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| POTENTIOMETER TRANSMITTER | MODEL | 6BM |
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BEFORE USE

Thank you for choosing M-System. 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 M-System's 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.

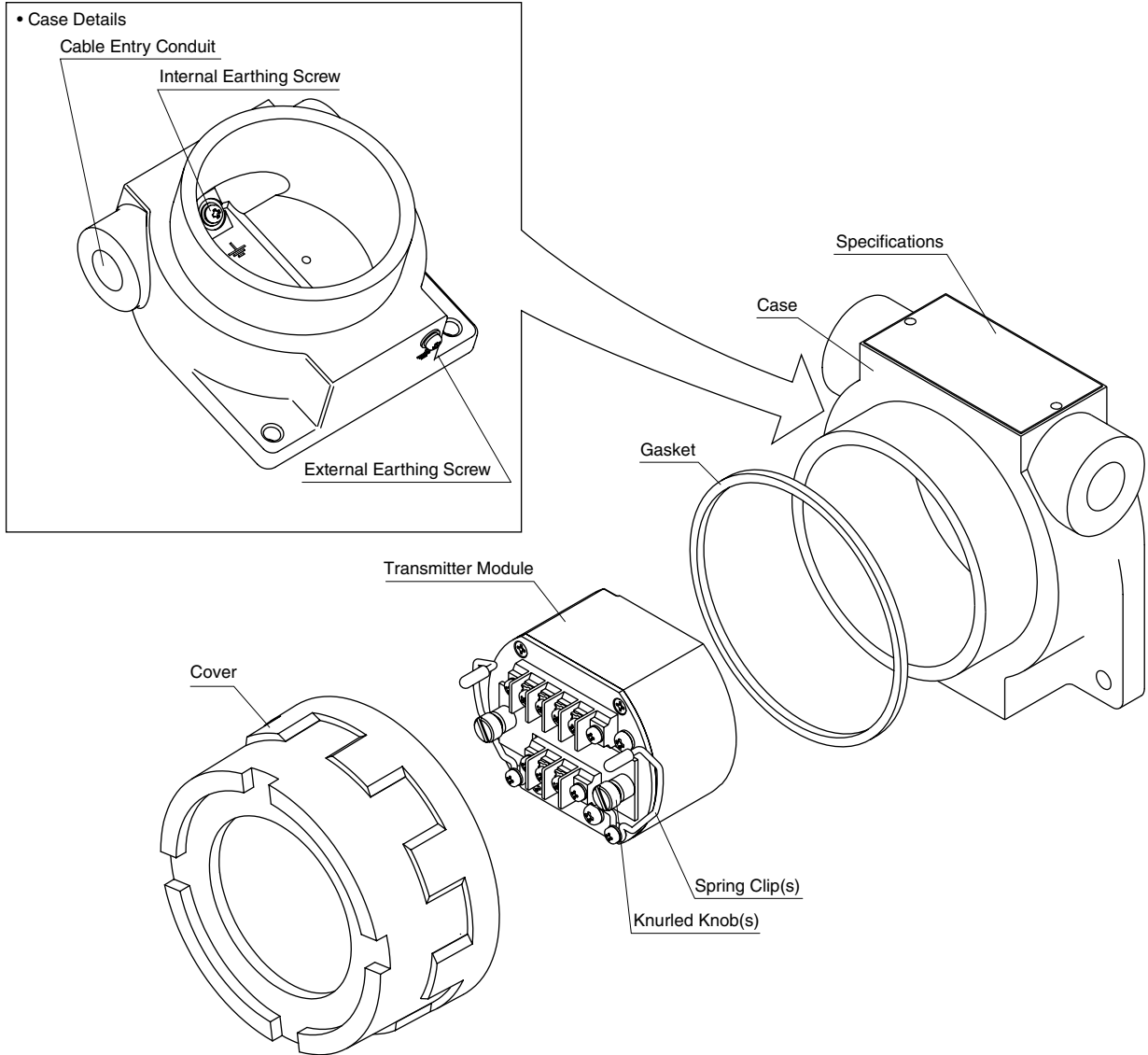
■ WIRING

- 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.

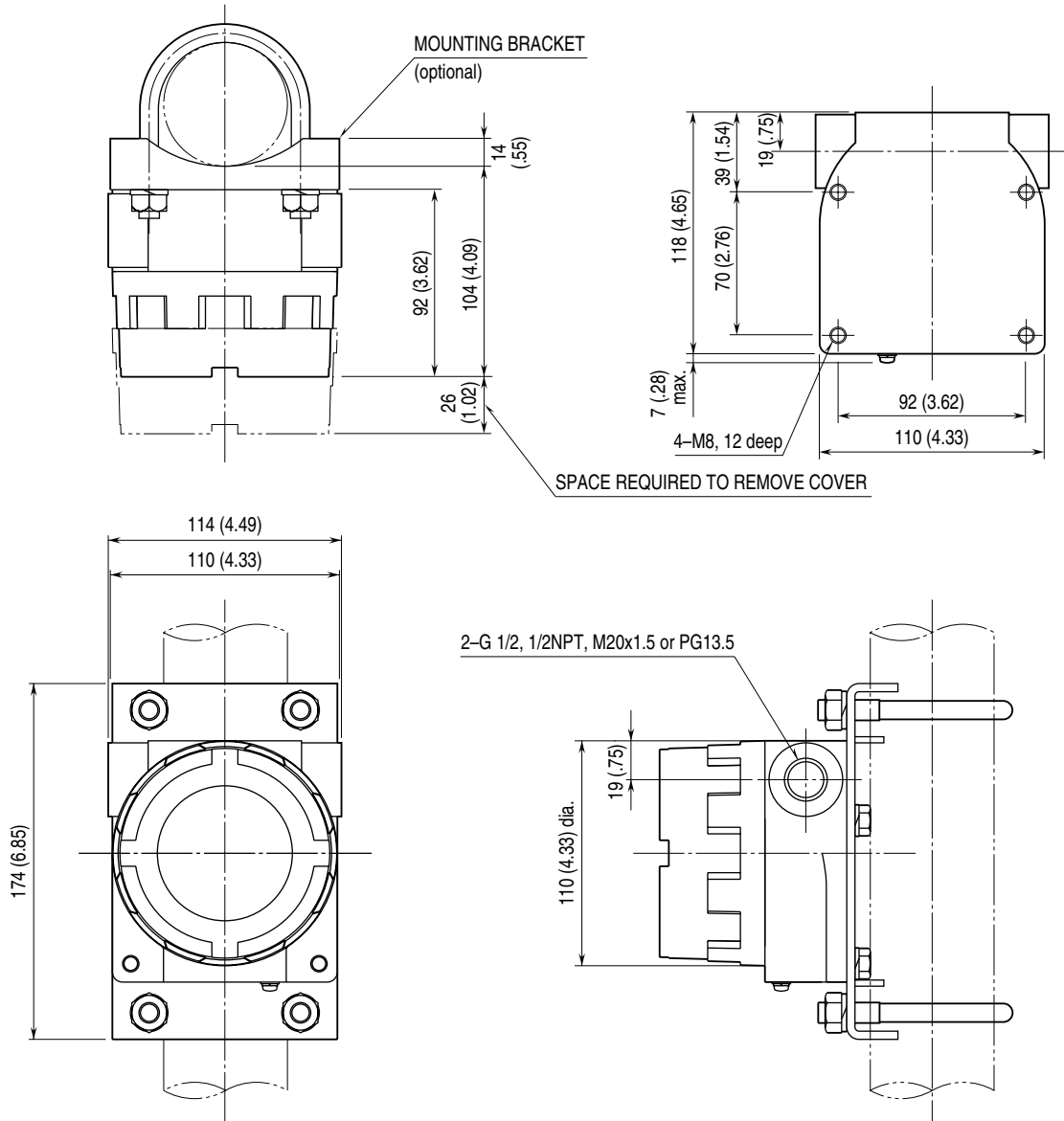
■ AND

- 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

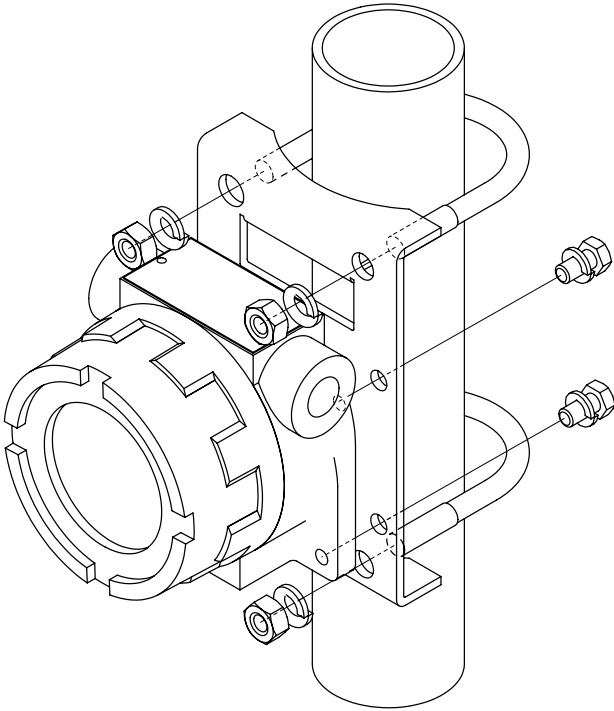


EXTERNAL DIMENSIONS unit: mm (inch)

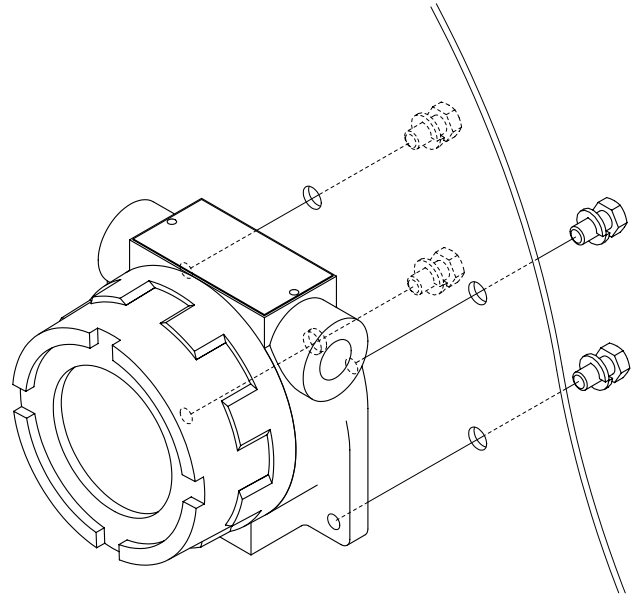


INSTALLATION

■ MOUNTING THE ENCLOSURE ON A PIPE

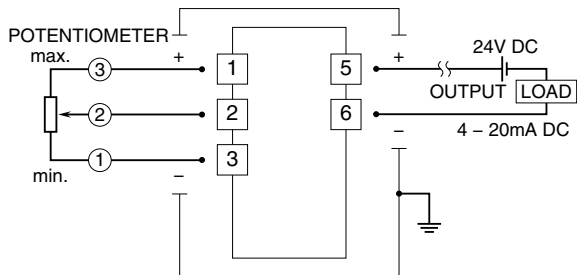


■ MOUNTING THE ENCLOSURE ON A WALL



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 voltage across the terminal 2 (+) – 3 (–) with a voltmeter to show 0V at 0% potentiometer input and the same voltage as that across 1 (+) – 3 (–) at 100% input.
- 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)

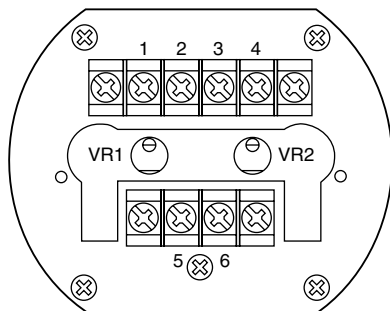
ADJUSTMENT PROCEDURE

This unit is calibrated at the factory with the total resistance input, therefore you do not need any calibration if you use the potentiometer's total resistance.

When you do not use the total resistance or in case of regular calibration, adjust the output as explained in the following.

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.



■ HOW TO CALIBRATE THE OUTPUT SIGNAL

Use a signal source and measuring instruments of sufficient accuracy level. Turn the power supply on and warm up for more than 10 minutes.

- 1) ZERO: Apply 0% input and adjust output to 0% with the VR1.
- 2) SPAN: Apply 100% input and adjust output to 100% with the VR2.
- 3) Check ZERO adjustment again with 0% input.
- 4) When ZERO value is changed, repeat the above procedure 1) – 3).

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

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.