

**FEATURES**

- Voltage or current inputs
- Programmable decimal point and Attenuation ratio
- High accuracy and linearity
- Auto-zero
- Measuring freeze by command
- Options for low consumption or high brightness
- EMC compliant – CE mark
- Low profile (15 mm) DIN 36 x 72 mm housing
- Mounting on panel in according to DIN 43700 standard



**GENERAL DESCRIPTION**

The DAT 701 is a 3.5 digit LED digital indicator with high accuracy and reliability able to measure the normalised current or voltage signal applied to its input . In function of the parameters requested in phase of order, the following versions of the device are available:

- DAT 701 V - A: measure of voltage signal with amplitude from  $\pm 200$  mV up to  $\pm 20$  V ;
- DAT 701 V - B: measure of voltage signal with amplitude from  $\pm 2$  V up to  $\pm 200$  V;
- DAT 701 I - A: measure of current signal with amplitude from  $\pm 200$   $\mu$ A up to  $\pm 2$  mA;
- DAT 701 I - B: measure of current signal with amplitude from  $\pm 2$  mA up to  $\pm 200$  mA.

It is not necessary to recalibrate the Zero value.

Are available two ways of visualisation:

- Version S: visualisation of the measure by a standard LED display ;
- Version H: visualisation of the measure by a high efficiency LED display.

The DAT 701 is designed for the mounting on panel in according to the DIN 43700 standard .

It is possible to set, by jumper, the input attenuation ratio ( x 10 and x 100) and the decimal point position.

Moreover are available the functions of measuring freeze (HOLD) and testing display (TEST).

The DAT 701 is in compliance with the Directive 2004/108/EC on the Electromagnetic Compatibility.

**USER INSTRUCTIONS**

The digital indicator DAT 701 must be powered by a direct 5 V  $\pm$  5% voltage applied between the terminals 7 (+V) and 8 (GND); to avoid the damage of device it is important that the power supply value doesn't exceed the limit of 5,5 V.

The input connections must be made as shown in the section "Input connections". The input signal in voltage or current, must be applied between the terminals 2 (IN HI) and 3 (IN LO) for the basic full-scale measure, between the terminals 1 (IN ATT) and 3 (IN LO) for the attenuated full-scale measure.

The following complementary functions are available:

- function TEST : use it to control the display, it switches on all the segments independently from the input signal. To use this function connect the terminal 6 (TEST) to the terminal 7 (+V);
- function HOLD: use it to freeze the measure at the last value detected. To use this function connect the terminal 5 (HOLD) to the terminal 8 (GND).

If the power supply and the input signals are isolated, connect the terminal 3 (IN LO) to the terminal 4 (COM).

To configure, calibrate and install the device refer to sections "Configuration and calibration DAT701" and "Installation Instructions".

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

<b>Input</b>	
Configuration	Bipolar, true differential
Signal type	Voltage: from 200 mV up to 2 V ( Version A ), basic full scale: 200 mV from 2 V up to 200 V ( Version B ), basic full scale: 2 V
	Current: from 200 $\mu$ A up to 2 mA ( Version A ), basic full scale: 200 $\mu$ A from 2 mA up to 200 mA ( Version B ) basic full scale: 2 mA
Input impedance	Voltage: basic full scale: 10 M $\Omega$ attenuated full scale: 1 M $\Omega$
	Current: from 1 $\Omega$ up to 1K $\Omega$
Maximum input signal	full scale * 2.5
Common mode voltage	$\pm 2$ V referred to the power supply ground
Common mode rejection ratio	86 dB
Normal mode rejection ratio	50 dB @ 50 Hz
Decimal point programming	From front side, on three decades
<b>Visualisation</b>	
Scale of visualisation	2000 points (from 0 up to 1999 or from -1999 up to 0)
Out of range visualisation	High = 1; Low = -1
Type of visualisation	3.5 digit standard LED display (version S) 3.5 digit high efficiency LED display (version H)
Digit height	0.52 "
<b>Performances</b>	
Reading accuracy	$\pm 0.1$ % of f.s.
Thermal drift	0.005 % of f.s./ $^{\circ}$ C
Reading rate	3 read/second
Power supply voltage	5 Vdc $\pm 5$ %
Current consumption	Version S: 90 mA Version H: 180 mA
Electromagnetic Compatibility ( EMC ) ( for industrial environments )	Immunity: EN 61000-6-2 Emission: EN 61000-6-4
Operative temperature	-10 $\div$ 60 $^{\circ}$ C
Storage temperature	-40 $\div$ 85 $^{\circ}$ C
Relative Humidity (not condensing)	0 $\div$ 90%
Weight	about 50 g

# CONFIGURATION & CALIBRATION DAT 701

## - CONFIGURATION

### Attenuation ratio setting

Refer to sections "Programming tables", "Input connections" and "Dimensions", set the input attenuation ratio by the proper jumper connector and connect the input as indicated.

### Decimal point setting

Refer to sections "Programming tables" and "Regulations", set the position of the decimal point by the proper jumper connector.

## - CALIBRATION CONTROL

Refer to section "Regulations".

- 1) By screwdriver, remove the external frame.
- 2) By screwdriver, unlock the hookups indicated as A, B, C and D in the figure and remove the front panel.
- 3) Set, by a voltage or current simulator the maximum value of the input scale.
- 4) By potentiometer regulate the value to visualize.
- 5) It's not necessary to calibrate the Zero value.

## PROGRAMMING TABLES

### ATTENUATION RATIO PROGRAMMING

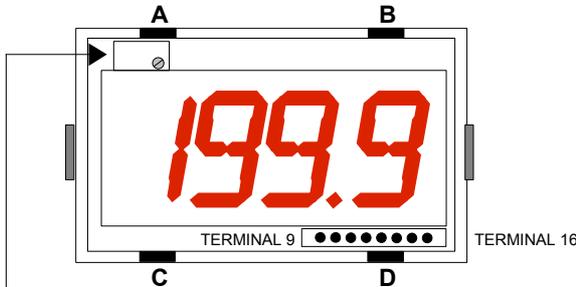
ATTENUATION (*)	CONNECTION
ATT. x 10	Terminal 15 to 16
ATT. x 100	Terminal 15 to 14

(\*) Attenuation ratio: x 1 = Basic full scale .

### DECIMAL POINT PROGRAMMING

POSITION	CONNECTION
DIP 1 ( .1999 )	Terminal 9 to 10
DIP 2 ( .19.99 )	Terminal 10 to 11
DIP 3 ( .199.9 )	Terminal 12 to 13

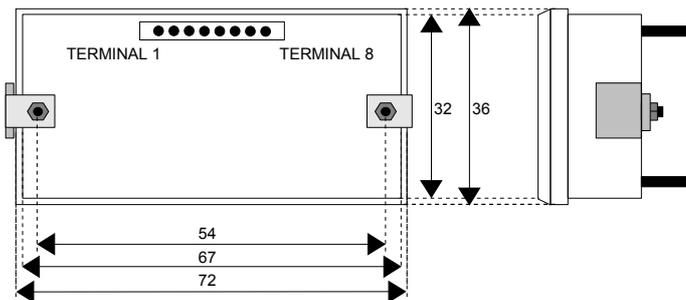
## REGULATIONS



Full scale value regulation potentiometer.

A = B = C = D: hookups to remove the front panel

## DIMENSIONS (mm)



## INSTALLATION INSTRUCTIONS

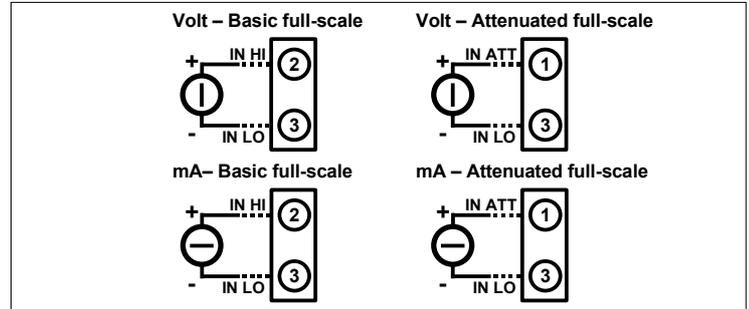
The device DAT 701 is suitable for mounting on panel (DIN 43700); the device needs a panel cut out of 68 \* 33 mm (W\*H).

The mounting kit (inclusive of connector and jumpers for setting ) is supplied with the device.

It is necessary to install the device in a place without vibrations; avoid to routing conductors near power signal cables .

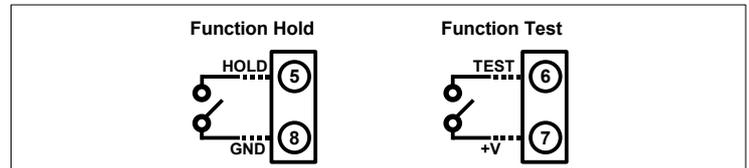
## DAT 701 CONNECTIONS

### INPUT CONNECTIONS (\*\*)

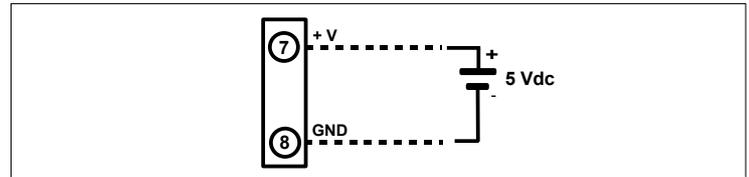


(\*\*) Note: if the input signal is isolated from the power supply the terminal 3 (IN LO) must be connected to the terminal 4 (COM).

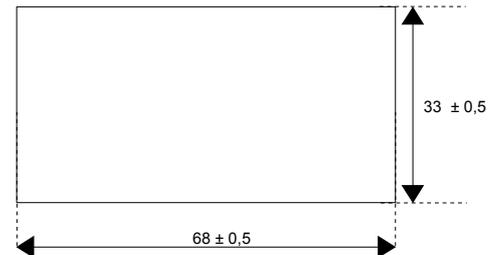
### COMPLEMENTARY FUNCTIONS CONNECTIONS



### POWER SUPPLY CONNECTIONS



### PANEL CUT-OUT (mm)



## HOW TO ORDER

The DAT 701 is provided as requested on the Customer's order.

### ORDER CODE:

DAT 701/ V / A / H

Display visualisation version :  
H = high efficiency  
S = standard

Input scale version :  
A = basic full scale: ± 200 mV or ± 200 µA  
B = basic full scale: ± 2 V or ± 2 mA

Input type version:  
V = voltage input  
I = current input