

AD-26P, AD-27P, AD-56P and AD-57P

Atkinson Dynamics Panel Mount Intercoms



Installation and Maintenance Manual

2645 Federal Signal Drive, University Park, Illinois 60484

Customer Support +1-708-534-4756, iordersup@fedsig.com

Technical Support 1-800-755-7621 +1-708-587-3587, signalsupport@fedsig.com

www.fedsig.com

INSTALLATION AND SERVICE INSTRUCTIONS FOR ATKINSON DYNAMICS PANEL MOUNT INTERCOMS

Safety Messages to Installers, Users, and Maintenance Personnel



It is important to follow all instructions shipped with this product. This device is intended to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls, and the routing of the wiring are to be accomplished under the direction of the facilities engineers and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This is not a listed safety device and is not intended to be used as such.
- Read and understand all instructions before installing or operating this equipment.
- Disconnect power before connecting or doing any maintenance on this intercom.
- 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.
- 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 testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the intercom installation for integrity and proper operation. Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

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

A. General Features.

The Atkinson Dynamics "P" model is a panel mount intercom intended for 2-way communications in industrial and vehicular applications. Each panel mount intercom consists of a printed circuit board that is attached to a cover plate which has various control functions. It is designed to be mounted in a customer-supplied panel. A separate speaker/microphone that connects to the printed circuit board is utilized for both receiving and transmitting audio signals. Nominal operating voltages for the panel mount intercom include 12VDC, 24VDC, 120VAC, and 240VAC. The AC line is fused with a 1/2 A 250 V type GMC fuse in the 120/240VAC intercoms. Basic model specifications and additional model information is listed in Tables 1 and 2.

Model	AD-26P	AD-56P	AD-27P	AD-57P
Supply Voltage	12 VDC	24 VDC	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
Audio Power Output (Max.)	8.0 watt	11.7 watt	11.3 watt	11.3 watt
Power Consumption (Max.)	20.0 watt	39.6 watt	28.8 watt	30.5 watt
Operating Current (Nominal)	1.47 A	1.65 A	0.240 A	0.127 A
Operating Temperature	-31°F to 150°F			
Shipping Weight	2 lb 1.5 oz	2 lb 1.5 oz	2 lb 11.6 oz	2 lb 11.6 oz
Dimensions	See Figure 1			
Ratings	UL, cUL (Recognized Component Listing)			

Table 1

Additional Model Information

Letter Group	Function / Feature
“A”	Call button
“C”	Primary mode
“D”	Secondary
Number Group	
“-1”	Remote power
“-8”	Additional pre-amp for use with remote secondary speaker
Miscellaneous	
“-M44”	Remote speaker volume control

Table 2

PRIMARY UNITS:

“C” Models default to Primary, or speaker mode. In Primary mode, the unit acts as a speaker and broadcasts audio signals generated elsewhere in the intercom system. Depressing the Talk switch turns the unit into a microphone and enables the user to broadcast to all other intercoms in the system. Releasing the switch returns the unit to Primary mode. Figures 2 through 4 illustrate Primary/Secondary intercom systems.

SECONDARY UNITS:

“D” Models default to Secondary, or microphone, mode. In Secondary mode, the unit is designed to serve as a hands-free microphone with transmission to all Primary units in the intercom system. The Secondary unit will act as a speaker and broadcast audio transmissions only when the Talk switch of any Primary unit in the intercom system is depressed. Figures 2 through 4 illustrate Primary/Secondary intercom systems.

CALL BUTTON:

“A” Models are equipped with a Call switch. Depressing the call switch transmits an 890 Hz tone to all units in the intercom system. The volume of the call signal is affected by the volume control on the receiving unit, so if volume is turned all the way down at a receiving station, the call signal will not be heard.



The call signal is louder than normal voice messages being carried on the line. Do not depress the call switch while carrying on a conversation with someone on the system. This will subject the listener to very loud sound levels.

PRE-AMPLIFIER:

“-8” Models are equipped with a pre-amplifier and are designed for use with Secondary speaker units such as the AD-SV-25 Remote Speaker with Volume Control. The “-M44” option equips the “-8” Primary unit with a knob for controlling the volume of remote speakers. Figure 2 illustrates an intercom system with the “-8” and “-M44” options.

EXTERNAL POWER SOURCE:

The use of an external power source allows the user to configure intercom systems made up of “-1” DC powered Primary and Secondary units. Figure 4 illustrates such a system.

SURGE PROTECTION:

Metal Oxide Varistor (MOV) devices are used to protect the audio lines. The intercom must have Earth or Chassis Ground terminated to it to ensure surge protection.

The output amplifier of the Atkinson Dynamics intercom offers full short circuit protection and overheat protection on the 120/240VAC intercoms only.

B. Unpacking.

After unpacking the Atkinson Dynamics panel mount intercom, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it, and 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.

Before attempting to install the intercom, be sure that all parts listed in the KIT CONTENTS LIST have been supplied.

C. Kit Contents List.

Qty.	Description	Part Number
1	Resistor, 1K, 1W	101216
1	Instruction Manual	2561542

D. Mounting.



The selection of the mounting location for the device, its controls, and the routing of the wiring are to be accomplished under the direction of the facilities and the safety engineer.

The panel mount intercom is designed to be mounted behind a customer-supplied panel.

1. Cut an opening and drill the four (4) mounting holes in the customer-supplied panel. Refer to Figures 1 and 6.
2. Carefully insert the panel mount intercom into the customer-supplied panel.
3. Secure the panel mount intercom by installing screws in the four (4) mounting holes. The four mounting holes are 0.191" in diameter and will accept a #8 mounting screw. Hardware for mounting the intercom to the surface is left up to the installer.

Refer to instruction sheet 2561543, if necessary, for mounting the speaker.

E. Electrical Connections.

Connect the power wires labeled "**PWR +**" and "**PWR -**" on the panel mount intercom to a nearby power source. On 120/240VAC models, the green/yellow wire labeled "**EGND**" should be connected to earth ground. Connect the audio wires labeled "**SPK**" (white/brown) and "**COM**" (white) from the intercom to the local speaker/microphone. Models with the "**-M44**" option have an extra pair of audio wires labeled "**REM SPK**" (black) and "**COM**" (white) that should be connected to a remote speaker. Connect the audio wires labeled "**AUD**" (black or green) and "**COM**" (white) on the panel mount intercom to the same color audio wires on another intercom in the system. Audio wires should be sized properly by a licensed installation electrician for your specified application. "**C**" and "**D**" models have a control line labeled "**CTRL**" (black). The control line on a "**C**" model (Primary mode) connects to the control line on a "**D**" model (Secondary mode). Refer to Figures 2 through 5 for typical connections and additional wiring information.

Optional: A 1K, 1W resistor is included in a kit with each intercom. Installing the resistor across the audio lines helps to reduce noise in certain environments. Only one resistor needs to be installed on the lines for any system installation.

F. Service.

Federal Signal will service your equipment or provide 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. This R.M.A. can be obtained only from the factory by calling (708) 534-4756. At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

Federal Signal
Service Department
2645 Federal Signal Drive
University Park, IL 60484-3167

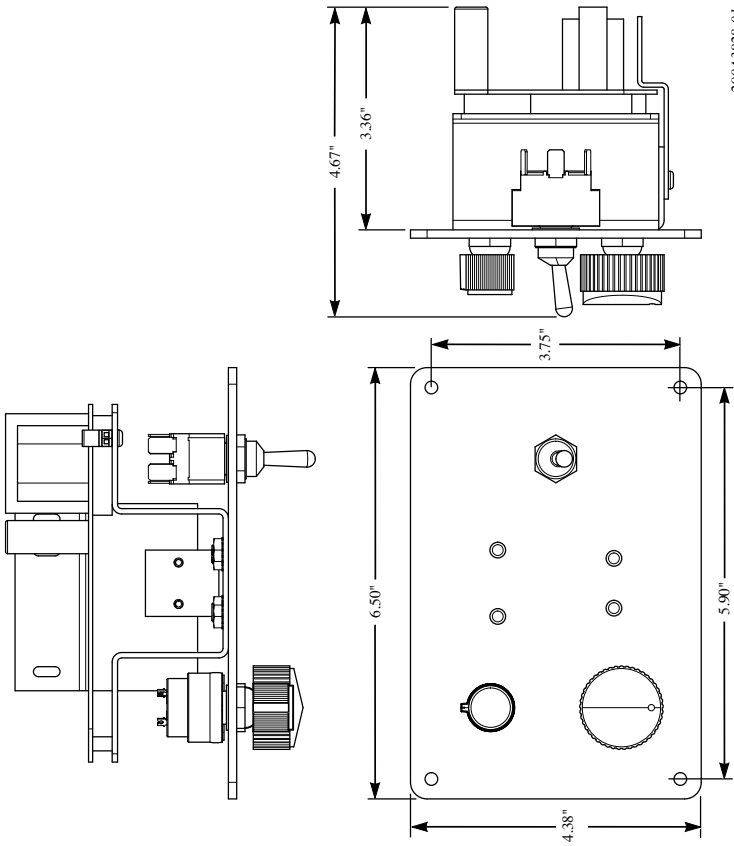
2. Replacement Parts.



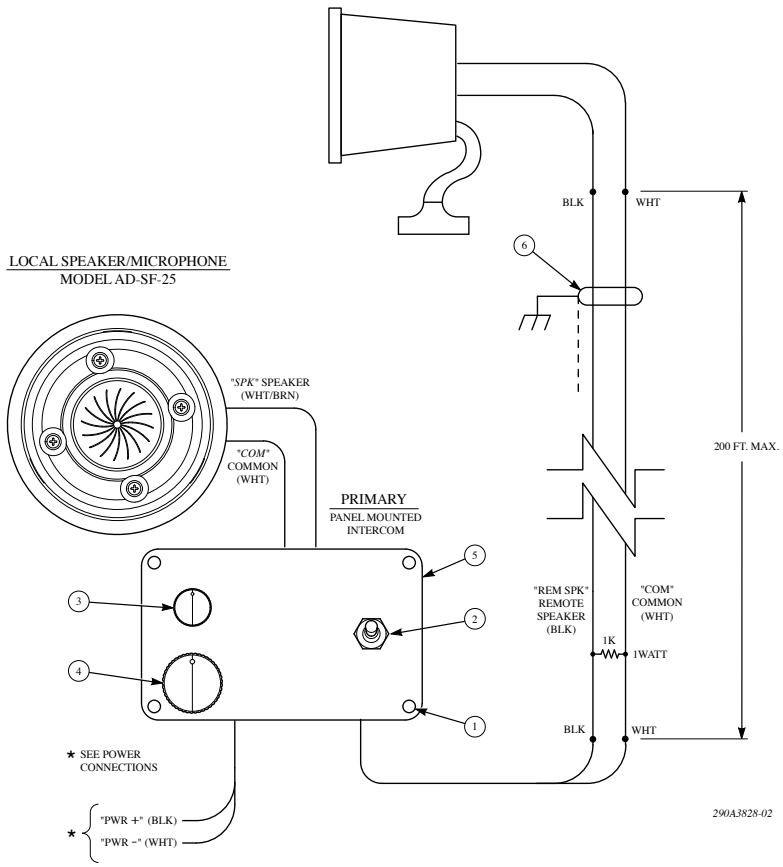
Replace fuse with GMC-1/2 only. DO NOT substitute.

<u>Description</u>	<u>Part Number</u>
Kit, PC Board, 12V, AD-26C	K2001878B-01
Kit, PC Board, 12V, AD-26D	K2001878-02
Kit, PC Board, 24V, AD-56	K2001878-07
Kit, PC Board, 24V, AD-56C	K2001878-08
Kit, PC Board, 12V, AD-26-8-M44	K2001896B
Kit, potentiometer with on/off switch	K8590236A
Kit, toggle switch, 3PDT	K8590239B
Kit, push button switch, DPDT (12/24V Models)	K8590242A
Kit, push button switch, SPST (120/240V Models)	K8590241A
Knob, volume control	K141A129A
Rubber boot, toggle switch	K288696A
Rubber boot, push button switch	K288697A
Rubber boot, volume control	K288A542A
Resistor, 1K, 1W	K101216A

1



REMOTE SECONDARY SPEAKER
AD-SF-25/AD-SS-25



290A3828-02

Power Connections:

"PWR+" (Black)	+DC-Power	
12/24V Models	"PWR-" (White)	Common
12/24V Models		

POWER	PRIMARY
12-18VDC	AD-26-8-M44P
22-30VDC	AD-56-8-M44P

NOTES:

1. Mounting Holes
2. Talk/Listen Switch
3. Primary Off/On/Speaker Volume Control
4. Remote Secondary Speaker Volume Control
5. Cover Plate
6. On some installations, use shielded cable if electrical noise is picked up.

OPERATING PRINCIPLE:

- Remote Secondary station is both a speaker and a microphone.
- Primary is normally in "Listen" mode until the talk button is pressed to talk to Remote Secondary.
- Outgoing and incoming volumes are controlled by separate controls on Primary.

POWER CONNECTIONS:

- "PWR+" (Black) +DC-Power
HOT
- "PWR-" (White) Common
- "EGND" (Green/yellow) Neutral
Earth Ground

12/24V Models
120/240V Models

12/24V Models
120/240V Models
120/240V Models only

SECONDARY

- AD-26DP
- AD-27DP
- AD-56DP
- AD-57DP

PRIMARY

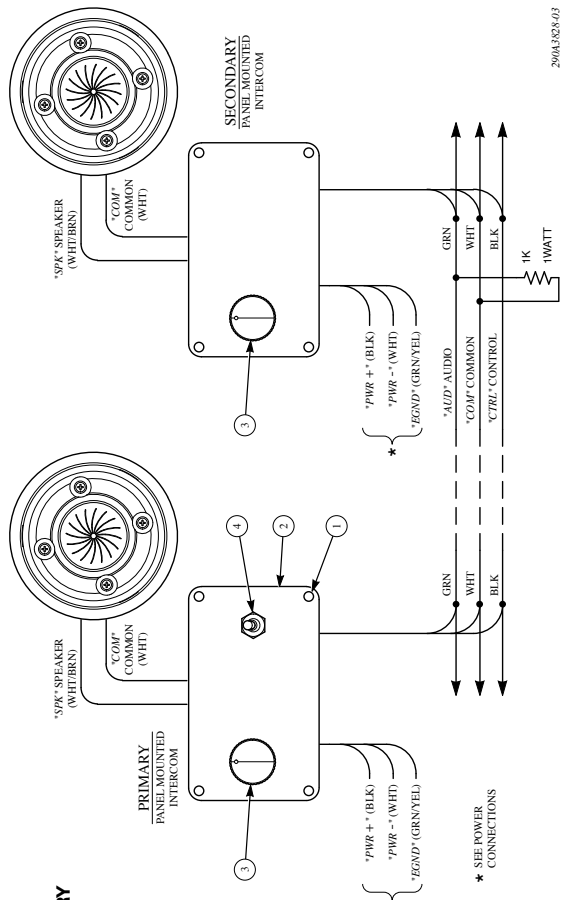
- AD-26CP
- AD-27CP
- AD-56CP
- AD-57CP

NOTES:

1. Mounting Holes
2. Cover Plate
3. Off/On/Speaker Volume Control
4. Press-to-Talk Switch

LOCAL SPEAKER/MICROPHONE
MODEL AD-SF-25

LOCAL SPEAKER/MICROPHONE
MODEL AD-SF-23



200A3284/03

OPERATING PRINCIPLE:

- Primary normally listens to Secondary.
- Secondary talks to Primary hands-free, without having to press a talk switch.
- To talk into Primary, press talk switch and speak into speaker/microphone. Release talk switch to listen.

LOCAL SPEAKER/MICROPHONE
MODEL AD-SF-25

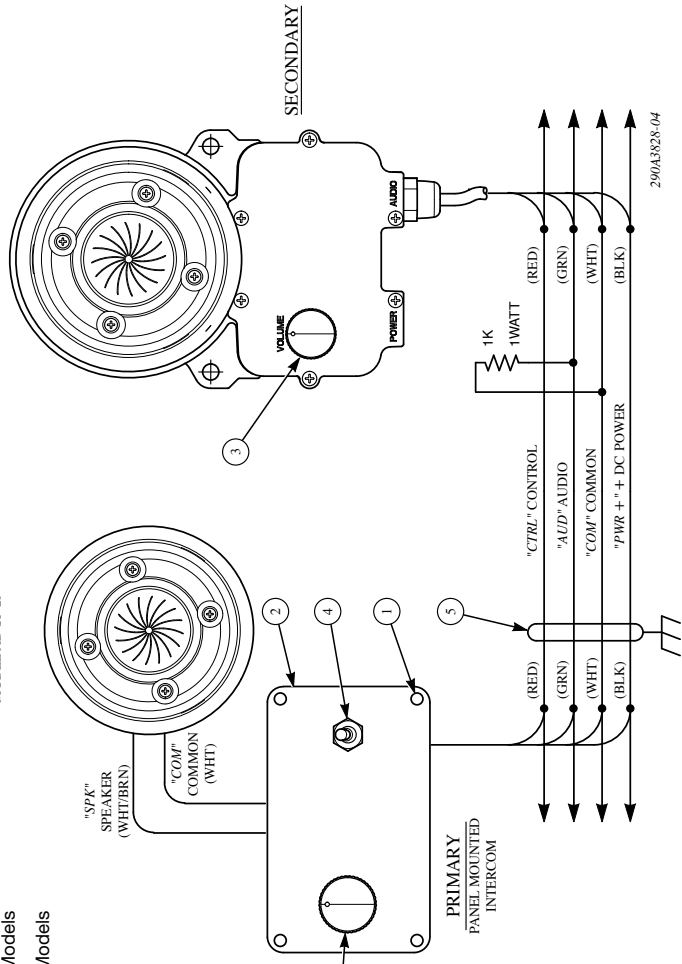
POWER CONNECTIONS:

- "PWR+" (Black) +DC-Power 12/24V Models
- "PWR-" (White) Common 12/24V Models

POWER	PRIMARY	SECONDARY
12-18VDC	AD-26CP-1	AD-26D-1

NOTES:

1. Mounting Holes
2. Cover Plate
3. Off/On/Speaker Volume Control
4. Press-to-Talk Switch
5. Use shielded audio cable in electrically noisy areas. Ground one end of the shield to "earth" ground.



OPERATING PRINCIPLE:

- Primary normally listens to Secondary.
- Secondary talks to Primary "hands-free", without having to press a talk switch.
- To talk into Primary, press talk switch and speak into speaker/microphone. Release talk switch to listen.

POWER CONNECTIONS:

- *PWR+ (Black) +DC-Power
HOT
- 12/24V Models
120/240V Models
- *PWR- (White) Common
Neutral
- 12/24V Models
120/240V Models
- *EGND (Green/yellow) Earth Ground
- 120/240V Models only

POWER PRIMARY SECONDARY

12-18VDC	AD-26P	AD-26P
120V 50/60Hz	AD-27P	AD-27P
22-30VDC	AD-56P	AD-56P
240V 50/60Hz	AD-57P	AD-57P

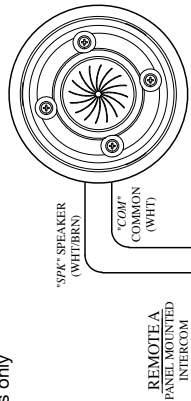
NOTES:

1. Mounting Holes
2. Cover Plate
3. Off/On/Speaker Volume Control
4. Talk/Listen Switch
5. Use shielded audio cable in electrically noisy areas. Ground one end of the shield to "earth" ground.

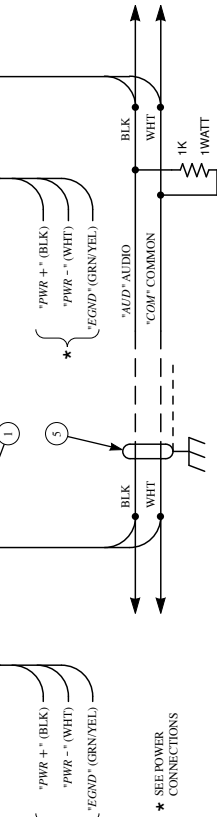
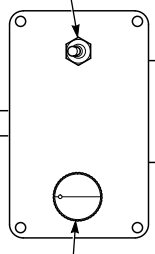
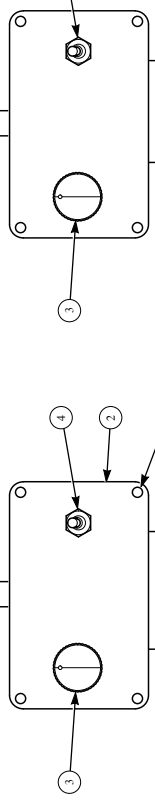
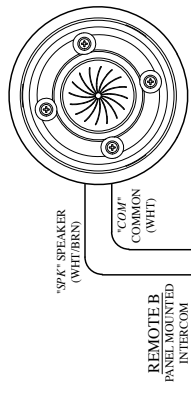
Operating Principle:

- When one talks, all intercoms will hear.
- To talk to other stations, press the talk/listen switch and speak into the speaker/microphone.
- Release talk/listen switch to listen.

LOCAL SPEAKER/MICROPHONE
MODEL AD-SF-25



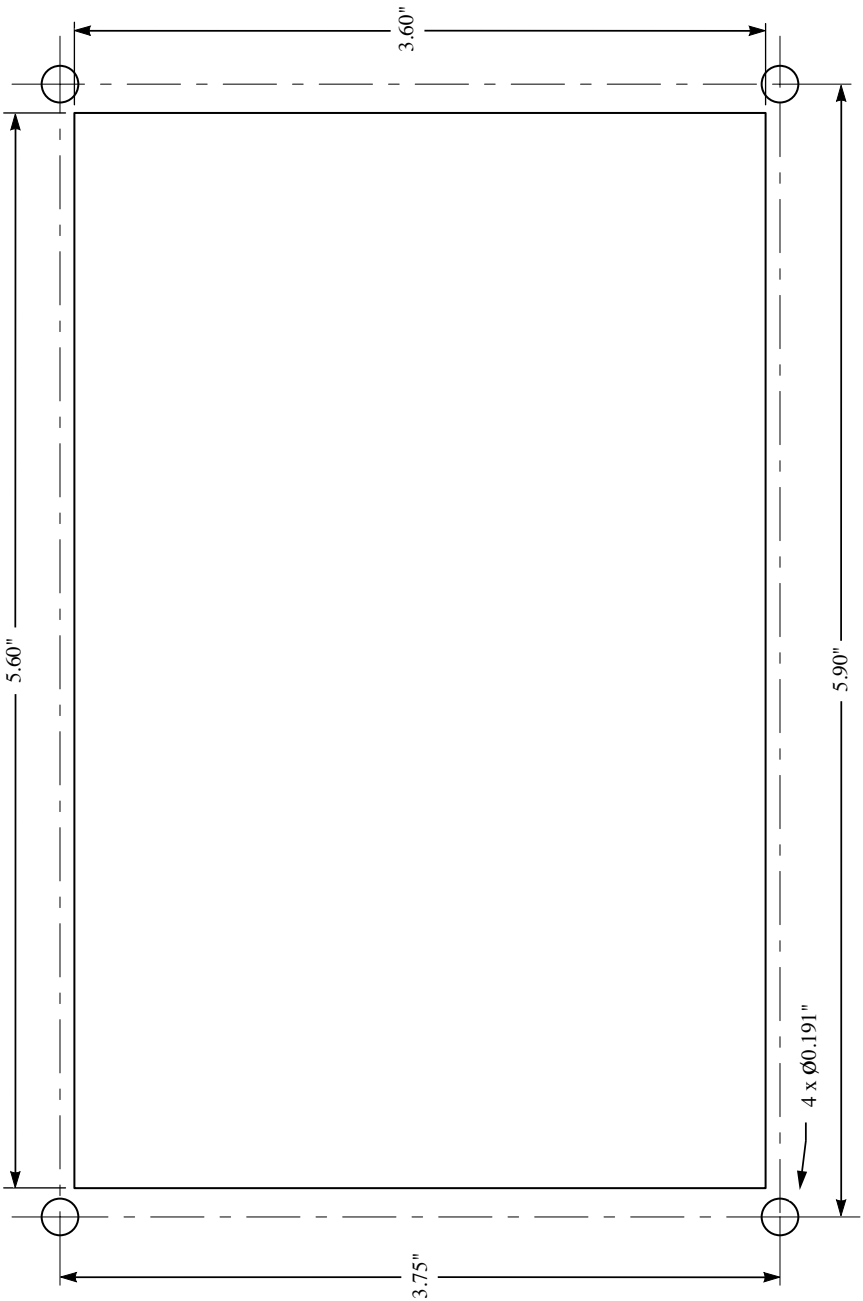
LOCAL SPEAKER/MICROPHONE
MODEL AD-SF-25



290A3826-06

6

PANEL MOUNT TEMPLATE



290A3828-07