
**User's
Manual**

**Model DOX10
Power Supply Unit**

IM 12J05S01-01E

◆ Introduction

The DOX10 power supply unit feeds power to the DO70G optical dissolved oxygen sensor and the DO402G dissolved oxygen converter.

This unit can be installed outdoors.

Please read this document thoroughly before use to avoid damage, failure, or improper operation of the unit.

Throughout this document, important handling instructions are indicated by Warning or Caution depending on their importance. To ensure safety and prevent damage, users must follow these instructions.

1. Confirming the Specifications

Make sure that the unit is exactly as ordered. A conduit adapter to protect cables is included if ordered as an option.

2. Information Described in This Manual

This manual describes information on the specifications, installation, and wiring of the DOX10.

For information on wiring to DO402G, refer to IM 12J05D02-01E.

The table below shows the instruction manuals of the relevant equipment used in the dissolved oxygen measuring system.

Table: Manuals of Relevant Equipment Used in Dissolved Oxygen Measuring System

Model	Title of Manual	Manual No.
DO402G	Dissolved Oxygen Converter	IM 12J05D02-01E
DO70G	Optical Dissolved Oxygen Sensor	IM 12J05D04-01E
DOX10	Power Supply Unit	IM 12J05S01-01E
PB350G	Angled Floating Ball Holder	IM 19H1E1-01E
PB360G	Vertical Floating Ball Holder	IM 19H1E2-01E
DOX8HS	Submersion Type Holder	IM 19H1D2-01E
PH8PU1	Cleaning Pump/Tank	IM 19C1E1-01E

Note: The manuals in the table are only for the basic components of the system.

For information on recorders, annunciators and other auxiliary instruments, refer to respective instruction manuals.

◆ For the safe use of this equipment

(1) About This Manual

- This manual should be passed on to the end user.
- The contents of this manual are subject to change without prior notice.
- The contents of this manual shall not be reproduced or copied, in part or in whole, without permission.
- This manual explains the functions contained in this product, but does not warrant that they are suitable for the particular purpose of the user.
- Every effort has been made to ensure accuracy in the preparation of this manual. However, when you realize mistaken expressions or omissions, please contact the nearest Yokogawa Electric representative or sales office.
- This manual does not cover the special specifications. This manual may be left unchanged on any change of specification, construction or parts when the change does not affect the functions or performance of the product.
- If the product is not used in a manner specified in this manual, the safety of this product may be impaired.

(2) Safety and Modification Precautions

- Follow the safety precautions in this manual when using the product to ensure protection and safety of the human body, the product and the system containing the product.

(3) The following safety symbols are used on the product as well as in this manual.



This symbol indicates that an operator must follow the instructions laid out in this manual in order to avoid the risks, for the human body, of injury, electric shock, or fatalities. The manual describes what special care the operator must take to avoid such risks.



This symbol indicates that the operator must refer to the instructions in this manual in order to prevent the instrument (hardware) or software from being damaged, or a system failure from occurring.



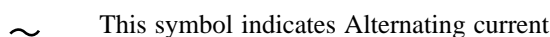
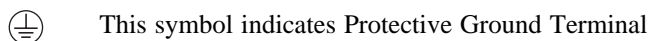
This symbol gives information essential for understanding the operations and functions.



This symbol gives information that complements the current topic.



This symbol identifies a source to be referred to.



◆ After-Sales Warranty

- Do not modify the product.
- During the warranty period, for repair under warranty carry or send the product to the local sales representative or service office. Yokogawa will replace or repair any damaged parts and return the product to you.
- Before returning a product for repair under warranty, provide us with the model name and serial number and a description of the problem. Any diagrams or data explaining the problem would also be appreciated.
- If we replace the product with a new one, we won't provide you with a repair report.
- Yokogawa warrants the product for the period stated in the pre-purchase quotation. Yokogawa shall conduct defined warranty service based on its standard. When the customer site is located outside of the service area, a fee for dispatching the maintenance engineer will be charged to the customer.
- In the following cases, customer will be charged repair fee regardless of warranty period.
 - Failure of components which are out of scope of warranty stated in instruction manual.
 - Failure caused by usage of software, hardware or auxiliary equipment, which Yokogawa did not supply.
 - Failure due to improper or insufficient maintenance by user.
 - Failure due to misoperation, misuse or modification which Yokogawa does not authorize.
 - Failure due to power supply (voltage, frequency) being outside specifications or abnormal.
 - Failure caused by any usage out of scope of recommended usage.
 - Any damage from fire, earthquake, a storms and floods, lightning, disturbances, riots, warfare, radiation, and other natural changes.
- Yokogawa does not warrant conformance with the specific application at the user site. Yokogawa will not bear direct / indirect responsibility for damage due to a specific application.
- Yokogawa will not bear responsibility when the user configures the product into systems or resells the product.
- Maintenance service and supplying repair parts will be covered for five years after the production ends. For repair this product, please contact the nearest sales office described in this instruction manual.

Introduction

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1. Overview

The DOX10 power supply unit feeds power to the DO70G optical dissolved oxygen sensor and the DO402G dissolved oxygen converter.

1.1 Standard Specifications

Construction :	JIS waterproof (IP 53)
Case material :	Fiberglass reinforced polycarbonate resin.
Case Color :	Grayish-green (Munsell 2.5G5.0/1.0)
Mounting :	Bracket mounting (mounting bracket unnecessary) Pipe mounting (need to specify pipe mounting bracket) Wall mounting (need to specify wall mounting bracket)
Electrical connections :	Watertight plastic gland with cable. (applicable cable O.D. : $\varnothing 6$ to $\varnothing 12$) Conduit adaptor (optional available)
Ambient temperature :	-10 to 55°C
Humidity range :	10 to 90% RH (non-condensing)
Power supply :	100/115/230V AC 50/60Hz
Acceptable range :	Rated Voltage $\pm 15\%$
Output voltage :	24V DC $\pm 1V$
Terminal :	M4 screw
Weight :	Body ; Approx. 1.6 kg Mounting bracket ; Approx. 0.7 kg Attached cable ; Approx. 0.3 kg

1.2 Model and Suffix Codes

DOX10 power supply unit

Model	Suffix Code	Option Code	Specifications
DOX10	.....	.....	Power supply Unit
Power supply	-U	.....	Always -U
Cable length	-00	.....	No cable
	-15	.....	1.5m (DO402G power supply use)
_____	-N	.....	Always -N
Option	Mounting bracket	/P	Pipe mounting bracket
	Tag plate	/W	Wall mounting bracket
	Conduit work adaptor	/SCT	Stainless steel tag plate
		/CB1	G1/2, 1pcs
		/CD1	1/2 NPT, 1pcs
		/CF1	M20 \times 1.5, 1pcs

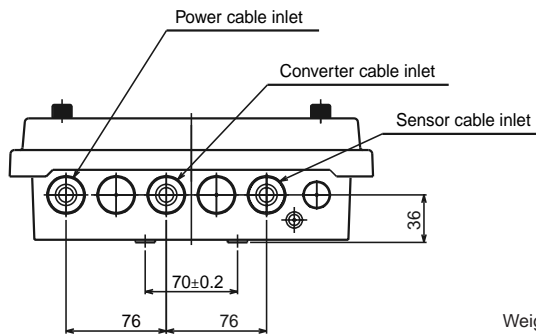
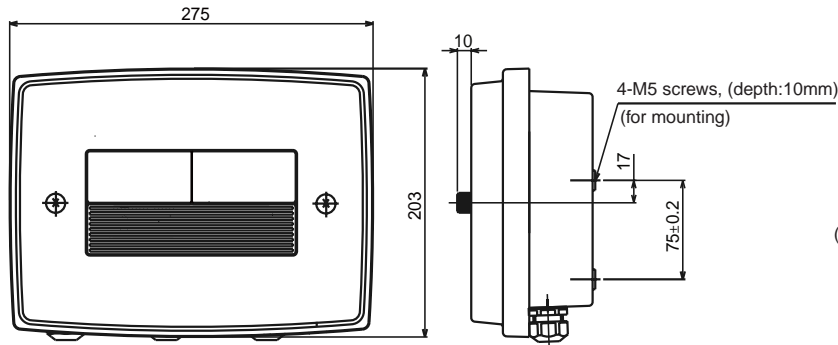
(*) In case of conduit construction, adaptor for conduit construction is specified.

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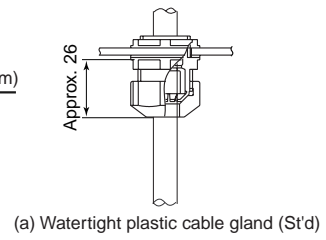
1.3 External Dimensions

DOX10 power supply unit

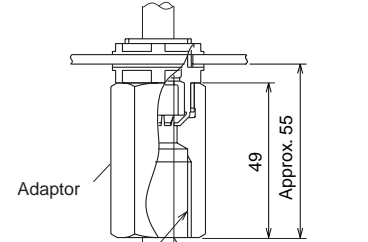
Unit : mm



Weight: Approx. 1.6kg



(a) Watertight plastic cable gland (St'd)



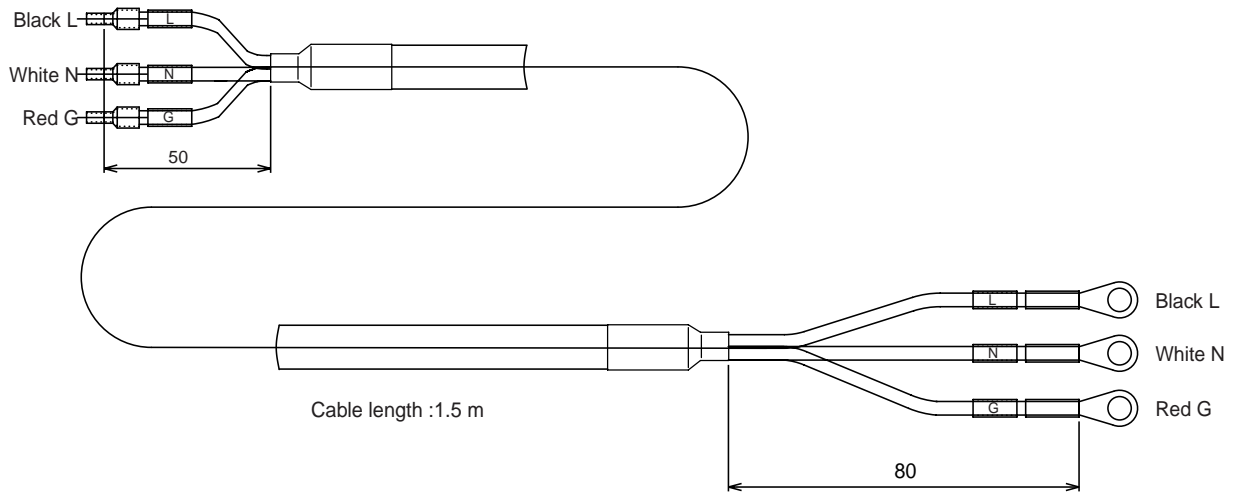
(b) Watertight plastic cable gland with conduit adaptor

G1/2 female (/CB1)
1/2 NPT female (/CD1)
M20×1.5 (CF1)
Please use the watertight cable gland of the attachment. If metallic conduit is directly connected with the case, it becomes the factor of the measurement error

(b) Watertight plastic cable gland with conduit adaptor

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Attached cable with DOX10 (Not supplied if suffix code "-00-N" is selected)



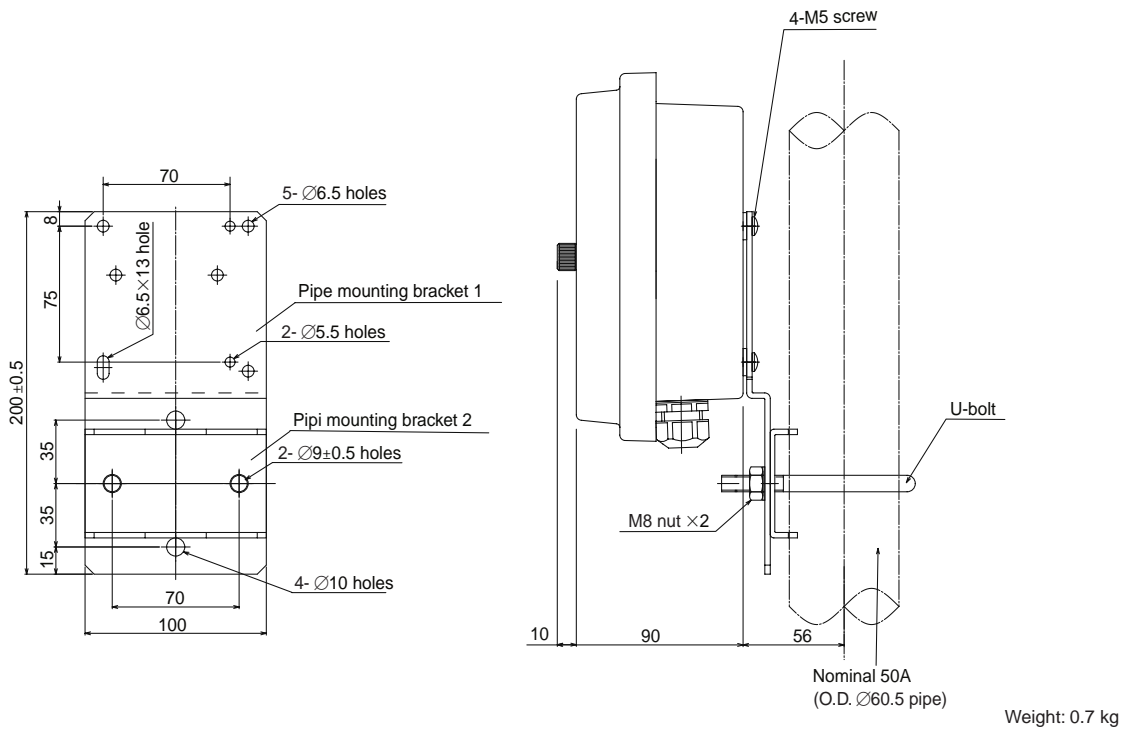
Model and Suffix Code	L (mm)
DOX10 - U - 00 - N	No cable
DOX10 - U - 15 - N	Approx. 1,500

Weight : Approx. 0.3kg (1,500mm)

Pipe mounting bracket for power supply unit (optional)

(option code: /P)

Unit : mm

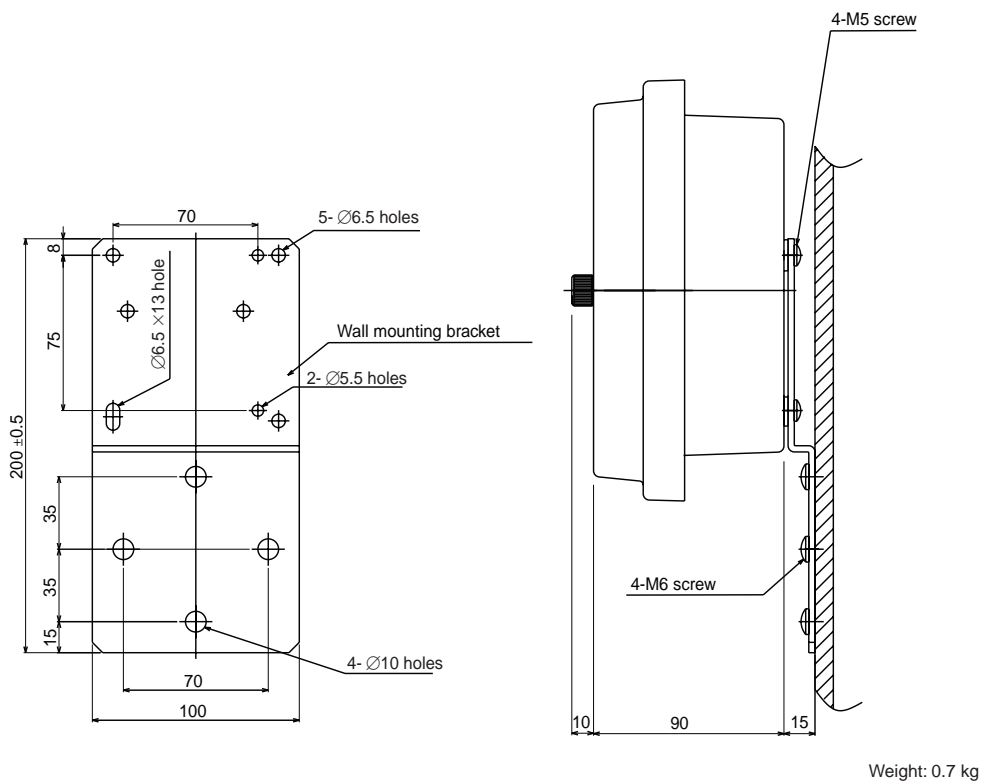


Weight: 0.7 kg

Wall mounting bracket for power supply unit (optional)

(option code: /W)

Unit : mm



Weight: 0.7 kg

2. Installation and Wiring

2.1 Installation

2.1.1 Installation Location

Since power supply unit is waterproof, you can install it outdoors. Be sure to install it as close to the converter as possible.

Note:

Avoid installing the unit in ambient air containing excessive moisture or corrosive gas.

If the case cover is not closed tightly in excessive moisture or corrosive gas, the unit may suffer problems such as insulation failure, disconnection, or poor contact.

2.1.2 How to Mount

Power supply unit can be mounted on bracket, pipe (nominal 50A size) or wall. However for pipe or wall mounting, order and use the optional mounting bracket. This mounting bracket is supplied when specified.

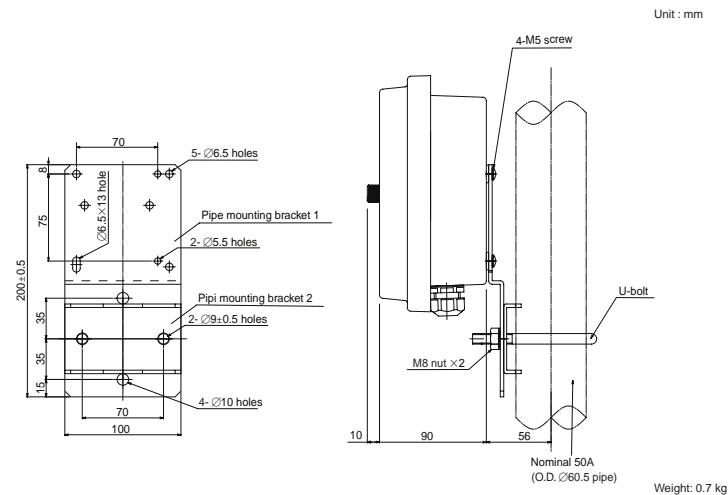


Figure 2.1 Pipe Mounting

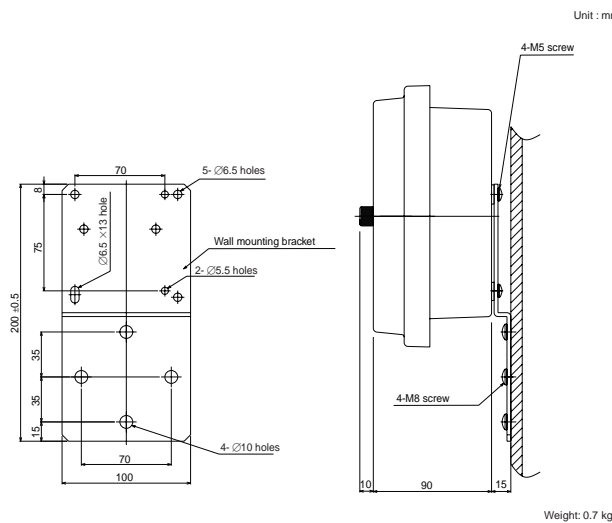


Figure 2.2 Wall Mounting

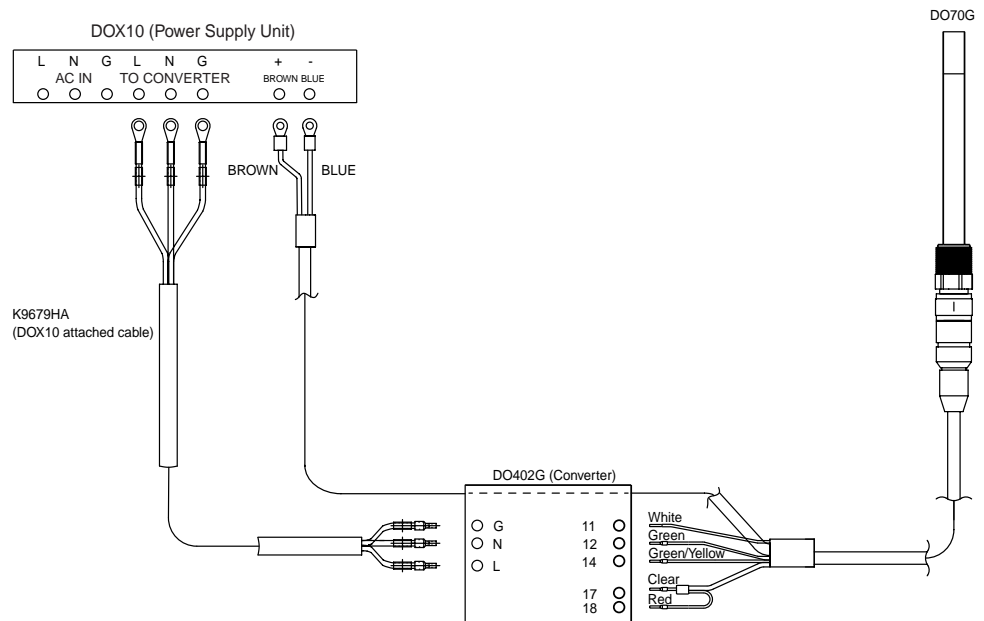
2.2 Wiring

Indoors terminal board in power supply unit is connected by dedicated sensor cable (used for wiring sensor to the DO402G).

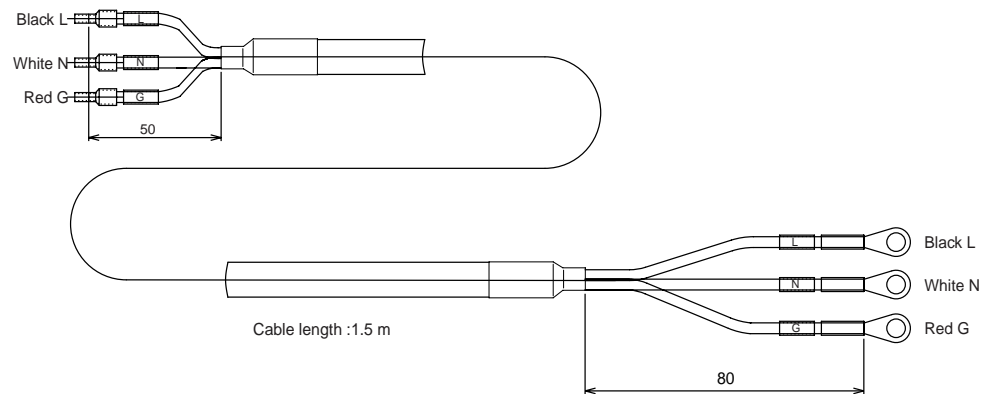


CAUTION

When connecting the sensor to the terminals, match the colors, symbols, and numbers described in the wiring diagram (it is packaged with the sensor cable).



Attached cable with DOX10 (Not supplied if suffix code "-00-N" is selected)



Model and Suffix Code	L (mm)
DOX10 - U - 00 - N	No cable
DOX10 - U - 15 - N	Approx. 1,500

Weight : Approx. 0.3kg (1,500mm)

Figure 2.3 Attached Cable

2.2.1 Connecting Sensor Cable

- (1) Loosen two screws which are at front of power supply unit and detach the cover.
- (2) Pull the cable into the power supply unit from sensor cable inlet hole.
- (3) Connect the sensor cable to the terminals.

After passing the cable through the nut, check the color on each core wire, then connect each core wire to the corresponding terminal.

DO70G Wiring Diagram Example

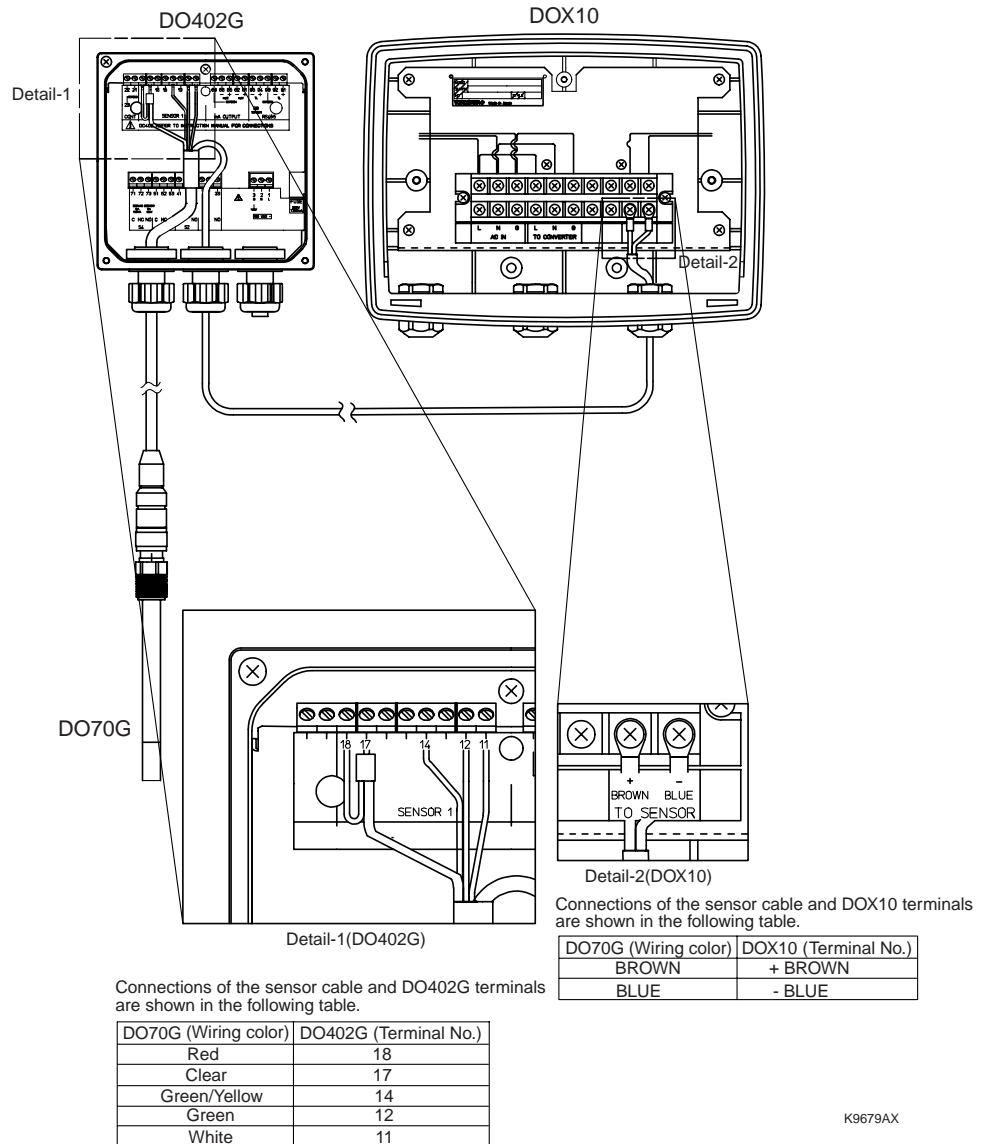


Figure 2.4 Connecting Sensor Cable

- (4) Mount the cable gland in the cable inlet hole.
Put the nut in place, and screw it onto the main body sufficiently. At this time, loosen the packing gland so that the cable is not twisted. After fixing the main body, tighten the packing gland to keep moisture out of the equipment. However if the packing gland is screwed up too tight, the cable will be damaged.

3. Inspection and Maintenance

Normally, it is sufficient to inspect the DOX10 power supply unit during periodic system repairs (once a year or every two years), as far as it works without fail. Daily inspection and maintenance are not required.

3.1 Power Supply Unit Inspection

3.1.1 Checking for Moisture and Performing the Required Maintenance

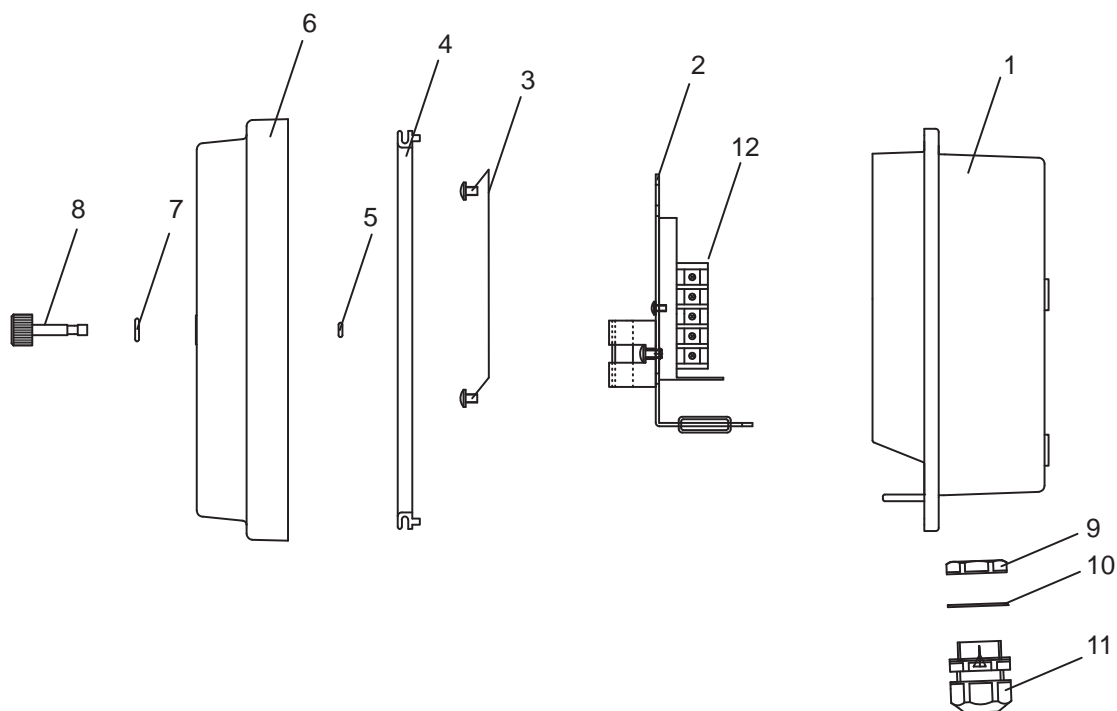
Remove the cover of the terminal box and check for moisture. If the inside is very damp, use a hair drier to dry the inside of the box.

3.1.2 Checking for Corrosion and Performing the Required Maintenance

Check that corrosive gas has not entered the terminal box and corroded the terminals and conductors. If the corrosion is excessive and problems such as poor contact and disconnection seem likely, replace the corroded apparatus.

Customer Maintenance Parts List

DOX10 Power Supply Unit



Item	Part No.	Qty	Description
1	K9141LA	1	Case
2	K9679FG	1	Plate Assy.
3	Y9408LU	4	Screw
4	K9141MB	1	Gasket
5	G9303NB	1	O-ring
6	K9141LD	1	Case
7	G9303NF	2	O-ring
8	K9141MH	2	Screw
9	L9811FM	3	Nut
10	L9811FN	3	Gasket
11	L9811FE	3	Body
12	A1630UP	1	Power Unit

Revision Record

Manual Title : Model DOX10 Power Supply Unit

Manual Number : IM 12J05S01-01E

Edition	Date	Remark (s)
1st	Feb. 2012	Newly publishd
