

# **Atkinson Dynamics Wireless Interface Model ADWI**

## **Installation and Service Instructions**

Address all communications and shipments to:



**INSTALLATION AND SERVICE INSTRUCTIONS FOR ATKINSON DYNAMICS  
WIRELESS INTERFACE UNIT  
MODEL ADWI**

**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 unit.
- 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 interface unit is a communications device designed for industrial applications that utilize a wired Atkinson Dynamics system and require communication with an Atkinson Dynamics wireless unit or system. The interface unit is housed in a NEMA Type 4X fiberglass enclosure with a hinged screw cover. The nominal operating voltage is 120VAC, 50/60 Hz. The AC power line is fused with a 1/2-amp, 250-volt type GMC fuse. Each unit is equipped with a 7-foot two-conductor audio cable for connection to any wired intercoms in the system.

An RF transmitter and receiver, and a “whip” style antenna are contained inside each interface unit. The transmitter and receiver operate in the same frequency band, 902-928MHz, as the Atkinson Dynamics wireless intercom. A four-position switch, located on the printed circuit board inside the unit, allows the user to select the same channel of operation as the wireless intercoms. The wireless interface unit must be set to the same frequency channel as the wireless intercoms to communicate with each other. Refer to section E for details on setting the channel.

Each unit is equipped with a squelch adjustment potentiometer, located inside the unit. The squelch adjustment allows the user to set the signal strength threshold level for the RF receiver in the interface unit. Refer to section F for more information on adjusting the squelch potentiometer.

Model Specifications	
Supply Voltage	120VAC, 50/60 Hz
Audio Power Output (Max.)	
Power Consumption (Max.)	
Operating Current (Nominal)	50 mA
Operating Temperature	
Shipping Weight	
Dimensions (H x W x D)	11.62 x 9.41 x 4.25
Ratings	UL, FCC (Part 15), NEMA-Type 4X

**Table 1**

## **B. UNPACKING.**

After unpacking the Atkinson Dynamics wireless interface unit, 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**

The interface unit is intended to be mounted on any relatively flat and rigid surface by the four mounting ears on the exterior of the housing. The four mounting ears are 0.31" diameter holes. Refer to Figure 3 for the proper mounting configuration. Hardware for mounting the interface unit to the surface shall be provided by the installer.

### **NOTE**

The unit should be mounted right side up so that the antenna (located inside the unit) is facing upward. Failure to do so may void FCC compliance.

### **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 the interface unit into a nearby power source. Each unit is equipped with a power cord that has a NEMA 5-15P molded plug. Connect the audio lines from the interface unit in parallel with the audio inputs from any wired intercoms in the system.

Audio wires should be sized properly by your licensed installation electrician for your specified application.

See figure 1 for a typical installation.

## 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. Open the front cover by removing the four screws and lock washers.
3. Locate the 4-position switch on the circuit board. Refer to Figure 2. Use a nylon probe tool to change the position of the 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.
4. Close the front cover on the enclosure and reinstall the hardware removed in step 2.

The interface unit and all other wireless 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 2**

## F. SQUELCH ADJUSTMENT.

Each unit is equipped with a squelch adjustment potentiometer that is located on the printed circuit board inside the unit. Adjusting the potentiometer allows the user to set the signal strength threshold level for the receiver in the interface unit. The incoming signal level must be higher than the signal strength threshold level for the receiver to acknowledge it; otherwise, the audio will be squelched. The squelch potentiometer should be adjusted, if necessary, after the interface unit is installed in the system. Test the sensitivity of the interface unit by transmitting from other wireless intercoms in the system. If the wired intercoms do not broadcast the audio signal, the threshold level may be set too high. To adjust the squelch potentiometer, perform the following steps:

1. Open the front cover by removing the four screws and lock washers.
2. Locate the potentiometer R1 labeled "SQUELCH ADJUST" on the P.C. board. Refer to Figure 2. The potentiometer is factory set at the midway point.
3. Turning the potentiometer counterclockwise lowers the threshold level. If the wireless intercoms are located far away from the interface unit, it may be necessary to adjust the squelch fully counterclockwise to receive an audio signal.

4. When the potentiometer is adjusted fully clockwise, the threshold level is set at maximum. The incoming signal level must be higher than the threshold level for the receiver to acknowledge it, or the audio will be squelched.
5. Test the squelch setting on the interface unit by transmitting from other wireless intercoms in the system. If the wired intercoms do not broadcast the audio signal, the signal strength threshold level is set too high. Adjust the squelch potentiometer counterclockwise until the wired intercoms broadcast audio.
6. Close the front cover on the enclosure and reinstall the hardware removed in step 2.

## **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
Fuse, GMC-1/2	K148A155A
PC Board, Wireless Interface	K2005211A
Kit, Antenna assembly	K8590279A

## **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**

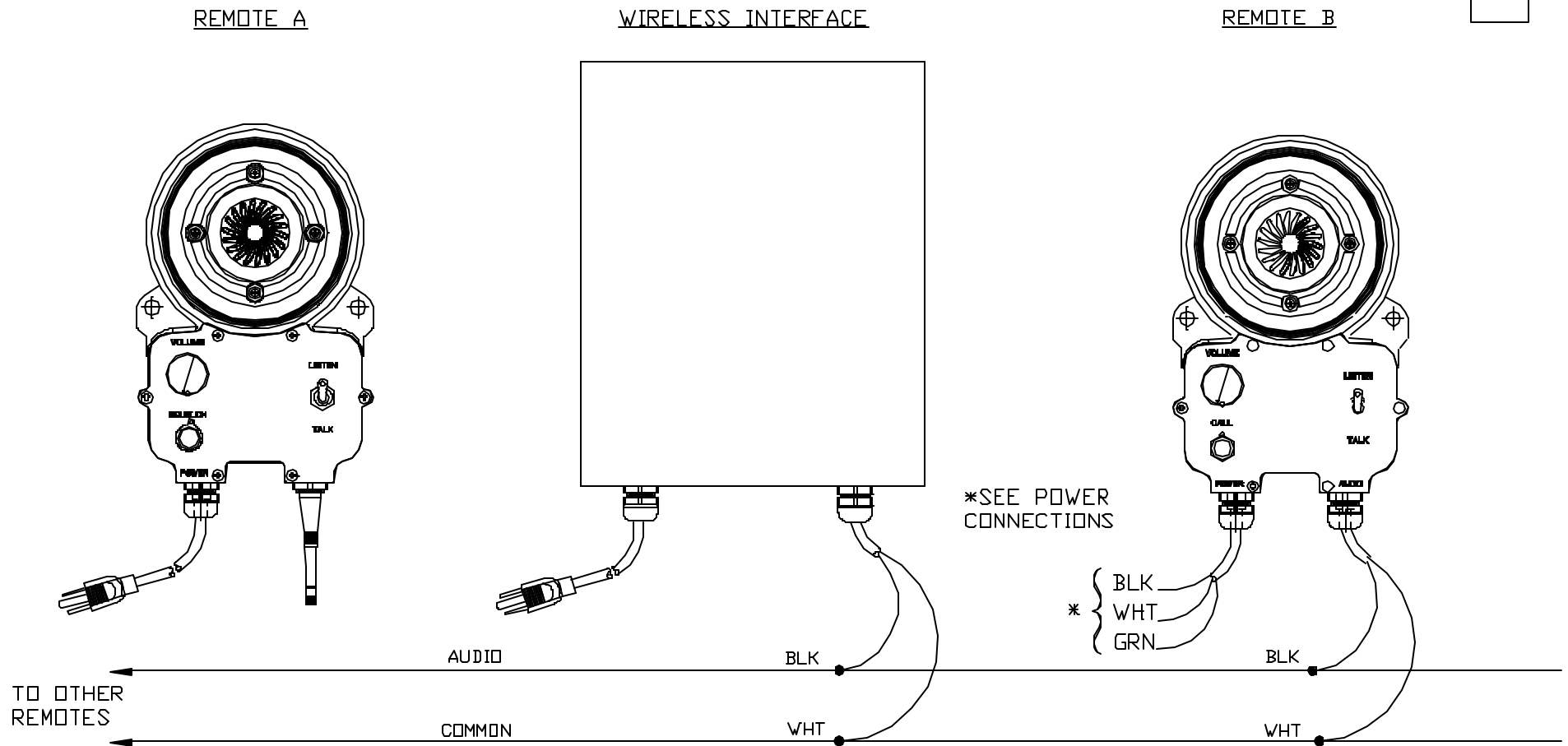
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- The unit should be mounted right side up so that the antenna (located inside the unit) is facing upward. Failure to do so could void the user's authority to operate the equipment.

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POWER	WIRELESS INTERFACE	REMOTE A	REMOTE B
12-18VDC	----	----	See Note 2
120V 50/60Hz	ADWI	See Note 1	See Note 2
22-30VDC	----	----	See Note 2
240V 50/60Hz	----	----	See Note 2

**POWER CONNECTIONS:**

BLK	+DC Power	12/24V Models
	HOT	120/240V Models
WHT	Common	12/24V Models
	Neutral	120/240V Models
GRN	Earth Ground	120/240V Models only

**Operating Principle:**

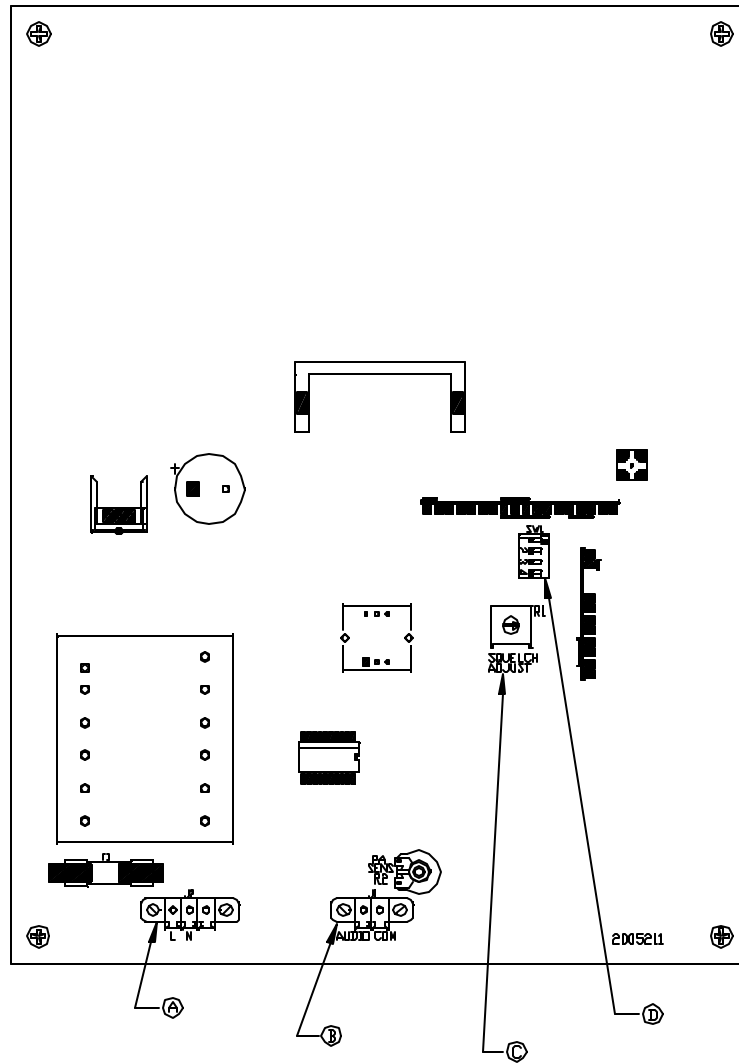
- When one talks, all remotes will hear.
- To talk to other stations, press the talk/listen switch and speak into the speaker/microphone on the remote intercom. Release talk switch to listen.

**NOTES:**

1. Remote A can be Atkinson Dynamics wireless intercom Model AD-27W or AD-27AW.
2. Remote B can be any Atkinson Dynamics wired intercom with the exception of "C", "D", "-6", "-8", "-M22", and "-M44" models.

**Reminders:**

- The interface unit and wireless intercom(s) must be within a 300-400' range to receive and transmit audio signals.



- A. Power Connector
- B. Audio Interface Connector
- C. Squelch Adjust Potentiometer
- D. Channel Select DIP Switch

