Instruction Manual

Model MPF7 Power Factor Transducer

JUXTA

1. PRECAUTION

Please read thorough 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 compact plug-in type Power Factor Transducer receives signal from 3 phase power line and converts it into 4~20mA DC or 1~5V DC signal after making power factor calculation.
Accessories:
Spacer (for DIN rail mounting use) 1
Tag Number Label 2

3. MOUNTING METHOD

JUXTA M-series Power Factor 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 done after ensuring power break of each cable

Fig. 4 shows terminal arrangement and Fig.5 shows wiring diagram.
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 Connect input voltage cable to 6(P1), 8(P2), 5(P3) and input current cable to 9(1S), 15(1L), 11(3S), 2(3L) of the instrument.
② Connect output signal cable to 10(+), 1(-).
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.

FIG. 1 WALL MOUNTING

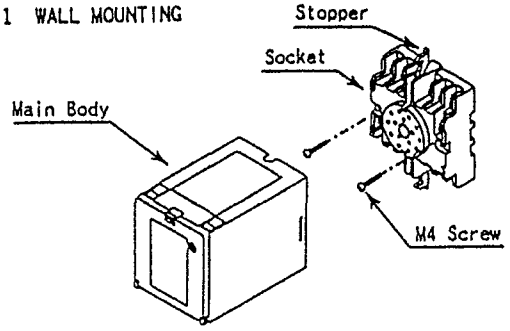


FIG. 2 MOUNTING DIMENSION

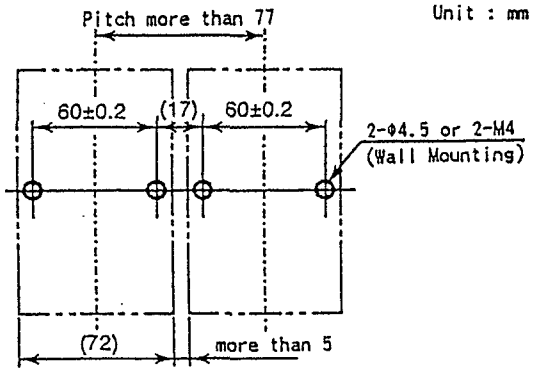
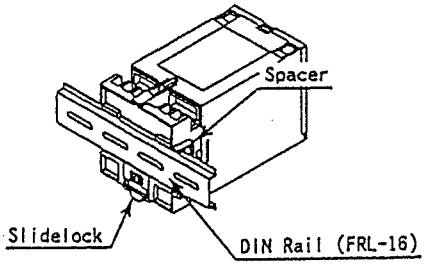
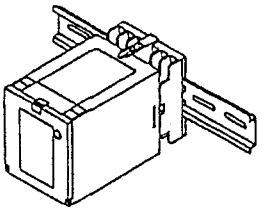


FIG. 3 DIN RAIL MOUNTING

When remove instrument from DIN rail, lower the slidelock with (-) screwdriver





5. 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 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 socket.
- The follwing 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 terminals should be connected correctly. (See preceding Article 4)
- Do not use the instrument in such dangerous places where exist inflammable and 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, the 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 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 maim body. (See Fig.5)
In case 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% 1W) on output side of main body after dropping power to prevent electric shock and convert current signal into voltage. Then, measure output through voltmeter. Carry out the adjustment after warming up the instrument for 10~15 minutes.
NOTE : When apparent power level becomes below 1% of rated value, output signal overscales to (-) side.

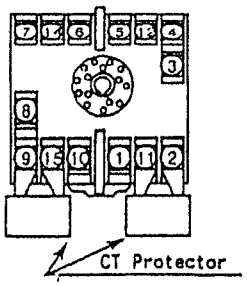
7.1 Adjustment through Handy Terminal

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

7.2 Adjustment through front switch

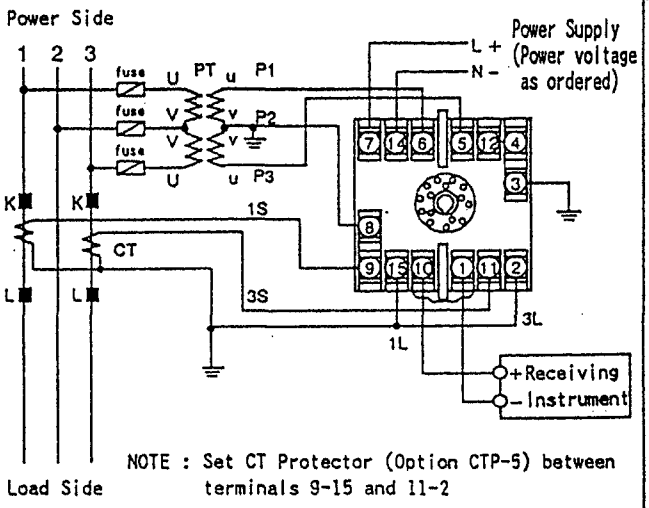
If output signal is out of tolerance, following adjustment should be done by referring Fig. 8 Table after opening the front cover.

FIG. 4 TERMINAL ARRANGEMENT



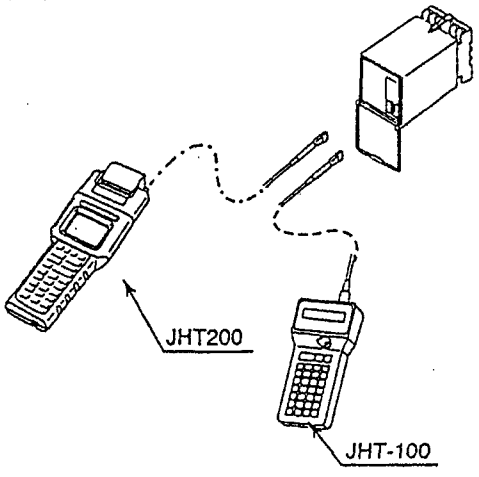
1	OUTPUT	(-)
2	INPUT	(3L)
3	GND	(G)
4	——	
5	INPUT	(P3)
6	INPUT	(P1)
7	SUPPLY	(L)
8	INPUT	(P2)
9	INPUT	(1S)
10	OUTPUT	(+)
11	INPUT	(3S)
12	——	
14	SUPPLY	(N)
15	INPUT	(1L)

FIG. 5 WIRING DIAGRAM



NOTE : Set CT Protector (Option CTP-5) between terminals 9-15 and 11-2

FIG. 6 CONNECTION TO HANDY TERMINAL



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.
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 poistion 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 state through front switch.

8.1 Display by status

① Light on
Light on when power on. This means normal state (Status ③ arises if input is not connected to signal)

② Rapid on and off
Rapid on and off repeats at time during adjustment of output by 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.
Also, input apparent power level descent makes slow on and off since power factor cannot be calculated. Light on and off continues until it recovers to normal state.

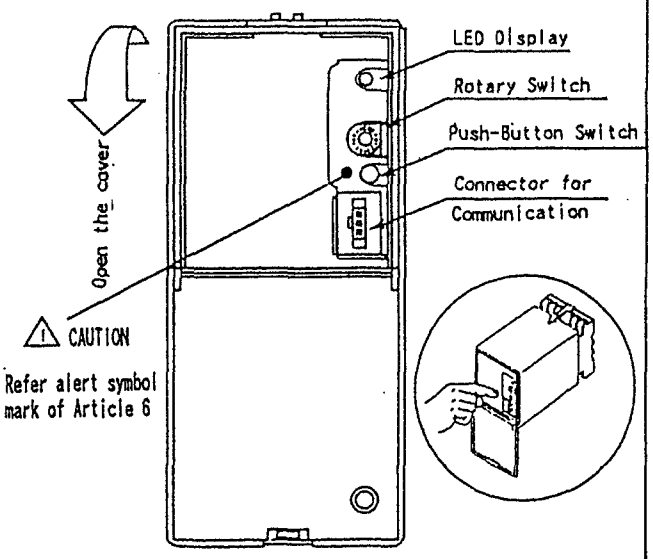
9. OUTPUT POLARITY CHANGE
Output polarity can be changed through Handy Terminal even after delivery which will be carried out through Handy Terminal D35: OUT POLARITY

Table 1 Handy Terminal display and output polarity

Handy Terminal Display	Output 0%	Output 100%
LEAD (-)	LEAD side	LAG side
LAG (-)	LAG side	LEAD side

10. INPUT POLARITY
When input polarity is at LEAD side, it indicates with -symbol. No -symbol indicates input polarity is at LAG side.

FIG. 7 FRONT SWITCH



NOTE : Front cover may sometimes be detached by rough handling while it is opening. Re-install it when it is detached.

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

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

<Fine Adjustment by Push-Button Switch>
- About 0.005% change of output range per 1 pushing.
- Contuinous 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.

11. PARAMETER LIST

Symbol Display	Data Display
MODEL	MPF7
TAG NO	Alphanumeric 16 characters
SELF CHK	GOOD or ERROR

① F1 or ② HOME (A) — To Display Item

HOME MENU	
Symbol Display	Data Dispaly
A :DISPLAY1	
A01:INPUT	Numeric data (Effective 4 digits by decimal numeral)
A05:OUT	Numeric data (Effective 4 digits by decimal numeral) ※1
A17:STATUS	FF (Hexagonal 2 digits)
A18:REV NO	n.nnn (n: Rev No.)
A60:SELF CHK	*
B :DISPLAY2	
B01:INPUT	Numeric data (Effective 4 digits by decimal numeral) ※1
B05:OUT	Numeric data (Effective 4 digits by decimal numeral) ※1
B60:SELF CHK	*

① F2 or ② SET (B) — To Set Item

SET MENU	
Symbol Display	Data Dispaly
D :SET1	
D01:TAG NO1	Alphanumeric 8 characters (1st half 8 characters of Tag. No.)
D02:TAG NO2	Alphanumeric 8 characters (2nd half 8 characters of Tag. No.)
D03:COMMENT1	Alphanumeric 8 characters
D04:COMMENT2	Alphanumeric 8 characters
D35:OUT POLARITY	LEAD(−)/LAG(−)
D60:SELF CHK	*

① F3 or ② ADJ (C) — Adjust Item!

ADJUST MENU	
Symbol Display	Data Dispaly
P :ADJUST1	
P02:ZERO ADJ	Adjust by RST/INC/HINC/HDEC/DEC
P03:SPAN ADJ	Adjust by RST/INC/HINC/HDEC/DEC
P12:OUT 0%	Numeric Data (±10.00)
P13:OUT 100%	Numeric Data (±10.00)
P60:SELF CHK	*
Q :TEST	
Q02:OUT TEST	□□□.□%
Q60:SELF CHK	*

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
※1 Automatic data renewal is made periodically

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