

DAT 1010



FEATURES

- Configurable input for RTD, mV, Resistance and Potentiometer
- Damping function on output
- 4 ÷ 20 mA configurable output on current loop
- Configurable by Personal Computer by cable CVPROG
- High accuracy
- On-field reconfigurable
- EMC compliant – CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN 50022 (DIN RAIL Option)



GENERAL DESCRIPTION

The transmitter DAT 1010 is able to execute many functions such as : measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. The measured values are converted in a 4÷20 mA current signal . The device guarantees high accuracy and performances stability both in time and in temperature.

The programming of the DAT 1010 is made by a Personal Computer using the software PROSOFT and the cable CVPROG, both developed and provided by DATEXEL. By DATAPRO, that runs under the operative system "Windows™", it is possible to configure the transmitter to interface it with the most used sensors .

In case of sensors with a no-standard output characteristic, it is possible to execute, via software, a "Custom" linearisation (per step) to obtain an output linearised signal .

For Resistance and RTDs sensors it is possible to program the cable compensation with 3 or 4 wires.

It is possible to set the minimum and maximum values of input and output ranges in any point of the scale, keeping the minimum span shown in the table below. Moreover it is available the option of alarm for signal interruption (burn-out) that allows to set the output value as high or low out of scale .

On the device is provided the function "Damping" that allows the user to set a programmable filter up to 30 seconds to reduce eventual sudden variations of the input signal.

It is housed in a self-extinguish plastic enclosure suitable for DIN B in-head mounting.

Moreover (by proper mounting kit) it is possible to mount the DAT 1010 on DIN rail.

USER INSTRUCTIONS

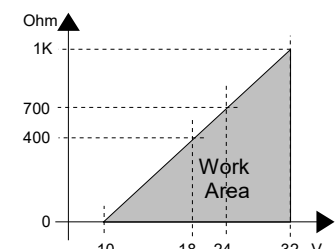
The transmitter DAT 1010 must be powered by a direct voltage between 10 to 32 V and applied to the terminals 5 and 7.

The 4÷20 mA output signal is measurable in the power loop as shown in the section "Output/Power supply connections"; Rload is the input impedance of instruments on the current loop; to obtain a correct measure, the value of Rload will be calculated as function of the power supply value (see section "Technical specification – Load characteristic").

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

To configure, calibrate and install the transmitter refer to sections " DAT1010: configuration and calibration" and "Installation Instructions".

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

Input type	Min	Max	Min. span	Input calibration (1)		Response time (10÷ 90%)	about 400 ms
RTD(*) 2,3,4 wires Pt100 Pt1000 Ni100 Ni1000	-200°C	850°C	50°C	RTD	> of ±0.1% f.s. or ±0.2°C	Power supply Power supply voltage 10 .. 32 Vdc Reverse polarity protection 60 Vdc max	Load characteristic - Rload (maximum load value on current loop per power supply value) 
	-200°C	200°C	50°C	Low res.	> of ±0.1% f.s. or ±0.15 Ω		
	-60°C	180°C	50°C	High res.	> of ±0.2% f.s. or ±1 Ω		
	-60°C	150°C	50°C	mV	> of ±0.1% f.s. or ±18 uV		
Voltage mV	-100mV	+700mV	2 mV	Output calibration Current ± 7 uA		Temperature & humidity Operative temperature -40°C .. +85°C Storage temperature -40°C .. +85°C Humidity (not condensed) 0 .. 90 %	
				Input impedance mV >= 10 MΩ			
				Linearity (1) RTD ± 0.1 % f.s.			
Potentiometer (Nominal value)	0 Ω	200 Ω	10%	Line resistance influence mV <=0.8 uV/Ohm		Housing Material PC + ABS V0 Mounting DIN B head or bigger Weight about 50 g. Dimensions Ø = 43 mm ; H = 24 mm	
	200 Ω	500 Ω	10%	RTD 3 wires 0.05%/Ω (50 Ω balanced max.)			
	0.5 KΩ	50 KΩ	10%	RTD 4 wires 0.005%/Ω (100 Ω balanced max.)			
RES. 2,3,4 wires Low High	0 Ω	300 Ω	10 Ω	RTD excitation current Typical 0.350 mA		EMC (for industrial environments) Immunity EN 61000-6-2 Emission EN 61000-6-4	
	0 Ω	2000 Ω	200 Ω	Thermal drift (1) Full scale ± 0.01% / °C			
Output type Direct current Reverse current	4 mA	20 mA	4 mA	Burn-out values Max. output value about 20.5 mA Min. output value about 3.8 mA Max. fault value about 21.6 mA Min. fault value about 3.5 mA			
	20 mA	4 mA	4 mA	Damping time constant Selectable from 0.3 to 30 s. Value 0: function not active.			

(1) referred to input Span (difference between max. and min. values)

(*) For temperature sensors it is possible to set the input range also in F degrees; to made the conversion use the formula: °F = (°C*9/5)+32)

DAT 1010: CONFIGURATION

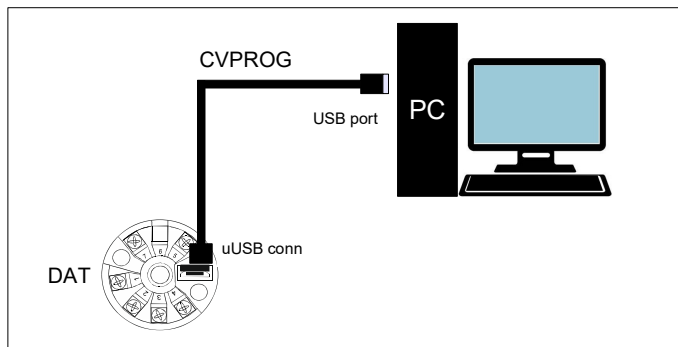
Notice: before to execute the next operations, check that the drivers of the cable CVPROG in use have been previously installed in the Personal Computer.

- 1) Remove the protection plastic cap on DAT 1010.
- 2) Connect the two plugs of cable CVPROG to the Personal Computer (USB plug) and to the device (uUSB plug).
- 3) Run the software DATAPRO. Set the COM port assigned to the CVPROG cable by the Operative System.
- 4) Set the parameters of configuration.
- 5) Program the device.

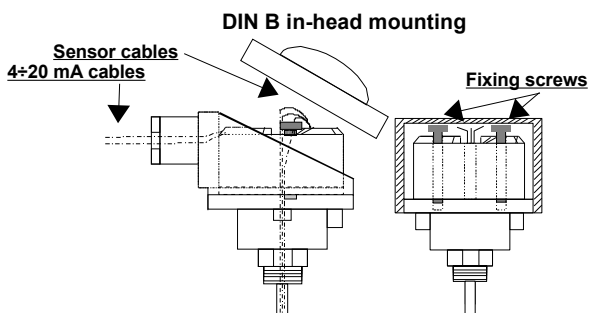
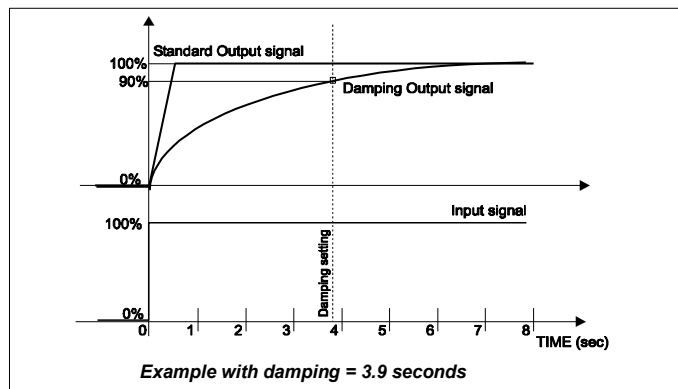
CONFIGURATION BY CABLE CVPROG



Notice, during this operation don't power on the device.



DAMPING FUNCTION

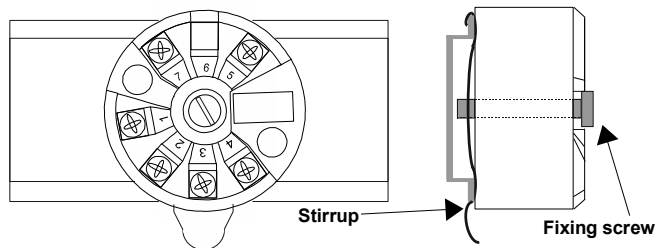


INSTALLATION INSTRUCTIONS

The device DAT 1010 is suitable for direct DIN B in-head mounting. The transmitter must be fixed inside the probe by the proper kit.

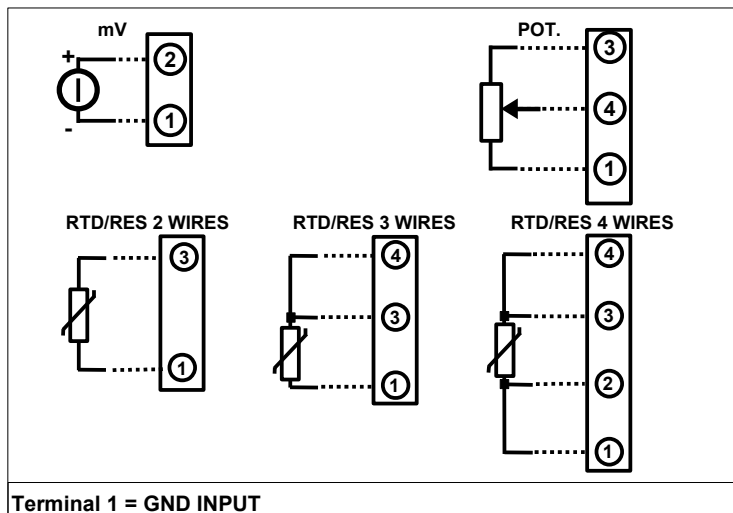
By apposite stirrup, provided on request, it is possible to mount the device on DIN rail in compliance with EN-50022. It is necessary to install the device in a place without vibrations; avoid to routing conductors near power signal cables.

DIN rail mounting (DIN RAIL Option)

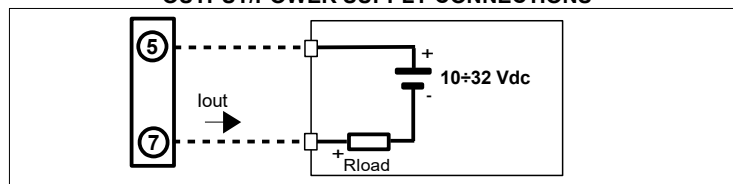


DAT1010: CONNECTIONS

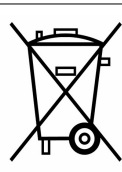
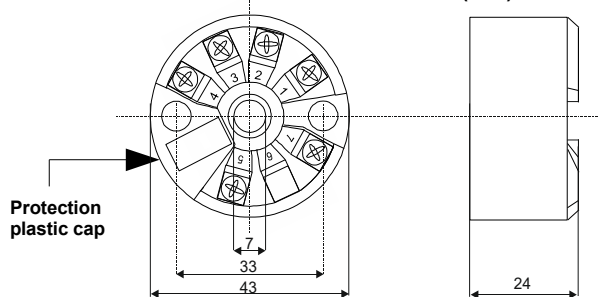
INPUT CONNECTIONS



OUTPUT/POWER SUPPLY CONNECTIONS



MECHANICAL DIMENSIONS (mm)



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.

HOW TO ORDER

The DAT1010 is provided as requested on the Customer's order. Refer to the section "Technical specification" to determine input and output ranges. The mounting kit for DIN rail is provided **only on request** with code DIN RAIL. In case of the configuration is not specified, the parameters must be set by the user.

ORDER CODE EXAMPLE:

