

FEATURES
Pt100 input
Linearized output, voltage or current
**Input range and output signal type and range
configurable by means of DIP switches**
2000 Vca galvanically isolation between
power supply and input/output section
Independent zero and full scale regulations
Good accuracy and performance stability
EMC compliant - CE mark
12,5mm only enclosure thickness
DIN rail mounting
Economy
APPLICATIONS
Control and monitoring of the temperature for:

- Process controls
- Automation systems
- Energy sources management


GENERAL INFORMATION

The DAT 2061 signal conditioner accepts at its input a Pt100 sensor connected in two or three wire configuration. It converts the Pt100 signal into a correspondent linearized and normalized analog signal output. The input signal range and the type and value of the output signal are configurable in a wide range of combinations (see table "CONFIGURABILITY"). They are selected by means of suitable DIP switches which are accessible after opening the apposite door on the housing side. The careful adjustments of the programmed value are performed by means of the ZERO and SPAN regulations. They are one independent from the other, permitting so an easy calibration of the device.

The isolation capability of the DAT2061 (2000 Vac between I/O section and Power Supply section) prevents ground loops from causing errors in current signals and may reduce susceptibility to RF interference. Isolation also provides protection from high voltages and current spikes which may damage expensive equipments (PLC or DCS).

The DAT 2061 unit, developed, manufactured and tested in strict accordance with the quality assurance standard UNI EN ISO 9001: 2000, is in compliance with the directive 89/336/CEE on the electromagnetic compatibility. It is packaged into a strong plastic enclosure of only 12,5mm thickness, allowing an high density mounting capability on DIN rail.

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

Sensor type

Pt100 according to IEC 751(other Rtd type available on request)

Zero

Programmable in the -50°C to +50°C range

Span

Programmable from 50°C to 600°C

Sensor current

1 mA

Influence of line resistance

0.05% of f.s./Ohm for f.s. max.(100 Ohm max. balanced on each wire).

OUTPUT

Output signal

configurable: V and mA (see table "Configurability")

Max output signal

18Vdc or 35mA dc

Load resistance

 ≥ 5 KOhm (Voltage) or ≤ 500 Ohm (Current)

Reverse polarity protection

60 Vdc reverse max.

Response time (from 10 % to 90% e.s.)

0.5 s.

Warm up time

3 min.

CHARACTERISTIC PERFORMANCES

Calibration error

 $\pm 0.1\%$ of f. s. or $\pm 0.1^\circ\text{C}$

Non linearity error

 $\pm 0.15\%$ of f.s.

(inclusive of hysteresys, linearization error and power supply voltage variations)

Electro Magnetic Compatibility (EMC)

In compliance with EN50081-2 and EN50082-2

Thermal drift

0.02% of f.s./°C

Power Supply Voltage

18 ÷ 30 Vdc

Current consumption

 ≤ 60 mA

Operating temperature

- 20 ÷ 70 °C

Storage temperature

- 40 ÷ 100 °C

Relative humidity (non condensing)

0 ÷ 90 %

Weight

approx. 80 g.

CONFIGURABILITY												
INPUT SELECTION						OUTPUT SELECTION						
SPAN	ZERO	DSI	1	2	3	4	DSO	1	2	3	4	5
< 80°C	-50 to -15°C				●		USC.					
< 80°C	-15 to 15°C	●			●		0-20 mA	●	●	●		
< 80°C	15 to 50°C	●	●		●		4-20 mA	●		●		●
80 to 200°C	-50 to -15°C				●	●	0-10 V		●		●	
80 to 200°C	-15 to 15°C	●			●	●						
80 to 200°C	15 to 50°C	●	●		●	●						
200 to 250°C	-50 to 50°C											
250 to 600°C	-50 to 50°C					●						

●: DIP-SWITCHES ON

INSTALLATION INSTRUCTIONS

The DAT 2061 device is suitable for fitting to DIN rails in the vertical position. For optimum operation and long life, make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel.

When devices are installed side by side, it may be necessary to separate them by at least 5 mm in the case that the panel temperature exceeds 35°C and the Power Supply voltage is greater than 27 Vdc.

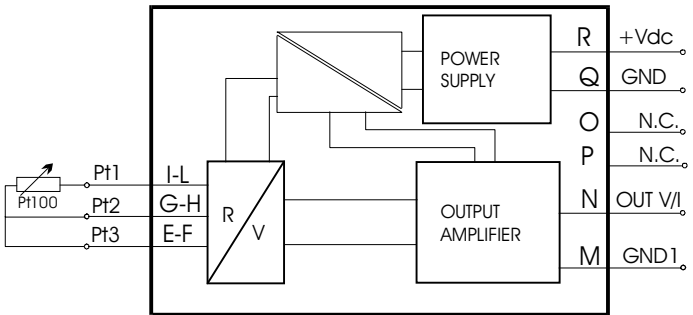
It is recommended to use shielded cable for connecting signals. The shield must be connected to an earth wire provided for this purpose. Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters etc..)

OPERATING INSTRUCTIONS

The DAT2061 must be powered with a voltage value ranging from 18 to 30Vdc, applied between the terminal R(+Vdc) and the terminal Q (GND). The Pt100 sensor must be connected between terminal I or L and terminal H or G while the third wire has to be connected to terminal E or F.

The output signal, voltage or current, is available between the terminals N (OUT V/I) and M (GND1). The input configuration is performed by means of the two DIP switches DSI and DSO. They are accessible only after opening the apposite door on the housing side. The table "CONFIGURABILITY" shows the lists of the possible input measuring ranges, output signals and the indication of how to set the DIPswitches to obtain the selected configuration. Once such operation is completed it is necessary to proceed to the calibration by means of the ZERO and SPAN regulations placed on the top of the enclosure. The DAT 2061 is supplied conforming the calibration requested by the customer's order. In case of order without this specification, the unit is supplied with a standard setting: IN=0-200°C and OUT=4-20 mA. In the case be necessary to make a new calibration, it can be made in a very simple and fast way thanks to the complete independence of the zero and span regulations.

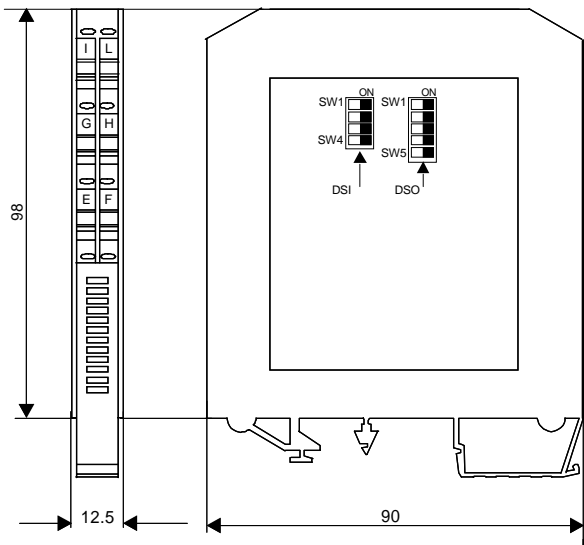
BLOCK DIAGRAM



TERMINAL ASSIGNMENT

E	Pt1	M	GND1
F	Pt2	N	OUT V/I
G	Pt2	O	N.C.
H	Pt2	P	N.C.
I	Pt1	Q	GND
L	Pt1	R	+Vdc

DIMENSIONS (mm.)



HOW TO ORDER:
DAT 2061 0 ÷ 200 4 - 20 mA
 Input _____
 Output _____

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