

The SP-4002 optical-acoustic outdoor siren comes in three versions differing by the color of optical signaling (red in SP-4002 R, blue in SP-4002 BL and orange in SP-4002 O).

## 1. Features

- Acoustic signaling by means of piezoelectric transducer.
- Optical signaling by means of LEDs.
- Battery as backup power supply.
- Four selectable tones for acoustic signaling.
- Weatherproofed electronic circuit.
- Tamper protection in 2 ways – cover opening or tearing housing from the wall.
- Inner cover of galvanized metal sheet.
- Housing made of PC LEXAN high-impact polycarbonate, featuring a very high mechanical strength.

Explanations for Fig. 1:

- 1 - housing cover.
- 2 - inner cover of galvanized sheet.
- 3 - housing base.
- 4 - battery.
- 5 - piezoelectric transducer.
- 6 - tamper contact (NC).
- 7 - electronics board.
- 8 - housing cover locking screws.

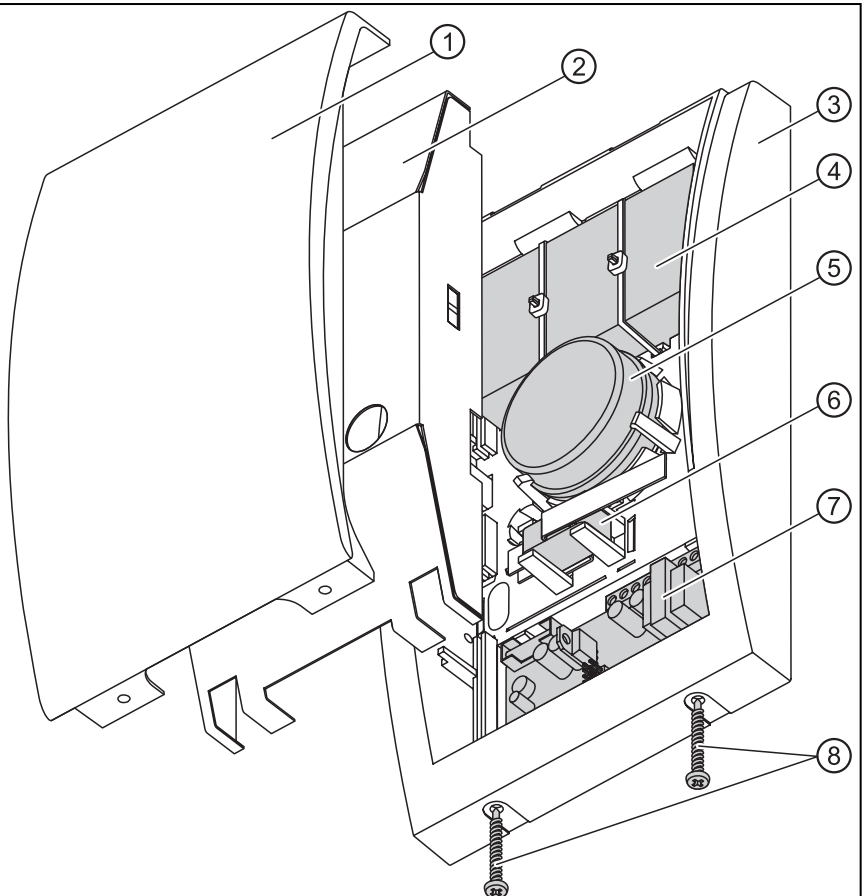


Fig. 1. View of the siren.

## 2. Functioning

The siren requires  $12\text{ V} \pm 15\%$  power supply. The signaling is generated by changing the STA input status (acoustic signaling) or the STO input status (optical signaling). The way of triggering the alarm is set by means of the PLA and PLO pins. The alarm can only be triggered 20 seconds after power-up, provided that during that time the signaling control input status was stable and consistent with that

set by means of pins for inactive status. The 20-second delay prevents the alarm from being accidentally triggered during installation work.

The maximum duration of acoustic signaling is set by means of the TM0 and TM1 pins (the fact that the acoustic signaling control output of the control panel will be active longer is of no significance). Triggering the acoustic signaling again will only be possible after the control signal is restored to its status which preceded the alarm.

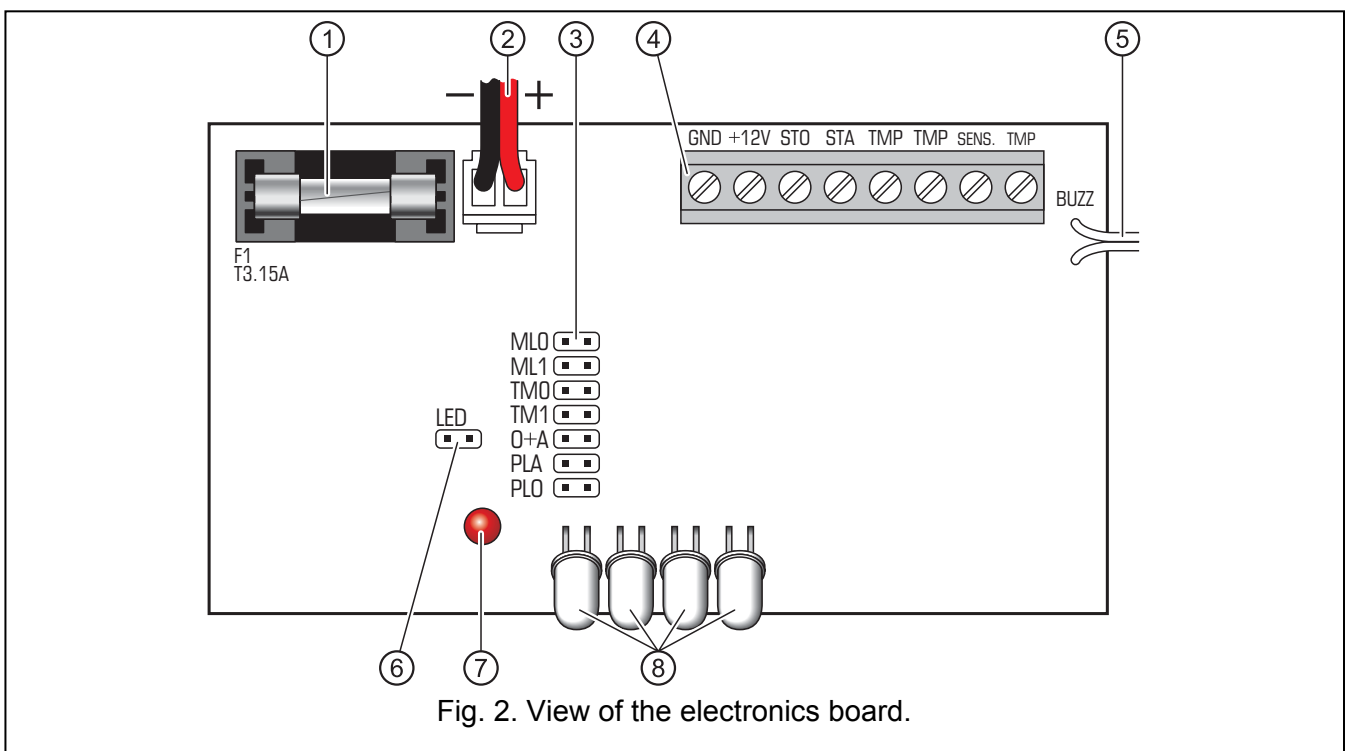
If the control wires are cut or the external power supply is lost, the tamper signaling is triggered (signaling mode: pins O+A; signaling duration: pins TM0 and TM1).

The siren is designed for operation with a 6 V / 1.3 Ah lead-acid battery, but it can also work without one.

#### Notes:

- The battery charging system used in the siren is designed for recharging a partially discharged battery, not for charging a fully discharged one.
- The current consumed by the siren to charge the battery depends on the battery degree of discharge.

### 3. Description of electronics board



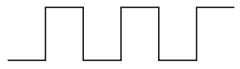
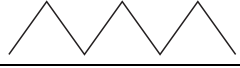
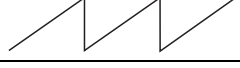

Explanations for Fig. 2:

- 1 - battery charging system fuse (3.15 A).
- 2 - battery leads (red +, black -).
- 3 - siren configuration pins (see section CONFIGURING SIREN).
- 4 - terminals:
  - GND** - common ground.
  - +12V** - power supply.
  - STO** - optical signaling control.
  - STA** - acoustic signaling control.
  - TMP and TMP** - tamper circuit.
  - SENS. and TMP** - siren tamper contact.
- 5 - wires to piezoelectric transducer.
- 6 - pins for switching ON/OFF the external power supply indication. The indication is enabled when the pins are shorted.

- 7 - LED indicating external power supply (a short flash approximately every 3 seconds).
- 8 - LEDs for visual indication of the alarm.

## 4. Configuring siren

■ - pins shorted; □ - pins open

Type of acoustic signaling		
MLO <input type="checkbox"/> ML1 <input type="checkbox"/>	Two sound frequencies (1450 Hz/2000 Hz) alternating during 1 second	
MLO <input type="checkbox"/> ML1 <input type="checkbox"/>	Sound with a smoothly rising and falling frequency (1450 Hz – 2000 Hz – 1450 Hz) during 1 second	
MLO <input type="checkbox"/> ML1 <input type="checkbox"/>	Sound with a rising frequency (from 1450 Hz to 2000 Hz) during 1 second	
MLO <input type="checkbox"/> ML1 <input type="checkbox"/>	Sound with a falling frequency (from 2000 Hz to 1450 Hz) during 1 second	
Maximum duration of acoustic signaling / duration of tamper signaling		
TM0 <input type="checkbox"/> TM1 <input type="checkbox"/>	Approx. 1 minute	
TM0 <input type="checkbox"/> TM1 <input type="checkbox"/>	Approx. 5 minutes	
TM0 <input type="checkbox"/> TM1 <input type="checkbox"/>	Approx. 10 minutes	
TM0 <input type="checkbox"/> TM1 <input type="checkbox"/>	Approx. 15 minutes	
Tamper signaling mode		
O+A <input type="checkbox"/>	Optical and acoustic signaling	
O+A <input type="checkbox"/>	Acoustic signaling only	
Way of triggering acoustic alarm (polarization of STA input)		
PLA <input type="checkbox"/>	On common ground cut-off (inactive status: common ground present on STA input)	
PLA <input type="checkbox"/>	On +12 V voltage loss (inactive status: +12 V present on STA input)	
Way of triggering optical alarm (polarization of STO input)		
PLO <input type="checkbox"/>	On common ground cut-off (inactive status: common ground present on STO input)	
PLO <input type="checkbox"/>	On +12 V voltage loss (inactive status: +12 V present on STO input)	

## 5. Installation

Install the siren on flat surface, in a hard-to-reach place, so as to minimize the risk of tampering. The device must be attached to the surface by means of screws and expansion plugs. In order to take off the cover, remove the two locking screws and lift it by an angle of approx. 60°.

**Note:** Leave a distance of at least 2.5 cm between the upper edge of the siren housing and the ceiling or another object located above the siren. Otherwise, replacement of the cover may be impossible.

On completion of the installation, it is advisable to seal the mounting holes and the cable inlet with silicone compound.

## 6. Connection



All connections should only be made after the alarm system power supply has been turn off and with disconnected battery.

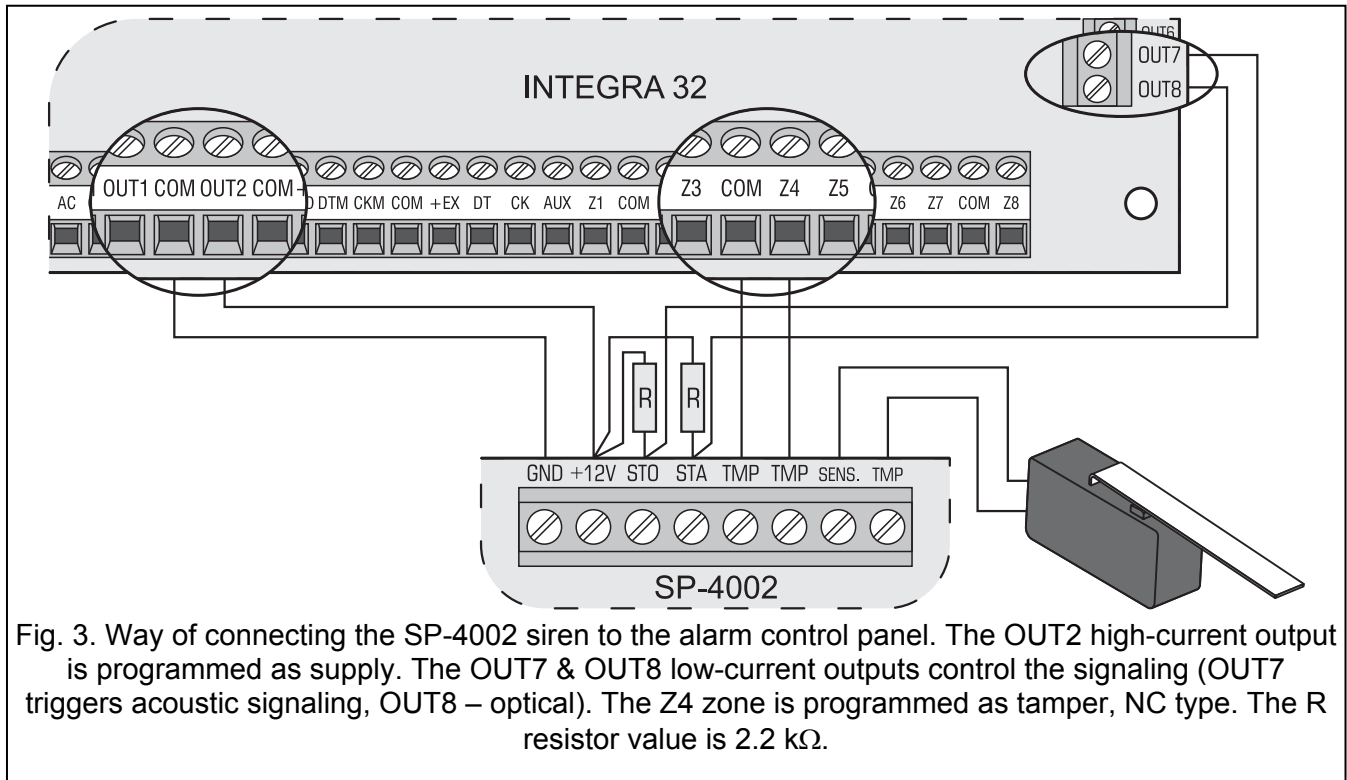


Fig. 3. Way of connecting the SP-4002 siren to the alarm control panel. The OUT2 high-current output is programmed as supply. The OUT7 & OUT8 low-current outputs control the signaling (OUT7 triggers acoustic signaling, OUT8 – optical). The Z4 zone is programmed as tamper, NC type. The R resistor value is 2.2 k $\Omega$ .

## 7. Specifications

Power supply .....	12 V DC $\pm$ 15%
Maximum current consumption:	
optical signaling .....	60 mA
acoustic signaling .....	240 mA
optical and acoustic signaling .....	260 mA
Internal lead-acid battery .....	6 V/1.3 Ah
Sound pressure level (at 1 m distance) .....	up to 120 dB
Environmental class according to EN50130-5 .....	III
Operating temperature range .....	-35...+55 $^{\circ}$ C
Maximum humidity .....	93 $\pm$ 3%
Housing dimensions .....	148 x 254 x 64 mm
Weight .....	1.2 kg

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