Weatherproof NEMA Type 4X Horn

Description

The AUTOPULSE Weatherproof NEMA Type 4X Horn is a wall or ceiling mounted device that provides audible notifications. It has a NEMA Type 4X back box and switch presets, making installation fast and efficient.

The appliance includes a pre-wire and pre-test capability, so installers can complete wiring and ground fault testing before the device is installed.

When used with the included mounting accessory, 4X rating makes the appliance resistant to corrosion, ice formation, and oil seepage.

Features

- FIRE lettering
- Wall and ceiling mounting
- Lettering plates suitable for wall or ceiling installation (turn the plate over for correct test and alignment)
- Pre-wire and pre-test mounting plate and back box terminals

Approvals, listings, and standards

- Certified to NEMA Type 4X
- IP54 and IP66 Certified, tested to IP67
- IEC 60529 2nd edition + AMD2:2013
- FCC Part 15 B / ICES-003 Class A
- UL464 for Public Mode Audible Signal Appliances
- ULC525 (Audible Signaling Devices for Fire Alarm and Signaling Systems)

Note: The converted values provided in this document are for nominal reference only and do not reflect an actual measurement.

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Technical specifications

Table 1: Specifications

Physical	
Material	Red textured UV stabilized, colored impregnated engineered plastic
Weight	2.3 lb (1.0 kg)
Dimensions (H x W x D)	8.0 in. x 6.5 in. x 4.4 in. (203.2 mm x 165.1 mm x 111.8 mm) The box has 3/4 in. NPT entries/plugs
Operating temperature	Indoor and outdoor use: -40 °F to 150 °F (-40 °C to 66 °C) 95% RH
Mounting and wire connections	
Mounting	Wall and ceiling
Wire connections	12 AWG to 18 AWG (2.5 mm^2 to 0.75 mm^2), two-wire
Power and general	
Input voltage	8 VDC/VRMS to 17.5 VDC/VRMS or 16 VDC/VRMS to 33 VDC/VRMS (selectable with a jumper plug)

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Tone and volume settings

You can field set the appliance to produce any of the eight commonly used alarm tones. The appliance is designed for use with either filtered or unfiltered full wave rectified (FWR) input voltage. You can field set the sound output to either high (HI) or standard (STD) dBA sound output level.

To set the required input voltage and dBA sound output level, complete the following steps:

1. Insert a 24/12 jumper plug and use it to select the required voltage as shown in Table 2 and Figure 1.
2. Use position 1 (POS 1) of the four-position switch SW1 to select the dBA sound output level as shown in Table 2 and Figure 2.

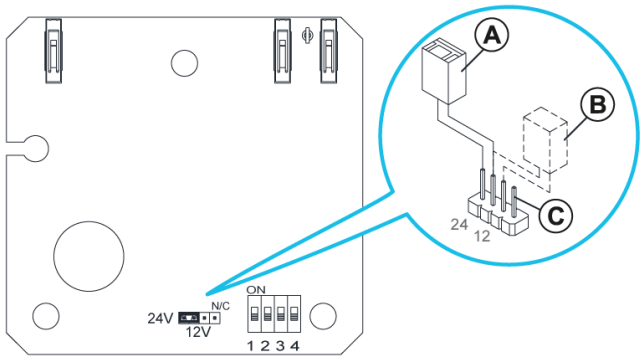
⚠ WARNING

Do not apply 24 VDC input if the 24/12 jumper plug is set on 12. This can damage the unit. Verify that the jumper plug and switch SW1 settings are correct. Incorrect settings can damage the unit. They can also result in no sound output or a dBA sound output level that is below code requirements for public mode fire protection. This could result in property damage or serious injury or death to you or others.

Table 2: Input voltage and dBA sound output level settings

Input voltage/ sound output level	24/12 jumper plug and switch SW1 settings
24 VDC/HI dBA	Jumper plug on 24 V, SW1 POS 1 on 1 (factory setting)
24 VDC/STD dBA	Jumper plug on 24 V, SW1 POS 1 on 0
12 VDC/HI dBA	Jumper plug on 12 V, SW1 POS 1 on 1
12 VDC/STD dBA	Jumper plug on 12 V, SW1 POS 1 on 0
Note: Do not apply 24 VDC input if the 24/12 jumper plug is set on 12. This can damage the unit. See the warning earlier in this section for more information.	

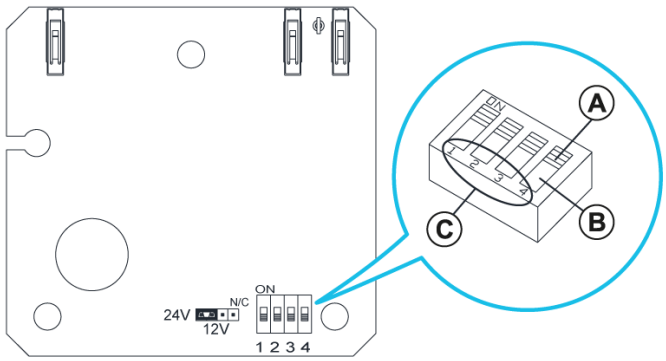
Figure 1: Jumper plug location and settings



Callout	Description
A	Jumper plug on 24 V
B	Jumper plug on 12 V (middle two pins)
C	Pin not used

Use needle nose pliers to lift and correctly insert the jumper plug.

Figure 2: Switch SW1 location and positions



Callout	Description
A	Slide here for 1
B	Slide here for 0
C	Switch positions 1 to 4 (POS 1, POS 2, POS 3, and POS 4)

To set the tone, use a finger or a small screwdriver to change positions 2 to 4 (POS 2, POS 3, and POS 4) of switch SW1. Refer to Table 3 for the alarm tone settings.

Table 3: Alarm tone settings

Tone	Pattern description	Switch SW1		
		POS 2	POS 3	POS 4
Horn	Broadband horn (continuous)	1	1	1
Bell	1560 Hz modulated (0.07 s ON/repeat)	1	0	1
March time	Horn (0.25 s ON/0.25 s OFF/repeat)	0	0	1
Code 3 horn	Horn (ANSI S3.41 temporal pattern)	1	1	0
Code 3 tone	500 Hz (ANSI S3.41 temporal pattern)	0	1	1
Slow whoop	500 Hz to 1200 Hz sweep (4 s ON/0.5 s OFF/repeat)	0	1	0
Siren	600 Hz to 1200 Hz sweep (1.0 s ON/repeat)	1	0	0
HI/LO	1000 Hz/800 Hz (0.25 s ON/alternate)	0	0	0
Note: Factory setting is horn with switch SW1 POS 2, POS 3, and POS 4 set on 1.				

Code 3 horn and code 3 tone incorporate the temporal pattern specified by ANSI/NFPA/ISO for standard emergency evacuation signaling. Use them for fire evacuation signaling, not for any other purpose.

⚠ CAUTION

If operated within 15 in. (38 cm) of a person's ear, the appliance can produce a sound pressure level that exceeds the maximum 120 dBA permitted by ADA and OSHA rules. Exposure to such sound levels can damage hearing.

Table 4: Multitone sound pressure level (SPL) ratings

	Reverberant dBA at 10 ft (UL 464/ULC 525)			
	24 V regulated		12 V regulated	
Tone	HI	STD	HI	STD
Horn	88	83	88	74
Bell	81	75	81	65
March time	88	83	88	74
Code 3 horn	88	83	88	74
Code 3 tone	81	76	82	67
Slow whoop	87	81	87	71
Siren	87	81	87	71
HI/LO	84	79	84	68

Table 5: Multitone horn directional characteristics

Attenuation	Angle
-3 dB	±43° horizontal, ±48° vertical
-6 dB	±53° horizontal, ±56° vertical
-18 dB	±90° horizontal/vertical

Current ratings

When calculating the total currents, use Table 6 to determine the highest value of RMS current for an individual appliance. Then multiply these values by the total number of appliances. Be sure to add the currents for any other appliances powered by the same source and include any required safety factors.

Make sure that the total RMS current required by all appliances that are connected to the system's **primary** and **secondary** power sources, NAC circuits, synchronization modules, or power supplies does not exceed the rated capacity of the power sources or the current ratings of any fuses on the circuits to which these appliances are wired.

Check the minimum and maximum output of the power supply and standby battery. Subtract the voltage drop from the circuit wiring resistance to determine the applied voltage to the appliance.

Wiring and mounting plate

The in-out wiring terminals accept two 12 AWG to 18 AWG (2.5 mm^2 to 0.75 mm^2) wires at each screw terminal.

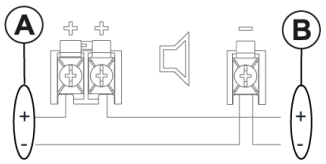
Make wire connections by stripping about 3/8 in. (1 cm) of insulation from the end of the wire. Then slide the bare end of the wire into the appropriate screw terminal and tighten the clamping plate screw.

⚠ CAUTION

Do not overtighten the mounting plate screws, this can cause the mounting plate to flex.

Figure 3 shows the wiring terminals.

Figure 3: System wiring



Callout	Description
A	Input from prior device, fire alarm control panel (FACP), power supply, or synchronization module
B	Output to next device or end-of-line resistor (EOLR)

Figure 4 shows how to break all in-out wire runs on supervised circuits to assure integrity of circuit supervision. The polarity shown in the wiring diagrams is for appliance operation. The FACP reverses the polarity during supervision.

Figure 4: In-out wire runs

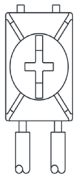


Table 6: Current ratings

		Maximum RMS current (amps)							
		16 VDC to 33 VDC		16 VFWR to 33 VFWR		8 VDC to 17.5 VDC		8 VFWR to 17.5 VFWR	
Tone	Tone description	HI	STD	HI	STD	HI	STD	HI	STD
Horn	Broadband horn (continuous)	0.108	0.044	0.087	0.045	0.177	0.034	0.172	0.039
Bell	1560 Hz modulated (0.07 s ON/repeat)	0.053	0.024	0.067	0.028	0.095	0.020	0.095	0.023
March time	Horn (0.25 s ON/0.25 s OFF/repeat)	0.104	0.087	0.087	0.045	0.142	0.034	0.156	0.041
Code 3 horn	Horn (ANSI S3.41 temporal pattern)	0.122	0.035	0.087	0.045	0.200	0.034	0.183	0.039
Code 3 tone	500 Hz (ANSI S3.41 temporal pattern)	0.135	0.035	0.110	0.032	0.152	0.027	0.150	0.030
Slow whoop	500 Hz to 1200 Hz sweep (4 s ON/0.5 s OFF/repeat)	0.098	0.037	0.092	0.042	0.142	0.035	0.142	0.038
Siren	600 Hz to 1200 Hz sweep (1.0 s ON/repeat)	0.104	0.042	0.092	0.040	0.152	0.030	0.152	0.034
HI/LO	1000 Hz/800 Hz (0.25 s ON/alternate)	0.057	0.035	0.063	0.035	0.114	0.027	0.114	0.030

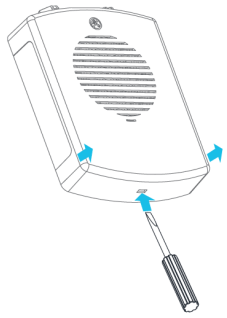
Removing the appliance cover grille

To remove the appliance cover, insert a small, flat-bladed screwdriver into the bottom slot and complete the following steps:

1. Push in to release the snap.

3. Pull to remove the cover.

Figure 5: Removing the cover



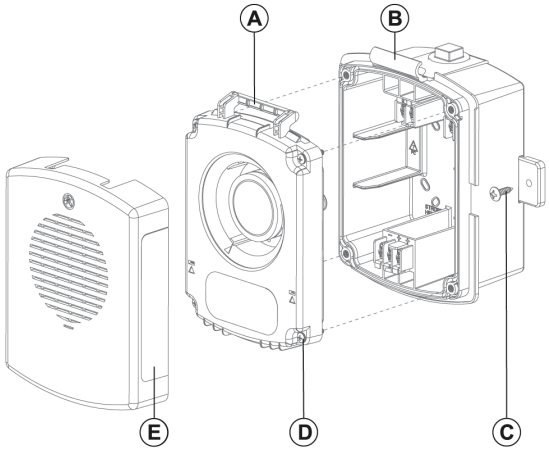
Surface mounting on a wall or a ceiling

Select conduit entrances to the back box with sufficient wiring clearance for the installed product. Do not pass additional wires that are not used by the signaling appliance through the back box. Such additional wires could result in insufficient wiring space for the signaling appliance.

NOTICE

- Do not fully back out the terminal screws.
- Do not overtighten screws or terminals.
- Excessive torque can affect operation.
- When using power tools, ensure the torque is set to the lowest setting available.

Figure 6: Surface mounting



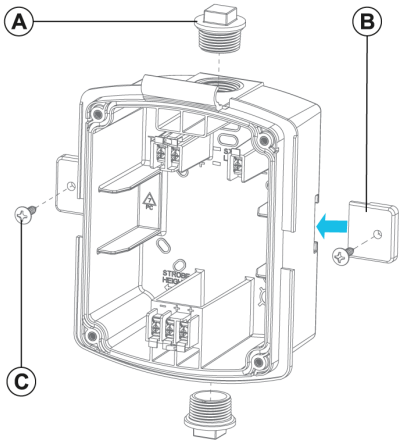
Callout	Description	Quantity
A	Appliance hinge	1
B	Surface back box hook	1
C	#10 screw	2
D	#8-32 screw	4
E	Cover grille lettering plate	2

Note: The maximum number of conductors is four.

⚠ CAUTION

Do not alter the factory finish or paint the product.

Figure 7: Surface back box



Callout	Description	Quantity
A	3/4 in. NPT plug	2
B	Mounting tab	2
C	#10 screw	2

To surface mount the appliance on a wall or a ceiling, complete the following steps:

1. Use the two external mounting tabs shown in Figure 7 with the two provided #10 screws. The mounting hole spacing is 5 in. to 9/16 in. (127 mm to 14.3 mm). Use conduit fittings that are rated Type 4X/IP66 and UL Certified. Ensure ground continuity when metallic conduit is used. Use TEFLON tape on all conduit fittings and install the 3/4 in. NPT plugs using TEFLON tape and the provided O-ring. Secure the NPT plug and conduit fitting with a torque of 2.17 lb•ft (2.9 N•m).

   Note: Make sure the surface back box hook is on top for wall mounting as shown in Figure 6.

2. Connect the field wires to the terminals (see *Wiring and mounting plate*). Position the wires in the back box with care and use correct techniques so that they take minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing. When terminating field wires, do not use more lead length than required. Excess lead length can result in insufficient wiring space for the signaling appliance.

3. Conduct pre-tests. AUTOPULSE provide a shunt between adjacent positive (+) terminals in the back box to facilitate testing before the device is attached.

   Note: The shunt opens permanently when the device is installed.

4. Verify that the appliance settings are correct for your application (see *Tone and volume settings*). Factory settings are 24 V, HIGH dBA, and horn.

5. Place the appliance hinge over the back box hook and verify that the appliance is aligned to the box. Secure with the four #8-32 screws and apply a torque of 1.67 lb•ft (2.3 N•m). Verify that the gasket is seated correctly, not pinched.

6. Align the cover grille to the appliance and click in place.

   Note: Insert the lettering plates with the T tab down on the horn/logo-side.

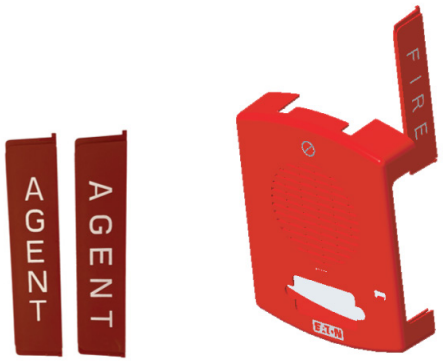
7. Apply outdoor-rated silicone to all outdoor Type 4X installations.

Note: Final acceptance is subject to the Authority Having Jurisdiction (AHJ).

Lettering plates

The lettering plates are suitable for wall or ceiling installation. Turn the plate over for correct test and alignment. The plates are available in packs of 10 pairs (one pair for each device).

Figure 8: Lettering plates



Ordering information

Use the details in Table 7 when ordering products.

Table 7: Part details

Part No.	Description	Color
A16382VBAK	Weatherproof multitone horn, FIRE lettering and surface back box included	Red
A16382V8HB	AGENT lettering plates, pack of 10 pairs (one pair for each device)	Red

Dimensions

Figure 9 shows the product dimensions.

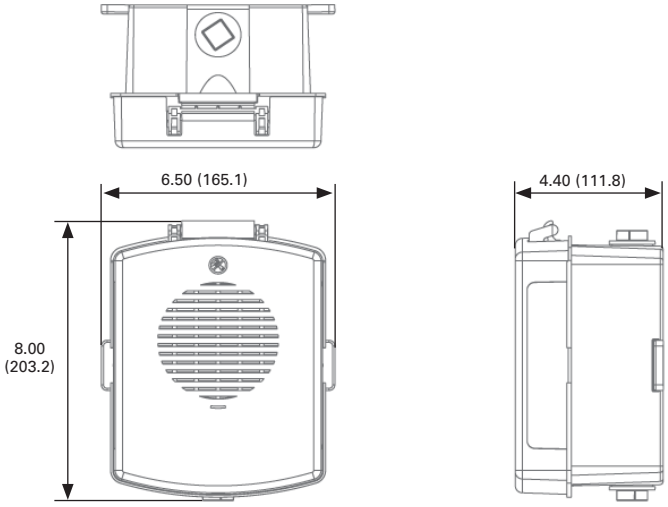



Figure 9: Weatherproof multitone horn dimensions, in. (mm) (Part No. A16382VBAK)