VENITEM

MANUALE TECNICO
TECHNICAL MANUAL

HEMA

L – LS – LSP

GENERAL DESCRIPTION

HEMA L is a low-consumption sounder with high-brightness LED flashing unit – anti-opening and anti-removal tamper – sound and timing programming – alarm counting – microprocessor self-test of: battery, speaker and drivers with dedicated anomaly negative output – programming of sounder trigger polarity – input for speaker block - permanent or momentary optical indication of alarm system ON/FF (arming/disarming) – electronic board protected against polarity inversion and tropicalized through a special resin tropicalization process against bad weather conditions and moisture. External cover and sounder base are in ABS while the internal cover is made of zinc-plated steel.

The tamper devices detecting removal, sounder opening, foam and shock are to be connected in series. In case of tamper attempt, they open the contact between the two TAMPER terminals thus triggering off the alarm.

HEMA LS: technical features as HEMA L with double micro switch **anti-foam** circuit provided of **anti-shock** technology against hard hits.

HEMA LSP: technical features as HEMA L with double micro switch **anti-foam** circuit provided of **anti-shock** technology against hard hits and **anti-drilling** device.

TECHNICAL FEATURES

Voltage	Nominal battery recharge	13.0 ± 13.8 Vdc
	Minimum command	4.1 Vdc
	Minimum supplying	10 Vdc
	Max supplying	15 Vdc
Current	Max consumption from control panel (for battery recharge and sound)	500 mA ± 100 mA
	Battery consumption in alarm	1.3 A +100/-300 mA
	Flashing unit consumption	90 mA ± 10 mA
	Consumption in stand-by	15 mA
	Consumption from control inputs	+0.5 mA @12 Vdc; -0.3 mA @ 0 Vdc
	Open collector	-10 mA Max
Fundamental frequency		See CHART 6
Sound pressure		See DIAGRAM 1
Life of LED flashing light		1,000,000 flashes
Timings		3 minutes, settable at 8 min
Battery	Housing capacity	12 Vdc 1.2 Ah or 12 Vdc 2.2 Ah max
	Duration in stand-by	120 hours using 12 Vdc 2.2 Ah model
Control panel command		2 or 3 wires
Tamper switch		N.C. 0.2 A max; cover opening and sounder removal from wall
Mechanic		
Cover		Painted ABS
Base		ABS
Internal cover		Zinc-plated steel
Flash cover		Polycarbonate
Temperature conditions		from –25°C to +55°C
Environmental class		Class IV
IP protection		IP 44
Relative humidity condition		from 20% to 100% of RH
Size		330x210x110 (H x L x W)
Weight		1,957 gr
Standards compliance		T031:2014
		EN50131-4:2009
Security	L and LS models	Grade 3
	LSP model	Grade 4

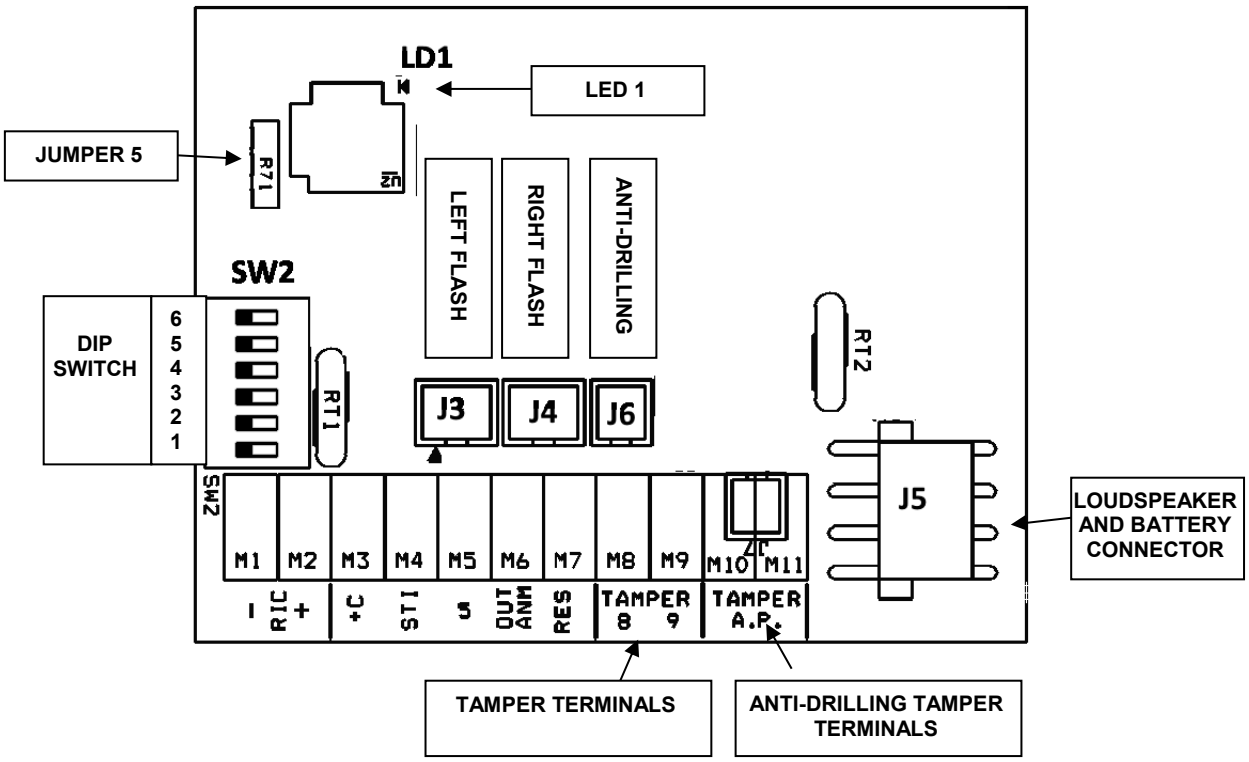
MOUNTING:

1. Use the 6mm plugs to fix the siren on the wall; always check if the tamper works properly;
2. Insert the connection cables through the holes located on the lower part of the sounder base;
3. If necessary, modify the default settings by acting on the dipswitches as shown in the charts below;
4. Connect battery and power supplying to the alarm control panel;
5. Close both internal and external covers using the screws provided.

Battery must have UL94-HB flammability rate.
Power supplying must be of SELV type.

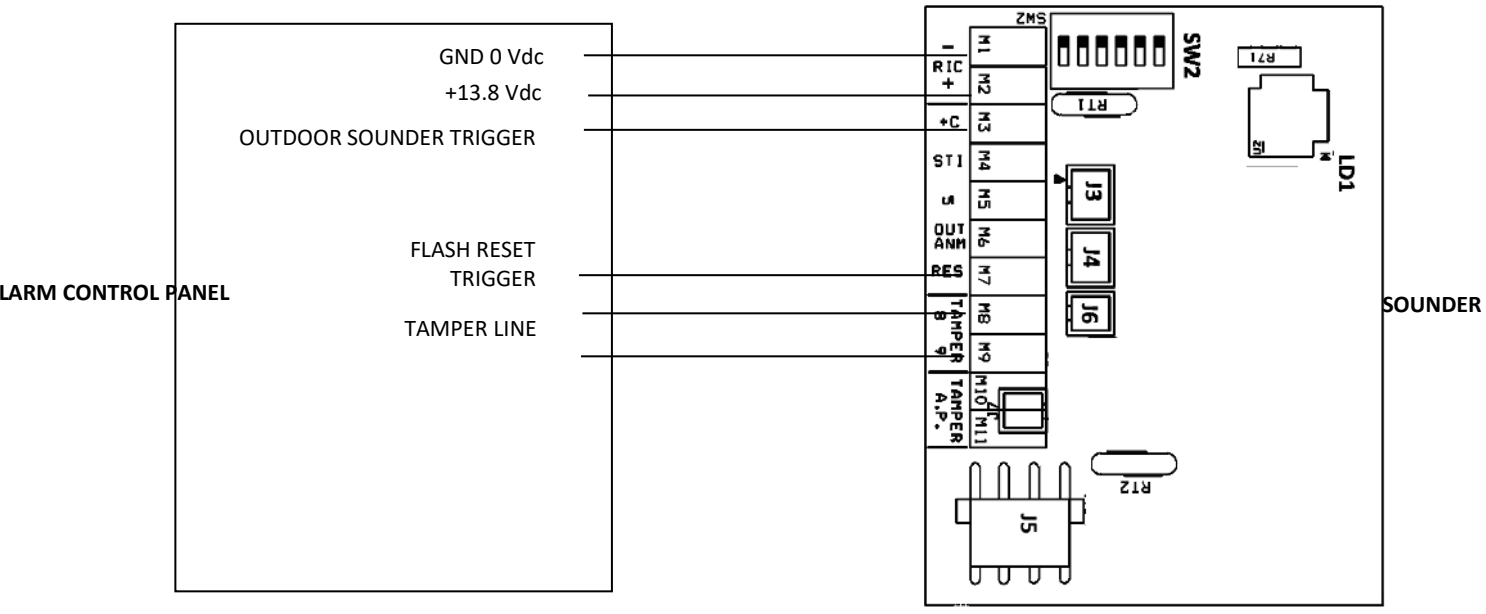
Attention: in order to avoid moisture formation inside the sounder, it is important to prevent air from flowing in the cable tray. To obtain such a result, once the sounder is connected, seal the hole using some silicon or any other filler type. This operation avoids the formation of moisture inside the sounder; condensation mostly appears in winter and it is usually caused by warm and humid air coming out of the wall where the sounder is installed and passing through the holes located on the sounder base. Condensation and moisture can affect the sounder which might not work properly.

CONNECTION SCHEMES



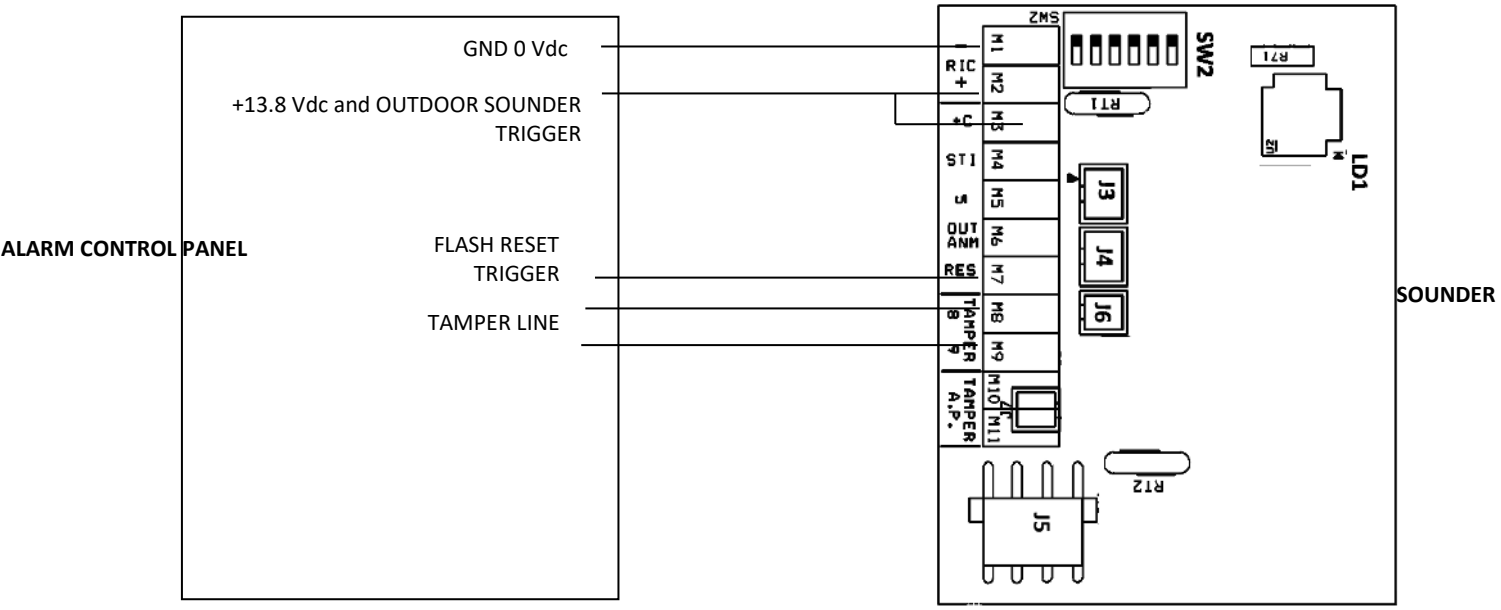
1. FOUR-WIRE CONNECTION

Connect 13.8 Vdc supplying coming from control panel to the dedicated terminals:
-RIC negative; +RIC positive; +C positive-missing trigger; RES negative trigger for flash reset.
Note: by default, DIPSWITCH N°2 is set in OFF position, POSITIVE-MISSING TRIGGER



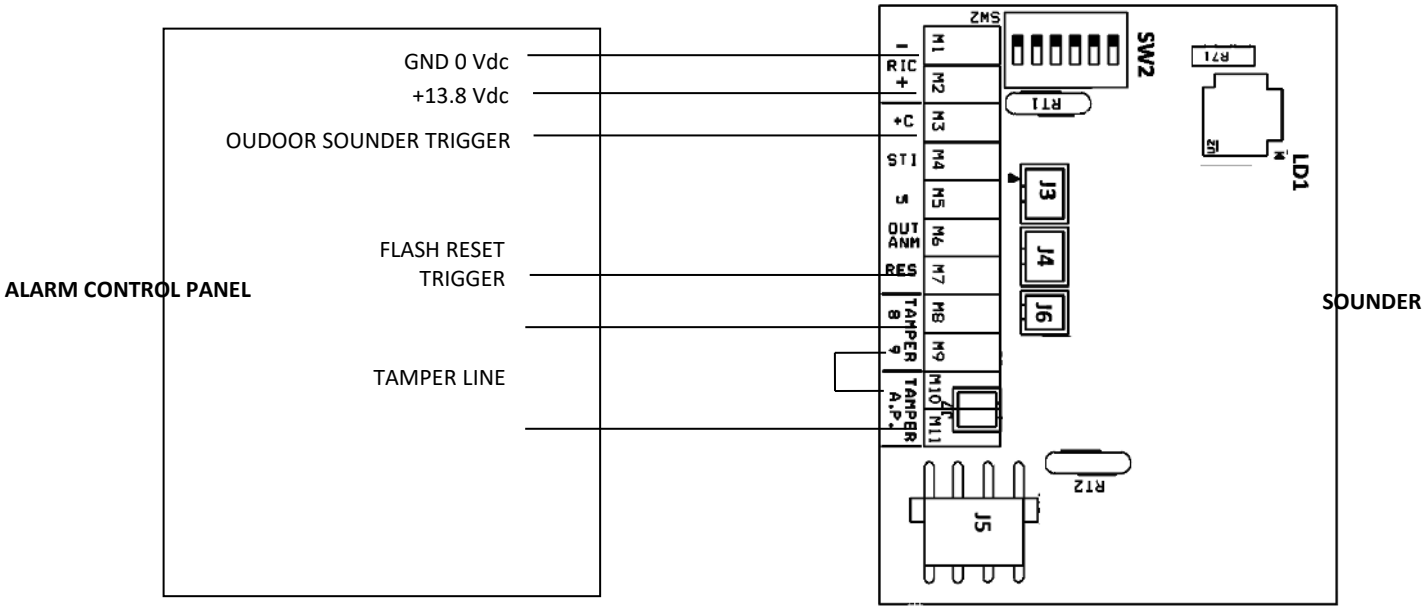
2. THREE-WIRE CONNECTION

Connect 13.8 Vdc supplying coming from control panel to the dedicated terminals:
-RIC negative; +RIC positive. (+C trigger must be jumped to +RIC); RES negative trigger for flash reset.
Note: by default, DIPSWITCH N°2 is set in OFF N°6 OFF, POSITIVE-MISSING TRIGGER



3. HEMA *LSP* MODEL WIRING

Connect 13.8 Volt supplying coming from control panel to the dedicated terminals:
-RIC negative; +RIC positive; +C positive-missing trigger; RES negative trigger for flash reset.
Note: by default, DIPSWITCH N°2 is set in OFF position, POSITIVE-MISSING TRIGGER
Only in HEMA LSP model, terminal M9 must be jumpered to terminal M10 TAMPER A.P.



4. OPTICAL INDICATION OF SYSTEM STATUS (MOMENTARY OR PERMANENT ON-OFF)

- If a positive is given to terminal STI (System status) all LEDs of the flashing light make 3 flashes (ON);
- If the positive is removed, all LEDs light on steady for 5 seconds (OFF) and the complete sounder test is launched (remote test).

By default, DIPSWITCH N°4 is set in OFF position (MOMENTARY ON-OFF)
DIPSWITCH N°4 in ON position (MOMENTARY ON-OFF) and 1 LED keeping on flashing as long as positive tension = 0V is given to terminal STI.

5. SOUNDER TIMING

By default, timing is 3 minutes (DIPSWITCH N°1 in OFF position) and it can be modified into 8 minutes.

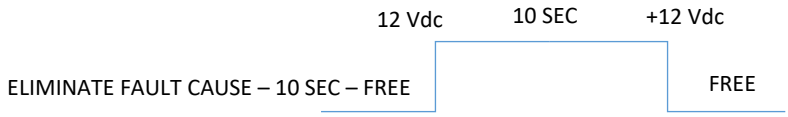
6. TERMINAL 5 - NEGATIVE SOUND-BLOCK INPUT

It gives a 0V signal to terminal 5 thus activating the sound interruption trigger.

7. TERMINAL OUT ANM AND FAULTS LED

The microcontroller managing the sounder is able to check if recharge, battery, loudspeaker and drivers are working properly. In case of faults, the open collector output OUT ANM opens while the LED located on the sounder board shows the type of fault by making a certain number of flashes followed by a short pause (please see chart here below for FAULTS LED signalisation).
The microcontroller automatically performs every 4 hours the battery current test. Moreover, other tests are performed on regular basis. Usually, if the sounder is **properly** supplied, the faults output (terminal 7) **remains at 0 Vdc** (max consumption 50 mA). In case any of the tests performed **fails**, the faults output **disconnects from the ground and becomes free**. Moreover, the microprocessor is always under self-test and in case of failure or malfunctioning, it gives a **free output** with sound interruption.
To reset the fault appeared: eliminate the fault cause. Then:

- (*see scheme below*): wait 10 seconds, let terminal n°4 (STI) free, take it to 12 Vdc, wait 10 seconds and let terminal n°4 free again. This procedure resets all faults;



- all faults are anyway reset after every alarm (+C), with the exception of those concerning the battery that are reset after 12 hours from battery restore (replacement). The sounder performs all tests again and therefore updates battery faults too.

At the first sounder supplying (13.8 Vdc or battery), anomalies automatically reset once the cause disappears; this makes the installation easier. After the first activation of the sounder, anomalies reset through a command to STI terminal or through +C.
To launch the remote test, see *scheme here above*. This action launches the test that lasts 60 seconds. During the test, the sounder verifies if it is working properly and provides signalization of any faults through the faults output (OUT ANM) and the faults LED as shown in CHART 1: FAULTS below.

In case a fault occurs, the LEDs of the flashing light flash faster.

CHART 1: FAULTS

FAULT TYPE	LED LD1	Output OUT ANM
Speaker interruption (test performed every 10 s)	1 FLASH	OPEN
No recharge voltage (recharge V < 12 Vdc) (test performed every 10 s)	2 FLASHES	OPEN
Battery not connected (test performed every 12 hours)	3 FLASHES	OPEN
Low battery (battery V < 10.5V) (test performed every 12 hours)	4 FLASHES	OPEN
Damaged battery – internal resistor over 3.5 Ohm (test performed every 12 hours)	5 FLASHES	OPEN
Speaker drivers failure (test performed every 10 s)	6 FLASHES	OPEN
No anomaly	OFF	0V

8. CONNECTION OF MICRO SWITCH ANTI-OPENING AND ANTI-REMOVAL TAMPER

Connect the tamper line coming from control panel in series to the two wires of micro switch located on the sounder using the dedicated terminals TAMPER 8 and 9.

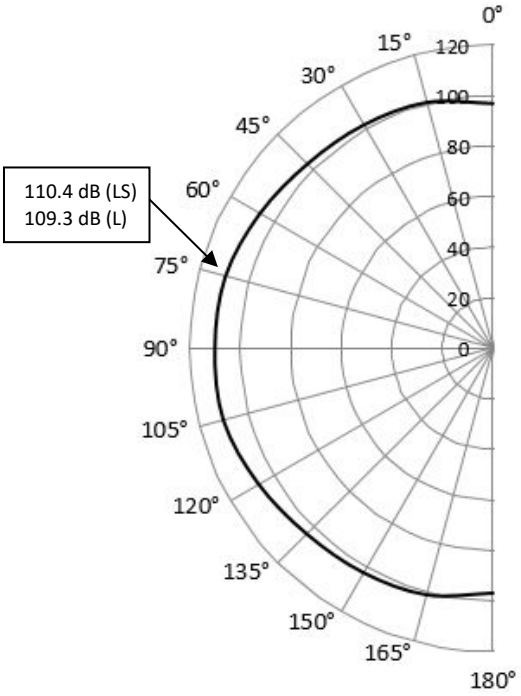
9. CONNECTION OF ANTI-FOAM (LS model)

Connect the two wires of the antifoam device in series to the micro switch and the tamper line coming from control panel.

10. CONNECTION OF ANTI-DRILLING (LSP model)

Connect TAMPER A.P. terminals in series to the anti-foam, the micro switch and the tamper line coming from control panel.

Diagram 1



HEMA LS DIP3 in ON position	
Angle	dB (A) @1m
15°	100.8
45°	104.5
75°	110.4
105°	110.7
135°	104.7
165°	100.8

HEMA L DIP3 in ON position	
Angle	dB (A) @1m
15°	100.9
45°	103.4
75°	109.3
105°	110.1
135°	104.0
165°	101.2

CONNECTION and SETTINGS

DIP SWITCHES SETTING

DIP switches can be moved only within the first 12 hours after the board is powered. After this period, DIP switches settings will be stored and any further switching will be useless.
By disconnecting battery and power supply, DIP switches will return to active for another 12 hours.

Chart 2: dipswitches and jumpers	
DIP 1	Alarm timing
DIP 2	Polarity of alarm input +C
DIP 3	Tone selection
DIP 4	Alarm system STI (ON/OFF) notice setting
DIP 5	Flash reset mode
DIP 6	Alarm trigger mode +C
JUMPER 5	Max daily alarms

Chart 3: wiring	
Terminals	**Connections**
-RIC (1)	Negative supplying 0 Vdc GND
+RIC (2)	Positive supplying +13.8 Vdc
+C (3)	Sounder control chart 5
STI (4)	ON/OFF indication of alarm system status
5	Input for sound block
OUT ANM (6)	Fault output. Open collector, 0 Vdc = no anomaly
RES (7)	Flash reset
TAMPER (8)	Self-protection N.C.
TAMPER (9)	Self-protection N.C.

Chart 4: alarm timing	
DIP 1	**Alarm duration**
OFF (default)	3 minutes
ON	8 minutes

Chart 5: Voltage reference for alarm input +C	
DIP 2	**Terminal +C**
OFF (default)	Positive (12 Vdc) reference for Alarm [see DIP 6]
ON	Negative (0 Vdc) reference for Alarm [see DIP 6]

Chart 6: tone selection		
DIP 3	**Tone**	**Frequency limits (Hz)**
OFF (default)	Increasing-continuous-decreasing	1,200 ÷ 1,750
ON	Increasing-decreasing (NFC 48-265)	1,400 ÷ 1,600

Chart 7: Alarm system STI (ON/OFF) signalization setting		
DIP 4	**Terminal 4**	**Flash status (ON/OFF)**
OFF (default)	+12 Vdc	All LEDs flash 3 times
	Not connected or 0 Vdc	All LEDs remain steady on for 4 seconds then switch off
ON	+12 Vdc	All LEDs flash 3 times and 1 LED keeps on flashing
	Not connected or 0 Vdc	All LEDs remain steady on for 4 seconds then switch off

Chart 8: flash reset mode	
DIP 5	**Flash behaviour – Terminals +C and RES**
OFF (default)	Flash activates through +C trigger and deactivates through a negative signal to RES terminal (Flash reset)
ON	Flash activates through +C trigger and deactivates through +C trigger

Chart 9: Alarm trigger mode +C		
DIP 6	**Terminal +C**	**Note**
OFF (default)	Missing Reference	Alarm occurs by disconnecting the cable (see DIP 2)
ON	Giving Reference	Alarm occurs by connecting the cable (see DIP 2)

Chart 10: Max daily alarms	
JUMPER 5	**Number of alarms during 24 hrs after the first alarm**
CONNECTED (default)	Infinite alarms
CUT	Restriction to 4 daily alarms (24 hours) of sound activation (STI resets the counter to zero)

INSTALLATION SUGGESTIONS

In case the sounder does not work properly, check if the on-board LED flashes. If it flashes, check FAULTS CHART here above.

WARRANTY

All Venitem products are granted against factory or material defects. In order to improve design and quality of its products, Venitem reserves the right to modify the products without prior notice. All faulty or defective products must be returned to supplier.

CE

MADE IN ITALY

DISPOSAL:
This product must be disposed of using the appropriate bins for electrical and electronic products. This product must not be placed in bins for collection of other waste types.

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