Instruction Manual

Model MFQ7 Frequency 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 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 Frequency Transducer receives signal from power line and converts it into 4~20mA DC or 1~5V DC signal proportional to frequency.
Accessories :
Spacer (for DIN rail mounting use) 1
Tag Number Label 2

3. MOUNTING METHOD

JUXTA M-series Frequency 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 signal cable to 3(P1), 4(P2) of the instrument.
② Connect output cable to 1(+), 2(-).
③ When DC drive, connect power cable to 7(+), 8(-). When AC drive, connect power cable to 6(GND), 7 (L), 8(N).

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

FIG. 1 WALL MOUNTING

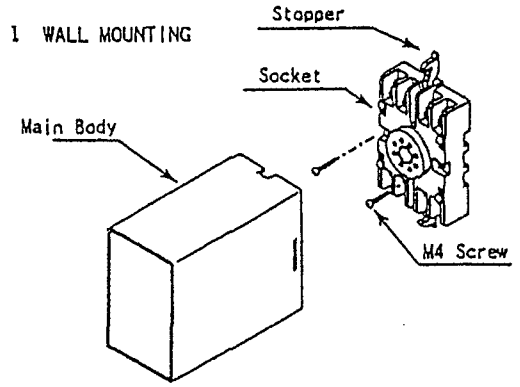


FIG. 2 MOUNTING DIMENSION

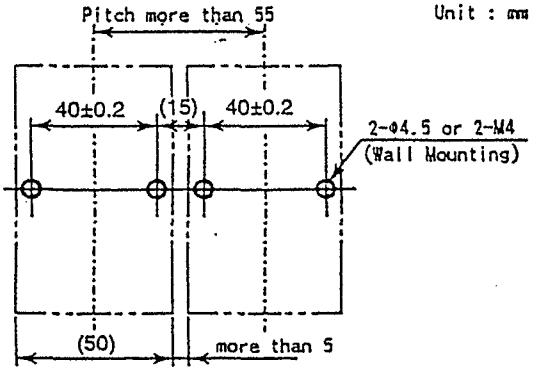
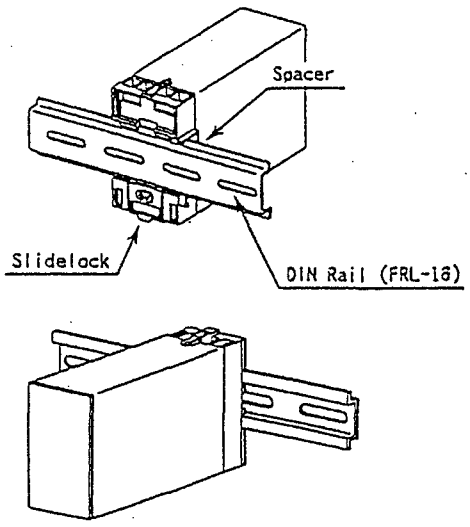


FIG. 3 DIN RAIL MOUNTING

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 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 wirings 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.

7. ADJUSTMENT

Output value can be adjusted in 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).
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) 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.
NOTE : When voltage level of input signal becomes below 5% of rated input voltage, output signal overscales to (-) side.

7.1 Adjustment through Handy Terminal

Adjustment and parameter setup can be done through Handy Terminal by referring Article 10 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.

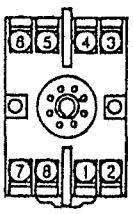
① When lower value indicated for Output 0%
Set rotary switch position at "1" and push push-button switch to increase output value.

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.

FIG. 4 TERMINAL ARRANGEMENT



1	OUTPUT	(+)
2	OUTPUT	(−)
3	INPUT	(P1)
4	INPUT	(P2)
5		
6	GND	(G)
7	SUPPLY	(L+)
8	SUPPLY	(N−)

FIG. 5 WIRING DIAGRAM

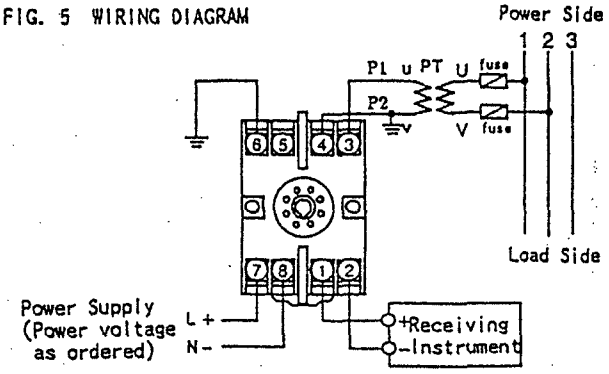
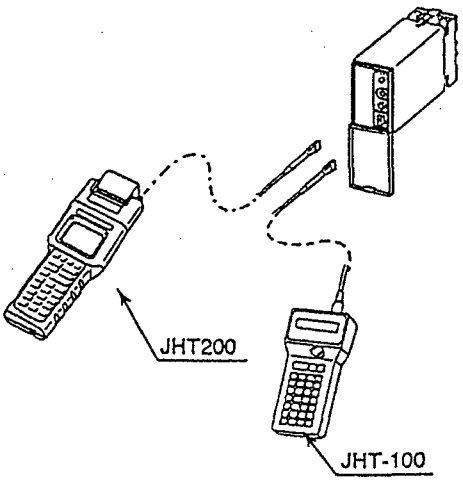


FIG. 6 CONNECTION TO HANDY TERMINAL



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 status 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 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 voltage level descent makes slow on and off since frequency cannot be calculated.
Light on and off continues until it recovers to normal statue.

9. INPUT RANGE CHANGE

Input range can be changed through Handy Terminal by the following steps when input range is specified as 3(45~65Hz).

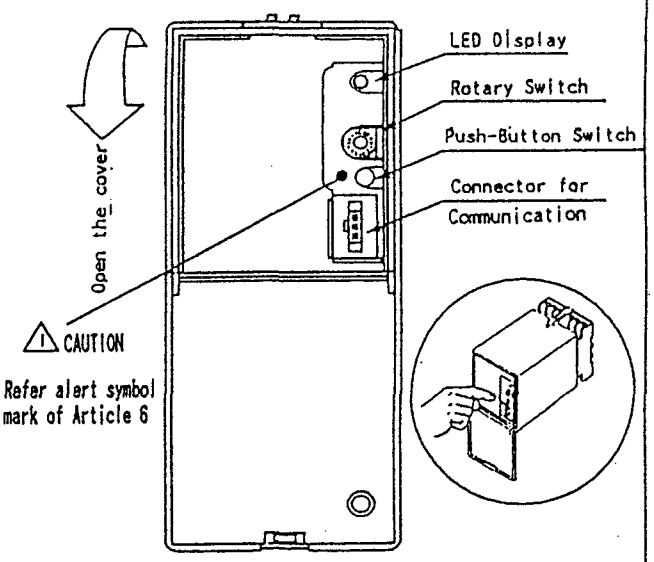
9.1 Input range setup

Setup input range 0% value at Setup Item D22 : INPUT L__RNG.
Setup input range 100% value at Setup Item D23 : INPUT H__RNG.

9.2 Setup range

Freely changeable in range of 45~65Hz. However, use span at more than 10Hz.

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.

10. PARAMETER LIST

Symbol Display	Data Dispaly
MODEL	MFQ7
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) Hz
A05:OUT	Numeric Data (Effective 4 digits by decimal numeral) I
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) Hz ※1
B05:OUT	Numeric Data (Effective 4 digits by decimal numeral) I ※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
D22:INPUT L_RNG	Numeric Data (Effective 4 digits by decimal numeral)
D23:INPUT H_RNG	Numeric Data (Effective 4 digits by decimal numeral)
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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