



ATT1

SIGNAL TRANSMITTER FOR ALL SENSOR TYPES



ATT1
not insulated model



ATT1-I
insulated model

Engineering manual

Cod.: ENG - Vr. 02 - 19/05 - ISTR-MATT1ENG02

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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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Ascon Tecnologic and its legal representatives do not assume any responsibility for any damage to people, things or animals deriving from violation, wrong or improper use or in any case not in compliance with the instrument features.



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.

INSTRUMENT DESCRIPTION

General description

ATT1/ATT1-I is a signal transmitter (Not insulated/Insulated) capable of accepting in input various types of sensors and retransmitting their signals with a programmable range.

The transmitter accepts input signals from:

Pt100 Measuring range: $-200... +800^{\circ}\text{C}$, type of connection: 2, 3, 4 wires, accuracy: $0.1\% \text{ fs} \pm 10 \mu\text{A}$;

Pt1000 Measuring range: $-200... +800^{\circ}\text{C}$, type of connection: 2 wires, accuracy: $0.1\% \text{ fs} \pm 10 \mu\text{A}$;

Ni100 Measuring range: $-60... +180^{\circ}\text{C}$, type of connection: 2, 3, 4 wires, accuracy: $0.5\% \text{ fs} \pm 10 \mu\text{A}$;

TC B Measuring range: $40... 1820^{\circ}\text{C}$, the accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$ (only in the range $900... 1800^{\circ}\text{C}$);

TC E Measuring range: $-200... +940^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$;

TC J Measuring range: $-200... +1200^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$;

TC K Measuring range: $-200... +1340^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$;

TC N Measuring range: $-200... +1280^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$;

TC R Measuring range: $-40... +1760^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$ (only in the range $400... 1760^{\circ}\text{C}$);

TC S Measuring range: $-40... +170^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$ (only in the range $400... 1760^{\circ}\text{C}$);

TC T Measuring range: $-200... +400^{\circ}\text{C}$, accuracy: $0.2\% \text{ fs} \pm 10 \mu\text{A}$ (only in the range $-100... +400^{\circ}\text{C}$);

mV Measuring range: $-10... +70 \text{ mV}$, accuracy: $0.1\% \text{ fs}$;

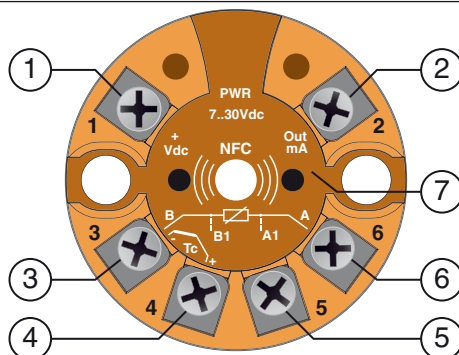
Potentiometer 10... 400 Ω type of connection: 2, 3, 4 wires; accuracy: $0.1\% \text{ fs} \pm 10 \mu\text{A}$;

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

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

The transmitter 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 **ATNfcSoft** program (downloadable, free of charge, from our Internet site).

Instrument description



1, 2 Power/Output terminals (2 wires transmitter);

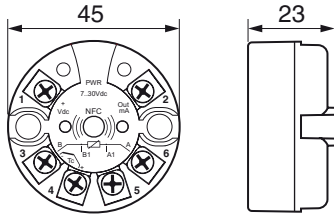
3, 4, 5, 6 Input terminals;

7 Orange label: **Not isolated** transmitter (**ATT1**),

Blue label: **Isolated** transmitter (**ATT1-I**).

INSTALLATION INFORMATION

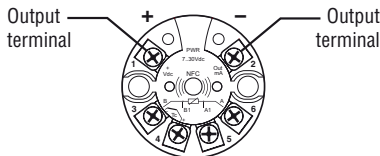
Dimensions



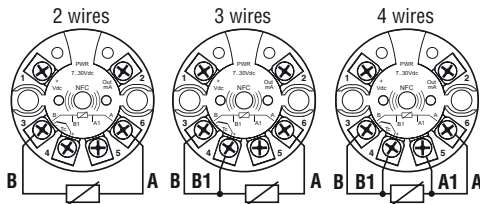
Electrical connections

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

Output

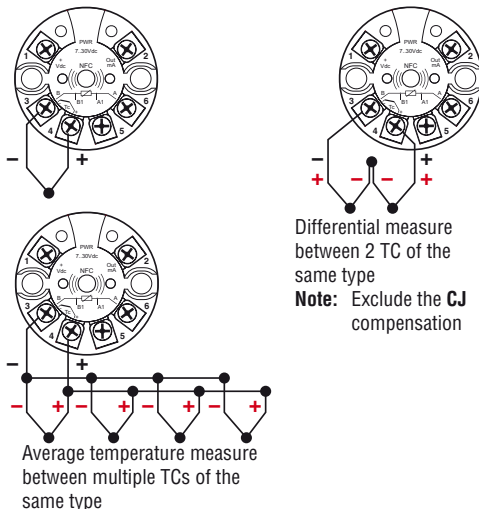


Pt100, Pt1000 and Ni100 Sensors

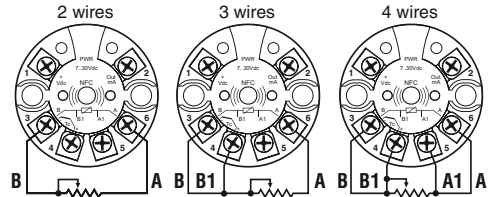


Note: The PT1000 sensors must be connected in 2 wires mode.

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

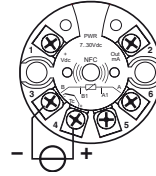


10... 400 Ω and 10... 4000 Ω Potentiometer



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

Voltage input



TECHNICAL CHARACTERISTICS (@ 20°C)

General specifications

- Insulation voltage:** 1 kV AC for 1 minute (ATT1-I model only);
- RTD excitation current:** < 200 μ A;
- RTD maximum wire resistance:** 20 Ω per wire;
- Cold junction accuracy:** $\pm 0.5^\circ\text{C}$;
- Cold junction drift:** $0.05^\circ\text{C}/^\circ\text{C}$;
- Voltage operating range:** 7... 30 Vdc;
- Current output:** 4... 20 mA (2 wires);
- Output resolution:** 2 μ A;
- Over-range output value:** $+5^\circ\text{C}$;
- Under-range output value:** -5°C ;
- Failure output value:** Selectable between 21 mA, 3.8 mA or any other value;
- Rejection:** 50... 60 Hz;
- Temperature drift:** < 150 ppm;
- Sampling time:** 300 ms;
- Response time (10%input, 90% output):**
 - With no filters: 400 ms,
 - With medium filter: 2 s,
 - With strong filter: 6 s;
- Protection:** IP 20;
- Compliance:** CE, EN 61326-1;
- Operating temperature:** $-40... +85^\circ\text{C}$;
- Humidity:** 30... 90% @ 40°C (with no condensation);
- Storage temperature:** $-40... +105^\circ\text{C}$;
- Connections:** Screw terminals;
- Enclosure:** PA66;
- Dimensions:** $\varnothing 45$ mm, thickness 23 mm.