

MTM4832E

Operation Manual

V1.0



MICROSENSOR



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Micro Sensor reserves the right to modify this operation manual due to product technology and process updates. Any modifications will be made without prior notice.

Refer to the latest version of this manual.

Micro Sensor also reserves the final interpretation right of this manual.

Version: V1.0

Thanks for using products from MICROSENSOR. To make the most of this product, it is recommended that you carefully read this manual before using it.

1 Introduction

MTM4832E Temperature Transmitter measures temperatures of various liquids, gases, and solid surfaces within a range of -30°C to $+200^{\circ}\text{C}$, converting the the measured temperature into a standard two-wire current signal (4mA to 20mA DC). Featuring a compact design and multiple electrical connection options, the transmitter meets various installation and application requirements. It is used for temperature measurement in refrigeration systems, pumps and compressors, machinery, hydraulics and pneumatics, measurement and control systems, as well as marine and shipbuilding.

2 Safety Instructions

Please read this manual carefully and follow all instructions to prevent personal injury or property damage.

Intended Use

The device is designed to measure the temperature of liquids, gases, or solid surfaces and convert it into a standard 4mA to 20mA current signal.

Operational safety of the supplied equipment is guaranteed only when

used as intended. The specified limits (indicated on the product nameplate and in the technical specifications) must not be exceeded under any circumstances.

Qualified Personnel

Personnel responsible for installation, operation, and maintenance shall be properly qualified through training or supervision.

General Safety Instructions

Operate the device only when fully functional. Inspect and replace any damaged or defective equipment immediately.

The device is strictly prohibited from use in hazardous areas!

Do not remove or obscure the nameplate or other identification markings, as this voids the warranty and releases the manufacturer from liability.

3 Technical Specifications

Sensing element: Pt100 / Pt1000

Measuring range: $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

Power supply: $10\text{V} \sim 35\text{V DC}$

Output signal: $4\text{mA} \sim 20\text{mA DC}$

Ambient temperature: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

Accuracy: $\pm 1\% \text{FS}$ or $\pm 1^{\circ}\text{C}$ (max.)

$\pm 0.5\% \text{FS}$ or $\pm 0.5^{\circ}\text{C}$ (max.)

Electrical connection: Hirschmann connector

Packard plug

M12×1, 4-pin connector

Process connection: Fixed thread (refer to Table 2 for thread specs)

IP rating: IP65

4 Outline Construction and Installation

4.1 Overall Dimensions

The transmitter is available in two configurations: standard type and extended type, as shown in the figures below:

Unit: mm

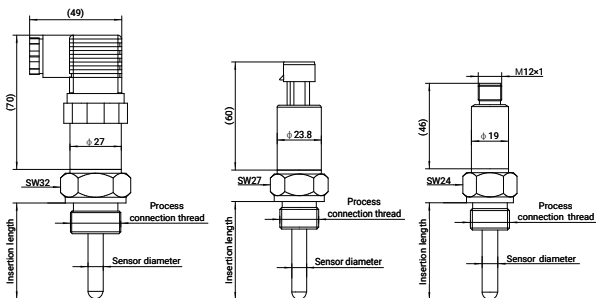


Figure 1 Standard Type

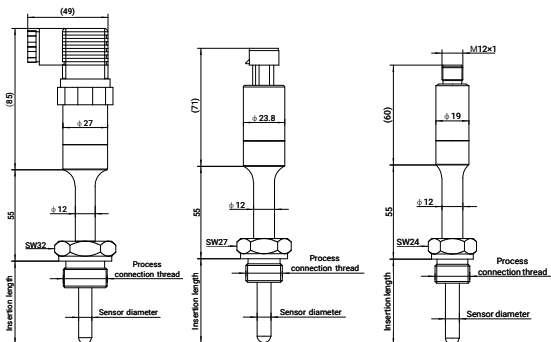


Figure 2 Extended Type

The diameters of the sensor and extension neck, as well as the mounting thread specifications, are listed in the tables below:

Table 1

Sensor diameter	Extension diameter
$\varphi 6$	$\varphi 12$
$\varphi 8$	$\varphi 12$

Table 2

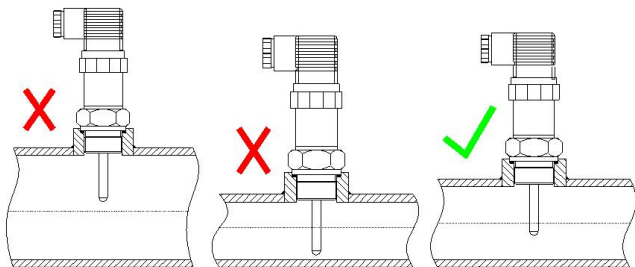
Thread spec.	Thread length	Standard
G1/4	12	ISO 1179-2-2022
G1/2	14	
G3/8	12	

NPT1/4	10	ASME B1.20.1
NPT1/2	14	
M12×1.5	12	ISO 9974-2-2000
M20×1.5	14	

4.2 Installation Requirements

To ensure measuring accuracy, the transmitter must be installed with the sensing point positioned at the center of the pipeline. When using insulation materials, ensure that the insertion tube is sufficiently long.

The installation diagram is shown in Figure 3:



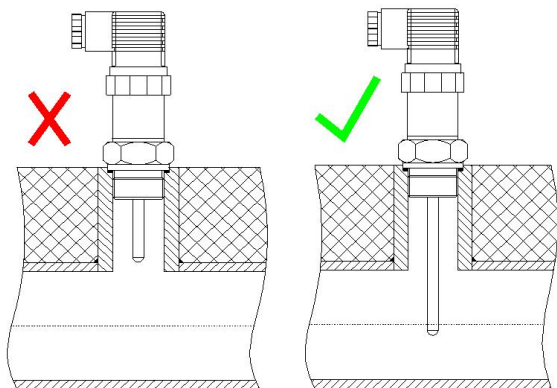
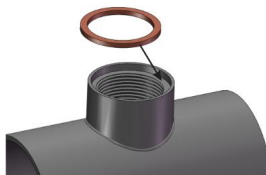


Figure 3 Standard Installation

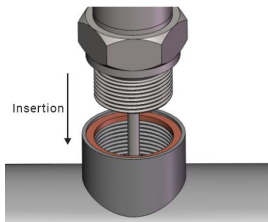
4.3 Installation Methods

- a) Place the sealing gasket onto the thread port

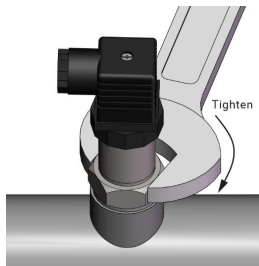
Copper gasket/PTFE sealing gasket



- b) Insert the temperature transmitter



c) Tighten and secure the temperature transmitter



5 Electrical Connection

Connection type		Pin assignment
Hirschmann connector		1: V+ 2: OUT 3: n.c. ⊕: Earth

Packard plug		1: V+ 2: OUT 3: Earth
M12×1, 4-pin connector		1: V+ 2: n.c. 3: OUT 4: n.c.

Note: Shielded cables are recommended, with the shield grounded at a single end.

Verify the power supply polarity before wiring.

6 Unpacking, Components and Storage

6.1 Unpacking

Attentions before unpacking:

- Check that the packaging is intact and undamaged. The package shall be handled and placed according to the “Up” marking.
- Avoid impact during unpacking to prevent damage to the transmitter or accessories.

6.2 Components

Upon leaving the factory, the components shall include:

MTM4832E Integrated Temperature Transmitter 1 unit

Operation Manual

1 copy

Certificate of Conformity

1 copy

6.3 Storage

The transmitter shall be stored indoors in a dry, well-ventilated environment at -40°C to $+85^{\circ}\text{C}$ with relative humidity below 85%, free from corrosive substances.

7 Operation, Maintenance and Fault Diagnosis

7.1 Operation

The transmitter can be put into operation without any adjustment. Before start-up, verify that the installation and electrical connections are correct.

The transmitter is ready for operation immediately upon power-up. The first measurement value can be read after 1.5 seconds, and the specified accuracy will be achieved after a warm-up period of approximately 4 minutes.

7.2 Maintenance

After completing the electrical connection, tighten the connector retaining nut and the cable gland nut securely to maintain the specified IP rating of the transmitter.

The transmitter is maintenance-free. Do not adjust or disassemble it on-site. If a fault occurs, verify the installation and electrical connections. If the fault persists, contact the service center of Micro Sensor.

7.3 Fault Diagnosis

The output complies with NAMUR NE 43 with self-diagnostics. The lower and upper alarm currents are $\leq 3.6\text{mA}$ and $\geq 21\text{mA}$ respectively (factory default). In case of a fault signal, disconnect the power supply, rectify the fault, and repower the device.

8 Warranty & After-Sales Service

8.1 Warranty Period

The standard warranty period is 12 months from the date of shipment. Any separate written agreements (e.g., extended warranty services) shall prevail. Within the warranty period, Micro Sensor will provide free repair or replacement services for product failures caused by defects in materials or workmanship, under normal conditions of use and maintenance.

8.2 Service Terms

- a) For repair or replacement services due to product defects within the warranty period, Micro Sensor will cover all material, labor, and return shipping costs (unless otherwise specified in the contract).
- b) The following conditions are excluded from the free warranty. Paid repair services are available, with all material, labor, packaging, and shipping costs borne by the user.

- 1) Failures caused by improper installation, operation, maintenance, or violation of the instructions in this manual.
- 2) Damage caused by unauthorized disassembly, modification, or repair.
- 3) Damage caused by external factors (e.g., power supply anomalies, environmental corrosion, or mechanical impact).

www.microsensorcorp.com



MICRO SENSOR CO.,LTD.

ADD: No. 30 Jiangtan West Road, Baoji 721008, Shaanxi, P.R. China

Tel: +86(29)8834 6384 Ext.801

Fax: +86(29)8834 6384 Ext.807

E-mail: service@microsensor.cn