

This product has been designed with the intention of meeting the requirements of Class I, Division 2 hazardous location application. Division 2 locations are those locations where ignitable concentrations of flammable substances are normally confined, prevented by ventilation, or present in an adjacent Class I, Division 1 location, but where an abnormal situation might result in intermittent exposure to such ignitable concentrations.

While this product is a non-incendive device under ANSI/ISA 12.12.01 and CSA C22.2 N°213, it is not designed for, and should never be used within a Division 1 (normally hazardous) location.

This product is suitable for use in Class I, Division 2, Groups A, B, C, and D hazardous locations or in non-hazardous locations. Before installing or using this product, confirm that the ANSI/ISA 12.12.01 or CSA22.2 N°213 certification appears on the product labeling.

**NOTE:** Some products are not yet rated as suitable for use in hazardous locations. Always use your product in conformance with the product labeling and this manual.

### DANGER

#### POTENTIAL FOR EXPLOSION

- Suitable for use in Class I, Division 2, Groups A, B, C, and D hazardous locations.
- Substitution of any component may impair suitability for Class I, Division 2.
- Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Always confirm that this product is suitable for use in hazardous locations by checking the ANSI/ISA 12.12.01 or CSA C22.2 N°213 certification appears on the product labeling.
- Do not attempt to install, operate, modify, maintain, service, or otherwise alter this product except as permitted in this manual. Unpermitted actions may impair the suitability of this product for Class I, Division 2 operation.

**Failure to follow these instructions will result in death or serious injury.**

### DANGER

#### POTENTIAL FOR EXPLOSION

- Always confirm the ANSI/ISA 12.12.01 or CSA C22.2 N°213 hazardous location rating of your device before installing or using it in a hazardous location.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

**Failure to follow these instructions will result in death or serious injury.**

Make sure that this product is properly rated for the location. If the intended location does not presently have a Class, Division and Group rating, then users should consult the appropriate authorities having jurisdiction in order to determine the correct rating for that hazardous location.

## Operation and Maintenance

The systems have been designed for compliance with relevant spark ignition tests.

### **DANGER**

#### **POTENTIAL FOR EXPLOSION**

In addition to the other instructions in this manual, when installing this product in a hazardous location, wire the equipment in accordance with the National Electrical Code article 501.10 (B) for Class I, Division 2 hazardous locations.

**Failure to follow these instructions will result in death or serious injury.**

## European (CE) Compliance and KC Markings

### CE Compliance Note

The product described in this manual comply with the European Directives concerning Electromagnetic Compatibility and Low Voltage (CE marking) when used as specified in the relevant documentation, in application for which they are specifically intended, and in connection with approved third-party products.

### KC Markings

#### 사용자안내문

| 기종별                    | 사용자안내문                                                                          |
|------------------------|---------------------------------------------------------------------------------|
| A급 기기<br>(업무용 방송통신기자재) | 이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. |



# Chapter 2

## Device Connectivity

### System Design

This product is an accessory for the SP5000 Series.

By attaching this product to the SP5000 Series Box Module (hereafter referred to as "Box Module"), you can join a fieldbus network to communicate with master or slave equipment on the same network.

**NOTE:**

- For model numbers of the SP5000 Series Box Module, refer to the SP5000 Series Hardware Manual.
- For details on the system structure or connection methods, refer to the corresponding device driver manual for your screen editing software.

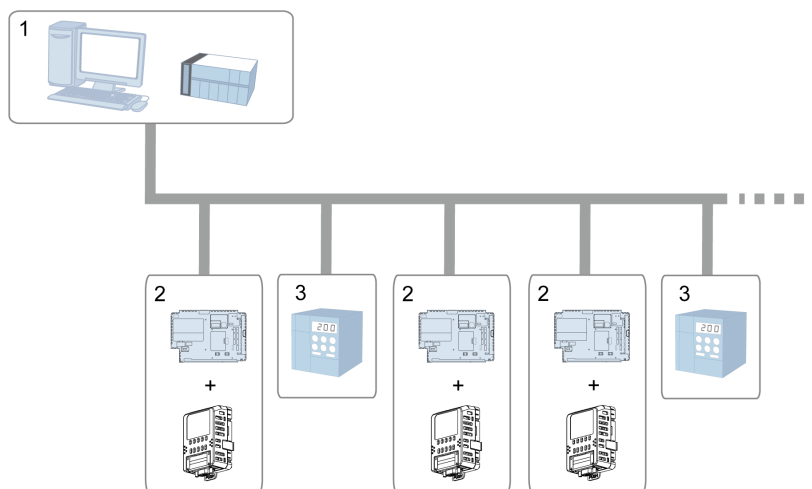
#### PROFIBUS DP Slave/MPI Unit

By attaching this product to the Box Module, you can join a PROFIBUS DP network or MPI network to communicate with PROFIBUS DP master or MPI equipment.

Use your screen editing software to set up this product as either a PROFIBUS DP slave unit or MPI unit.

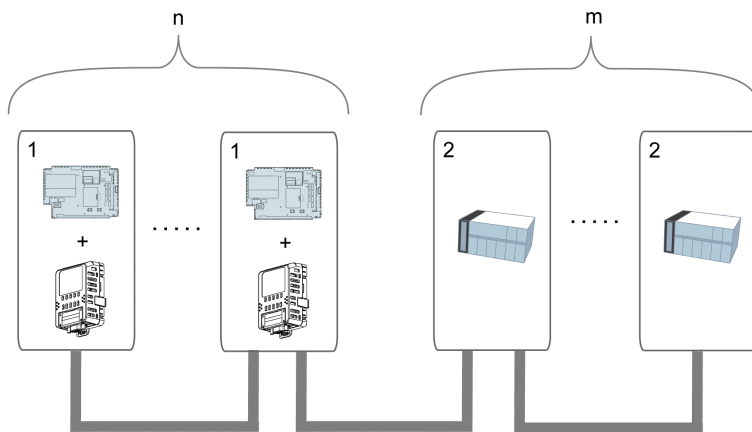
**NOTE:** This product supports PROFIBUS DP-V0.

#### PROFIBUS DP Network



- 1 PROFIBUS DP master PC/PLC
- 2 PROFIBUS DP Slave/MPI Unit + Box Module
- 3 Other PROFIBUS DP slave equipment

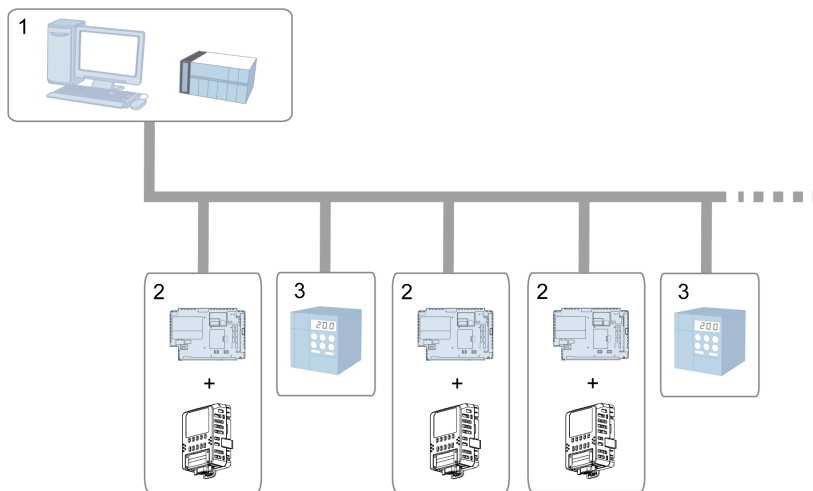
## MPI Network



- 1 PROFIBUS DP Slave/MPI Unit + Box Module
- 2 MPI equipment

## CANopen Slave Unit

By attaching this product to the Box Module, you can join a CANopen network to communicate with a CANopen master.



- 1 CANopen master PC/PLC
- 2 CANopen Slave Unit + Box Module
- 3 Other CANopen slave equipment

# Chapter 3

## Parts Identification and Functions

---

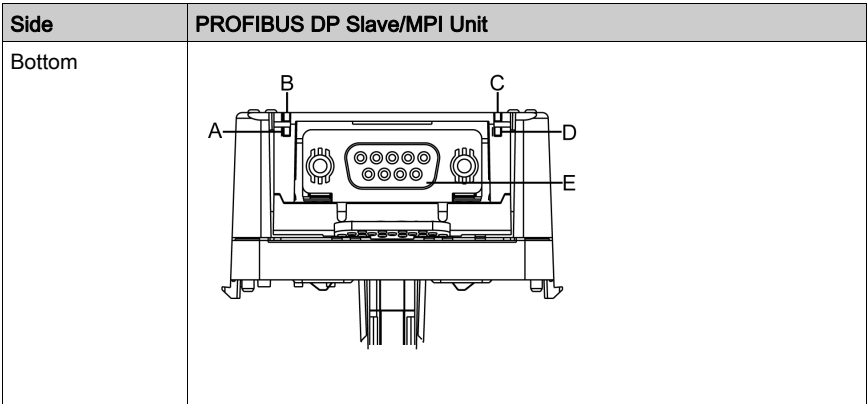
### What Is in This Chapter?

This chapter contains the following topics:

| Topic                | Page |
|----------------------|------|
| Parts Identification | 20   |
| LED Indications      | 22   |

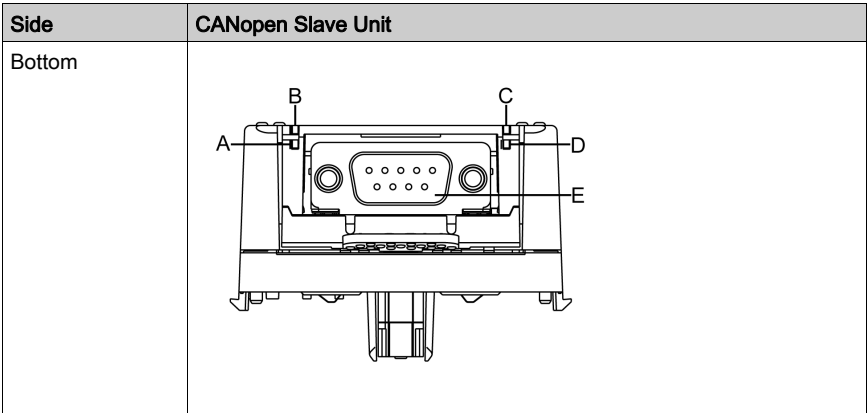
Parts Identification

PROFIBUS DP Slave/MPI Unit



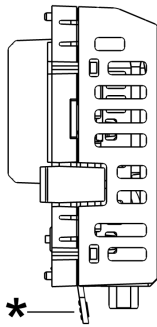
| Part | Name                      | Description   |
|------|---------------------------|---------------|
| A    | Status LED                | (see page 22) |
| B    | Status LED                |               |
| C    | Status LED                |               |
| D    | Status LED                |               |
| E    | PROFIBUS DP/MPI interface | -             |

CANopen Slave Unit



| Part | Name              | Description   |
|------|-------------------|---------------|
| A    | Status LED        | (see page 22) |
| B    | Status LED        |               |
| C    | Status LED        |               |
| D    | Status LED        |               |
| E    | CANopen interface | -             |

**NOTE:** Do not use the item marked with an asterisk (\*), as shown in the image below.



## LED Indications

### PROFIBUS DP

| Status LED |                     |       |           |                                                   |
|------------|---------------------|-------|-----------|---------------------------------------------------|
| Position   | LED name            | Color | Indicator | Description                                       |
| A          | RUN                 | Green | ON        | Normal operation                                  |
| B          | BF (Bus Failure)    | Red   | ON        | Bus fault<br>Device is not in data exchange mode. |
|            |                     |       | OFF       | No bus fault                                      |
| C          | SF (System Failure) | Red   | ON        | Device does not detect other masters on the bus.  |
|            |                     |       | OFF       | No fault                                          |
| D          | -                   | -     | -         | (Not applicable)                                  |

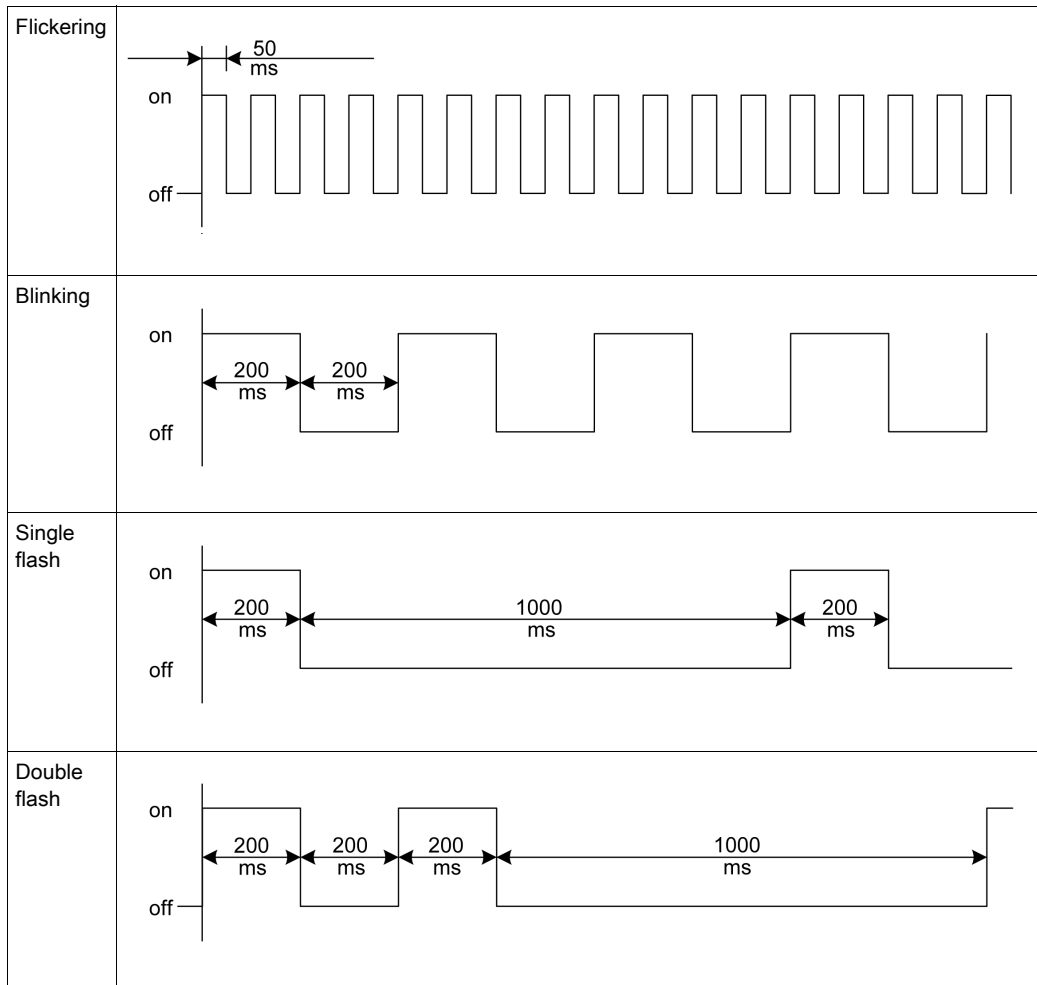
### MPI

| Status LED |          |       |           |                  |
|------------|----------|-------|-----------|------------------|
| Position   | LED name | Color | Indicator | Description      |
| A          | RUN      | Green | ON        | Normal operation |
| B          | -        | -     | -         | (Not applicable) |
| C          | -        | -     | -         | (Not applicable) |
| D          | -        | -     | -         | (Not applicable) |

### CANopen

| Status LED |          |       |              |                       |
|------------|----------|-------|--------------|-----------------------|
| Position   | LED name | Color | Indicator*1  | Description           |
| A          | RUN      | Green | ON           | Operational           |
|            |          |       | Blinking     | Pre-operational       |
|            |          |       | Single flash | Stopped               |
| B          | ERR      | Red   | OFF          | No error              |
|            |          |       | ON           | Bus off               |
|            |          |       | Blinking     | Invalid configuration |
|            |          |       | Single flash | Warning limit reached |
|            |          |       | Double flash | Heatbeat event        |
| C          | -        | -     | -            | (Not applicable)      |
| D          | -        | -     | -            | (Not applicable)      |

\*1 The following illustrates the flash cycle.







# Chapter 4

## Specifications

---

### What Is in This Chapter?

This chapter contains the following sections:

| Section | Topic                     | Page |
|---------|---------------------------|------|
| 4.1     | General Specifications    | 26   |
| 4.2     | Functional Specifications | 30   |
| 4.3     | Interface Specifications  | 31   |

# Section 4.1

## General Specifications

---

**What Is in This Section?**

This section contains the following topics:

| Topic                        | Page |
|------------------------------|------|
| Electrical Specifications    | 27   |
| Environmental Specifications | 28   |
| Structural Specifications    | 29   |

## Electrical Specifications

|                       |                     |                                                                                |
|-----------------------|---------------------|--------------------------------------------------------------------------------|
| Power supply          | Rated input voltage | 3.3 Vdc (Supplied by the Box Module)                                           |
|                       | Power consumption   | PROFIBUS DP Slave/MPI Unit: 1.3 W or less<br>CANopen Slave Unit: 0.7 W or less |
| Voltage endurance     |                     | 500 Vac, 20 mA for 1 minute (between SG terminal and FG terminal)              |
| Insulation resistance |                     | 500 Vdc, 100 MΩ or more (between SG terminal and FG terminal)                  |

## Environmental Specifications

|                        |                                           |                                                                                                                                                                                               |
|------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical environment   | Surrounding air temperature               | 0...60 °C (32...140 °F)                                                                                                                                                                       |
|                        | Storage temperature                       | -20...60 °C (-4...140 °F)                                                                                                                                                                     |
|                        | Surrounding air and storage humidity      | 10%...90% RH (non-condensing, wet bulb temperature 39 °C [102.2 °F] or less)                                                                                                                  |
|                        | Dust                                      | 0.1 mg/m <sup>3</sup> (10 <sup>-7</sup> oz/ft <sup>3</sup> ) or less (non-conductive levels)                                                                                                  |
|                        | Pollution degree                          | For use in Pollution Degree 2 environment                                                                                                                                                     |
|                        | Corrosive gases                           | Free of corrosive gases                                                                                                                                                                       |
|                        | Atmospheric pressure (operating altitude) | 800...1,114 hPa (2,000 m [6,561 ft] or lower)                                                                                                                                                 |
| Mechanical environment | Vibration resistance                      | IEC/EN 61131-2 compliant<br>5...9 Hz single amplitude 3.5 mm (0.14 in)<br>9...150 Hz fixed acceleration: 9.8 m/s <sup>2</sup><br>X, Y, Z directions for 10 cycles (approximately 100 minutes) |
|                        | Shock resistance                          | IEC/EN 61131-2 compliant<br>147 m/s <sup>2</sup> , X, Y, Z directions for 3 times                                                                                                             |
| Electrical environment | Electrostatic discharge immunity          | Contact discharge method: 6 kV<br>Air discharge method: 8 kV<br>(IEC/EN 61000-4-2 Level 3)                                                                                                    |

### Air quality requirements

Do not operate or store the panel where chemicals evaporate, or where chemicals are present in the air:

- Corrosive chemicals: Acids, alkalines, liquids containing salt.
- Flammable chemicals: Organic solvents.

## CAUTION

### INOPERATIVE EQUIPMENT

Do not allow water, liquids, metal, and wiring fragments to enter inside this product.

**Failure to follow these instructions can result in injury or equipment damage.**

## Structural Specifications

|                                    |                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Grounding                          | Functional grounding: Grounding resistance of 100 $\Omega$ , 2 mm <sup>2</sup> (AWG 14) or thicker wire, or your country's applicable standard (same for FG and SG terminals). |
| Cooling method                     | Natural air circulation                                                                                                                                                        |
| External dimensions<br>(W x H x D) | 60 x 87 x 41 mm<br>(2.36 x 3.43 x 1.61 in)                                                                                                                                     |
| Weight                             | 100 g or less                                                                                                                                                                  |

## Section 4.2

### Functional Specifications

#### Transmission Specifications

##### PROFIBUS DP/MPI

|                                                                 |                                                                                                                            |        |         |         |       |       |       |     |      |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------|---------|---------|-------|-------|-------|-----|------|
| Number of connectable units                                     | Maximum 32 units per segment (without repeaters)<br>Maximum 125 units per segment (with repeaters)                         |        |         |         |       |       |       |     |      |
| Range of exchange numbers                                       | 1...125                                                                                                                    |        |         |         |       |       |       |     |      |
| Transmission channel configuration                              | Bus configuration (multi drop)                                                                                             |        |         |         |       |       |       |     |      |
| Transmission channel                                            | Bus transmission channel: Twisted pair cable with shield<br>(Extension of whole channel depends on the transmission speed) |        |         |         |       |       |       |     |      |
| Transmission method                                             | Half-duplex transmission, serial transmission, and comply with EIA RS-485                                                  |        |         |         |       |       |       |     |      |
| Transmission setting                                            | Data length: 8 bits<br>Parity: Even<br>Stop bit: 1 bit                                                                     |        |         |         |       |       |       |     |      |
| Data transmission speed (bps)/<br>Maximum transmission distance | 9.6 K                                                                                                                      | 19.2 K | 93.75 K | 187.5 K | 500 K | 1.5 M | 3 M   | 6 M | 12 M |
|                                                                 | 1,200 m                                                                                                                    |        |         | 1,000 m | 400 m | 200 m | 100 m |     |      |
| Encoding method                                                 | NRZ (Non Return Zero) method                                                                                               |        |         |         |       |       |       |     |      |
| I/O Points*1                                                    | Input/Output: 1...112 words                                                                                                |        |         |         |       |       |       |     |      |

##### CANopen

**NOTE:** CANopen is the networking standard based on the international standard CAN. CANopen is defined as a uniform application layer by the DS301 specifications of the CiA (CAN in Automation).

|                                                                                |                                                         |       |       |       |       |         |
|--------------------------------------------------------------------------------|---------------------------------------------------------|-------|-------|-------|-------|---------|
| Communication type                                                             | 1:N                                                     |       |       |       |       |         |
| Transmission channel configuration                                             | Bus configuration                                       |       |       |       |       |         |
| Transmission method                                                            | Half-duplex transmission, serial transmission, CSMA/NBA |       |       |       |       |         |
| Data transmission speed (bps) <sup>*1</sup> /<br>Maximum transmission distance | 50 K                                                    | 125 K | 250 K | 500 K | 800 K | 1,000 K |
|                                                                                | 1,000 m                                                 | 500 m | 250 m | 100 m | 40 m  | 20 m    |
| Number of nodes <sup>*1</sup>                                                  | Node IDs: 1...127<br>PDO numbers: TPDO 64, RPDO 64      |       |       |       |       |         |

<sup>\*1</sup> Set with the screen editing software.

## Section 4.3

### Interface Specifications

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#### What Is in This Section?

This section contains the following topics:

| Topic                | Page |
|----------------------|------|
| Interface Connection | 32   |
| Fieldbus Interfaces  | 33   |

## Interface Connection

### Cable Connections

#### DANGER

##### POTENTIAL FOR EXPLOSION

- Always confirm the ANSI/ISA 12.12.01 or CSA C22.2 N°213 hazardous location rating of your device before installing or using it in a hazardous location.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

**Failure to follow these instructions will result in death or serious injury.**

Division 2 hazardous location regulations require that all cable connections be provided with adequate strain relief and positive interlock. Never connect or disconnect a cable while power is applied at either end of the cable. All communication cables should include a chassis ground shield. This shield should include both copper braid and aluminum foil. The D-sub style connector housing must be a metal conductive type (for example, molded zinc) and the ground shield braid must be terminated directly to the connector housing. Do not use a shield drain wire.

The outer diameter of the cable must be suited to the inner diameter of the cable connector strain relief so that a reliable degree of strain relief is maintained. Always secure the D-sub connectors to the workstation-mating connectors via the two screws located on both sides.

#### DANGER

##### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Remove power before wiring this product's power terminals.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to this product.
- Be sure to ground this product's FG terminal.

**Failure to follow these instructions will result in death or serious injury.**



## Fieldbus Interfaces

### DANGER

#### ELECTRIC SHOCK AND FIRE

When using the SG terminal to connect an external device to this product:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the SG terminal to remote equipment when the external device is not isolated.
- Connect the SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

**Failure to follow these instructions will result in death or serious injury.**

### CAUTION

#### LOSS OF COMMUNICATION

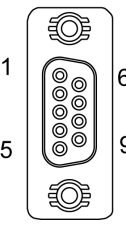
- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.
- Use a D-Sub 9 pin connector with jack screws.

**Failure to follow these instructions can result in injury or equipment damage.**

**NOTE:** Use within the rated current.

## PROFIBUS DP / MPI Interface

D-Sub 9 pin socket connector

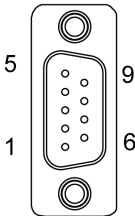
| Product side                                                                        | Pin No. | Signal name | Direction    | Meaning                                |
|-------------------------------------------------------------------------------------|---------|-------------|--------------|----------------------------------------|
|  | 1       | NC          | -            | No connection                          |
|                                                                                     | 2       | NC          | -            | No connection                          |
|                                                                                     | 3       | RxD/TxD+    | Input/Output | Send/Receive Data (+)                  |
|                                                                                     | 4       | CNTR-P      | Output       | Repeater control signal                |
|                                                                                     | 5       | GND         | -            | Ground                                 |
|                                                                                     | 6       | VCC         | -            | +5 Vdc<br>(for termination resistance) |
|                                                                                     | 7       | NC          | -            | No connection                          |
|                                                                                     | 8       | RxD/TxD-    | Input/Output | Send/Receive Data (-)                  |
|                                                                                     | 9       | NC          | -            | No connection                          |
|                                                                                     | Shell   | FG          | -            | Functional ground                      |

Interfit bracket is #4-40 (UNC).

**NOTE:** For information on connecting PROFIBUS DP Slave/MPI Unit and PROFIBUS DP master or MPI equipment, refer to the corresponding device driver manual for your screen editing software.

CANopen Interface

D-Sub 9 pin plug connector

| Product side                                                                      | Pin No. | Signal name | Direction | Meaning           |
|-----------------------------------------------------------------------------------|---------|-------------|-----------|-------------------|
|  | 1       | NC          | -         | No connection     |
|                                                                                   | 2       | CAN_L       | I/O       | CAN_L bus line    |
|                                                                                   | 3       | CAN_GND     | -         | CAN ground        |
|                                                                                   | 4       | NC          | -         | No connection     |
|                                                                                   | 5       | NC          | -         | No connection     |
|                                                                                   | 6       | CAN_GND     | -         | CAN ground        |
|                                                                                   | 7       | CAN_H       | I/O       | CAN_H bus line    |
|                                                                                   | 8       | NC          | -         | No connection     |
|                                                                                   | 9       | NC          | -         | No connection     |
|                                                                                   | Shell   | FG          | -         | Functional ground |

Interfit bracket is #4-40 (UNC).

**NOTE:** For information on connecting CANopen Slave Unit and CANopen master, refer to the corresponding device driver manual for your screen editing software.

# Chapter 5

## Dimensions

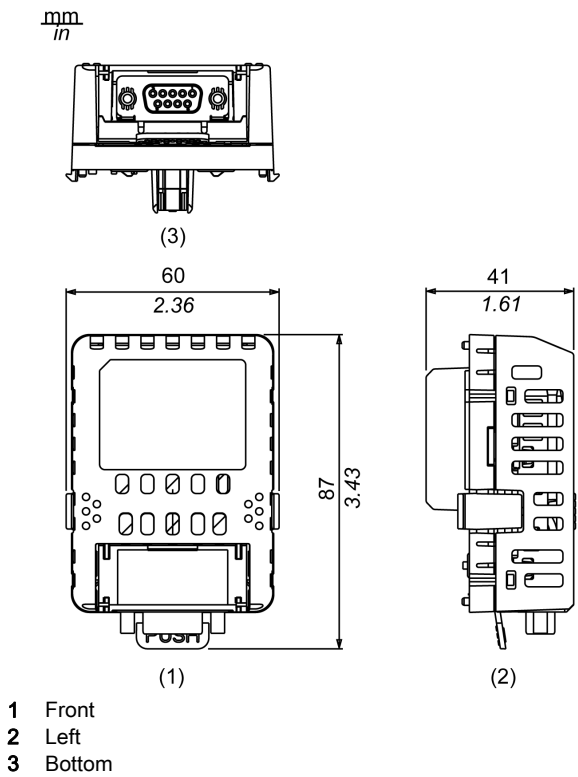
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### What Is in This Chapter?

This chapter contains the following topics:

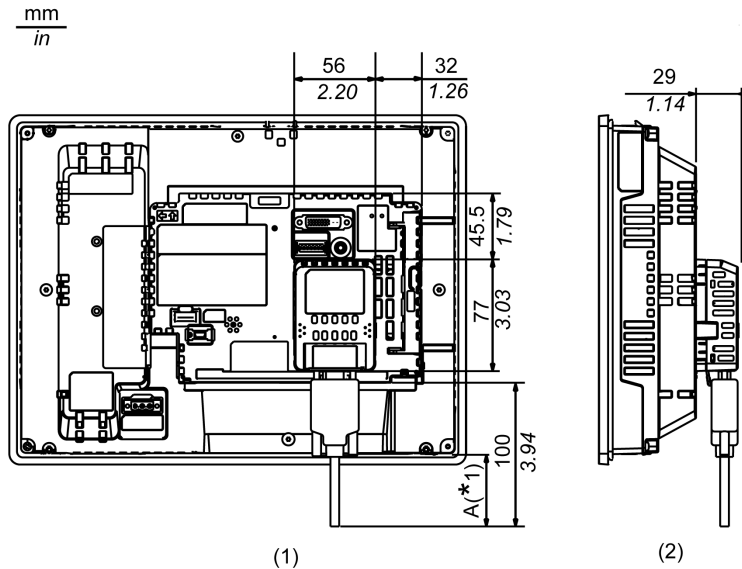
| Topic                  | Page |
|------------------------|------|
| External Dimensions    | 36   |
| Dimensions with Cables | 37   |

External Dimensions



## Dimensions with Cables

**NOTE:** The following illustration is of the SP-5600TP.



- 1 Rear  
2 Left

\*1 Refer to the following table for the length of A.

| Series        |                  | Size         | Model name | A               |
|---------------|------------------|--------------|------------|-----------------|
| SP5000 Series | Premium Display  | 10 inch      | SP-5500TP  | 63 mm (2.48 in) |
|               |                  | 12 inch      | SP-5600TP  | 50 mm (1.97 in) |
|               |                  |              | SP-5660TP  |                 |
|               |                  | 15 inch      | SP-5700TP  | 22 mm (0.87 in) |
|               |                  | 15 inch Wide | SP-5700WC  | 39 mm (1.54 in) |
|               |                  | 19 inch Wide | SP-5800WC  | 5 mm (0.20 in)  |
|               | Advanced Display | 7 inch Wide  | SP-5400WA  | 96 mm (3.78 in) |
|               |                  | 10 inch Wide | SP-5500WA  | 71 mm (2.80 in) |
|               |                  | 12 inch Wide | SP-5600WA  | 55 mm (2.17 in) |

**NOTE:**

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.
- For information on the dimensions when the Box Module and Display Module are attached together, refer to the SP5000 Series Hardware Manual.

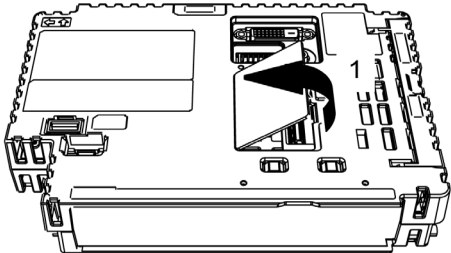
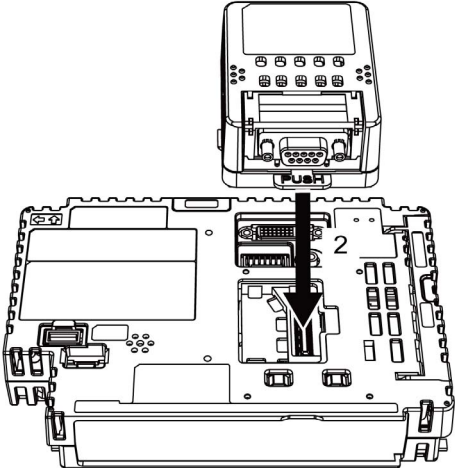


# Chapter 6

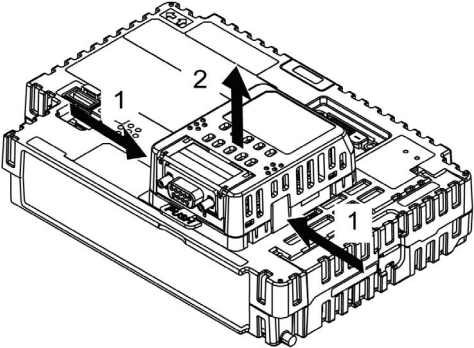
## Installation

### Installation Procedures

#### Attaching to Box Module

| Step | Action                                                                                                                                                                                          |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | At the rear of the Box Module, open the cover in the direction shown by arrow 1 in the figure below.<br>       |
| 2    | As shown by arrow 2, connect the interface at the back of this product to the interface inside the cover.<br> |
| 3    | Continue pressing until you hear a click. Check to make sure this product is fastened securely.                                                                                                 |

Removing from Box Module

| Step | Action                                                                                                                                                                                                                             |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <p>Push and hold the hooks at both sides of this product in the direction shown by the arrows (1), then lift the product (2) to unfasten it.</p>  |
| 2    | <p>After removing this product, reattach the cover that you removed during product installation back onto the rear of the Box Module.</p>                                                                                          |



# Chapter 7

## After-sales Service

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### After-sales Service

#### Information

For details on after-sales service, refer to Pro-face website at

<http://www.pro-face.com/trans/en/manual/1001.html>

