ES-4000A

Intercom Expansion Station

The ES-4000A is an Expansion Station for the US-2002 User Station. It interfaces four additional intercom channels to the US-2002, and it provides talk, listen and call buttons for the four additional channels. There are also four additional program inputs on the back of the ES-4000A, one for each added channel. Up to four ES-4000A Expansion Stations may be connected to the US-2002 to add up to 16 channels (18 channels total). The ES-4000A typically utilizes the US-2002 microphone and speaker (or microphone headset) for communication with the added channels. The ES-4000A also has individual speaker outputs for independent monitoring of one or more of the 4 channels if desired.

Features

Simplified Expansion
The EMS-4001 integrates four powered channels with talk, listen, and call controls in a single rackmount unit. Saves on rackmount hardware and eliminates power supply to expansion station interconnect cables.

Compatibility and Flexibility
Connects directly to an MS-2002 or US-2002 Master Station to add four complete powered channels. Or connects to a previous EMS-4001 or ES-4000A Expansion Station to add another four powered channels (up to 18 channels total).

Overload/Short-Circuit Protection
Provides automatic current limiting during short circuits or overloads. Front panel fault indicator provided for each channel.

Mic Kill
Turn off all microphones on a selected expansion channel, or all channels, using the master station's Mic Kill key.
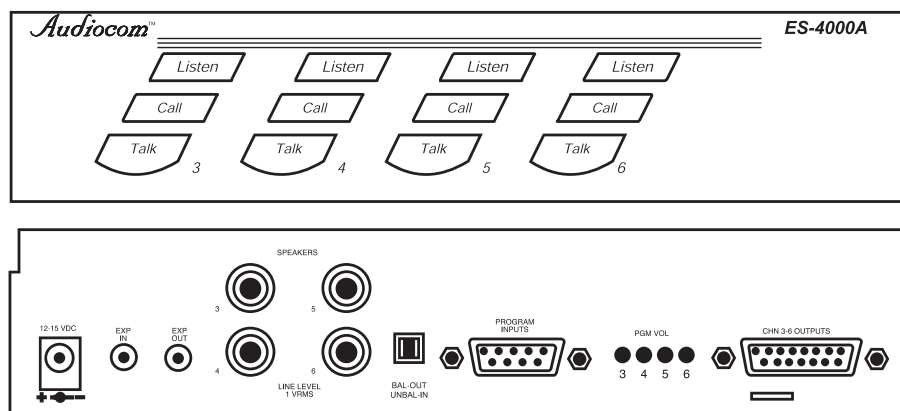
Dedicated Program Inputs
Each expansion channel has its own program input. Connect any line-level audio source for monitoring in the master station's speaker or headset and for routing to the expansion channel if desired. When program audio is routed to the channel it can be set to interrupt while the master station operator is talking on the channel.

Binural (Stereo) Inputs
If the master station is equipped with external powered speakers you can assign the EMS-4001 channels to either right or left speaker.

Clear-Com™ Compatible

Line Drawing

ES-4000A Specifications

General
Power Requirements:
  Voltage:
    Phantom Power: 24 VDC nominal (12 to 30 VDC)
    Local Power (with PS-L Wall-pack Power Supply or equivalent): 14 to 15 VDC
  Current: 65 mA, quiescent; 150 mA maximum
Dimensions: 1.75" (44.5 mm) high, 8.25" (209.6 mm) wide, 10.0" (250 mm) deep
Environmental Requirements:
  Storage: -20°C to 80°c; 0% to 95% humidity, non-condensing
  Operating: -15°c to 60°C; 0% to 95% humidity, non-condensing

Intercom Channels, Balanced Mode (BAL / UNBAL switch set to BAL position)
Output Level: 1 Vrms nominal
Input Impedance: 300 Ω
Bridging Impedance: greater than 10,000 ohms
Sidetone: -40 dB, 35 dB adjustable range
Call Signaling:
  Send: 20 kHz ±100 Hz, 0.47 Vrms ± 2dB
  Receive: 20 kHz ±800 Hz, 100 mVrms
Mic-Kill Frequency:
  Send: 24 kHz ±100 Hz, 0.5 Vrms ± 2dB
  Receive: 24 kHz ±800 Hz, 100 mVrms
Noise Contribution: less than -70 dB
Common Mode Rejection Ratio: greater than 50 dB

Intercom Channel, Unbalanced Mode (BAL / UNBAL switch set to UNBAL position)
Output Level: 1 Vrms ±10%
Input Impedance: 150 Ω
Bridging Impedance: 10,000 Ω ±5%
Sidetone: -40 dB, 35 dB ±10% adjustable range
Call Signaling:
  Send: 11 ±2 VDC
  Receive: 4 VDC

Speaker Output
Level: 1.0 Vrms, ±2 dB (0 dB nominal)
Impedance: 1000 ohms nominal

Program Input
Voltage Gain Adjustment Range (program Input to channel output, with 100 mVrms input): 25 ±3 dB (2.6 Vrms maximum, unit is factory-set to 1.0 Vrms)
Input Impedance: Balanced, 75 Kohm ±10%; unbalanced,
38 Kohm ±10%

Frequency Response
EXP IN to/from Channel, EXP IN to/from EXP OUT,

Channel to Speaker: 200 Hz to 8 kHz +1/-3 dB
Total Harmonic Distortion: Less than 0.5 %

Connector Pin-outs

12-15 VDC Jack
Connector Type: 2.0 mm DC jack
  Internal pin: +12 to 15 VDC
  External Ring: Common

EXP IN Jack
Connector Type: ⅛" (2.0 m) stereo phone jack
  Tip: Listen input
  Ring: Talk output
  Sleeve: Common

EXP OUT Jack
Connector Type: ⅛" (2.0 m) stereo phone jack
Tip: Talk output
Ring: Listen input
Sleeve: Common
SPEAKER Jacks
Connector Type: RCA Phono jack
Tip: Speaker output high
Sleeve: Common

PROGRAM INPUTS Connector
Connector Type: DB-9F Female, 9-pin D-subminiature
  Pin 1: Common
  Pin 2: Channel 3 program in low
  Pin 3: Channel 4 program in low
  Pin 4: Channel 5 program in low
  Pin 5: Channel 6 program in low
  Pin 6: Channel 3 program in high
  Pin 7: Channel 4 program in high
  Pin 8: Channel 5 program in high
  Pin 9: Channel 6 program in high

CHANNEL 3-6 OUTPUTS Connector
Connector Type: DB-15F Female, 15-pin D-subminiature
  Pin 1: Channel 3 intercom audio input/output high
  Pin 2: Channel 3 intercom audio input/output low
  Pin 3: Common
  Pin 4: Channel 5 intercom audio input/output high
  Pin 5: Channel 5 intercom audio input/output low
  Pin 6: Common
  Pin 7: Common
  Pin 8: Common
  Pin 9: Common
  Pin 10: Channel 4 intercom audio input/output high
  Pin 11: Channel 4 intercom audio input/output low
  Pin 12: Common
  Pin 13: Channel 6 intercom audio input/output high
  Pin 14: Channel 6 intercom audio input/output low
  Pin 15: Power (30 VDC)

Ordering Information

ES-4000A
4 channel expansion station with 2.0 amp power supply with instantaneous auto reset in a single unit.
Catalog Number: 90007551000