

**FREQUENCY TRANSMITTER**  
(field-selectable freq. range)

MODEL

**6BPA****BEFORE USE ....**

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.

If you have any problems or questions with the product, please contact our sales office or representatives.

**■ PACKAGE INCLUDES:**

Transmitter module .....	(1)
Outdoor enclosure .....	(1)
Mounting screws	
Bolt (M8 × 15).....	(4)
Spring washer for M8 .....	(4)
Mounting bracket assembly (optional)	
Mounting bracket.....	(1)
M10 U-bolt.....	(2)
Nut for M10.....	(4)
Spring washer for M10 .....	(4)

**■ MODEL NO.**

Confirm Model No. marking on the product to be exactly what you ordered.

**■ INSTRUCTION MANUAL**

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

**POINTS OF CAUTION****■ GENERAL PRECAUTIONS**

- Before you remove the unit or mount it, turn off the power supply and input signal for safety.

**■ ENVIRONMENT**

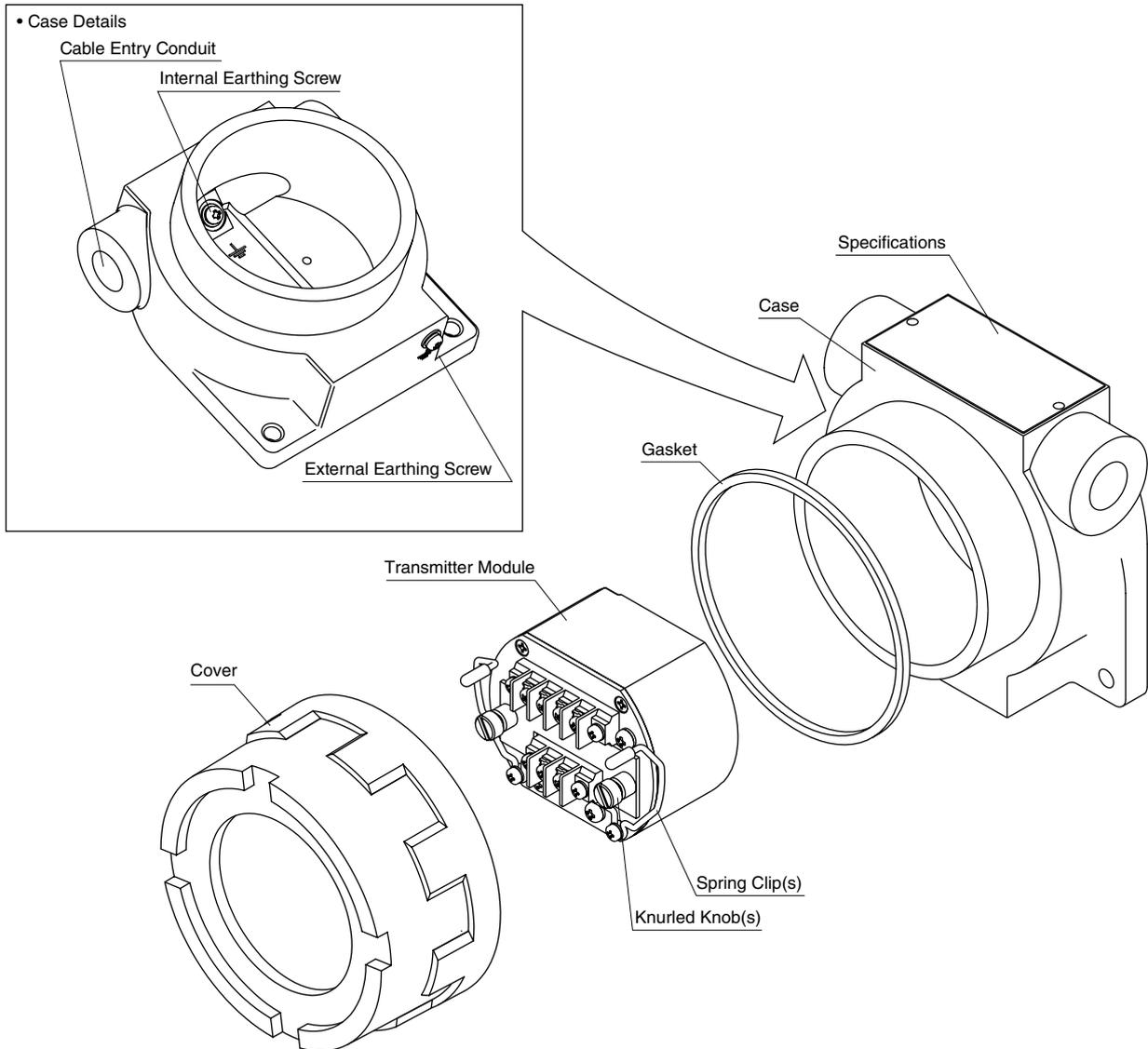
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +70°C (23 to 158°F) in order to ensure adequate life span and operation.

**■ WIRING**

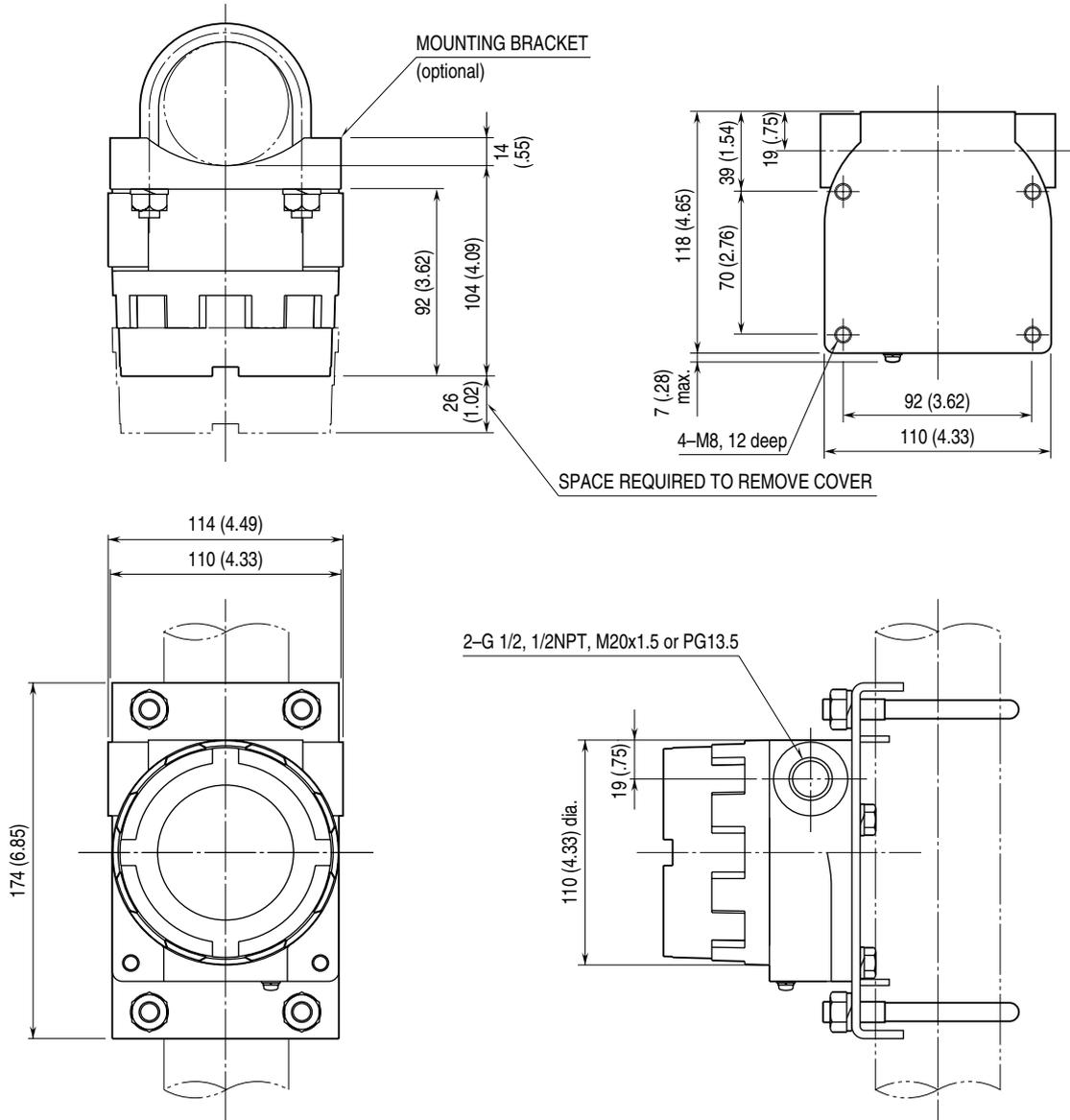
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

**■ AND ....**

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

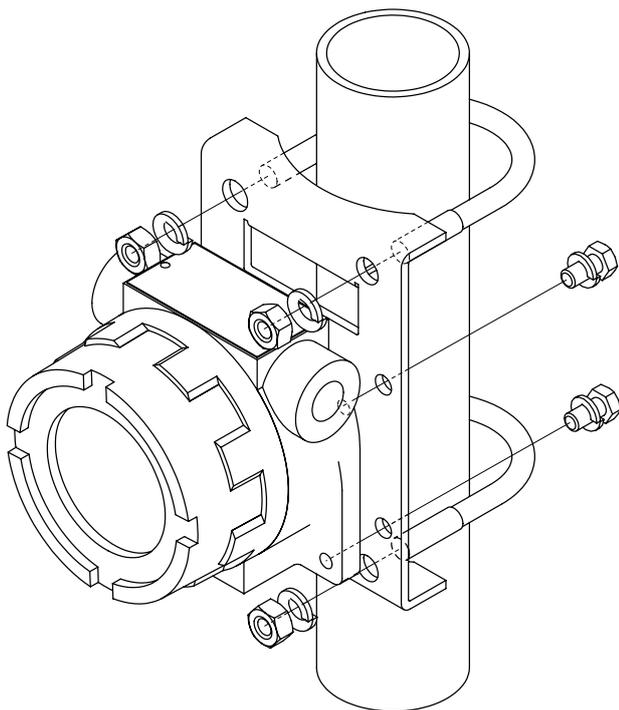
**COMPONENT IDENTIFICATION**

**EXTERNAL DIMENSIONS unit: mm (inch)**

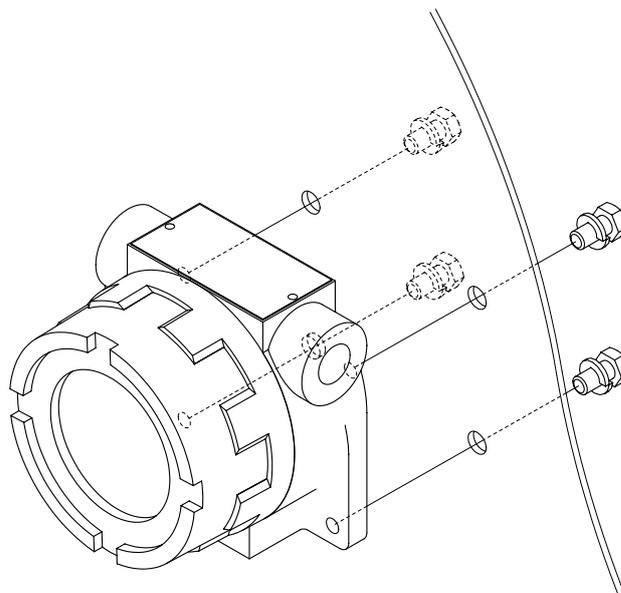


## INSTALLATION

### ■ MOUNTING THE ENCLOSURE ON A PIPE

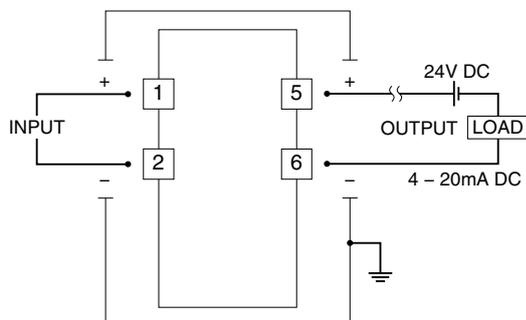


### ■ MOUNTING THE ENCLOSURE ON A WALL



## TERMINAL CONNECTIONS

Connect the unit as in the diagram below.



## WIRING INSTRUCTIONS

### ■ SCREW TERMINAL

Torque: 0.6 N·m

## CHECKING

Open the unit's outdoor enclosure cover when you conduct checking of the transmitter. Be sure to close the cover after the checking is complete.

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Input: Check that the input signal is within 0 – 100% of the full-scale.
- 3) Output: Check that the load is within the permissible limit including wiring resistance.

$$\text{Load Resistance } (\Omega) = \frac{\text{Supply Voltage (V)} - 13 \text{ (V)}}{0.02 \text{ (A)}}$$

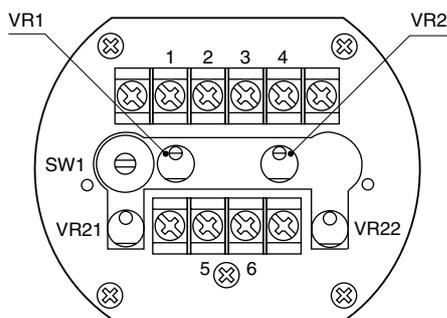
(including leadwire resistance)

## ADJUSTMENT PROCEDURE

This unit is calibrated at the factory to meet the ordered specifications, therefore you usually do not need any calibration.

For matching the signal to a receiving instrument or in case of regular calibration, adjust the output as explained below. Zero and Span adjustments are located behind the top cover of the unit. Open the enclosure cover, release the knurled knobs at the front of the unit and open the top cover.

After the calibration is complete, be sure to close both covers.



- SW1 : Frequency Selector
- VR1 : Zero Adjustment
- VR2 : Span Adjustment (fine)
- VR21 : Bias Adjustment
- VR22 : Span Adjustment (coarse)

### INPUT FREQUENCY RANGE SETTING

Use SW1 for the frequency range setting.

SW1	FREQUENCY RANGE (Hz)*			
	36 ≤ < 100	100 ≤ < 240	240 ≤ < 480	480 ≤ < 1000
1	34 – 38	85 – 95	170 – 190	340 – 380
2	38 – 43	95 – 105	190 – 220	380 – 430
3	43 – 48	105 – 120	220 – 240	430 – 480
4	48 – 54	120 – 135	240 – 270	480 – 540
5	54 – 60	135 – 150	270 – 300	540 – 600
6	60 – 66	150 – 165	300 – 330	600 – 660
7	66 – 74	165 – 185	330 – 370	660 – 740
8	74 – 82	185 – 205	370 – 410	740 – 820
9	82 – 92	205 – 230	410 – 460	820 – 920
10	92 – 102	230 – 255	460 – 510	920 – 1020
11	102 – 114	255 – 285	510 – 570	1020 – 1140
12	114 – 130	285 – 325	570 – 650	1140 – 1300

SW1	FREQUENCY RANGE (kHz)*		
	1 ≤ < 2.4	2.4 ≤ < 4.8	4.8 ≤ < 12
1	0.85 – 0.95	1.7 – 1.9	3.4 – 3.8
2	0.95 – 1.05	1.9 – 2.2	3.8 – 4.4
3	1.05 – 1.20	2.2 – 2.4	4.4 – 4.8
4	1.20 – 1.35	2.4 – 2.7	4.8 – 5.4
5	1.35 – 1.50	2.7 – 3.0	5.4 – 6.0
6	1.50 – 1.65	3.0 – 3.3	6.0 – 6.6
7	1.65 – 1.85	3.3 – 3.7	6.6 – 7.4
8	1.85 – 2.05	3.7 – 4.1	7.4 – 8.2
9	2.05 – 2.30	4.1 – 4.6	8.2 – 9.2
10	2.30 – 2.55	4.6 – 5.1	9.2 – 10.2
11	2.55 – 2.85	5.1 – 5.7	10.2 – 11.4
12	2.85 – 3.25	5.7 – 6.5	11.4 – 13.0

\* The frequency range can only be changed within the adjustment range of the frequency variable range covering the input range that you specified.

Example: If you specified the input range of 0 – 150 Hz  
The range can be changed within 85 – 325 Hz.

### OUTPUT ZERO & SPAN ADJUSTMENT

- 1) Turn the bias adjustment (VR21) fully counterclockwise.
- 2) ZERO: With 0% input frequency, adjust output to 0 ±0.05% with VR1.
- 3) SPAN: With 100% input frequency, adjust output to 100 ±0.05% with VR22 after turning VR2 fully counterclockwise and then 1.5 turns clockwise.
- 4) Check ZERO adjustment again with 0% input frequency.
- 5) When ZERO value is changed, repeat the above procedure 2) – 4).

## MAINTENANCE

Regular calibration procedure is explained below:

### CALIBRATION

Warm up the unit for at least 10 minutes. Apply 0%, 25%, 50%, 75% and 100% input signal. Check that the output signal for the respective input signal remains within accuracy described in the data sheet. When the output is out of tolerance, recalibrate the unit according to the "ADJUSTMENT PROCEDURE" explained earlier.

## LIGHTNING SURGE PROTECTION

We offer a series of lightning surge protectors for protection against induced lightning surges. Please contact us to choose appropriate models.