

FEATURES

- Pt100 input
- Input range programmable either with °C or °F unit measure
- Zero e Span values programmable by DIP-switches
- Voltage or current linearised outputs
- Good accuracy and performance stability
- EMC compliant – CE mark
- DIN rail mounting in according to EN-50022 and EN-50035 standards



GENERAL DESCRIPTION

The double channel converter DAT 2166 is designed to provide on the output two linearised voltage or current signals proportional with the temperature characteristics of the Pt100 sensors connected on its inputs. It is possible to connect on the input both 3 wire Pt100 and 2 wire Pt100.

The user can program the input ranges and the output signal type of each channel by the proper DIP-switches available after opening the suitable door located on the side of device.

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the front side of device.

Moreover, an isolation of 1000 Vac is provided among the channels; it allows to avoid signal errors due to the ground loops and to reduce eventual R.F. Interferences.

It is housed in a plastic enclosure of 12.5 mm thickness suitable for DIN rail mounting in according to EN-50022 and EN-50035 standards .

OPERATIVE INSTRUCTIONS

The DAT 2166 converter must be powered by a direct voltage included in the 18 V to 30 V range. The power supply must be applied between the terminals N (+V1) and M (GND1) for the channel 1, between the terminals R (+V2) and Q (GND2) for the channel 2 as shown in the section "Power supply connections".

The output signals are measurable between the terminals P(OUTV/I 1) and M (GND1) for the channel 1, between the terminals O (OUT V/I 2) and Q (GND2) for the channel 2 as shown in the section "Output connections".

The input connections must be made as shown in the section "Input connections".

The channel 1 three wires Pt100 must be connected between the terminals G and I, while the third wire must be connected to the terminal L . If the measure is made with a two wires Pt100, the sensor must be connected between the terminals G and L, connecting the terminal I to the terminal L.

The channel 2 three wires Pt100 must be connected between the terminals E and H, while the third wire must be connected to the terminal F. If the measure is made with a two wires Pt100, the sensor must be connected between the terminals H and F, connecting the terminal E to the terminal F.

The configuration of input and output ranges values is made by DIP-switches (refer to the sections "Input ranges table" and "Output ranges table").

After the converter configuration, it is necessary to calibrate it using the ZERO and SPAN; this operation is illustrated in the section "DAT 2166: Configuration and calibration".

To install the device refer to the section "Installation instructions".

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

Inputs	
Sensor type	2 or 3 wire Pt100 in according to IEC60751 standard
Minimum input Span	40 °C (104 °F)
Zero programmability	From -80 °C (-112 °F) up to + 50 °C (122 °F)
Span programmability	From 40 °C (104 °F) up to 450 °C (842 °F)
Sensor excitation current	1 mA
Line resistance influence	0.05 % of f.s./ohm (100 ohm max. balanced per wire)
Outputs	
Signal type	Configurable as 4 + 20 mA, 0+20 mA, 0+10 Vdc or 2+10 Vdc
Load resistance	Voltage outputs: > 5 Kohm; Current outputs: < 500 ohm
Sensor burn-out signalling	Positive out of scale (>20 mA or > 10 Vdc)
Maximum output signal	Current outputs: > 23 mA, 35 mA max. Voltage outputs: > 11 Vdc, 16 Vdc max.
Response time (from 10 to 90 % of f.s.)	300 ms
Warm-up time	3 minutes
Performances	
Calibration error	± 0.1 % of f.s.
Linearity error (*)	± 0.15 % of f.s.
Thermal drift	0.03 % of f.s./°C
Power supply voltage(**)	18+30 Vdc
Current consumption for each channel	Voltage output: 15 mA max. ; current output: 40 mA max.
Isolation among the channels	1000 Vac @ 50 Hz, 1 min.
Electromagnetic Compatibility (EMC) (for industrial environments)	Immunity: EN 61000-6-2; Emission : EN 61000-6-4.
Operating temperature	-20 + 70 °C
Storage temperature	-40 + 85 °C
Relative humidity (not cond.)	0 + 90%
Maximum Altitude	2000 m
Installation	Indoor
Category of installation	II
Pollution Degree	2
Weight	approx. 90 g
Mechanical Specifications	
Material	Self-extinguish plastic
IP Code	IP20
Wiring	wires with diameter 0.8+2.1 mm ² /AWG 14-18
Tightening Torque	0.8 N m
Mounting	in compliance with DIN rail standard EN-50022 and EN-50035

(*) inclusive of hysteresis and power supply variation.

(**) internally protected against polarity reversion.

