



MicroComm

INSTALLATION INSTRUCTIONS



ICE-400 Series Intercom Stations

1. Intent & Scope

This document describes the installation procedure for the ICE-400 series intercom stations, which includes the 2-gang and 3-gang standard intercom station types ICE-420, ICE-421, ICE-430, ICE-431, as well as custom ICE-400 intercom station. The ICE-4x1 stations include a LED while the ICE-4x0 stations do not. Instructions on installing a two sided door Primary/Secondary intercom station is also included.

2. Description

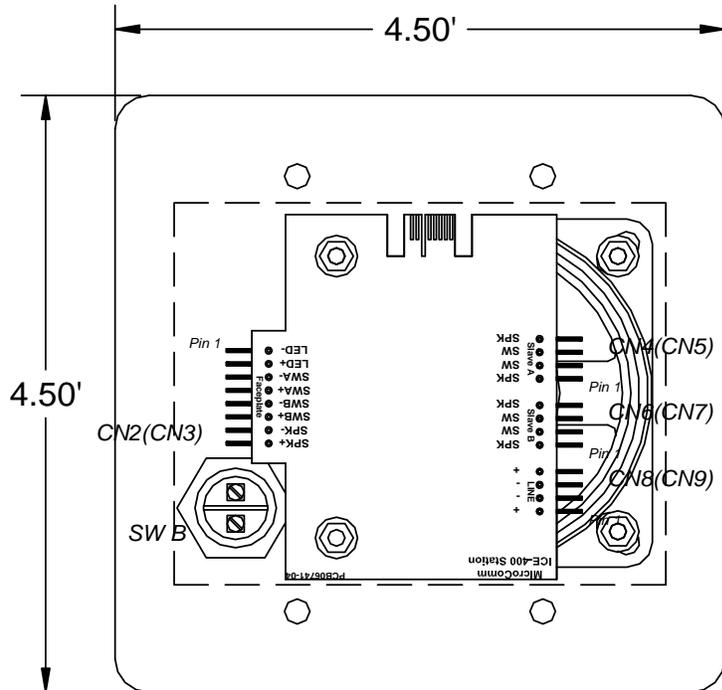
The ICE-400 series of intercom stations include all intercom stations that are connected to a DXI system via a SAB-400 or SAB-401 station audio board, or to a DXL system via a SCC-400 or SCC-401 station control card. Each ICE-400 series intercom station is connected to the system with a single shielded twisted pair cable that carries all the microphone, loudspeaker, switch, and LED indicator signals.

The ICE-400 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 internally terminated. They can be used for call request, program music selection, or other functions. The terminations allow the system to detect open or short line faults.

The switch information is multiplexed with the audio signals over a single pair of wires.

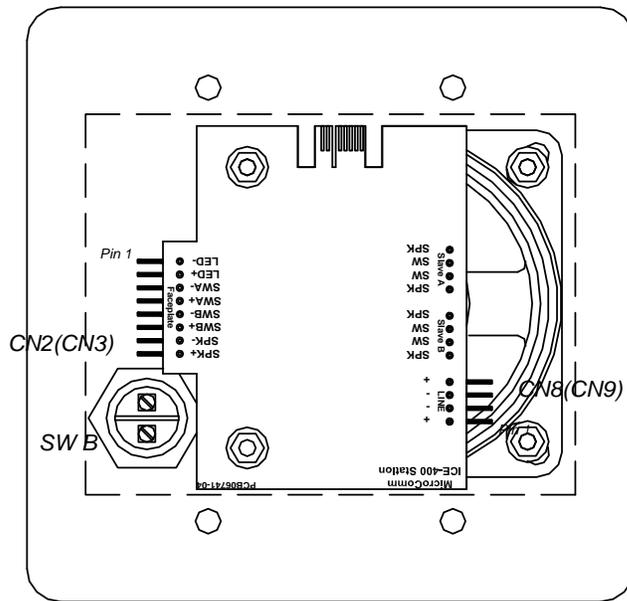
- (ii) The LED stations, ICE-421 and ICE-431, are used with SAB-401 station audio board or SCC-401 station control card. The LED is used to indicate call request status or active call status. Again LED status information is multiplexed over the audio pair.
- (iii) A cord jack can be specified in place of the standard faceplate switch on the intercom stations.
- (iv) A vandal resistant switch, red mushroom button switch or mini-piezo switch can be ordered for the intercom stations.
- (v) The switch contacts of a switch can be made available on a four-pin header. 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 this four-pin header. This allows external equipment to activate the station switches and place call requests or act as a switch to change the music selection.



Rear View of ICE-420 Intercom Station showing Connector Positions

3. Installation

A simplified diagram of the back view of an ICE-420 with one faceplate mounted switch is shown below. The headers CN2 (CN3) and CN8 (CN9) are always present. Connector CN2 (CN3) is used to connect the printed circuit board to the faceplate components (Microphone/Speaker, Switch B, Switch A, and LED). Connector CN8 (CN9) is used to connect the field wiring audio lines via of a 4-pin MTA-100-04 connector.



3.1 Standard Station Audio Connections

Each ICE-400 intercom station is connected to the exchange with a single shielded twisted pair. The pair is connected to terminals on the field interface terminal block. In turn these terminals are connected via a CBL-190 or CBL-196 cable to the SAB-400 or SAB-401 in a DXL system, or a CBL-STN cable when connected to an SCC-400 or SCC-401 in a DXL system. The shields are terminated at the field interface terminal block and are grounded through the cable that connects the terminal block to the DXI or DXL exchange.

The audio line shielded twisted pair connects to pins 1 and 2 of a MTA-100-04 connector that plugs into CN8 (CN9) header labeled LINE. The shield is left open at the intercom station end of the cable. The pin assignments of CN8 (CN9) header and the corresponding MTA-100-04 connections are shown in the following table: The connector pin outs are assigned so that the orientation of the mating connectors is reversible.

Connector Pin	Signal	MTA Pins
1	Line +	Line +
2	Line -	Line -
3	Line -	NC
4	Line +	NC

The maximum recommended distance to run 22-gauge twisted-pair shielded cable from a 400 series station to SAB-400, SAB-401, SCC-400 or SCC-401 is 2500 feet (750 meters).

3.2 Connections to an MTA Connector

The connections to the intercom station are made with an AMP MTA-100 series connector. The intercom pair should connect to pins 1 and 2 on a female 4-pin AMP MTA-100 series connector that plugs onto the header CN8(CN9) labeled LINE on the intercom station printed circuit board. 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.

3.3 Face Plate Connections

ICE-400 stations use one 8-pin MTA-100 header CN2 (CN3) to connect the faceplate mounted devices to the printed circuit board. This header is also used to connect remote switches to the station.

Connections to the faceplate mounted components are made with MTA-100 connectors. One 4-pin MTA-100-04 connector connects the speaker and the switch 1 (SW B), while a second 4-pin MTA-100-04 connects the LED and/or the second switch 2 (SW A). When the switch inputs terminals are to be used for remote switches, the

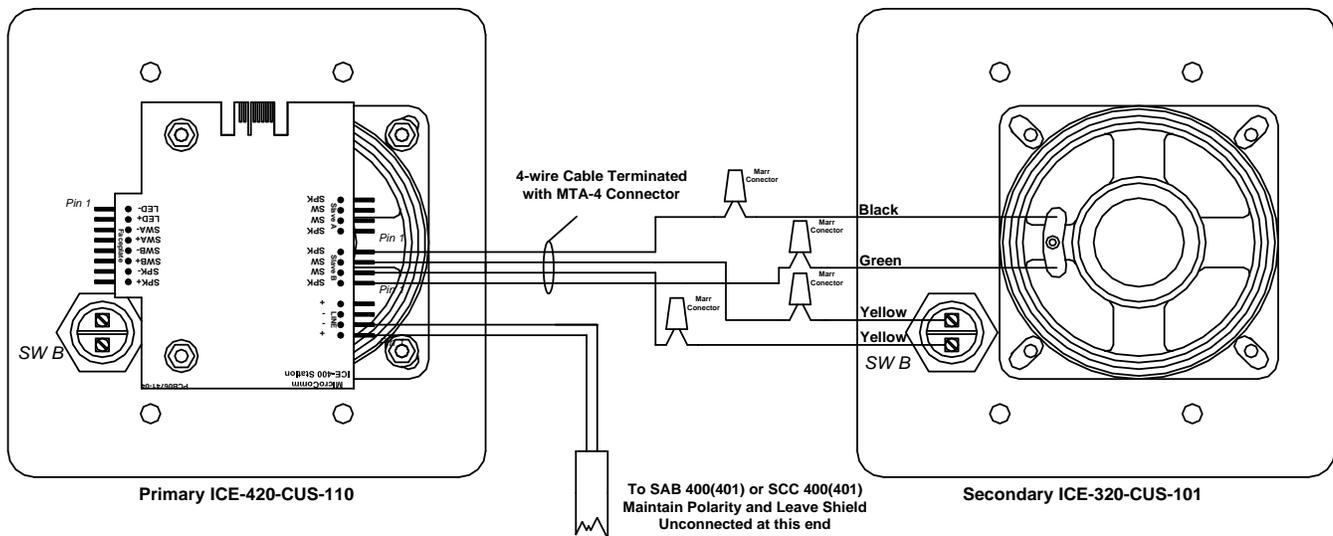
speaker and LED are connected using two terminal MTA connectors so that the customer can connect a 4-terminal MTA-100 to the switch input terminals.

MTA Pin	Signal
1	LED -
2	LED +
3	Switch 2 -
4	Switch 2 +
5	Switch 1 -
6	Switch 1 +
7	Speaker -
8	Speaker +

4. Two Sided Door Primary/Secondary Pair

The two sided Door Primary/Secondary paired stations are meant to provide an intercom on both sides of a door at the same time but require only one audio channel. The two stations are configured as a single intercom station with one call switch. This is achieved by paralleling the speaker and switch of the secondary station to the speaker and switch of the primary station. The following diagram shows the necessary connections. The connections can be made using a 4-wire cable with a 4-pin MTA connectors at one end. The 4 pins of the 4-pin MTA connector are connected to the header CN6 (CN7) labeled Slave B of the primary station and are connected to the secondary speaker and switch pig tail wires with Marr connectors. Note that the switch and speaker connections are not polarity sensitive so that the connector can be reversed.

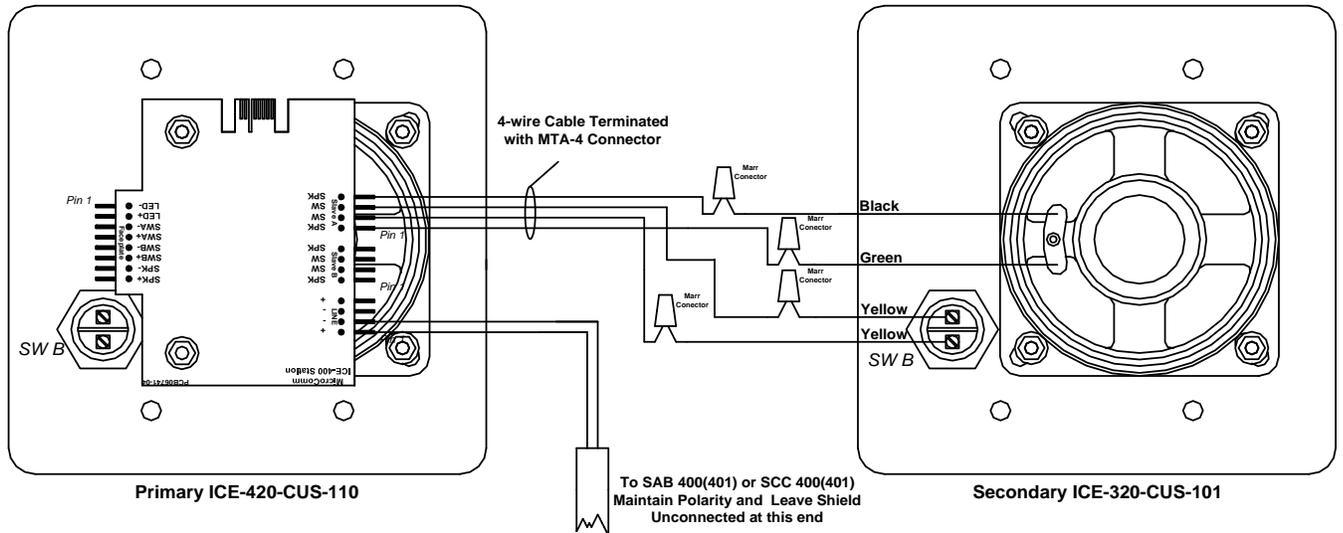
The two intercom stations are assigned custom numbers, where they are both 2-gang stations the primary intercom station is ICE-420-CUS-110 while the secondary station is ICE-320-CUS-101.



Two Sided Door Primary/Secondary Pair with Two Call Switches acting as one call switch

ICE-400 Series Intercom Station

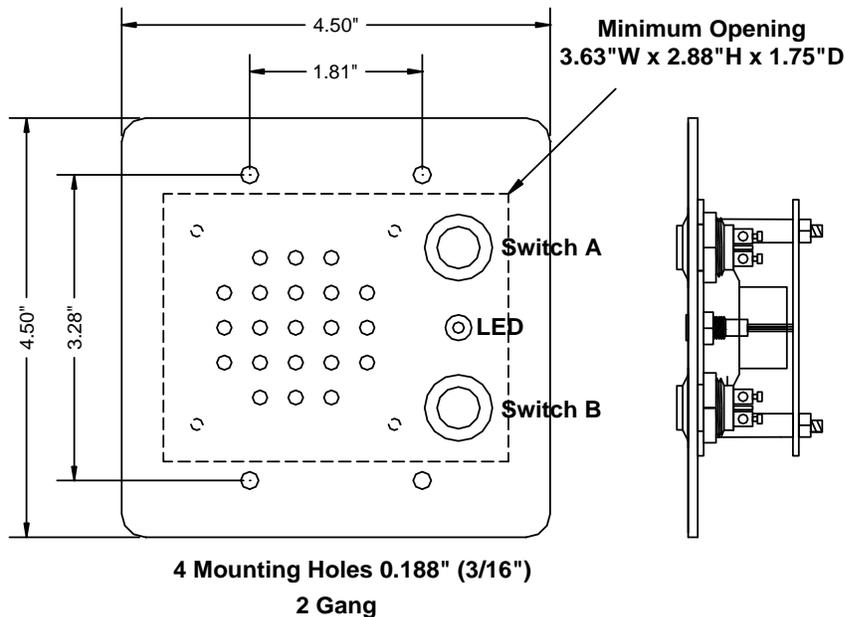
A second connection is possible whereby Switch B of the Secondary station will act as a Switch A. In this case the two stations acts as a single station with two call switches. This can allow the operator to distinguish between the two call requests.



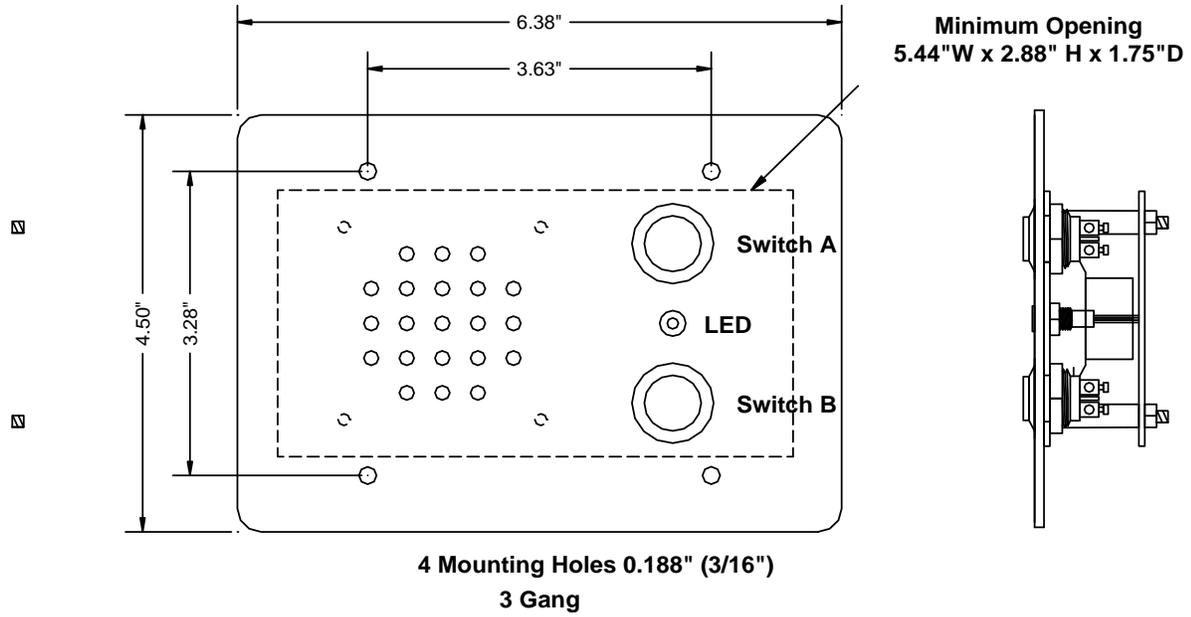
Two Sided Door Primary/Secondary Pair with Two Separate Call Switches

5. Mounting ICM

The ICE-420 and ICE-421 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 ICE-431 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. Mounting hole details for the 2-gang and 3-gang ICEs are shown



ICE-400 Series Intercom Stations



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