

TWO-COLOUR DIGITAL PANEL METER TRMS VOLTAGE AND CURRENT DGN177

The DGN177 is a highly accurate **programmable digital panel meter**, with **IP 65** front face protection. Each appliance is equipped with a two-colour 4 digits 14 mm high display with a brightness which integrates perfectly in applications in industrial control rooms. The extra-thin front face allows a better integration in cabinet fronts. They allow the display, the control and the transmission of the measure of a true real measured direct or alternating voltage or current (TRMS).

Two display versions are available:



Two-colour display,
red and green



Two-colour display,
red and white



Introduction

Inputs:

True real measure (TRMS) of the voltage and the current
Voltage calibres: 100 mV, 1 V, 10 V, 150 V, 300 V.
Current calibres: 100 mA, 1 A, 5 A.
Frequency of the input signal: DC and from 10 Hz to 1 kHz.

Universal power supply

20 to 250 VAC and 20 to 250 VDC

Options:

(Specify on order)

Isolated analogue output

Active current output, or voltage output.

Output 2 or 4 relays

Mode setpoint or window.

Isolated digital communications

RS485 2-wire, protocol MODBUS-JBUS

2 isolated logic inputs (24VDC signal)

16-leds bar graph display

Option Wifi (not compatible with digital communications)

Reading of the measures and configuration

Easy programming on front face with a 5-key tactile keyboard, or via the software SlimSET with a standard USB-µUSB cable (optional).

Display:

Electroluminescent red and green (or red and white)
Selection of the basic colour and the condition for colour change programmable.
±10000 points
4 alarm leds + 2 configurable leds

Housing: Self-extinguishing case of black UL 94 V0 ABS.
Extra-thin 1.4 mm front face

Connectors: Removable terminal blocks on rear face for screwed connectings (2.5mm², flexible or rigid)

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

Compliance with standards:

Directive LV 2014/35/UE.....EN 61010-1
Directive EMC 2014/30/UE.....EN 61326-1
Directive ROHS 2011/65/UE

Marking



Technical features

Types of inputs

Direct or alternating current, voltage

True real measures (TRMS)

- Voltage calibres: 100 mV, 1 V, 10 V, 150 V and 300 V.
Input impedance: $\geq 1 \text{ MOhm}$
- Current calibres: 100 mA, 1 A and 5 A.
Input impedance: max. drop 1.2 V (calibre 100 mA)
and $\approx 20 \text{ m}\Omega$ for 1 A and 5 A.
- Accuracy rating: 0.2 % of the calibre.
- Measurable scale overrange: $\pm 10 \%$
- Pass-band: DC and from 10 Hz to 1 kHz.
- Thermal drift $< 200 \text{ ppm}/^\circ\text{C}$

Types of options

option A1, A2, A3

Analogue output: 3 types on choice

- A1: Active current output** 0/4-20mA
A2: Passive current output 0/4-20mA
A3: Voltage output 0-10V

- Accuracy: 0.1 % in relation to the display (at $+25^\circ\text{C}$)
- Residual ripple $\leq 0.2\%$
- Admissible load $0\Omega < L_r < 600 \Omega$ (current)
 $L_r > 5\text{k}\Omega$ (voltage)
- Scale ratio programmable with enlarging effect.
- Response time: 40 ms.

option R, R4

Relay outputs:

2 or 4 independently programmable setpoint relays

- Hysteresis programmable independently in display points.
- Time delay programmable independently from 0 to 999.9 s in 0.1s. increments.
- Break-make contact 8 A - 250 V on resistive load.

option N

Digital output:

- RS485 2-wire, protocol MODBUS-JBUS
- Slave number programmable from 1 to 255.
Baud rate from 1200 to 19200 bauds.

option T

2 logic inputs: 24 VDC signal

Display hold, 0 reset of the min. and max., moving of the decimal point or tare function.

option B

16-leds bargraph display:

- Quick evaluation of the variations of the measured value.
Scale factor programmable.

option W

Wifi:

Reading of the measures and configuration

Not compatible with the option N: Digital comms

◆ Power supply

20 to 250 VAC 50/60Hz, and 20 to 250 VDC

Power consumption: 3 W max. 6 VA max.

◆ Galvanic isolation

3 kVeff 50HZ 1mn, between supply, voltage input, current input, analogue output, relay outputs, RS485 output and logic inputs.

1.5 kV between analogue output and RS485.

◆ Integration indice (programmable)

Allows stabilizing the display in case of unsteady input.

◆ Self-diagnosis

- Self-diagnosis detection of the errors programmable on the 2 relays.
- Fall back value programmable on the analogue output in case of self-diagnosis error.

◆ Input scale overrange

Visualized on the display by a blinking measure.

◆ Linearisations

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

◆ Process calibration (slope and offset)

Programmable on all inputs.

◆ Brightness setting

Setting of the digits brightness programmable on 4 levels, depending on the location of the device (outdoor, 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 analogue output (generator mode).
- Possibility to simulate the input or the displayed measure: allows validating the configuration of the analogue output and the relay outputs in the installation.

◆ Changing of the display colour

- Programming of the main display colour.
- Programming of the display colour change on alarm or self-diagnosis.

◆ **Access code**

An access code adjustable from 0000 to 9999 serves to protect the digital panel meter from unauthorized programming and to lock the access to some functions.

On factory exit the code is 0000.

Programming of the functions for which the code will be required.

◆ Environment

- IP65 front face protection.
- Operating temperature: -20 to +60°C.
- Storage temperature: -20 to +70°C.
- Relative dampness: 80% annual average.
- Use in pollution degree 2 and voltage surge category II or better.
- Max. altitude: 2000m
- Weight: 150g (with packaging)

Coding

◆ Type: DGN177

◆ **Output options:**

A : Analogue (A1, A2 or A3: specify)

R : 2 relays

R4: 4 relays

N : Digital communications RS485

T : 2 logic inputs

B : Bar graph display

W : Wifi (not compatible with option N: digital comms)

◆ **Colour code:**

RG: Two-colour display, Red/Green

RW: Two-colour display, Red/White

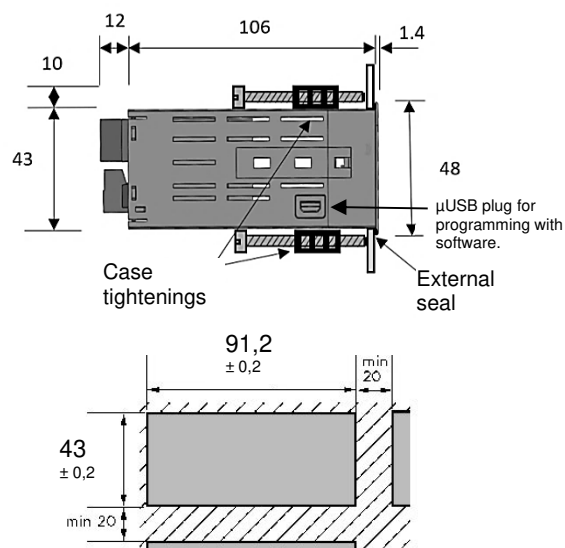
Order example:

For a two-colour digital panel meter in Red/Green with active current analogue output and 2 relays, request the reference:

DGN177 A1R RG.

Dimensions

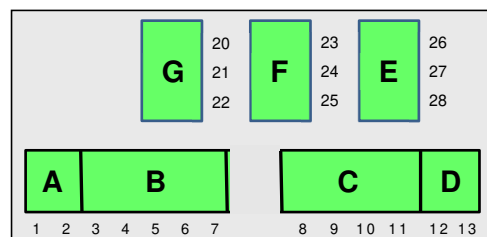
Housing: 96 x 48 x 119.4 mm (with terminals)



Mounting: on panel, cut out 43 x 91.2 mm

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

Connectings

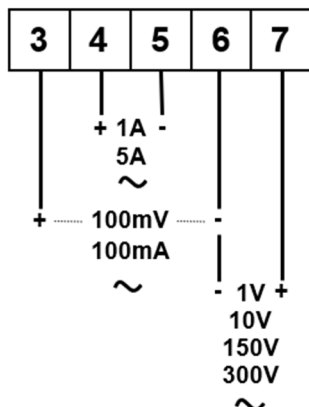


Location of the terminals

(view of case rear side)

INPUTS

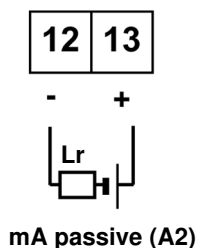
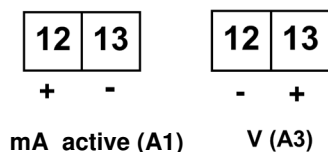
B



OUTPUTS (options)

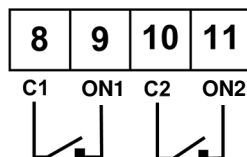
ANALOGUE OUTPUT

D



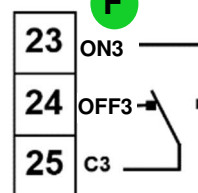
RELAYS 1 AND 2

C

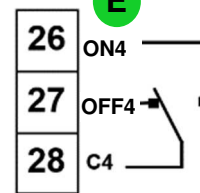


RELAYS 3 AND 4

F

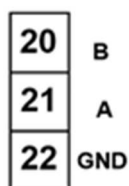


E



RS485

G



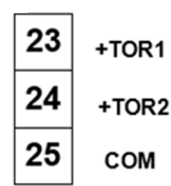
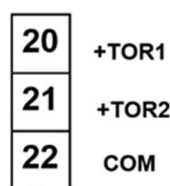
LOGIC INPUTS

G

or

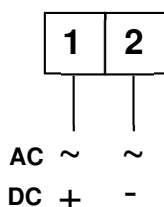
LOGIC INPUTS

F



SUPPLY

A



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