

Clear-Com Encore™

TW-12C System Isolation Interface



TW-12C Front Panel

Clear-Com's **TW-12C** intercom system interface is designed for connecting one intercom system to another, without compromising the audio quality of either system.

Transparent Isolation Between Systems

The unique TW-12C completely eliminates hums and buzzes caused by ground loops. The TW-12C compensates not only for level differences between systems, but for varying impedances caused by transformers and capacitance on the lines.

The TW-12C provides an electrically isolated interface between the two intercom systems. Either "side" of the interface can connect to a Clear-Com intercom system or an RTS intercom system, allowing Clear-Com-to-Clear-Com, Clear-Com-to-RTS, and RTS-to-RTS combinations. In addition, the TW-12C passes through and translates "call" signals, Clear-Com-to-RTS and vice versa.

The interface consists of two identical, 2-wire-to-4-wire hybrid networks which break the ground loops that occur when two systems are run from separate power sources. The audio paths are transformer-coupled and the signaling circuits are opto-isolated.

Fast, Easy & Accurate Setup

The operator can quickly set up the TW-12C by using a standard intercom headset and the TW-12C's built-in setup tone. The TW-12C is capable of a range of null adjustments, allowing it to adapt to a wide variety of line conditions, line lengths, and impedances.

The TW-12C provides each side of the system with null adjustment controls that allow adjustment even when the system is operating. The rear panel of the TW-12C contains a pair of 3-pin XLR connectors (one male, one female) for each side of the interface.

Call Signal Translation

The TW-12C interface receives "Call" signaling in the appropriate form (DC level for Clear-Com, tone for RTS), decodes it, and passes it to the other side of the interface, via an optical coupler. The receiving side of the interface sends the signal appropriate for the connected intercom.

Power

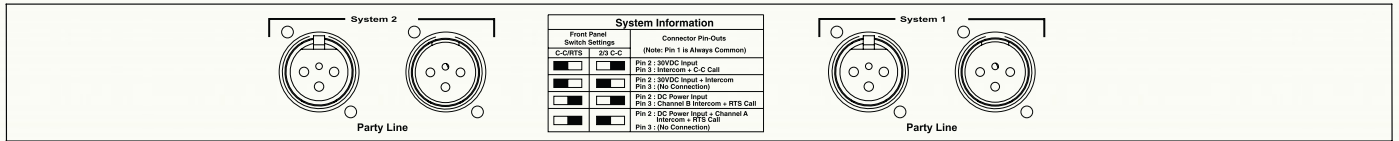
Each side of the TW-12C is powered directly by the intercom system to which it is connected. The unit draws about the same amount of power as a belt-pack. If either system is disconnected, the power loss immediately shuts down the associated electronics, eliminating any unwanted noises on the operating intercom side. The TW-12C front panel provides an LED power indicator for each side of the interface.

Features:

- Eliminates grounding problems between intercom systems
- Matches gain between systems
- Provides system isolation for:
Clear-Com to Clear-Com;
Clear-Com to RTS; RTS to RTS
- Passes through and translates signaling
- Provides superior hybrid nulling—up to 40 dB
- Setup tone allows adjustment during operation
- Powered from connected systems
- Uses just one rack space

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Technical Specifications:

dBu is an absolute measurement. 0 dBu is referenced to 0.775 volts RMS

Clear Comm Format

Line Characteristics

Max Level Before Clipping : ≥ 3 dBu
Impedance: ≥ 10 K Ω

Signalling

Receive: ≤ 4 VDC
Send: ≥ 11 VDC

RTS Format

Line Characteristics

Max Level Before Clipping : ≥ 5 dBu
Impedance: ≥ 10 K Ω

Signalling Tone

Send frequency: 20kHz \pm 100Hz
Receive frequency: 20kHz \pm 500Hz
Send level: ≥ -6 dBu
Receive level: ≤ -25 dBu

General Characteristics

Frequency response:

Party-line - Party-line: 200-8KHz

Distortion

Party-line - Party-line: $\leq 0.2\%$

Max Gain

ClearCom - RTS: ≥ 9 dB
ClearCom - ClearCom: ≥ 4 dB
RTS - ClearCom: ≥ -1 dB
RTS - RTS: ≥ 4 dB

Min Gain

ClearCom - RTS: ≤ 1 dB
ClearCom - ClearCom: ≤ -4 dB
RTS - ClearCom: ≤ -9 dB

Power Requirements

Input Voltage Range: 20-30VDC
Input Current (average): ≤ 50 mA

Rear Panel Connectors

Rear panel: (2) XLR3M
(1 per channel)
(2) XLR3F
(1 per channel)

Front Panel Connectors

Headset: (1) XLR4M
TS1 Earphone: (1) 3.5mm Jack
Socket

Front Panel Controls and Indicators

Power: (2) Green LED
(1 per channel)
Null Test Button : (2) Buttons
(1 per channel)
Gain Level Adjust: (2) Controls
(1 per channel)
Null Adjust: (6) Controls
(3 per channel)
Connection Type Switch: (2) Switches
(1 per channel)
Pin Connection Select Switch: (2) Switches
(1 per channel)

Dimensions

1.75in. H x 19in. W x 7.25in. D
(45 x 483 x 185 mm)

Weight

5.63 lbs. (2.56 Kg)

Notice About Specifications

While Clear-Com makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-center specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary.

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