

### 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.

① Model number and specifications check  
Check to see model number and specifications on the plate attached to upper face of the converter are as ordered.

② Contents of the instruction manual  
This instruction manual provides instructions on handling, external wiring and safety use of the converter.

### 2. GENERAL

This compact plug-in type converter has function of transmitter and converts pulse train signal into isolated DC signal.

Accessories :

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

### 3. MOUNTING METHOD

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

#### 3.1 Wall Mounting

Remove stopper of converter and pull out main body from socket as shown in Fig. 1. Then fix the socket on the wall with screws. Take installation gap as shown in Fig. 2.

#### 3.2 DIN rail mounting

Insert DIN rail into the upper of the DIN rail groove on rear of socket of the converter and fix the rail with slidelock at the lower of the transmitter as shown in Fig.3.

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

#### 3.3 Duct Installation

Install ducts, if necessary, aperting from top of the transmitter 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.

Use round crimp-on terminals for connection to terminals.

● Signal cable having more than  $0.5\text{mm}^2$  and power cable having more than  $1.25\text{mm}^2$  of nominal cross-sectional area of conductor are recommended to be used.

#### 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 transmitter. (See Fig.5 : Wiring Diagram 1)

③ When receiving voltage pulse by driving generator through internal power supply, connect input signal to 5(PS+), 3(+), 4(-). (See Fig. 6 : Wiring Diagram 2)

FIG.1 WALL MOUNTING

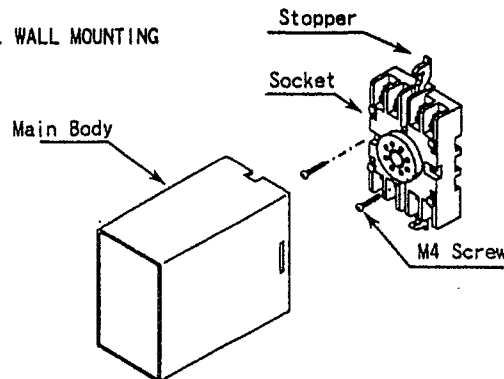


FIG.2 MOUNTING DIMENSION

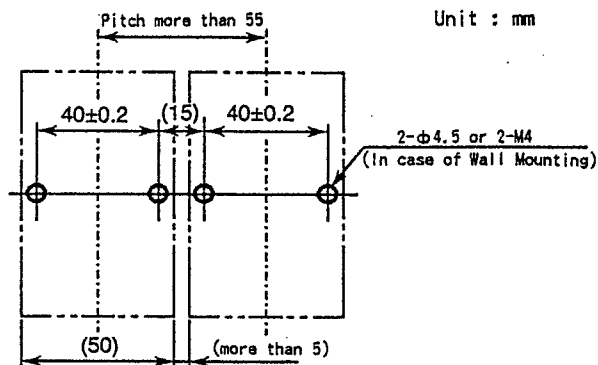
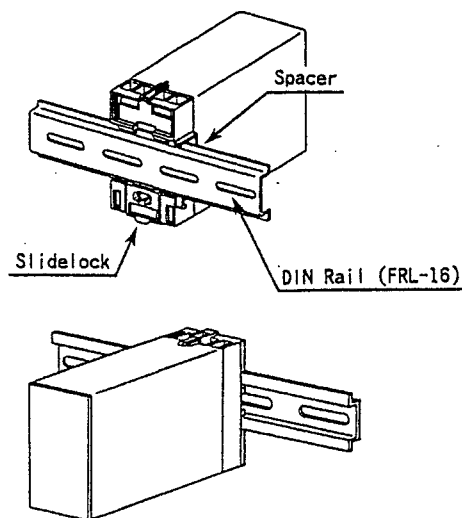


FIG.3 MOUNTING DIMENSION

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



- ④ When receiving current pulse by driving generator through internal power supply, connect input signal 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 8(GND).

NOTE : Apart wiring of power cable and input/output cable from noise source. Otherwise, accuracy may not only be warranted but also it badly affects to operation.

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

In case signal from generator is current pulse, conversion it into voltage is necessary using current pulse load resistance (seven types of resistance value settings are available through SW1~3). Set load resistance so as relationship between current wave height from generator (p-p) and synthetic load resistance RL would satisfy swing width  $i \times RL \geq 2V$

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 resistance for current pulse  
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	

6. INSTALLATION 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 In order to protect the converter from inducement of thunder surges in power and signal cables, use arrester between the converter and equipment installed in the field.

7. SAFETY USE

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

**CAUTION**

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

FIG. 4 TERMINAL ARRANGEMENT

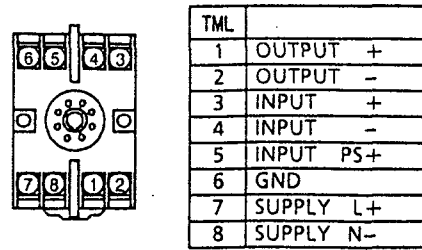


FIG. 5 WIRING DIAGRAM 1

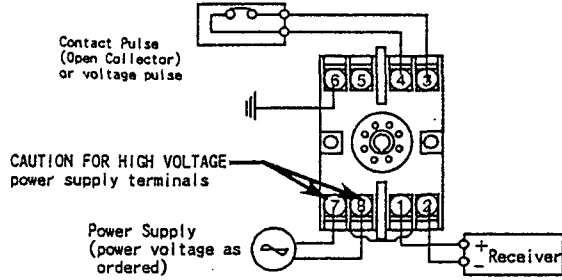


FIG. 6 WIRING DIAGRAM 2

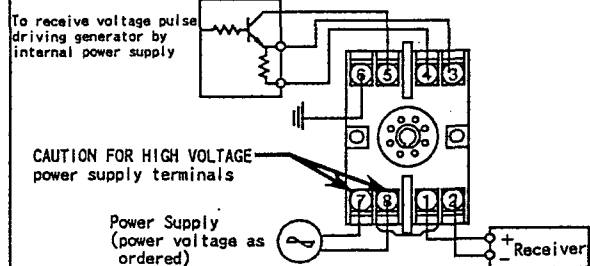


FIG. 7 WIRING DIAGRAM 3

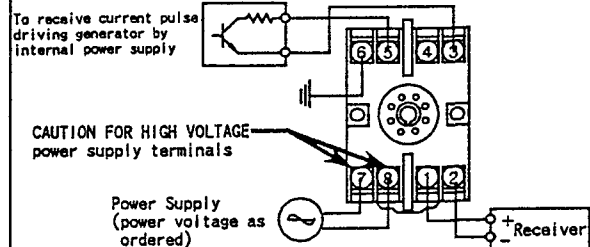
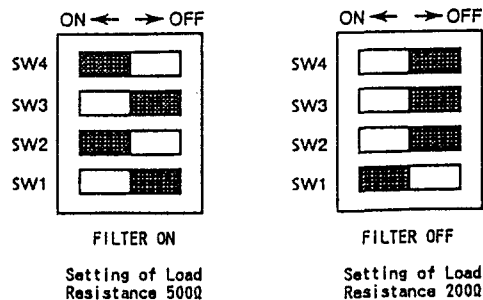


FIG. 8 SETTING OF CURRENT PULSE LOAD RESISTANCE AND FILTER



- 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 resistance or filter or connecting Handy Terminal, be careful for electric shock touching other than these parts by driver or hand.

### 8. CALIBRATION

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

#### 8.1 Calibration Equipment

- Pulse Generator.....1  
(Hewlett-Packard Type 3314A or equivalent)
- Voltmeter.....1  
(Yokogawa Type 7551 or equivalent)
- Counter .....1  
(Hewlett-Packard Type 5334B (or equivalent))
- Precision Resistor .....1  
250Ω±0.01% 1W (Use for current output)

#### 8.2 Calibration

- ① Connect each equipment as shown in Fig.10.
- ② Input/output characteristic check  
Use Pulse Generator and apply input signals corresponding 0%, 25%, 50%, 75%, 100% to the converter. Check to see outputs are 0%, 25%, 50%, 75%, 100% respectively and are within specified accuracy rating.
- If output signal is out of accuracy rating range, adjust it by using Handy Terminal (JHT200 or JHT-100). Please refer to Instruction Manuals of Handy Terminal. (JHT200 : IM JF81-02E, JHT-100 : IM JF81-01E)

FIG.9 TRANSMITTER FRONT SWITCH

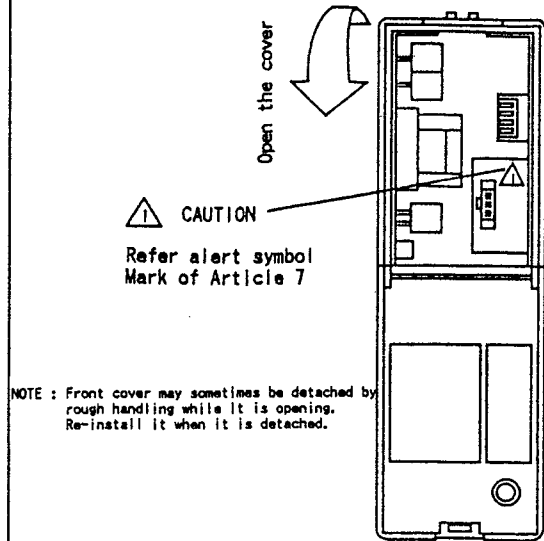


FIG.10 WIRING OF CALIBRATION EQUIPMENT

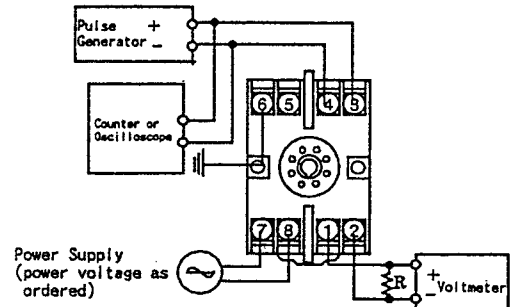
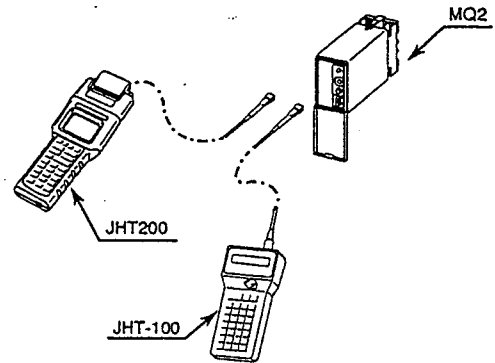


FIG.11 CONNECTION TO HANDY TERMINAL



9. PARAMETER LIST

Display	Communication Item	Data Display
MODEL	Model	MQ2
TAG NO	Tag No.	Alphabetic numeral 16 characters
SELF CHK	Self Check	GOOD or ERROR

HOME MENU		
Display	Communication Item	Data Display
A : DISPLAY	Display	
A01 : INPUT	Input	5 digits Hz (including decimal point)
A02 : OUTPUT	Output	□□□.□%
A03 : STATUS	Status	FF (Hexadecimal 2 digits)
A04 : REV NO	Rev No	n.nnn (n : Rev No.)

SET MENU		
Display	Communication Item	Data Display
B : SET	Set	
B01 : TAG NO1	Tag No.1	Alphabetic numeral 8 characters (first half 8 characters of Tag No.)
B02 : TAG NO2	Tag No.2	Alphabetic numeral 8 characters (second half 8 characters of Tag No.)
B03 : COMMENT1	Comment 1	Alphabetic numeral 8 characters
B04 : COMMENT2	Comment 2	Alphabetic numeral 8 characters
B07 : LOW CUT	Low Cut	5 digits Hz (including decimal point)
B13 : INP ZERO	Input Zero	Numeral Data (decimal numeral, effective 4 digits)
B14 : INP SPAN	Input Span	Numeral Data (decimal numeral, effective 4 digits)
B15 : OUT ZERO	Output Zero	Numeral Data (decimal numeral, effective 4 digits)
B16 : OUT SPAN	Output Span	Numeral Data (decimal numeral, effective 4 digits)

ADJUST MENU		
Display	Communication Item	Data Display
C : ADJUST	Adjust	
C01 : OUT 0%	Output 0%	Numeral Data (±10.00)
C02 : OUT 100%	Output 100%	Numeral Data (±10.00)

① F1 or ② HOME A

To Display Item

① F2 or ② SET B

To Set Item

① F3 or ② ADJ C

To Adjust Menu

- ① : Key when use JHT200
- ② : Key when use JHT-100

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