



ATT1

SIGNAL TRANSMITTER FOR ALL SENSOR TYPES



Engineering manual

Cod.: ENG - Vr. 01 - 18/04 - ISTR-MATT1ENG01

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FOREWORD



This manual contains the information necessary for the installation of the product, we therefore recommend that the utmost attention is paid to the following instructions and to save it.

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Whenever a failure or a malfunction of the device may cause dangerous situations for persons, things or animals, please remember that the plant must be equipped with additional electromechanical devices which will guarantee safety.

Disposal



The appliance (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal.

INSTRUMENT DESCRIPTION

General description

ATT1 is a signal transmitter capable of accepting in input various types of sensors and retransmitting them with a programmable range.

The transmitter accepts input signals from:

- Pt100** Measuring range: -200... +800°C, type of connection: 2, 3, 4 wires, accuracy: 0.1% fs $\pm 10 \mu A$;
- Pt1000** Measuring range: -200... +800°C, type of connection: 2 wires, accuracy: 0.1% fs $\pm 10 \mu A$;
- Ni100** Measuring range: -50... +170°C, type of connection: 2, 3, 4 wires, accuracy: 0.5% fs $\pm 10 \mu A$;
- TC B** Measuring range: +200... +1820°C;
- TC E** Measuring range: -200... +940°C;
- TC J** Measuring range: -200... +1200°C;
- TC K** Measuring range: -200... +1340°C;
- TC N** Measuring range: -200... +1280°C;
- TC R** Measuring range: -40... +1760°C;
- TC S** Measuring range: -40... +1760°C;
- TC T** Measuring range: -200... +400°C;
- mV** Measuring range: -10... +70 mV, accuracy: 0.1% fs;

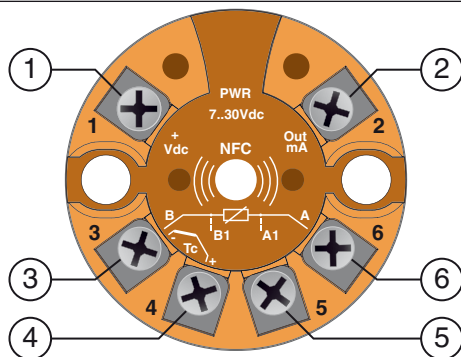
Potentiometer 10... 400 Ω type of connection: 2, 3, 4 wires; accuracy: 0.1% fs $\pm 10 \mu A$;

Potentiometer 10... 4000 Ω type of connection: 2 wires, accuracy: 0.1% fs $\pm 10 \mu A$.

ATT1 transmits, on the output, **4... 20 mA** current signals.

The **ATT1** can be programmed using an Android Smartphone equipped with the **NFC** functionalities (**Near Field Communications**) and the APP **ATNfc** (available, free of charge, on Google store) or using a **PC** with the **AFC1** transmitter and the **ATNfcConf** program (downloadable, free of charge, from our Internet site).

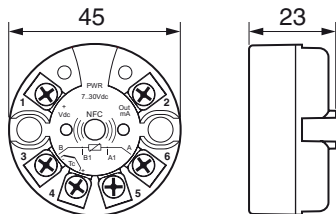
Instrument description



- 1, 2** Power/Output terminals (2 wires transmitter);
- 3, 4, 5, 6** Input terminals.

INSTALLATION INFORMATION

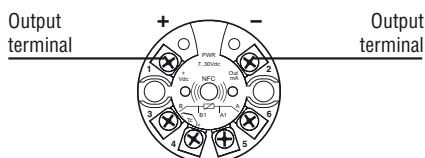
Dimensions



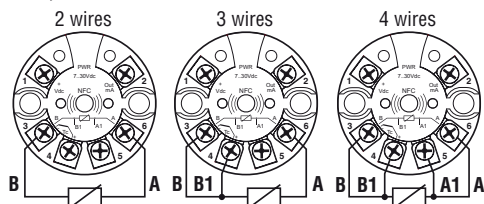
Electrical connections

Carry out the electrical wiring by connecting only one wire to each terminal and according to the following diagrams:

Output

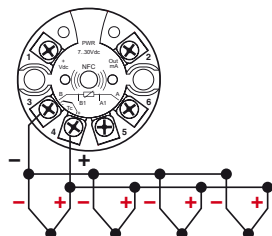
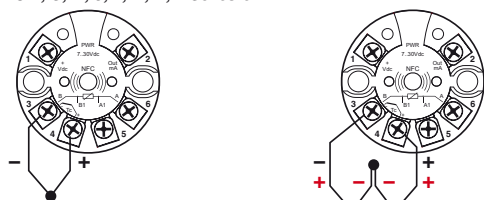


Pt100, Pt1000 and Ni100 Sensors



Note: The PT1000 sensors must be connected in 2 wires mode.

TC K, S, R, J, T, N, B, E Sensors

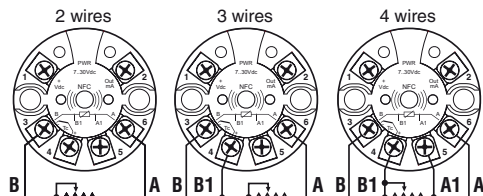


Differential measure between 2 TC of the same type

Note: Exclude the CJ compensation

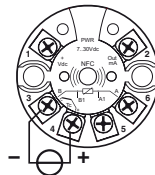
Average temperature measure between multiple TCs of the same type

10... 400 Ω and 10... 4000 Ω Potentiometer



Note: The 4000 Ω potentiometer must be connected in 2 wires mode.

Voltage input



TECHNICAL CHARACTERISTICS (@ 20°C)

General specifications

- RTD excitation current: < 200 μ A;
- RTD maximum wire resistance: 20 Ω per wire;
- TC input total accuracy: 0.2% fs \pm 10 μ A;
- Cold junction accuracy: \pm 0.5°C;
- Cold junction drift: 0.1°C/°C;
- Voltage operating range: 6... 32 Vdc;
- Current output: 4... 20 mA (2 wires);
- Output resolution: 2 μ A;
- Over-range output value: +5°C;
- Under-range output value: -5°C;
- Failure output value: Selectable between 21 mA, 3.8 mA or any other value;
- Current output protection: About 30 mA;
- Rejection: 50... 60 Hz;
- Accuracy: Better than 0.2% of full range;
- Temperature drift: < 100 ppm;
- Sampling time: 300 ms;
- Response time (10%input, 90% output):
 - With no filters: 200 ms,
 - With a medium filter: 1 s,
 - With a strong filter: 4 s;
- Protection: IP 20;
- Compliance: CE, EN 61326-1;
- Operating temperature: -40... +85°C;
- Humidity: 30... 90% @ 40°C (with no condensation);
- Storage temperature: -40... +105°C;
- Connections: Screw terminals;
- Enclosure: PA66;
- Dimensions: \varnothing 45 mm, thickness 23 mm.