BY-ALARM PLUS

03827

By-alarm self-powered outdoor siren, can be connected to any burglar alarm system control unit, 2 piezoelectric speakers, LED alarm signalling, 13.8 Vdc power supply, surface mounting. Buffer battery not included. Spirit level for easy installation, system status LED, anti-tamper protection, anti-removal and anti-foam, 4 programmable sounds, 2 programmable timers.

The siren is self-powered and managed by a microprocessor that can continuously monitor all device parameters. It has a volt-free changeover relay specifically for signalling tampering when integrated with other systems, and a fault output for remote monitoring of fault conditions. The activation method can be set freely (e.g. 2-wire, 3-wire, etc.) as can the signalling method. The siren is pre-configured with default factory settings, which can be changed using the internal push buttons.

CONNECTIONS

2-wire connection
This is the classic connection method in which the alarm signal is active when there is no power supply positive (see the figure CONNECTIONS - 2-wire connection).

3- or 4-wire connection
This connection method offers greater flexibility to activate/deactivate the siren and a second siren (the figure CONNECTIONS - 3- or 4-wire connection). In this case, the parameters are programmed using the By-alarm Plus Manager software.

Activation: this can be done by either disconnecting the power supply + or using the START input (which is driven by the control unit).

Deactivation: this can be done by either reconnecting the power supply + or using the STOP input (which is driven by the control unit).

Both the START and STOP terminals can be programmed as described in the PROGRAMMING paragraph.

Any alarm can be stopped with the "STOP" input. The STOP input stops alarm signalling as long as it is kept active; for example, if the input is deactivated, the siren will sound again if the cause of activation is still present.

The figure also shows how to simultaneously activate both the external siren and an optional internal siren using the volt-free changeover contacts COM-NC-NO of the control unit relay; switching the relay disconnects the + from the external siren and simultaneously connects it to the internal siren.

Other connections
If you want to take the tamper signal to the control unit, connect terminals "7" and "8" on the siren directly to a terminal on the control unit. The contact connected to terminals "7" and "8" opens in the event of tampering.

SIREN BATTERY (NOT INCLUDED)

This powers the siren in the event of tampering and/or no mains voltage on the line connecting to the rest of the system. It must always be present since, in the event of an alarm, it supplies the energy necessary to develop the required sound power and to supply the flashing light. The 12 V power supply keeps it charged.
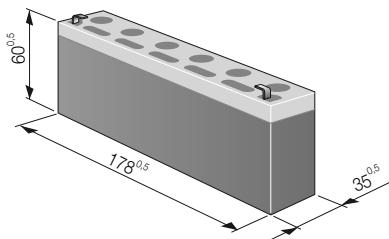
N.B. Always observe the polarity during installation (red = positive, black = negative).
If the battery is flat and its voltage is lower than 10.5 V, the siren stops sounding, while the light indicators remains on.

INSTALLATION

1. Choose a suitable location to install the device. Position the siren on a flat surface, in a place that is hard to access but clearly visible so that it acts as a deterrent against attempted break-ins.
2. Cut off the power supply to the electrical system.
3. Remove the cover.
4. Route the cables through the cable outlet holes.
5. If you want to activate the anti-removal protection, insert the screw into the corresponding hole; take care to position the microswitch lower than the screw.
6. Insert the buffer battery into its housing and wire it with the correct polarity.
7. Wire the siren.
8. Check whether the default settings are what you want, and make any necessary changes (refer to the PROGRAMMING chapter). Power up the siren; red LED DL7 will remain on during this step.
9. Close the cover, taking care to centre the holes, and tighten the screws provided. The anti-tamper microswitch will close and LED DL7 (red) will flash every 2 s for 20 s; when the flashing stops, the siren is ready and operational.

PROGRAMMING
The siren is programmed using the push buttons and LEDs on the electronic board.
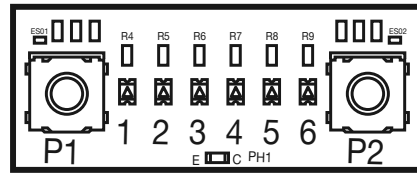
The programming menus can be recognised by a combination of LED flashes (from 3 to 6), and push buttons P1 and P2 are used to navigate within the menus.

Programming is only done after initial power-up, so make sure that:
• the siren is not powered, i.e. the battery and power supply are disconnected;
• the anti-tamper switch is open;
• the control unit is in a state that allows tampering with the siren without triggering an alarm (e.g. control unit in the programming state).

1. Open the cover.
2. Power up the siren; the red LED will remain on.
3. Press push button P1 and hold it down for 3 s; the LEDs will flash to indicate that programming is active. Release the push button; the combination of LEDs on indicates the current menu (as specified in the table below).
4. To scroll through the menus to the one you want, press push button P1 until you see the corresponding LED combination.
5. To enter the current configuration in the selected menu, press push button P2 and release it. You will then be in the menu, and each press of push button P2 will change the selected configuration, which is shown by the flashing LEDs.
6. To exit from the current menu and return to the menu selection, press push button P1 and release it.
7. To exit from programming mode and save the settings, press push button P1 and hold it down for 3 s until the LEDs flash. To exit from programming mode without saving the changes made, press push button P2 and hold it down for 3 s until the programming LEDs flash, or wait for the 30 s timeout without pressing any push buttons.
8. Close the cover and complete the installation.

Below is a list of all programming menus and the corresponding combination of LEDs 3, 4, 5 and 6. The "Options" column contains the programmable settings for each menu (the options enabled by default are identified with a grey background).

Menu					Options															
No.	LED combination				Item	3	4	5	6	3	4	5	6	3	4	5	6	3	4	5	6
	3	4	5	6		◑	○	○	○	○	◑	○	○	○	○	◑	○	○	○	○	◑
1	●	○	○	○	START input	Negative rising edge				Positive rising edge				Negative falling edge				Positive falling edge			
2	○	●	○	○	STOP input	Negative rising edge				Positive rising edge				Negative falling edge				Positive falling edge			
3	●	●	○	○	Sound signalling	Sound 1				Sound 2				Sound 3				Sound 4			
4	○	○	●	○	Maximum sound duration	3 minutes				6 minutes				9 minutes				12 minutes			
5	●	○	●	○	Activate START input	LED DL7				LED DL8				Flashing light				Siren			
6	○	●	●	○	No power supply	FAULT output				TAMPER output				Flashing light				Siren			
7	●	●	●	○	Tamper/removal signal, anti-foam, thermal attack	FAULT output				TAMPER output				Flashing light				Siren			
8	○	○	○	●	Courtesy light on LED line transition	Activate LED DL8 only				Activate combination of LED DL8 and Flashing light for 10 s				Activate only Flashing light for 10 s				/			
9	◑	◑	◑	◑	Reset to default	Default															

● = LED on continuously   ◑ = LED flashing   ○ = LED off

OPERATION

The siren performs different kinds of optical and acoustic signalling; these signalling modes are activated or not according to how the siren and control unit are programmed. All parameters of each signalling mode are therefore programmable, and may be single, combined with other signals or deactivated.

SIGNALLING TYPES

Flashing light

The high-intensity light signal is generated by a stroboscopic flash. The flashing light is activated with a frequency of 36 flashes per minute when there is no power (power supply "+" and "-" cut off), in the event of tampering or when activated via the "START" terminal, if programmed to do so.

In courtesy light mode, it follows the state of the "LED" terminal and remains active for 10 s.

Status LED

There are two auxiliary LEDs at the sides of the flashing light, which serve to indicate alarms and to support programming.

LED DL7 (red) behaves as follows during programming:
• On continuously = programming mode active and cover open.
• Flashing = exited from the programming menu, start of the time that is insensitive to external stimuli, after which the siren will return to normal operation.

During normal operation, the status LED is activated by a signal on the START terminal (if programmed to do so).

LED DL8 (green) behaves as follows during normal operation:
• it lights under control from the LED terminal.
• it lights under control from the START terminal, if programmed to do so.

Programming LED

LEDs 3, 4, 5 and 6 show the current programming step and when the settings have been saved.

Acoustic signalling

The sound type can be programmed (from 4 different types) in combination with the optical signalling of the flashing light.

SIREN ACTIVATION

The sirens can be activated from either the control unit or events generated by the siren itself. Activation ends when one of the following conditions occurs:
- the rest condition is restored
- the maximum alarm time lapses (which only stops the alarm sound)

Siren events

Siren 03827 generates events that can be associated with one or more signalling modes.

Siren event	Action/signalling
No power	Programmable. Refer to the table in PROGRAMMING
Battery problems	FAULT output activated
Anti-foam device dirty	FAULT output activated
Siren tampering: - cover opening/ripping from the wall - anti-foam - thermal attack (rapid temperature increase/decrease; oxygen lance or forced freezing)	Programmable. Refer to the table in PROGRAMMING

No power

This is the most commonly used mode because it uses few connections but guarantees protection against cutting the wires. In this activation mode, the siren signals when it detects a loss of primary power. The available signalling can be programmed as required.

LED input

This input (active low) is an auxiliary channel though which the control unit can activate signalling on status LED DL8 (green).

INSTALLATION RULES

Installation must be carried out by qualified persons in compliance with the current regulations regarding the installation of electrical equipment in the country where the products are installed.

CHARACTERISTICS

• Power supply voltage:
  - rated: 13.8 V
  - range: 9 to 16 V
• Absorption:
  - 220 mA during operation
  - 140 mA on stand-by
• Sound pressure level: 108 dB
• Minimum sound pressure levels at 1 m:
  - tone 1: 99.0 db(A)
  - tone 2: 98.6 db(A)
  - tone 3: 98.4 db(A)
  - tone 4: 97.4 db(A)
• Sound frequency: 2 Hz/3000 Hz
• Flashes per minute: 36
• Battery that can be accommodated: 12 Vdc 2.1 Ah flammability class UL94-HB
• 2 piezoelectric speakers

FRONT VIEW (with the cover open)
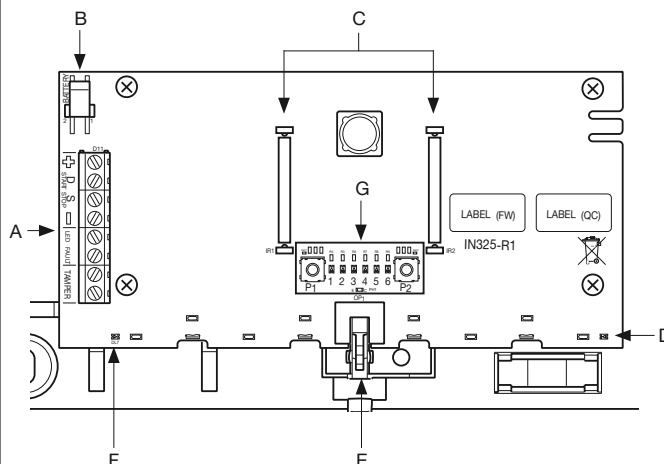
A: Connection terminals (see the TERMINALS figure for details)
B: Battery cables
C: Anti-foam device
D: Status LED DL8 - Green
E: Anti-tamper/anti-removal device
F: Status LED DL7 - Red
G: Push buttons P1, P2 and programming LEDs

TERMINALS
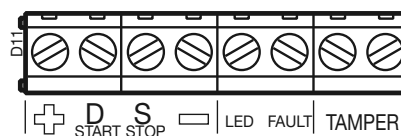
+: Power supply positive. It also acts as an alarm terminal in 2-wire connections.
D/START: Terminal with programmable polarity to active alarm signalling.
S/STOP: Terminal with programmable polarity to deactivate all signalling.
-: Power supply negative.
LED: Input to activate the LEDs.
FAULT: Terminal for fault signalling. Wire it to an input terminal configured as normally closed.
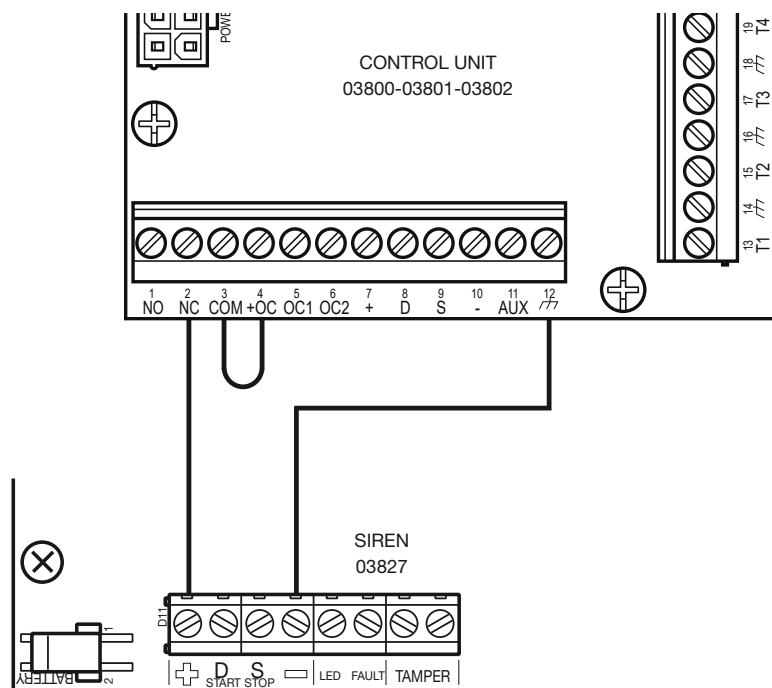TAMPER: Terminals for tamper signalling. Configure the tamper input as normally closed.

• Stroboscopic flashing light
• Anti-tamper device
• Anti-removal device
• Plastic enclosure
• Battery monitoring and charging based on the ambient temperature
• "Low battery" signal voltage: 11.5 Vdc
• 4 programmable sound signalling modes
• Alarm activation input (START)
• Forced signalling deactivation input (STOP)
• Auxiliary signalling LED activation input (LED)
• Programmable START, STOP input polarity
• Tamper signal output
• Fault signal output
• Operating temperature: -25 to +55 °C
• IP34 protection level
• Safety class: 3
• Environment class: IV
• Dimensions (W x H x D): 218 x 237 x 54.7 mm
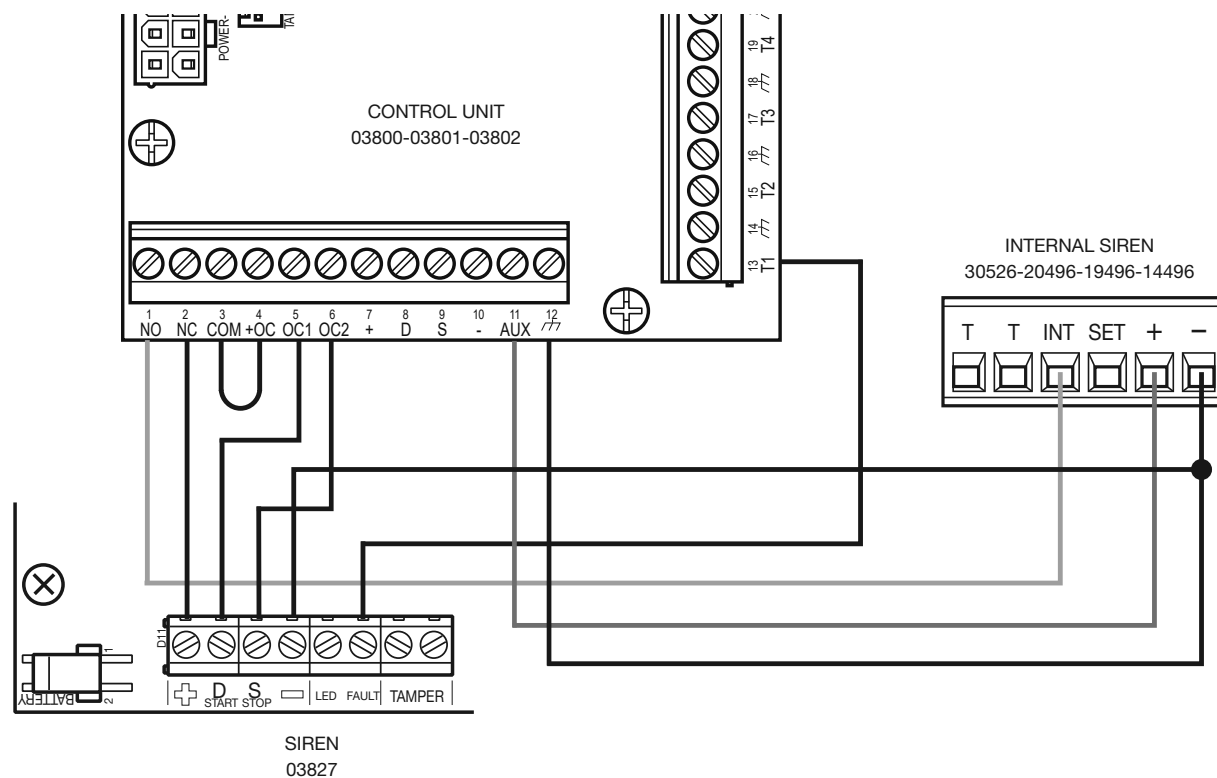
REGULATORY COMPLIANCE.

EMC directive. RoHS directive.
Standards EN 62368-1, EN 50130-4, EN 50130-5, EN 55032, EN 50131-4, EN IEC 63000.
REACH (EU) Regulation no. 1907/2006 – Art.33. The product may contain traces of lead.
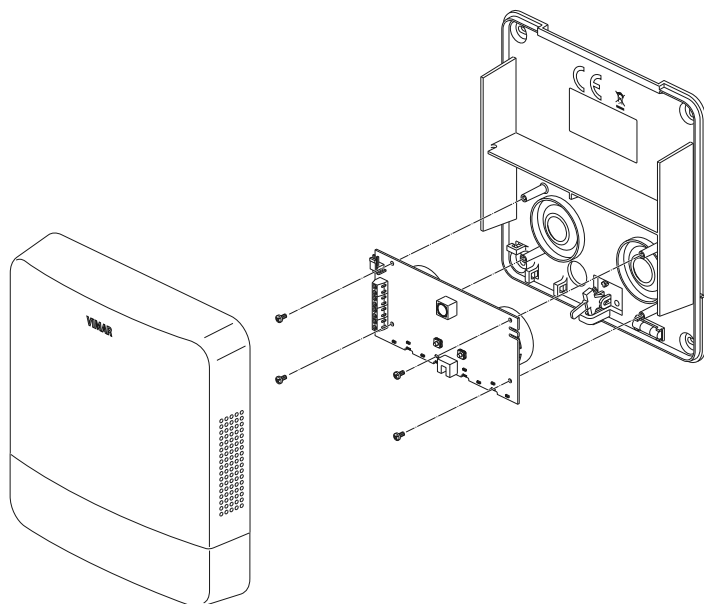
CONNECTIONS

2-wire connection

CONTROL UNIT
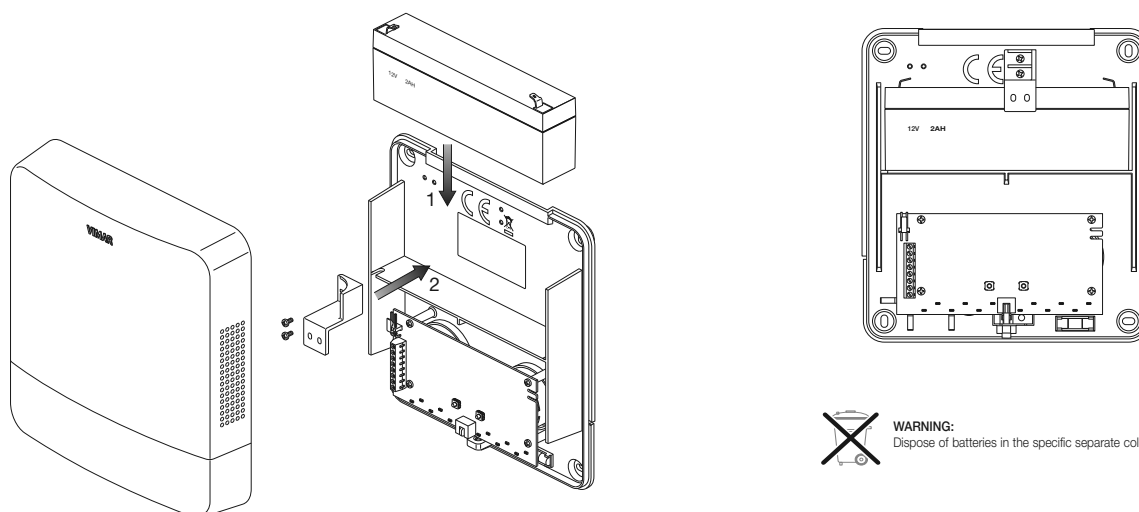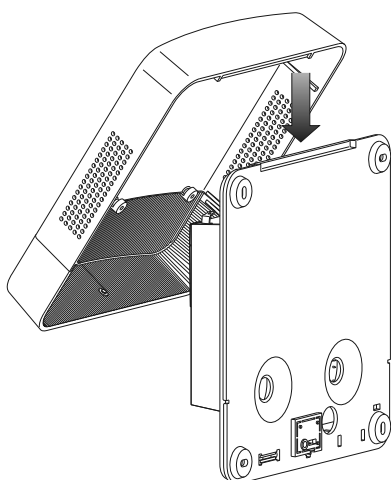03800-03801-03802

SIREN
03827

3- or 4-wire connection

CONTROL UNIT
03800-03801-03802

INTERNAL SIREN
30526-20496-19496-14496

SIREN
03827

INSTALLATION

1.

2.

WARNING:
Dispose of batteries in the specific separate collection bins.

3.

4.