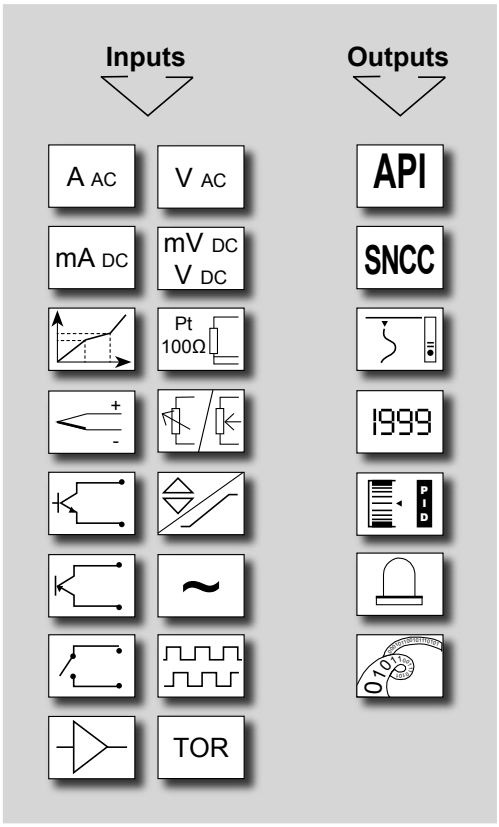
PROGRAMMABLE DIGITAL PANEL METERS

Display from 4 to 6 digits

Series DIGINORM®



♦ *This range is declined into 8 input versions, combinable with output extensions according to your requirements.*

DGN 75 U	4 digits	Process bidirectionnal
DGN 75 T		Temperature
DGN 75 M		Universal (process, T°, Ω)
DGN 75 AC		Alternating : U, I, F
DGN 75 J		Gauge bridge
DGN 75 S	5 digits	2 current inputs
		
DGN 85 U		Process bidirectionnal
DGN 85 M		Universal (process, T°, Ω)
	6 + 3 digits	
		
DGN 95 F		mA - Integrator / totaller
DGN 95 I		Frequency (1 channel)
DGN 95 IC		Frequency - Counting / de-counting (2 channels)
	3.5 + 4 digits	
		
DGN 45 L		mA - LCD display, self-powered by the loop
DGN 75 L		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.

♦ **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 overstepping by a blinking measure.

♦ **Measure filtering** :
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 brightnes 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

Input features

Names of the DIGINORMs®		Type	Accuracy (at +25°C)*	Thermic drift	Overs-tepping*	Impedance	Features
Universal **DGN 75 M** (4 digits) and **DGN 85 M** (5 digits)	*Process* **DGN 75 U** (4 digits) **DGN 85 U** (5 digits)	DC current, voltage ±100mV, ±1V, ±10V, ±300V, ±20mA.	0.05%	<150ppm /°C	±5%	U : ≥1MΩ I : Drop 0.9V max.	Programmable scale factor. Enlarging effect. √² extraction Special linearisation on 20 points. Supply for 2 or 3 wire sensor. 26Vdc (±15%) -25mA protected from short circuits. Sampling time : 100ms. Compensation of the drifts : zero and self-calibration.
	Tempera-ture **DGN 75 T** (4 digits)	Thermocouples Types J, K, N, S, B, W5, T, R, E, W, W3, L .	0.1% or 25µV typical (50µV max.)	<150ppm /°C (except CJC) (1)	±5%	U : ≥1MΩ	(1) CJC efficiency < 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	±5%	-	Influence of the line resistance in 3 wire measure-ment included in the class for 0<Rl<25Ω. Measurement of ΔPt100 2 wire from -200 to +270°C (0<Rl<10Ω) (Max. resistance 400Ω). Max. mesure current 250µA. Compensation of the drifts : zero and self-calibration.
(Process, temperature, potentiometer and resistance) 		Resistive sensors 0-400Ω 0-2kΩ (0-8kΩ optional)	0.1% 0.5%	<150ppm /°C	±5%	-	
		Potentiometers from 100Ω to 10kΩ	0.1%	<150ppm /°C	±5%	-	
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 vclc 40 mA Mathematical operation between channels (summ, substraction etc...)
Alternating **DGN 75 AC** (4 digits) 		AC current, voltage, network frequency By programming (2) • 2 voltage calibers : 150 and 500V Un=150 and 500V • 2 current calibers : 1 and 5A In=1.2 & 6A	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 and I=10A Overload during 10s : U=1000V and I=50A Frequency : 45 to 65Hz Measure cycle : 55ms Possibility to programme 3 magnitudes for display accessible by simple pressing of 1 key.
Gauge bridge **DGN 75 J** *10 acquisitions/sec.* **DGN 75 JS** *50 acquisitions/sec.* (4 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. Special linearisation in 20 points. 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.
Integrator, totaller **DGN 95 F** (6 + 3 digits) 		DC current, voltage ±100mV, ±1V, ±10V, ±300V, ±20mA	0.05%	<150ppm /°C	±5%	U : ≥1MΩ I : Drop 0.9V max.	Programmable scale factor. Enlarging effect. √² extraction. 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 convertion 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	Overs-tepping*	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	30 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. Funtion integrator with programmable time basis and convertion factor. *In mode counting* : 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.
	Namur : Supply 8.2V (10mA max.) Low level i ≤ 1,2V High level i ≥ 2,1V	1 KΩ				
	Npn or contact	Pull up resistor to + 26Vdc of 5KΩ				
	Pnp	7.5kΩ GND pull down resistor				
	Alternating : 5 to 500Veff.	800 KΩ				

Options

Designation	Type	Features
Analog output A1, A2, or A3 mA/V	3 Types of outputs (to be specified on order) : 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 < 500Ω (current) and Lr > 2kΩ (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	2 Types of outputs (to be specified on order) : 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. *For the frequency/counting meters and the integrator/totaller : Mode pulses (400ms max., weight of the pulse adjustable).*
Digital output N	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 TOR	2 insulated logic inputs (standard on the integrator / totaller)	Display hold. Zero reset of the min. and max. (RAZ). *For the frequency/counting meters and the integrator/totaller : RAZ / re-load / function stop and start.* *For the process, T°, Ω and gauge bridge meters : Moving of the decimal point. Function tare.*
Bargraph display B	16 led display (standard on the integrator / totaller)	Allows a quick evaluation of the measured value variations. Programmable scale factor. *For the AC meter : possibility of programming 3 displays.*
Power supply **2 or 3**	High voltage (2) : 90 to 270 Vac and 88 to 350 Vdc Low voltage (3) : 20 to 53 Vac or 20 to 75 Vdc (specify on order)	

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 J/JS** **DGN75 S**	±10000 points (14mm) -2000 / +10000 points	A / R / N / B* / tor A / R4 / N / B* R4 / N / B* / tor *Bargraph as standard on the DGN 95F Specify the type of supply on your order high (2) or low (3) voltage	For a 10000 point meter with a temperature input, an analog output (20mA passive) and 2 relays, in 230 Vac supply, request reference : **DGN 75T A2R-2** For a gauge bridge meter (fast version) with 1 analog output (20mA active), 4 relays, a digital output and a bargraph display, supplied in 230 Vac, request reference : **DGN 75JS A1R4NB-2**
DGN 85 U **DGN 85 M**	-10000 /+100000 points (14mm) -2000 / +10000 points		
DGN 95 I/IC	±100000 points (3 displays : input A, B and the summ or the difference of the two).		
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 +999999999 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 :

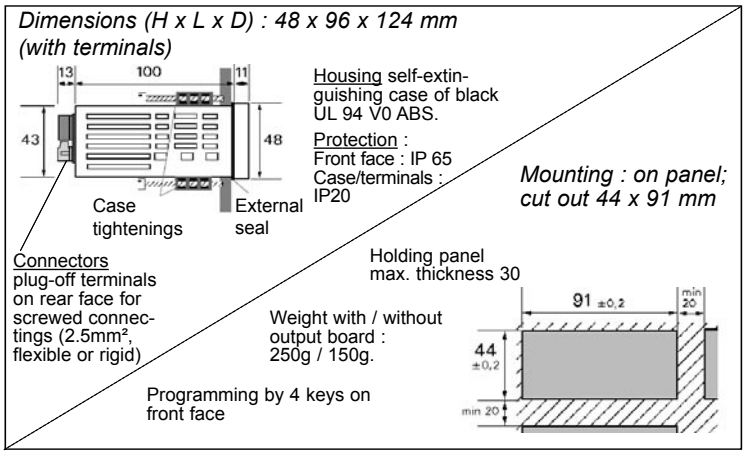
- **Other meters :**
  Mode common : 130dB (except AC inputs)
  Mode series 70dB 50/60Hz
  Except :
- **Gauge bridge meters :**
  Mode common : 120dB

Power draw :

- **Integrator/totaller meters :**
  7W max. / 10VA max.
- **Other meters :**
  5W max. / 8VA max.
  Except :
- **Gauge bridge meters :**
  6W max. / 9VA max.

Environment :

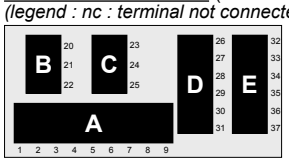
- Operating temperature : -5 to +55°C.
- Storage temperature : -30 to +80°C.
- Relative dampness : 80% annual average.



- CE marking (89/336 rev.92/31).
- Complies with standards IEC 61000-6-4 on emissions and IEC 61000-6-2; on immunity (in 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 of case rear side)
(legend : nc : terminal not connected)



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

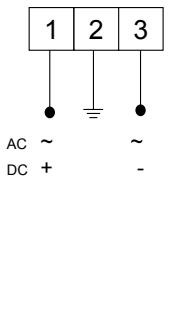
Wiring recommendations :

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.

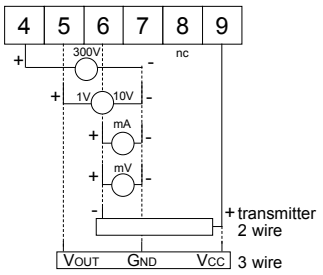
- Use for all outputs shielded cables connected to the GND on both ends.

Power supply



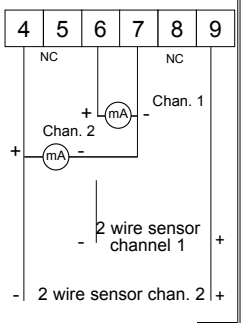
DGN 75 U / 75 M / 85 U / 85 M

Process input



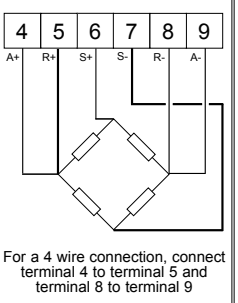
DIGINORM 75 S

Process input



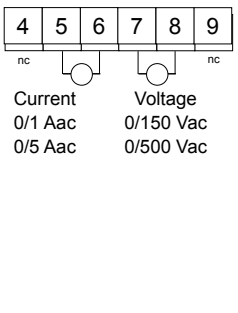
DGN 75 J / 75 JS

Gauge bridge input



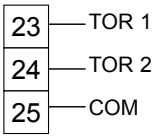
DGN 75 AC

AC input



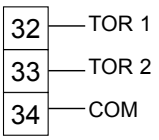
OPTION tor logic inputs

2 channels



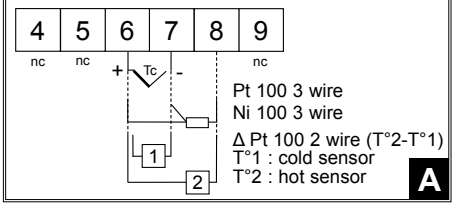
or

2 channels



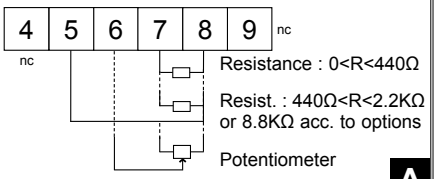
DGN 75 T

Temperature input



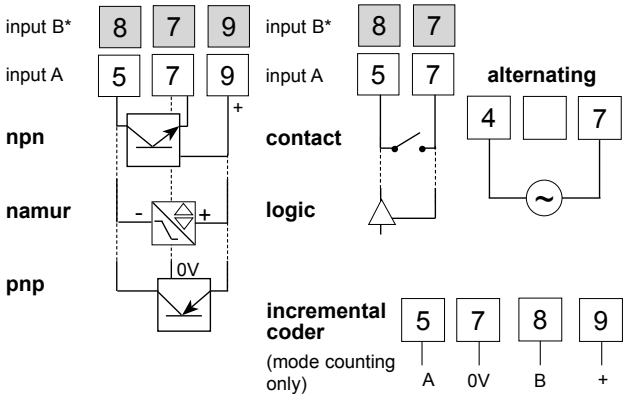
DGN 75 M / DGN 85 M

Resistance / potentiometer inputs



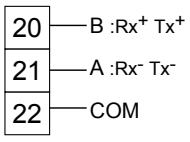
DGN 95 I

Frequency, counting/de-counting inputs



OPTION N

Digital output

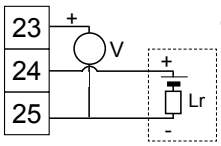


Data link RS485

B

OPTION A3 A2

Voltage or passive current output

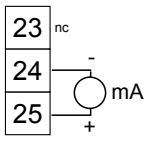


0-4/20mA passive external source 30 V max.

or

OPTION A1

Active current output

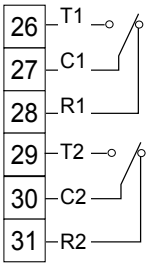


0-4/20mA active

C

OPTION R / R4

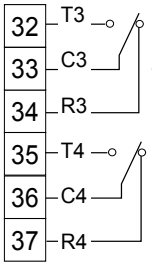
Output 2 relays



D or E

OPTION R4

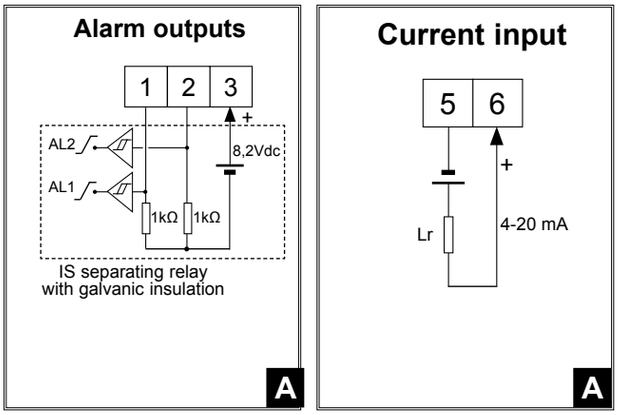
Output 4 relays



D and E

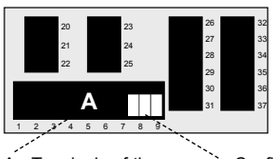
This instrument is dedicated to industrial applications. It has to be installed in an electrical switchbox, or equivalent.

DGN 45 L and DGN 75 L



Wiring

Location of the terminals (view of case rear side)



A : Terminals of the inputs and alarms

Configuration of the rear-lighting
- at 100%
- at 50%
- at 0%

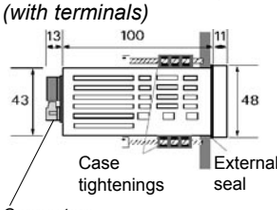
Input features

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 & codings

Designation	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. increases. Visualisation of the state on front face. Not insulated from the input.	
DGN 45L **DGN 75 L**	± 2000 points (16mm) ± 10000 points (16mm)	Display resolutions : ±1999 points ±9999 points	Measure range : from 0 to 3998 points from 0 to 19998 points

Dimensions (H x L x D) : 48 x 96 x 124 mm (with terminals)



Housing self-extinguishing case of black UL 94 V0 ABS.

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

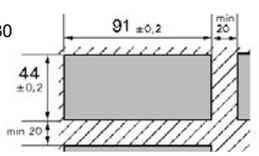
Case tightenings

External seal

Mounting : on pannel; cut out 44 x 91 mm

Connectors plug-off terminals on rear face for screwed connectings (2.5mm², flexible or rigid)

Holding pannel max. thickness 30



Weight : 165 g.

Programming by 4 keys on the front face

Description

Rejection rate :

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

Environment :

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

- CE marking (89/336 rev.92/31).
- Complies with standards IEC 61000-6-4 on emissions and IEC 61000-6-2; on immunity (in 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** DGN 45L and DGN 75L weight : 165g.

SFERE - CA IN/32 - A 06/05 - Any data in this documentation may be modified without prior notice.

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