

## MS-4002

### Master Station and Power Supply

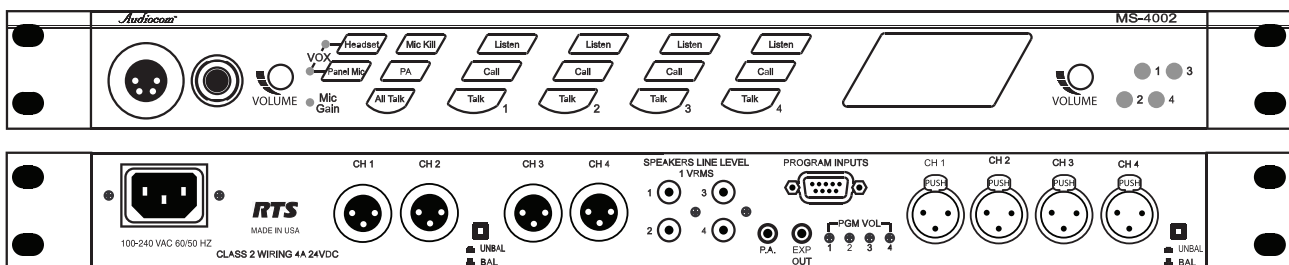


The MS-4002 is a complete 4-channel, balanced audio master station and 3.6 Amp system power supply in a single unit. You simply plug it into any AC power outlet from 100 to 240 volts, add a microphone or headset, connect intercom stations to the back panel, and you're ready to communicate. The MS-4002 is now equipped with an advanced programming mode on the front panel, eliminating the need for internal DIP switches. It also has a feature that automatically senses the type of headset attached to the unit, either dynamic or electret. The MS-4002 fits in a standard 19-inch equipment rack and is one (1) rack unit high. The MS-4002 is Clear-Com compatible, with the ability to run in unbalanced mode.

## Features

- Auto-Sensing Headset Connector. The MS-4002 has a built-in autosensing headset connector that will determine automatically whether a dynamic or electret headset is connected to the system.
- Speaker Station or Headset Station. Use the built-in speaker for listening and add an optional RTS MCP-90 series Gooseneck Panel Microphone for talkback. You can also turn off the speaker, and plug in a headset for private communication.
- Voice Activated Microphone (VOX). Separate controls adjust the voice activation level for the headset microphone and panel microphone inputs.
- Public Address (PA) Output, with PA key. Use your intercom microphone to talk over a PA system.
- Back-lit Keys. Improves visibility in low-light.
- Incoming Call Indications. Red flashing call light, with beep tone, if desired.
- Mic Kill Key – You can turn off all microphones on a channel to quickly clear the channel.
- Program Input for Each Channel. Connect any line-level audio source for monitoring in the speaker or headset, or for routing to the intercom channel. The program audio to the channel can be set to interrupt while the MS-4002 operator is talking on the channel.
- Listening with External Powered Speakers. You can connect external powered speakers and then monitor channels 1, 2, 3 and 4.
- Expandable. Add more channels by connecting optional EMS-4001 Expansion Stations. Each EMS-4001 adds four (4) additional powered channels (up to twenty channels).
- 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 Drawings



# Specifications

## General

Power Requirements:  
 AC Input: ..... 100-240VAC, 50/60Hz  
 Channel Power: ..... 24VDC nominal (18 to 30VDC), 65 to 150mA  
 MS-4002 is capable of supplying 3.6A overall  
 Dimensions: ..... 1.75 in (44.5 mm) high,  
 19 in (483 mm) wide,  
 10.31 in (261.9 mm) deep  
 Weight: ..... approximately 4.5lb (2kg)  
 Environmental Requirements:  
 Storage: ..... -20°C to 80°C; 0% to 95% humidity, non-condensing  
 Operating: ..... -0°C to 50°C; 0% to 95% humidity, non-condensing

## Dynamic-mic Headset

Microphone: ..... 50 to 200Ω, dynamic (balanced or unbalanced)  
 Headphones: ..... 150 to 600Ω, monaural  
 Connector Type: ..... XLR-4M  
 Pin 1 ..... Microphone low  
 Pin 2 ..... Microphone high  
 Pin 3 ..... Headphone high  
 Pin 4 ..... Headphone low

## Panel Microphone Input

Microphone Type: ..... Electret condenser  
 Power: ..... Phantom (+5VDC)  
 Nominal Level: ..... -42dBu  
 Maximum Level: ..... -25dBu  
 Connector Type: ..... IKP12 (MCP-90 series, stereo plug connector)

## Program Input

Input Level: ..... 100mV maximum  
 Voltage Gain: ..... 25 ±3dB  
 Output Level (to intercom channel) : ..... 1.0Vrms nominal 2.3Vrms max.  
 Input Impedance: ..... 75k  
 Common Mode Rejection: ..... >50 dB  
 Connector Type: ..... 9-pin female D-sub (DE9S)  
 Pin 1 ..... Ground  
 Pin 2 ..... Program 1 input low  
 Pin 3 ..... Program 2 input low  
 Pin 4 ..... NC  
 Pin 5 ..... NC  
 Pin 6 ..... Program 1 input high  
 Pin 7 ..... Program 2 input high  
 Pin 8 ..... NC  
 Pin 9 ..... NC

## Intercom Channels, Balanced Mode (Both Back Panel and internal switches (BAL/UNBAL) must be set to same setting) Output Level: 1 Vrms nominal

Input Impedance: ..... 300Ω  
 Bridging Impedance: ..... >10kΩ  
 Sidetone: ..... -40dB, 35dB adjustable range  
 Call Signaling:  
 Send: ..... 20kHz ±100Hz, 0.5Vrms ±10%  
 Receive: ..... 20kHz ±800Hz, 100mVrms

Mic-Kill Frequency:  
 Send: ..... 24kHz ±300Hz, 0.5Vrms ±10%  
 Detect: ..... 24kHz ±800Hz, 100mVrms  
 Noise Contribution: ..... < -70dB  
 Common Mode Rejection Ratio: ..... >50dB  
 Connector Type: ..... One XLR-3M and XLR-3F pair, wired in parallel,  
 for each channel (permits "loop-thru" connection).

## XLR-3 Balanced Configuration Pinouts

Pin 1: ..... Common  
 Pin 2: ..... Intercom audio low and +24VDC input  
 Pin 3: ..... Intercom audio high and +24VDC input

## Intercom Channel, Unbalanced Mode (Both Back Panel and internal switches (BAL/ UNBAL) have to be set to same setting)

Output Level: ..... 1Vrms ±10%  
 Input Impedance: ..... 200Ω  
 Bridging Impedance: ..... >10kΩ  
 Call Signaling:  
 Send: ..... 11 ±3VDC  
 Receive: ..... 4VDC minimum  
 Connector Type: ..... Uses same connectors as for balanced mode, above,  
 but with pinouts modified by BAL/UNBAL switch on  
 back panel as follows:

## XLR-3 Unbalanced Configuration Pinouts

Pin 1: ..... Common  
 Pin 2: ..... +24VDC input  
 Pin 3: ..... Intercom audio high

## PA Output

Output Level: ..... 235mVrms nominal  
 Connector Type: ..... ¼-inch Stereo Phone Jack  
 Tip: ..... PA output high  
 Ring: ..... Not used  
 Sleeve: ..... Common

## Speaker Output

Output Level: ..... 0 dB nominal (1.0Vrms)  
 Output Impedance: ..... 1000 Ω nominal  
 Frequency Response: ..... 200Hz to 8kHz +1/-3dB  
 Connector Type: ..... RCA Phono Jack  
 Tip: ..... Speaker output high  
 Sleeve: ..... Common

## Expansion Input /Output

Type: ..... 2.0 mm stereo phone jack  
 Tip: ..... Talk output  
 Ring: ..... Listen input  
 Sleeve: ..... Common

## Headphone Amplifier

Voltage Gain: ..... 30 ±3dB  
 Maximum Output: ..... 250mW ±10% into 150Ω, 65mW ±10%  
 into 600Ω  
 Frequency Response: ..... 200Hz to 8kHz +1/-3db  
 Incoming Call Beep Tone: ..... 2kHz, at the headphones  
 Total Harmonic Distortion: ..... Less than 0.2% at 200mW  
 Sidetone: ..... 18 ±2dB, adjustable

# Order Information

MS-4002 • 4 channel user/main station with 3.6 amp power supply

For ordering information, contact your regional sales representative at:  
<http://rtsintercoms.com/us/intercom/contact>

The specification information is preliminary and is subject to change without notification.  
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