

Yokogawa Electric Corporation

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Please read through this User's Manual before use for correct handling.
Please keep this User's Manual for future reference.

YOKOGAWA
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IM UZ011-01E
1st Edition Aug. 2000 (MC)
2nd Edition June 2004 (YK)

1. CAUTIONARY NOTES FOR SAFE USE OF THE PRODUCT

This User's Manual should be carefully read before installing and operating the product. The following symbol is used on the product and in this manual to ensure safe use.



This symbol is displayed on the product when it is necessary to refer to the User's Manual for information on personnel and instrument safety. This symbol is displayed in the User's Manual to indicate precautions for avoiding danger to the operator, such as an electric shock.

The following symbols are used only in this manual.



IMPORTANT

Indicates that operating the hardware or software in a particular manner may cause damage or result in a system failure.



NOTE

Draws attention to essential information for understanding the operations and/or functions of the product.

2. CHECKING PRODUCT SPECIFICATIONS AND PACKAGED ITEMS

(1) Checking the Model and Product Specifications

Check that the model and specifications indicated on the nameplate attached to the side face of the main unit are as ordered.

(2) Packaged Items

Check that the packing carton contains the following items:

- UZ011: 1
- Spacer (used for DIN rail mounting): 1
- External resistor, 1 (Shunt resistor used when 4 to 20mA DC input)
- User's Manual (this manual: IM 77J04A01-01E): 1 copy

3. GENERAL

This UZ011 is a plug-in type Analog Positioner.

- Internal timer prevent frequent ON-OFF of motor valve.
- Retransmission output can be used to monitor the motor position value.
- Feedback slide resistance : 100 Ω to 10 kΩ
- Easy adjustment operation, ±1% Setting Accuracy.

4. MOUNTING METHOD

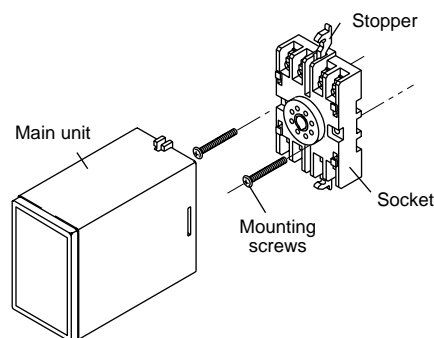


NOTE

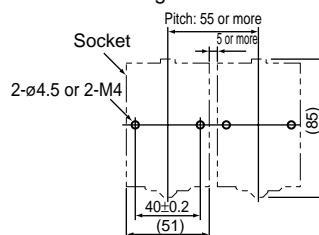
Insert/pull out the main unit into/from the socket vertically to the face of socket. Otherwise the terminals are bent and it may cause a bad contact.

4.1 Wall Mounting

Remove the stoppers (top and bottom) from the product and pull out the main unit from the socket. Fix the socket on the wall using two M4 screws. Next, insert the main unit into the socket and fasten the main unit with the stoppers (top and bottom).



<Mounting Dimensions>



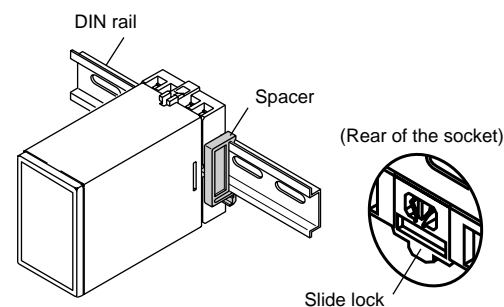
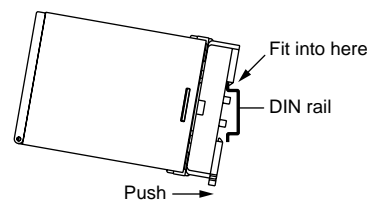
Unit: mm

Note:

- (1) More than 5 mm interval is required for side-by-side close mounting.
- (2) Use the supplied spacer for DIN rail mounting to keep 5 mm interval.

4.2 DIN Rail Mounting

Insert a DIN rail into the upper part of the DIN rail groove on the rear of the socket, and then slide the slide lock at the lower part of the socket upwards until the socket is fixed into position as shown below.



4.3 Using a Duct

When using a wiring duct, install the duct at least 20 mm away from the top and bottom faces of the main unit.

5. INSTALLATION LOCATIONS

- Avoid the following environments for installation locations: Areas with vibration, corrosive gases, dust, water, oil, solvents, direct sunlight, radiation, a strong electric field, and/or a strong magnetic field
- If there is any risk of a surge being induced into the power line and/or signal lines due to lightning or other factors, a dedicated lightning arrester should be used as protection for both this unit and a field-installed device.

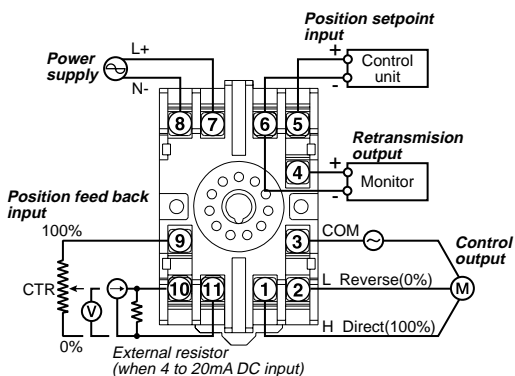
6. EXTERNAL WIRING

WARNING

To avoid the risk of an electric shock, turn off the power supply and use a tester or similar device to ensure that no power is supplied to a cable to be connected, before carrying out wiring work.

Wiring should be connected to the terminals on the socket of the product. The terminals for external connections are of M3.5 screws. Use crimp-on terminal lugs for connections to the terminals.

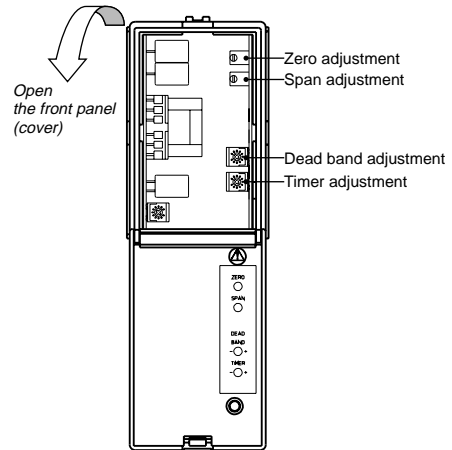
- Recommended cables: A nominal cross-sectional area of 0.5 mm² or thicker for signal cables, and that of 1.25 mm² or thicker for power cables.
- (1) Position setpoint input signal's terminals are No.5 (+) and No.6 (–).
 - (2) Control output signal's terminals are No.1 (H), No.2 (L) and No.3 (COM).
 - (3) Position feedback input signal's terminals are ;
 - When the slide-wire resistance is used: No.9 (100%), No.10 (CTR) and No.11 (0%).
 - When analog signal (1 to 5V DC or 4 to 20mA DC) is used: No.10 (+) and No.11 (–).
 - (4) Power supply's terminals are No.7 (L+) and No.8 (N–).
 - (5) Retransmission output signal's terminals are No.4 (+) and No.6 (–).



IMPORTANT

- **The power line and input/output signal lines should be installed away from noise-generating sources. Other wise accuracy cannot be guaranteed.**
- **Use of the product ignoring the specifications may cause overheating or damage. Before turning on the power, ensure the following:**
 - (a) **Power supply voltage and input signal value applied to the product should meet the required specifications.**
 - (b) **The external wiring to the terminals and wiring to ground are as specifications.**
- **Do not operate the product in the presence of flammable or explosive gases or vapors. To do so is highly dangerous.**
- **The product is sensitive to static electricity; exercise care in operating it. Before you operate the product, touch a nearby metal part to discharge static electricity.**
- **Connect the external resistor (shunt resistor) when the signal of the "Position setpoint input" or the "Feedback input" is 4 to 20mA DC.**

7. ADJUSTMENT



WARNING

To avoid electric shock, do NOT touch internal components when adjusting the instrument with its front panel (cover) removed.

The product starts running immediately when the power is turned on; however, it needs 10 to 15 minutes of warm-up before it meets the specified performance.

7.1 Zero and Span Adjustments

Perform the zero and span adjustments so that 0% and 100% retransmission outputs are obtained. (In general, 0% and 100% outputs are valve fully-closed and fully-open, respectively.)

7.2 Deadband Adjustment

The deadband is the range (differential in an input signal) until the H (direct) or L (reverse) relay turns on. Adjust the deadband in the range from 1 to 20% if an undersired change (disturbance) or hunting adversely affects the operating points. This deadband is adjusted to a maximum (20%) at the factory before shipment. Adjust the deadband as narrow as possible (in an appropriate range to minimize outputting a drive signal) by observing the control line status and stability of motor-driven part operations.

7.3 Timer Adjustment

The timer-adjustment time is the time taken to enable the H or L relay after it has been turned off. That is, it is the time during which a relay output cannot be issued in order to prevent the motor from being overheated by frequently turning on and off the relays. Thus, there is a certain time until the motor can be restarted. Appropriately adjust the timer-adjustment time between 1 and 30 seconds such that the relay does not turn on and off too frequently. The timer-adjustment time is adjusted to a minimum at the factory before shipment.