DIGITAL PANEL METER

programmable ±10000 points

DIP 10

The DIP 10 is a highly accurate **programmable panel meter**, with **IP 65 front face protection**.
Each instrument is equipped with a four 14mm high red digits display, whose brightnes suits applications in industrial control rooms perfectly.
It allows the display, the control and the transmission of data from any measurable magnitudes.

- **Universal power supply:**
  20 to 270VAC and 20 to 300VDC

- **Universal input:**

• direct current: 0/4 - 20 mA
• direct voltage: 100mV, 1V, 10V, 300V
• thermocouple: J, K, N, S, B, W5, T, R, E, W, W3, L
• sensor: Pt 100 Ω 3 wire, Ni 100 Ω 3 wire
• potentiometer: from 100 Ω to 10 KΩ
• resistance: caliber 0-400 Ω, 0-2 KΩ (0-8 KΩ, optional)

- **Combinable with various types of options:**
  (specify on order)

Insulated analog output:
Active current output, or voltage output.
Programmable scale ratio with enlarging effect.
Return value in case of sensor rupture and/or self-diagnosis error.

Output 2 relays:
Mode setpoint or window.
Recording of the alarms.
Time delay and hysteresis adjustable on each set-point.
Alarm messages.

External features

Easy programming on front face via a 4-key keyboard.

• **Display**:
Electroluminescent red - 4 alarm messages
±10 000 points (14 mm)
-2 000 / +10 000 points (20 mm) (consult)

• **Housing**: Self-extinguishing case of black UL 94 V0.

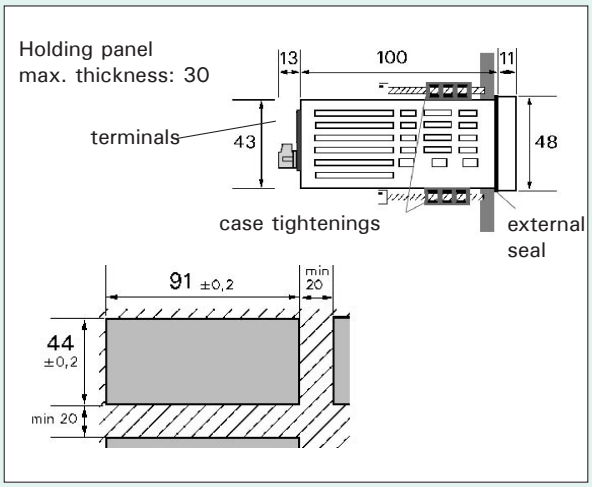
• **Connectors** plug-off connectors on rear face for screwed connectings (2.5mm², flexible or rigid)

• **Protection**: Front face: IP 65 Housing/terminals: IP20

• **Standards**: Disturbance immunity according to the standard IEC 61000-6-2
(IEC 61000-4-2 level 3, IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3)
CE marking according to IEC 61000-6-4, IEC 61000-6-2 (industrial environment)

Dimensions

Case: 96 x 48 x 124 mm (with terminals)



Mounting: on panel; cut out 44 x 91 mm

Technical features

Types of inputs

DC current or voltage

100mV, 1V, 10V, 300V, 20mA.

- Accuracy: 0.1 % of the full scale at +25 °C
- Thermic drift < 150 ppm/°C
- Measurable scale overstepping from -10% to +10%
- Permanent overload: ±100 mA for caliber 20 mA
  ±1V for caliber 100 mV
  ±50V for calibers 1V, 10V
  ±600V for caliber 300V
- Programmable scale factor
- Enlarging effect
- Special linearisation on 20 points
- Supply for 2 or 3-wire sensor
  24 VDC (±15%) -25 mA protected from short-circuits

Temperature

Thermocouples :

Type J	min.	-160	°C	max. +1200	°C
Type K	min.	-270	°C	max. +1370	°C
Type N	min.	+0	°C	max. +1300	°C
Type S	min.	-50	°C	max. +1770	°C
Type B	min.	+200	°C	max. +1820	°C
Type W5	min.	+0	°C	max. +2300	°C
Type T	min.	-270	°C	max. +410	°C
Type R	min.	-50	°C	max. +1770	°C
Type E	min.	-120	°C	max. +1000	°C
Type W	min.	1000	°C	max. +2300	°C
Type W3	min.	0	°C	max. +2480	°C
Type L	min.	-150	°C	max. +910	°C

- Accuracy: 0.1% of the full scale at +25°C, or 30µV typical (60µV max.)
- thermic drift < 150ppm/°C (except CJC)
  CJC efficiency: < 0.03°C/°C ± 0.5°C from -5°C to +55°C

Sensors:

Pt 100 Ω	min	-200	°C	max. +850	°C
Ni 100 Ω	min	-60	°C	max. +260	°C

- Influence of the line resistance in 3-wire measurement within the grade for 0<R**I**<25Ω
- Max. measured current: 250 µA
- Accuracy: 0.1% of the full scale at +25°C
- Thermic drift < 150ppm/°C

Potentiometer and resistance

Resistive sensors: calibers 0-400 Ω and 0-2 kΩ (0-8 kΩ optional)
- Accuracy: 0.1% for calibers 0-400 Ω and 0-8 kΩ and 0.5% for caliber 0-2 kΩ (of the full scale at +25°C)
- Thermic drift < 150ppm/°C

Potentiometers: from 100 Ω to 10 kΩ
- Accuracy: 0.1% of the full scale at +25°C
- Thermic drift < 150ppm/°C

Types of options

option A1, A3

Analog output: 2 types on choice

A1: Active current output 0/4-20mA
A3: Voltage output 0-10V

- Accuracy: 0.1 % in relation to the display (at +25°C)
- Residual ripple ≤ 0.2%
- Admissible load 0Ω < Lr < 600 Ω (current)
  Lr > 500kΩ (voltage)
- Programmable scale ratio with enlarging effect
- Response time: 40 ms

option R

Relay outputs:

2 independently programmable setpoint relays

- Hysteresis independently programmable from 0 to 100% of the setpoint in the display unit
- Time delay independently programmable from 0 to 25 s in 0.1s. increments
- NO-NC contact 8 A - 250 V on resistive load

♦ Power supply

20 to 270VAC 50/60/400Hz, and 20 to 300VDC

Power draw: 3 W max. 5.5 VA max.

♦ Galvanic partition

2.5KVEFF 50HZ 1MN, BETWEEN SUPPLY, INPUT, ANALOG OUTPUT, RELAY OUTPUTS

♦ Features

- Sampling time: 100ms
- Input impedance ≥ 1 MΩ for the voltage inputs
Max. drop 0.9 V max. for the current input
- Rejection rate:
Common mode: 130 dB Serial mode: 40 dB 50/60 Hz
- Zero drift compensation and self-calibration

♦ Programmable integration indice

Allows stabilising the display in case of unsteady input.

♦ Detection of the line or sensor rupture

- Can be detected on inputs mV, TC, Pt 100, Ni 100 , resistance (0-400 Ω) and current (4-20 mA).
- Return value programmable on the analog output in case of sensor rupture.
- Detection of the sensor rupture programmable on the 2 relays.
- Possibility to disconnect the sensor rupture.

♦ Self-diagnosis:

- Permanently watches any drifts which may occur on the components. Serves to warn the user before they may provoque false measures
- Self-diagnosis error detection programmable on the 2 relays.
- Return value programmable on the analog output in case of self-diagnosis error.

♦ Measurable scale overrange

Visualised on the display by a blinking measure.

♦ Linearisations

- Linear input
- Special linearisation on 20 points (in X and in Y) (voltage, current, potentiometer or resistance inputs)

♦ Scale shifting (slope and offset)

Programmable on all the inputs.

♦ Adjusting of the brightness

Adjusting of the digits brightness programmable on 4 levels depending on the location of the instrument (outside, control room...)

♦ Quick reading on the display

- of the value of the setpoints,
- of the input signal electrical value,
- of the min. and max. values.

♦ Function simulation

- Possibility to simulate the analog output (mode generator).
- Possibility to simulate the measure: allows validating the configuration of the analog output and the relay outputs in the installation.

♦ Access code

An access code adjustable from 0000 to 9999 serves to protect the meter and its setpoints from unauthorized programming, and to lock the access to some functions.
The code is 0000 on factory exit.

x x x x		
	0 to 5	Access to the scale shifting
	6 to 9	No access
	0 to 5	Access to the measure and output simulations
	6 to 9	No access
	0 to 5	Access to the function “tare” (except t° inputs)
	6 to 9	No access
0 to 5		Access to the quick entering of alarm setpoints
6 to 9		No access

♦ Environment

- IP65 front face protection.
- Operating temperature: -5 to 55°C.
- Storage temperature: -30°C to +80°C.
- Relative dampness: 80% annual average.
- Plug-off connectors for screwed connections (2.5 mm² cable, flexible or rigid).
- Case of self-extinguishing black UL 94 VO ABS.
- Weight: 150g (with packaging)

Coding

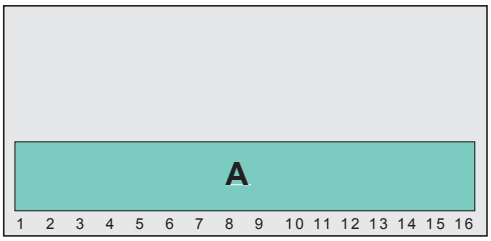
♦ Type: DIP 10

♦ **Output options**:
A: Analog (A1, or A3: specify)
R: 2 relays

Order example:
For a panel meter with 1 active current analog output and 2 relays, request reference:
DIP 10 A1R .

This appliance is dedicated to industrial applications. It has to be installed in an electrical switchbox, or equivalent.

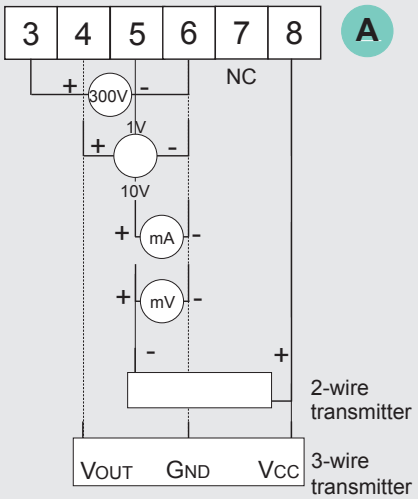
Wiring



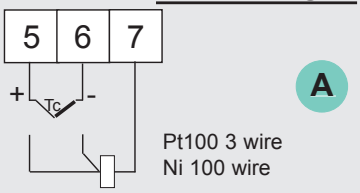
Location of the terminals
(view of case rear side)

INPUTS

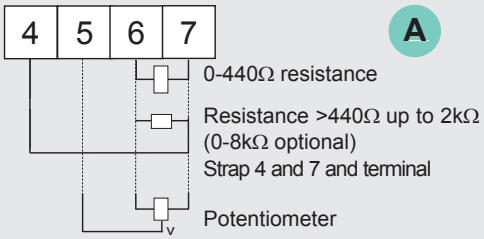
PROCESS



TEMPERATURE



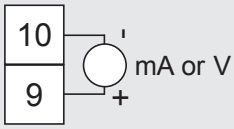
RESISTANCE and POTENTIOMETER



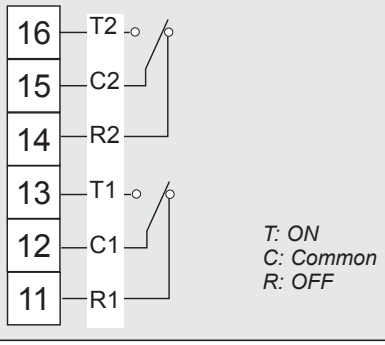
OUTPUTS (optional)

ACTIVE CURRENT

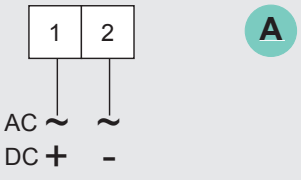
OR VOLTAGE



2 RELAYS:



POWER SUPPLY



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