DS100

Self-powered sounder/flasher for outdoor installation

Installation and programming manual

inim®

Table of contents

1. Description of DS100

The DS100 sounder/fasher is self-powered and is managed by a microprocessor that allows constant monitoring of all the device parameters.

It is equipped with a voltage-free-relay dedicated to signalling tampering for integration with other systems,while a fault output allows remote-management of any anomalies.

It is possible to freely set the activation mode (for example 2-wire, 3-wire, etc.) and the signalling mode.

The sounder/fasher is preconfigured by default with factory settings which can however be changed by means of the buttons inside.

Models

- DS100/HBB, wired outdoor sounder/flasher, flasher in blue
- DS100/HBT, wired outdoor sounder/flasher, flasher in frosted texture

Functions

- 2 piezoelectric horns
- Super bright LED-technology flasher
- System status LED signals
- 13.8 Vdc operating voltage
- Houses 12V, 2.1 Ah backup battery
- Thermal probe for regulating the charging process
- Spirit level for installation
- Open-enclosure tamper protection
- Tamper-protection device
- Anti-foam protection
- Protection against blow-torch tamper and freezing
- Degree of protection IP34
- 4 programmable tones
- 4 programmable timers (3, 6, 9, 12 minutes)
- Courtesy lights

Package contents

- DS100 sounder/flasher
- Drilling pattern
- Installation guide

1.1 Description of parts
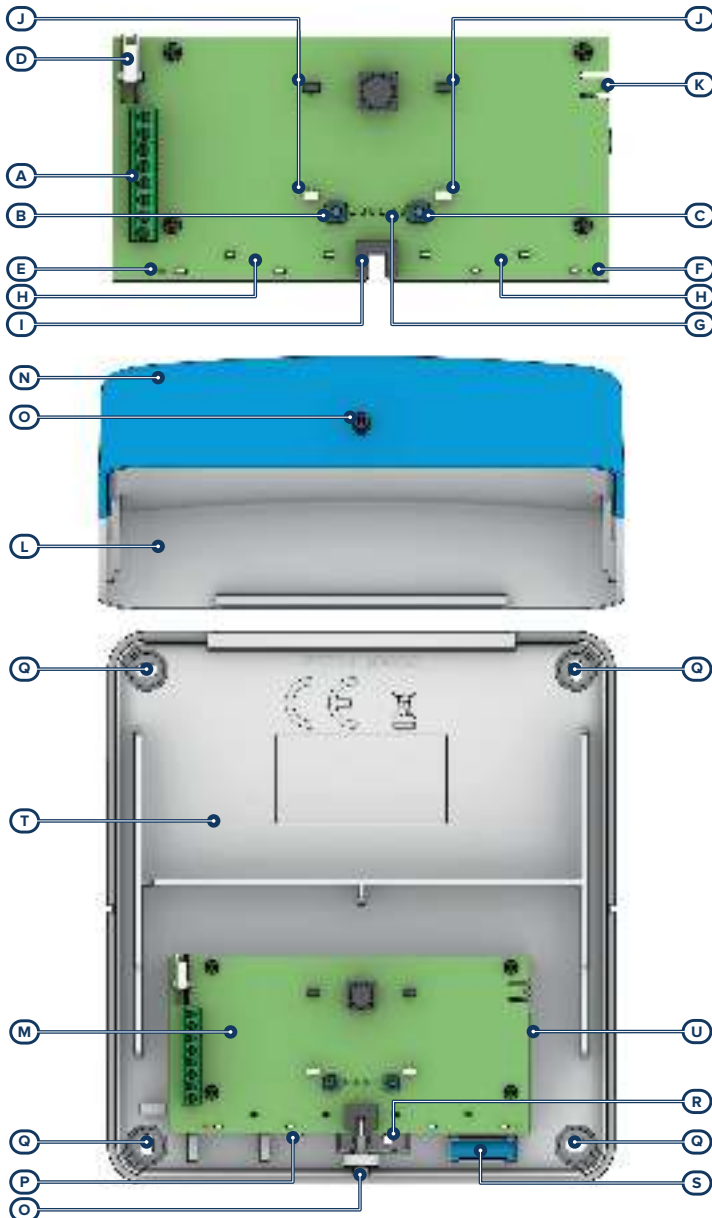
[A]	Terminal board		**[L]**	Cover
[B]	Programming button P1		**[M]**	Back
[C]	Programming button P2		**[N]**	Flash output
[D]	Battery connector		**[O]**	Cover screw
[E]	Red status LED		**[P]**	Cable entry
[F]	Green status LED		**[Q]**	Wall-mount screw locations
[G]	**LED 3, 4, 5, 6** Programming LED		**[R]**	Tamper-screw location
[H]	Flasher		**[S]**	Spirit level
[I]	Anti-opening and anti-dislodgement protection		**[T]**	Battery housing
[J]	Anti-foam protection		**[U]**	Piezoelectric speakers (back)
[K]	Thermal probe			

1.2 Terminal board

identifier	description	
+	Positive power terminal	
-	Negative power terminal	
START **D**	Ancillary terminal with programmable polarity for alarm activation	
STOP **S**	'Stop Alarm' terminal, with programmable polarity for alarm deactivation	
LED	Input for the activation of the green status LED or the courtesy lights	
FAULT	Open-collector output for fault signalling	
TAMPER	Voltage-free terminals of the relay	

1.3 Technical specifications of DS100

Warning device type	For outdoor use, self-powered, type Z
Power supply voltage	
nominal	13.8 V ⎓
range	from 9 to 16 V ⎓
Backup battery	12V - 2.1Ah UL94-HB flame class
Current absorption	
during standby	50 mA
for battery recharge	50÷180 mA
maximum	220 mA

Acoustic output type	tones
Sound pressure at 1m	105 dB(A)
Carrier frequency	2÷3 KHz
Flash rate per minute	36
Maximum alarm-time	12 min
Operating environmental conditions	
Temperature	from -25 to +60 °C
Relative humidity	≤93 % without condensation
Degree of protection	IP34
Security grade	2
Environmental class	IV
Dimensions (W x H x D)	218 x 237 x 53 mm
Weight (without batteries)	650 g
Flash color	Blue (DS100/HBB) Frosted texture (DS100/HBT)

Note

The sounder/flasher must be powered by outputs that provide at least 200 mA.

The maximum duration of the sound emitted by the signalling device may be subject to variation depending on local or national requirements.

2. Sounder/flasher functions

The DS100 sounder provides different types of flash and sound-emission signals as well as FAULT or TAMPER outputs that can be connected to an anti-intrusion control panel.

The signals will activate or deactivate in accordance with the programmed settings of the sounder/flasher or the connected control panel. The parameters of each signal can be programmed individually, combined with other signals, or deactivated.

2.1 Types of signalling

Flasher

The high intensity luminous signal is achieved by means of high-efficiency LEDs (*Description of parts, [H]*) which, due to their extra-low power consumption, provide optimum autonomy.

The flasher activates with a frequency of 36 flashes per minute in the event of power failure (power cut "**+**" and "**-**"), tamper, or in the case of activation via the "**START**" terminal, if so programmed.

Courtesy lights

This is a flasher function, which can be activated on demand for 10 seconds, by providing an ancillary light source.

This signalling mode follows the status changes of the "**LED**" terminal.

Status LED

The two ancillary LEDs, reveal the device status and guide you through the programming operations (*Description of parts, [E]* and *Description of parts, [F]*).

The Red status LED signals:

- in the programming phase, with the light on solid, the LED signals the programming status in progress with the casing open

- during the programming phase, with an intermittent light, the LED signals exit from the programming menu and the period of insensitivity from external stimuli at the end of which the device resumes normal operation

- during normal operation, the LED is activated by a signal generated by the "**START**" terminal, if so programmed

The green status LED, during normal operation:

• is activated via the "**LED**" terminal, if so programmed.

• it is activated on signal generated by the "**START**" terminal, if so programmed.

Programming LED

The LEDs (*Description of parts, [G]*) indicate the current programming phase and the eventual saving of selected settings.

Audible signalling

The two speakers emit an audible signal which is programmable for the sound type (selectable from 4 tones).

FAULT output

Open-collector output normally closed or in stand-by status.

TAMPER Output

These are the contacts of a free-exchange relay that can be used for signalling the sounder/flasher events to external devices, normally closed during stand-by.

2.2 Sounder/flasher activations

The DS100 sounder can be activated by signals from the control panel, depending on the wiring method used as well as by events generated by the device itself.

Signalling will cease when one of the following conditions occurs:

- the alarm condition clears
- the maximum alarm time expires (in this case, only the audible signalling will cease);

Control-panel event activations

The occurrence of control-panel events (activations or resets) can activate a sounder/flasher and generate signalling.

Each event can be associated with one or more sounder/flashers, configured as "Outputs" during the event programming phase.

Sounder/flasher events

The DS100 sounder processes signals detected by its components in such a way as to generate events to which one or more signals can be associated.

The Ivy unit can generate the following events:

- Power failure
- Low battery
- Battery inefficient
- Sounder tamper, due to:
    - Open casing
    - Dislodgement tamper
    - Foam tamper (or similar)
   - Blow torch or freezing

Mains failure

This signalling method is widely applied as it ensures intrinsic protection against wire-cutting. This activation method triggers audible and visual signals (sounder and flasher) when the primary mains power fails.

LED Input

This input (active by ground) is an ancillary channel through which to activate the signal on the green status LED or the courtesy light function of the sounder/flasher, depending on the programming of the sounder-/flasher. The activation of the input can be carried out manually or from an output of the anti-intrusion control panel.

3. Installation of DS100
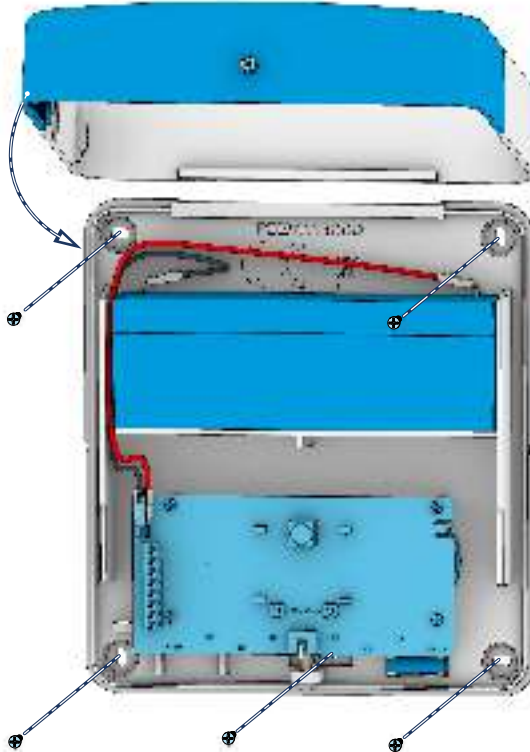
1. Choose a suitable mounting placement.

    The Ivy unit should be mounted high up on a smooth surface, in such way that it is out of reach but on view and, therefore, may serve as a visible deterrent against break-in.

2. Remove all electrical power.
3. Remove the cover.
4. Pull the connection wires through the cable entry (*Description of parts, [P]*).
5. Using the appropriate holes and screws provided, attach the base to the wall.
6. If enablement of the anti-dislodgement device is required (*Description of parts, [R]*), insert the screw in the appropriate hole.
7. Locate the battery in its housing (*Description of parts, [T]*), then connect it by means of the battery wires. Ensure that the battery polarity is correct.
8. Complete the device wiring.
   During this phase, the red STATUS LED remains On.

9. Check that the programming default settings are appropriate to needs, if not, make any necessary changes (*Programming*).
10. Close the casing and secure the appropriate screw (*Description of parts, [O]*).
    The tamper microswitch closes and the red LED blinks at intervals of 2 seconds for a total of 15 seconds.
11. The red LED will stop flashing and the sounder/flasher will be ready to operate.

3.1 Connection to control panel

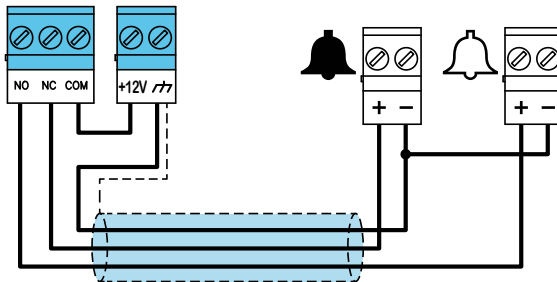Below are all the possible connection types between an DS100 sounder and an anti-intrusion control panel.

All connections involve the terminals on the motherboard (*Description of parts, [A]*).
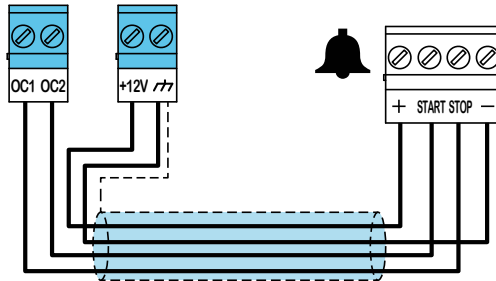
2 wire connection
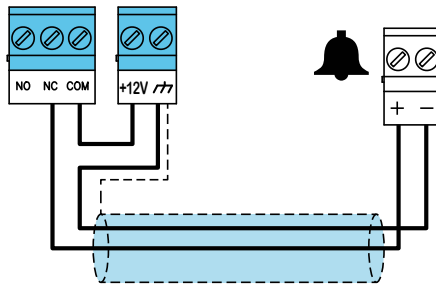
This standard wiring method activates the alarm signal by means of a positive-power-removed signal.

3 wire connection

In this connection mode, it is possible to activate both the external sounder and any internal sounder at the same time through the voltage-free "COM-NC-NO" relay of the control panel. Switching the relay disconnects the "**+**" terminal of the external sounder and at the same time connects the "**+**" of the internal sounder.

4 wire connection

This connection mode allows greater flexibility for activation/deactivation of the sounder.

- Activation: can be done either by disconnecting the power supply "**+**" or through the "**START**" input (which is driven by the control panel).

- Deactivation: can be done either by reconnecting the power supply "**+**" or through the "**STOP**" input (which is driven by the control panel).

Both the "**START**" and "**STOP**" input terminals are programmable as indicated in the paragraph on the programming menu

The interruption of any signal can be done via the "**STOP**" input.

Extra connections

The green status LED can be turned on by connecting the "**LED**" input to ground.

If you want to get the tamper signal back to the anti-intrusion control panel you must connect the "**TAMPER**" terminals of the sounder directly to a terminal of the control panel.

In the event of tamper, the contact at terminals "**TAMPER**" opens.

3.2 Connecting the battery

The 12V @ 2.1Ah battery that must be connected to the appropriate connector (*Description of parts, [D]*) is not supplied.

Note

Take care to respect the battery polarity during the installation phase (red=positive; black=negative).

The material used for the backup-battery casing must have a HB flammability class rating or superior.

The battery powers the sounder/flasher in the event of tamper or failure of the mains power supply to the system connection line.

This must always be present, since, in the event of an alarm, it provides the power required to generate the expected sound and to power the flasher.

In the case of low battery status with a voltage lower than 10.5 V the sounder/flasher interrupts the production of the audible signals while maintaining the visual signals.

Battery recharging is optimized by adjusting the necessary voltage based on the temperature detected by the thermal probe with which the sounder/flasher is equipped.

4. Programming of DS100

DS100 sounders can be programmed by means of their buttons and LEDs, through their own programming menu.

4.1 Programming from DS100

To change its programming, the DS100 sounder provides a programming menu indicated by blinking on its LEDs; it is possible to navigate the menu by means of the programming buttons.

This programming is possible only after a first powerup; therefore you must first make sure that:

- all power sources to the Ivy unit (mains and battery) are disconnected;
- the tamper protection is open;
- the anti-intrusion control panel is operating in a mode that acknowledges sounder tamper without triggering an alarm (e.g. control panel in programming mode)

1. Remove the cover.

2. Power-up the sounder; the red LED lights up solid.

3. By holding down the "**P1**" button (*Description of parts, [B]*) the programming LEDs (*Description of parts, [G]*) blink until the button is released to indicate access to the programming phase. They remain on, in binary sequence, to indicate the current programming section.

4. To select the required section, press the button until the associated combination of LEDs light.

5. To enter the selected programming section and view the current configuration, press and release the "**P2**" programming button.
From this moment on you are in the required section and each subsequent press of the "**P2**" button will change the selected configuration, shown by the blinking programming LEDs.

6. To exit the section you are in and return to the programming selection section, press and release the "**P1**" button.

7. To exit programming and save the applied changes, press and hold the "**P1**" button for 3 seconds, until the programming LEDs blink.

   To exit programming and cancel the applied changes, keep the "**P2**" button pressed for 3 seconds until the programming LEDs blink, or wait 30 seconds without pressing any button.

8. Close the casing and complete the installation procedure.

4.2 Programming menu

The programming menu of the DS100 sounder/flasher consists of selected options depending on the turning On of the available programming LEDs (*Description of parts, [G]*) here defined, from left to right, LED "3",

"4", "5" and "6".

The following table shows, under the caption 'Menu', all the options on the Programming menu and their respective LED combinations:

Instead (under the caption 'Options'), the programmable settings for each item. Highlighted on a grey background are the options enabled at default:

Menu					Options			
Num.	LED combinations			Item	3 4 5 6	3 4 5 6	3 4 5 6	3 4 5 6
	3	4	5	6				
1	On	Off	Off	Off	**START input**	Negative applied	Positive applied	Negative removed	Positive removed
2	Off	On	Off	Off	**STOP input**	Negative applied	Positive applied	Negative removed	Positive removed
3	On	On	Off	Off	**Audible signalling**	Tone 1	Tone 2	Tone 3	Tone 4
4	Off	Off	On	Off	**Maximum sound (audible signal) time**	3 minutes	6 minutes	9 minutes	12 minutes
5	On	Off	On	Off	**Activation of the START input**	Red status LED	Green status LED	Flasher	Sounder
6	Off	On	On	Off	**Power failure**	FAULT output	TAMPER output	Flasher	Sounder
7	On	On	On	Off	**Tamper signalling**	FAULT output	TAMPER output	Flasher	Sounder
8	Off	Off	Off	On	**LED Input**	Green status LED	Green status LED and courtesy lights	Courtesy lights	/
9	Flashing	Flashing	Flashing	Flashing	**Restore default**	/			

LED Off	LED Off
LED On solid	LED On solid
Flashing LED	Flashing LED
grey	Option at default

5. General information

5.1 About this manual

Manual code: DCMIINE0DS100

Revision: 110

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5.2 Manufacturer's details

Manufacturer: Inim Electronics S.r.l.
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The persons authorized by the manufacturer to repair or replace the parts of this system have authorization to work only on devices marketed under the brand Inim Electronics.

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As Inim Electronics does not install this product directly, and due to the possibility that it may be used with other equipment not approved by Us;Inim Electronics does not warrant against loss of quality, degradation of performance of this product or actual damage that results from the use of products, parts or other replaceable items (such as consumables) that are neither made nor recommended by Inim Electronics. Seller obligation and liability under this warranty is expressly limited to repairing or replacing, at Seller's option, any product not meeting the specifications. In no event shall Inim Electronics be liable to the purchaser or any other person for any loss or damage whether direct of indirect or consequential or incidental, including without limitation, any damages for lost profits, stolen goods, or claims by any other party caused by defective products or otherwise arising from the incorrect or otherwise improper installation or use of this product.

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover damage arising from improper maintenance or negligence, damage caused by fire, flood, wind or lightning, vandalism, fair wear and tear.

Inim Electronics S.r.l. shall, at its option, repair or replace any defective products. Improper use, that is, use for purposes other than those mentioned in this manual will void the warranty. Contact Our authorized dealer, or visit our website for further information regarding this warranty.

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Installation of this Product must be carried out by qualified persons appointed by Inim Electronics. Installation of this Product must be carried out in accordance with Our instructions in the product manual.

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The crossed-out bin symbol on the equipment or on its packaging indicates that the product must be disposed of correctly at the end of its working life and should never be disposed of together with general household waste. The user, therefore, must take the equipment that has reached the end of its working life to the appropriate civic amenities site designated to the differentiated collection of electrical and electronic waste. As an alternative to the autonomous-management of electrical and electronic waste, you can hand over the equipment you wish to dispose of to a dealer when purchasing new equipment of the same type. You are also entitled to convey for disposal small electronic-waste products with dimensions of less than 25cm to the premises of electronic retail outlets with sales areas of at least 400m2, free of charge and without any obligation to buy. Appropriate differentiated waste collection for the subsequent recycling of the discarded equipment, its treatment and its environmentally compatible disposal helps to avoid possible negative effects on the environment and on health and favours the re-use and/or recycling of the materials it is made of.

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Evolving Protection

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