



**COMMUNICATIONS  
COMPANY  
INC.**

**IC-29  
Universal  
Intercom**

The IC-29 is a universal two station intercom. All configurations are supported, push to talk, privacy, etc. However, the unit is optimized for VOX (voice actuated, hands off operation). The IC-29 consists of two complete audio sections and a common control section. The IC-29 incorporates several unique features. The output amplifier, when "OFF", has a very high output impedance so that the speaker may also be used as a microphone without the need of switching contacts. A limiter/volume control prevents overload from unusually high inputs. The changeover circuits are designed for either VOX operation, push to talk, or combinations to afford maximum versatility. A call feature is also included to both alert the user and wake up the system if turned off. Indication circuits are provided to enable easy test and setup. User functions are remotable through D.C. controls. Optional available accessory boards provide an audio delay in the talk (outside) circuit to assure the VOX can operate without clipping words, and a dual tunable notch filter is available in both the inside and outside circuits to reduce feedback.



## SPECIFICATIONS

**TYPE:** Dual channel universal intercom amplifier.

**U.L. LISTED:** Commercial audio product.

**FREQUENCY RESPONSE:**  $\pm 1$  dB 250 HZ - 5 KHZ.

**POWER OUTPUT:** 5 watts R.M.S. sine wave into 45 ohms (one channel at a time). Outputs are short circuit protected.

**OUTPUT SOURCE IMPEDANCE:**  $< 4$  ohms balanced differential output.

**LINE INPUT:** Unbalanced 10k Ohm, adjustable 78mV (-20dBm) required for full output.

**MICROPHONE INPUT:** Balanced differential input designed for speaker or microphone compatibility. 130 $\mu$ V (-76dBm) input sensitivity to provide full power output. Inputs are R.F. field protected. Maximum microphone input level 7.8 mV (-40dBm).

**INPUT SOURCE IMPEDANCE:** 1K ohms.

**LEVEL CONTROL:** Front panel user adjustable to set comfortable listening level (remotable).

**LIMITER CONTROL:** Limiter can be adjusted to provide greater than 30 dB of compression, screwdriver adjustment.

**EQUIVALENT INPUT NOISE:** Line input • -96dB

Microphone Input (both jumpers) • -116dB

Microphone input (no jumpers) • -106dB

**DISTORTION:** Less than .3% at full output.

**VOX:** Voice operated switching for hands free operation. Threshold level provided on front panel as continuously variable screwdriver adjustment. Indicator for adjustment accuracy.

**ANTIVOX:** Anti-trip circuit eliminates speaker-microphone VOX coupling. Anti-VOX level is a continuously variable screwdriver adjustment. Indicator for adjustment accuracy.

**TALK/LISTEN:** Talk/Listen switching; many priorities, or configurations supported.

**SWITCHING NOISE:** Sequenced change over is designed to completely eliminate switching noise.

**LOGIC CIRCUITRY:** Solid state CMOS logic, no relays. Ground switching input/output logic is used for ease of interface. All I/O is protected from static and R.F. fields.

**CALL:** Internal audio generator connects to listen (inside) circuit. Call level continuously adjustable (remotable)

**CONNECTORS:** Three each plug-in terminal blocks and two each RCA phono connectors.

**POWER REQUIREMENTS:** 105 - 125 or 210 - 250 Volts, 50/60 HZ, 28 Watts. Power supply fuse protected.

**WEIGHT:** 6 lbs (2.7 kg).

**DIMENSIONS:** 7.65" x 14" x 1.75"  
(194mm x 361mm x 45mm).

**MOUNTING:** The IC-29 cabinet is supplied with rubber feet installed for counter top installation. Optional rack mounting panel is available.

### FRONT PANEL CONTROLS

**LEVEL:** Variable potentiometers for both amplifiers (remotable).

**LIMITER:** Variable screwdriver adjustments for maximum level and compression, both amplifiers.

**VOX:** Continuously variable screwdriver adjustment for the talk channel VOX sensitivity.

**ANTIVOX:** Continuously variable screwdriver adjustment for the decoupling of the listen speaker.

**CALL LEVEL:** Continuously variable screwdriver adjustment (remotable).

### FRONT PANEL (LED) INDICATORS

**POWER:** Indicates unit has power (remotable).

**ACTIVE:** Both channels, indicates power amplifier is on (remotable).

**THRESHOLD:** Both channels, indicates signal compression is taking place.

**VOX:** Indicates sufficient VOX input level.

**ANTIVOX:** Indicates the Anti-VOX decoupling level.

### OPTIONAL ACCESSORIES

**AUDIO DELAY:** Optional 55ms audio delay in talk channel for VOX operation, avoids chopping first syllable.

**NOTCH FILTERS:** Optional notch filters available to reduce feedback and compensate for small live room acoustics. Two channel independently screwdriver adjustable: Freq. Ch. 1 = 100 - 500HZ;  
Freq. Ch. 2 = 500 - 2500HZ.

The IC-29 programmable dual channel amplifier provides a solution to many voice communications applications. Easy programming allows the user several choices of operation. For instance:

1. A ticket booth system that uses a microphone and speaker both inside and outside with Vox hands-free operation both ways. The operator can have a break-in option which will allow them to interrupt the customer. Refer to Figure 1.
2. The same system as described above but with a speaker only outside and Vox operation from the inside. Refer to Figure 2.
3. A fast food system. The IC-29 can provide microphone-speaker inside and speaker or microphone-speaker

- for outside operation, with manual talk/listen mute switching.
- The IC-29 can also provide audible annunciation while simultaneously activating the system when a car trips a magnetic loop or air hose sensor system. Refer to Figure 3.
4. The IC-29 can also provide the basic intercom needs. Speaker to speaker with talk/listen, mute control. Refer to Figure 4.
5. The IC-29 can also be used as two independent amplifiers. Refer to Figure 5.
6. A Cath Lab system, full duplex using a headset inside. Speaker and microphone outside. Refer to Figure 6.

As can be seen by the few applied descriptions below, the IC-29 programmable dual channel amplifier and various accessories provide unusual flexibility in operation and application for your intercom needs.

