

# **Atkinson Dynamics Wireless Intercom**

## **Model AD-27W**

### **Installation and Service Instructions**

Address all communications and shipments to:



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***ATKINSON DYNAMICS***

**A FEDERAL SIGNAL COMPANY**

2645 Federal Signal Drive

University Park, IL 60466-3195

(888)751-1500

## **INSTALLATION AND SERVICE INSTRUCTIONS FOR ATKINSON DYNAMICS WIRELESS HEAVY-DUTY INTERCOMS**

### **SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL**

It is important to follow all instructions shipped with this product. This device is 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. Marine installations shall be in accordance with Title 46, CFR, Parts 110-113.

The selection of the mounting location for the device is to be accomplished under the direction of the facilities engineer 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.
- 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 wireless intercom is a heavy-duty, 2-way, communications device designed for industrial applications. The nominal operating voltage is 120VAC, 50/60 Hz. A "whip" style 1/4-wave antenna is built into the bottom of each unit. The intercoms operate in the 902-928 MHz band and offer the user eight selectable channels. A 4-position switch, located on the printed circuit board inside the unit, allows the user to select the channel of operation. All units in a system must be set to the same channel of frequency to communicate with each other. Refer to section E for details on setting the channel of operation. The range of the intercom is 500 feet under optimum conditions. The range is dependent on the environment and decreases when obstacles are in the way. Line-of-sight between intercoms will provide the best range. Each unit is equipped with a squelch control knob located on the front cover. A shielded power cord is supplied with each unit. The AC power line is fused with a 1/2-amp, 250-volt type GMC fuse. A description of the available models follows.

Basic Model Specifications	
	Model AD-27W
Supply Voltage	120VAC, 50/60 Hz
Audio Power Output (Max.)	11.3 Watts
Power Consumption (Max.)	28.8 Watts
Operating Current (nominal)	0.240 A
Operating Temperature	+32°F to 150°F
Shipping Weight	10 lbs. 11 oz
Dimensions	See Figure 2.
Ratings	UL, cUL, Marine-Listed NEMA-Type 4X (excluding microphone models)

Table 1.

Additional Model Information	
Letter Group	Function/Feature
"A"	Call button

Table 2.

## CALL BUTTON:

"A" Models are equipped with a Call switch. Depressing the call switch transmits an 890Hz tone to all units in the intercom system.

## CAUTION

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.

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.

## B. UNPACKING.

After unpacking the Atkinson Dynamics 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.

## **C. MOUNTING.**

### **CAUTION**

The selection of the mounting location for the device is to be accomplished under the direction of the facilities and the safety engineer.

### **NOTE**

Intercoms supplied with flexible cords for connection to field wiring are not intended for permanent mounting.

The intercom is intended to be mounted on any relatively flat and rigid surface by the two mounting ears on the exterior of the housing. Figure 5 is a dimensional outline drawing showing the proper mounting configuration. The two mounting ears are 13/32" diameter holes spaced 5.68" apart. Hardware for mounting the intercom to the surface shall be provided by the installer.

### **NOTE**

The unit should be mounted right side up with the antenna pointed downward. Failure to do so may void FCC compliance.

### **WARNING**

This unit is heavy and should be mounted on a rigid surface capable of supporting the weight of the intercom.

### **WARNING**

For shipboard applications, installations shall be in accordance with the United States Coast Guard, Title 46 CRF, Parts 110-113.

## **D. ELECTRICAL CONNECTIONS.**

Plug each intercom into a nearby power source. Each unit is equipped with a shielded power cord with a NEMA 5-15P molded plug.

See figure 1 for a typical intercom configuration.

## **E. CHANNEL SELECTION.**

Each unit is factory set to channel 3 (909.37 MHz). To select another channel, it is necessary to reconfigure the 4-position switch located on the printed circuit board inside the unit. To select another channel, perform the following steps;

1. Disconnect power from the unit.
2. Remove and retain the six screws and lock washers from the front cover.
3. Carefully lift the front cover from the housing.
4. Locate the 4-position switch on the circuit board. Use a nylon probe tool to change position of switch. Refer to table 3 for switch settings and their corresponding

channel frequency. The setting of position 4 on the switch does not matter because it is not electrically connected. Positions 1 through 3 determine the channel frequency.

5. Carefully place cover on housing, making sure that no wires are pinched. Reinstall the hardware removed in step 2. Torque the six cover screws to 18-20 inch-lbs.

All intercoms in the system need to be set to the same channel to communicate with each other.

Channel	Frequency (MHz)	SW1-3	SW1-2	SW1-1
0	903.37	ON	ON	ON
1	906.37	ON	ON	OFF
2	907.87	ON	OFF	ON
3	909.37	ON	OFF	OFF
4	912.37	OFF	ON	ON
5	915.37	OFF	ON	OFF
6	919.87	OFF	OFF	ON
7	921.37	OFF	OFF	OFF

Table 3.

## F. SQUELCH ADJUSTMENT.

Each unit is equipped with a squelch control knob on the front cover. Adjusting this knob allows the user to set the threshold level. When the knob is adjusted fully clockwise, the threshold level is set at maximum. The received signal must be stronger than the threshold level, or the audio will be squelched. Turning the knob counter-clockwise lowers the threshold level.

## G. SERVICE.

### 1. General.

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

Any units returned to Atkinson Dynamics 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 (888)751-1500.

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:

**ATKINSON DYNAMICS**  
Service Department  
2645 Federal Signal Drive  
University Park, IL 60466-3195

## 2. *Replacement Parts.*

### **WARNING**

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

Description	Part Number
Cover plate gasket	K8590013B
Fuse, GMC-1/2	K148A155A
Knob, volume control	K141A129A
PC Board, 120VAC	K2005150A
Kit, potentiometer w/ on/off switch	K8590236A
Kit, push button switch	K8590241A
Rubber boot, push button switch	K288697A
Rubber boot, toggle switch	K288696A
Rubber boot, volume control	K288A542A
Voice Coil/Diaphragm Assembly-Series C	K8590181A
Kit, Squelch control, 1K potentiometer	K8590289A
Kit, Antenna assembly	K8590279A
Kit, Toggle switch	K8590298A

### **H. WARRANTY.**

Atkinson Dynamics guarantees their intercoms to be free of defects at the time of delivery. If damage is found to be a factory defect, Atkinson Dynamics will warrant all labor charges for repair for one full year, and all replacement parts for two full years.

### **NOTE**

- Changes or modifications to the device could void the user's authority to operate the equipment.
- During installation, route the power cord away from the antenna. Failure to do so could void the user's authority to operate the equipment.
- The unit should be mounted right side up with the antenna pointed downward. Failure to do so could void the user's authority to operate the equipment.

**1**

**Operating Principle:**

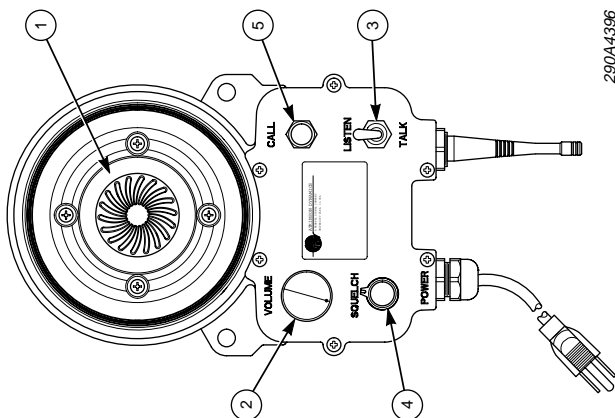
- When one talks, all intercoms will hear.
- To talk to other stations, press the talk/listen switch and speak into the speaker/microphone. Release talk switch to listen.

**NOTES:**

1. Speaker/Microphone
2. Off/On/Speaker Volume Control
3. Talk/Listen Switch
4. Squelch Control
5. "Call" Tone Switch

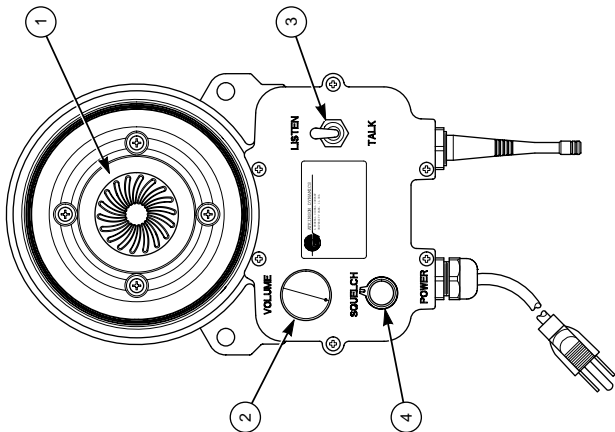
**Power**      **Remote A**      **Remote B**  
 120V 50/60Hz    AD-27W      AD-27AW

REMOTE B



29044396

REMOTE A



**Reminders:**

- Before installing remote intercoms, precautions should be taken to prevent feedback between two or more remotes in close proximity and acoustically reflective areas.
- 7 foot (2 meter) cable provided for power.

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