

FEATURES

PT100 input
Two wire 4÷20 mA linearized output
Zero and span programmable by DIP SWITCH
Good accuracy and performance stability
Also available in °F scale
Conform to EMC standards - CE mark
Suitable for mounting on DIN B connection heads
Low cost

APPLICATIONS

Temperature monitoring and controlling in:
- Process controls
- Automation systems
- Energy sources management


GENERAL INFORMATION

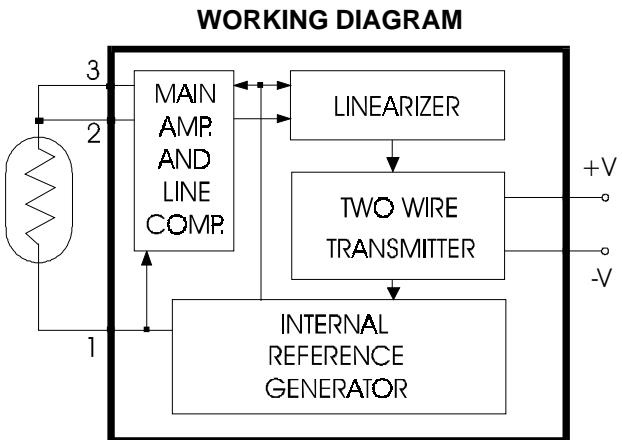
The two wire DAT1111 transmitter has been designed to give an output current signal of 4÷20 mA; this signal is perfectly linear and proportional to the temperature detected by the PT100 sensor (IEC 751) connected to its input. The connection can be performed with two or three wires. The output current signal is supplied on the same two wires used to power the device.

The user can program the full scale easily and quickly by means of four way DIP switch. The "zero" value can be varied between -50°C to +50°C and the span value can be programmed from 50°C to 650°C. 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 to the use of the SMD technology. The device, conform to the 89/336/EEC directives on electromagnetic compatibility, is housed in a rugged self-extinguishing plastic case suitable for direct mounting on the probe head. The device is available also in a different case version suitable for mounting on DIN rails.

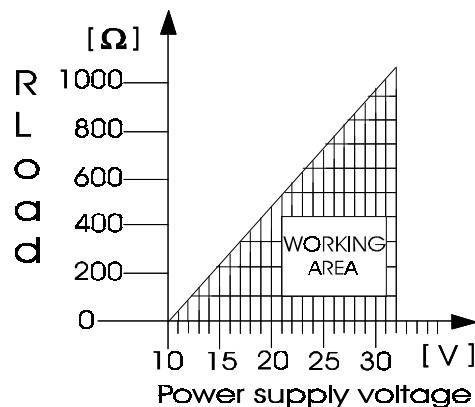
TECHNICAL SPECIFICATIONS (Typical @ 25°C and in the nominal conditions)

Input	
Type of sensor	PT100Ω according to IEC 751
Zero	Programmable in the -50°C to +50°C range
Span	Programmable from 50°C to 650°C
Sensor current	1 mA
Input configuration	two or three wires
Influence of line resistance	0.05% of f.s./Ω for the maximum f.s.*(100 Ω max. balanced on each wire)
Output	
Sensor interruption signaling	Positive out-of-scale
Measuring current	4÷20 mA, two wires
Current limitation	about 35 mA
Protection against polarity reversal	60 V reverse max
Response time (10 to 90% of full scale)	0.3 seconds
Warm-up time	3 minutes
Performances	
Calibration inaccuracy	± 0.1% of full scale or ±0.1°C
Linearity error (inclusive of hysteresis, linearization error and variation of supply voltage)	± 0.15% of full scale
Electromagnetic Compatibility (EMC)	According to EN50081-2 and EN50082-2
Thermal drift	0.03% of full scale/°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 grams

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



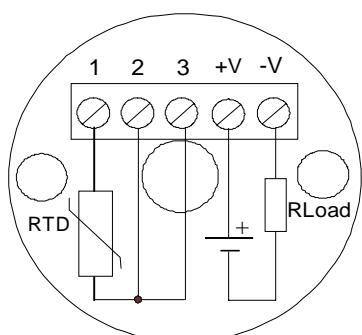
LOAD CHARACTERISTICS



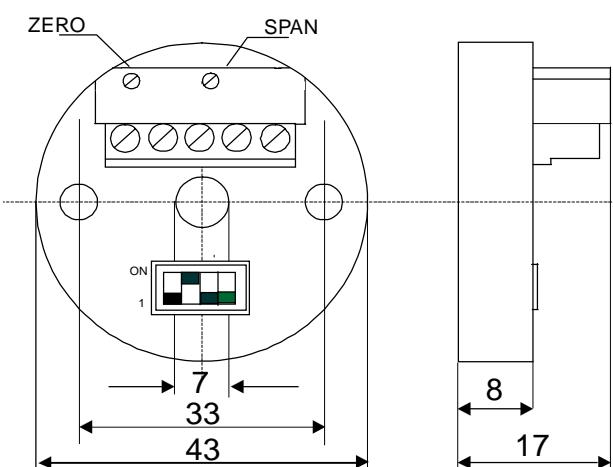
OPERATING INSTRUCTIONS

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. 1 and no. 2 and connecting terminal no. 2 to the terminal no. 3. The wiring diagram here below shows a three-wire connection. The range can be programmed in a quick and easy way: the span value must be set giving to the DIP switch a configuration according to the "Calibration Table" here below, then, after placing at the input a sample resistor of a value corresponding to zero, adjust the "zero" potentiometer so as to obtain a 4 mA indication, finally, 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.

WIRING DIAGRAM



PHYSICAL SIZE
(measures in mm.)



CALIBRATION TABLE

Span values	SW2	SW1
<80°C or <140°F	ON	OFF
80...200°C or 140...360°F	ON	ON
200...250°C or 360...450°F	OFF	OFF
250...650°C or 450...1200°F	OFF	ON
Zero values (Per Span <200°C or <360°F)	SW4	SW3
-50...-15°C or -100...-33°F	OFF	OFF
-15...15°C or -33...33°F	ON	OFF
15...50°C or 33...100°F	ON	ON
Zero values (Per Span >200°C or >360°F)	SW4	SW3
-50...50°C or -100...100°F	OFF	OFF

HOW TO ORDER:

DAT 1111 - PT100 - °C

°C or °F

EDIT.06.03-REV.00

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