INTRON-D *plus* Function no. 010

INTRON-D *plus*
Two-way Switchboard Call

In a Nutshell

Via a centralized master control station, a temporary two-way connection is configured between 2 subscribers who cannot establish a direct voice connection between each other themselves. This way, any subscriber can be connected to another subscriber.

A two-way connection is also often called half-duplex connection or intercom connection.

Illustration

Master Control Station   Station A   Station B

Subscriber at Station A requests the master control station to configure a two-way connection to subscriber at Station B.
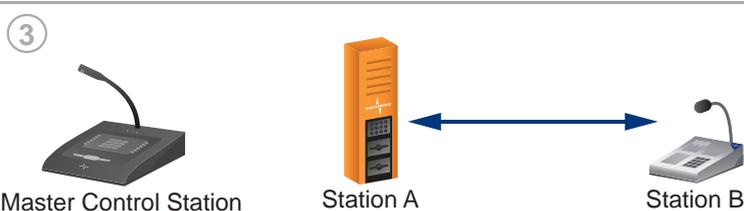
②

Operator at master control station configures a two-way connection as follows:

1 [Switchboard TW]

He presses the "Switchboard TW" key.

2 [Station A] [Station B]

He presses the "Station A" and "Station B" keys.

Master Control Station   Station A   Station B

3 [Switchboard TW]

Then, he presses the "Switchboard TW" key again.

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③

Master Control Station   Station A   Station B

A temporary two-way connection is configured. The subscribers at Station A and B can speak to each other using the corresponding switchboard speak key.

Description

The subscriber at Station A speaks to the subscriber at the master control station and requests a two-way connection to Station B. The operator at the master control station presses the two-way switchboard key first to configure a temporary connection. Then, the operator selects the two stations which are supposed to participate in the connection by pressing the corresponding keys. Here, the station which requested the connection is selected first. Finally, he presses the two-way switchboard key again. The temporary two-way connection is now configured, but not established yet.

A short acoustic signal is played back at Station A and B and the temporary direct keys especially defined for temporary connections are activated (switchboard speak key). To establish the two-way connection, the operator at Station A now presses this switchboard speak key, keeps it pressed and speaks into the microphone (Push-to-Talk). The subscriber at Station B listens to the message.

As soon as the operator at Station A releases the key, the subscriber at Station B can answer. To do this, he presses his switchboard speak key, keeps it pressed and speaks into the microphone. Now, the subscriber at Station A can listen to the message.

So both subscribers can speak and listen alternately, but not simultaneously. One subscriber speaks and the other listens.

The temporary two-way connection is automatically deleted if the switchboard speak key at Station A or B is no longer pressed within a specified time (e.g. 10 s). The corresponding switchboard speak key is then without function.

Doc. no. FDA-330-003-010 • Rev. 2 • EN • 23.07.2015   Subject to technical modifications

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Signaling at Master Intercom Station

LEDs at the keys indicating the different connection states are helpful for the operator personnel. The following illustrations show the default signaling types at a master control station using the example of an IP desktop intercom station from INDUSTRONIC with display buttons.

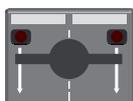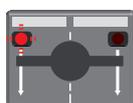| Signaling		Description
Switchboard TW	Switchboard key is off.	Mode to configure the temporary two-way connection is not active. Subscribers cannot be selected.
Switchboard TW	Switchboard key blinks at a frequency of 250:250 (250 ms on / 250 ms off).	Mode to configure the temporary two-way connection is active. Subscribers can now be selected.
Station (x)	Selection key is off.	Subscriber for temporary two-way connection is not selected.
Station (x)	Selection key is illuminated.	Subscriber for temporary two-way connection is selected. Pressing the key again removes the subscriber from the selection.

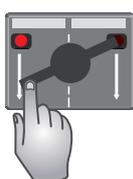### Signaling at Participating Intercom Stations (Switchboard Speak Key)

The following illustrations show the signaling at intercom stations participating in a switchboard connection using the example of momentary rocker switches which are installed in outdoor intercom stations from INDUSTRONIC.
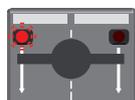
Signaling		Description
	LED is off.	No temporary connection configured. Key has no function.
	LED blinks at a frequency of 100:900 (100 ms on / 900 ms off). Corresponding side of the rocker switch is not pressed.	Temporary connection configured. Key can now be used.
	LED is illuminated. Corresponding side of the rocker switch is pressed down.	Connection to target established. Operator can speak into the microphone. (Ready-to-talk signaling)

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Signaling	Description
LED blinks at a frequency of 250:250 (250 ms on / 250 ms off). Corresponding side of the rocker switch is not pressed.	The operator which can be reached via this side of the rocker switch is speaking to you. (Ready-to-listen signaling)

Application Examples

The two-way switchboard call is often used to configure temporary two-way connections between subscribers who cannot establish direct voice connections between each other themselves. An intercom station in a control room is often deployed as centralized master control station which coordinates and configures the connections requested.

Customer Benefits

- Any subscriber can be connected to another subscriber at any time
- A centralized master control station, which has a coordinating role, configures two-way connections and thus authorizes subscribers to speak to each other
- Easy coordination of call requests
- Compact and easy-to-use intercom stations can be deployed as they only require one direct call key to the master control station and one speak key to communicate (switchboard speak key)

Options

Priorities

You can also assign an individual priority for a temporary two-way connection configured by the master control station. This means that an active connection remains busy for other subscribers with the same or lower priority. The connection can only be interrupted by a voice connection or function with higher priority.

Dial Keypad

Two-way connections can also be configured by using a dial keypad. For each individual subscriber the operator enters the call number first and then presses the * key. Only after pressing the * key, the subscriber is selected. A dial keypad is often used when a master control station has only a few keys available or when these keys are already assigned to other functions.

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Technical Details

For a two-way switchboard call at least one intercom station is required which takes on the role of the centralized master control station (e.g. an intercom station in a control room). This intercom station requires the following keys:

- 1 key to configure the two-way connection and to activate the mode for selecting the subscribers (two-way switchboard key).
- 1 key for each subscriber who is supposed to participate in the connection. If there are already direct call keys configured to reach the subscribers, you can use them.
- Optionally, you can also use a dial keypad to select the subscribers.

A master control station can configure several connections at the same time.

Each intercom station which is used for temporary connections requires 1 special key which is exclusively reserved for these temporary connections and which has no other function (switchboard speak key). As soon as the connection has been successfully configured, the key is temporarily used as direct call key. This means that the connection is established via keypress and the operator can speak to the target (Push-to-Talk).

If the switchboard speak key at Station A or B is no longer pressed within a specified time (e.g. 10 s), the temporary connection is deleted. The corresponding switchboard speak key is then without function.

An intercom station can only control one temporary connection at a time. The master control station, however, can always override an active connection by a new one. In this case, the operator is informed about it by an acoustic tone.

Related Functions

- PA switchboard call
- Duplex switchboard call
- Switchboard call to external telephones
- Conference switchboard call
- Direct two-way communication