

## 1. PRECAUTION

Please read through this Manual before use of the transmitter for correct handling. Please keep this Manual carefully after use. This transmitter 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 the front face of the transmitter are as ordered.
- ② Contents of the instruction manual  
This instruction manual provides instructions on handling, external wiring and safety use of the transmitter.

## 2. GENERAL

This compact plug-in type selsyn transmitter receives angle signal from selsyn generator and converts it into isolated DC current or DC voltage signal.

Accessories :

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

## 3. MOUNTING METHOD

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

### 3.1 Wall Mounting

Unlock stoppers 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.2 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 transmitter and fix the rail with slidelock at the lower of the transmitter as shown in Fig.3. Use furnished spacer so as transmitters would be mounted with 5mm gap.

### 3.3 Install ducts, if necessary, aperting more than 20mm from top face of the transmitter.

## 4. EXTERNAL WIRING

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

See Fig 5 for wiring. Wires should be connected 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  $0.5\text{mm}^2$  and power cable having more than  $1.25\text{mm}^2$  of nominal cross-sectional area of conductor are recommended.

### 4.1 Wiring

- ① See Fig.4 for terminal arrangement.
- ② Connect selsyn generator S1, S2, S3 signal cable to input terminals 3(S1), 4(S2), 5(S3) respectively.
- ③ Connect output signal cable to 1(+), 2(-).
- ④ Connect power supply cable to 7(L), 8(N) and ground to 9 (GND).
- ⑤ Power cable of selsyn generator and power wiring of selsyn transmitter should be accorded (R1-L, R2-N). Reverse wiring makes slip out of  $180^\circ$  in conversion to selsyn generator axis.

FIG.1 WALL MOUNTING

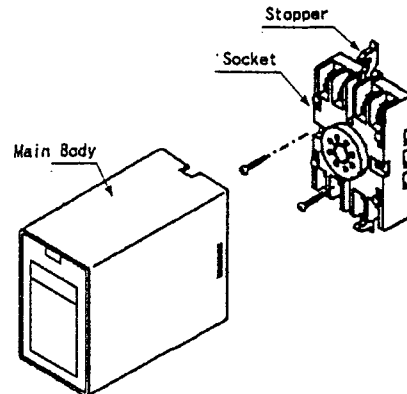


FIG.2 MOUNTING DIMENSION

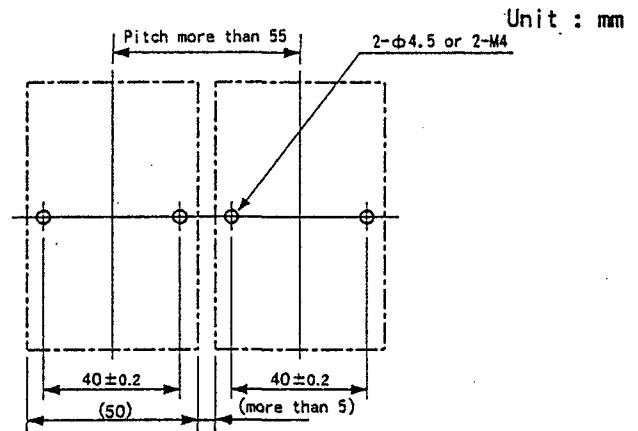
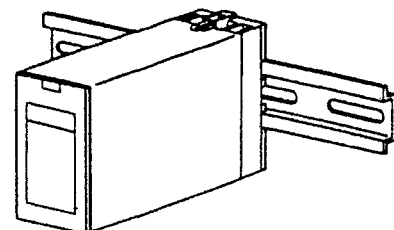
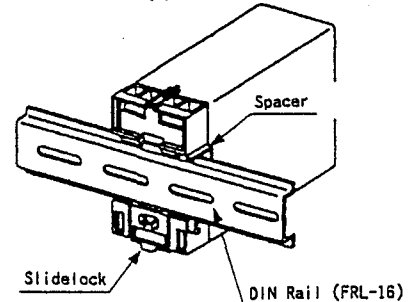


FIG.3 DIN RAIL MOUNTING

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



**NOTE :**

- Wirlings of power and signal cables should be connected cirrcetly.
- Apart wiring of power cable and input/output cable from noise source. Otherwise, accuracy may not be warranted.

**5. INSTSLATION 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 transmitter from inducement of thunder surges in power and signal cables, use arrester between the transmitter and equipment installed in the field.

**6. SAFETY USE**

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

**CAUTION**

- When install the main body, lock the stoppers (upper and lower) to fix the main body to socket after inserting it into socket.
- Following items should be checked before power on. Use of the transmitter ignoring the specifications may cause overheating and burning.
  - (a) Voltage of power supply and input value be applied to the transmitter should meet with required specifications.
  - (b) External wiring to terminals should be connected correctly (See Article 4).

**WARNING**

● Do not use the unit in such dangerous places where exist inflammable and explosive gas or steam.

- ⚠ For instrument type having 85~132V AC or 170~264V AC power supply, these voltages are contained in main body. To prevent electric shock, do not touch by hand or by driver the internal parts while opening the front cover for connection to Handy Terminal, etc. (See Fig.6)

**7. ADJUSTMENT**

Carry out the adjustment after warmup the transmitter for more than 10~15 minutes in wiring status as shown in Fig.5. Adjustment would be done using Handy Terminal. (adjustment in the filed is possible). Connection to Handy Terminal is as shown in Fig.7.

If input range adjustment is required in the field, it is recommendable to carry out adjustment in accordance with one push adjustment method mentioned in Article 8.2.

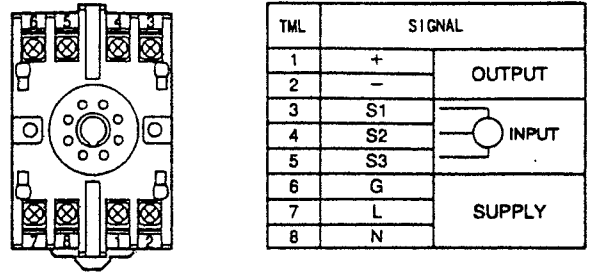
As for output adjustment, it should be checked through receiver connected to the transmitter (See Fig.5). However, in case receiver locates too far to read measured value, connect voltmeter (Yokogawa Type 7551 or equivalent) in place of receiver.

If output range is current output, convert it into voltage by connecting resistor ( $250\Omega \pm 0.01\%$  1W) to output side of transmitter and measure its value through voltmeter. To prevent electric shock, make power off at time when connecting voltmeter or resistor.

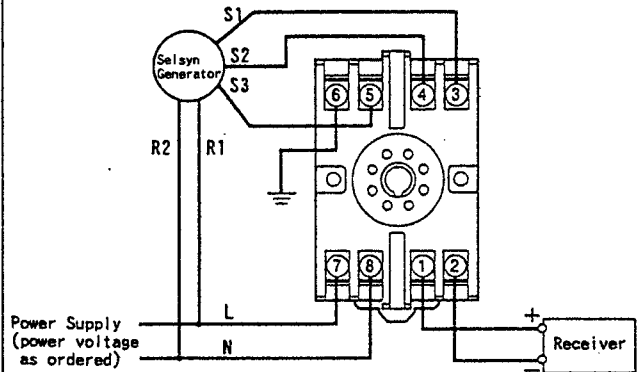
Use linearization function (See Article 9) for correction of middle point other than output 0% and 100%. (See Fig.9)

As for adjustment and parameter setting through Handy Terminal, refer Article 10 Parameter List and Handy Terminal Instruction Manuals. (JHT200:1M JF81-02E, JHT-100:1M JF81-01E)

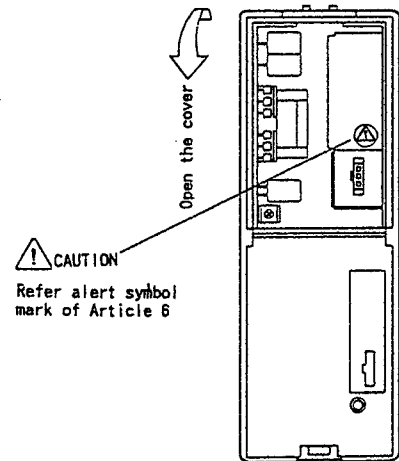
**FIG. 4 TERMINAL ARRANGEMENT & TERMINAL CONNECTION**



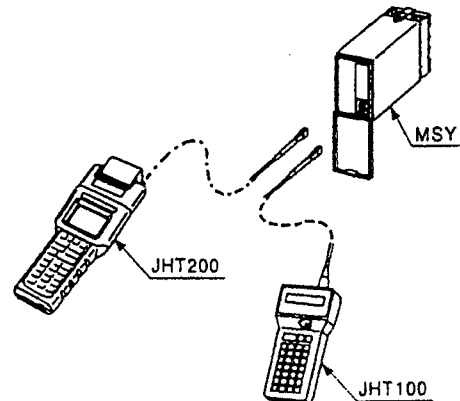
**FIG. 5 WIRING DIAGRAM**



**FIG. 6 CAUTION FOR OPENING FRONT COVER**



**FIG. 7 CONNECTION TO HANDY TERMINAL**



### 8. ADJUSTMENT AND CHANGE OF INPUT RANGE

Adjustment and change of input range can be done through Handy Terminal even after delivery. (its operation would be explained taking out JHT200 as example)

- After setting turning direction, carry out adjustment and change of input range by referring Articles 8.2 or 8.3.

#### 8.1 Setting of turning direction

- ① Select [D35:TURNING] in parameter screen and press <ENTER>.
- ② Select turning direction of CCW (counter clock wise) or CW (clock wise).
- ③ After selection, data flushes for confirmation. After confirmation, press <ENTER>. Turning direction is set.

#### 8.2 One push adjustment of input range

Setting of automatic adjustment through 0% point, 100% point of selsyn generator

##### (1) One push adjustment of input 0%

- ① Connect selsyn generator and set it at 0% position.
- ② Select [P10:ADJ L RNG] in parameter screen and press twice <ENTER>. Present input angle is adjusted to set at 0%.

##### (2) One push adjustment of input 100%

- ① Set selsyn generator at 100% position.
- ② Select [P11:ADJ H RNG] in parameter screen and press twice <ENTER>. Present input angle is adjusted to set at 100%.

\* As for display data of P10 and P11, angle at time when pressing <ENTER> will be displayed on P10, P11 respectively at the same value.

Input range after adjustment reflects to [D22:INPUT ZERO] [D23:INPUT SPAN] respectively.

#### 8.3 In case angle input of selsyn is known in advance

##### (1) Input range 0 setting

- ① Select [D22:INPUT ZERO] in parameter screen and press <ENTER>. When the screen becomes Set Screen, set zero angle of input range and press <ENTER>.
- ② After input, data flushes for confirmation. Press <ENTER> after confirmation and 0 setting is made.

##### (2) Input range span setting

- ① Select [D23:INPUT SPAN] in parameter screen and press <ENTER>. When the screen becomes Set Screen, set span angle of input range and press <ENTER>.
- ② After input, data is flushes for confirmation. Press <ENTER> after confirmation and span setting is made.

### 9. Linearization

Provide optional relation between input signal (X) and output signal (Y) by optional segmental line. There are 32 segmental points and provide input/output relation by %.

Linearization is only effective when selecting ENABLE in linearization function (D10).

Set segmental point number at segmental point number (M33).

Set X axis (input) at linearization table X(M01~M32).

Set Y axis (output) at linearization table Y(N01~N32).

At time when linearized table function is effective, linearization table is effective from M01 to segmental point number.

X axis segmental point M01 corresponds to Y axis N01 and thereafter it forwards in order.

Linearization table (M01~M32; N01~N32) can be changed through Handy Terminal.

Segmental point setting conditions

$$-6.0\% \leq (M01 \sim M32) \leq 106\%$$

$$M01 < M02 < M03 < \dots < M30 < M31 < M32$$

In case of input  $\leq M01$ , output would be interpolated by extension line of N02~N01

In case of input  $\geq M32$ , output would be interpolated by extension line of N31~N32

When shipment, linearization function(D10) is set at DISENABLE and input=output.

Table 1 shows initial value of linearization table.

Table 1 Linearization Table Initial Value

M : Linearization Table X	Value (X)	N : Linearization Table Y	Value (Y)
M01	-6.00	N01	-6.00
M02	-4.00	N02	-4.00
M03	-3.00	N03	-3.00
M04	-2.00	N04	-2.00
M05	-1.00	N05	-1.00
M06	0.00	N06	0.00
M07	5.00	N07	5.00
M08	10.00	N08	10.00
M09	15.00	N09	15.00
M10	20.00	N10	20.00
M11	25.00	N11	25.00
M12	30.00	N12	30.00
M13	35.00	N13	35.00
M14	40.00	N14	40.00
M15	45.00	N15	45.00
M16	50.00	N16	50.00
M17	55.00	N17	55.00
M18	60.00	N18	60.00
M19	65.00	N19	65.00
M20	70.00	N20	70.00
M21	75.00	N21	75.00
M22	80.00	N22	80.00
M23	85.00	N23	85.00
M24	90.00	N24	90.00
M25	95.00	N25	95.00
M26	100.0	N26	100.0
M27	101.0	N27	101.0
M28	102.0	N28	102.0
M29	103.0	N29	103.0
M30	104.0	N30	104.0
M31	105.0	N31	105.0
M32	106.0	N32	106.0

# 10. PARAMETER LIST

SYMBOL DISPLAY		DATA DISPLAY	
MODEL		MSY	
TAG NO		Alphanumeric 16 characters	
SELF CHK		GOOD or ERROR	

SYMBOL DISPLAY		DATA DISPLAY	
A : DISPLAY1			
A01 : INPUT		□□□.□deg	
A05 : OUT		□□□.□%	
A17 : STATUS		FF (Hexadecimal 2 digits)	
A18 : REV NO		n.nnn (n:Rev No.)	
A20 : MENU REV		n.nnn (n:Rev No.)	
A60 : SELF CHK		GOOD or ERROR	
B : DISPLAY2			
B01 : INPUT	※1	□□□.□deg	
B05 : OUT	※1	□□□.□%	
B60 : SELF CHK		GOOD or ERROR	

SYMBOL DISPLAY		DATA DISPLAY	
D : SET1			
D01 : TAG NO1		Alphanumeric 8 characters (Second half 8 characters of Tag No.)	
D02 : TAG NO2		Alphanumeric 8 characters (First half 8 characters of Tag No.)	
D03 : COMMENT1		Alphanumeric 8 characters	
D04 : COMMENT2		Alphanumeric 8 characters	
D10 : LINEARIZE		Select DISENABLE/ENABLE	
D22 : INPUT ZERO		Numeric Data (Effective 4 digits in decimal numeral)	
D23 : INPUT SPAN		Numeric Data (Effective 4 digits in decimal numeral)	
D35 : TURNING	※2	Select CCW/CW	
D60 : SELF CHK		GOOD or ERROR	
M : XTBL			
M01~32 : XTBL	※3	□□□.□%	
M33 : MAX POINT		Numeric Data (0~32 in decimal numeral)	
M60 : SELF CHK		GOOD or ERROR	
N : YTBL			
N01~32 : YTBL	※3	□□□.□%	
N60 : SELF CHK		GOOD OR ERROR	

SYMBOL DISPLAY		DATA DISPLAY	
P : ADJUST1			
P10 : ADJ L_RNG		□□□.□deg	※4
P11 : ADJ H_RNG		□□□.□deg	※4
P12 : OUT 0%		Numeric Data (±10.00)	
P13 : OUT 100%		Numeric Data (±10.00)	
P60 : SELF CHK		GOOD or ERROR	
Q : TEST			
Q02 : OUT TEST		□□□.□%	
Q60 : SELF CHK		GOOD or ERROR	

- ① Key operation when use of JHT200
- ② Key operation when use of JHT-100

- ※1 Automatic renewal of data is made periodically
- ※2 Indicates turning direction of selsyn generator  
CCW: Counter Clock-Wise/CW: Clock Wise
- ※3 Data setting is effective when ENABLE selection is done in linearization function
- ※4 Angle at that position is shown in data display.

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