

TWO-COLOUR DIGITAL PANEL METER

2 INPUTS in mA

DGN175 S

The DGN175S is 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.

It allows the display of one of the 2 inputs or of the performed calculation, which can be managed on the different outputs.

Two display versions are available:



Two-colour display, red and green



Two-colour display, red and white



Introduction

Inputs:

Two bidirectional current inputs: ± 20 mA
Mathematical calculation between the 2 channels, with programmable operations and constants.

The performed calculation is of the type:

$[(Fct1.Var1) OP1 (Fct2.Var2)] OP2 (Fct3.Var3)$

Operations: Sum, subtraction, multiplication, division and absolute value of the difference.

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- μ USB 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 Leds for indication of the displayed measure

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



Technical features

Types of inputs

DC current

2 bidirectional inputs: $\pm 20\text{mA}$.

- Accuracy 0,05 % of the up scale at +25 °C
- Thermal drift < 150 ppm/°C
- Measurable scale overrange from -5% to +5%
- Scale factor programmable
- Enlarging effect
- Square root extraction
- Supply for 2-wire sensor
22 Vdc ($\pm 15\%$) 50 mA protected from short-circuits
- Input impedance: Max. drop 0.9 V

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 $0\Omega < L_r < 600\Omega$ (current)
 $L_r > 5k\Omega$ (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., 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: 5 W max. 8 VA max.

◆ Galvanic isolation

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

1.5 kV between analogue output and RS485.

◆ Response time

Average response time: 350 ms (for a variation from 10 to 90 % of the input signals)

◆ Features

- Sampling time: 100ms

- Rejection rate:

Common mode: 130 dB

Serial mode: 50 dB 50/60 Hz

- Zero drift compensation and self -calibration

◆ Integration indice (programmable)

Allows stabilizing the display in case of unsteady input.

◆ Detection of the line or sensor break

- Detection if the down and up scale are < 3.5 mA on at least one of the two inputs.
Fall back value programmable on the analogue output in case of sensor break.
- Detection of the sensor break programmable on the 2 relays.

◆ Self-diagnosis

- Permanently watches any drifts of the components. Serves to warn the user before they may provoke false measures.
- 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

Shown on the display by a blinking measure.

◆ Linearisations

- Linear input
- Extraction of the square root

◆ Process calibration (slope and offset)

Programmable on both inputs.

◆ 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 input signal electrical value.
- Of the min. and max. values

◆ Simulation function

- 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.

◆ 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 terminals)

Coding

◆ Type: DGN175S

◆ 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

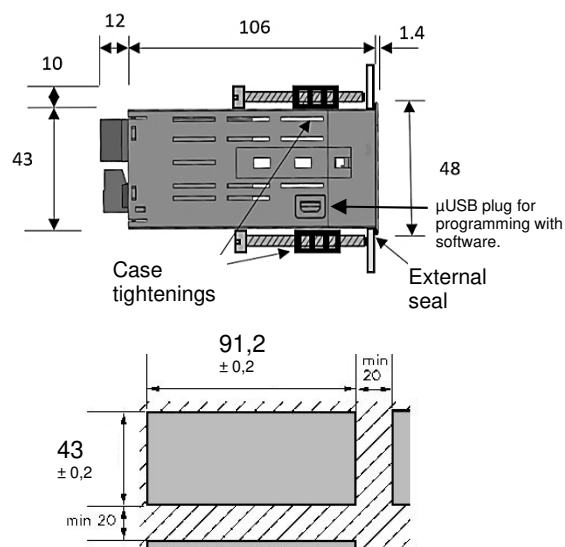
Order example:

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

DGN175S A1R RG.

Dimensions

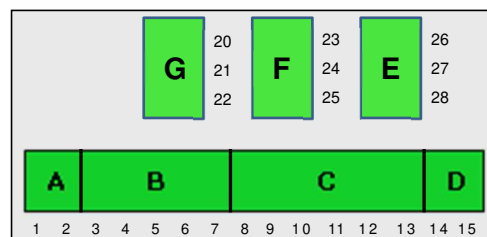
Housing: 96 x 48 x 119.4 mm (with terminals)



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

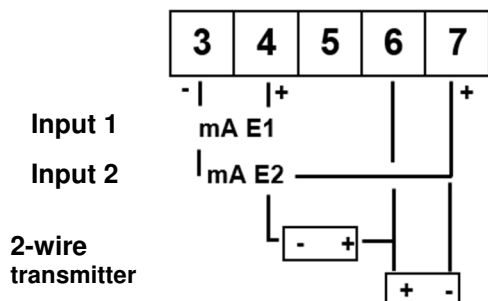


Location of the terminals

(view of case rear side)

INPUTS

B



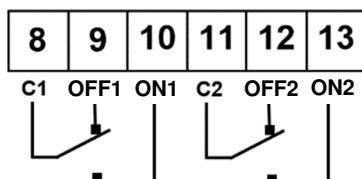
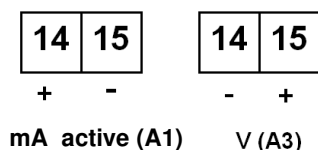
OUTPUTS (optional)

ANALOGUE OUTPUT

D

RELAYS 1 AND 2

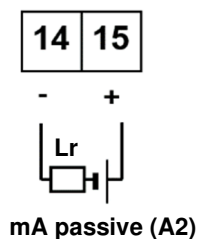
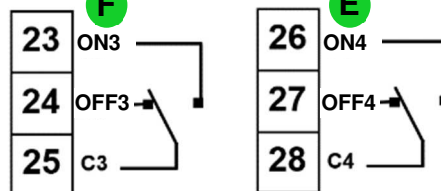
C



RELAYS 3 AND 4

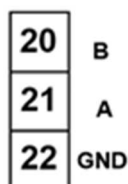
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E



RS485

G



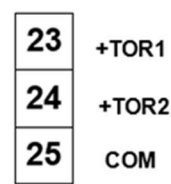
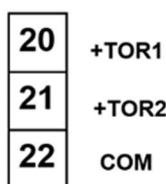
LOGIC INPUTS

G

or

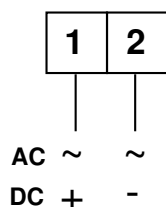
LOGIC INPUTS

F



SUPPLY

A



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