

Series DIP/DGN

ARDETEM

SFERE

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

4 digits



5 digits



6 + 3 digits



3.5 + 4 digits



DIP400/DGN75U	Process bidirectionnal
DIP401/DGN75T	Temperature
DIP402/DGN75M	Universal (process, T°, Ω)
DIP404/DGN75AC	Alternating: U, I, F
DIP420/DGN75S	2 current inputs
ADIP300/DGN45L	mA - LCD display
ADIP400/DGN75L	self-powered by the loop
DIP500/DGN85U	Process bidirectionnal
DIP502/DGN85M	Universal (process, T°, Ω)
DIP506/DGN85J	Gauge bridge

DIP603/DGN95F	mA - Integrator / totaller
DIP605/DGN95I	Frequency (1 channel)
DIP605C/DNG95IC	Frequency - Counting / de-counting (2 channels)

♦ Output options:

A Isolated analog output:
active or passive current, or voltage output.
Return value in case of sensor break and/or self-diagnosis error.

R / R4 Relay outputs: 2 or 4 relays (mode setpoint/window or pulses)

N Isolated digital output:
RS485 2 wire
(Modbus-Jbus)

for 2 isolated logic inputs
standard on the DIP603/
DGN95F)

B Bargraph display with
programmable functions

4 digits



5 digits



6 + 3 digits



3.5 + 4 digits



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 installation.

♦ 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 break:

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.

♦ Measure filtering:

Programmable integration indice, allows stabilising the display in case of 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.
Programmable scale factor.

♦ Programming possible by PC software (SuperVISION / MCvision) for some types:

- DIP400/401/402 / DGN75U/T/M
- DIP500/502 / DGN85U/M

Input features

Names of the DIP / DGN		Type	Accuracy (at +25°C)*	Thermal drift	Over-range*	Impedance	Features
Universal DIP 402 DGN75M (4 digits) and DIP 502 DGN85M (5 digits) (Process, temperature, potentiometer and resistance)	Process DIP 400 DGN75U (4 digits) DIP 500 DGN85U (5 digits)	DC current, voltage	0.1% for DIP400/ DIP402 DGN75U/ DGN75M	<150ppm /°C	±10% DIP400 DGN75U	U : ≥1MΩ I: Max. drop 0.9V	Scale factor programmable. Enlarging effect. √ ² extraction. Special linearisation on 20 points.
		±100mV, ±1V, ±10V, ±300V, ±20mA.	0.05% for DIP500/ DIP502 DGN85U/ DN85M				±5% DIP500 DGN75M
	Temperature DIP 401 DGN75T (4 digits)	Thermocouples	0.1% or 30μV typical (60μV max.)	<150ppm /°C (except CJC) (1)	±10%	U: ≥1MΩ	Sampling time: 100ms. Compensation of the drifts: zero and self-calibration.
		Sensors	0.1%	<150ppm /°C	±10%	-	(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.
		Pt100 Ω 3 wire ΔPt100 Ω 2 wire Ni100 Ω 3 wire					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.
		Resistive sensors	0.1% 0.5%	<150ppm /°C	±10% DIP402 DGN75M ±5% DIP502 DGN85M	-	
		Potentiometers			0.1%		<150ppm /°C
		from 100Ω to 10kΩ					
DIP 420 DGN75S (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, subtraction etc...)
Alternating DIP 404 DGN75AC (4 digits)		AC current, voltage, frequency of the network	0.2%	<200ppm /°C	1.2 Un	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.
		Programmable(2) • 2 voltage calibers: 150 and 500V • 2 current calibers: 1 and 5A			1.2 In		
Gauge bridge DIP506 / DGN85J 10 acquisitions/sec. DIP506S/DGN85JS 50 acquisitions/sec. (5 digits)		Voltage	0.05%	<200ppm /°C	±5%	≥100MΩ	3 types of tares saved (in case of power supply cut) measured / entered / calculated tare. Scale factor programmable. Enlarging effect. Special linearisation on 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.
		±10mV, ±20mV, ±50mV, ±100mV					
Integrator, totaller DIP603 / DGN95F (6 + 3 digits)		DC current, voltage	0.05%	<150ppm /°C	±5%	U: ≥1MΩ I: 0.9V max. drop	Scale factor programmable. Enlarging effect. √ ² extraction. Special linearisation on 20 points. Supply for 2 or 3-wire sensor (current input) 26Vdc (±15%) /100mA protected from short-circuits. Sampling time: 100ms. Compensation of the drifts: zero and self-calibration. Integrator function with programmable time basis and conversion factor. Totaller saved in case of power supply cut.
		±100mV, ±1V, ±10V, ±300V, ±20mA					

* of the MR (measure range)

Names of the DIP/ DGN	Type	Impedance	Accuracy (at +25°C)*	Thermal drift	Over- range*	Features
Frequency (1 channel) DIP605/DGN95I Frequency, counting / de-counting (2 channels) DIP605C/DGN95IC (6 + 3 digits)	Logic:(Umax.18V) Low level ≤ 1.2V High level ≥ 2.1V	30 KΩ 1 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 on 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 of connection to npn, pnp, logic, namur, contact type sensors (without external components) , and AC input 500Veff. Integrator function with programmable time basis and conversion factor. <i>In mode counting:</i> Programming of a pulse weight, of a re-load and self re-load value. Saving of the counters (in case of power supply cut). Possibility to associate 2 inputs for incremental coder with resolution x1, x2, x4.
	Npn or contact	Pull up resistor to the + 26Vdc of 5KΩ				
	Pnp	Pull down resistor to the GND 7.5kΩ				
	Alternating:5 to 500Veff.	800 KΩ				



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°C). 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 self-diagnosis error. 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 independently programmable setpoint relays	Mode setpoint or window. Alarm messages. Latching function. Hysteresis independently programmable from 0 to 100% of the setpoint in the display unit. Time delay independently programmable from 0 to 25 sec. in 0.1 sec. increments. NO-NC contact: 8A - 250V on resistive load. <i>For the frequency/counting meters and the integrator/totaller:</i> Mode pulses (400ms max., weight of the pulse adjustable).
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 isolated logic inputs (in 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> zero reset / re-load / function stop and start. <i>For the process, T°, Ω and gauge bridge meters:</i> Moving of the decimal point. Function tare.
Bargraph display B 	16 leds display (in standard on the integrator / totaller)	Allows a quick evaluation of the measured value variations. Scale factor programmable. <i>For the AC meter: possibility of programming 3 displays.</i>
Power supply	DIP 400.401.402 / DGN 75U/75T/75M : 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
DIP400 / DGN75U DIP401 / DGN75T DIP402 / DGN75M DIP404 / DGN75AC DIP420 / DGN75S	±10000 points (14mm)	A / R / N / B* / tor* A / R4 / N / B* R4 / N / B* / tor* *Bargraph as standard on the DIP 603 / DGN95F	For a 10000 point meter with a temperature input, an analog output (20mA passive) and 2 relays, powered in 230 Vac, request the reference: DIP401/DGN75T A2R
DIP500 / DGN85U DIP502 / DGN85M DIP506 / DGN85J DGN85J/DGN85JS	-10000 / +100000 points (14mm)	Specify the type of supply on your order high (2) or low (3) voltage, except for the DIP 400, 401, 402 / DGN 75U, 75T, 75M	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: DIP506S/DGN85JS A1R4NB-2
DIP605 / DGN95I DIP605C/DGN95IC	-100 000 to + 1000 000 (3 displays: input A, B and the summ or the difference of the 2) for the 605C/95IC		
DIP603 / DGN95F	Instant value ±100000 points (14mm) Cumulated value -100000 points to +1000000 points associated with a counter of oversteppings (±1000 points) for a max. counting from -99999999 to +99999999 points.		

Description

Isolation:

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 meters = 120dB

Other meters = 130dB (except AC input)

• Mode series:

DIP 400, 401, 402 / DGN 75U, 75T, 75M = 40dB

Other meters = 70dB

Power draw:

• **DIP 400, 401, 402 / DGN 75U, 75T, 75M:**
4W max. / 7.5VA max.

• Integrator/totaller meters:

7W max. / 10VA max.

• Gauge bridge meters:

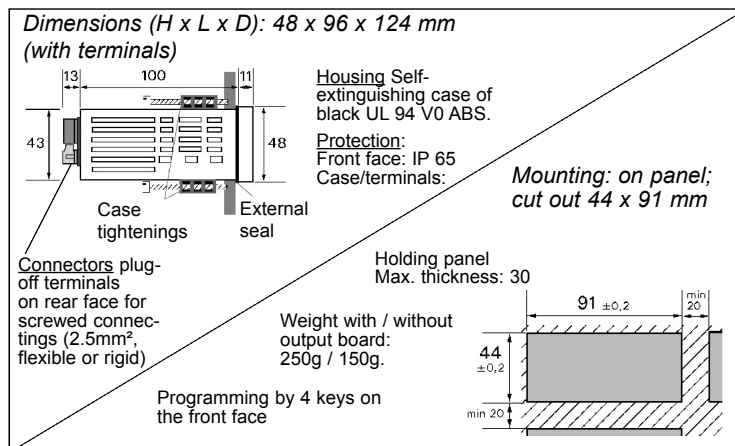
6W max. / 9VA max.

• Other meters:

5W max. / 8VA max.

Environment:

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

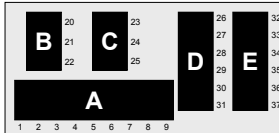


• CE marking

- 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)

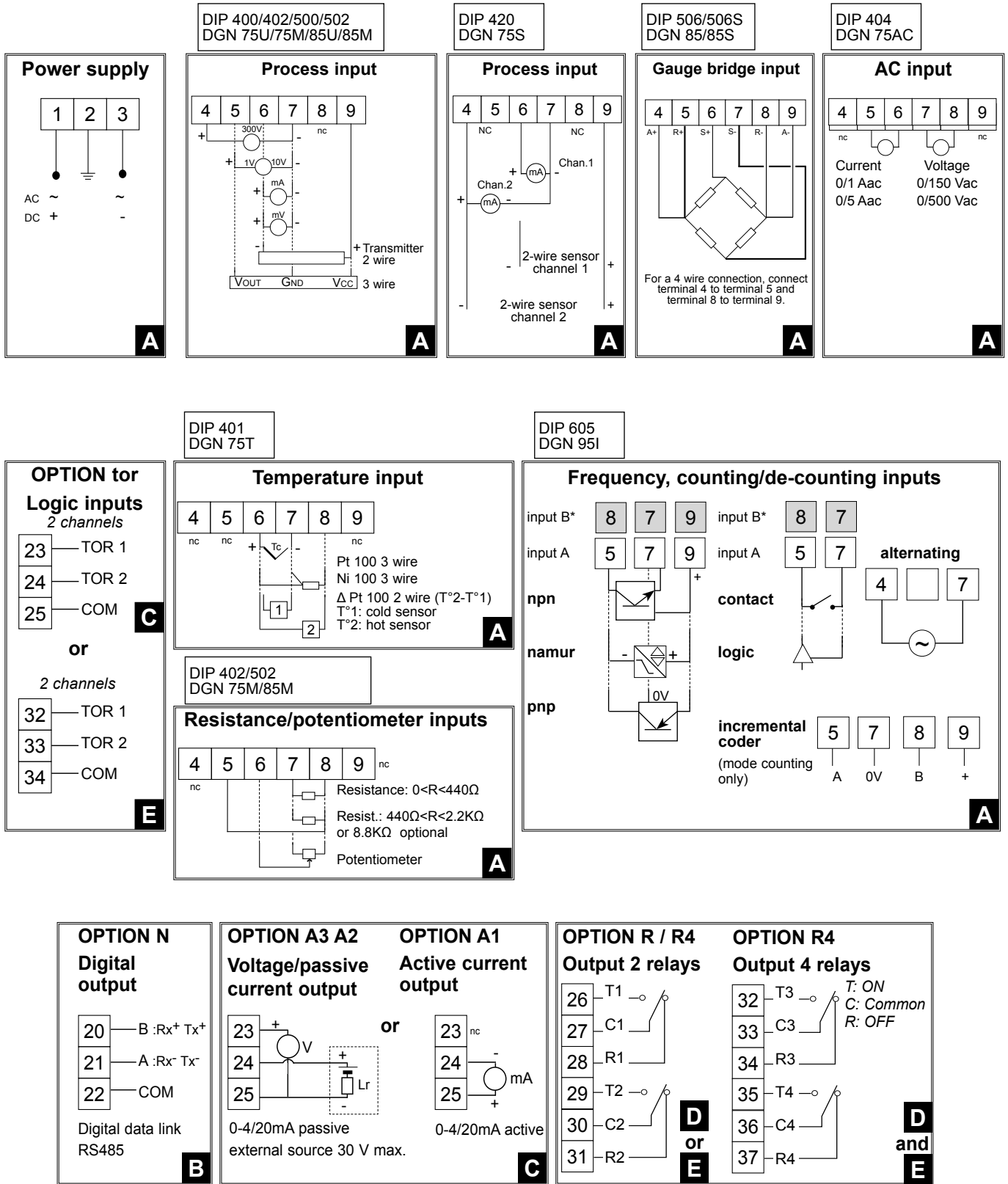


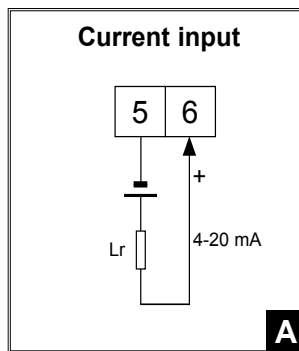
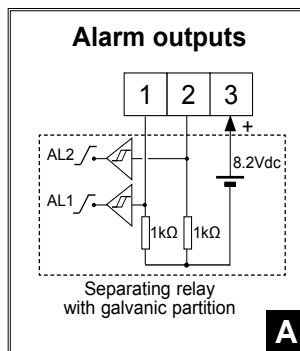
A: inputs and power supply
B: output N (digital)
C: outputs A1, A2, A3 (analog)
C or E: logic inputs
D: output R (2 relays only)
D and E: output R4 (2 + 2 relays)

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:

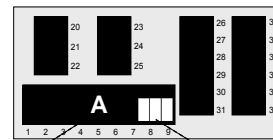
- Do not connect too close: the input network and the power supply wires, the input network and all the output wires.
- Use for all outputs shielded cables connected to the GND on both ends.





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%

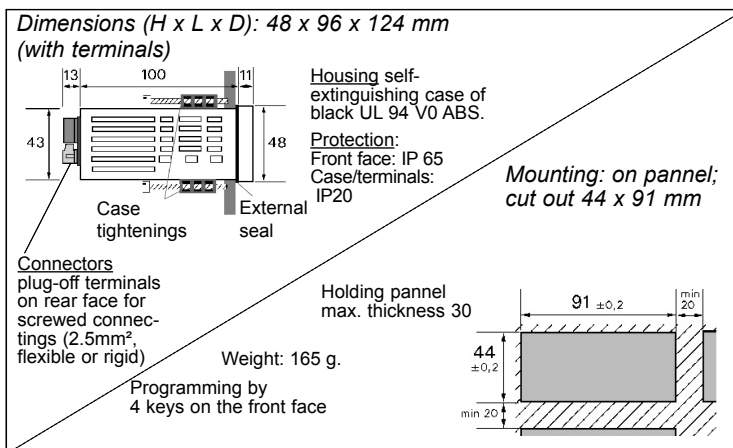
■ at 0%

Input features

Name	Type	Accuracy (at +23°C)	Thermal drift	Measure range	Features
Process ADIP300/DGN45L ADIP400/DGN75L	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	Latching function. 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 isolated from the input.
ADIP 300 / DGN 45L ADIP 400 / DGN 75L	± 2000 points (16mm) ± 10000 points (16mm)	Display resolution: ±1999 points ±9999 points Measure range: from 0 to 3998 points from 0 to 19998 points



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
- 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.
- Weight: 165g.

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



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