

Insulation Monitoring Device for hospital use, 4 DIN modules & Alarm remote panels

Cat. nos: 0 435 01/02/11/21



Contents	Pages
1. Description - Use.....	1
2. Range	1
3. Overall dimensions.....	1
4. Preparation - Connection	2
5. General characteristics.....	4
6. Compliance and approvals.....	7

1. DESCRIPTION - USE

Insulation Monitoring Device (IMD) and Alarm Remote panels.
It allows to monitor permanently of the isolation level towards earth for circuits supplied by isolation transformers with earth-insulated secondary winding, in accordance with the standard IEC 60364-7-710 (Group 2 hospital rooms).

2. RANGE

- . Cat. N° 0 435 01: Insulation Monitoring Device (IMD) 230 V~, 4 DIN modules (4 x 17,8 mm = 71,2 mm). The device is equipped with 2 opto-relays to use as alarm relays.
- . Cat. N° 0 435 02: Insulation Monitoring Device (IMD) 24 V~, 4 DIN modules (4 x 17,8 mm = 71,2 mm). The device is equipped with 1 opto-relay to use as alarm relay.
- . Cat. N° 0 435 11: Alarm remote panel for flush-mounting installation. Supplied with flush-mounting box for masonry. Can be also installed in drywall boxes (cat. no PB503).
- . Cat. N° 0 435 21: Alarm remote panel 72x72 mm for installation on a door or full panel.

Auxiliary supply, "Us":

- . Cat. N° 0 435 01:
Us: 230 V~ (± 10%)
- . Cat. N° 0 435 02:
Us: 24 V~ (± 10%)
- . Cat. nos 0 435 11/21: derived from Insulation Monitoring devices.
Note: Each insulation monitor device can supply up to 5 repeaters.

Rated current:

- . Cat. N° 0 435 01
In: 5 A (via external current transformer x/5 A only)
- . Max current, Imax:
1,2 In = 6 A

Voltage of monitored network, "Un":

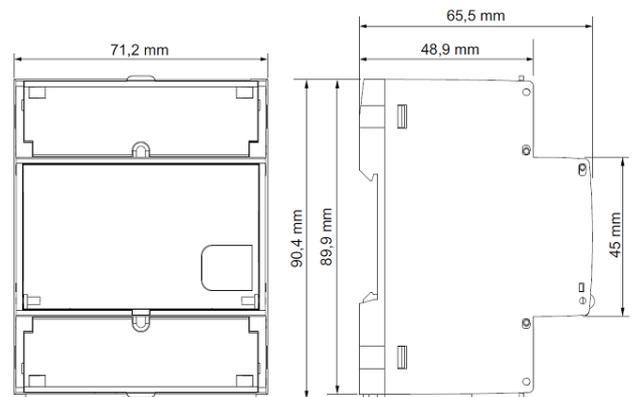
- . Cat. N° 0 435 01:
Un: 230 V~ (output side of isolation transformer)
- . Cat. N° 0 435 02:
Un: 24 V~ (± 10%), (output side of isolation transformer)

Rated frequency:

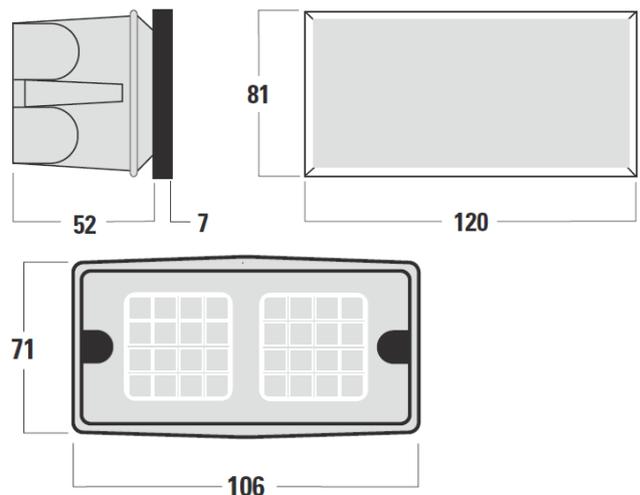
- . fn: 50/60 Hz

3. OVERALL DIMENSIONS

. Insulation Monitoring device (IMD, cat. nos 0 435 01/02)



. Alarm remote panel for flush-mounting installation (cat. no 0 435 11)

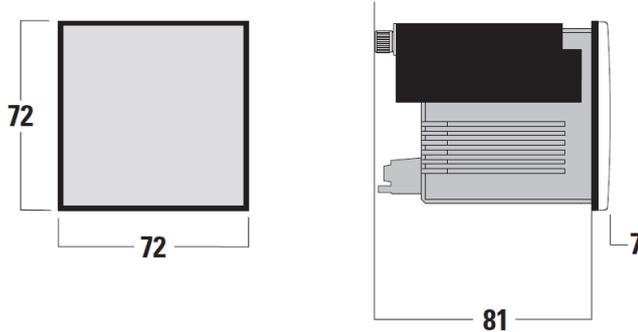


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3. OVERALL DIMENSIONS (continued)

. Alarm remote panel 72x72 mm (cat. no 0 435 21)



4. PREPARATION - CONNECTION

Type of installation:

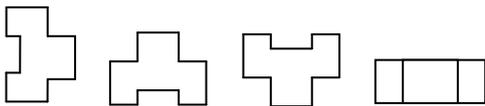
. Indoor

Fixing:

. On symmetrical IEC/EN 60715 rail or DIN 35 rail.

Operating position of IMDs:

. Vertical Horizontal Upside down On the side



Screw terminals:

. Terminal depth: 8 mm.
. Stripping length: 8 mm

Screw head:

. Insulation Monitoring device (IMD, cat. nos 0 435 01/02):
Screw slotted and Philips PH0.
. Alarm remote panels (cat. nos 0 435 11/21):
Screw slotted.

Recommended tightening torque:

. 0,5 Nm.

Tools required:

. Insulation Monitoring device (IMD, cat. nos 0 435 01/02): flat screwdriver 3,5 mm or screwdriver PH0
. Alarm remote panels (cat. nos 0 435 11/21): flat screwdriver 3,5 mm
. For fixing the IMD on the DIN rail: flat screwdriver 5.5 mm (from 4 to 6 mm).
. For fixing the 72x72mm repeater panel: no tools needed.

Connectable section:

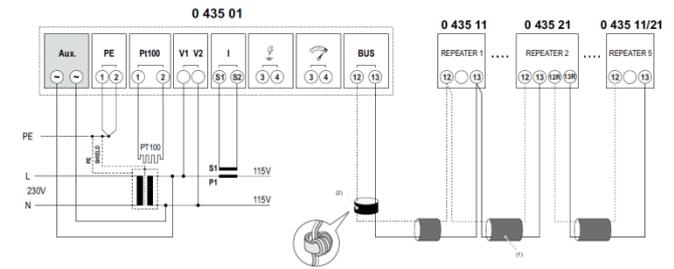
. Copper cables.

	Without ferrule	With ferrule
Rigid cable	max. 1 x 4 mm ²	-
Flexible cable	max. 1 x 2,5 mm ²	max. 1 x 2,5 mm ²

4. PREPARATION - CONNECTION (continued)

Wiring diagrams:

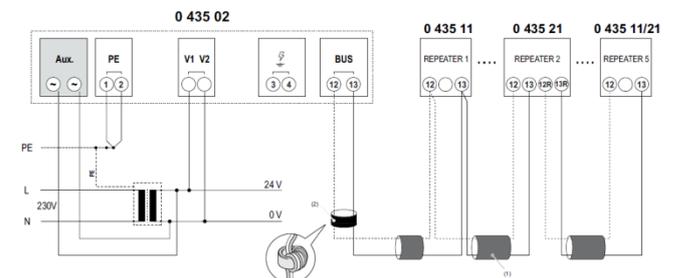
. System 230 V~



(1) Cable cat. n° 336904, max. 50 m

(2) Wind the cable pair 5 times on the ferrite tor (delivered with the IMD)

. System 24 V~

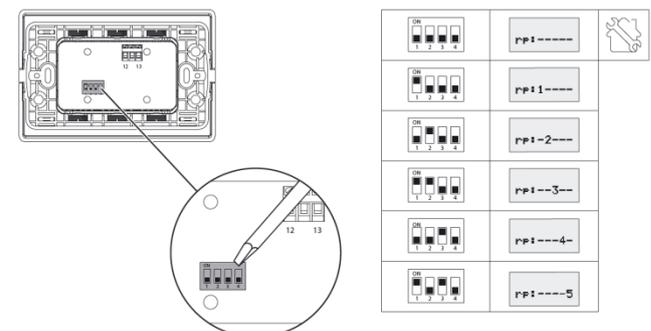


(1) Cable cat. n° 336904, max. 50 m

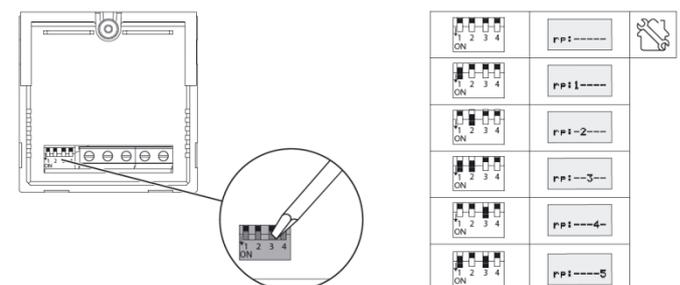
(2) Wind the cable pair 5 times on the ferrite tor (delivered with the IMD)

Alarm remote panels addressing:

. To configure the address of remote panels (cat. nos 0 435 11/21), a series of micro-switches are provided in the rear part the panel.
. It is possible to assign an address from 1 to 5 to each panel.
. Default address: micro-switches in "0000" position
. 0 435 11:



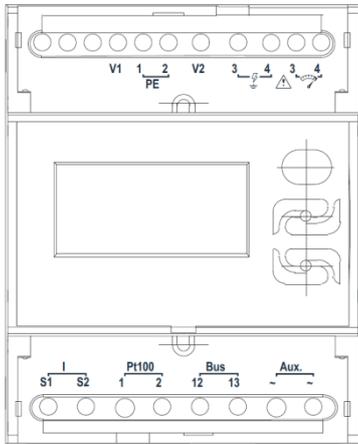
. 0 435 21



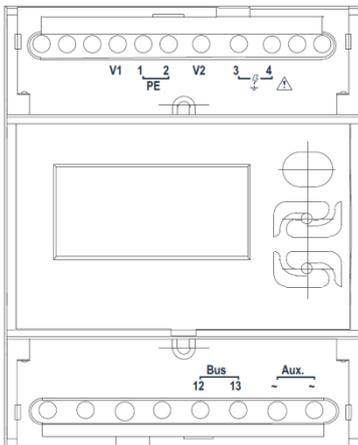
5. GENERAL CHARACTERISTICS

IMD marking:

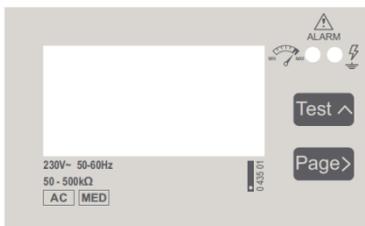
- . Plastic case: By permanent ink pad printing.
0 435 01



0 435 02



- . Front face marking: By adhesive foil:
0 435 01



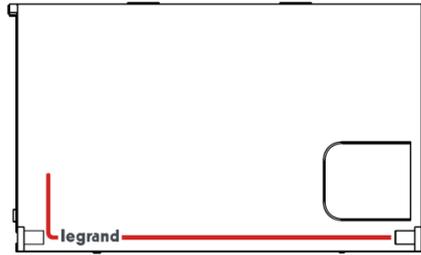
0 435 02



5. GENERAL CHARACTERISTICS (continued)

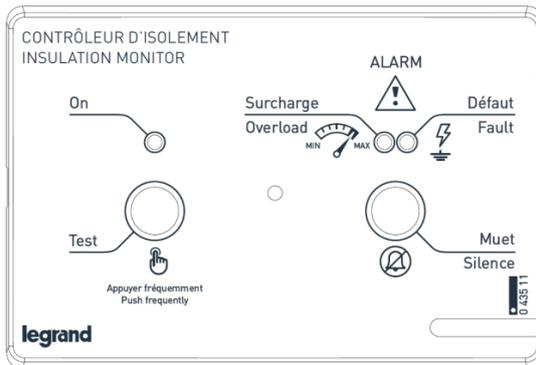
IMD marking (continued):

- . Transparent flip front marking: By permanent ink pad printing.

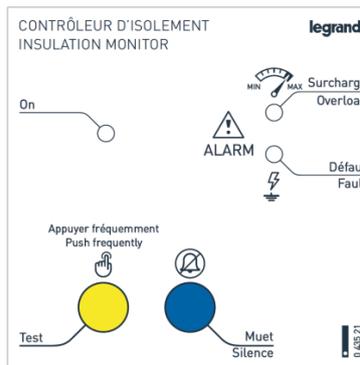


Alarm remote panels marking:

- . 0 435 11: By permanent ink pad printing.



- . 0 435 21: By adhesive foil.



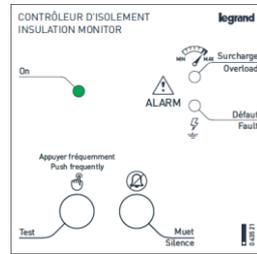
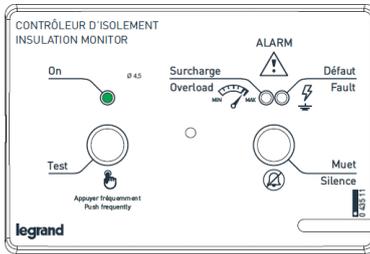
5. GENERAL CHARACTERISTICS (continued)

Led signalisation:

. Remote panels On/Off status:

0 435 11

0 435 21



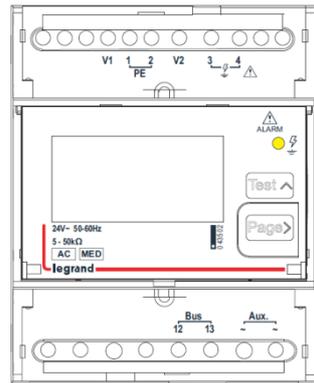
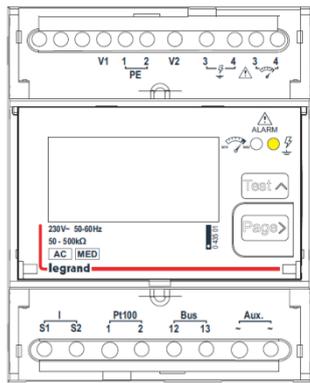
Possible states:

Led color	State	Meaning
 vert	Steady	Remote panel supplied by the IMD
	Turned-off	Remote panel not supplied by the IMD

. Alarm signalisation: Isolation fault:

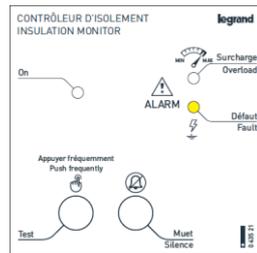
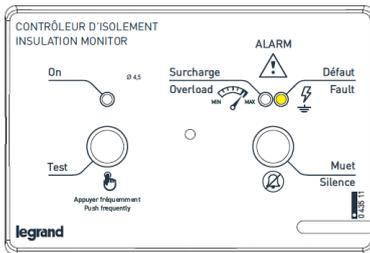
0 435 01

0 435 02



0 435 11

0 435 21



Possible states:

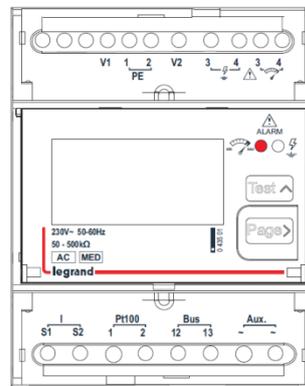
Led color	State	Sound signaller (on the Alarm remote panel)	Meaning
 yellow	Turned-off	Off	Surveillance condition
	Blinking	Off	Pre-alarm condition
	Steady	On	Alarm condition

5. GENERAL CHARACTERISTICS (continued)

Led signalisation (continued):

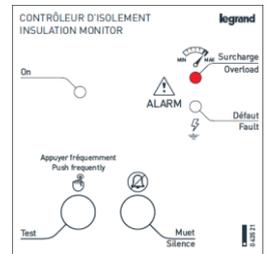
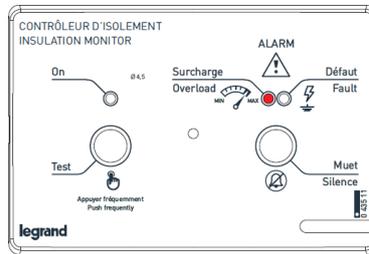
. Alarm signalisation: Temperature/Overload alarm:

0 435 01



0 435 11

0 435 21



Possible states:

Led color	State	Sound signaller (on the Alarm remote panel)	Meaning
 red	Turned-off	Off	Surveillance condition
	Blinking	Off	Pre-alarm condition
	Steady	On	Alarm condition

5. GENERAL CHARACTERISTICS (continued)

IMD and Panels push buttons:

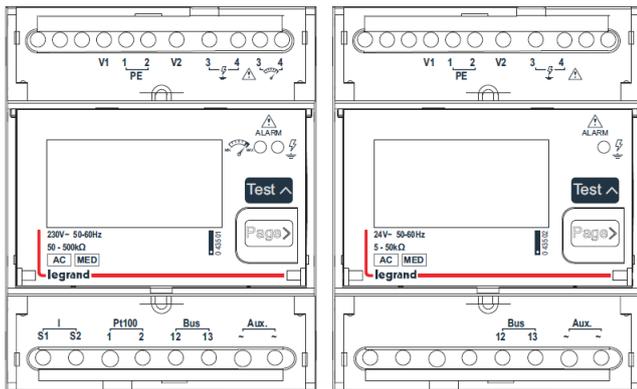
. Test pushbutton:

It can be used to check that the earth leakage control system is working correctly. Press the "Test" key until the sound signaller emits a sound (2 beeps).

Release the "Test" key. The earth leakage control system will automatically simulate an earth leakage, followed by visual and audible notification, and switching of the alarm relay. At the end of the simulation the device resets automatically, returning to the monitoring condition (the TESTING process takes about 30 seconds).

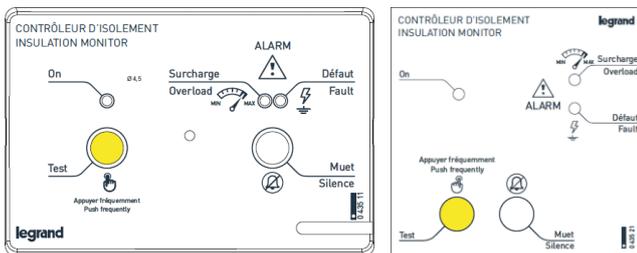
0 435 01

0 435 02



0 435 11

0 435 21



. Silence pushbutton:

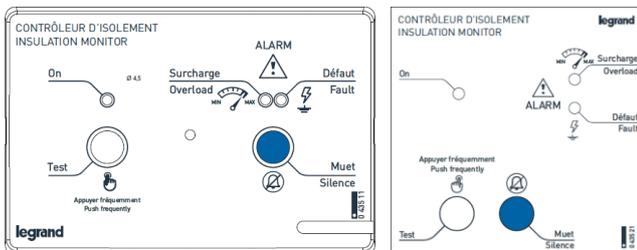
It is used to silence the acoustic signal by an operator who recognizes an alarm condition by pressing it for at least 1 second. The acoustic signal is disabled within 5 seconds.

Note: the LED linked to the alarm type (Isolation fault [yellow led] or Temperature/Overload [red led – only for 0 435 01]) stays turned on until the alarm cause is removed.

The silencing key acts on all the connected Alarm remote panels.

0 435 11

0 435 21



5. GENERAL CHARACTERISTICS (continued)

Display

. Type: LCD.

. Digit height: 5mm (2 lines x 8 digit)

. Page scrolling: manual by front push-button and/or automatic

. Display measure: display is divided into 7 pages:

1. Indication of the measured resistance value and Line indication with lowest resistance towards ground
2. Line voltage and frequency
3. Temperature of the insulation transformer (Pt100 probe) - Alarm remote panels connected
4. Measured current
5. Active power P and Apparent power S
6. Apparent power demand (Σ) and Apparent power max demand (\wedge)
7. Device name and firmware version

. If the AUTOSCROLL function is not active, after 5 seconds the display menu returns to the R = HIGH page (page 1.).

. To scroll through the display pages press "Page" pushbutton.

. The device automatically notifies the failed connection of the PE ("GROUND FAULT") and/or of one of the measurement inputs V1 and V2 ("NO LINE").

External isolation transformer:

- . Selectable Apparent power (Pn):
1,5 - 2,5 - 3 - 4 - 5 - 6,3 - 7,5 - 8 - 10kVA

Isolation transformer Temperature measurement:

- . Via 2-wires Pt100 probe

External CT:

- . Max CT's primary current: 49995 kA
- . Selectable CT ratio: 1...9999

Isolation alarms output characteristics:

- . Optorelay with potential-free SPST-NO contact
- Voltage U_{imp} : max. 230 Va.c./d.c.
- Current I_{imp} : max. 50 mA
- . Programmable intervention threshold: 50...500 k Ω
- . Relays run mode programmable: normally open (NO) / normally closed (NC)
- . Hysteresis: 0...99%

Temperature or Overload alarms output characteristics (only for 0 435 01):

- . Optorelay with potential-free SPST-NO contact
- Voltage U_{imp} : max. 230 Va.c./d.c.
- Current I_{imp} : max. 50 mA
- . Programmable intervention threshold:
Temperature: 60...150 °C
Overload: 50...100% Pn (P_n : Rated power of the connected isolation VT)
- . Relays run mode programmable: normally open (NO) / normally closed (NC)
- . Hysteresis: 0...99%

Insulation Monitoring Device for hospital use, 4 DIN modules & Alarm remote panels

Cat. nos: 0 435 01/02/11/21

5. GENERAL CHARACTERISTICS *(continued)*

Plastic material:

. Self-extinguishing polycarbonate.

Ambient operating temperature:

. Min. = - 5 °C Max. = + 55 °C.

Ambient storage temperature:

. Min. = - 20 °C Max. = + 70 °C.

Protection Index:

. Insulation Monitoring Devices (cat. nos 0 435 01/02):

Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).

Protection index of the front face against solid and liquid bodies: IP 54 (IEC/EN 60529).

. Alarm remote panel (cat. no 0 435 11):

Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).

Protection index of the front face against solid and liquid bodies: IP 30 (IEC/EN 60529).

. Alarm remote panel (cat. no 0 435 21):

Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).

Protection index of the front face against solid and liquid bodies: IP 54 (IEC/EN 60529).

Impulse withstand voltage:

. Alternate current 50 Hz / 1 min.:

. Voltage values and considered circuits: see table

	Aux. supply	"Bus" output for panels	Measure inputs	Alarm relays
Aux. supply		2 kV	2 kV	2,5 kV
"Bus" output for panels	2 kV		1 kV	2,5 kV
Measure inputs	2 kV	1 kV		2,5 kV
Alarm relays	2,5 kV	2,5 kV	2,5 kV	

Insulation measuring circuit current:

. ≤ 100 μA

Input impedance:

. > 100kΩ

Measuring voltage:

. < 15 V

Capacitance of Leakage value:

. ≤ 2 μF

Insulation rated voltage:

. Ui: 300 V

5. GENERAL CHARACTERISTICS *(continued)*

Pollution degree:

. 2

Installation category:

. III

Average weight per device:

	Weight (kg)
Insulation Monitoring Device 230 V~	0,285
Insulation Monitoring Device 24 V~	0,285
Alarm remote panel for recessed installation	0,150
Alarm remote panel 72x72 mm	0,140

Volume when packed :

	Volume (dm ³)
Insulation Monitoring Device 230 V~	0,701
Insulation Monitoring Device 24 V~	0,701
Alarm remote panel for recessed installation	1,554
Alarm remote panel 72x72 mm	0,701

Consumption

. ≤ 6 VA

Thermal power dissipated:

. ≤ 4 W.

6. COMPLIANCE AND APPROVALS

Compliance to standards:

- . Compliance with Standard IEC/EN 61557-8 (Annexes A and B)
- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2014/30/EU
- . Compliance with low voltage directive n° 2014/35/EU.
- . Electromagnetic Compatibility:
 - emission tests according to EN/IEC 61557-8
 - immunity tests according to EN/IEC 61326-2-4

Environment respect – Compliance with CEE directives:

- . Compliance with Directive 2011/65/EU known as "RoHS II" on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- . Compliance with REACH regulation: at the date of the publication of this document no substance from the candidate list is present in these products.

Plastic materials :

- . Halogens-free plastic materials.
- . Marking of parts according to ISO 11469 and ISO 1043.

Packaging :

- . Design and manufacture of packaging compliant to decree 98-638 of the 20/07/98 and also to directive 94/62/CE.