



MicroComm INSTALLATION INSTRUCTIONS



ICE-300 Series Intercom Stations

1 Intent & Scope

This document describes the installation procedure for the ICE-300 series of intercom stations. The ICE-300 series intercom stations include intercom station types ICE-320, ICE-330 and ICE-390. The ICE-300 intercom stations are half-duplex 25v/4-wire intercom stations compatible with DXI SAB-300 station audio boards and DXL SCC-300 station control cards.

The installation instructions for the Secondary intercom station ICE-320-CUS-101, which is used in conjunction with the Primary intercom station ICE-420-CUS-110 to form a two sided door intercom, is included in the installation bulletin IM-ICE-400-1.1.

2 Description

Each ICE-300 series intercom station is connected to the system with 4 wires, a single shielded twisted pair cable that carries microphone and loudspeaker signals and a second pair of wires that carries up to multiplexed two switch indicator signals.

The ICE-300 series intercom stations can be ordered in several configurations. These include:

- (i) 0, 1 or 2 switches. These switches are mounted on the faceplate and can be internally terminated. They can be used for call request, program music selection, or other functions. The optional terminations allow the system to detect open or short circuit line faults.

Switch information is sent back to the exchange through a single pair of wires.

- (ii) A cord jack can be specified in place of the standard faceplate switch on the intercom stations.
- (iii) A vandal resistant switch, red mushroom button switch or mini-piezo switch can be ordered for the intercom stations.
- (iv) The contacts of the switch are available on four-pin headers. With external field wiring the switch can then be used to operate an external device, i.e. open a door; turn on lights, etc. External contacts can also be connected to these four-pin headers. This allows external equipment to activate the station switches and place call requests or act as a switch to change the music selection.
- (v) An optional LED mounted on the faceplate can be operated from an external source.

3 Installation

3.1 Field Connections

A simplified diagram of the back view of the ICE-320 is shown below. The printed circuit board header labeled Audio/Switch is always present and is used to connect audio and switch between an exchange and the intercom

station. The audio lines are connected to pins 1 and 4 of the header and the supervised (or unsupervised) switch pair is connected to pins 2 and 3 of the header. A 4-pin MTA-100-04 connector connects the fielding wiring to the intercom station. This wiring allows the mating connector to be reversed without causing harm

MTA Pin	Signal
1	Audio +
2	Switch +
3	Switch -
4	Audio -

MTA Pin Signals to Header Audio/Switch

The header labeled LED/Switch2 is used to connect external equipment to the optional LED pair and/or the optional second unsupervised switch. (Note Switch 2 can be used as an output for the faceplate mounted Switch 2.) The pinout of this header follows:

MTA Pin	Signal
1	LED +
2	LED -
3	Switch 2 +
4	Switch 2 -

MTA Pin Signals to Header LED/Switch2

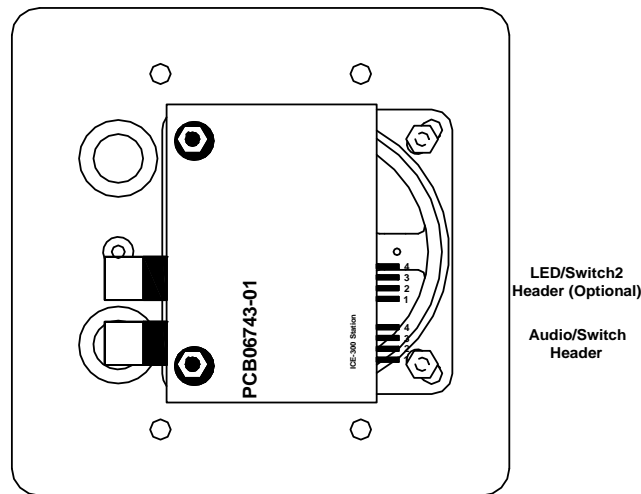


Figure 1 Rear View of ICE-320 Printed Circuit Board Showing Header Positions

3.2 Switch Designations

Up to two switches, multiplexed over a single pair of wires, can be mounted on the faceplate of an ICE and they are designated as Switch A and Switch B. The physical location of a switch on the faceplate determines whether the switch is considered Switch A or Switch B. Figure 2 shows the location and designation of two switches on an ICE-320 and ICE-330. Normally Switch B is present and used as the Call switch, while Switch A, if present, is used for some other purpose such as program selection.

The switch connections on the PC board are labeled as Switch 1 and Switch 2. When two switch signals are multiplexed over a single pair of wires using terminating resistors Switch 1 will produce a lower voltage than Switch 2. If both switches are pressed simultaneously the lower voltage will be produced, i.e. Switch 1 has a higher priority than Switch 2.

For all standard ICE-320 and ICE-330 Intercom Stations Switch B is connected to Switch 1 contacts on the PC board giving Switch B a higher priority than an option Switch A. Usually the Call switch is Switch B and it will have the highest priority.

The DXL Administrator Software uses the designation Switch 1 and Switch 2 when configuring an ICE and these switch names correspond to the Switch 1 and Switch 2 labels on the station PC board.

3.3 Audio Connections from System to Intercom Stations

Each intercom station is connected to the exchange with a single shielded twisted pair and a second unshielded twisted pair. Quick Connect Boards QCB-120-1 and cables CBL-STQ can be used to facilitate connecting the audio lines to an SCC-300 card, while a QCB-120-2 with cables CBL-SWQ can be used to connect the switch pairs to a the SCC-300. For a DXL system a QCB-120-3 with cable CBL-136 can be used to connect the audio lines to an SAB-300 while a QCB-120-2 and cable CBL-136 can be used to connect the switch pairs to an SAB-300. All shields are terminated at the QCBs. The shields are grounded through the cable that connects the QCB to the DB-37 connector on the SAB-300 (a CBL-136 cable). The shields are left open at the intercom station end of the cable. Where two twisted pair cable segments are used to make up a cable the shields must be continued from one cable segment to the other. Care should be taken to ensure that the shields on the different signal pairs are not connected together.

The connections to the intercom station are made with an AMP MTA-100 series connector. The intercom pair should connect to pins 1 and 4 on a female 4-pin AMP MTA-100 series connector that plugs onto the header labeled Audio/Switch and the switch should be connected to pins 2 and 3 of the connector on the printed circuit board of the intercom station. To make these connections you should use an AMP Handle Assy 58074-1 tool with a 58246-1 head. The cable should be cut to length and the shield and outer jacket should be trimmed back about 1/2 inch. Ensure that the shield is not exposed or it may short out exposed contacts on the intercom PCB when it is installed.

To insert the signal wires into the connector you remove the white cover from the connector, insert the connector into the tool from the left side (it will travel through the tool in the direction indicated by the arrow), pull the trigger once to load the connector. Then insert the signal wire for pin 1 (do not strip the wire) into the hole on the top of the tool and pull the trigger to insert the wire into the connector. Then repeat to install the other signal wire. Finally, remove the connector from the tool, replace the cover, and then slide the connector onto the pins on the intercom station.

3.4 Optional LED

An optional LED mounted on the faceplate can be turned on by a 24Vdc signal applied to terminal 1 and 2 of the LED/Switch2 header. A built in resistor limits the current to the LED.

4 Mounting the ICE

The ICM-320 intercom stations are designed to mount in a standard 2-gang electrical box, with the faceplate connected to the box by four #6-32 mounting screws. The box must have a minimum opening of 3.625"W x 2.875"H x 1.75"D. The ICM-330 intercom stations are designed to mount in a standard 3-gang electrical box, with a minimum opening of 5.438"W x 2.875"H x 1.75"D. The ICM-390 is a custom faceplate design. Mounting hole details for the 2-gang and 3-gang ICEs are shown below.

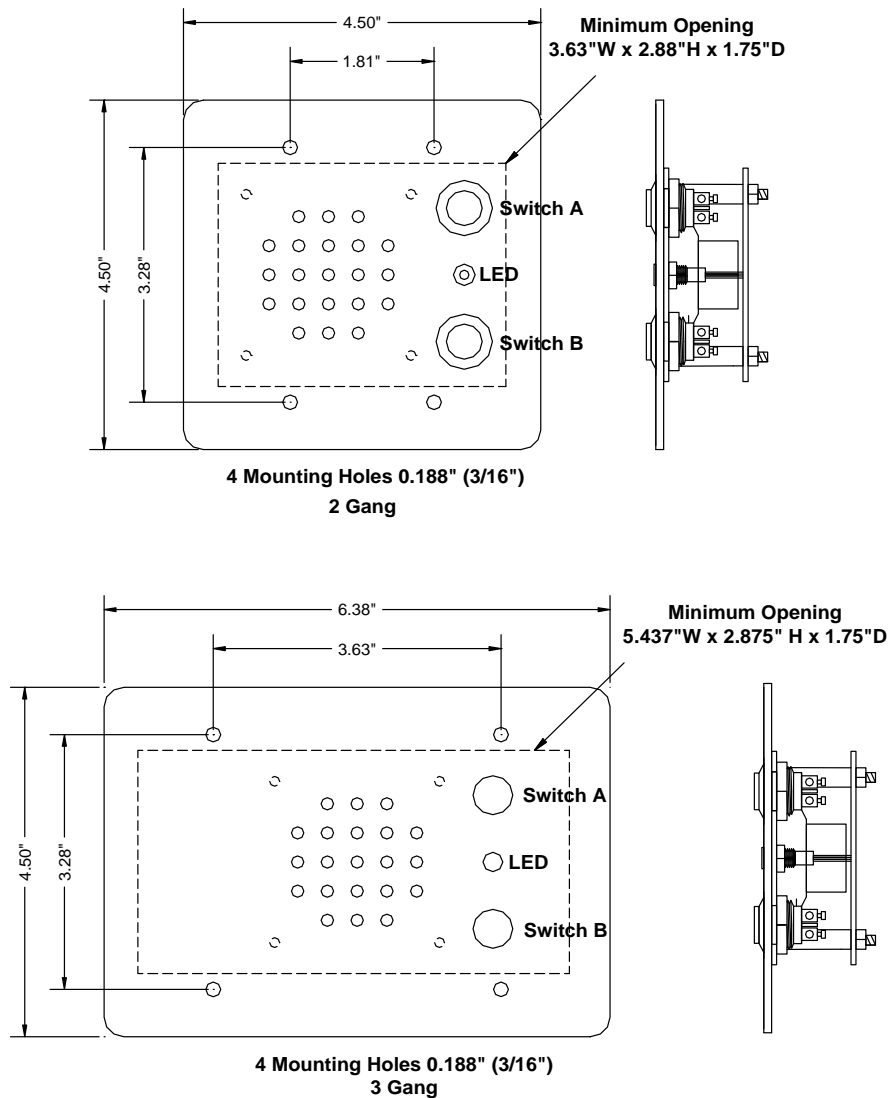


Figure 2 Mounting Hole Details for 2-gang and 3-gang Intercom Stations