

TWO-COLOUR DIGITAL PANEL METER

AC VOLTAGE AND CURRENT

DGN175 AC

The DGN175 AC 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 data from an alternating current or voltage.



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 current
2 voltage calibres: 150 / 500 V
2 current calibres: 1 / 5 A

• 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.
Possibility to programme 3 magnitudes for display, accessible simply by pressing 1 key.

• 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

CE Marking



Technical features

Types of inputs

Alternating current or voltage

- 2 voltage calibres (programmable): 150V and 500V.
Un = 150 VAC and 500 VAC
Overrange: 1.2 Un
- 2 current calibres (programmable): 1A and 5A.
In = 1 AAC and 5 AAC
Overrange: 1.2 Un
- Voltage overrange:
Permanent: 750 V
During 10 s: 1000 V
- Current overrange:
Permanent: 10 A
During 10 s: 50 A
- Frequency: 10...50...65 Hz
- Accuracy rating: 0.2 % voltage / current (at 25°C)
- Measure cycle: 50 ms
- Thermal drift < 200 ppm/°C
- Digital filtering programmable
- Input impedance:
> 2 MOhms for the voltage input.
< 0.2 VA for the current input.

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°C)
- Residual ripple $\leq 0.2\%$
- Admissible load $0\Omega < R_L < 600\Omega$ (current)
 $R_L > 5k\Omega$ (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.

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.

◆ Brightness setting

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

◆ Quick reading on the display

- Of the value of the setpoints.
- Of the min. and max. values

◆ Function simulation

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

◆ 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 which will be accesible with code.

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 for 500 V AC, and III or better for a voltage lower than 300 V AC.
- Max. altitude: 2000 m
- Weight: 150g (with terminals)

Coding

◆ **Type: DGN175 AC**

◆ **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)

All outputs can be combined except for the configuration: AR4NT.

◆ **Colour code:**

RG: Two-colour display, Red/Green

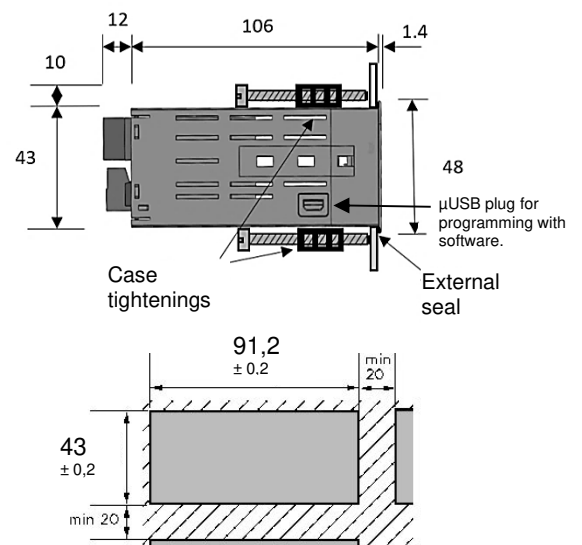
RW: Two-colour display, Red/White

Order example:

- ◆ For a two-colour digital panel meter in Red/Green with active current analogue output and 2 relays, request the reference: **DGN175 AC-A1R-RG**.

Dimensions

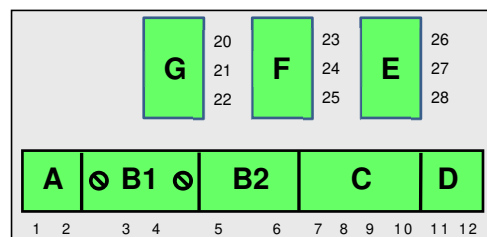
Housing: 96 x 48 x 119.4 mm (with terminals)



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

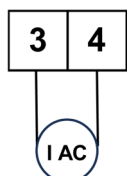


Location of the terminals

(view of case rear side)

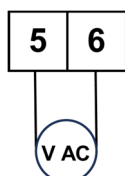
INPUTS

CURRENT **B1**



1 A AC
5 A AC

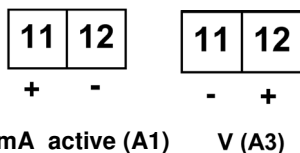
VOLTAGE **B2**



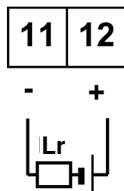
150 V AC
500 V AC

OUTPUTS (optional)

ANALOGUE OUTPUT **D**

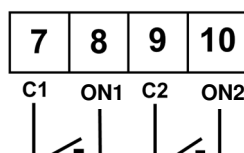


mA active (A1) V (A3)

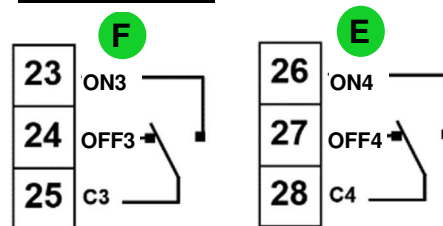


mA passive (A2)

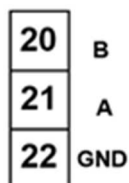
RELAYS 1 AND 2 **C**



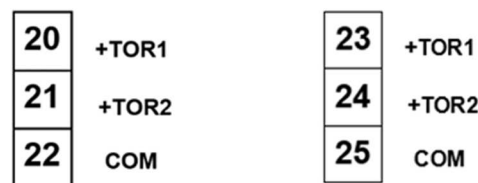
RELAYS 3 AND 4



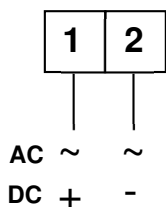
RS485 **G**



LOGIC INPUTS **G** or LOGIC INPUTS **F**



POWER SUPPLY **A**



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