

Thermocouple Transmitter

DAT 2065

FEATURES

- Input for RTD type Pt100
- Unit of measure configurable in °C or °F
- Zero and Span values configurable by DIP-switches
- 4 to 20 mA linearised output on current loop
- Good accuracy and performance stability
- EMC compliant – CE / UKCA mark
- DIN rail mounting in compliance with EN-50022 and EN-50035



GENERAL DESCRIPTION

The transmitter DAT 2065 is designed to provide on its output a linearised 4÷20 mA current loop signal proportional with the temperature characteristic of the Pt100 sensor connected on its input.

It is possible to connect on the input both 3 wires and 2 wires Pt100.

The user can program the input range by the proper DIP-switch available after opening the suitable door located on the side of device (see "Input range table" section).

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

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 connections must be made as shown in the section "Wiring".

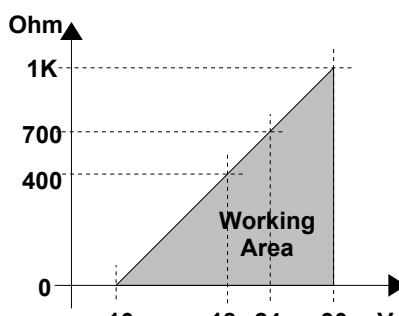
The 4÷20 mA output signal is measurable in series to the power loop as shown in the section "Power supply/output connections"; "Rload" is the input impedance value of the instruments located on the current loop; for a correct measure, it is recommended that the maximum value of "Rload" must be calculated as function of the power supply value (refer to the section " Load characteristic ").

The configuration of input range values is made by DIP-switches (refer to the section "Input range table").

After the transmitter configuration, it is necessary to calibrate it using the ZERO and SPAN; this operation is illustrated in the section "DAT 2065: Configuration and calibration".

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

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

INPUT	OUTPUT	GENERAL SPECIFICATIONS
RTD Pt100 2 or 3 wires in compliance to IEC 60751 <u>Configurability for Span</u> Minimum value 50 °C 122 °F Configuration From 50 °C to 650 °C From 122 °F to 1202 °F <u>Configurability for Zero</u> Configuration From -50 °C to 50 °C From - 58 to 122 °F Input calibration (1) Pt100 ± 0.1% f.s. Linearity (2) Pt100 ± 0.15 % f.s. Line resistance influence (1) Pt100 0.05 % f.s./ohm (100 ohm max. balanced on each wire) RTD Excitation current Typical 0.6 mA	Output type Current 4÷20 mA two wires Thermal drift (1) Full Scale ± 0.02 % of full scale /°C Out of scale values Type positive (> 20 mA) Maximum value 32 mA Response time (10÷ 90%) 300 ms circa Warm-up time 1 minute Load characteristic - Rload (maximum load value on current loop per power supply value) 	Power supply voltage 10 .. 30 Vdc Reverse polarity protection 60 Vdc max ENVIRONMENTAL CONDITIONS Operative temperature -20°C .. +70°C Storage temperature -40°C .. +85°C Humidity (not condensing) 0 .. 90 % Maximum Altitude 2000 m slm Installation Indoor Category of Installation II Pollution Degree 2 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 Weight about 90 g. CERTIFICATIONS EMC (for the Industrial Environments) Immunity EN 61000-6-2 Emission EN 61000-6-4 UKCA (ref S.I. 2016 N°1091) Immunity BS EN 61000-6-2 Emission BS EN 61000-6-4

(1)referred to input Span (difference between Val. max. and min.)
 (2)inclusive of hysteresis and variations of power supply voltage

- 1) Calculate the difference between the maximum and the minimum value of the input range (Span).
- 2) Refer to the " Input ranges table " and determine in the column " SPAN " the position where the calculated value is included, then referring to the position obtained determine in the column "ZERO", the line in which the minimum value is included .
In the correspondent line is shown as to set the DIP-switches .
- 3) Set the DIP-switches as indicated .
- 4) Connect on input a 3 wire Pt100 simulator programmed to supply the maximum and minimum values of the input range or a fixed resistor of the same values.
- 5) Set the simulator at the minimum temperature or to connect a fixed resistor correspondent to the minimum value .
- 6) By the ZERO potentiometer calibrate the output at the 4 mA value .
- 7) Set the simulator at the maximum temperature or to connect a fixed resistor correspondent to the maximum value .
- 8) By the SPAN potentiometer calibrate the output at the 20 mA value .
- 9) Repeat the operation from the step 5 to the step 8 until the output value will be correct (3 attempts typically required).

Configuration ex. : -30/200 °C
Span => 200°C - (-30°C) = 230°C;
Input switches configuration (DSI): Off, Off, Off, Off.

INPUT RANGES TABLE

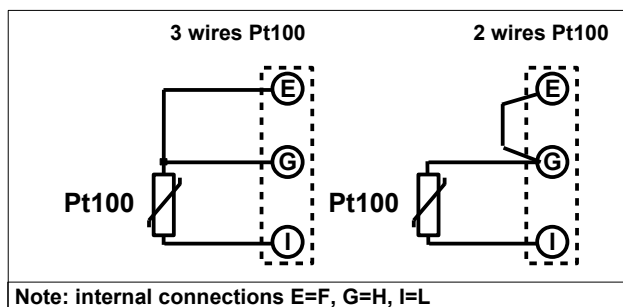
INPUT		DSI			
SPAN	ZERO	1	2	3	4
< 80°C (176°F)	- 50 to -25°C(-58 to -13°F)		●		
< 80°C (176°F)	- 25 to 12°C(-13 to 53°F)		●		●
< 80°C (176°F)	12 to 50°C(53 to 122 °F)		●	●	●
80 to 200°C(176 to 392°F)	- 50 to -25°C(-58 to -13°F)	●	●		
80 to 200°C(176 to 392°F)	- 25 to 12°C(-13 to 53°F)	●	●		●
80 to 200°C(176 to 392°F)	12 to 50°C(53 to 122 °F)	●	●	●	●
200 to 250°C(392 to 482°F)	- 50 to 50°C(-58 to 122°F)				
250 to 650°C(482 to 1202°F)	- 50 to 50°C(-58 to 122°F)	●			

● = DIP SWITCHES: " ON"

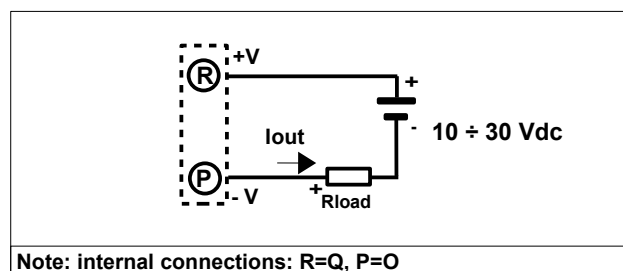
The device DAT 2065 is suitable for DIN rail mounting in vertical position.
It is necessary to install the device in a place without vibrations .
Moreover, it is recommended to use shielded cable to connect signals and to avoid routing conductors near power signal cables.

WIRING

INPUT CONNECTIONS

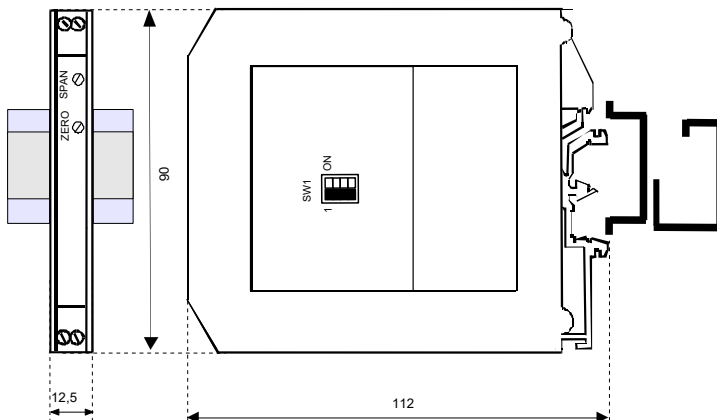


POWER SUPPLY/OUTPUT CONNECTIONS



Terminals N and M are not connected (NC) .

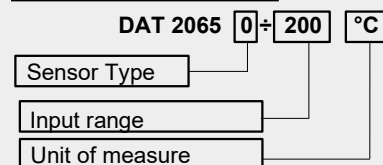
DIMENSIONS (mm) AND SETTINGS



HOW TO ORDER

The device is supplied regulated as requested on the order.
In case of the configuration is not specified, the parameters must be set by the user.

ORDER CODE EXAMPLE:



The symbol reported on the product indicates that the product itself must not be considered as a domestic waste.
It must be brought to the authorized recycle plant for the recycling of electrical and electronic waste.
For more information contact the proper office in the user's city , the service for the waste treatment or the supplier from which the product has been purchased.