

Safety Message to Installers of Sound/Light Equipment

⚠ WARNING

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. Listed below are some other important safety instructions and precautions you should follow.

Before Installation

Qualifications

- To properly install an electronic siren, you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle's service manuals when performing equipment installations on a vehicle.

Sound Hazards

- Your hearing and the hearing of others, in or close to your emergency vehicle, could be damaged by loud sounds. This can occur from short exposures to very loud sounds, or from longer exposures to moderately loud sounds. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 offers guidance on "Permissible Noise Exposure."
- All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sound and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound.
- Federal Signal siren amplifier/relay modules and speakers are designed to work together as a system. Combining a siren and speaker from different manufacturers may reduce the warning effectiveness of the siren system and may damage the components. You should verify or test your combination to make sure the system works together properly and meets federal, state and local standards or guidelines.

During Installation

- Do NOT get metal shavings inside the product. Metal shavings in the product can cause the system to fail. If drilling must be done near the unit, place an ESD approved cover over the unit to prevent metal shavings from entering the unit. Inspect the unit after mounting to be sure there are no shavings present in or near the unit.
- Do NOT connect this system to the vehicle battery until ALL other electrical connections are made, mounting of all components is complete, and you have verified that no shorts exist. If wiring is shorted to vehicle frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- Ensure that the siren amplifier/relay module and speaker(s) in your installation have compatible wattage ratings.
- In order for the electronic siren to function properly, the ground connection must be made to the NEGATIVE battery terminal.

Pathfinder® 17-Button Remote

- Sound output will be severely reduced if any objects are in front of the speaker. If maximum sound output is required for your application, ensure that the front of the speaker is clear of any obstructions.
- Install the speaker(s) as far forward on the vehicle as possible in a location that provides maximum signaling effectiveness and minimizes the sound reaching the vehicle's occupants. Refer to the National Institute of Justice guide 500-00 for further information.
- Mounting the speakers behind the grille will reduce the sound output and warning effectiveness of the siren system. Before mounting speakers behind the grille, make sure the vehicle operators are trained and understand that this type of installation is less effective for warning others.
- Sound propagation and warning effectiveness will be severely reduced if the speaker is not facing forward. Carefully follow the installation instructions and always install the speaker with the projector facing forward.
- Do NOT install the speaker(s) or route the speaker wires where they may interfere with the operation of airbag sensors.
- Installation of two speakers requires wiring speakers in phase.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation and safety functions or circuits. Always check vehicle for proper operation after installation.
- Do NOT install equipment or route wiring or cord in the deployment path of an airbag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- Locate the handheld so the vehicle, controls, and microphone can be operated safely.
- When drilling into a vehicle structure, ensure that both sides of the surface are clear of anything that could be damaged. All drilled holes should be deburred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing. All exterior drilled holes must be sealed with Motorcraft seam sealer T-A-2-B or equivalent to prevent the potential exposure to carbon monoxide or other potentially harmful fumes. Failure to observe this warning could cause serious injury or death.

After Installation

- After installation, test the siren and light system to ensure that it is operating properly.
- Test all vehicle functions, including horn operation, vehicle safety functions, and vehicle light systems, to ensure proper operation. Ensure that installation has not affected vehicle operation or changed any vehicle safety function or circuit.
- After testing is complete, provide a copy of these instructions to the instructional staff and all operating personnel.
- File these instructions in a safe place and refer to them when maintaining or reinstalling the product.

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

RETAIN AND REFER TO THESE MESSAGES

Pathfinder 17 Button Remote, PF100S17BB and PF200S17B

This publication has instructions for installing the Pathfinder with the 17-button control head. Select a mounting location that allows the vehicle, controls, and microphone to be operated safely under all driving conditions. To identify safe mounting areas for equipment inside the vehicle, consult the vehicle manufacturer's guidelines. To avoid driver distraction and unreliable switch activation, the mounting location must not allow any movement of the unit. Installer-supplied mounting hardware is required to mount the siren.

NOTE: For additional electrical installation instructions, refer to the Installation and Maintenance Instructions packed with the Pathfinder.

Unpacking the Kit

After unpacking the kit, inspect 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 destroying them. Ensure that the parts in the Kit Contents List are included in the package. If you are missing any parts, contact Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

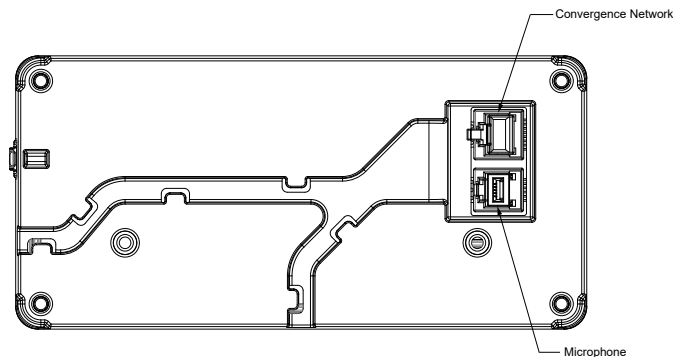
Table 1 Kit Contents

Qty.	Description	Part Number - PF100S17BB	Part Number - PF200S17B
1	Pathfinder 100 or 100/200-Watt Amplifier	862302662-100	862302662
1	PF200S17B Remote Control Head	862303172	862303172
1	Keypad Legend Stickers	8572294	8572294
1	Dynamic Microphone with Mod	258B577-03	258B577-03
1	Pathfinder Bail Bracket	862302132	862302132
2	Smart Control Mtg. Bracket	85361065	85361065
1	RS485 25-ft (7.62 m) Cable Assembly	1751357-02	1751357-02
1	Pathfinder Relay Wire Assembly	17501359	17501359
1	Pathfinder I/O Wire Assembly	17501360	17501360
1	A male to Mini-B USB 2.0 Cable	17501813	17501813
1	8P8C RJ45 T 1F to 2 F Adapter Connector	13901989	13901989
1	RS485 8-inch Cable Assembly	1751357-06	1751357-06
1	Pathfinder Hardware Kit	77700765	77700765
Siren Mount Kit			
2	Term, #8, 6AWG	19001363	19001363
2	1/4-20 Stainless Steel Carriage Bolt	7004A020-12	7004A020-12
2	1/4-20 Stl External Tooth Keps Nut	7058A005	7058A005
2	1/4-inch Flat Washer	7072A028	7072A028
2	M4 Sems Pan Head Screw	70000451-06	70000451-06
2	1/4-inch Internal Tooth Lockwasher	7075A016	7075A016
1	Pathfinder Control Head Hardware Kit	77700992	77700992
Control Head Kit			
2	#6-32 Pan Head Phillips Screw	7000A404-05	7000A404-05
2	1/4,,,dxz-20, Stl Zinc Clear Bolt Cap	7002A000-12	7002A000-12
2	#10 Type B stl Black Zinc Pan Head Screw	7011246-08	7011246-08
2	Split Stl #6 Screw Lockwasher	7074A001	7074A001
2	1/4-inch External Tooth Lockwasher	7075A007	7075A007

Connecting the Control Head

The only connections required for the control head are the 25-foot Convergence Network cable and the Federal Signal Microphone (P/N 258B8577-03).

Figure 1 Control Head Connections and DIP SW position



Mounting the Control Head

The control head comes with two mounting brackets and mounting hardware.

Tools needed:

- Drill with 1/64-inch drill bit
- Phillips screwdriver
- 7/16-inch nut driver
- Pencil or felt-tip pen for marking drill position locations

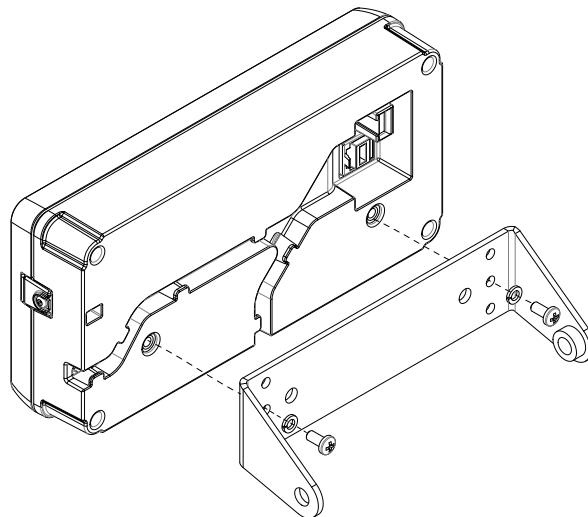
⚠ WARNING

AIRBAG DEPLOYMENT: Do not install equipment or route wiring in the deployment of an airbag. Failure to observe this warning will reduce the effectiveness of the airbag or potentially dislodge the equipment, causing serious injury or death.

To mount the control head:

1. Secure a bracket to the control head with the #6-32 by 1/4-inch Phillips screws and #6 lock washers. See Figure 2.

Figure 2 Bracket attached to back of control head



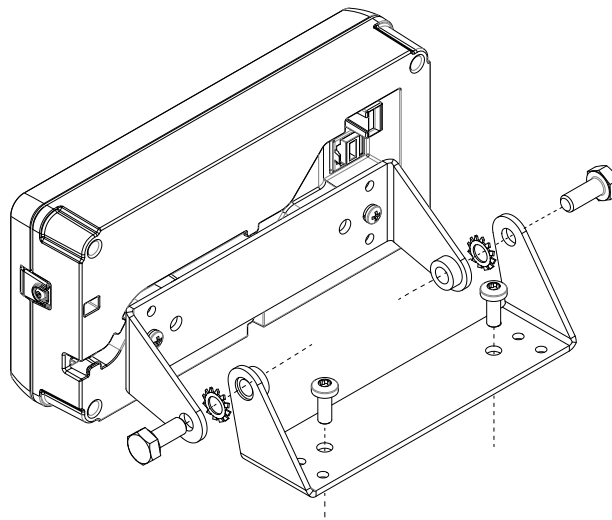
2. Using a 7/16-inch nut driver, secure the other bracket to the control head/bracket assembly with the 1/4-20 by 3/4-inch hex head screws and 1/4-inch lock washers. See Figure 2.
3. Use the mounting bracket as a template and scribe two drill position marks at the selected mounting location.

⚠ WARNING

DRILLING PRECAUTIONS: Before drilling holes, check the area into which you plan to drill to ensure you do not damage vehicle components while drilling. All drilled holes should be deburred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing. All exterior drilled holes must be sealed with Motorcraft seam sealer T-A-2-B or equivalent to prevent the potential exposure to carbon monoxide or other potentially harmful fumes. Failure to observe this warning could cause serious injury or death.

4. Drill two pilot mounting holes at the drill position marks.
5. Secure the mounting bracket to the mounting surface with the #10 thread-forming screws. See Figure 3.

Figure 3 Brackets attached to control head and mounting surface



6. To adjust the angle of the control head, loosen the hinge screws, tilt the control head forward or backward, and then securely tighten the screws.

Keypad Default Functions

See Figure 4 and Table 2

Figure 4 Button Layout

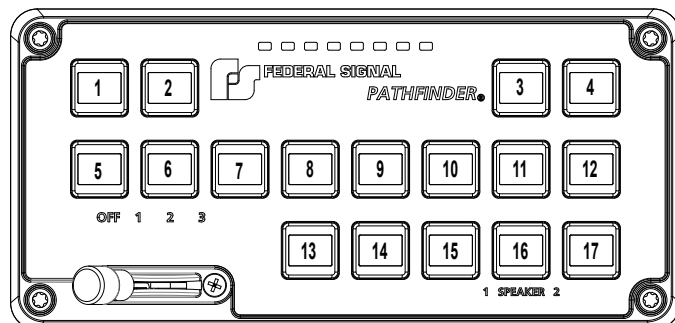


Table 2 Button Default Programming

Button	Default Function
BTN 1	SignalMaster® Step LRCO (Light Bar)
BTN 2	SignalMaster Step Warn 1-4 (Light Bar)
BTN 3	Light Bar Rear Cut
BTN 4	Dim (Light Bar)–Disabled if BTN 3 is active
BTN 5	Siren Standby
BTN 6	Radio Re-Broadcast
BTN 7	Relay 9 ON
BTN 8	SSP Wail (Active with BTN 3)
BTN 9	SSP Yelp (Active with BTN 3)
BTN 10	SSP Priority (Active with Slide Switch 3)
BTN 11	Manual (Peak and Hold SSP Wail)
BTN 12	SSP Air Horn
BTN 13	Light Bar Left Alley Relay 6 ON
BTN 14	Light Bar Takedown Relay 7 ON
BTN 15	Light Bar Right Alley Relay 8 ON
BTN 16	Intersection Light Bar Pattern 22 (8 Seconds)
BTN 17	Gun Lock Relay 10 ON (8 Seconds)
Slide Switch 1	Light Bar–Pattern 10, Front Cutoff Relay 1 ON
Slide Switch 2	Light Bar–Pattern 26 Horn Ring Transfer Relays 1-3 ON
Slide Switch 3	Light Bar–Pattern 27, Flash White Enable Horn Ring Transfer Siren Enabled (SSP Wail) Relays 1-5 ON

Table 3 Input Default Programming

Input	Default Function	Polarity
Ignition	System Enable, Immediate system shutdown (no delay) ignition off	BAT
Park	Siren Mute White Light Cutoff (Light Bar)	GND
Input 1	Remote Slide Switch 1 Activation	GND
Input 2	Remote Slide Switch 2 Activation	GND
Input 3	Remote Slide Switch 3 Activation	GND
Input 4	Remote BTN 14 Activation	GND
Horn Ring	When Slide Switch 3 is active, scrolls through Wail/Yelp/Priority When Slide Switch 2 or Siren Standby is active, SSP Air Horn When in park, SSP Air Horn	GND

Table 4 Global/Misc Default Programming

Global	Default Function
Audible	All buttons
Dim Level	10
Battery Level	No action defined

Refer to the Installation and Maintenance Instructions packed with the Pathfinder to complete the installation.

Getting Technical Support

For technical support, please contact:

Federal Signal Corporation
 Service Department
 Phone: 1-800-433-9132
 Email: empsserviceinfo@fedsig.com

Getting Repair Service

The Federal Signal factory provides technical assistance with any problems that cannot be handled locally. Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain a RMA from a local Distributor or Manufacturer’s Representative. Provide a brief explanation of the service requested, or the nature of the malfunction.

Address all communications and shipments to the following:

Federal Signal Corporation
 Service Department
 2645 Federal Signal Dr.
 University Park, IL 60484-3167

Ordering Replacement Parts

To order replacement parts, call Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT) or contact your nearest distributor.

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to, the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



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