

FEATURES

- PT100 input**
- Linearized output (4÷20 mA)**
- Good accuracy and linearity**
- Available in both °C & °F scales**
- Conform to EMC standards - CE mark**
- Suitable for mounting on DIN B connection heads**
- Class V0 Polycarbonate case**
- Low cost**

APPLICATIONS

- Temperature monitoring and control in:**
- **Process controls**
 - **Automation systems**
 - **Energy source management**



GENERAL INFORMATION

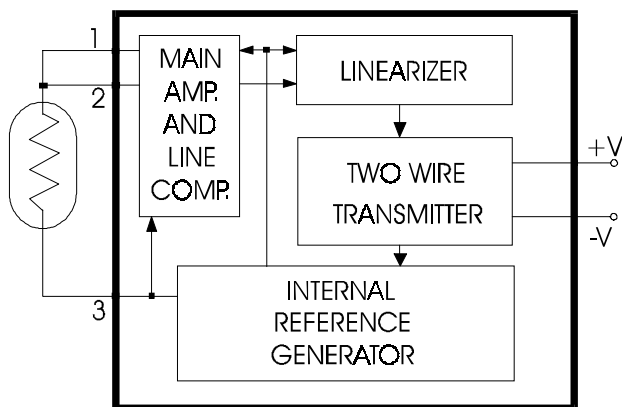
The two wire transmitter DAT 1040 has been designed to give an output current signal of 4÷20 mA; this signal is perfectly linear and proportional to the temperature detected by the PT100 sensor (IEC 751) connected to its input. The connection can be performed with two or three wires. The output current signal is supplied on the same two wires used to power the device. This transmitter has been conceived to provide a reliable device with good precision at low cost. The maximum accuracy and reliability are ensured for all the functions (conditioning, linearization, line resistance compensation and current transmission) thanks to the employment of high-precision and high-quality components and the use of the SMD manufacturing technology. The device, conform to the 89/336/EEC directives on electromagnetic compatibility, is placed in a rugged self-extinguishing plastic case suitable for direct assembling on the probe connection head.

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

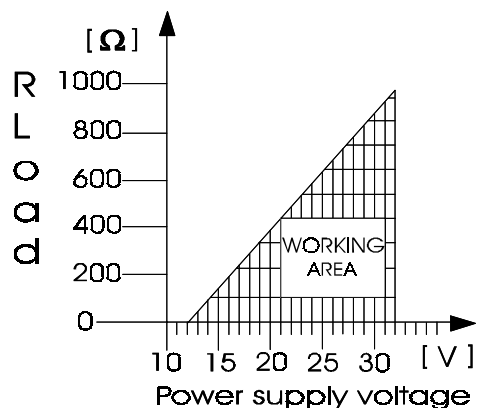
Input	
Sensor type	PT100 Ω according to IEC 751
Minimum input span	50 °C or 100°F
Sensor current	1 mA
Input configuration	2 o 3 wires
Line resistance influence	0.05 % of f.s./ Ω for the maximum f.s.* (100 Ω max. balanced on each wire)
Output	
Sensor interrupting signaling	Positive out-of-scale
Measuring current	4÷20 mA, two wires
Current limitation	Approx. 25 mA
Protection against polarity reversal	60 V reverse max
Response time (10 to 90% of f.s.)	0.3 seconds
Warm up time	3 minutes
Performances	
Calibration error	$\pm 0.1\%$ of f.s. or $\pm 0.1^\circ\text{C}$
Linearity error (inclusive of hysteresis, linearization error and supply voltage variations)	$\pm 0.25\%$ of f.s.
Electromagnetic Compatibility (EMC)	According to EN50081-2 and EN50082-2
Thermal drift	0.03 % of f.s./°C
Power supply voltage	10 ÷ 32 V
Operating temperature	- 20 ÷ 70 °C
Storage temperature	- 40 ÷ 100 °C
Relative humidity (non condensing)	0 ÷ 90 %
Weight	35 g.

*: For lower f.s. this value must be proportionally increased.

WORKING DIAGRAM



LOAD CHARACTERISTIC

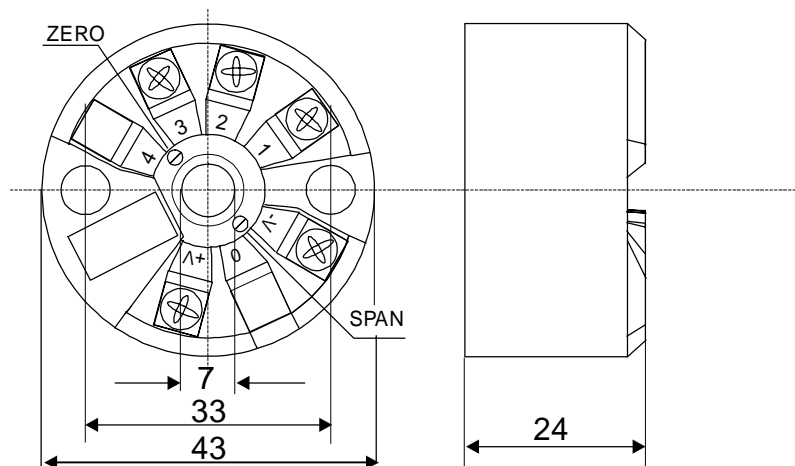


OPERATING INSTRUCTIONS

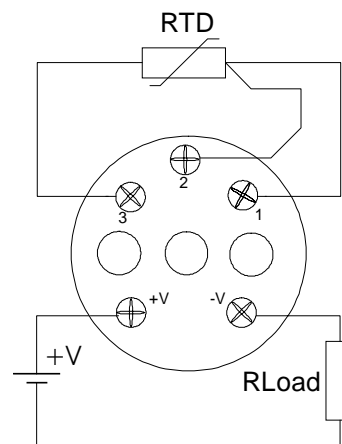
The transmitter must be powered with a voltage ranging from 10 to 32 V, applied between the -V and +V terminals. The permissible Rload resistance, equivalent to that of the instruments applied in series to the voltage generator, must be determined as a function of the power supply voltage value and according to the load characteristic so that its value is covered by the working area. The connection of the sensor can be performed with two or three wires. The two-wire connection is performed by connecting the sensor to terminals no. 2 and no. 3 and connecting terminal no.1 to the no. 2. The wiring diagram here below shows a three-wire connection. It is possible and easy to perform the calibration, if needed, just by operating on the zero and span adjustments: after placing at the input a sample resistor of a value corresponding to zero scale, adjust the "zero" potentiometer so as to obtain a 4 mA indication, then, with a resistor of a value corresponding to the full scale, adjust the "span" potentiometer to a 20 mA indication. Repeat these adjustments until the requested accuracy is achieved.

PHYSICAL DIMENSIONS

(measures in mm.)



CONNECTION DIAGRAM



HOW TO ORDER:

DAT 1040 PT100 - 0 ÷ 100

Scale range
(To choose it, refer to the opposite list here at side)

AVAILABLE RANGES

-50 ÷ 50	-50 ÷ 100
-50 ÷ 150	-50 ÷ 200
-50 ÷ 250	0 ÷ 50
0 ÷ 100	0 ÷ 150
0 ÷ 200	0 ÷ 250
0 ÷ 300	0 ÷ 400
0 ÷ 500	0 ÷ 600

EDIT.10.00-REV.00