

General

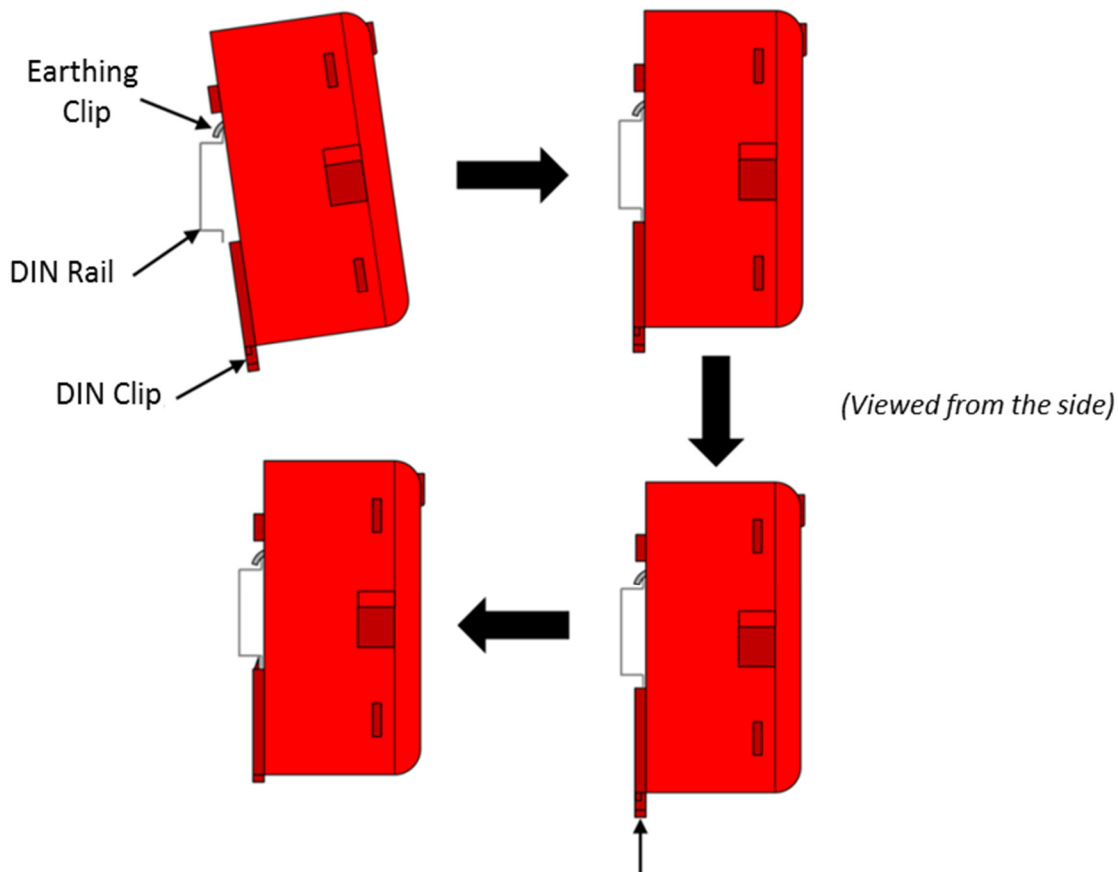
The plug-in VL-NCB module provides power for, and handles communications to the non-addressable notification appliances. It has two notification appliance circuits that can be wired in the class B configuration. Up to a maximum of 500mA can be connected to each class B circuit. Each circuit is supervised for open, short and earth trouble conditions and will report this status back to a Velocity MMP fire alarm control panel. An additional feature that is included in the VL-NCB module is that it has the ability to program a circuit as a 24v auxiliary special application class B output, which can be used to provide power to external equipment.

Installation



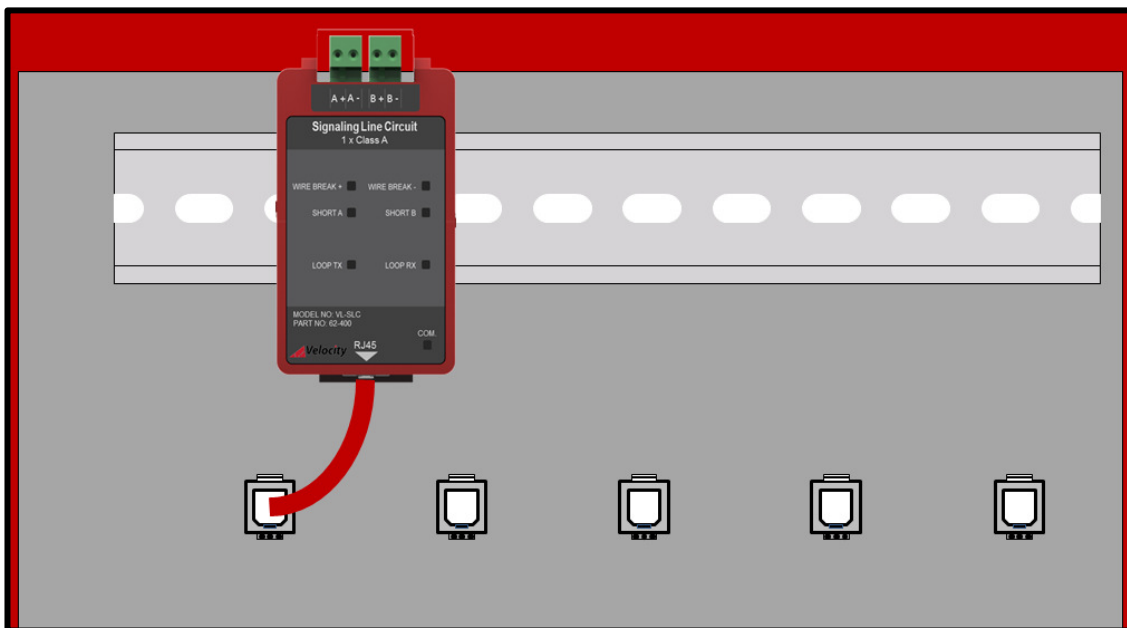
ATTENTION: THE PANEL MUST BE POWERED DOWN, AND DISCONNECTED FROM THE BATTERIES BEFORE INSTALLING OR REMOVING ANY MODULES.

1. Ensure that the installation area is free from any cables or wires that may get caught, and that there is enough space on the DIN rail to mount the module. Also ensure that the DIN clip underneath the module is in the open position.
2. Place the module onto the DIN rail, hooking the metal earth clip underneath onto the rail first.
3. Once the earth clip is hooked, push the bottom of the module onto the rail so that the module sits flat.
4. Push the plastic DIN clip (located at the bottom of the module) upwards to lock and secure the module into position.



5. Once the module is secured to the DIN rail, simply connect the supplied CAT5E cable to the module's RJ45 port.

6. Connect the other end of CAT5E cable to the nearest unoccupied RJ45 port on the termination PCB.



TRM RJ45 Port Address Designation

Each RJ45 port on the Velocity termination has its own unique port address. This port address is important to keep note of as it is displayed on Alarm/Trouble messages and is used when configuring or setting up cause and effects on the panel (See Velocity MMP operation manual GLT-261-7-2).

Securing the modules

The modules are designed to clip together to make them more secure. In addition, the MMP panel is supplied with Din rail stoppers. These should be fitted before the first module, and after the last module on each rail.


Before Powering the Panel On

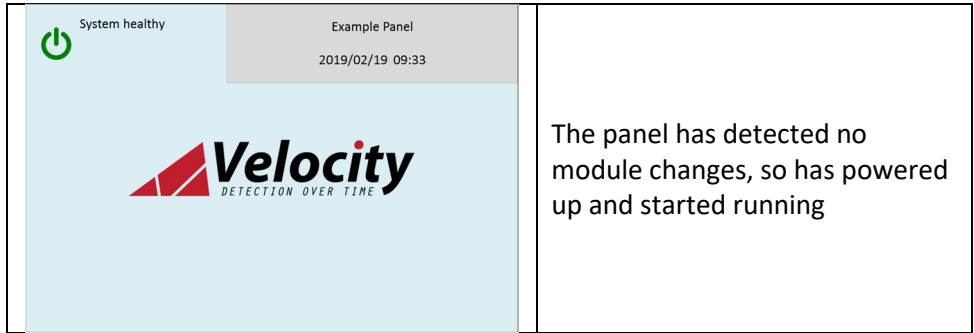
1. To prevent the risk of a spark, do not connect the batteries. Only connect the batteries after powering on the system from its main AC supply.
2. Check that all external field wiring is clear from any open, shorts and ground faults.
3. Check that all the modules have been installed properly, with correct connections and placement
4. Check that all switches and jumper links are at their correct settings.
5. Check that all interconnection cables are plugged in properly, and that they are secure.
6. Check that the AC power wiring is correct.
7. Ensure that the panel chassis has been correctly earth grounded (See NFPA 70).

Before powering on from the main AC supply, make sure that the front panel door is closed

Power on Procedure

1. After the above has been completed, turn the panel on (Via AC Only). The panel will follow the same power up sequence described in initial power up section above
2. The panel will now display one of the following messages

Message	Meaning										
 <p style="text-align: center;">No Modules</p>	<p>Panel has not detected any modules fitted during its power up check.</p> <p>Power down the panel and check that the expected modules are fitted, and that all module cables are correctly inserted.</p> <p>Note that the panel will need at least one module fitted to run.</p>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">001</td> <td style="background-color: #00FF00;">New module : SOUNDER CLASS A</td> </tr> <tr> <td>002</td> <td>Empty port</td> </tr> <tr> <td>003</td> <td>Empty port</td> </tr> <tr> <td>004</td> <td>Empty port</td> </tr> <tr> <td>005</td> <td>Empty port</td> </tr> </table> <p style="text-align: center;"> ✓ ▽ ▲ </p>	001	New module : SOUNDER CLASS A	002	Empty port	003	Empty port	004	Empty port	005	Empty port	<p>The panel has detected a new module added to a port that was previously empty.</p> <p>This is the usual message seen the first time a panel is configured</p>
001	New module : SOUNDER CLASS A										
002	Empty port										
003	Empty port										
004	Empty port										
005	Empty port										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">001</td> <td style="background-color: #FFFF00;">Changed module : SOUNDER CLASS A</td> </tr> <tr> <td>002</td> <td>Empty port</td> </tr> <tr> <td>003</td> <td>Empty port</td> </tr> <tr> <td>004</td> <td>Empty port</td> </tr> <tr> <td>005</td> <td>Empty port</td> </tr> </table> <p style="text-align: center;"> ✓ ▽ ▲ </p>	001	Changed module : SOUNDER CLASS A	002	Empty port	003	Empty port	004	Empty port	005	Empty port	<p>The panel has detected a different type of module fitted to a port that was previously occupied.</p>
001	Changed module : SOUNDER CLASS A										
002	Empty port										
003	Empty port										
004	Empty port										
005	Empty port										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">001</td> <td style="background-color: #FFFF00;">Serial Number Changed : LOOP</td> </tr> <tr> <td>002</td> <td>Empty port</td> </tr> <tr> <td>003</td> <td>Empty port</td> </tr> <tr> <td>004</td> <td>Empty port</td> </tr> <tr> <td>005</td> <td>Empty port</td> </tr> </table> <p style="text-align: center;"> ✓ ▽ ▲ </p>	001	Serial Number Changed : LOOP	002	Empty port	003	Empty port	004	Empty port	005	Empty port	<p>The panel has detected a module fitted to a port that is the same type, but it's serial number has changed.</p> <p>This could happen if a loop module was swapped with another one, for example.</p>
001	Serial Number Changed : LOOP										
002	Empty port										
003	Empty port										
004	Empty port										
005	Empty port										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">001</td> <td style="background-color: #FFFF00;">Removed Module : LOOP</td> </tr> <tr> <td>002</td> <td>Empty port</td> </tr> <tr> <td>003</td> <td>Empty port</td> </tr> <tr> <td>004</td> <td>Empty port</td> </tr> <tr> <td>005</td> <td>Empty port</td> </tr> </table> <p style="text-align: center;"> ✓ ▽ ▲ </p>	001	Removed Module : LOOP	002	Empty port	003	Empty port	004	Empty port	005	Empty port	<p>The panel has detected no module fitted to a port that was previously occupied.</p>
001	Removed Module : LOOP										
002	Empty port										
003	Empty port										
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005	Empty port										



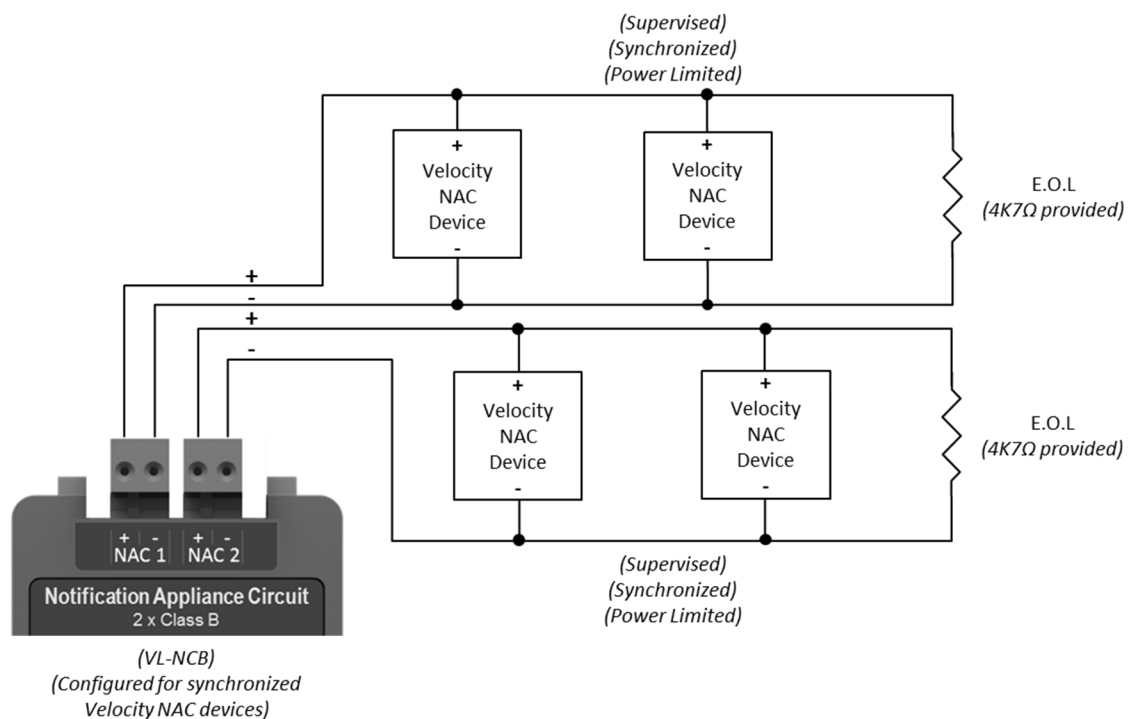
1. Check that the module configuration is as expected using the ▲ and ▼ to navigate the through the port numbers. Press the ✓ icon to confirm the changes.
2. The new module is now configured into the panel and is ready for use.
3. Since the batteries are not connected, the panel will report them as removed, lighting the yellow “Trouble” LED, intermittently sounding the trouble buzzer, and displaying battery removed message on the screen.
4. Connect the batteries, ensuring that the polarity is correct (Red wire = +ve) & (Black wire = -ve). Acknowledge the trouble event via the display screen, and reset the panel to clear the battery fault.
5. The panel should now remain in the normal condition, and you can configure the panel as normal.

Field Wiring

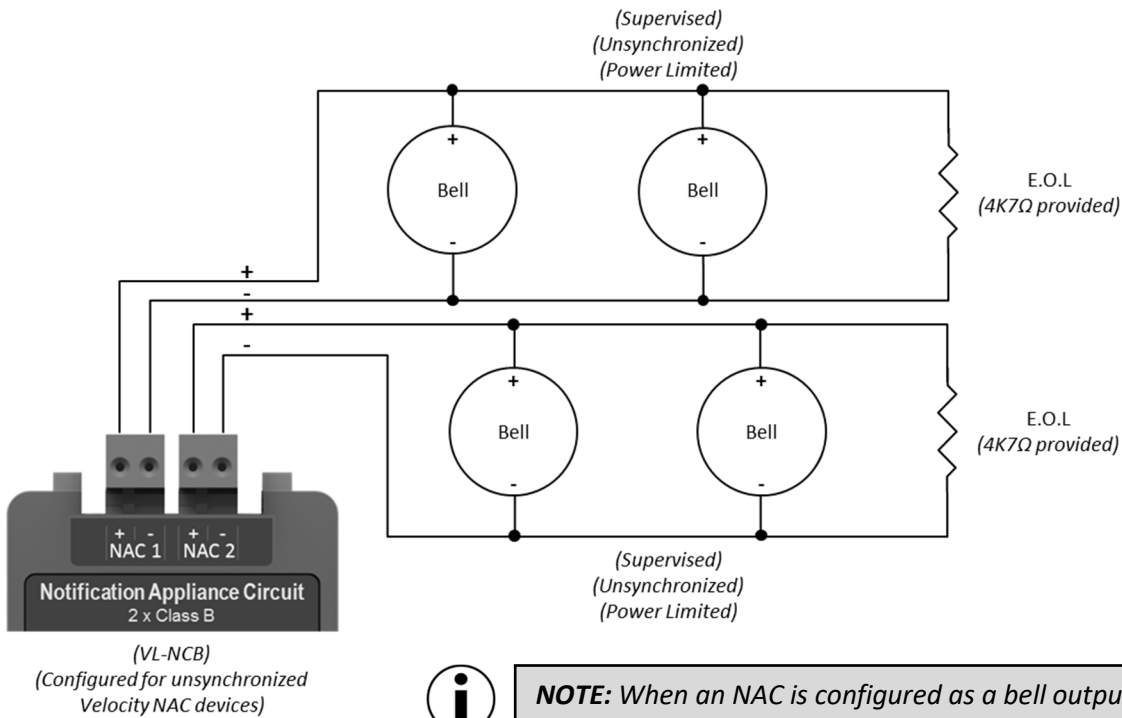
i **NOTE:** The terminal blocks are removable to make wiring easier.

! **ATTENTION:** DO NOT EXCEED POWER SUPPLY RATINGS, OR MAXIMUM CURRENT RATINGS.

Class B Wiring – Synchronized Velocity NAC Devices

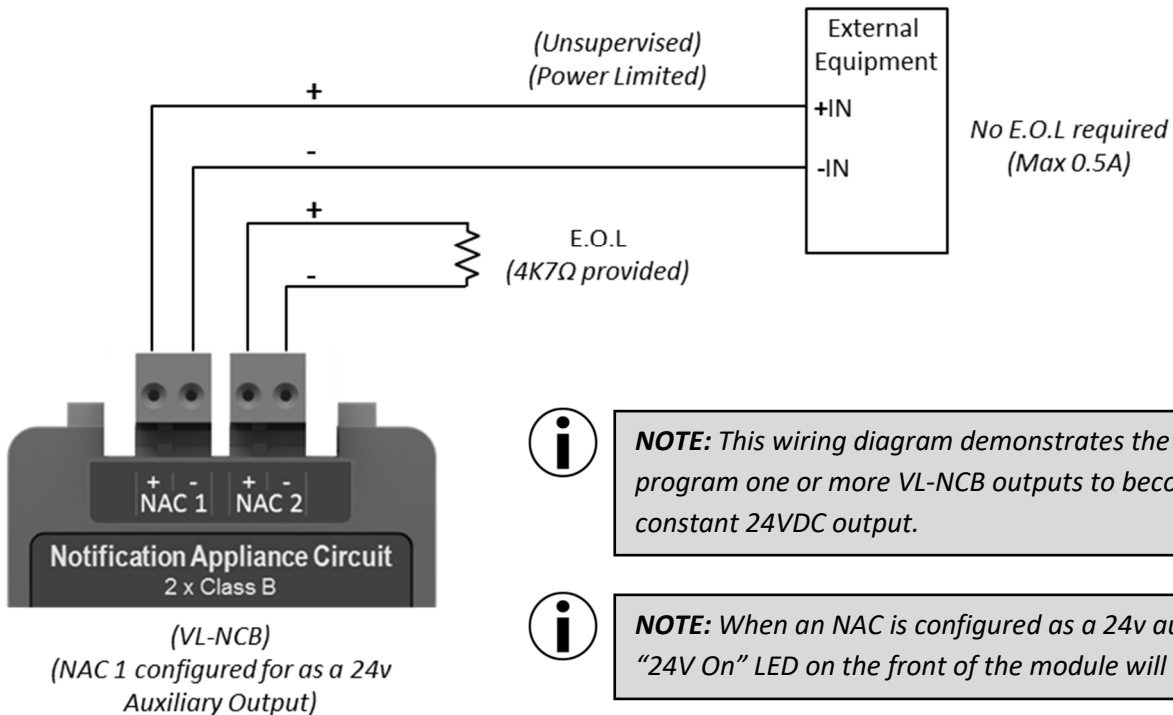


Class B Wiring – Unsynchronized Velocity Bell Devices



NOTE: When an NAC is configured as a bell output, the “24V On” LED on the front of the module will be flashing ON/OFF.

Auxiliary 24VDC Wiring – External Equipment



NOTE: This wiring diagram demonstrates the option to program one or more VL-NCB outputs to become a regulated constant 24VDC output.



NOTE: When an NAC is configured as a 24v aux output, the “24V On” LED on the front of the module will be ON.

Wiring recommendations

The VL-NCB circuits are rated for 500mA each. The table shows the maximum wire run in metres for different wire gauges and alarm loads.

Wire Gauge	125mA Load	250mA Load	500mA Load	1000mA Load
18 AWG	765 m	510 m	340 m	227 m
16 AWG	1530 m	1020 m	680 m	340 m
14 AWG	1869 m	1246 m	831 m	554 m

RECOMMENDED CABLE: Cable should be UL listed FPL, FPLR, FPLP or equivalent.

Front Unit LED Indications

LED Indication	Description
Wire Break (Yellow)	Flashing yellow when a wire break in the circuit is detected.
Short (Yellow)	Flashing yellow when a short in the circuit is detected.
24v On (Green)	Flashing green when the module is programmed as an unsynchronised bell output. Solid green when the module is programmed to provide a 24v auxiliary output.
Com. (Green)	Pulses green to show communication between the module and the motherboard.

Specifications

Specification	VL-NCB
Part Number	62-421
Design Standard	UL864 10 th Edition
Approval	UL Laboratories
Circuit Type	Regulated 24V DC. Power limited & Supervised. Special application: 2 x 500mA (Velocity Synchronised appliances) Regulated : 2 x 50mA
Supply Voltage	24VDC Nominal
Output Voltage	24VDC Nominal
Quiescent Current	35mA
Alarm Current	1035mA (with fully loaded circuits)
Maximum RMS current for a single notification appliance	350mA
Maximum Line Impedance	3.6Ω total (1.8Ω per core)
Maximum Ground Fault Impedance	10k Ω
Wiring Class	2 x Class B [Power limited & Supervised]
End of Line Device	4k7 Ω Resistor
Special Applications	Auxiliary 24 VDC Output [Power limited & Unsupervised] Connection are to be made within 20 ft (6.1 m) and are to be enclosed in conduit (or equivalently protected against mechanical injury).
Synchronisation	Selectable at each module as :- Sounder (Uses synchronisation protocol for horn strobes) or Bell (Will pulse the output voltage to give the required temporal pattern)
Operating Temperature	0°C (32°F) to 49°C (120°F)
Max Humidity	93% Non-Condensing
Size (mm) (HxWxD)	105mm x 57mm x 47mm
Weight	0.15KG
Terminal Wiring Size	18 AWG to 14 AWG (0.8mm ² to 2.5mm ²)

Compatible Notification Devices

Model No.	Description
VL-MH-W	Mini Horn Notification Appliance (White)
VL-MH-R	Mini Horn Notification Appliance (Red)
VL-W-C-W	Chime Notification Appliance (Wall Mount) (White)
VL-W-C-R	Chime Notification Appliance (Wall Mount) (Red)
VL-W-M-W	Multi-Tone Chime Notification Appliance (Wall Mount) (White)
VL-W-M-R	Multi-Tone Chime Notification Appliance (Wall Mount) (Red)
VL-W-CS-W	Chime & Multi-Candela Notification Appliance (Wall Mount) (White)
VL-W-CS-R	Chime & Multi-Candela Notification Appliance (Wall Mount) (Red)
VL-C-CS-W	Chime & Multi-Candela Notification Appliance (Ceiling Mount) (White)
VL-C-CS-R	Chime & Multi-Candela Notification Appliance (Ceiling Mount) (Red)
VL-W-MS-W	Multi-Tone & Multi-Candela Notification Appliance (Wall Mount) (White)
VL-W-MS-R	Multi-Tone & Multi-Candela Notification Appliance (Wall Mount) (Red)
VL-C-MS-W	Multi-Tone & Multi-Candela Notification Appliance (Ceiling Mount) (White)
VL-C-MS-R	Multi-Tone & Multi-Candela Notification Appliance (Ceiling Mount) (Red)
VL-W-S-W	Multi-Candela Notification Appliance (Wall Mount) (White)
VL-W-S-R	Multi-Candela Notification Appliance (Wall Mount) (Red)
VL-C-S-W	Multi-Candela Notification Appliance (Ceiling Mount) (White)
VL-C-S-R	Multi-Candela Notification Appliance (Ceiling Mount) (Red)

Maximum Notification Devices per Circuit

Some of the Velocity notification devices have selectable settings for horn and strobe output. The table below gives an indication of the number of devices that can be connected to a NAC under different settings.

Sound Setting	No Strobe	15 Candela	30 Candela	75 Candela	110 Candela
Chime	9	3	2	1	1
Multitone (low)	9	2	2	1	1
Multitone (High)	9	2	2	1	1
Mini Horn	9	-	-	-	-