DIGITAL PANEL METERS

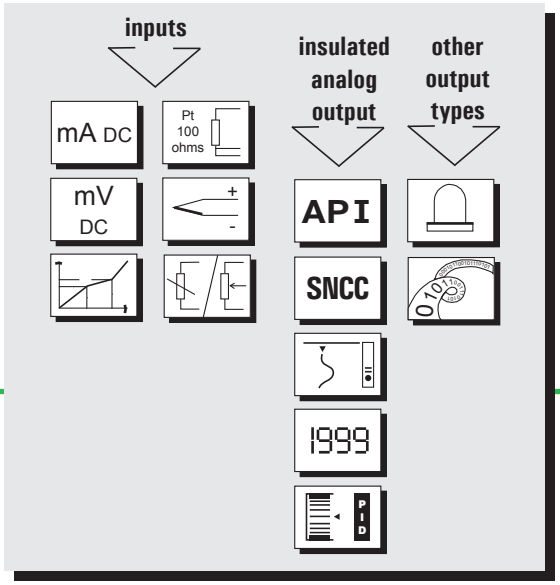
programmable ± 10000 points

DGN 10

*The DGN 10 is a **universal programmable panel meter**, highly accurate, with **IP 65** front face protection. This device is equipped with a 14mm high 4 digit red display, whose brightness suits applications in industrial control rooms perfectly.*
It allows the display, the control and the transmission of data of any measurable magnitudes.

PANEL METER

FUNCTIONS



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

Universal input:
- **DC current or voltage**
  100mV, 1V, 10V, 300V, 0/4-20mA.
- **Temperature:** thermocouple (J,K,N,S,B, W5,T,R,E,W,W3,L), PT100Ω 3 wire, NI100Ω 3 wire.
- **Potentiometer:** from 100 Ω to 10 KΩ
- **Resistance:** caliber 0-400 Ω, 0-2 KΩ (8 KΩ, optional)

INTRODUCTION

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

- **Display**:
Electroluminescent red - 4 alarm messages
± 10 000 points (14 mm)
-2000 / + 10 000 points (20 mm) consult with SFERE

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

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

- **Protection**: Front face: IP 65 Case / terminals: IP20

Combinable with various option types:
(specify on order)

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

Relay output: 2 relays:
Mode setpoint or window.
Recording of the alarms.
Time delay and hysteresis adjustable on each setpoint.
Alarm messages

- **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)

sfere® *The friendly interface*

CA IN/40

TECHNICAL FEATURES AT 23°C

OPTION TYPES

option A1, A3

Analog output: 2 types on choice

A1: 0/4-20mA active current output

A3: 0-10V voltage output

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

option R

Relay output:

R: 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

INPUT TYPES

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 included in the grade for 0<R**l**<25Ω
- Max. measure current: 250 µA
- Accuracy: 0.1% of the full scale at +25°C
- Thermic drift < à 150ppm/°C

DC current or voltage

100mV, 1V, 10V, 300V, 0/4-20mA.

- Accuracy: 0.05 % of the full scale at +25 °C
- Thermic drift <150 ppm/°C
- Permanent overload: ±100 mA for caliber 20 mA
  ±1V for caliber 100 mV
  ±50V for calibers 1V, 10V
  ±600V for caliber 300V
- Measurable scale overrange from -10% to +10%
- Programmable scale factor
- Enlarging effect
- Special linearisation on 20 points
- Supply for 2 or 3-wire sensor 24 Vdc (±15%) 25mA, protected from short-circuits

Potentiometer and resistance

Resistive sensors: calibers 0-400 Ω and 0-2 kΩ (0-8 kΩ optional)

- Accuracy: 0.1% for the calibers 0-400 Ω and 0-8 kΩ and 0.5% for the 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

Universal power supply:

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

Power draw: 3 W max. 5.5 VA max.

Galvanic partition:

2.5 KV eff 50 Hz 1 Mn, between supply, input, analog output, relay outputs

Features

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

Programmable integration indice

Allows stabilising the display in case of unsteady input.

Detection of 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.
- Sensor rupture detection programmable on the 2 relays.
- Possibility to disconnect the sensor rupture.

Self-diagnosis:

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

Input scale overrange

Visualised on the display by a blinking measure.

Linearisations

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

Scale shifting (slope and offset)

Programmable on all inputs.

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 relays in the installation.

Adjusting of the brightness

- Setting of the digits brightness programmable on 4 levels according to the location of the instrument (outdoor, control room, ...).

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 simulation
↓	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 T°: -5 to 55°C.
- Storage T°: -30°C to +80°C.
- Relative dampness: 80% annual average.
- Connection by plug-in screwed terminals (for 2.5 mm² cable, flexible or rigid).
- Self-extinguishing case of black UL 94 VO.
- Weight: 150g (with packaging).

CODING

Type: DGN 10

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

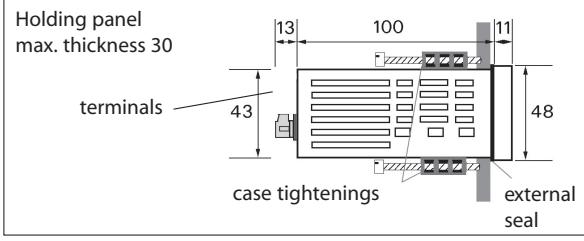
Simultaneously combinable options

Order example:
For a panel meter with analog output and 2 relays request the reference:
DGN 10 - A1R

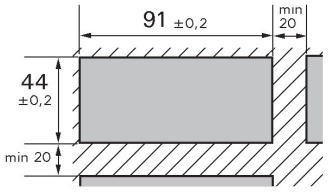
This appliance is dedicated to industrial applications. It has to be installed in an electrical switchbox, or equivalent.

WIRING / DIMENSIONS

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

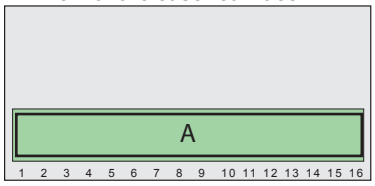


Mounting: on panel; cut out
44 x 91 mm



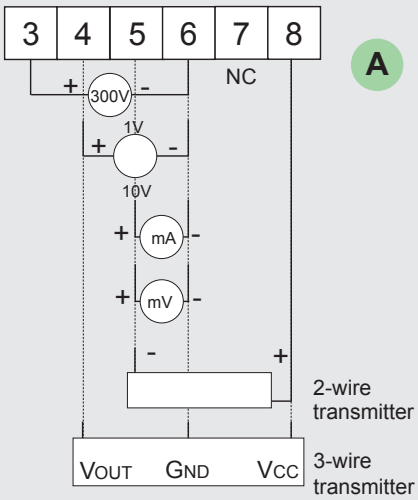
Location of the terminals

View of the case rear face

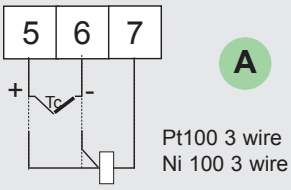


INPUTS

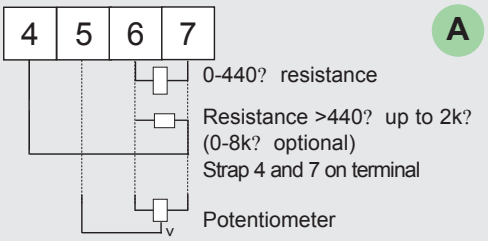
PROCESS



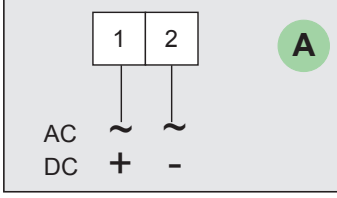
TEMPERATURE



RESISTANCE and POTENTIOMETER

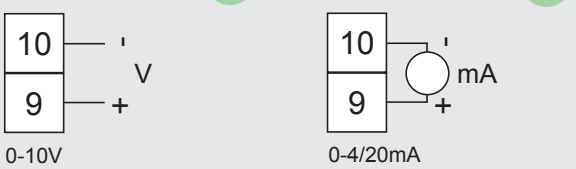


SUPPLY

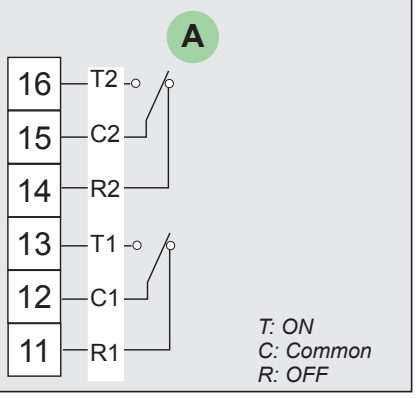


OUTPUTS (options)

VOLTAGE or ACTIVE CURRENT



2 RELAYS:



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