



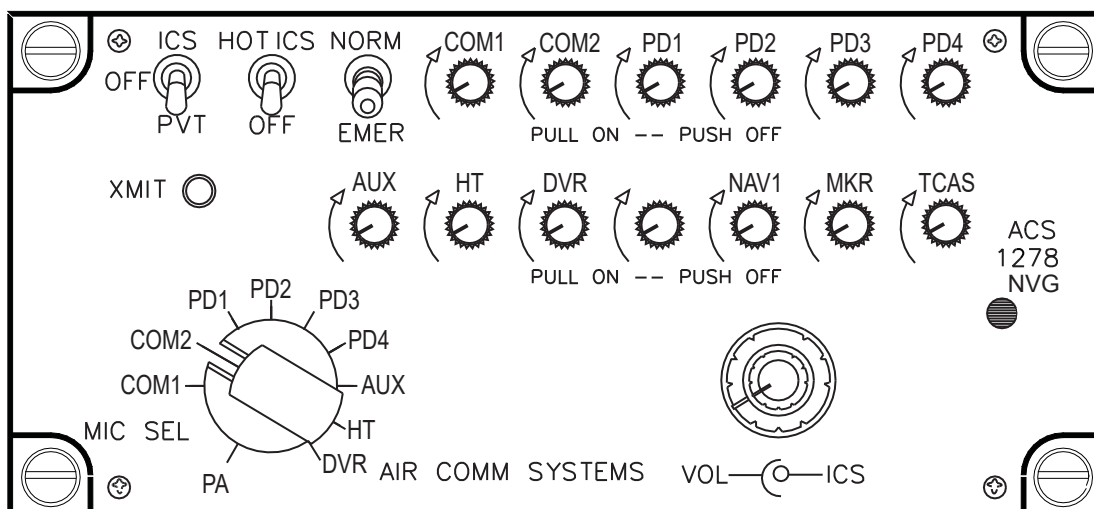
**AIR COMM SYSTEMS, INC.**

**AIRBORNE-AUDIO**

# Single Audio Mixer Panel Operations and Installation Manual

ACS 1278-200

Revision 2



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# **ACS 1278 Operations and Installation Manual**

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# **ACS 1278 Operations and Installation Manual**

## **Physical and Operating Specifications**

### ■ **Physical Specifications**

SIZE: 5.75 in. (14.61cm) W  
2.62 in. ( 6.67 cm) H  
6.78 in.(17.22 cm) D

WEIGHT: 2.20 lb. (.99 kg)

MOUNTING: Dzus rail mount (4)

CONTROLS: Panel mounted - transmit = rotary switch, audio inputs = toggle switch,  
ICS and headphone volume control = dual potentiometer

ILLUMINATION: Edge lit front panel per MIL-P-7738E, type 5. Capable of connection to  
dimmer bus for adjustment. Green NVG transmit light indicates when unit  
is in transmit mode.

### ■ **Operating Specifications**

INPUTS: 13 selectable receive audio inputs and up to 11 transmit selections.

DUTY CYCLE: Continuous

POWER REQUIREMENTS: 28V DC +/- 10%

MAXIMUM OPERATING ALTITUDE: 22,000 ft.

OPERATING TEMPERATURE RANGE: -40 C to +85 C (operating)

-65 C to +125 C (storage)

CURRENT DRAIN: 70 mA at 28V (standby) - 500mA at 28V (max. signal)

AUDIO OUTPUT: Minimum 250 mW into 600 ohms

FREQUENCY RESPONSE: Within 6 db - 300-3000Hz

ICS INPUT IMPEDANCE: 600 ohms

RECEIVER INPUT IMPEDANCE: 600 ohms - matched to receiver INPUT

ISOLATION: Not less than 50 db between inputs

AUDIO MUTING: Not less than 40 db during transmit/ICS (optional)

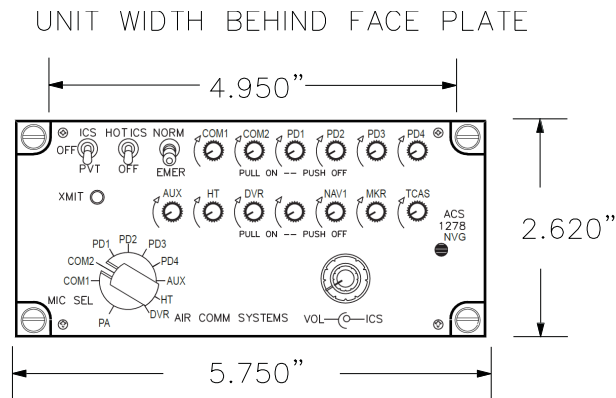
MIC SENSITIVITY: 300 mV for rated output

DISTORTION: Less than 10% at 1000 Hz for maximum output

# ACS 1278 Operations and Installation Manual

## Physical Dimensions

### ■ Physical Dimension Outline for Mounting



FRONT PANEL WIDTH – STANDARD DZUS MOUNT



ALLOW UP TO 2.500" FOR REAR  
CONNECTOR AND CABLE CLEARANCE

### Physical Installation

The ACS 1278-200 is designed to be Dzus mounted and should be installed in the aircraft using the Installation kit that is included. The above outline drawing of the unit with dimensions will facilitate the installation. The Installation Kit consists of the following:

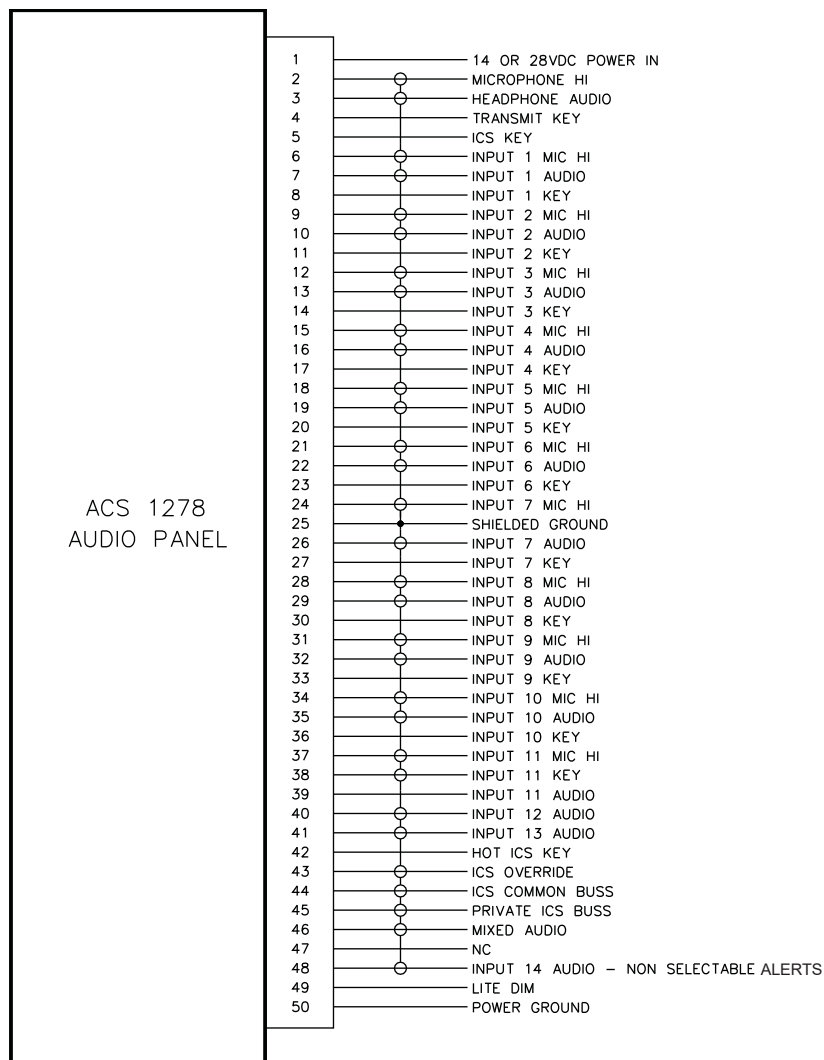
One (1) 50 pin AMP D-Subminiature female mating connector complete with crimp pins, hood, and slidelock.

The connector pin configuration of the ACS 1278-200 rear connector and the recommended wire size for the aircraft cable harness is shown on the following page. Be sure that adequate clearance is allowed for the appliance.

# ACS 1278 Operations and Installation Manual

## Interface Schematic

### ■ Connector Pin-out



NOTE: Inputs are read from left to right on the Audio Panel plastic overlay, starting on the top row.

The ACS 1278-200 wiring harness should be constructed of Tefzel aircraft wire (M22759/34 grade). Power and ground wires should be 18 or 20 AWG, and all other wires may be 22 AWG. Shielded wires should be used where noted. Adequate protection against wear and chafing should be taken by using a braided cable sleeving or jacket. Before completing installation, verify that all cable connector pins are seated properly and that the connector is securely mounted to the unit mating connector.

Pre-fabricated cable harnesses are available from Air Comm to expedite installation - consult our sales department for details.

# **ACS 1278 Operations and Installation Manual**

## **Front Panel Controls**

*( See Figure 1 — Page 8 for pictorial )*

### ■ **Description**

The ACS 1278 Single Audio Mixer Panel is a compact, lightweight unit which provides full audio control and ICS support for one position in the aircraft (Pilot, Co-pilot, observer or crew). It has the capability to provide the user with up to 13 receive audio selections, up to 11 transmitter selections, Normal and HOT (Hands Free) ICS, a Private ICS buss, Emergency mode operation, and full headphone audio and ICS volume control.

### ■ **1 - Normal - Emergency Operation Switch (NORM-EMER)**

This switch controls the operation of the audio panel in the event of an audio amplifier failure. In the "up" position (NORM) the audio panel is in normal operating mode. In the "down" position (EMER) all audios are summed and then fed directly to the headphones. This enables the use of the transmitters and other equipment during audio amplifier failure.

### ■ **2 - Audio Select-Mute Switches**

Normal operation - In the "out" position the audio selected is channeled to its proper headphone. In the "in" position the audio selected is muted.

Emergency operation - In the "out" position the audio selected is muted. In the "in" position the audio selected is summed with any other audios selected and sent to the headphones.

### ■ **3 - Volume Controls (VOL-ICS)**

These concentric knobs adjust headphone volume and ICS volume. The larger knob (rear) adjusts the for the proper headphone audio level while the small knob adjusts the ICS headphone volume. Adjust the ICS volume for adequate level with minimum background noise. Clockwise rotation on both knobs increases the volume - counter clockwise rotation decreases the volume. In the event of excessive or inadequate receiver volume the pots located on the side of the unit may be adjusted for the proper level. (See Figure 2 on Page 8)

### ■ **4 - Panel Lighting**

The audio panel is internally lit by a 28V circuit board with 12 miniature peanut NVG lamps to provide lighting for all panel legends.

# **ACS 1278 Operations and Installation Manual**

## **Front Panel Controls**

*( See Figure 1 — Page 8 for pictorial )*

### ■ **5 - Mic Selector (MIC SEL)**

This rotary switch performs three functions simultaneously. It (a) connects the mic to the selected transmitter (b) selects the associated keyline, and (c) selects the associated audio (if not already selected using the audio select - mute switch).

### ■ **6 - Transmit Indicator (XMIT)**

When the transmit key is activated this light turns on to indicate that the audio panel is in the transmit mode.

### ■ **7 - ICS / Private Switch (ICS-PVT)**

This switch selects the ICS mode. In the "up" position ( ICS ) the audio panel is connected to the common ICS buss. This enables the audio panel to communicate with any other audio panels also connected to the common ICS buss. In the "center" position (OFF) the audio panel is disconnected from all other audio panels. In the "down" position (PVT) the audio panel is connected only to the panels using the private ICS buss.

### ■ **8 - HOT ICS Switch (HOT)**

This switch provides for "hands-off" operation while in the ICS mode. In the "up" position (HOT ICS) the headphone mic becomes active and its signal is fed into the ICS buss ( PVT or common ) without having to depress the ICS key. In the "down" position (OFF) normal ICS operation is in effect.

### ■ **9- Photo Sensor**

This sensor automatically brightens or dims the transmit light depending on the ambient light level.

## ■ **NOTES**

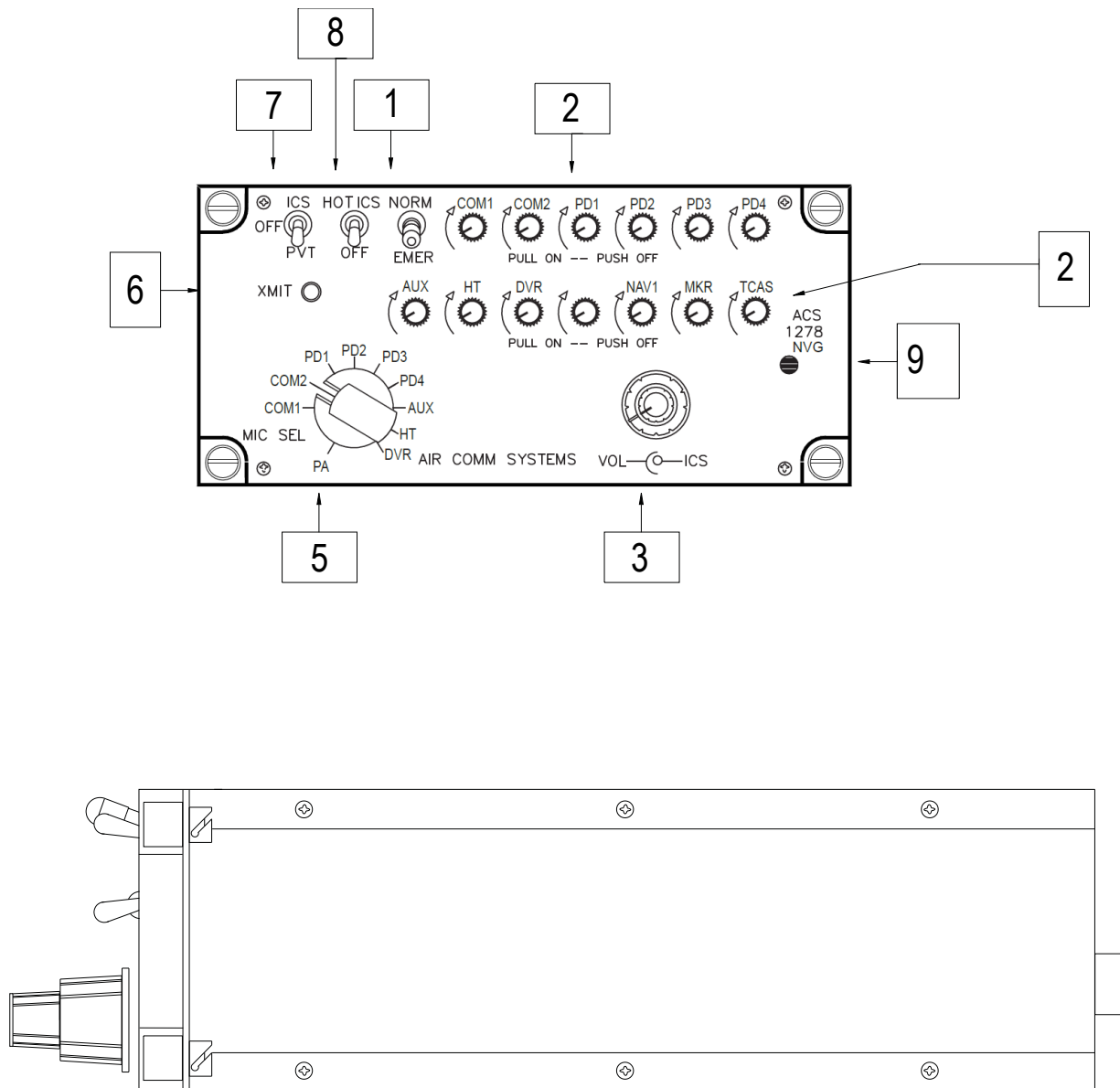
**Optional muting is available with an internal jumper:**

- 1) Audio Muting Disabled - When the audio panel is in the ICS, Transmit, or HOT ICS modes, any audios selected by their toggle switch will not be muted.
- 2) Audio Muting Enabled - When the audio panel is in the ICS or Transmit mode, any selected by their toggle switch will be muted. In HOT ICS mode there is no muting.

# ACS 1278 Operations and Installation Manual

## Front and Side Panel Controls

■ Figure 1 - Front and Side Panel Controls





# **ACS 1278 Operations and Installation Manual**

## **Instruction for Continued Airworthiness**

Instruction for continued airworthiness for Audio Mixer Panel Model ACS-1278 Series, Part Number 1000-000.

### **GENERAL DESCRIPTION:**

The Audio Mixer Panel consists of a Dzus mounting located in the cockpit or cabin area which provides access to multiple radios for transmitting and receiving. It also provides intercom, both keyed and VOX between other audio mixer panels or slave units located elsewhere in the aircraft.

### **PURPOSE:**

To provide instructions for the maintenance and inspection of the Air Comm Systems, Inc. Model ACS-1278 Series Audio Mixer Panels.

This Manual provides instructions supplementing the aircraft maintenance manual. These instructions only supersede the aircraft manual in the indicated areas.

### **OPERATIONAL CHECK:**

The Audio Mixer Panel should be checked prior to first flight each day per current operations manual.

### **MAINTENANCE:**

Check security and condition of Dzus mounted panel(s), check associated wiring harness at periodic inspections such as annual/100 hour IAW FAR43 Appendix D(i).

### **On Condition.**

Send Audio Mixer Panel(s) to qualified repair facility for any repairs. Contact Air Comm Systems, Inc. Phone 909-0824-8860 or FAX 909-824-8862 for nearest factory authorized repair facility.

## **ACS 1278 Operations and Installation Manual Warranty Information**

### ■ **Warranty Information**

Air Comm Systems, Inc. warrants each new product to be free from defective material and workmanship and agrees to remedy any defect or to furnish a new part in exchange for any defective unit provided an examination discloses such defect occurred under normal use and service, and provided the defective unit is delivered to us, with transportation charges prepaid, within 1 year from the date of acceptance of equipment by the owner. Each unit required and claimed defective must be returned to:

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This warranty does not extend to any products which have been subjected to misuse, neglect, accident, or in violation of instructions furnished, nor does it extend to units which have been repaired or altered outside of our factory except where such repairs are specifically authorized in writing by us.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.