

1. PRECAUTION

Please read through this Manual before use of the instrument for correct handling. Please keep this Manual carefully after use. This instrument has been thoroughly tested at the factory before shipment. When you receive it, visually inspect it for damage and check the accessories.

● Model number and specifications check
Check to see model number and specifications on the plate attached to side face of the repeater are as ordered.

● Contents of the instruction manual
This instruction manual provides instructions on handling, external wiring and safety use of the repeater.

2. GENERAL

This compact plug-in type pulse repeater receives contact pulse, voltage pulse or current pulse from the field and converts it into isolated transistor contact pulse or dry contact AC switch-pulse.

Accessories :

- Spacer (Use for DIN rail mounting).... 1
- Tag Number Label 2

3. MOUNTING METHOD

JUXTA M Series Transmitters can be mounted on wall or DIN rail.

3.1 Wall Mounting

Unlock stoppers of repeater and pull out main body from socket as shown in Fig. 1. Then, fix the socket on the wall with 2 M4 screws. Take installation gap as shown in Fig. 3 for close mounting.

3.2 DIN rail mounting

Insert DIN rail into the upper of the DIN rail groove on rear of socket of the repeater and fix the rail with slidelock at the lower of the repeater as shown in Fig.2.

Use furnished spacer so as repeaters would be mounted with 5mm gap.

3.3 Duct Installation

Install ducts, if necessary, aperting from top of the repeater more than 20mm.

4. EXTERNAL WIRING

CAUTION Wiring should be done after ensuring power break of cable.

See Fig.5~7 for wiring. Wiring should be done to M3.5 screw terminals of the socket. Flexible twisted wires and good contact of durable round crimp-on terminals are recommended to be used.

● Signal cable having more than 0.5mm² and power cable having more than 1.25mm² of nominal cross-sectional area of conductor are recommended.

4.1 Wiring

- ① See Fig.4 for terminal arrangement.
- ② Connect voltage pulse or dry voltage contact pulse signal cable from transmitter to 3(+), 4(-) of the repeater. (See Fig.5 : Wiring Diagram 1)
- ③ When receiving voltage pulse by driving generator through internal power supply, connect input signal cable to 5(PS+), 3(+), 4(-). (See Fig. 6 : Wiring Diagram 2)

FIG.1 WALL MOUNTING

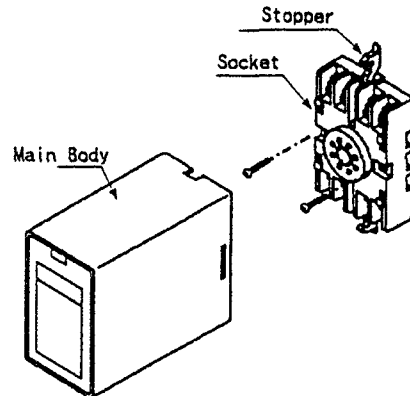


FIG.2 DIN RAIL MOUNTING

When remove the repeater from DIN Rail, lower the slidelock with (-) screwdriver

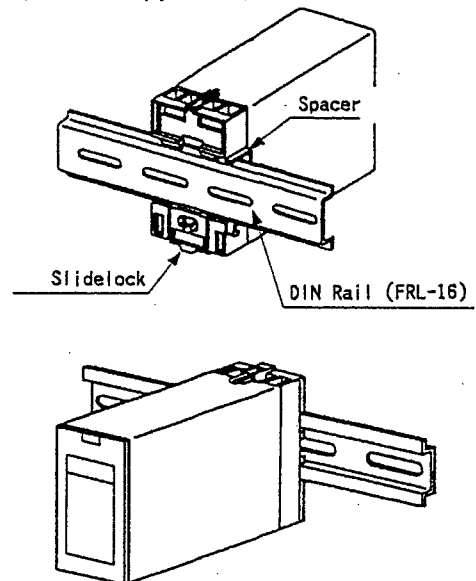
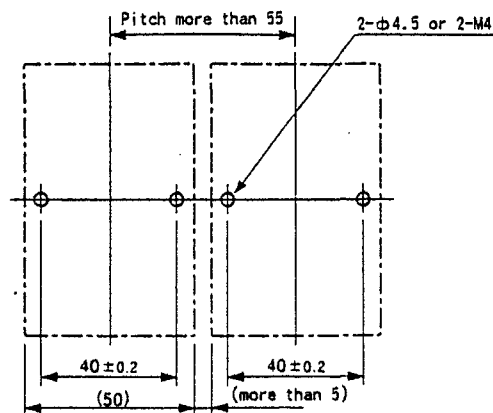


FIG.3 MOUNTING DIMENSION

Unit : mm



- ④ When receiving current pulse by driving generator through internal power supply, connect input signal cable to 5(PS+), 3(+). (See Fig. 7 : Wiring Diagram 3)
- ⑤ Connect output signal cable to 1(+), 2(-).
- ⑥ Connect power cable to 7(L+), 8(N-) and ground to 6(G).

NOTE : Operation caused by erroneous wiring is not warranted.

Apart wiring of power cable and input/output cable from noise source. Otherwise, accuracy may not be warranted.

5. SETTING OF CURRENT PULSE LOAD RESISTOR AND DRY VOLTAGE CONTACT INPUT FILTER

In case signal from generator is current pulse, conversion it into voltage is necessary using current pulse load resistors (seven types of resistance value settings are available through SW1~3). Open front cover and set load resistor so as relationship between current wave height from generator (p-p) and synthetic load resistance R_L would satisfy

$$\text{swing width} \times R_L \geq 2V$$

If chattering noise arises when receiving dry contact (mechanical relay, etc.), noise affect can be controlled by making switch (SW4) ON. However, in this case, input frequency range is limited to less than 100Hz (pulse width more than 3ms). (See Fig.8)

SW1~3 : Setting of load resistor for current pulse (Set it at OFF when other than current pulse input)

SW4 : Setting of filter

SW1	SW2	SW3	Resistance	SW4
ON	OFF	OFF	200Ω	Filter ON/OFF
OFF	ON	OFF	500Ω	
OFF	OFF	ON	1kΩ	
ON	ON	OFF	143Ω	
ON	OFF	ON	167Ω	
OFF	ON	ON	500Ω	
ON	ON	ON	143Ω	

(SW1~4 are set at OFF when shipment from factory)

6. INSTALLATION PLACE AND HANDLING

- ① Avoid installation in such environments as shock, vibration, corrosive gas, dust, water, oil, solvent, direct sunlight, radiation, powerful electric and magnetic fields.
- ② To protect the repeater from inducement of thunder surges in power and signal cables, use arrester between repeater and equipment installed in the field.

7. SAFETY USE

Following caution for safety should be taken for handling of the repeater. We are not responsible for damage caused by use contrary to caution.

CAUTION

- Following items should be checked before power on. Use of the repeater ignoring the specifications may cause overheating and burning.
 - (a) Voltage of power supply and input signal to be applied to the repeater should meet with required specifications.
 - (b) External wiring to terminals should be connected correctly (See Article 4).
- Do not use the repeater in such dangerous places where exist inflammable and explosive gas or steam.

FIG. 4 TERMINAL ARRANGEMENT & TERMINAL CONNECTION

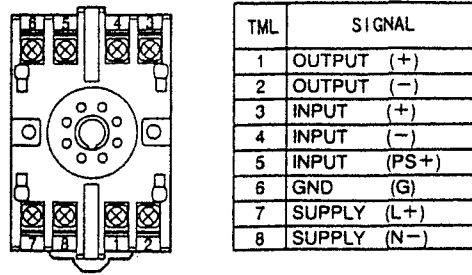


FIG. 5 WIRING DIAGRAM 1

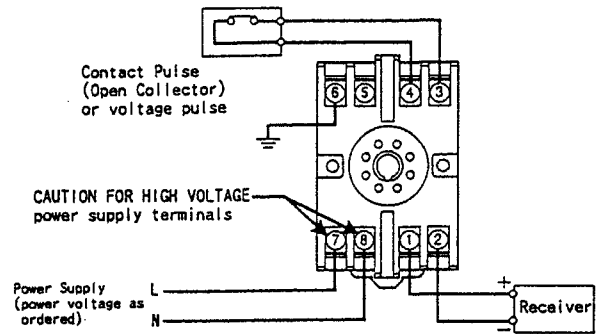


FIG. 6 WIRING DIAGRAM 2

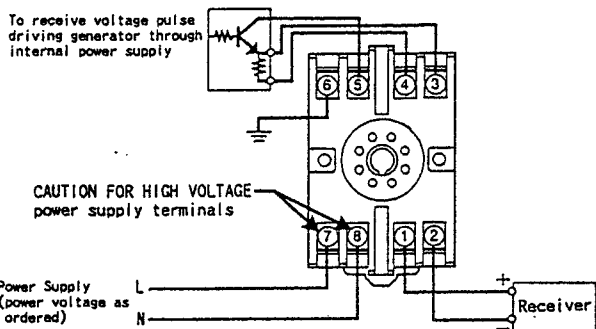


FIG. 7 WIRING DIAGRAM 3

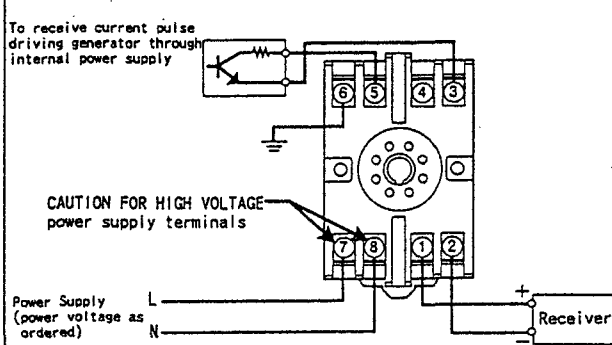
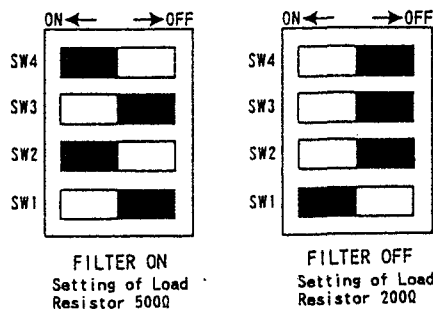


FIG. 8 SETTING OF CURRENT PULSE LOAD RESISTOR AND FILTER



● On terminals 7 and 8 shown in Fig.4, high voltages of 85~132V AC or 170~264V AC be applied in case of AC power supply, and 85~150V DC be applied in case of DC power supply. So, do not touch terminals.

⚠ Instrument types having power supplies of 85~132V AC/85~150V DC, 170~264V AC, these high voltages exist internally. When opening front panel for setting of load resistor or filter, be careful for electric shock touching other than these parts by screw-driver or hand.

8. CALIBRATION

Carry out the following calibration after warmup the repeater for more than 10~15 minutes to satisfy its specified performance.

8.1 Calibration Equipment

- Pulse Generator.....1
(Japan Hewlett-Packard Type 3314A or equivalent)
- Counter.....1
(Japan Hewlett-Packard Type 5334B (or equivalent))
- Resistor & dry cell1
(1k Ω , 1.6k Ω 1 each ; 6V dry cell1)

8.2 Calibration

- ① Connect each equipment as shown in Fig.10.
- ② Input/output characteristic check
Use Pulse Generator and generate rectangular pulse at optional frequency of less than 10kHz (See dot line in Fig. 10 for connection to counter or oscilloscope)
- ③ Connect counter to 1 and 2 terminals and check to see same frequency pulse as the one of pulse generator is output. Also, check through oscilloscope the output pulse wave is well shaped.

FIG.9 FRONT SWITCH

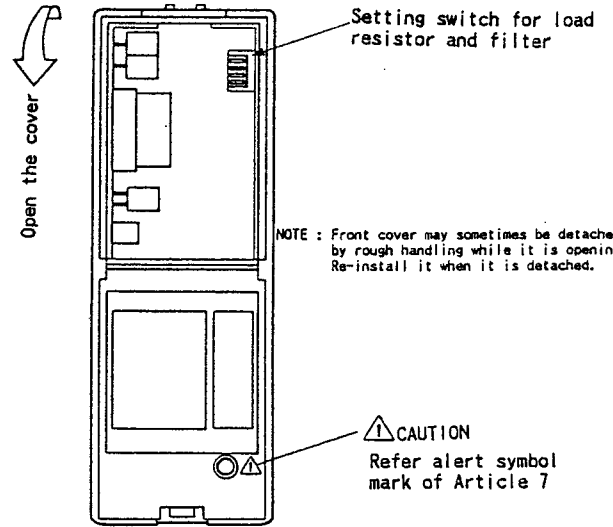
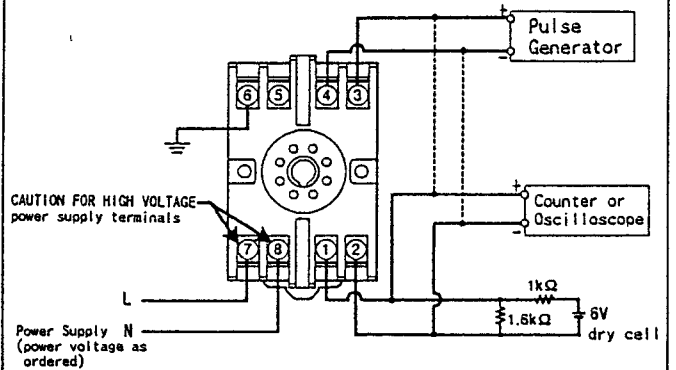


FIG.10 WIRING OF CALIBRATION EQUIPMENT



Subject to change without notice for grade up quality and performance.

YOKOGAWA 
Yokogawa Electric Corporation

Network Solutions Business Division
2-9-32, Nakacho Musashino-shi, Tokyo, 180-8750 Japan
Phone: (81)-422-52-7179 Fax: (81)-422-52-6793