

**INSTALLATION AND SERVICE INSTRUCTIONS  
FOR  
MODEL EZ1 ECHO INTERCOMS**

Address all communications and shipments to:



**FEDERAL SIGNAL CORPORATION**  
Electrical Products Division  
Service Department  
2645 Federal Signal Drive  
University Park, IL 60466-3195



# **INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL EZ1 ECHO 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 Country Electric Codes and will follow the guidelines as well as local codes.

The selection of mounting location for the device, its controls and the routing of the wiring 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:

- Read and understand all instructions before installing or operating this equipment.
- Disconnect intercom from the power supply before any installation or maintenance is performed.
- Power is only to be provided from the Central Control. This intercom is not for stand-alone use.
- After installation, test the intercom system to ensure that it is operating properly.
- 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.
- The product nameplate, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured in any way.

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

### **I. INSTALLATION.**

#### *A. Unpacking.*

After unpacking the 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. 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.

#### *B. General.*

The equipment comprises of a polymeric enclosure containing a potted printed circuit board assembly providing the communications and safety functions. The design incorporates intrinsically safe barriers to the handsets and other ancillary devices. The relay output module is available as an optional extra. The relay operates

when the intercom is in ring mode. A single N.O. contact is provided, rated at 250 volts a.c. / 3 amps. This module is fully encapsulated and an internal fuse protects the contacts. In the event of a fuse failure, the module must be disconnected and replaced.

This station must be powered from an Echo Central Control. The data/power is supplied from the Central Control line cards. Please refer to the instructions provided with the Central Control for full operational details of the Echo system.

C. *Surface Mounting and Wiring.*

The EZ1 ECHO intercoms are designed for mounting on a flat horizontal or vertical surface.

1. Loosen the four M6 fixing screws to access the mounting holes. The cover opens right to left.

2. Mount the unit through the four corner M6 fixing holes located on the lower moulding. Mounting hardware is to be user supplied.

3. Remove the four M3 fixing screws and remove the encapsulation chamber cover to gain access to the field wiring terminal block.

4. The lower moulding is supplied with three M20 cable entries suitable for glands approved Exd or Exe for connection of the following cables:

- Data/Power (from Central Control)
- External Loudspeaker
- Relay Switched Output - N.O. contact

5. A twelve-pole screw terminal socket block is provided for field wiring. These terminals are rated for the following wire ranges: 22-12AWG (.5 - 4 mm<sup>2</sup>).

6. Terminate wires as follows:

Terminals 1 & 2 - Connect wire pair for switched N.O. relay contact (250VAC,3A max.)

Terminals 3 & 4 - Used for internal wiring of relay coil

Terminals 5 & 6 - Link for Handset Operation/ Remove link for hands free operation

Terminals 7 & 8 - Link for sensitivity/ Link increases gain on microphone

Terminals 9 &10 - Connect wire pair from external loudspeaker

Terminal 11 - Power/Data line 24V- from central control

Terminal 12 - Power/Data line 24V+ from central control

Earth Stud - M6 stud for termination of earth wires

7. Refit encapsulation chamber cover with M3 screws.

8. Refit cover ensuring that cables are correctly routed to avoid damage to conductors. Secure M6 screws to ensure weather-tightness.

## II. MAINTENANCE.

### SAFETY MESSAGE TO MAINTENANCE PERSONNEL

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

- Read and understand all instructions before operating this system.
- Any maintenance to the intercom system must be done with the power turned off. Power to relay contact must also be disconnected as this is externally supplied.
- Any maintenance to the intercom system must be performed by a trained electrician in accordance with Country Electrical Guidelines and local codes.
- Never alter the unit in any manner. Safety may be endangered if additional openings or other alterations are made to units.
- Only factory provided service parts are to be used. Only these components have been verified and certified for use in hazardous areas.
- The nameplate, which contains cautionary or other information of importance to maintenance personnel, should not be obscured.
- After performing any maintenance, test the intercom system to ensure that it is operating properly.

#### A. *Keypad Replacement.*

The keypad is to be replaced as an assembly consisting of the keypad and LED. See the list below for the replacement part number.

1. Loosen the four M6 fixing screws from the cover and open the unit right to left.
2. Disconnect the 10-way IDC connector from the keypad.
3. Remove the eight M4 screws from the clamping plate and remove both items.
4. Fit the new keypad assembly into position and ensure that the fascia is firmly seated to the sealing gasket in the moulded cover. Tighten the clamping plate with the eight M4 screws.
5. Re-connect the 10-way connector and re-install cover.
6. Test unit for proper operation after replacement is complete.

#### B. *Stubby Microphone Replacement.*

1. Loosen the four M6 fixing screws from the cover and open the unit right to left.

2. Disconnect the 2-way microphone socket block from the audio distribution board.
3. Remove the three M4 nuts that retain the microphone to the fascia.
4. Fit new microphone by reversing the above procedure. Ensure that the sealing gasket is fitted properly between the microphone base and the fascia.
5. Re-connect the 2-way socket block and re-install cover.
6. Test unit for proper operation after replacement is complete.

C. *Gooseneck Microphone Replacement.*

1. Loosen the four M6 fixing screws from the cover and open the unit right to left.
2. Disconnect and remove the 2-way microphone socket block from the audio distribution board.
3. Unscrew the gooseneck microphone assembly from the front cover and withdraw the cable.
4. Fit new microphone by reversing the above procedure. Ensure that the sealing washer is fitted properly between the microphone base and the enclosure.
5. Reinstall and connect the 2-way socket block and re-install cover.
6. Test unit for proper operation after replacement is complete.

D. *Handset Replacement.*

1. Loosen the four M6 fixing screws from the cover and open the unit right to left.
2. Disconnect and remove the 4-way handset socket block from the audio distribution board.
3. Unscrew the handset gland from the front cover and withdraw the cable.
4. Fit the new handset by reversing the above procedure. Ensure that the sealing washer is fitted properly between the handset gland and the enclosure.
5. Reinstall and connect the 4-way socket block and re-install cover.
6. Test unit for proper operation after replacement is complete.

E. *Potted PCB Assembly Replacement.*

1. Loosen the four M6 fixing screws from the cover and open the unit right to left.
2. Disconnect the 8-way input socket block from the audio distribution board.

3. Disconnect the 10-way IDC connector from the keypad. Remove the p-clip that retains the keypad wire harness.
4. Remove the four M3 fixing screws and remove the encapsulation chamber cover to gain access to the field wiring terminal block.
5. Disconnect and label all field wiring from the twelve-pole terminal. If small jumpers are fitted, remove and re-use these in the new assembly.
6. Remove locknut from M20 adapter inside the potted PCB enclosure.
7. Remove the six M4 fixing screws that retain the potted PCB assembly to the molded housing.
8. Remove the potted PCB assembly and replace with new part.
9. Install new part by reversing the above procedure. Be sure to observe polarity of power/data line when reconnecting field wiring.
10. Test unit for proper operation after replacement is complete.

**F. Replacement Parts.**

Description	Part No.
Headset	K137149A-01
Stubby Microphone	K137164A
Gooseneck Microphone, 150mm	K137165A
Gooseneck Microphone, 330mm	K137165A-01
Potted Relay Assembly	K8601241A
Potted PCB Assembly	K8601274A
Handset, 1m stainless steel cord	K8601248A
Handset, 3m stainless steel cord	K8601248A-01
Handset, 1.8m curly cord	K8601249A
Handset, 10m curly cord	K8601249A-01
Keypad Assy.	K8601267A
Keypad Assy., Microphone	K8601267A-01


**III. CERTIFICATION.**

Certified to EN55022: 1998 +A1: 2000, EN555024: 1998, EN61000-3-2: 2000, EN61000-3-3: 1995, and EN60950: 2000

EEx meib IIC T6 (Tamb -35°C to +50°C)

The ATEX certificate (BAS 01 ATEX 2306X) and the product label carry the ATEX group and category marking:



- Where: - **CE** indicates compliance with directive 94/9/EC  
 hexagon symbol, the specific marking of explosion protection  
 II indicates suitability for use in surface industries  
 2 indicates suitability for use in a Zone 1 area  
 G indicates suitability for use in the presence of gases

Special conditions for safe use are as follows:

1. All terminals, used and unused shall be fully tightened down.
2. The power supplied to this unit from the central control module must not exceed 28 V d.c., 100mA.

#### **IV. SERVICE.**

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

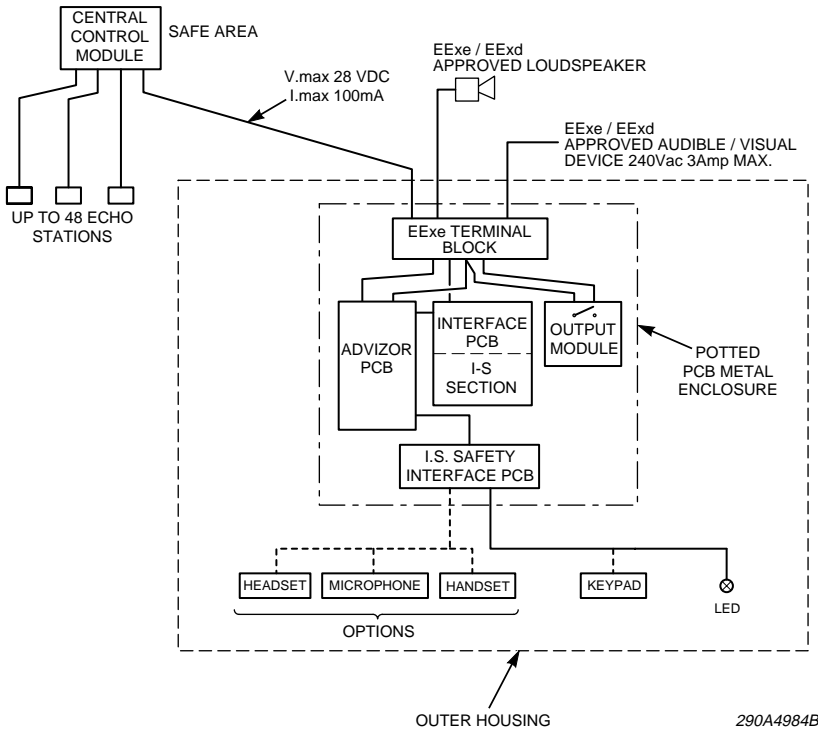
Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from a local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested, or the nature of the malfunction, should be provided.

Address all communications and shipments to:

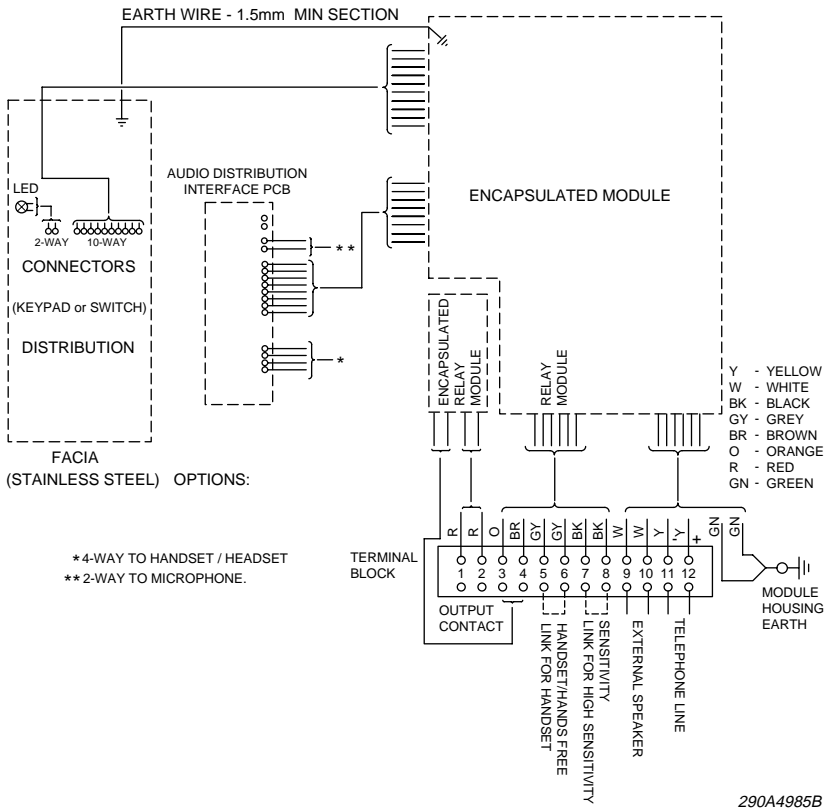
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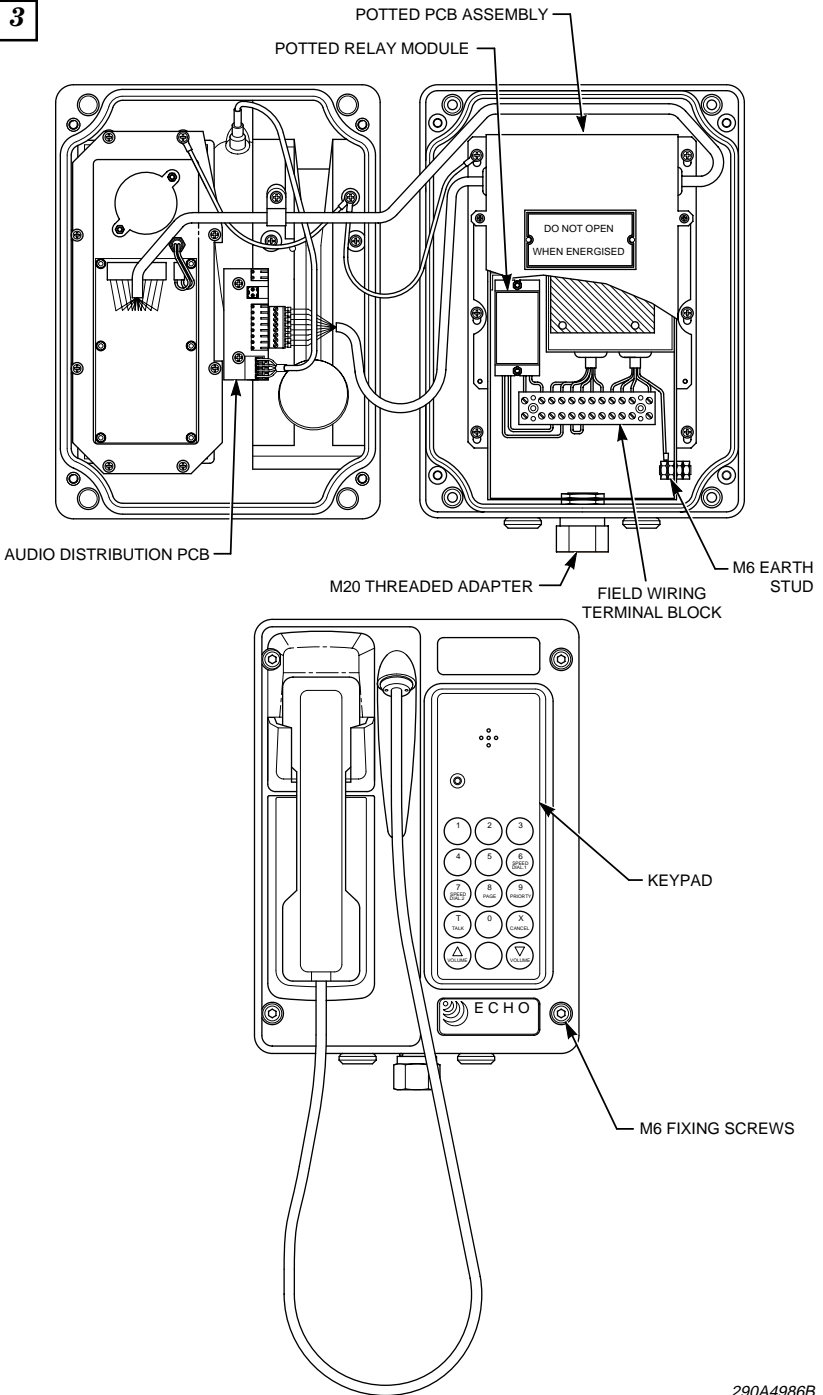
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