

DIGITAL PANEL METERS

programmable - 10000/+ 100000 points



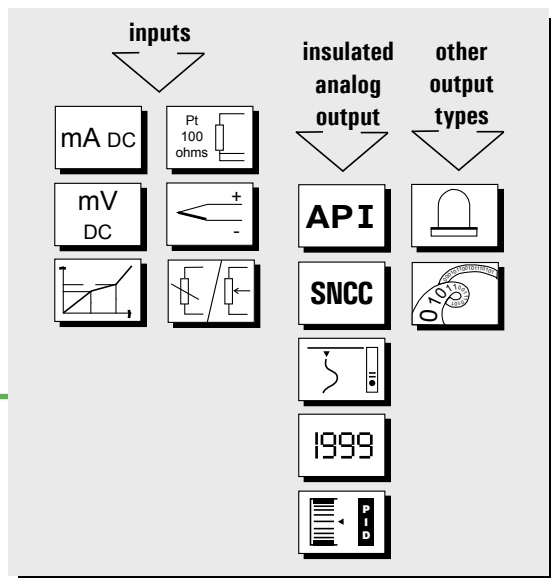
DGN 50

The DGN 50 is a highly accurate **programmable panel meter**, with **IP 65 front face protection**. Each instrument is equipped with a display of five 14mm high red digits, whose brightness suits applications in industrial control rooms perfectly. It allows the display, the control and the transmission of data from any measurable magnitudes.



PANEL METER

FUNCTIONS



Universal power supply:

20 to 270 VAC and 20 to 300 VDC

Universal input:

- **Direct 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)

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.
Latching function.
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)

EXTERNAL FEATURES

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

- **Display:**
Electroluminescent red - 4 alarm messages
-10 000/+100 000 points (14 mm)
- **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



The friendly interface

CA
IN/48

TECHNICAL FEATURES AT 23°C

	TYPES OF OPTIONS	TYPES OF INPUTS																																										
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 $\leq 0.2\%$ - Admissible load $0\Omega < L_r < 600\Omega$ (current) $L_r > 500k\Omega$ (voltage) - Programmable scale ratio with enlarging effect - Response time: 40 ms	Temperature Thermocouples : <table> <tr> <td>Type J</td><td>min. -160 °C</td><td>max. +1200 °C</td></tr> <tr> <td>Type K</td><td>min. -270 °C</td><td>max. +1370 °C</td></tr> <tr> <td>Type N</td><td>min. +0 °C</td><td>max. +1300 °C</td></tr> <tr> <td>Type S</td><td>min. -50 °C</td><td>max. +1770 °C</td></tr> <tr> <td>Type B</td><td>min. +200 °C</td><td>max. +1820 °C</td></tr> <tr> <td>Type W5</td><td>min. +0 °C</td><td>max. +2300 °C</td></tr> <tr> <td>Type T</td><td>min. -270 °C</td><td>max. +410 °C</td></tr> <tr> <td>Type R</td><td>min. -50 °C</td><td>max. +1770 °C</td></tr> <tr> <td>Type E</td><td>min. -120 °C</td><td>max. +1000 °C</td></tr> <tr> <td>Type W</td><td>min. 1000 °C</td><td>max. +2300 °C</td></tr> <tr> <td>Type W3</td><td>min. 0 °C</td><td>max. +2480 °C</td></tr> <tr> <td>Type L</td><td>min. -150 °C</td><td>max. +910 °C</td></tr> </table> - 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 $\pm$ 0.5°C from -5°C to +55°C Sondes : <table> <tr> <td>Pt 100 Ω</td><td>min -200 °C</td><td>max. +850 °C</td></tr> <tr> <td>Ni 100 Ω</td><td>min -60 °C</td><td>max. +260 °C</td></tr> </table> - Influence of the line resistance in 3-wire measurement within the grade for $0 < R_l < 25\Omega$ - Max. measured current: 250 μA - Accuracy: 0.1% of the full scale at +25°C - Thermic drift < 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 $\pm 1V$ for caliber 100 mV $\pm 50V$ for calibers 1V, 10V $\pm 600V$ for caliber 300V - Measurable scale overstepping from -10% to +10% - Programmable scale factor - Enlarging effect - Special linearisation on 20 points - Supply for 2 or 3-wire sensor 24 VDC ($\pm 15\%$) -25 mA protected from short-circuits	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	Pt 100 Ω	min -200 °C	max. +850 °C	Ni 100 Ω	min -60 °C	max. +260 °C
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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																																											
		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																																										

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 $\geq 1 \text{ M}\Omega$ for the voltage inputs
Max. drop 0.9 V max. for the current input
- Zero drift compensation and self-calibration
- Rejection rate:
Common mode: 130 dB Serial mode: 40 dB 50/60 Hz

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 provoke 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)

Process calibration (slope and offset)

Programmable on all the 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 relay outputs in the installation.

Adjusting of the brightness

- Adjusting of the digits brightness programmable on 4 levels depending on the location of the instrument (outside, 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	6 to 9	0 to 5	6 to 9	Access to the process calibration
				No access
0 to 5	6 to 9	0 to 5	6 to 9	Access to the measure and output simulations
				No access
0 to 5	6 to 9	0 to 5	6 to 9	Access to the function "tare" (except t° inputs)
				No access
0 to 5	6 to 9	0 to 5	6 to 9	Access to the quick entering of alarm setpoints
				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: DGN 50

Output options:

A: Analog (A1, or A3: specify)

R: 2 relays

Options simultaneously combinable

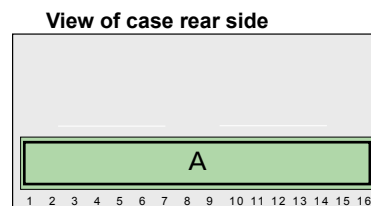
Order example:

For a panel meter with 1 analog output and 2 relays, request the reference:

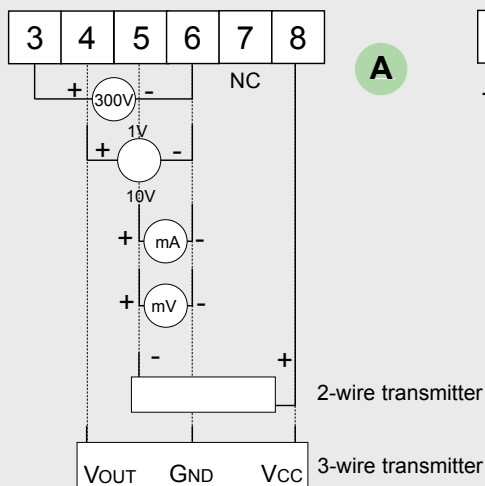
DGN 50 - A1R

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

Location of the terminals



PROCESS



Pt100 3 wire
Ni 100 3 wire

A

0-440Ω resistance

Resistance >440Ω up to 2kΩ
(0-8kΩ optional)

Strap 4 and 7 and terminal

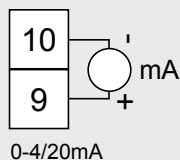
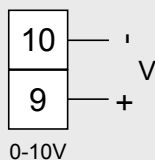
Potentiometer

	1	2
AC	~	~
DC	+	-

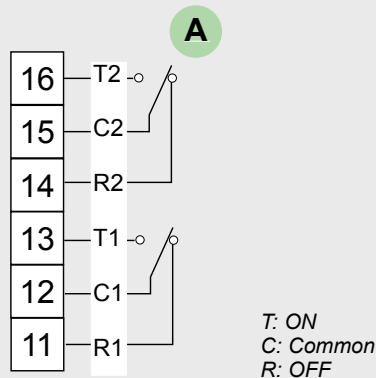
VOLTAGE

or

ACTIVE CURRENT



2 RELAYS:



T: ON
C: Common
R: OFF

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