SIP-WS 211V DA

Robust SIP stations for barrier-free building, habitation and living

IEC 60118-4 compliant | Open-Duplex® | High Volume | HD Voice 7 kHz Audio | Vandal resistant IK07 | Weather-proof IP66

Our commitment to barrier-free communication

While developing SIP-WS 211V DA, Commend's commitment was to provide an Intercom station that was to be especially easy to operate by any user while providing clear intelligibility under all ambient conditions. The target was to build "the world's most barrier-free Intercom station" that would support equal opportunities for impaired persons to participate in public life.

The special Intercom station equipment developed for this purpose ranges from a special call button in contrasting colours for the visually impaired and extra large LED pictograms to HD Voice sound and inductive speech transmission.

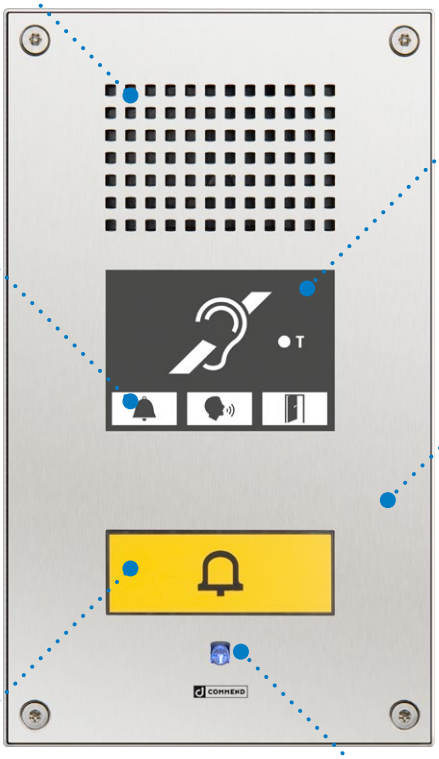
The resulting multi-purpose Intercom station even exceeds the official requirements for people with visual and hearing impairments and the accessibility regulations in accordance with the equal opportunities for the disabled principle (see "Two-Senses Principle").
What is more, the integrated IEC 60118-4 compliant induction loop system is setting new worldwide standards in Intercom barrier-freeness for the benefit of users and customers.

Features and highlights

The two built-in loudspeakers support **high audio volumes and superior acoustic intelligibility**; they also enable automated playback of pre-recorded audio messages for user guidance purposes.

Extra large, bright coloured **LED pictograms** provide users with clearly visible feedback on current device transactions and operating states.

Small feature, big effect: Larger, more easily visible call buttons make for greater ease of use. A more than **3.8 square inch illuminated call button** with tactile bell symbol and high-contrast colouring allows easy operation of the Intercom station at any time of the day.



The **IEC 60118-4 compliant** induction loop system provides a sustained high level of functionality to support the hearing impaired. SIP-WS 211V DA provides in a clean, compact device what other solutions can provide only with cumbersome constructions, using external amplifiers and induction loops.

The **robust stainless** steel construction and IP66 rating ensure uninterrupted, trouble-free operation in publicly accessible outdoor areas.

An **electret condenser microphone** with omnidirectional directivity supports talking distances of up to 7 m (23 ft). As a result, optimum communication conditions can be maintained even over a relatively large distance between the user and microphone (e.g. for wheelchair users).

Information on the "Two-Senses Principle"

This principle requires information to be presented clearly so that it can be perceived through two complementary senses: Acoustic information must also be indicated visually, and visual information must also be represented either acoustically or by tactile means.

Features and highlights

Optimum speech intelligibility

A loud, clear and beautifully crisp voice signal ensures natural, face-to-face style communication with visitors and customers – even in challenging situations.

- Suppression of interfering background sounds such as traffic noise
- Easy to hear, thanks to higher volume capacity than standard SIP stations
- OpenDuplex® for simultaneous speaking and listening at high volume levels
- Switched Duplex for situations with extreme ambient noise (e.g. tunnels)
- HD Voice speech quality with 7 kHz audio bandwidth

Automated voice messages

Pressing the call button at an entrance or emergency call station triggers the playback of a customised voice message, reassuring the caller that someone will be available shortly to assist them.

Always at your service, thanks to redundancy

- Stations can be logged in at up to three servers simultaneously
- Calls are transmitted via the active server
- In case none of the servers can be reached, the system can try to establish a serverless connection if necessary – e.g. by calling all stations on the network

Electricity costs as low as € 2.60 a year

When it comes to low power consumption, Commend's SIP stations are second to none.

- Approx. 1.5 watts in standby mode, and only 2 watts in call mode, depending on the volume level
- Power can be supplied via PoE or an external power adapter

Relays enable powerful control functions

Stations come with the ability to remote-control relays.

- Doors, shutters, gates and barriers open effortlessly at the touch of a button (desktop or mobile telephone) or by remote control via a third-party system (HTTP request)
- Easy control of signal lamps and other subsections

Attendant contacts for additional indication of operating states such as error, ringing, active call, etc. (e.g. automatic activation of flashing light signal to indicate incoming calls).

Quickly assign calls and reduce waiting times

In serverless communication scenarios the next free query point is found by calling each one using an action sequence. Server integration, on the other hand, allows for incoming calls to be allocated instantly and automatically to the next available operator (e.g. at a call centre). This way, waiting times for callers are reduced to an absolute minimum.

Location identification messages

An optional location identification message (e.g. "Emergency Call Station at Subway Station West Park") can be defined for each station individually. The identification message is played back automatically when the operator at the control desk or query point takes the call. This way, the operator knows immediately where the call is coming from without having to ask. This is particularly important if there is no visualisation system installed at the control desk or query point, or if the call is relayed to a mobile phone.

Loudspeaker/microphone monitoring

This feature causes the SIP station to emit an unnoticeable audio test signal through the loudspeaker, which is picked up and analysed by the microphone. If the test signal does not arrive in the required quality (e.g. due to chewing gum blocking the microphone), the station will notify the receiving station accordingly. This ensures constant availability without the need for regular manual inspections, which goes a long way towards saving costs.

Configuration made easy

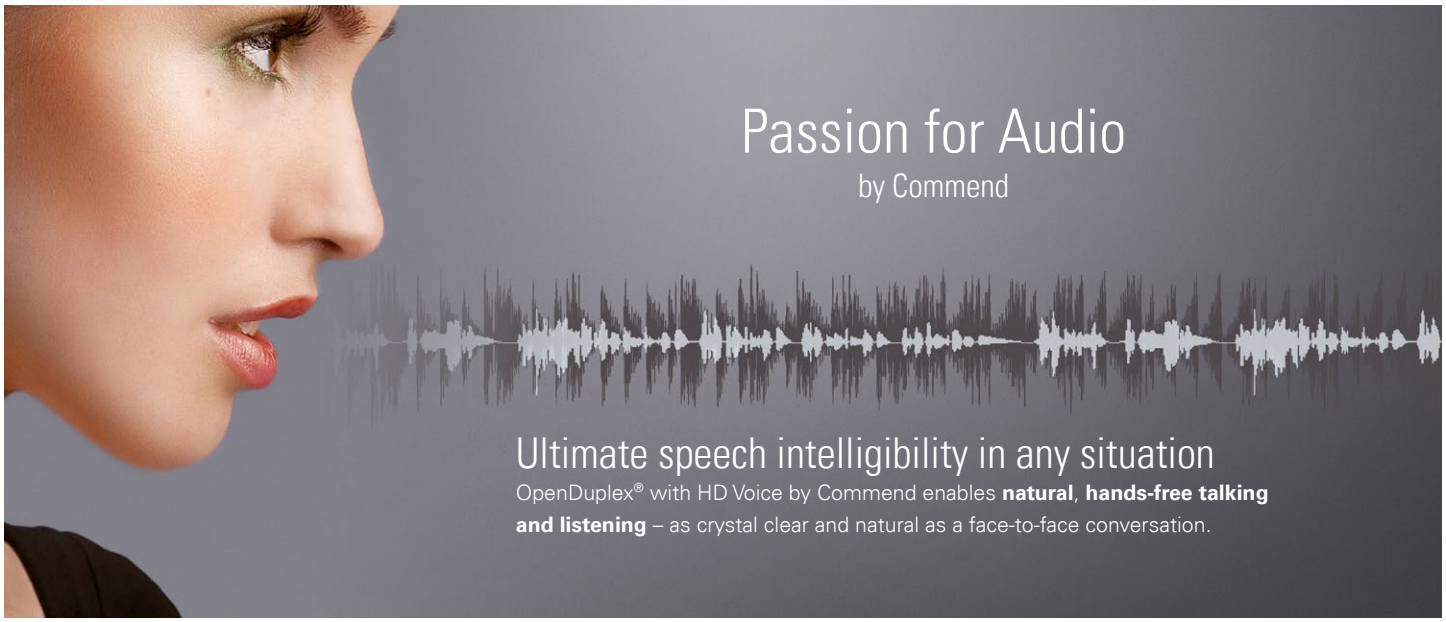
The stations are specifically designed for easy, convenient configuration over the special web interface. A few clicks is all it takes to perform an update and even set up complex action sequences. For large-scale installations, the provisioning function helps to deploy configuration settings automatically and conveniently to thousands of connected stations at once.

Simply compatible

SIP stations integrate seamlessly into existing Commend security and communication systems as needed. This allows adding features such as announcements, audio recording, interfacing with external systems (e.g. visualisation), and many more.

Wide range of functions

- Telephone directory and web call
- Connection ports for external amplifier and loudspeakers
- Connection ports for add-on modules (loudspeaker, direct dialling buttons, handset)
- SNMP for station monitoring
- HTTP support for network-based control of stations
- MLC (Metal Loss Correction) and AGC (Automatic Gain Control) for easy startup and faultless operation



Audio // Basics

HD Voice	HD Voice by Commend transfers the audio signal at a bandwidth of **7 kHz**
Sound pressure level	**High volume** up to **99 dB**
Amplifier	High efficient class-D amplifier with 2.5 W
Microphone	Omnidirectional electret condenser microphone for max. 7 m (23 ft) speaking distance
Loudspeaker	2 x 8 Ω loudspeaker with humidity-resistant special membrane type for optimum sound quality

Audio // Functions

Dynamic **background noise suppression** virtually eliminates all ambient noise

Loudspeaker/microphone surveillance – ensures the availability of the Intercom station while reducing the need for manual verification of its functionality

Peer-to-peer audio – reduces network and server load to ensure efficient use of resources

Conference call function for simultaneous talking with multiple conversation partners

OpenDuplex® for natural, hands-free communication

Switched Duplex for situations with extreme ambient noise (e.g. tunnels)

Learn more
audio.commend.com

SIP-WS 211V DA
Technical Specifications

Technical data SIP-WS 211V DA

IP rating acc. EN 60529:	IP66
Mechanical impact resistance acc. EN 62262:	IK07
Front panel:	stainless steel, 3 mm (0.12 in)
Operating temperature range:	–20 °C to +70 °C (–4 °F to +158 °F)
Storage temperature range:	–20 °C to +70 °C (–4 °F to +158 °F)
Relative humidity:	up to 95%, not condensing
Call button:	large yellow emergency call button with bell symbol
Microphone:	electret condenser microphone polar pattern: omnidirectional speaking distance: max. 7 m (23 ft)
Loudspeaker:	special membrane type for optimal sound quality, sound pressure level: 85 dB/ 1 W/ 1 m (3.28 ft), 2 x 8 Ω
Amplifier:	built-in class-D amplifier with 2.5 W
Sound pressure level:	max. 99 dB
Outputs:	2 relay outputs (switch-over contacts) max. 60 VDC, 2 A, 60 W [1] expected life: min. 5 x 10^4 (2 A), 10^5 (1 A)
Inputs:	3 inputs for floating contacts
Protocols:	IPv6 ready, IPv4, TCP, UDP, HTTP (RFC 2617, RFC 3310), RTP (RFC 3550), RTCP, DHCP, SDP (RFC 2327), SIP (RFC 3261), SNMPv2, STUN, TFTP, URI (RFC 2396), DTMF Decoding (RFC 2876, RFC 2833), SIP User Agent (UDP RFC 3261), SIP Refer Method (RFC 3515)
Transmission bandwidth:	7 kHz
Connection:	pluggable screw terminals expansion jack for e.g. EB2E2AHE IP uplink/downlink: shielded RJ45 modular jacks
Cabling:	min. Cat. 5
Audio features:	OpenDuplex®, Switched Duplex background noise suppression, pre-recorded audio
Power supply:	PoE or external supply 24 VDC ± 2 V power consumption: max. 16.5 W
PoE (Power over Ethernet):	following IEEE 802.3af power consumption of the terminal device: class 0 (0.44 W to 12.95 W)
Codecs:	G.722, G.711 a-Law, G.711 µ-Law
Ethernet:	2 x 10/100 MBit/s (Full/Half Duplex) Auto MDIX
Additional mounting material:	flush mount kit WSFB 50V flush mount kit WSFB 50V FL surface mount kit WSSH 50V rain protection roof WSRR 50V
Dimensions (W x H x D):	with flush mount kit: 164 x 279 x 14 mm (6.46 x 10.98 x 0.55 in) with surface mount kit: 164 x 279 x 50 mm (6.46 x 10.98 x 1.97 in)
Weight incl. package:	approx. 1,650 g (3.64 lbs)

[1] The relay output may only be connected to a SELV circuit! A SELV circuit as per IEC/EN 60950-1 must be separated safely from a dangerous electrical circuit (e.g. 230 V or 110 V mains power), e.g. by means of double insulation. The SELV circuit must not exceed 60 VDC or 42.4 VAC_{peak} (30 VAC_{eff})!

Line length in LAN

The maximum line length of Cat. 5 cabling in a LAN is 100 m (328 ft) – e.g. from switch to Intercom station.

Extent of supply

- Intercom station incl. induction loop
- Clip and screws for the induction loop
- Screws for mounting
- Short reference

System requirements

- Compatible SIP server (see TE | 2) or
- VirtuoSIS (min. PRO 800 5.0, min. base licence PRO 3) or
- GE 800 with G8-VOIPSERV or
- Serverless operation

Technical data induction loop amplifier module*

Input:	input impedance 10 kΩ sensitivity: –15 dBu for max. output overload level +10 dBu
Output:	drive voltage: max. 6.5 V_{rms} drive current: 2.8 A continuous 1 kHz sine wave loop resistance: 0.1 Ω to 1.0 Ω resistive or 1.5 Ω maximum reactive impedance
Frequency response:	80 Hz to 8 kHz at –3dB
MLC (Metal Loss Correction):	0 to –3dB per octave
Power supply:	external supply 15–26 VDC (max. power consumption 8 W) or via power supply from station (if external power supply is used)
Connection:	pluggable screw terminals JST jack (type: PAP-02v-s)

*Technical data only valid for the Intercom station SIP-WS 211V DA min. Rev. AC!

Compatibility SIP PBX

Basically, the SIP stations can be used with any SIP server.
The following server types have been tested explicitly by Commend International GmbH and therefore a proper functionality can be confirmed:

Manufacturer[1]	Type	Version
Cisco	Cisco Call Manager Cisco Unified Communication Manager	Versions 5, 6, 7, 8
Digium	Asterisk	Version 1.2, 1.4, 1.6
Avaya (former: Nortel)	CS1000	Version 6
Avaya	Avaya Aura™ (Avaya Communication Manager, Avaya Session Manager)	Release 6.1
Innovaphone	Virtual Appliance IPVA	Version 9 final
Alcatel	OmniPCX Enterprise (OXE)	Release 9
Siemens	Hipath 4000 Hipath 3000 + HG 1500	Version 5
3CX	3CX for Windows	3CX PhoneSystem Versions 9, 10, 11
Starface	Starface free	Version 4.x, 5.x
Aastra (former: Ericsson)	MX-ONE	Version 4.1 SP 1
Kamailio	Kamailio (OpenSER)	Version 3.3.0
FreeSWITCH	FreeSWITCH	Version 1.1 Beta1
ELMEG	elmeg ICT880	Version 7.67D
2N®	2N® Netstar IP	Version 3.1.0.96
AVM	Fritz!Box Fon 7170 Fritz!Box Fon 7270	Version 29.04.87 Version 54.05.05
Sipgate	sipgate.at, sipgate.de	tested in Dec 2010
Vodafone Arcor	vodafone.de	tested in Jan 2011
blueSIP	blueSIP.net	tested in May 2011
Mitel	3300ICP	12.0.0.49

[1] The listed products and company names are brand names or registered trademarks of their respective owners.

SIP-WS 211V DA
Installation Instructions

Mounting instructions

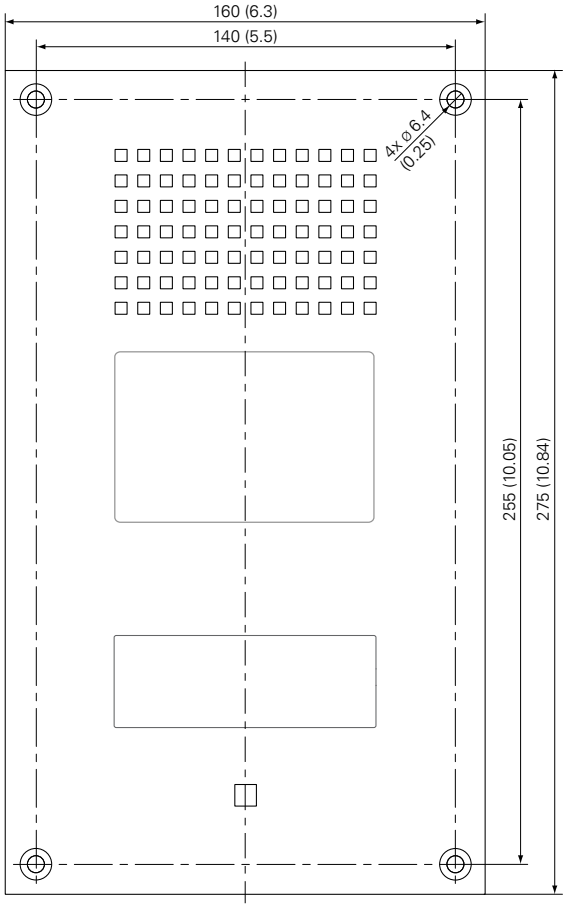
- Do not expose the station to extreme temperature (see "Technical Specifications" on TE | 1).
- For flush mounting, a flush mount kit WSFB 50V (available separately) is required.
- For surface mounting, a surface mount kit WSSH 50V (available separately) is required.
- Optionally a rain protection roof WSRR 50V is available.
- Observe the country-specific standards for installation, mounting and configuration.
- When opening the stations, ESD precautions must be observed.
- The stations may only be opened by authorised service engineers.
- Induction loop performance compliant with IEC 60118-4 (when installed correctly).
- Metal structures significantly affects performance of the induction loop system. The magnetic field generated by an induction loop system, induces a current in any closed path of a metal structure placed in the vicinity of the induction loop. These induced currents tend to weaken the magnetic field and cause loss.

Examples of metal structures

- Lightweight floor construction with a (usually profiled) metal sheet under a thin reinforced concrete slab.
- Girders, beams, constructional metal work
- Metal cladding and walls
- Metal box construction (elevators, lifts)

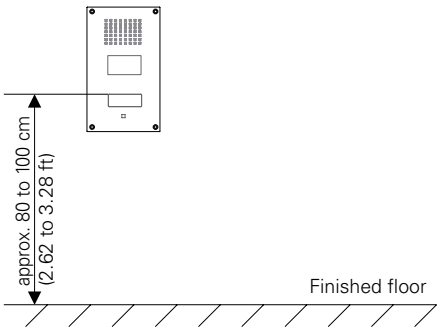
Dimensions front panel

Measuring units in mm (inch), not to scale!



Recommended mounting height

The upper edge of the button approx. 80 cm to 100 cm (2.62 ft to 3.28 ft) from the finished floor.



Note:
For barrier-free operation, it is recommended to mount the station with enough space to walls or corners.

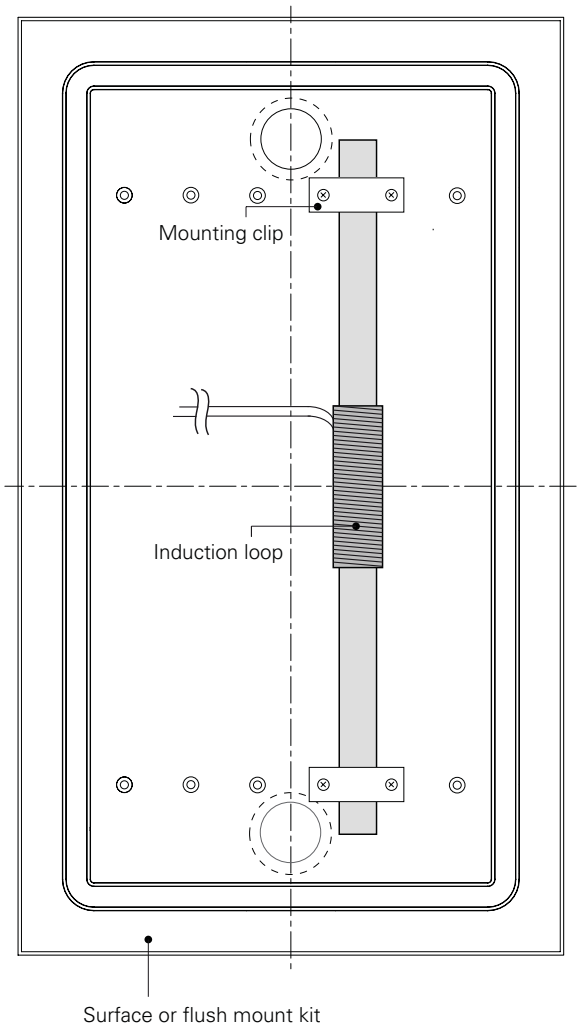
LED "T" – detection of audio signals

If an audio signal is detected (e.g. during an active conversation) the LED "T" flashes. Therefore, a correct setting on the appropriate hearing aid is necessary.

Quick start

Please follow the steps bellow for the installation of the Intercom station:

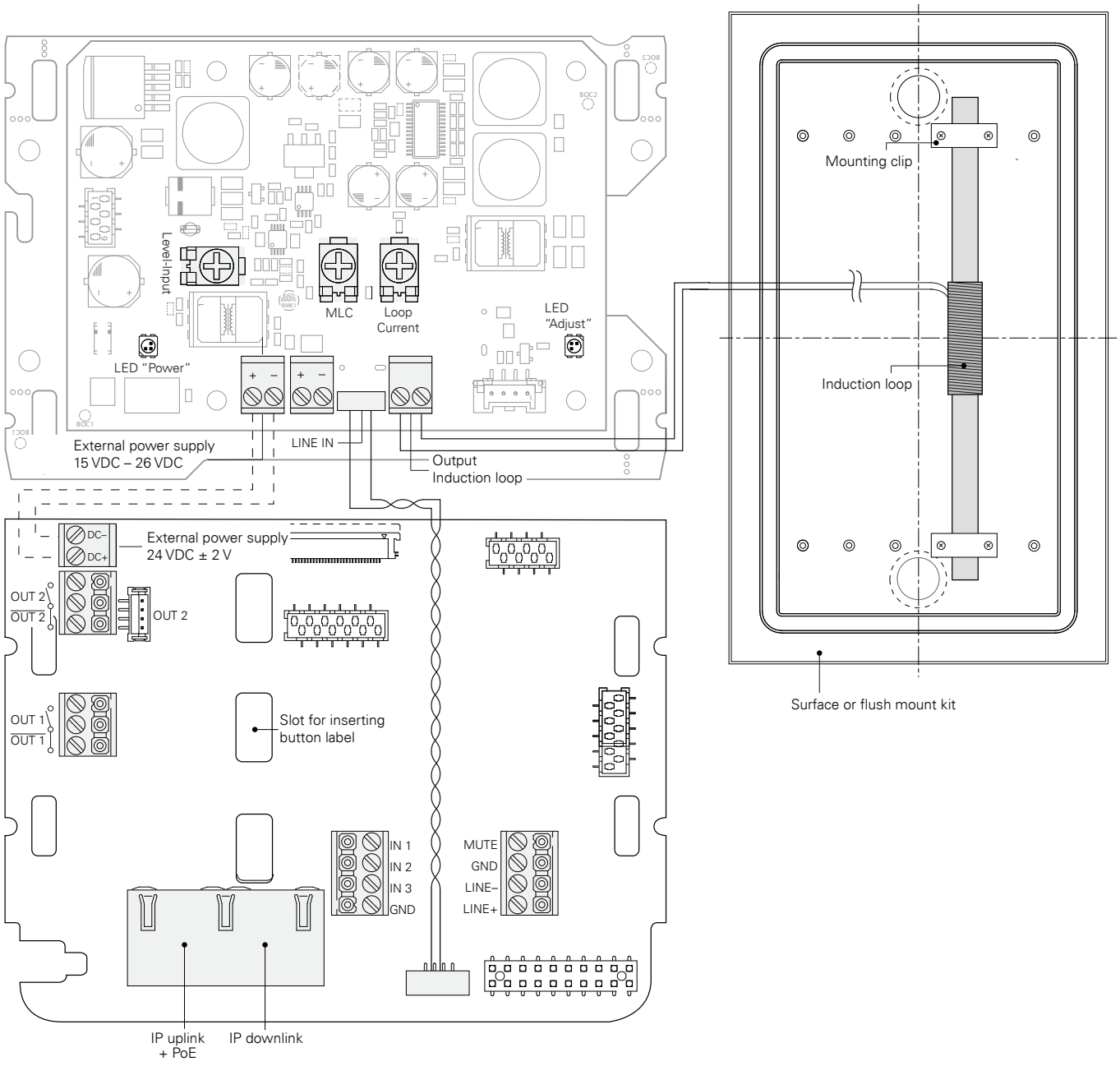
– Mount the induction loop on the surface or flush mount box as shown in the following picture.



Note:
It is mandatory to install the induction loop on the right side of the housing, as shown in the connection diagram. Otherwise disturbing hum may occur. For the installation use the attached mounting clips and screws (in extent of supply).

Quick start

- Carry out the connection of the induction loop and power supply
  - Connect the loop cable (polarity does not matter) via the screw terminals as shown in the following picture.
  - Connect power supply (15 VDC to 26 VDC) to the incution loop PCB, as shown in the following picture.
    Note: If an external power supply is used for the terminal (24 VDC ± 2 V, 500 mA), it is possible to use this power supply also for the induction loop amplifier module.



- Switch on the external power supply and check if the green "Power" LED illuminates!
- Apply input signal (e.g. by speaking into the microphone) and increase the level with potentiometer "Level-Input" until the LED "Adjust" begins to light green.
- Increase the potentiometer "Loop Current" until the LED "Adjust" begins to light orange.
- With the potentiometer "MLC" it is possible to compensate the metal loss.
  Note: Increase the potentiometer to compensate the metal loss. If the potentiometer is turned fully anti-clockwise, no metal loss correction is active.
- Test the performance of the system using a loop receiver or field strength meter and adjust 'MLC' & 'LOOP CURRENT' to achieve acceptable performance – please consider the respective norm!
- Mount the SIP station – see short reference surface/flush mount kit.

Quality tested. Reliable. Smart.

COMMEND products are developed and manufactured by Commend International in Salzburg, Austria.

The development and manufacturing processes are certified in accordance with **EN ISO 9001:2015** .

A strong worldwide network

COMMEND is represented all over the world by local Commend Partners and helps to improve security and communication with tailored Intercom solutions.

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