inovonics®

Tech note

Powering Annunciation Devices from Bell Circuits on the Gateway Mark II

Preliminary

Introduction

This document covers requirements for powering sirens, sounders, and strobes from the bell circuits of the Inovonics panel, including battery requirements, wire length limits, device compatibility, and troubleshooting.

Bell Circuit Specifications

Specification	Value
Number of bell circuits	2
Output voltage	10.2VDC → 13.8VDC (supplied from batteries)
Maximum current per circuit	600 mA (0.6A)
Output type	DC only (no tone generation)

Battery Requirement

The bell circuits draw power from the panel batteries. Batteries must be installed to drive standard sirens.

Without batteries installed, the bell circuits can only drive sounders with very low current draw, such as the Honeywell WAVE2EX.

Minimum Wire Length

Sirens draw high peak current at startup. The impedance of the connecting wire limits this inrush current to a level the bell circuit drivers can handle safely.

Caution: Sounder wiring must be at least 10 ft long.

Runs shorter than 10 ft allow the sounder to draw current too quickly, which overheats the bell circuit drivers. Runs of 10 ft or more slow the inrush and allow the sounder to operate normally. If the sounder is mounted close to the panel, coil the excess wire to maintain the 10 ft minimum.

Other wiring considerations such as increased thickness (gauge) and stranded/solid core wire may apply in certain applications depending on the requirements of the siren specified. Installers are encouraged to reference the specifications in this sheet as well as the datasheets for the application sirens to determine these parameters.

Preliminary

Device Compatibility

Most sirens marketed as 15 W are compatible. The 15 W rating is an industry designator rather than a true power specification, and in DC burglary applications these sirens often specify much lower operating and peak current. For example, the DSC 15W-ULF only draws 404mA at 12VDC despite the 15 watt designation.

Before installing, confirm that the device's operating voltage, operating current, and peak current in the manufacturer's datasheet fall within the bell circuit specifications above.

Strobes and Multiple Devices

Strobes can also be powered from the bell circuits. Strobes must meet the same power limitations as sirens.

Multiple sirens and strobes can be connected to a single bell circuit, provided the combined current draw of all devices on that circuit stays within the 600 mA limit. Add the operating current and the peak current of each device separately, and confirm both totals are within the limit.

Tested Devices

The following devices have been tested with batteries installed and a wire run of at least 10 ft:

Manufacturer	Model	Result
Honeywell	WAVE2EX	Operates normally (also supported without batteries)
Honeywell	WAVE2	Operates normally
DSC	15W-ULF	Operates normally

Preliminary

Listing Requirements

For burglary systems, Inovonics recommends sirens listed to UL 1023 or UL 2610.

Speakers Are Not Supported

The bell circuits supply DC power only and do not generate a tone. They cannot drive speakers. Use self-contained sirens with a built-in tone generator.

Troubleshooting

Problem: Sounder makes a sound once and then stops

Cause: The bell circuit drivers are overheating because the current draw on the circuit is too high. This is most commonly caused by a wire run shorter than 10 ft.

Resolution:

- Confirm the wire run is at least 10 ft. Add wire or coil the excess to meet the minimum.

Confirm the combined operating and peak current of all devices on the circuit are within the 600 mA limit.

Preliminary