

FEATURES

Thermocouple input, type E, J, K, N, S and T
 "Voltage linear" output (4÷20 mA)
 High accuracy and linearity
 Available in both °C & °F scales
 Conform to EMC standards - CE mark
 Suitable for mounting on DIN B connection heads
 Low cost

APPLICATIONS

Temperature monitoring and controlling in:
 - Process controls
 - Automations systems
 - Energy source management



GENERAL INFORMATION

DAT 1030 is a two wire transmitter designed to give an output current signal of 4÷20 mA which is proportional and perfectly linear with the voltage supplied by the thermocouple connected to its input. The cold junction compensation is performed inside it by a highly accurate and stable semiconductor temperature sensor. The output current signal is supplied on the same two wires used to power the device. The lack of linearization feature, available in the DAT 1015 model, makes this device compatible with data acquisition system which have an internal linearization software, allowing a further costs reduction. All features are realized with extreme accuracy and reliability thanks to the employment of high precision and quality components and the employment of the SMD manufacturing technology.

The device, conform to the 89/336/EEC directives on electromagnetic compatibility, is housed in a strong self extinguishing plastic case suitable for direct mounting in the probe connection head,. It is available also in a different case version suitable for mounting on DIN rails.

TECHNICAL SPECIFICATIONS (Typical @ 25°C and in the nominal conditions)

Input

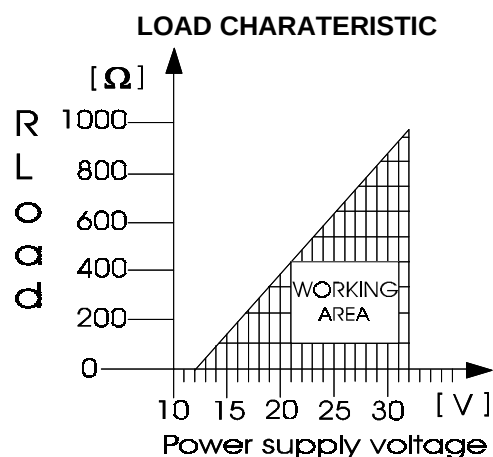
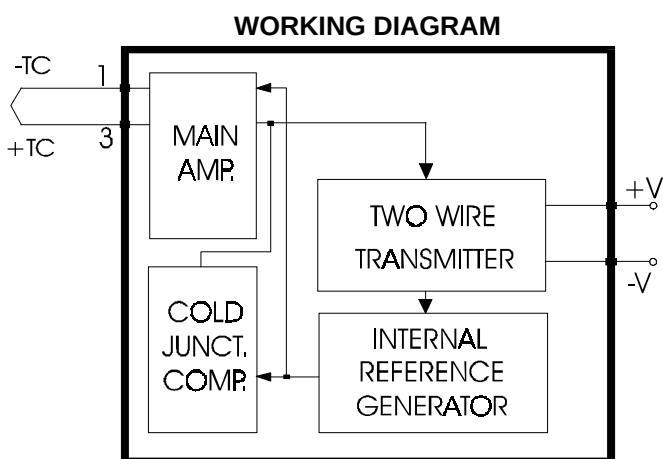
Sensor type	Termocouple type K, J, S, N, T, and E according to SIPT68
Minimum input range	15 mV
Influence of line resistance	0.2 $\mu\text{V}/\Omega$

Output

Sensor interruption signaling	Positive out-of-scale
Measuring current	4÷20 mA, two wires
Current limitation	Approx. 25 mA
Protection against polarity reversal	60 V reverse max
Response time (dal 10 al 90% del f.s.)	0.3 s.
Warm up time	3 minutes.

Performances

Calibration error	$\pm 0.1\%$ of f.s. or $\pm 0.2^\circ\text{C}$.
Non linearity error	$\pm 0.1\%$ of f.s.
(inclusive of hysteresis, linearization error and supply voltage variations)	
Electromagnetic Compatibility (EMC)	According to EN50081-2 and EN50082-2
Thermal drift	0.03% of f.s. /°C
Power supply voltage	12 ÷ 32 V
Operating temperature	-20 ÷ 70 °C
Storage temperature	-40 ÷ 100 °C
Relative humidity (non condensing)	0 ÷ 90%
Weight	35 grams

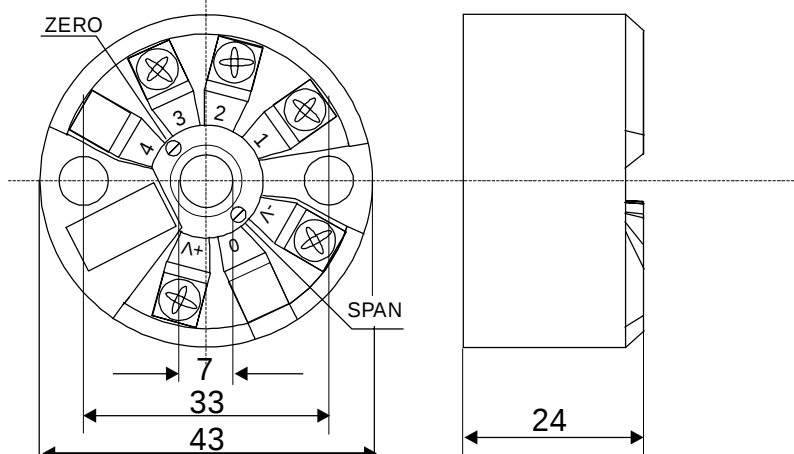


OPERATING INSTRUCTIONS

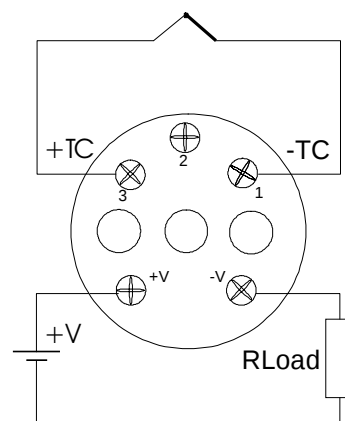
The transmitter must be powered with a voltage ranging from 12 to 32 V, applied between the -V and +V terminals. The permissible R_{load} resistance to be applied in series to the voltage generator must be dimensioned as a function of the power supply voltage value and according to the load characteristic so that the value obtained is covered by the working area. The thermocouple must be connected between terminals no. 1 and no. 3. When a shielded cable is used, the shield must be connected to terminal no. 1. It is possible and easy to perform the calibration, if needed, just by operating on the zero and span adjustments: after imposing at the input a voltage of a value corresponding to zero scale, adjust the "zero" potentiometer so as to obtain a 4 mA indication, and then, after imposing a thermocouple voltage corresponding to the full scale, adjust the "span" potentiometer to a 20 mA indication. Repeat these adjustments until the requested accuracy is achieved. Note: When the calibration is accomplished without precision calibrators performing internal cold junction compensation, the value of the thermocouple voltage corresponding to the room temperature must be subtracted from the input voltage in order to compensate the cold junction.

PHYSICAL DIMENSIONS

(All measures in mm.)



CONNECTION DIAGRAM



HOW TO ORDER:

DAT 1030 - J - 0 ÷ 300

Sensor type ———

Scale range ———

(To choose it, refer to the apposite list here at side)

SENSORS

	J	K	T	N	E	S
0 ÷ 300	●		●		●	
0 ÷ 600	●	●		●	●	
0 ÷ 900	●	●		●	●	
0 ÷ 1200		●		●		
600 ÷ 1600						●

[°C] RANGES

NOTE: Upon request and for appreciable quantities is possible to custom engineer particular calibrations for non standard sensors or scale range

EDIZ.10.00-REV.00