

1. PRECAUTION

Please read through this Manual before using 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 specification check
Check to see the model number and specifications on the nameplate at the front face of the instrument are as ordered.

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

2. GENERAL

This plug-in type Power Transducer receives signal from power line and converts it into 4~20mA DC or 1~5V DC signal after making power calculation.

Accessories:

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

3. MOUNTING METHOD

JUXTA M-series Power Transducer can be mounted on wall or DIN rail.

3.1 Wall mounting

Unlock stoppers and remove main body from the socket as shown in Fig.1. Then fix the socket on the wall with two (2) M4 screws. Take installation intervals as shown in Fig. 2 for access mounting.

3.2 DIN rail mounting

Insert DIN rail into the upper section of the DIN rail groove on the rear of the socket and fix the rail with slidelock at the base of the instrument as shown in Fig. 3. Use furnished spacer so as to install the instruments with 5mm intervals.

3.3

When use of wiring duct, install it aparting more than 20mm from top of the instrument.

4. EXTERNAL WIRING

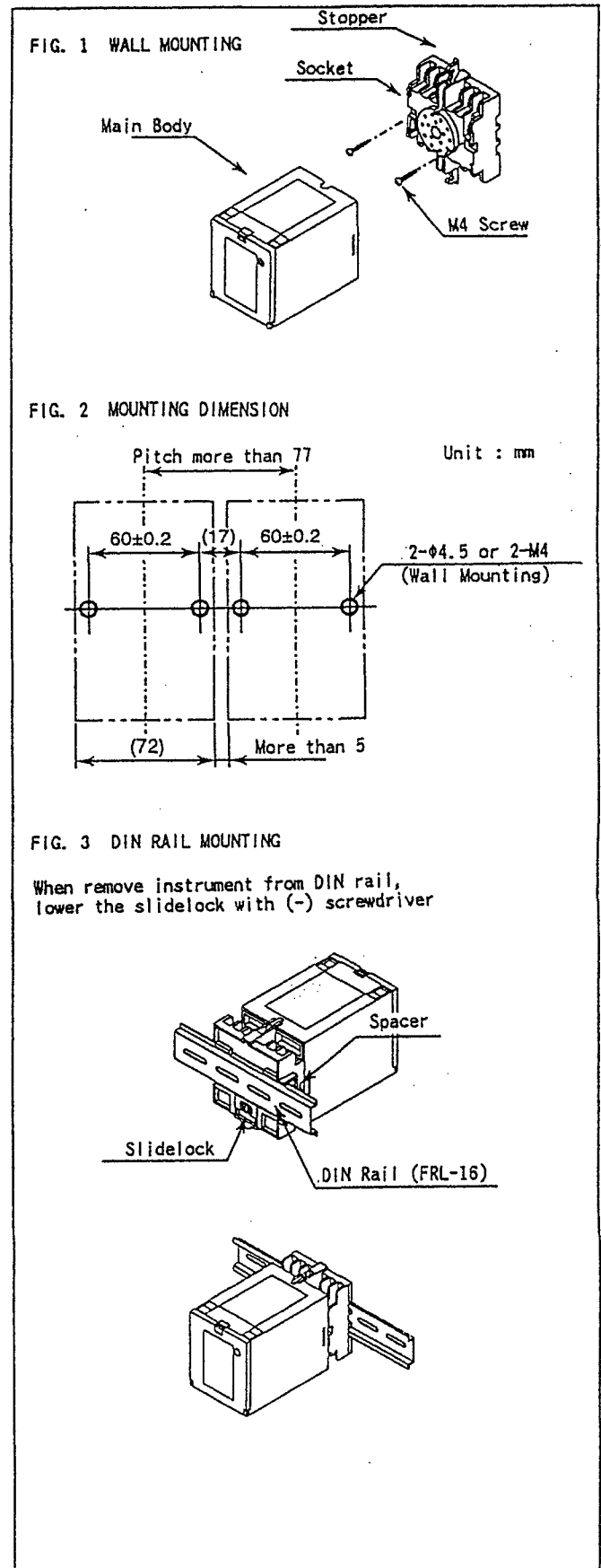
CAUTION: Wiring should be carried out after ensuring power break of each cable.

Fig. 4 shows terminal arrangement and signal on each terminal. Fig.5 shows wiring diagram on each phase and wire type. Wiring should be connected to M3.5 screw terminals of socket by referring Fig.4 and Fig.5. Flexible twisted wires and durable round crimp-on terminals are recommended to be used.

● Output signal cable should have more than 0.5mm² and input signal and power cables should have more than 1.25mm² cross-sectional area of conductor.

4.1 Wiring

- ① Wiring of input cable for voltage and current differs by phase and wire type.
Make wiring by selecting out of three drawings shown in Fig.5.
- ② Connect output cable to 10(+), 1(-) and pulse output cable to 12(+), 4(-).
- ③ When DC drive, connect power cable to 7(+), 14(-).
When AC drive, connect power cable to 3(GND), 7(L), 14(N).



(Note) Apart wiring of power and input/output cables from noise source. Otherwise, accuracy may not be warranted.

5. INSTALLATION AND HANDLING

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

6. SAFETY USE

The following caution for safety should be taken for handling of instrument. We are not responsible for damage incurred by use contrary to the caution.

CAUTION

- Be sure to lock the stoppers (top and bottom) after mounting the body into the socket.
- The following items should be confirmed when turning power on. Use of instrument by ignoring the specifications may cause over heating or burning.
 - (a) Voltage of power supply and input value be applied to the instrument should meet with required specifications.
 - (b) External wiring to the terminals should be connected correctly. (See preceding article 4)
- Do not use the instrument in such dangerous places where exist inflammable or explosive gas or steam.
- ⚠ Instruments using power of 85~132V AC/85~150V DC or 170~264V AC have these voltages internally. When opening front cover for zero/span adjustment etc., be careful for electric shock touching by hand or driver the parts other than adjustment switch.
- Break CT current when removing the main body from socket. When CT Protector CTP-5 (Option) is set on input terminal connecting secondary side of CT, main body can be removed from socket even during operation. Remove main body from socket in short time since CT protector is diode protect type. When remove main body from socket without setting CT protector during operation, be careful for high voltage on secondary side of CT. CT may sometimes be burned.

7. ADJUSTMENT

Output value can be adjusted in the state of wiring as shown in Fig. 5 (Adjustment in the field can be done). Adjustment is made through either Handy Terminal or front switch of the instrument. Setup of output value is made through receiving instrument connected to main body. (See Fig.5). However, when receiving instrument locates too far to read measured value, connect voltmeter (YOKOGAWA Type 7551 or equivalent) in place of receiving instrument after dropping power to prevent electric shock. In case output range is 4~20mA, connect resistor (250Ω±0.01%) to output side of main body after dropping power to prevent electric shock and then convert current signal into voltage. Measure output value through abovementioned voltmeter. Carry out adjustment after warming up the instrument for 10~15 minutes.

7.1 Adjustment through Handy Terminal

Adjustment and parameter setup through Handy Terminal can be done by referring Article 11 Parameter List and Instruction Manual of Handy Terminal. (JHT200 : 1M JF81-02E, JHT-100 : 1M JF81-01E)

7.2 Adjustment through front switch

Following adjustment can be done by referring Fig. 8 Table after opening the front cover.

- ① When lower value indicated for Output 0%
Set rotary switch position at "1" and push push-button switch to increase output value.
- ② When higher value indicated for Output 0%
Set rotary switch position at "2" and push push-button switch to decrease output value.

FIG. 4 TERMINAL ARRANGEMENT

1	OUTPUT	(-)
2	INPUT	(3L)
3	GND	(G)
4	PULSE OUTPUT	(-)
5	INPUT	(P3)
6	INPUT	(P1)
7	SUPPLY	(L)
8	INPUT	(P2)
9	INPUT	(1S)
10	OUTPUT	(+)
11	INPUT	(3S)
12	PULSE OUTPUT	(+)
14	SUPPLY	(N)
15	INPUT	(1L)

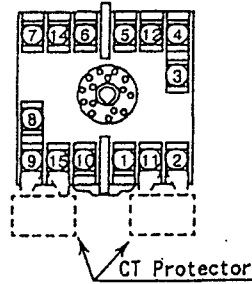
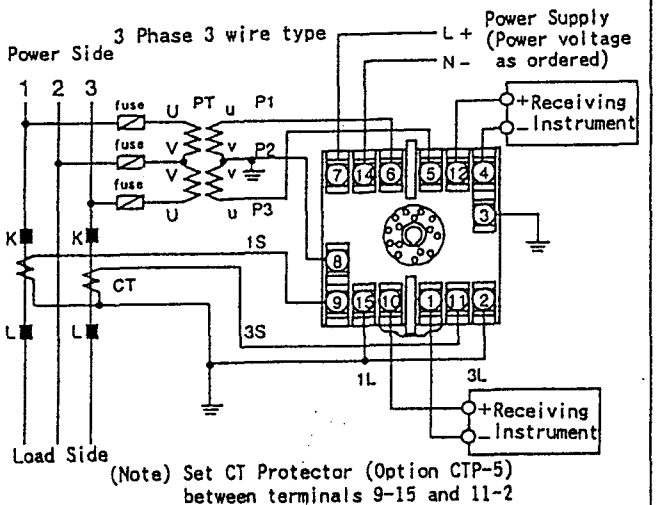
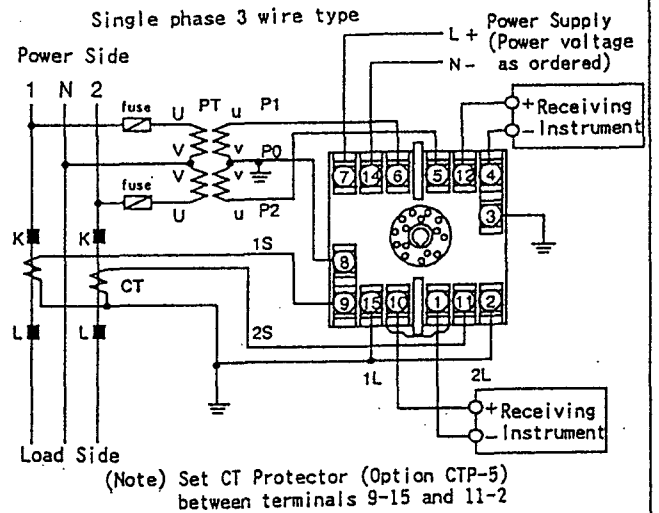
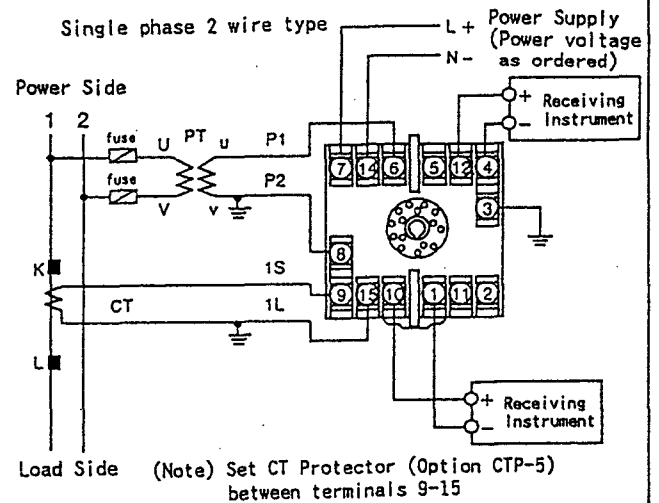


FIG. 5 WIRING DIAGRAM



- ③ When lower value indicated for Output 100% Set rotary switch position at "3" and push push-button switch to increase output value.
- ④ When higher value indicated for Output 100% Set rotary switch position at "4" and push push-button switch to increase output value.

NOTE

Set rotary switch position at "0" after adjustment is finished so as not to carry out adjustment by mistake

8. LED DISPLAY

LED indicates operating condition, unusual data setting, out of input range, adjustment status through front switch.

8.1 Display by status

- ① Light on
Light on when power on. This means normal state.
- ② Rapid on and off
Rapid on and off repeats during output adjustment or integrated pulse constant setting through front switch. Light on and off continues until internal adjustment is over.
- ③ Slow on and off
Over range input or unusual setting by Handy Terminal makes slow on and off. Light on and off continues until it recovers to normal state.

9. FULL SCALE POWER CHANGE

Input range can be changed by the following steps even after delivery.

9.1 Full scale power setup

Set full scale power 0% value at Setup Item D22 : INPUT L_RNG.

Set full scale power 100% value at Setup Item D23 : INPUT H_RNG.

9.2 Setup range

Setup range can be changed within setup range shown in Tables 1,2,3. However, use larger span than minimum span.

Table 1 Full Scale Power Setup Range (Single phase 2 wire type)

Input (AC)	Setup Range	Minimum Span
110V/1A	±50 ~ ±120W	50W
110V/5A	±250 ~ ±600W	250W
220V/1A	±100 ~ ±240W	100W
220V/5A	±500 ~ ±1200W	500W

Table 2 Full Scale Power Setup Range (Single phase 3 wire type)

Input (AC)	Setup Range	Minimum Span
220V/1A	±100 ~ ± 240W	100W
220V/5A	±500 ~ ±1200W	500W

Table 3 Full Scale Power Setup Range (3 phase 3 wire type)

Input (AC)	Setup Range	Minimum Span
110V/1A	±100 ~ ± 240W	100W
110V/5A	±500 ~ ±1200W	500W
220V/1A	±200 ~ ± 480W	200W
220V/5A	±1000 ~ ±2400W	1000W

10. INTEGRATED PULSE CONSTANT SETUP

Integrated pulse constant is setup in under the form of

X 10^{±□} [Hz]
[pulse/kwh]
[kwh/pulse]

Binary point of mantissa is fixed at above position. Symbol of characteristic is decided by the unit to be selected

In case of [Hz] 10^{-□}
In case of [pulse/kwh] 10^{+□}
In case of [kwh/pulse] 10^{-□}

FIG. 6 CONNECTION TO HANDY TERMINAL

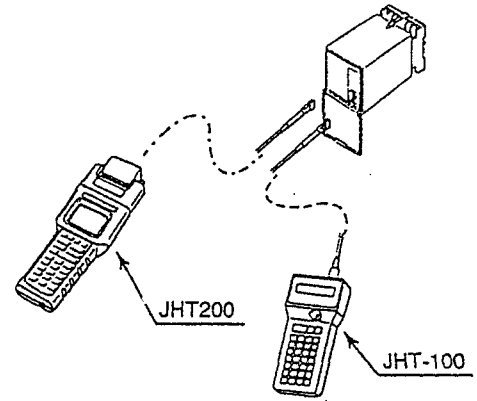
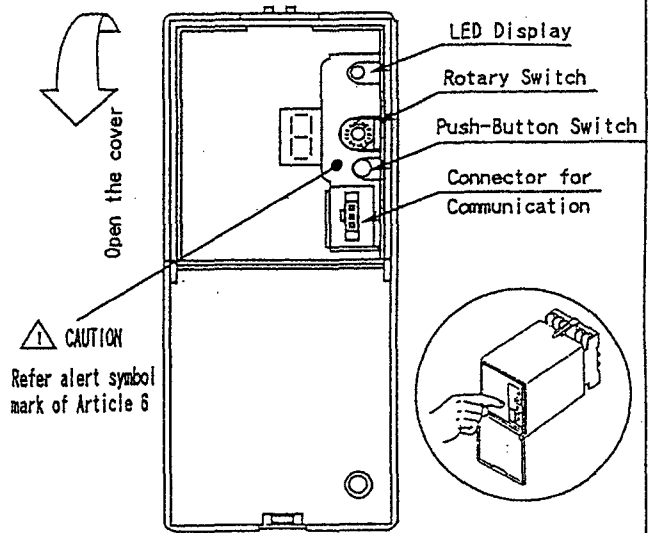


FIG. 7 FRONT SWITCH



CAUTION : Front cover may sometimes be detached by rough handling while it is opening. Reinstall it when it is detached.

FIG. 8 RELATION BETWEEN ROTARY SWITCH AND PUSH-BUTTON SWITCH

Rotary Switch Position	Function when Push-Button Switch ON
1	Adjust zero point to (+) side
2	Adjust zero point to (-) side
3	Adjust span to (+) side
4	Adjust span to (-) side

E	Enter integrated pulse constant setup mode
F	Display integrated pulse constant setup value

(Note) E and F apply to the instrument with integrated pulse output

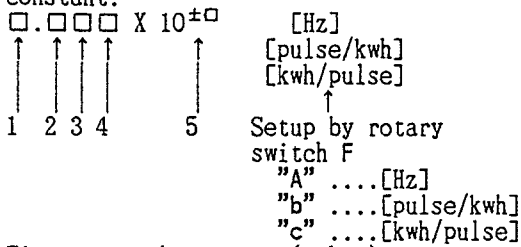
<Fine Adjustment by Push-Button Switch>

- About 0.005% change of output range per 1 pushing.
- Continuous pushing makes about 0.01% change per second for about 5 seconds from 1 second later. Further pushing makes consecutive change at high speed of about 0.1% per second.

(Symbol of characteristic is not displayed)
 Setup is made through Handy Terminal or front switch.

<Setup through front switch>

- ① Set rotary switch position at E and press push-button. Check to see rapid on and off on LED.
- ② Then, turn rotary switch to setup fixed constant.



Figures or characters (A,b,c) setup on Display are shown during setup.

[Example]

In case to setup integrated pulse constant of 2.778 [Hz]

- ① Set rotary switch position at E and press push button switch.
- ② Check to see LED shows rapid light on and off. Set rotary switch position at F. "A" or "b" or "C" is shown on Display. These are units of integrated pulse constant to correspond as follows :

"A"	[Hz]
"b"	[pulse/kwh]
"c"	[kwh/pulse]

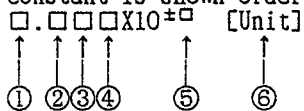
To select [Hz], press push button so as Display shows "A".

- ③ When Display shows "A", stop to press push-button and take following setup. To setup "2" of 2.778, set rotary switch position at 1. Display indicates one number of "0~9". Number increases by continuous pressing and returns to "0" after "9". Press button until it makes "2".
- ④ Remaining 3 digits are setup by same procedure of ③ at rotary switch position of 2~4 respectively.
- ⑤ Carry out setup of characteristic. In case unit is [Hz], it makes form of □.□□□ X 10^{-□} [Hz]
 Number of characteristic is setup at rotary switch 5.
- ⑥ To finish setup, set rotary switch position at E and press push-button. Rapid light on and off stops and becomes normal or slow light on and off. Slow light on and off means over setup limit of integrated pulse constant.

Make integrated pulse constant to be within range of 0.002778Hz~9.999Hz.

<Check integrated pulse constant>

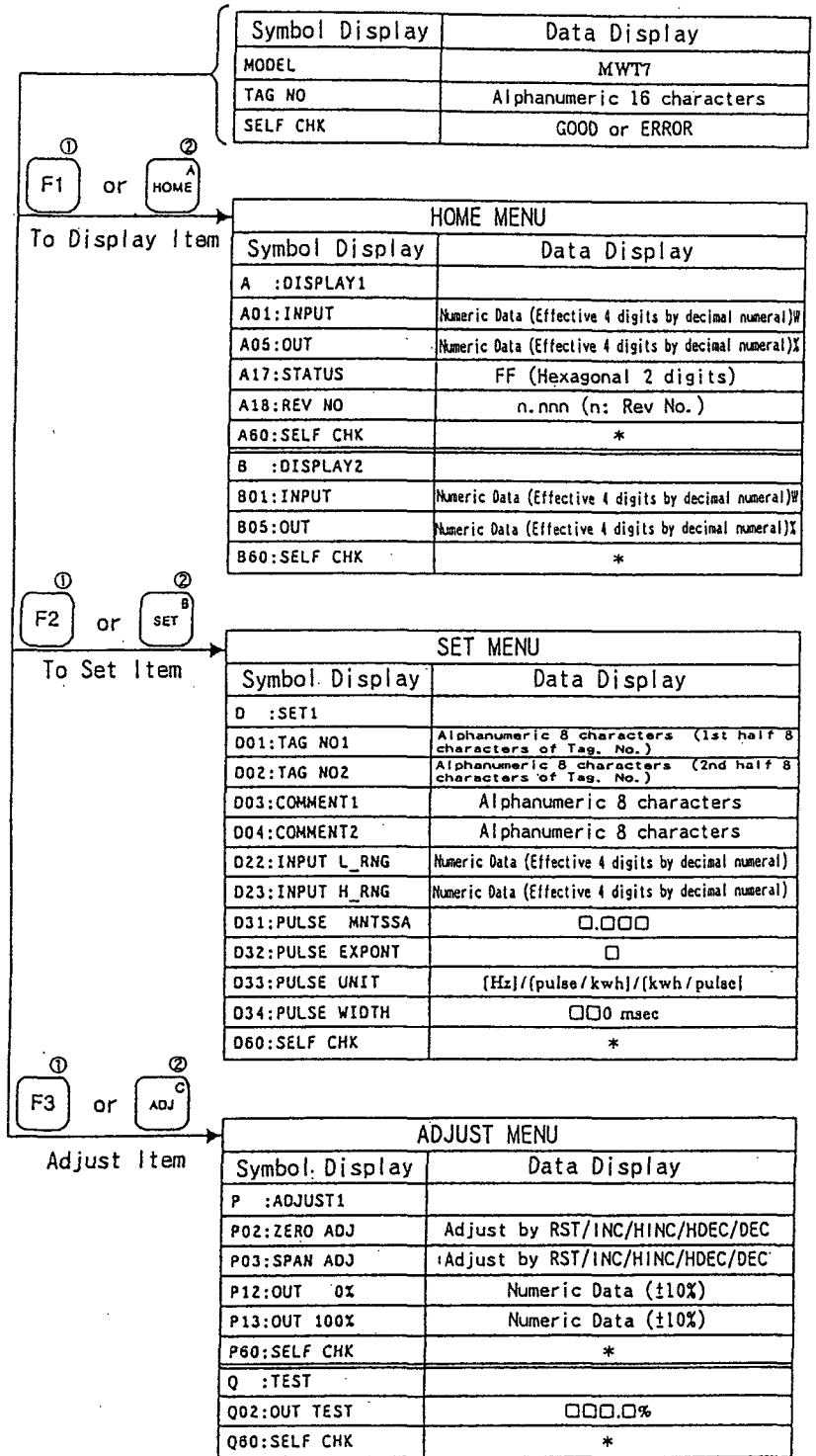
Set rotary switch position at "F" and press push button. Integrated pulse constant is shown orderly on Display.



①~⑥ is shown orderly.

[Example] When 2.778Hz is setup
 "2" → "7" → "7" → "8" → "0" → "A"
 shows orderly

11. PARAMETER LIST



① Key operation when use of JHT200
 ② Key operation when use of JHT-100
 * EEPROM ERROR/RANGE SET ERROR/INPUT OVER RANGE/LO IN OR PMC ERR/
 PULSE CNST ERROR
 *1 Automatic data renewal is made periodically.

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