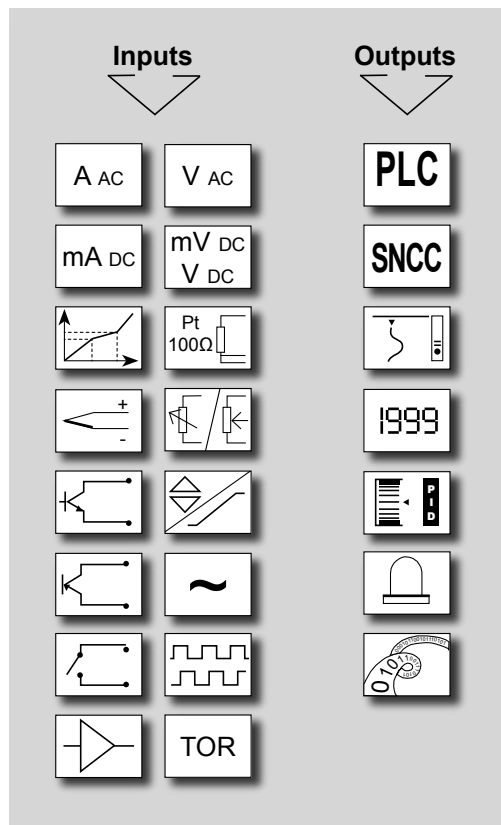


PROGRAMMABLE DIGITAL PANEL METERS

Display from 4 to 6 digits

Series DIGINORM®

♦ This range is declined into several input versions, combinable with output extensions according to your requirements.



DGN 75 U
DGN 75 T
DGN 75 M
DGN 75 AC
DGN 75 S

DGN 85 U
DGN 85 M
DGN 85 J

DGN 95 F
DGN 95 I
DGN 95 IC

DGN 45 L
DGN 75 L

4 digits



5 digits



6 + 3 digits



3.5 + 4 digits



Process bidirectionnal
Temperature
Universal (process, T°, Ω)
Alternating: U, I, F
2 current inputs

Process bidirectionnal
Universal (process, T°, Ω)
Gauge bridge

mA - Integrator / totaller
Frequency (1 channel)
Frequency - Counting /
de-counting (2 channels)

mA - LCD display self-
powered by the loop
Rear-lighting, configurable

♦ Output options:

- A Insulated analog output: active or passive current output, or voltage. Return value in case of sensor rupture and/or self-diagnosis error.
- R / R4 Relay outputs: 2 or 4 relays (mode setpoint/window or pulses)
- N Insulated digital output: RS485 2 wire (Modbus-Jbus)
- tor 2 Insulated logic inputs (standard on the DGN 95F)
- B Bargraph display with programmable functions

Display, control and transmission of data from any measurable magnitudes ...

A range of fully programmable digital panel meters which adapts closely to your applications. Their display allows a comfortable reading of the measure, even at a remote distance. Moreover, they are equipped with a 4-key keyboard, allowing direct access to the programming, displayed in clear language.

Functions

♦ Self-diagnosis:

The instrument permanently watches some of its parameters. If an error is detected, it can be reported on the 4 relays and on the analog output

♦ Simulation function:

The analog output and the measure can be simulated, in order to validate the configuration of the instrument in the system.



The friendly interface

♦ Quick reading on the display:

- Of the min. and max. Quick setting of the setpoints,
- visualisation of the input electrical value ...

♦ Detection of the sensor or line rupture:

- Programming on the 4 relays.
- Return value programmable on the analog output in case of detection. Disconnection possible.

♦ Input range overstepping:

- The meter will show a caliber overrange by a blinking measure.

♦ Filtering of the measure:

- Programmable integration indice, allows stabilising the display in case if unsteady input.

♦ Access code:

- Possibility to protect the programming and to lock the access to some functions.

♦ Displays:

- The brightness of the display, the leds and the bargraph (if option B) can be adjusted independently on 4 intensity levels.

- **Bargraph:** Quick evaluation of the measured value variations on a 16 led display.
- Scale factor programmable.

♦ Programming possible by PC software (MCVISION) for some types:




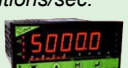

- - DGN75 U/T/M, DGN85 U/M



PANEL METERS

CA
IN/32

Input features






Names of the DIGINORMs®		Type	Accuracy (at +25°C)*	Thermic drift	Over- range*	Impedance	Features
Universal DGN 75 M (4 digits) and DGN 85 M (5 digits)	<i>Process</i> DGN 75 U (4 digits) DGN 85 U (5 digits)	DC current, voltage ±100mV, ±1V, ±10V, ±300V, ±20mA.	0.1% for DGN75U/ DGN75M	<150ppm /°C	±10% DGN75U	U: ≥1MΩ I: Max. drop 0.9V	Programmable scale factor. Enlarging effect. √ ² extraction Special linearisation on 20 points. <u>Supply for 2 or 3-wire sensor:</u> 26Vdc (±15%) for DGN85, 24Vdc (±15%) for DGN75, protected from short-circuits.
			0.05% for DGN85U/ DGN85M		±5% DGN85U		Sampling time: 100ms. Compensation of the drifts: zero and self-calibration. <u>Permanent overloads:</u> ± 100mA for the caliber 20mA ± 1V for the caliber 100mV ± 50V for the caliber 1V 10V ± 600V for the caliber 300V
	<i>Tempera- ture</i> DGN 75 T (4 digits)	Thermocouples Types J, K, N, S, B, W5, T, R, E, W, W3, L .	0.1% or 30µV typical (60µV max.)	<150ppm /°C (except CJC) (1)	±10%	U: ≥1MΩ	(1) Efficiency of the CJC < 0.03°C/°C ±0.5°C from -5°C to +55°C. Compensation of the drifts: zero and self-calibration.
		Sensors Pt100 Ω 3 wire ΔPt100 Ω 2 wire Ni100 Ω 3 wire	0.1%	<150ppm /°C	±10%	-	Influence of the line resistance in 3 wire measurement included in the class for 0<RI<25Ω. Measurement of ΔPt100 2 wire from -200 to +270°C (0<RI<10Ω) (Max. resistance 400Ω). Max. measure current 250µA. Compensation of the drifts: zero and self-calibration.
	<i>(Process, temperature, potentiometer and resistance)</i> 		Resistive sensors 0-400Ω 0-2kΩ (0-8kΩ option)	0.1% 0.5%	<150ppm /°C	±10% DGN75M ±5% DGN85M	-
		Potentiometers from 100Ω to 10kΩ	0.1%	<150ppm /°C	±10% DGN75M ±5% DGN85M	-	
DGN 75 S (4 digits) 		2 current inputs ±20mA	0.05%	<150ppm /°C	±5%	0.9V drop channel 1 5 Ω for channel 2	Scale factor programmable for the 2 channels. Enlarging effect. √ ² extraction Supply for 2-wire sensor 26 vdc 40 mA Mathematical operation between channels (summ, substraction etc...)
<i>Alternating</i> DGN 75 AC (4 digits) 		AC current, voltage, Network frequency Programmable(2) • 2 voltage calibers: 150 and 500V • 2 current calibers: 1 and 5A	0.2%	<200ppm /°C	1.2 Un 1.2 In	U: ≥1MΩ I: <0.2VA	(2) Possibility of automatic calibers 0-5A and 0-500V. Permanent overload: U=750V et I=10A Overload during 10s: U=1000V et I=50A Frequency: 45 to 65Hz Measure cycle: 55ms Possibility to programme 3 magnitudes for display accessible by simple pressing of 1 key.
<i>Gauge bridge</i> DGN 85 J 10 acquisitions/sec. DGN 85 JS 50 acquisitions/sec. (5 digits) 		Voltage ±10mV, ±20mV, ±50mV, ±100mV	0.05%	<200ppm /°C	±5%	≥100MΩ	3 Types of saved tares (in case of power supply cut): measured / entered / calculated tare. Programmable scale factor. Enlarging effect. Bridge excitation voltage programmable: 5V or 10V (±0.1%), 120mA max. Line resistance: 20Ω max. Automatic setting of all the input points. Zero drift compensation.
<i>Integrator, totaller</i> DGN 95 F (6 + 3 digits) 		DC current, voltage ±100mV, ±1V, ±10V, ±300V, ±20mA	0.05%	<150ppm /°C	±5%	U: ≥1MΩ I: Max. drop 0.9V	Programmable scale factor. Enlarging effect. √ ² ex- traction. Special linearisation in 20 points. Supply for 2 or 3 wire sensors (current input) 26Vdc (±15%) /100mA protected from short-circuits. Sampling time: 100ms. Compensation of the drifts : zero and self-calibration. Function integrator with programmable time basis and conversion factor. Totaller saved in case of power supply cut.

* of the MR (measure range)

Names of the DIGINORMs®	Type	Impedance	Accuracy (at +25°C)*	Thermic drift	Over-range*	Features
Frequency (1 channel) DGN 95 I Frequency, counting / de-counting (2 channels) DGN 95 IC (6 + 3 digits)	Logic: (Umax.18V) Low level ≤ 1.2V High level ≥ 2.1V Namur: Supply 8.2V (10mA max.) Low level i ≤ 1.2V High level i ≥ 2.1V Npn or contact Pnp Alternating: 5 to 500Veff.	30 KΩ 1 KΩ Pull up resistor to the + 26Vdc of 5KΩ Pull down resistor to the GND 7.5kΩ 800 KΩ	0.025%	<50ppm /°C	-	Frequency from 0.01Hz to 200 kHz Scale factor programmable on each input. Enlarging effect. Cut-off programmable. Special linearisation in 20 points on each input. Supply for 3 wire sensor. 26Vdc (±15%) /25mA protected from short-circuits. Sampling time : 100ms + 1 period of the measured signal (min. measurable frequency programmable). Possibility to be connected to npn, pnp, logic, namur, or contact type sensors (without external components) and to have a 500Veff AC input. Function integrator with programmable time basis and conversion factor. <i>In mode counting:</i> Programming of a pulse weight, of a re-load value and self-reload value. Saving of the counters (in case of power supply cut). Possibility to associate 2 inputs for incremental coder with a x1, x2, x4 resolution.



Options

Name	Type	Features
Analog output A1, A2, or A3 	<u>3 types of outputs (to be specified on order):</u> A1: Active current 0/4-20 mA A2: Passive current 0/4-20 mA (Vmax. = 30Vdc) A3: Voltage 0-10V	Accuracy: 0.1% in relation to the display (at +25%). Residual ripple ≤ 0.2%. Admissible load : 0Ω < Lr < 600Ω (current) and Lr > 5kΩ (voltage) Programmable scale ratio with enlarging effect. Return value in case of sensor rupture and/or error self-diagnosis. Response time 40ms.
Relay outputs R or R4 	<u>2 types of outputs (to be specified on order):</u> R: 2 independently programmable setpoint relays R4: 4 independ. programmable setpoint relays	Mode setpoint or window. Alarm messages. Recording of the alarms. Hysteresis programmable independently from 0 to 100% of the setpoint in the display unit. Time delay independently programmable from 0 to 25 sec. in 0.1 sec. increases NO-NC contact : 8A - 250V on resistive load. <i>For the frequency/counting meters and the integrator/totaller :</i> <i>Mode pulses (400ms max., weight of the pulse adjustable).</i>
Digital output N 	Digital data link RS 485 (2 wire) Protocoles Modbus Jbus	Slave number programmable from 1 to 255 with a transmission speed from 1200 to 19200 bauds.
Logic inputs tor 	2 insulated logic inputs (standard on the integrator / totaller)	Display hold. Zero reset of the min. and max. (RAZ). <i>For the frequency/counting meters and the integrator/totaller :</i> <i>zero reset/ re-load / function stop and start.</i> <i>For the process, T°, Ω and gauge bridge meters:</i> <i>Moving of the decimal point. Function tare.</i>
Bargraph display B 	16 led display (standard on the integrator / totaller)	Allows a quick evaluation of the measured value variations. Programmable scale factor. <i>For the AC meter: possibility of programming 3 displays.</i>
Power supply	DGN75 U.T.M: 20 to 270 Vac 50/60/400Hz and 20 to 300 Vdc Other meters: (to be specified on order): High voltage (2): 90 to 270 Vac and 88 to 350 Vdc or Low voltage (3): 20 to 53 Vac or 20 to 75 Vdc	

Coding

Types of meters	Displays (electroluminescent red)	Possible combinations	Order examples
DGN 75 U DGN 75 T DGN 75 M DGN 75 AC DGN 75 S	±10000 points (14mm)	A / R / N / B* / tor* A / R4 / N / B* R4 / N / B* / tor*	For a 10000 point meter with a temperature input, an analog output (20mA passive) and 2 relays, powered in 230 Vac, request the reference: DGN 75T A2R For a gauge bridge meter (fast version) with 1 analog output (20mA active), 4 relays, a digital output and a bargraph display, powered in 230 Vac, request the reference: DGN 85JS A1R4NB-2
DGN 85 U DGN 85 M DGN 85 J/JS	-10000 /+100000 points (14mm)	*Bargraph as standard on the DGN 95F	
DGN 95 I/IC	±100000 points (3 displays: input A, B and the summ or the difference of the two).	Specify the type of power supply on your order high (2) or low (3) voltage, except for the DGN75 U,T,M	
DGN 95 F	Instant value ±100000 points (14mm) Cumulated value -100000 points at +1000000 points associated with a counter of oversteppings (±1000 points) for a max. counting from -99999999 to +99999999 points.		

Description

Insulation:

• Other meters:

Input / output / supply: 2.5 kV eff. 50Hz
- 1min

Except:

• Gauge bridge meters:

Input / power supply: 2.5 kV eff. 50Hz
- 1min
Input / output:
1kV eff. 50Hz- 1min.

Rejection rate:

• Mode common:

Gauge bridge meter = 120dB
Other meters = 130dB (except AC input)

• Mode series:

DGN75 U,T,M = 40dB
Other meters = 70dB

Power draw:

• DGN75 U,T,M :

4W max. / 7,5VA max.

• Integrator/totaller meters:

7W max. / 10VA max.

• Gauge bridge meters:

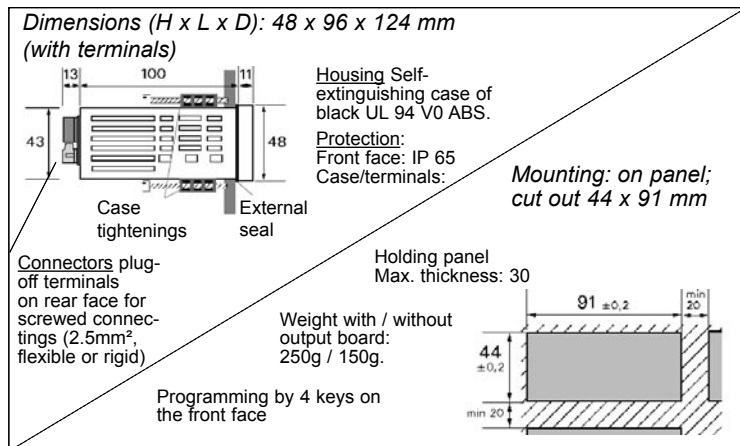
6W max. / 9VA max.

• Other meters:

5W max. / 8VA max.

Environment:

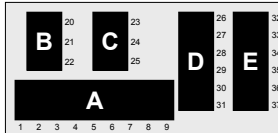
- Operating temperature: -5 to +55°C.
- Storage temperature: -30 to +80°C.
- Relative dampness: 80% annual average.



- **CE** marking (according to the directive 2004/108/CE).
- Complies with standards IEC 61000-6-4 on emissions and IEC 61000-6-2 immunity (industrial environment), IEC 61000-4-2 level 3, IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3.

Wiring

Location of the terminals (view from case rear face)
(legend: nc: terminal not connected)

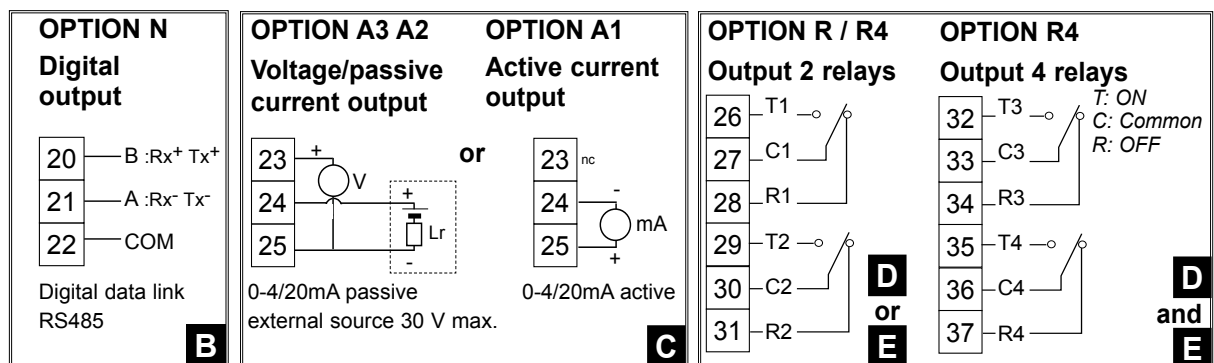
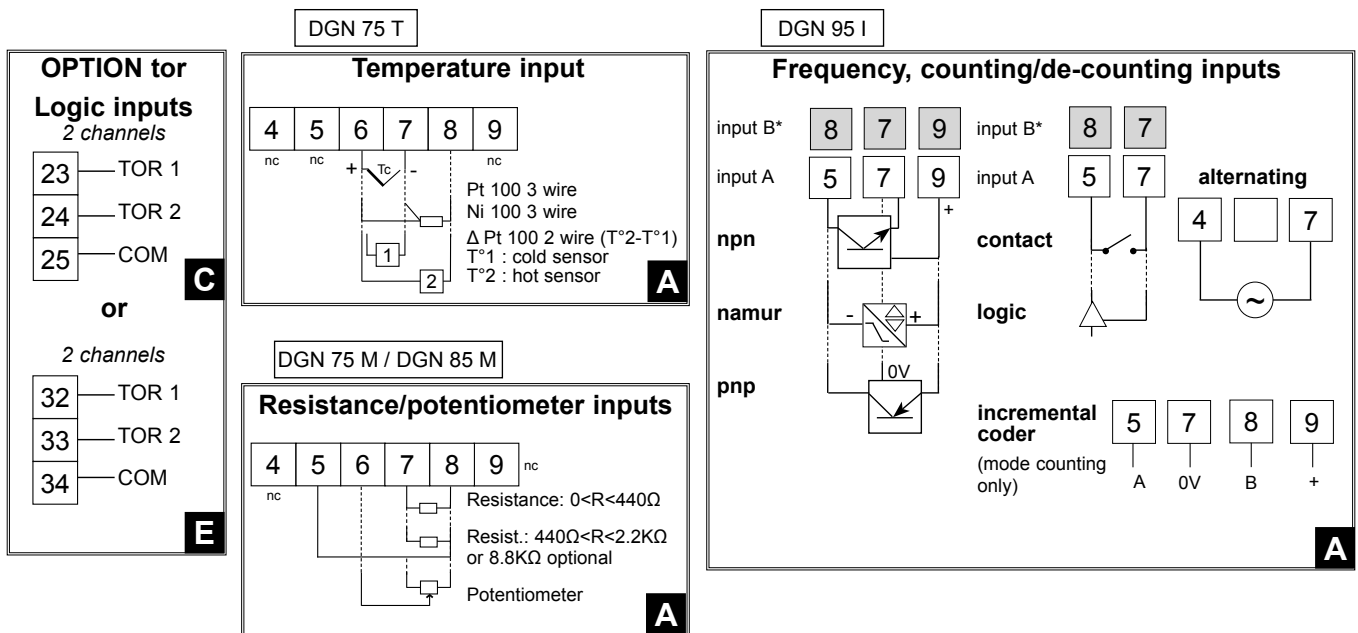
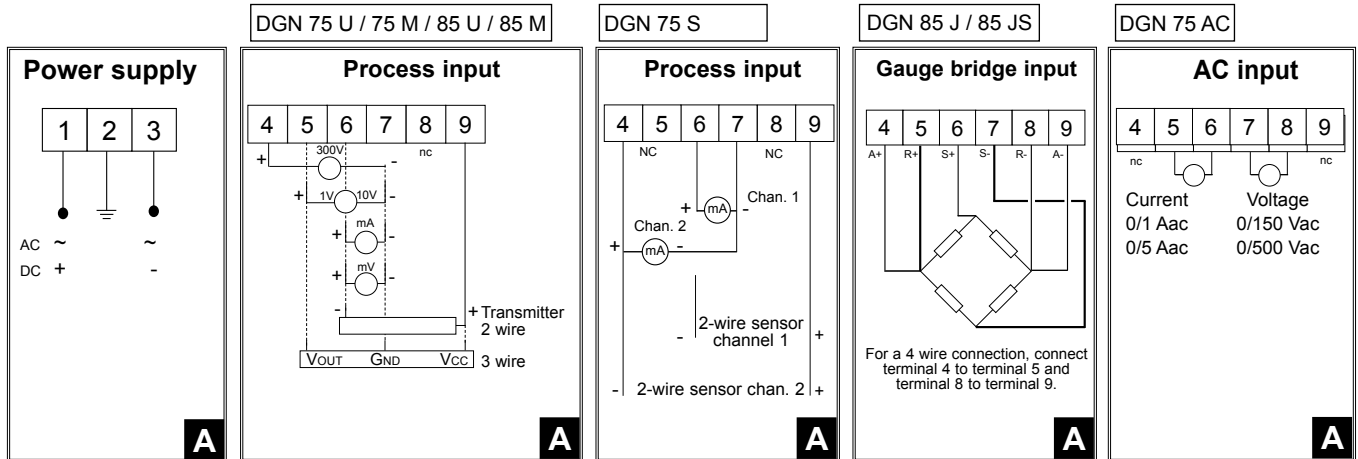


A: inputs and power supply
B: output N (digital)
C: outputs A1, A2, A3 (analog)
D or E: logic inputs
D: output R (2 relays only)
D and E: output R4 (2 + 2 relays)

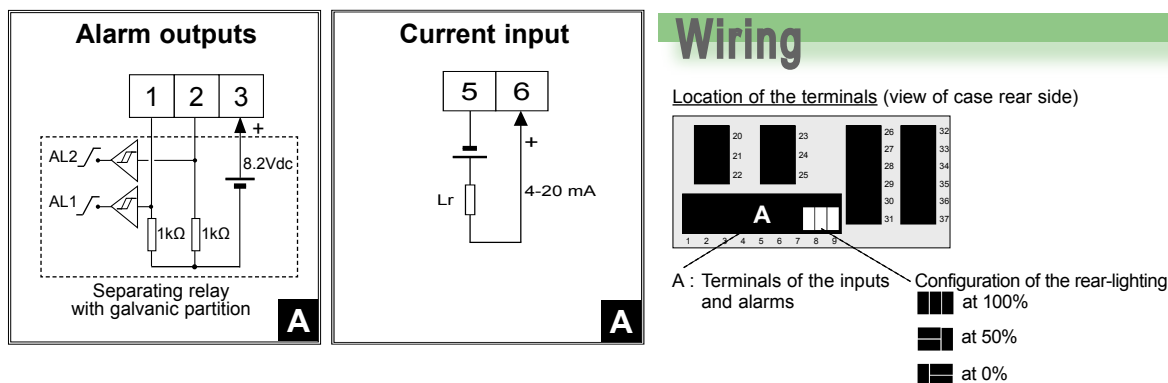
Wiring recommendations:

The input network may carry significant disturbances, and the complete processing line could be affected. To avoid this, the immunity from parasites can be made significantly better by respecting a few simple rules:

- Do not connect too close: the input network and the power supply wires, the input network and all the output wires.
- Use for all outputs shielded cables connected to the GND on both ends.



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

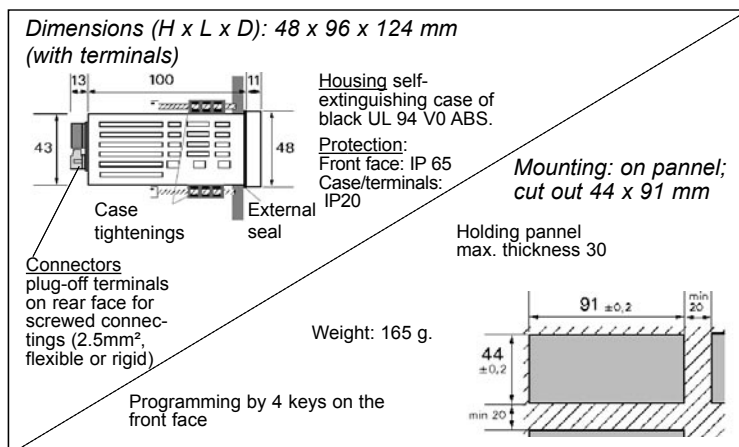


Input features

Names of the DIGINORMs®	Type	Accuracy (at +23°C)	Thermic drift	Measure range	Features
Process DGN 45 L DGN 75 L	DC current 4/20 mA	0.1% of the measure range	<100ppm /°C	from 3.6 to 23 mA	Programmable scale factor. Sampling time: 400ms. Response time (0 to 90%): < 2s without alarms < 2.5s with alarms Dynamic of the input signal: 15 bits

Options & coding

Name	Type	Features
Alarm outputs R	R: 2 proximity detector type alarm outputs, 2 wire, in NAMUR standard Mode setpoint programmable	Recording of the alarms. Hysteresis independently programmable from 0 to 100% of the setpoint in the display unit. Time delay independently programmable from 0 to 25 sec. in 1 sec. increments. Visualisation of the status on front face. Not insulated from the input.
DGN 45 L DGN 75 L	± 2000 points (16mm) ± 10000 points (16mm)	<div style="display: flex; justify-content: space-between;"> <div> Display resolution: ±1999 points ±9999 points </div> <div> Measure range: from 0 to 3998 points from 0 to 19998 points </div> </div>



Description

Rejection rate:

Mode common: 115dB
Mode series: 60dB 50/60Hz

Environment:

- Operating temperature: -20 to +60°C.
- Storage temperature: -30 to +80°C.
- Relative dampness: 80% annual average.

- CE marking according to the directive 2004/108/CE.
- Conform with the standards IEC 61000-6-4 on emissions and IEC 61000-6-2 on immunity (industrial environment) IEC 61000-4-2 level 3, IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-6 level 3.
- For the DGN 45L and DGN 75L weight: 165g.

SFERE . Société Française d'Etudes et de Réalisations Electroniques

RCS Lyon 423-502-608 - Printed in France

Route de Brindas - Parc d'Activité d'Arbora - N°2
69510 SOUCIEU EN JARREST - FRANCE

Tél. : 04 78 16 04 04 Fax. : 04 78 16 04 05
Tel. Intern. : 33 4 78 16 04 04 Fax Intern. : 33 4 78 16 04 05

e-mail : info@sphere-net.com . http : //www.sphere-net.com

Your representative

