



# ATT1

## SIGNAL TRANSMITTER FOR ALL SENSOR TYPES



### Engineering manual

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

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## 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  $\pm 10 \mu\text{A}$ ;
- Pt1000** Measuring range: -200... +800°C, type of connection: 2 wires, accuracy: 0.1% fs  $\pm 10 \mu\text{A}$ ;
- Ni100** Measuring range: -50... +170°C, type of connection: 2, 3, 4 wires, accuracy: 0.5% fs  $\pm 10 \mu\text{A}$ ;
- TC B** Measuring range: +40... +1820°C, accuracy max.: +400... +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;

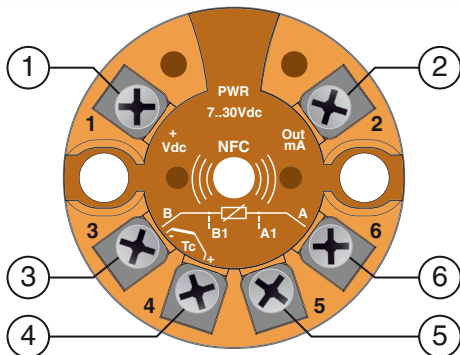
**Potentiometer 10... 400  $\Omega$**  type of connection: 2, 3, 4 wires; accuracy: 0.1% fs  $\pm 10 \mu\text{A}$ ;

**Potentiometer 10... 4000  $\Omega$**  type of connection: 2 wires, accuracy: 0.1% fs  $\pm 10 \mu\text{A}$ .

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

The **ATT1** can be programmed using the Smartphones 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 transmitter **AFC1** and **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.

## 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, thing or animals, please remember that the plant must be equipped with additional electromechanical devices which will guarantee safety.

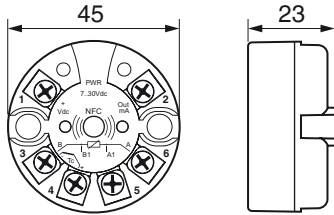
### Disposal



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

# INSTALLATION INFORMATION

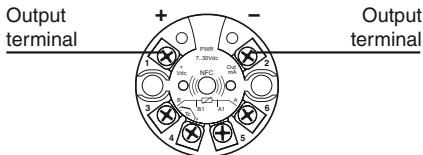
## Dimensions



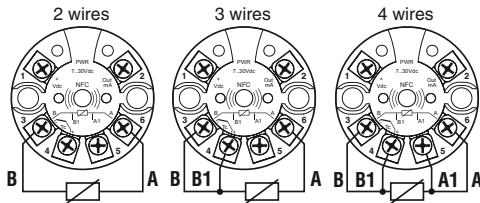
## Electrical connections

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

### Output

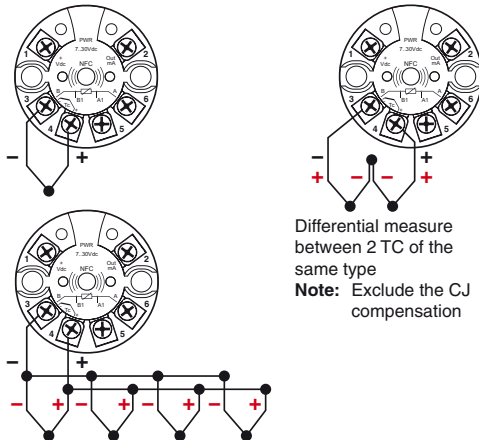


### Pt100, Pt1000 and Ni100 Sensors



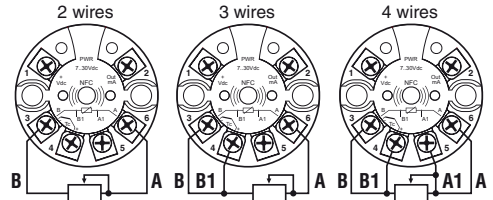
**Note:** The PT1000 sensors must be connected in 2 wires mode.

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



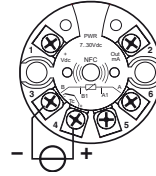
Average temperature measure between multiple TCs of the same type

## 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 μA;
- RTD maximum wire resistance:** 20 Ω per wire;
- TC input total accuracy:** 0.2% fs ±10 μA
- Cold junction accuracy:** ±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 μA;
- 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:** Ø45 mm, thickness 23 mm.