



## EMS-4001

### Expansion Master Station

The EMS-4001 adds four powered intercom channels to an MS-2002 or MS-4002 Master Station, and it provides talk, listen and call buttons for the added channels. Up to four EMS-4001 Expansion Master Stations may be connected to the MS-2002 or MS-4002 to can add up to 16 channels (20 channels total). The MS-2002 or MS-4002 microphone is used to talk back to the EMS-4001 channels, and the MS-4002 speaker is typically used for listening. However, there are also separate speaker jacks on the back panel of the EMS-4001 for independent monitor speakers, if desired. There are also 4 additional program inputs on the back of the EMS-4001, one for each added channel.

## Features

### Simplified Expansion

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

### Compatibility and Flexibility

Connects directly to an MS-2002, MS-4002 or US-2002 Master Station to add 4 complete powered channels. Or connects to a previous EMS-4001 or ES-4000A Expansion Station to add another 4 powered channels (up to 18-20 channels total).

### Overload/Short-Circuit Protection

Provides automatic current limiting during short circuits or overloads. Front panel fault indicator provided for each channel. The SPS-2001 has Instantaneous Auto Reset (IAR), the newest technology in performance and safety, which uses a revolutionary new circuitry that dynamically monitors line fault conditions.

### 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.

### Binaural (Stereo) Listening

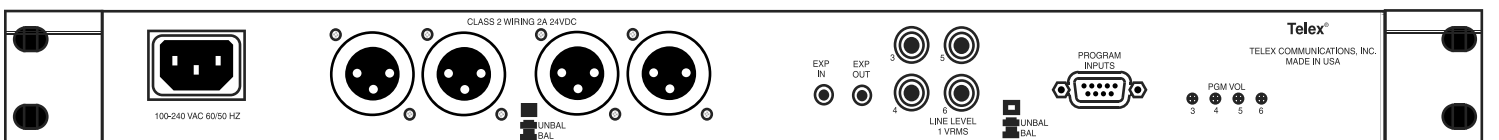
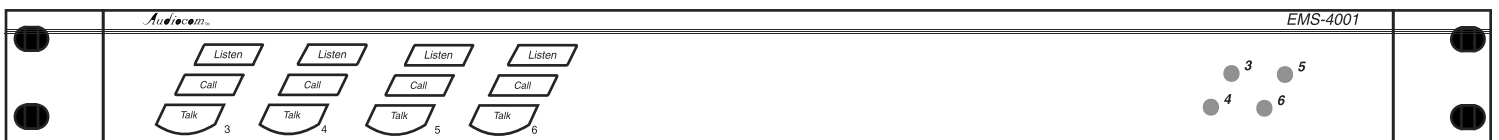
If the master station is equipped with external powered speakers you can assign the EMS-4001 channels to either right or left speaker.

### Instantaneous Auto-Reset

Instantaneous Auto Reset (IAR), the newest technology in performance and safety, which uses a revolutionary new circuitry that dynamically monitors line fault conditions. Then, when the fault is removed, automatically brings individual power supply channels up.

### Clear-Com Compatible

## Line Drawing



# EMS-4001 Specifications

## General

Input and Output Power:

AC Input: 100-240 VAC, 50/60 Hz

Channel Power (each channel): 24 ±1 VDC, 1 A

Dimensions: 1.75" (44.5 mm) high, 19" (483 mm) wide, 10.31" (261.9 mm) deep

Weight: approximately 4.5lbs (2kg)

Environmental Requirements:

Storage: -20°C to 80°C; 0% to 95% humidity, noncondensing

Operating: -15°C to 60°C; 0% to 95% humidity, noncondensing

## Program Input Connectors

Input Level: 100mV maximum

Voltage Gain: 25 ±3 dB

Output Level (to intercom channel): 1.0Vrms nominal, 2.3Vrms max.

Input Impedance: 75k ohms

Common Mode Rejection: Greater than 50 dB

Connector type: DB9F female, 9-pin D-Sub

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

## Intercom Channels, Balanced Mode (BAL/UNBAL switch set to BAL)

Output Level: 1 Vrms nominal

Input Impedance: 300 ohms ±10%

Bridging Impedance: greater than 10,000 ohms

Sidetone: -40 dB, 35 dB adjustable range

Figure 4 - EMS-4001 sidetone adjustment locations.

## Contact Information

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Telephone: (800) 392-0498  
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Form Number: 9320-7713-000 Rev B  
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Call Signaling:

Send: 20 kHz ±100 Hz, 0.5 Vrms ±10%

Receive: 20 kHz ±800Hz, 100 mVrms

Mic-Kill Frequency:

Send: 24 kHz ±100 Hz, 0.5 Vrms ±10%

Receive: 24 kHz ±800 Hz, 100 mVrms

Noise Contribution: less than -70 dB

Common Mode Rejection Ratio: greater than 50 dB

Connector type: One XLR-3M for each channel

Balanced Configuration Pinouts

Pin 1: DC/audio Common

Pin 2: Intercom audio low and +24 VDC output

Pin 3: Intercom audio high and +24 VDC output

## Intercom Channel, Unbalanced Mode (BAL/UNBAL switch set to UNBAL)

Output Level: 2 Vp-p (750 mVrms)

Input Impedance: 200 Ohms ±10%

Bridging Impedance: greater than 10k ohms ±5%

Call Signaling:

Send: 11 ±3 VDC

Receive: 4 VDC minimum

Connector Type: One XLR-3M for each channel

Pin 1: Common

Pin 2: +30 ±1 VDC output

Pin 3: Intercom audio high

## Expansion Input/Output

Connector Type: 1/8" Stereo phone jack

Tip: Talk output

Ring: Listen input

Sleeve: Common

## Ordering Information

### EMS-4001

4 channel expansion station with 2.0 amp power supply with instantaneous auto reset in a single unit.  
Catalog Number: 90007713000