AIR COMM SYSTEMS, INC.
AIRBORNE- AUDIO

Three (3) Passenger ICS Expansion Unit
Installation and Operations Manual

ACS 700-3   Revision 2.3

Air Comm Systems, Inc
37610 Sky Canyon Dr., Hangar 51
Murrieta, CA 92563
Ph: 951-677-0101 ~ Fx: 951-677-0701
Info@AirCommSystems.com ~ www.AirCommSystems.com

ACS 700-3 Installation and Operations Manual
Table of Contents

■ Physical Specifications

SIZE: 5.75 in.(14.61 cm) W   *WEIGHT:* .75 lb.. (0.38 kg)
1.87 in.(4.75 cm) H
2.87 in.(7.29 cm) D w/ connector   *ILLUMINATION*: n/a

MOUNTING: Dzus rail mount or remote mounting using 4 hole configuration.

CONTROLS: Unit slaves off of an existing audio mixer panel, typically a co-pilot or crew member.

■ Operating Specifications

INPUTS: 2 audio inputs. 1 for mixed audio and 1 for the ICS buss. Mixed audio is muted during transmit and normal ICS. Mixed audio is unmuted during hot ICS operation.

DUTY CYCLE: Continuous   *POWER REQUIREMENTS:* 28V DC +/- 10%

MAXIMUM OPERATING ALTITUDE: 16,500 ft.(5029 m)

OPERATING TEMP. RANGE: -40 C to +85 C (operating), -65 C to +125 C (storage)

CURRENT DRAIN: 10 mA at 28V (standby),   400 mA at 28V (max. signal)

AUDIO OUTPUT: 500 mW into 600 ohms

FREQUENCY RESPONSE: Within 6 db - 300-3000Hz

ICS INPUT IMPEDANCE: 600 ohms

INPUT ISOLATION: Not less than 60 db between mixed audio and ICS buss.

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

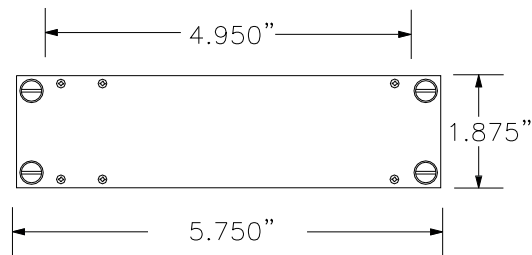*MIC SENSITIVITY:* 300 mV for rated output

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

■ Physical Dimension Outline

UNIT WIDTH BEHIND FACE PLATE

4.950"

1.875"

5.750"

FRONT PANEL WIDTH — STANDARD DZUS MOUNT

2.875"
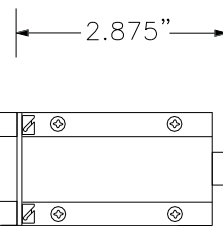
ALLOW UP TO 2.500" FOR REAR
CONNECTOR AND CABLE CLEARANCE

Physical Installation

The ACS 700-3 is designed to be Dzus or remote mounted and should be installed in the aircraft using the DC25SL-F Installation kit that was included with the unit. The above outline drawing of the unit with dimensions will facilitate the installation.

The connector pin configuration of the ACS 700-3 rear connector and the recommended wire size for the aircraft cable harness is shown on the following page.

■ **Connector Schematic**

```
┌─────────────────────────┐
│                         │
│                      1  ──────────── NC
│                      2  ─────○────── MIXED AUDIO
│                      3  ──────────── NC
│                      4  ─────○────── RIGHT PASSENGER MIC HI
│                      5  ──────────── RIGHT PASSENGER ICS KEY
│                      6  ─────○────── RIGHT PASSENGER HEADPHONE AUDIO
│                      7  ──────────── 14 OR 28VDC POWER
│                      8  ──────────── NC
│                      9  ──────────── NC
│                      10 ──────────── NC
│                      11 ─────○────── ICS BUSS
│  ACS 700-3           12 ─────○────── LEFT PASSENGER MIC HI
│  ICS UNIT            13 ──────────── POWER GROUND
│                      14 ──────────── LEFT PASSENGER ICS KEY
│                      15 ─────○────── LEFT PASSENGER HEADPHONE AUDIO
│                      16 ──────────── NC
│                      17 ──────────── NC
│                      18 ──────────── NC
│                      19 ─────○────── CENTER PASSENGER MIC HI
│                      20 ──────────── CENTER PASSENGER ICS KEY
│                      21 ─────○────── CENTER PASSENGER HEADPHONE AUDIO
│                      22 ──────────── NC
│                      23 ──────────── NC
│                      24 ──────────── NC
│                      25 ──────────── NC
│                         │
└─────────────────────────┘
```
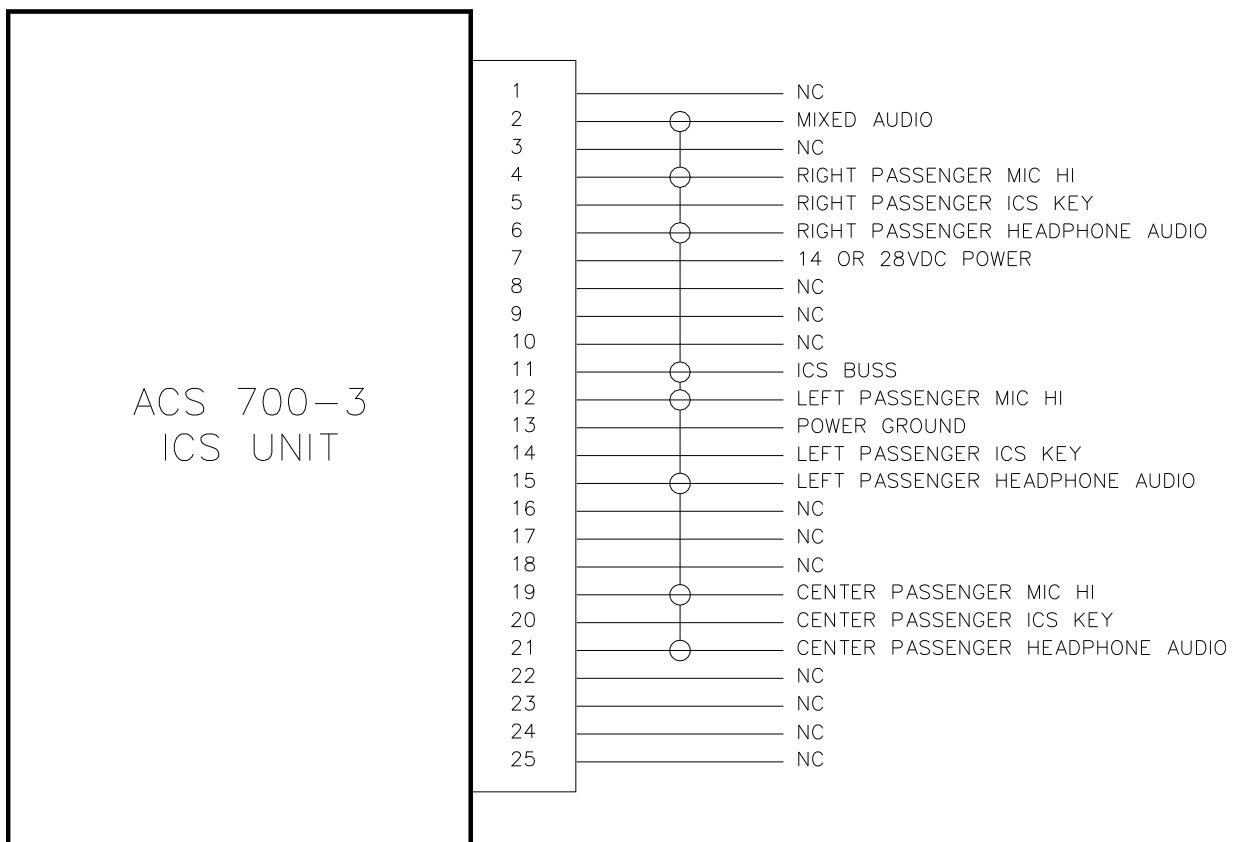
The ACS 700-3 wiring harness should be constructed of Tefzel aircraft wire (M22759/16 grade). Power and ground wires should be 18 or 20 AWG, and all other wires may be 22 AWG. Shielded wires should be used where noted. Adequate protection against wear and chafing should be taken by using a braided cable 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.

■ **Description**

The ACS 700-3 is a compact, remote slave unit which provides intercom and receive capability for up to three aircraft passengers.

■ **Method of Operation**

The ACS 700-3 is slaved to a master Audio Mixer Panel for receive audio and ICS. The master Audio Mixer Panel is normally a co-pilot or rear-crew member unit. The audio inputs selected by the master panel will be heard by the ACS 700-3.

The ACS 700-3's intercom function is activated using a switch cord assembly (such as the Carter Engineering or Comm Innovations models). The switch cord assembly also provides a volume control for the adjustment of both the intercom and receive audio. This allows for the independent control of volumes between the passengers and the Audio Mixer they are slaved to.

When the ICS switch on the switch cord is activated, passenger audio is heard by all the other positions. During intercom operation, the receive audio is muted on the ACS 700-3.
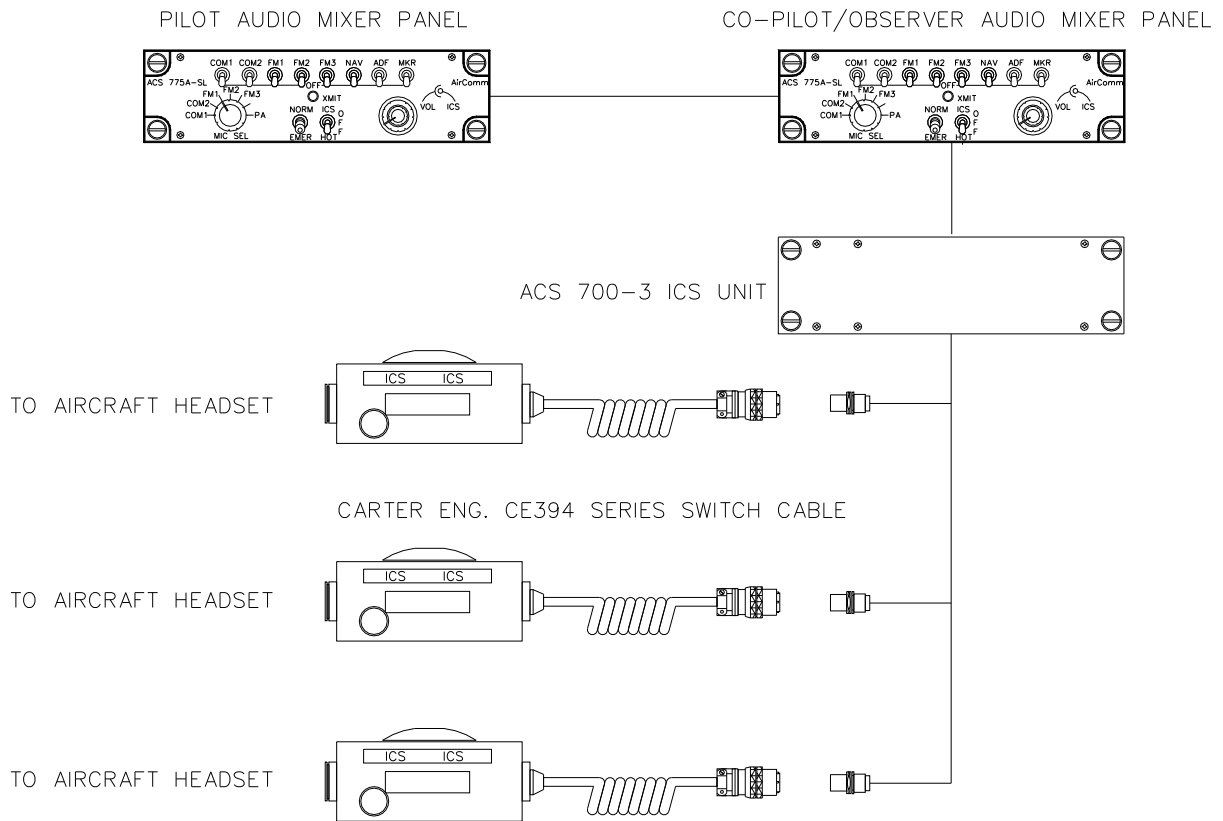
■ **Adjustments**

The volume control on the switch cord assembly adjusts the intercom and the receive audio. It should be set at a comfortable level on intercom first. Then, if the receive audio volume is too high or low, it can be adjusted at the radio itself (i.e. Com, FM, Nav, etc.)

■ **Unit Compatibility**

The ACS 700-3 is compatible with all Air Comm Audio Mixer Panels.

ACS 700-3 Installation and Operations Manual
Typical System Layout

PILOT AUDIO MIXER PANEL

CO-PILOT/OBSERVER AUDIO MIXER PANEL

ACS 700-3 ICS UNIT

TO AIRCRAFT HEADSET

CARTER ENG. CE394 SERIES SWITCH CABLE

TO AIRCRAFT HEADSET

TO AIRCRAFT HEADSET

Instruction for continued airworthiness for Intercom Expansion Unit Model ACS-700-3

■ GENERAL DESCRIPTION:

The ACS 700-3 Expansion Unit is a remote Dzus mounted unit which is slaved to a variety of audio mixer panels to provide intercom and transmit capability to cabin passengers.

■ PURPOSE:

To provide instructions for the maintenance and inspection of the Air Comm Systems, Inc. Model ACS-700-3 Intercom Expansion Unit.

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

■ OPERATIONAL CHECK:

The ACS 700-3 Intercom Expansion Unit 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 hareness at periodic inspections such as annual/100 hour IAW FAR43 Appendix D(i).

■ On Condition.

Send ACS 700-3 Intercom Expansion Units to qualified repair facility for any repairs. Contact Air Comm Systems, Inc. Phone 951-677-0101 or FAX 951-677-0701 for nearest factory authorized repair facility.

LIMITED WARRANTY

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:

Air Comm Systems

37610 Sky Canyon Dr., Hangar 51

Murrieta, CA 92563

Ph: 951-677-0101

Fx: 951-677-0701

E-Mail: info@AirCommSystems.com

Attn: Service Dept.

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.