S is m a L O C K- E v o

-Controlled by dual processor
-4 20 mA output
-Degree of protection IP66
-Multisensor technology
-Device status indicator
-Safety relay for solenoid valve
-Compliance: ASCE 2506 TS12884

General description

The SismalockEvo seismic detector is a device capable of measuring telluric type vibrations using multiple sensors with MEMS technology. The mechanical signal perceived by the device is converted into an electrical signal, analyzed by means of proprietary algorithms, and used to activate safety devices such as solenoid valves for dangerous fluids. The closing action of the solenoid valves can take place either directly, through the internal safety relay, or, alternatively, through a control unit (if the sensor is part of a network). The SismalockEvo uses redundant components for greater detection security and allows the sending of earthquake data by means of a signal with the 420mA standard or a signal on the RS485 bus. An input for remote (manual or automatic) activation of the device completes the technical panel

Technical features

Power supply (AC version) .... 85 ~ 305VAC @ 47 ~ 63Hz
Power supply (CC version) .... 10.8 ~ 26.4VDC
Absorbed power .... 3W Max
VALVE relay capacity 8A 250VAC (2kVA) AC1 500VA AC15
Relay flow FAULT SIG .... 0.5A 250VAC res. 2A 30VDC res.
ALARM SIG relay range .... 0.5A 250VAC res. 2A 30VDC res.
Seismic alarm threshold .... ASCE 2506
Seismic sensor resolution .... 10x103 m / s²
Inclination sensor resolution .... 0 , 01 °
Analog output signal .... 4 ÷ 20 mA
Digital output signal .... RS485 on 3 wires
Initialization time .... < 20 seconds
Response time .... <5 seconds
Digital central sensor distance (1) .... 1000 m
Analog central sensor distance (2) .... 100 m
Operating temperature .... from 20 ° C to + 60 ° C
Operating humidity .... 080% non condensing
Degree of external protection IP66

Belden 3106A cable or equivalent.
1.5mm2 C.S.A. shielded cable. Connect the screen only to the control panel side.

Ignition and Test

Connect the sensor as indicated in the wiring diagrams. If the device is part of a centralized system, connect the 420mA current output or the RS485 bus to the detection control unit (check the type of signal required by the control unit). If the control unit is digital with bus communication, set the "OPT" microswitch number 1 to ON (upwards). Power the sensor with a voltage that conforms to what is indicated on the label on the side of the sensor. Once the device is powered, the status LED will light red, then yellow and finally green for a verification of the visual signal. Subsequently, the status LED will flash until the sensors stabilize and the internal diagnosis is completed. At the end of this phase, the status LED must remain on green. To complete the test, press and hold the internal "TEST / RESET" button until the alarm / failure is signaled and check that the safety devices connected to the sensor have been implemented.

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Installation

The seismic sensor must always be positioned within 1 meter from the ground (the oscillations to be monitored must not be influenced by the oscillations of the structure to which the sensor is mechanically connected). The walls to which the sensor must be connected must be perimeter, firmly connected to the structure of the building and in a position such as to avoid, as far as possible, artificial vibrations generated by machinery or moving vehicles. The sensor can be positioned both inside and outside the building. A further precaution is to protect the sensor from possible impacts by means of an additional container or mechanical barriers.

Do not expose the sensor to direct sunlight, provide darkening protection.

Detector height
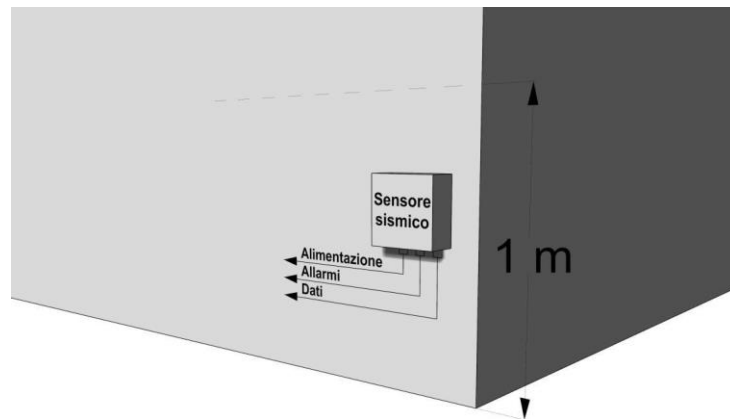
Correct position   ## Wrong position

The seismic sensor contains an inclinometer which intervenes when the inclination of the device is greater than 10 °. Install the device using a bubble to avoid its intervention.

Detector fixing
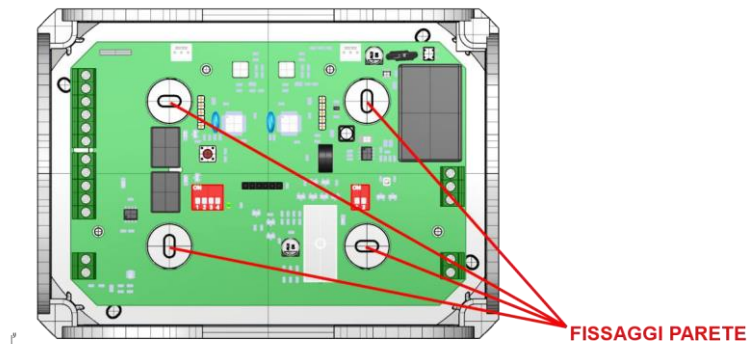
In a vibration detection device, wall mounting must be carried out with great care.

All four fixing points must be used and the screws with the plugs must make the sensor integral with the wall. Once the screws are tightened, check that there is no play between the wall and the device

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Precautions

MAKE SURE the integrity of the device after removing it from the box.
Check that the data written on the box correspond to that present on the body of the device. LIMITS OF LIABILITY
NRG Tech S.r.l. declines any responsibility towards any person for what concerns the damage of the material, the injuries or the death of the user resulting entirely or partially from inappropriate use, installation or conservation of the material not in compliance with the instructions and warnings and / or not comply with the rules and regulations in force.
NRG Tech S.r.l. does not support or authorize any other company, person or legal person to assume the part of responsibility due to NRG Tech S.r.l., even if involved in the sale of NRG Tech S.r.l. products.
NRG Tech S.r.l. will not be held responsible for direct, indirect damages as well as compensation for direct and indirect damages resulting from the sale and use of its products IF THESE PRODUCTS HAVE NOT BEEN DEFINED AND CHOSEN BY NRG Tech S.r.l. FOR THE USE THAT IS MADE OF IT.

Description of the components
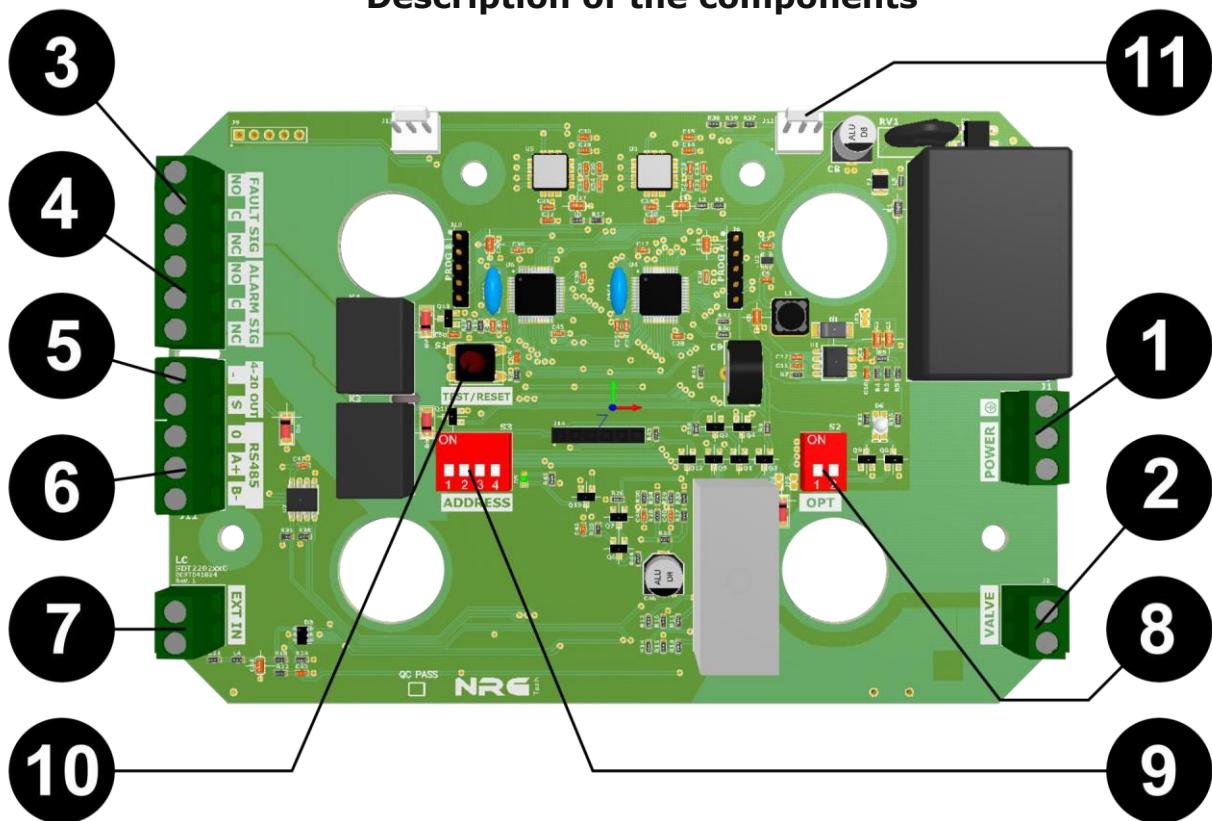
1 Power connector. In the version with AC power supply, also connect earth wire.
2 Connector for solenoid valve or other safety device. It is a normally closed contact free of voltage (clean contact).
3 Failure connector. It is a voltage-free exchange contact. Exchange its status in case of device failure.
4 Alarm signaling connector. It is a voltage-free exchange contact. It exchanges its status in the event of an alarm due to the seismic threshold being exceeded.
5 Current signal connector. Outputs a current signal according to the 420mA standard.
6 STNH3M data bus connector. Connection for systems with digital addressed control units. It uses the RS485 standard as a basis.
7 External input connector. Alarm input from remote device / button. Whoever supplies this signal must have a clean open contact with termination resistors.
8 Microswitches for operating options.
9 Microswitches for address setting. By means of these switches it is possible to set the detector address in order to make it unique in the network.
10 Reset / test button. With a short pressure it allows to reset the device and with a long pressure to check the device relays.
11 PC connector. It allows diagnostic and calibration functions of the device by means of dedicated software and communication cable on USB standard.
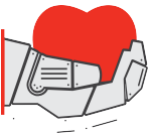
Typical connection scheme

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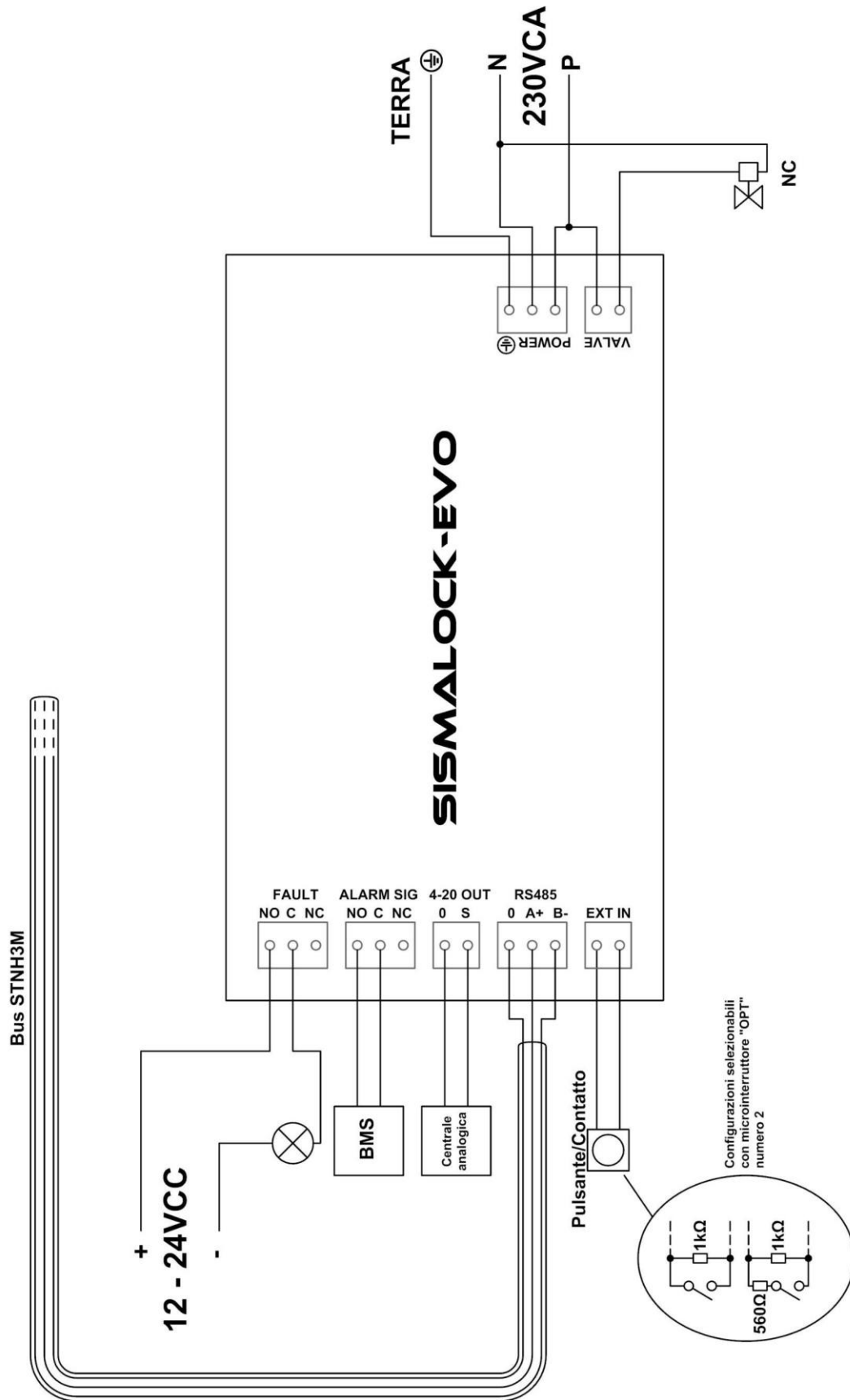
Note: it is a reference diagram, connections to peripheral devices may vary according to the type of device connected and the type of use. Carefully check the connection diagram on the technical data sheet of the peripheral. The example uses the version with AC power supply. All relays are voltage free.

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Operation setting

A 2-way microswitch is used to define the device options.
Microswitch number 1:
OFF (downwards) defines the SismalockEVO as an autonomous device. Stores the alarms and manages the reset only through the internal "TEST / RESET" button. All local functions are activated.
ON (upwards) defines the SismalockEVO as a bus device. In this configuration the control unit connected to it will manage the storing and restoring. It is managed as a remote sensor.
Microswitch number 2:
OFF (downwards) manages the external button / contact as a normally open contact with 1kΩ termination resistance.
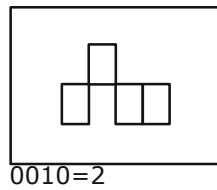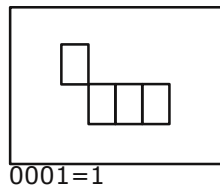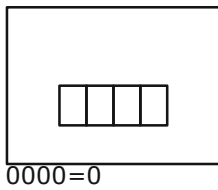ON (upwards) manages the button / external contact as a normally open contact with 1kΩ termination resistance and 470Ω ~ 560Ω contact closure resistance. See typical connection diagram.
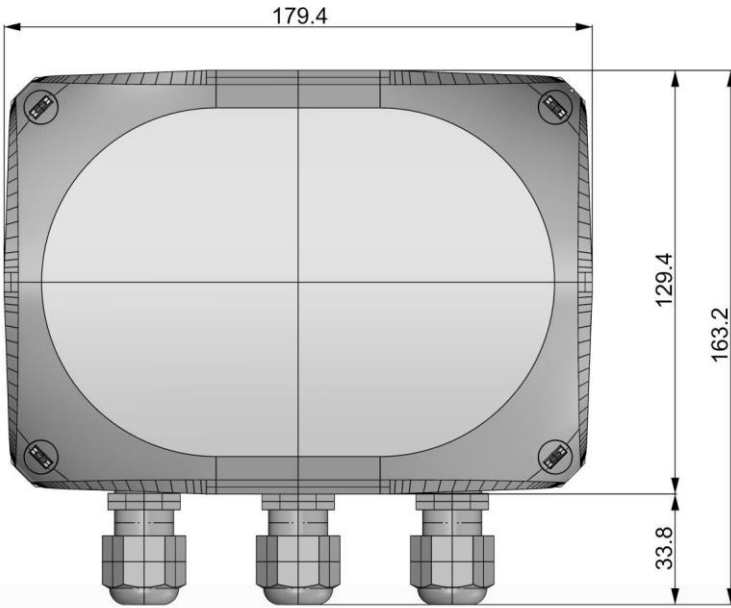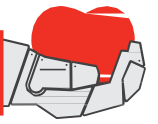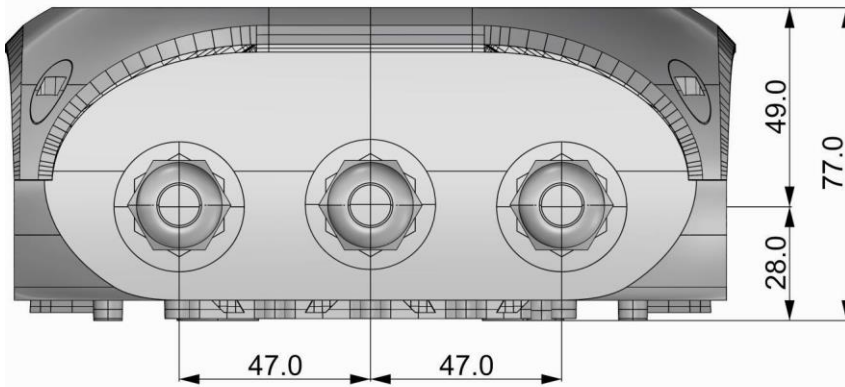
Address selection

A 4-way microswitch is used to define the address that will identify the device on the bus.
Binary code is used to manage up to 16 addresses (from 0 to 15 included). The least significant bit is marked with the number 1 on the left side. The most significant bit is marked by the number 4 on the right side. All the coding examples are shown below.
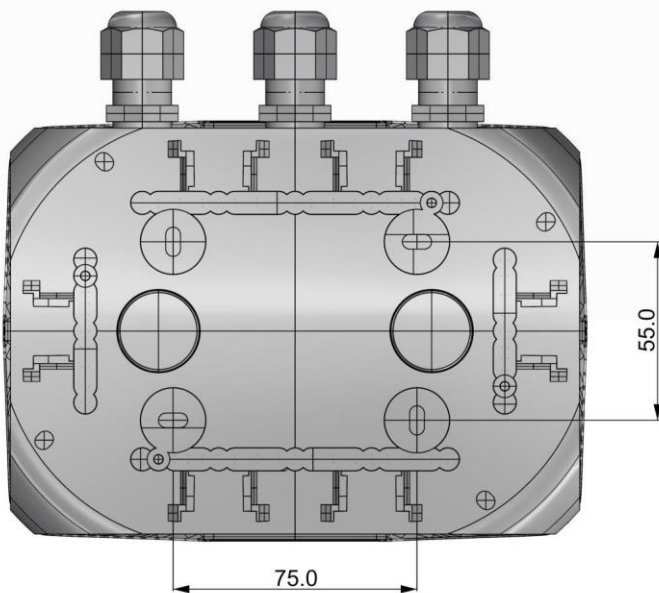
0000=0

0001=1

0010=2

0011=3

0100=4

0101=5

0110=6

0111=7

1000=8

1001=9

1010=10

1011=11

1100=12

1101=13

1110=14

1111=15

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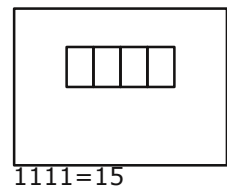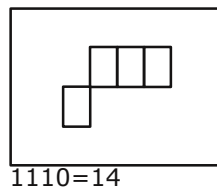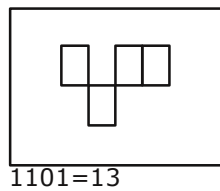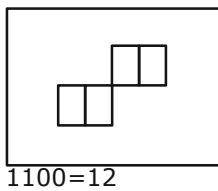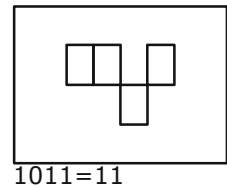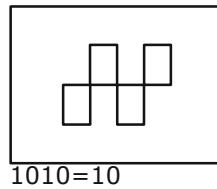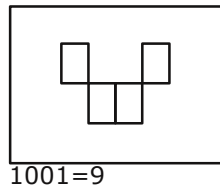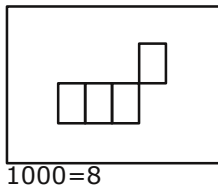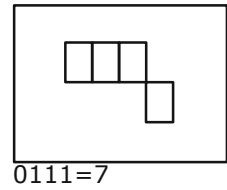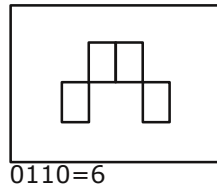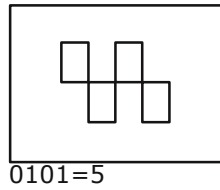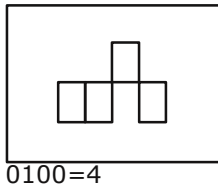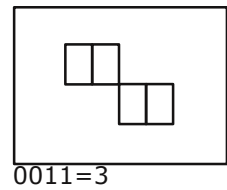
Mechanical dimensions

Side view

Rear view

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Warranty

The equipment is guaranteed for a period of 2 years from the date of manufacture, based on the conditions described below. The components recognized as defective will be replaced free of charge. With the exclusion and replacement of plastic or aluminum cases, bags, packaging, any batteries, and technical data sheets.

The equipment must be sent carriage paid to the manufacturer.

The warranty does not cover faults due to tampering by unauthorized personnel, as well as incorrect installations or carelessness deriving from phenomena unrelated to the normal operation of the appliance.

We are not responsible for any damage, direct or indirect, caused to people, animals or things, from product failures or from the forced suspension of the use of the product.

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