

Model G-SND


Sounder for Use in Hazardous Locations

25500187 Rev B11 0523



Limited Warranty: This product's limited warranty can be found at www.fedsig.com/SSG-Warranty.

WARNING - Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

MESSAGES TO INSTALLERS AND USERS  People's lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.


The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. Listed below are some other important safety instructions and precautions you should follow.

- Read and understand instructions before installing or operating equipment.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions, such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- The purchaser should make the manufacturer aware of any external effects or aggressive substances to which the equipment may be exposed.
- **WARNING: EXPLOSION HAZARD** – Do not disconnect the equipment unless power has been switched off unless the area is known to be non-hazardous.
- **WARNING: EXPLOSION HAZARD** – Do not remove or replace the fuse when energized.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

With respect to the potential electrostatic charging hazard as mentioned in the certificate "Specific Conditions of Use," under normal conditions of use, these devices are for fixed installations and not generally in contact with people. The risk of ignition is low. In addition, maintenance, cleaning, and extreme environmental factors (e.g., high velocity dust-laden atmospheres or high-pressure steam) should be taken into account by the end user using local Explosive Atmosphere (Ex) Electrical installation design, selection, inspection, and maintenance Codes and Standards. Cleaning of the devices should be done only with a damp cloth.

Certification

Certificate Nos.	<ul style="list-style-type: none"> • IECEx Cert No.: IECEx BAS 15.0104X • UKEX Cert No.: SGS23UKEX0086X • ATEX Cert No.: Baseefa15ATEX0155X • ATEX coding:  II 2 G D
Protection	<ul style="list-style-type: none"> • Ex db IIB T5 Gb or Ex db e IIB T5 Gb • Ex tb IIIC T100°C Db IP66 (Tamb= -55°C to + 49°C) • Ex db IIC T4 Gb or Ex db e IIC T4 Gb • Ex tb IIIC T135°C Db IP66 (Tamb= -55°C to + 70°C)
Standards	<ul style="list-style-type: none"> • EN60079-0:2018 • EN60079-1:2014 • EN IEC 60079-7:2015+A1:2018 • EN60079-31:2014 • IEC60079-0:2017 7th Ed • IEC60079-1:2014-06 7th Ed I • EC60079-7:2017 5.1 Ed • IEC60079-31:2013 2nd Ed.

Specific Conditions of Use

- The Modular Audible Device enclosure incorporates a sinter and the volume is greater than 100 cm³; therefore, use of the Modular Audible Device in a carbon disulphide gas atmosphere is not permitted.
- The Modular Audible Device has external non-metallic surfaces that may provide an electrostatic charging hazard. See the manufacturer's instructions for further information.
- The Modular Audible Device has metallic components in the non-metallic walls of the enclosure that can store electrical charge and therefore may provide a potential electrostatic discharge. The metallic brass inserts have a capacitance of 24 pF. See the manufacturer's instructions for further information.

cULus Zone Certifications

This equipment is for use in Class I, Zone 1, and Zone 21 hazardous (classified) locations. It has been investigated with reference to risks to life and property and for conformity to the installation and use in provisions of Articles 505 and 506 of NFPA 70 (NEC).

These models use protections:

- Class I, Zone 1, AEx db IIC T4 Gb or AEx db eb IIC T4 Gb
- Zone 21, AEx tb IIIC T135°C Db IP66 (Tamb= -55°C to +70°C)
- Ex db IIC T4 Gb or Ex db eb IIC T4 Gb
- Ex tb IIIC T135°C Db IP66 (Tamb= -55°C to +70°C)

UL Fire Alarm Certifications

See page 14.

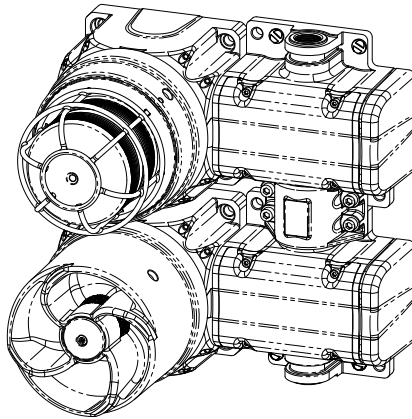
Unpacking the Sounder

After unpacking the sounder, examine it for damage that may have occurred in transit. If it has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of the damage. Carefully check all envelopes, shipping labels, and tags before removing or discarding them. If any parts are missing, please call Federal Signal Customer Support at +1 708-534-4756 or +1 877-289-3246.

Creating Combination Fixtures in the Field

The Federal Signal Global Series Ex de products can be connected together in the field using interchangeable E-box end caps and a proprietary coupling system. See Figure 1.

Figure 1 Sounder and sounder combination fixture



The proprietary coupling system allows for simple and cost-effective wiring from product to product, often eliminating the need for expensive Ex wiring practices and Ex rated glands. The E-box is available only when factory installed on an Ex d unit or when used as an E-box spacer adjoining an existing E-box. Please refer to the accessories listed in Table 3 on page 13 for available options. When creating certain fixture combinations, it is necessary to replace E-box end caps before mounting the product. If you are creating combination fixtures, refer to instruction manual 25500259 for specific instructions and details.

A note about combination fixtures: If the product is Ex db marked only, it is for use in gas atmospheres. If the product is Ex db e marked, it uses the increased safety terminal enclosures and is only for gas atmospheres. If the product is Ex tb marked, it is for installation in dust atmospheres.

Mounting the G-SND Sounder

ATTACH THE SOUNDER SECURELY - To prevent injury, this apparatus must be securely attached to the mounting surface in accordance with the installation instructions. Use installer-supplied fasteners suitable for the mounting surface.

The mounting method and the installer-supplied mounting hardware depend on which of the two G-SND models you are installing.

Mounting the Surface-Mount Ex d Sounder

Mount the sounder to a flat surface using the four 8.5 mm mounting holes. Use installer-supplied fasteners suitable for the surface to which the device will be mounted.

Figure 2 Side view of Ex d sounder

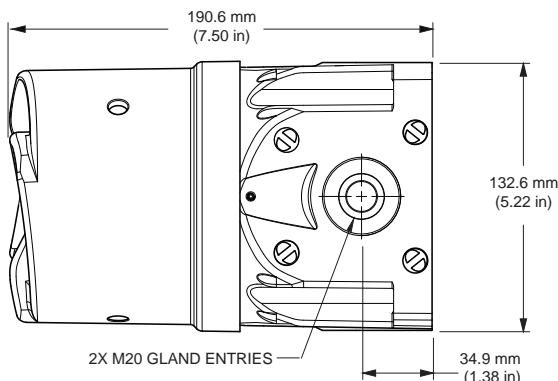
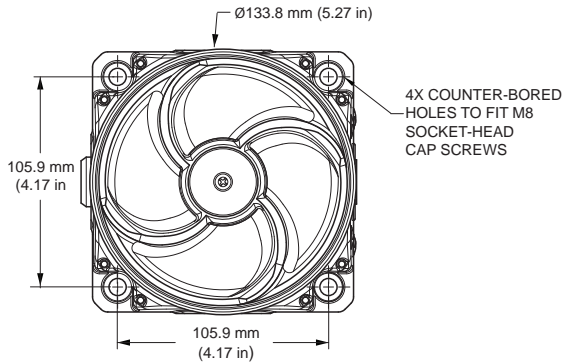


Figure 3 Front view of Ex d sounder



Mounting the Ex d e Surface-Mount Sounder

Mount the sounder to a flat surface using the six 8.5 mm mounting holes. Use installer-supplied fasteners suitable for the surface to which the device will be mounted.

Figure 4 Front view of Ex d e surface mount

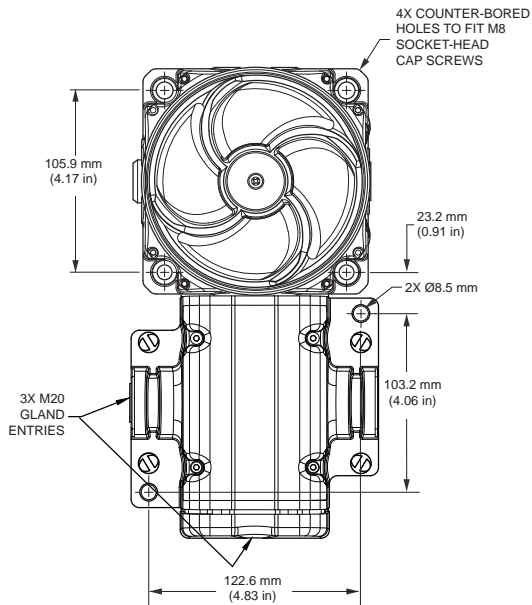
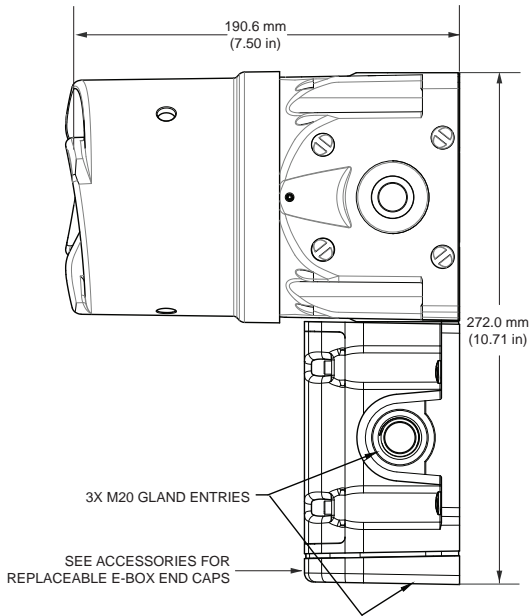


Figure 5 Side view of Ex d e surface mount



Safety Messages for Wiring

When installing and operating flameproof electrical equipment, the relevant national regulations for installation and operation (e.g., EN60079-14, IEC Wiring Regulations, and NEC/CEC) must be observed.

- To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.
- To maintain the flameproof integrity of the enclosure, DO NOT damage the cover or threads while disassembling or reassembling the unit.
- Painting and surface finishes, other than those applied by Federal Signal Corporation, are not permitted.
- Cable termination should be in accordance with specifications applying to the application. Federal Signal recommends that all cables and cores be fully identified.
- Ensure that only the correct equipment-certified glands are used and that the assembly is shrouded and correctly earthed. Gland entries are M20-1.5 6H with an option for the M25 entry on the end of the increased safety box models. See Table 4 on page 13 for choosing the correct cable entry devices for Equipment in Potentially Explosive Atmospheres.
- Because of space limitations, ensure that the cable cores within the unit are not too slack.
- In all countries, the wiring must comply with all national and local codes and standards.
- Ensure that all nuts, bolts, and fixings are secure.

Preparing to Wire the Ex d Flameproof Models

SHOCK HAZARD - To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.

CIRCUIT BOARD DAMAGE - The DC sounders are polarity sensitive and MAY BE DAMAGED by incorrect electrical hookup. When connecting the DC sounder to the voltage supply lines, POLARITY MUST BE OBSERVED. In addition, damage will result if the voltage rating of the particular model is exceeded by more than 10 percent.

This section has wiring instructions for the flameproof models G-SND 24 Vdc, 120 Vac, 220-240 Vac.

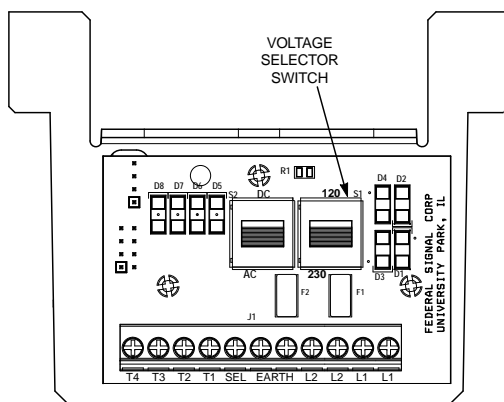
Ex d units are supplied with an eleven-position PCB-mounted screw terminal block. The maximum wire gauge is 4 mm (12 AWG). The wire must be rated 85°C or higher. Use only stranded cable to terminate the sounder. The cross-sectional area of the primary earth (ground) must equal the cross-sectional area of the phase conductor.

Cable termination for these models should be in accordance with specifications applying to the application. It is recommended that all cables and cores be fully identified. Use the appropriate cable gland for the application. Gland entry threads are M20-1.5 x 6H.

Tools needed:

- 1.5 mm A/F hexagon key
- 2 mm flat-tip screwdriver
- No. 1 Phillips® screwdriver
- Wire stripper

Figure 6 Ex d in/out PCB connections



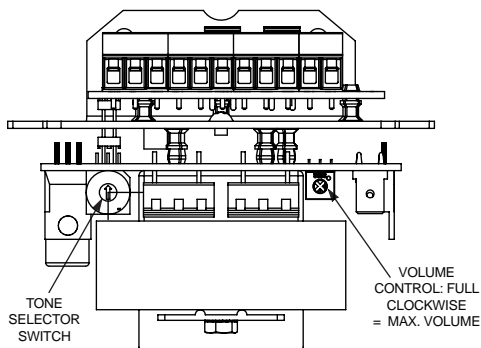
Wiring the Ex d Models

To wire the Ex d flameproof sounder:

1. Unscrew the M3 hex set screw on the side of the housing one full turn.
2. Remove the cover from the housing by turning the cover counterclockwise. Three 120-degree spaced reliefs are provided for a 3/8-inch spanner wrench if needed. If the cover will not unscrew, back out the set screw a few additional turns.
3. Loosen the captive Phillips® screw retaining the driver/printed circuit board (PCB).
4. Slide out the PCB until the terminals clear the housing. Strip the wire insulation 6.5 mm (0.25 in). Maximum screw tightening torque is 0.5 N·m (4.5 in-lb).

5. Follow the instructions starting below for your line voltage and continue to Step 6 on page 6. Refer to Figure 6 for the voltage selector switch and Table 1 on page 9 for the tone chart. For remote tone selection, refer to Table 5 on page 14.

Figure 7 Locations of tone and volume switches



220-240 Vac Operation (no remote switching of tones)

- Set the voltage selector switches to 230 and AC.
- Turn the tone selector switch to the desired tone.
- Connect the line (hot) power source wire to the terminal block position marked L1 on the PCB.
- Connect the neutral (common) power source wire to the terminal block position marked L2 on the PCB.
- Connect ground wire to the terminal block position marked EARTH.

120 Vac operation (no remote switching of tones)

- Set the voltage selector switches to 120 and AC.
- Turn the tone selector switch to the desired tone.
- Connect the line (hot) power source wire to the terminal block position marked L1 on the PCB.
- Connect the neutral (common) power source wire to the terminal block position marked L2 on the PCB.
- Connect ground wire to the terminal block position marked EARTH.

24 Vdc operation (no remote switching of tones)

- Set the voltage selector switches to 230 and DC.
- Turn the tone selector switch to the desired tone.
- Connect the positive (+) power source wire to the terminal block position marked L1 on the PCB.
- Connect the negative (-) power source wire to the terminal block position marked L2 on the PCB.
- Connect ground wire to the terminal block position marked EARTH.

220-240 Vac operation (remote switching of tones)

- Set the voltage selector switches to 230 and AC.
- Set the tone selector switch to 0.
- Connect the line (hot) power source wire to the terminal block position marked L1 on the PCB.
- Connect the neutral (common) power source wire to the terminal block position marked L2 on the PCB.
- Connect ground wire to the terminal block position marked EARTH.
- Connect the common wire from the remote switching device to the terminal block position marked SEL.

- g. Connect the tone select wires from the remote switching device to the terminal block positions marked T1, T2, T3, and T4.

For 120 Vac operation (remote switching of tones)

- a. Set the voltage selector switches to 120 and AC.
- b. Set the tone selector switch to 0.
- c. Connect the line (hot) power source wire to the terminal block position marked L1 on the PCB.
- d. Connect the neutral (common) power source wire to the terminal block position marked L2 on the PCB.
- e. Connect the ground wire to the terminal block position marked EARTH.
- f. Connect the common wire from the remote switching device to the terminal block position marked SEL.
- g. Connect the tone select wires from the remote switching device to the terminal block positions marked T1, T2, T3, and T4.

For 24 Vdc operation (remote switching of tones with local power)

- a. Set the voltage selector switches to 230 and DC.
- b. Connect the positive (+) power-source wire to the terminal block position marked L1 on the PCB.
- c. Connect the negative (–) power source wire to the terminal block position marked L2 on the PCB.
- d. Connect the positive (+) power source wire to the terminal block position marked L1 on the PCB.
- e. Connect the ground wire to the terminal block position marked EARTH.
- f. Connect the common wire from the remote switching device to the terminal block position marked SEL.
- g. Connect the tone select wires from the remote switching device to the terminal block positions marked T1, T2, T3, and T4.

For 24 Vdc operation (remote switching of tones with remote power)

- a. Set the tone selector switch to 0.
 - b. Connect the negative (–) power source wire to the terminal block position marked L2 on the PCB.
 - c. Connect the positive (+) power source/select wires to the terminal block positions marked T1, T2, T3, and T4.
 - d. Connect the ground wire to the terminal block position marked EARTH.
- 6. Insert the PCB into the enclosure and fully tighten the PCB captive screw.
 - 7. Place the cover on the housing and tighten it by turning it clockwise.
 - 8. To ensure O-ring compression, the cover must be fully seated against the housing when the threads are tightened. Turn the M3 set screw on the side of the housing until the screw contacts the housing.
 - 9. Ensure that the unused wire entry is sealed with the provided brass M20-1.5 x 6 g stopping plug (equipment-certified).

Table 1 Tone chart

Tone (Position)	Description	Frequency	Duration
0 (0)	Off		
1 (1)	Two Tone	588 Hz 714 Hz	0.25 s 0.25 s
2 (2)	Sleeping Quarters EVAC	520 Hz	Three 0.5 s ON Three 0.5 s OFF 1.5 s pause 4 s cycle
3 (3)	Warble	1000 Hz/1400 Hz Silence Warble Silence	0.4 s 0.25 s 0.4 s 0.2 s
4 (4)	Constant	700 Hz 700 Hz	
5 (5)	Simulated Bell	~ 3 rings per s	
6 (6)	Swept 1	.6 kHz to 1.2 kHz 1.2 kHz to 2.6 kHz	6 cycles per s
7 (7)	Two Tone	1 kHz 700 Hz	0.4 s 0.4 s
8 (8)	700 Hz	700 Hz Silence	0.25 s 0.25 s
9 (9)	Swept	400 Hz to 1.6 Hz Constant 1.2 kHz 1.2 kHz to 400 kHz Silence	1 s 2 s 1 s 5 s
10 (A)	Swept	550 Hz to 735 Hz	0.5 s
11 (B)	1 KHz	1 KHz Silence	1 s 1 s
*12 (C)	Constant 1 kHz	1 kHz	
13 (D)	Two Tone	700 Hz 500 Hz	0.5 s 0.5 s
14 (E)	Warble	1 kHz to 1.4 kHz	10 cycles per s
15 (F)	Swept	1.2 kHz 400 Hz	1 s

*Factory setting

Preparing to Wire the Ex de Increased Safety Models

SHOCK HAZARD - To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.

This section has wiring instructions for the three increased safety models:

- G-SND 24 Vdc
- G-SND 120 Vac
- G-SND 240 Vac

Ex de units are supplied with a six-pole, spring-tension clamp style terminal block. The maximum wire gauge is 4.0 mm (12 AWG). The wire must be rated 85°C or higher. Use only stranded cable to terminate the sounder. The cross-sectional area of the primary earth (ground) must equal the cross-sectional area of the phase conductor.

Cable termination should be in accordance with specifications applying to the application. It is recommended that all cables and cores be fully identified. Use the appropriate cable gland for the application. Gland entry threads are M20-1.5 6H.

Conductive metalwork, including cable glands, must be a minimum of 5 mm away from the terminals.

Leads connected to the terminals shall be insulated for the appropriate voltage, and this insulation shall extend to within 1 mm of the metal of the terminal throat.

The G-SND terminal block is supplied with two conductors per pole. The terminal block allows for easy supply-in and loop-out wiring to connect sounders in series.

Tools needed:

- 3.0 mm A/F hexagon key
- No. 1 Phillips® screwdriver
- Wire stripper

Wiring the Ex de Models

CIRCUIT BOARD DAMAGE - The DC sounders are polarity sensitive and MAY BE DAMAGED by incorrect electrical hookup. When connecting the DC sounder to the voltage supply lines, POLARITY MUST BE OBSERVED. In addition, damage will result if the voltage rating of the particular model is exceeded by more than 10 percent.

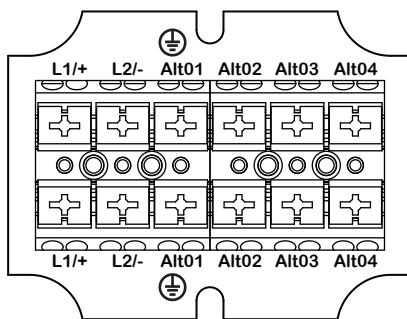
To wire the Ex de models:

1. Unscrew the four M4 socket-head cap screws and remove the terminal box cover.
2. Strip the wire insulation 8 mm to 9 mm (0.33 in).

NOTE: When using more than one single or multiple strand lead, the connection into either side of any terminal must be joined in a suitable manner, e.g., two conductors into a single insulated crimped bootlace ferrule.

3. To connect wires, press the button on the terminal block with a Phillips screwdriver and insert the wire into the round opening. Release the button to make the connection.
4. Follow the instructions starting below for your line voltage and continue to Step 5 on page 8. Refer to Figure 6 on page 6 for the voltage selector switch and the tone chart on page 9.

Figure 8 Connections for DC or AC Ex de sounder



220-240 Vac operation (no remote switching of tones)

- a. Connect the line (hot) power-source wire to the position marked L1/+ on the terminal block.
- b. Connect the neutral (common) power-source wire to the position marked L2/- on the terminal block.
- c. Connect the ground wire to the position marked Alt01 on the terminal block.

120 Vac operation (no remote switching of tones)

- a. Connect the line (hot) power-source wire to the position marked L1/+ on the terminal block.
- b. Connect the neutral (common) power-source wire to the position marked L2/- on the terminal block.
- c. Connect the ground wire to the position marked Alt01 on the terminal block.

24 Vdc operation (no remote switching of tones)

- a. Connect the positive (+) power-source wire to the position marked L1/+ on the terminal block.
- b. Connect the negative (-) power-source wire to the terminal block position marked L2/- on the terminal block.
- c. Connect the ground wire to the position marked Alt01 on the terminal block.

220-240 Vac operation (remote switching of tones)

- a. Connect the line (hot) power-source wire to the position marked L1/+ on the terminal block.
- b. Connect the neutral (common) power-source wire to the position marked L2/- on the terminal block.
- c. Connect the ground wire to the position marked Alt01 on the terminal block.
- d. Connect the common wire from the remote switching device to the terminal block position marked Alt02.
- e. Connect the tone-select wires from the remote switching device to the terminal block positions marked Alt03 and Alt04. Please note that only two tones are remotely selectable on Ex de 220-240 Vac units.

120 Vac operation (remote switching of tones)

- a. Connect the line (hot) power source wire to the position marked L1/+ on the terminal block.
- b. Connect the neutral (common) power source wire to the position marked L2/- on the terminal block.
- c. Connect the ground wire to the position marked Alt01 on the terminal block.
- d. Connect the common wire from the remote switching device to the terminal block position marked Alt02.
- e. Connect the tone-select wires from the remote switching device to the terminal block positions marked Alt03 and Alt04. Please note that only two tones are remotely selectable on Ex de 120 Vac units.

24 Vdc operation (remote switching of tones with remote power)

- a. Connect the negative (-) power source wire to the position marked L2/- on the terminal block.
 - b. Connect the positive (+) power source/select wires to the terminal block positions marked Alt02, Alt03, and Alt04. Please note that only three tones are remotely selectable on Ex de 24 Vdc units.
 - c. Connect the ground wire to the position marked Alt01 on the terminal block.
5. Secure the cover on the terminal box with the four M4 screws. Ensure that the gasket is properly seated to maintain IP rating. Do not overtighten the screws.

Selecting the Tone for Ex de Models

All effective warning sounders produce loud sounds, which may cause, in certain situations, permanent hearing loss. Take appropriate precautions such as hearing protection.

To select the tone for Ex de models:

1. Unscrew the M3 hex set screw on the side of the housing one full turn.
2. Remove the cover from the housing by turning the cover counter-clockwise. Three 120-degree spaced reliefs are provided for a 3/8-inch spanner wrench if needed. If the cover will not unscrew, back out the set screw a few additional turns.
3. Loosen the captive Phillips® screw retaining the driver/printed circuit board (PCB).
4. Slide out the PCB and set the tone selector switch to the desired tone.
5. Insert the driver/PCB into the enclosure, taking care not to pinch the wiring and fully tighten the PCB captive screw.
6. Place cover on housing and tighten it by turning it clockwise.
7. To ensure O-ring compression, the cover must be fully seated against the housing when the threads are tightened. Turn the M3 set screw on the side of the housing until the screw contacts the housing.

Safety Messages to Maintenance Personnel

Listed below are some important safety instructions and precautions you should follow:

- Read and understand all instructions before operating this system.
- The repair of flamepaths is not recommended.
- If you acquired a significant quantity of units, then it is recommended that spares also be made available.
- To avoid electrical shock hazards, do not connect wires when power is applied. Failure to observe this warning may lead to serious injury or death.
- Any maintenance to the sounder system must be performed by a trained electrician who is thoroughly familiar with all applicable national and local codes in the country of use.
- Any maintenance to the sounder system must be done with the power turned off.
- Check the sounder periodically to ensure that the effectiveness of the device has not been reduced because it has been clogged with a foreign substance or because objects have been placed in front of it.
- Never alter the unit in any manner. Safety of the unit may be affected if additional openings or other alterations are made to the internal components or housing.
- The nameplate, which may contain cautionary or other information of importance to maintenance personnel, should NOT be obscured in any way. Ensure that the nameplate remains readable.
- After performing any maintenance, test the sounder system to ensure that it is operating properly.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

Maintaining the Sounder

EXPLOSION HAZARD - To prevent ignition of hazardous atmosphere, disconnect the sounder from the supply circuit before opening it. Do not open the sounder in the presence of explosive gases in the atmosphere. Failure to follow this warning may result in serious injury or death.

During the working life of the sounder, it should require little or no maintenance. The non-metallic housing will resist attack by most acids, alkalis, and chemicals and is as resistant to concentrated acids and alkalis as most metal products. However, if abnormal or unusual environmental conditions occur due to plant damage or accident, etc., visual inspection of the sounder is recommended.

Cleaning the Enclosure

The enclosure should be cleaned periodically with a damp cloth to maintain maximum sound output. Periodic checks should be made to ensure that the effectiveness of this device has not been reduced because the sounder has become clogged with a foreign substance or because objects have been placed in front of the sounder.

Lubricating the Threaded Joints

A silicone-based, non-hardening, chemically compatible grease can be applied if required.

DO NOT PAINT - Do not paint this device after installation, and do not change the factory-applied finish.

Ordering Replacement Parts and Accessories

A replacement part for the driver/PCB assembly and accessories are listed in Tables 2 and 3. Due to certification, certain component parts are not available for field replacement. Sounders with this type of damage must be either replaced entirely or returned to Federal Signal for service. Refer to instruction manual 25500259 for accessory and replacement part assembly and operating instructions. To order, call Federal Signal Customer Support at 708-534-4756 or 877-289-3246.

Table 2 Replacement parts

Description	Part Number
Multi-voltage G-SND Sounder Kit (Includes PCBAs, Bracket, Driver, & Mounting Screws)	K859501404

Table 3 Accessories

Description	Part Number
Indicator Ring/Legend Kit, Black	G-KIT-RP-BK
Indicator Ring/Legend Kit, Blue	G-KIT-RP-B
Indicator Ring/Legend Kit, Green	G-KIT-RP-G
Indicator Ring/Legend Kit, Magenta	G-KIT-RP-M
Indicator Ring/Legend Kit, Red	G-KIT-RP-R
Indicator Ring/Legend Kit, Yellow	G-KIT-RP-Y
E-Box Endcap with M20 Opening	K859500805-02
E-Box Endcap with M25 Opening	K859500805-01
E-Box Cover Assembly (Includes two terminal blocks, mounting plate, retention hardware)	K859501414
In-Line E-Box Coupler Kit	G-KIT-EC180
90-Degree E-Box Coupler Kit	G-KIT-EC90
Extension Box Spacer Kit	G-KIT-EXTB
Single Trunnion Kit	G-KIT-ST
Dual Trunnion Kit	G-KIT-DT
Adapter, M20 Male to 1/2" Female NPT	K231246A
Adapter, M20 Male to 3/4" Female NPT	K231247
15 W Audible Acoustic Insert	G-KIT-15WINSERT

Table 4 Choosing cable-entry devices for equipment in potentially explosive atmospheres

Models	Ex Atmospheres	Cable Entry Devices (cable glands, stopping plugs, etc.)
G-SND-XXX-D (Ex db surface mount)	Gas	Cable entry devices shall be equipment certified as flameproof. To maintain the ingress protection of the flameproof sounder enclosure, we recommend the cable entry device be IP66 certified.
G-SND-XXX-E	Gas	For the flameproof enclosure, cable entry devices shall be equipment certified as flameproof. To maintain the ingress protection of the flameproof enclosure, we recommend the cable entry device be IP66 certified. For the increased safety terminal enclosures (terminal boxes), cable entry devices shall be equipment certified as increased safety and shall maintain an IP rating of IP54.
G-SND-XXX-D (Ex db surface mount) G-SND-XXX-E (Ex db e surface mount)	Dust	Cable entry devices for the and terminal enclosures shall be equipment certified as dust protected. To maintain the ingress protection of the sounder and terminal enclosures, the cable entry devices shall be IP6X certified.

Table 5 Remote tone selection

Tone	HEX SW	Terminal Wiring				
		SEL ¹	T4	T3	T2	T1
-	0					
1	1	X				X
2	2	X			X	
3	3	X			X	X
4	4	X		X		
5	5	X		X		X
6	6	X		X	X	
7	7	X		X	X	X
8	8	X	X			
9	9	X	X			X
10	A	X	X		X	
11	B	X	X		X	X
12	C	X	X	X		
13	D	X	X	X		X
14	E	X	X	X	X	
15	F	X	X	X	X	X

UL Fire Alarm Certifications

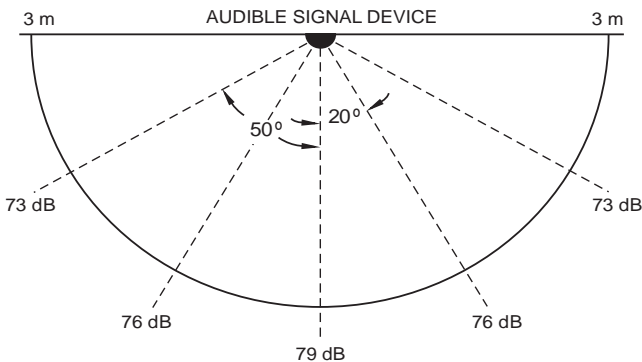
The audible sounder models that are powered using 24 Vdc input are Listed by Underwriters Laboratories (UL) for use in fire alarm applications. The 120 Vac and 230 Vac inputs have not been evaluated. These models have the following nomenclature: G-SND-MV-D, G-SND-MV-T, and G-SND-024-E. They have an electrical rating of 515 mA maximum at 24 regulated voltage Vdc (16 Vdc to 33 Vdc).

NOTE: UL evaluated this product only to the stated operational voltage range. It was not evaluated to 80% to 110% of the voltage range.

The sounder is factory set with the tone selector switch set to the No. 12 setting. This is a constant 1 kHz tone. This is the only tone setting that has been evaluated for fire alarm applications. At this tone, the sounder has a sound pressure level of 79.0 dB. See Figure 9 for the dispersion characteristics.

The units can be mounted on a wall or ceiling and have no mounting orientation restriction. For specific installation and wiring requirements, refer to local codes such as the National Code (NFPA70) and the National Fire Alarm and Signaling Code (NFPA72).

Figure 9 UL Fire alarm certification dispersion characteristics at 16 Vdc



Service

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Technical Assistance: Contact our Technical Support Team at +1 708-587-3587 or signalsupport@fedsig.com.

Repair Service: A return authorization is required. Contact your Authorized Distributor or Federal Signal Customer Support at +1 708-534-4756 or iordersup@fedsig.com. Defective products under warranty will be repaired or replaced at Federal Signal's discretion. Lamp failures excluded.

Product Returns: A return authorization is required from Federal Signal prior to returning the product. Contact your Authorized Distributor for more information or to request a product return.



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