WS 211V | DA

Multifunctional stations for barrier-free construction, housing and life

| Ultimate Usability | IEC 60118-4 compliant | 16 kHz eHD Voice | Fully IP based |

Our commitment to barrier-free communication

When developing 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 goal 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 enhanced 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" on page 2).
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.
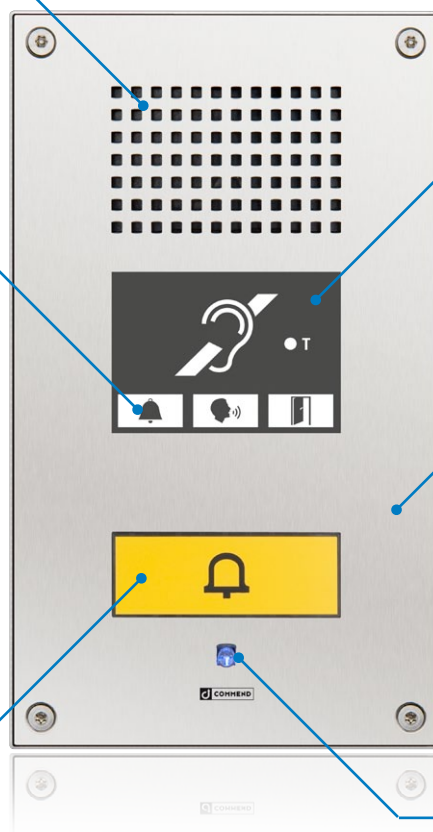
Features and Highlights

– A fully integrated, IEC 60118-4 compliant induction loop system enables persons wearing hearing aids with an induction loop to receive Intercom audio signals in clear, uninterrupted quality.

– 3 large, easily visible LED pictograms inform users visually about the Intercom station's current operating status (call transmitted, on going conversation, door open).

– Using sound patterns and pre-recorded audio messages, users can be provided with acoustic feedback about current device transactions (e.g. call transmitted, door open, etc.).

– Audio functions for ultimate speech intelligibility in any situation

– Large, illuminated, easy-to-use call button with tactile bell symbol (special call buttons, e.g. with Braille markings, are available on request).

– Extremely robust, vandal-resistant construction allows for installation in outdoor areas and publicly accessible locations.

– Continuous line and function check ensures that the Intercom station is always functional and ready, thus reducing the need for regular manual inspections.

– Functions as MLC (Metal Loss Correction) and AGC (Automatic Gain Control) for easy startup and faultless operation.

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Key benefits at a glance

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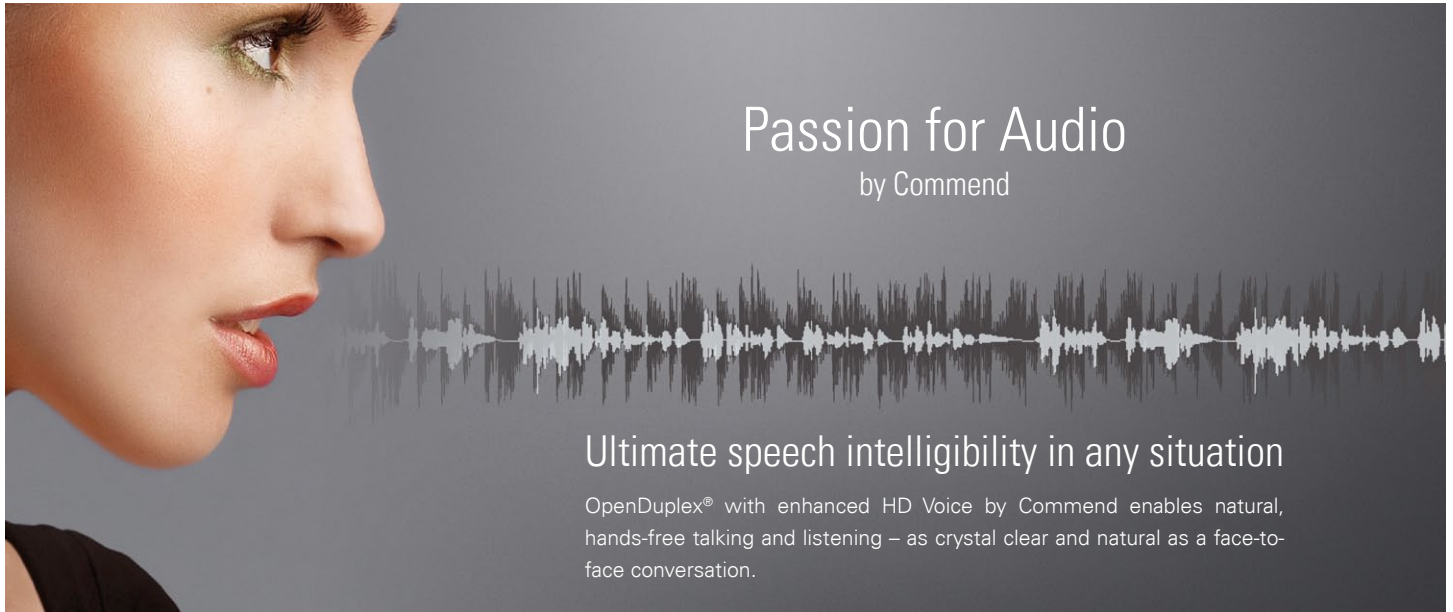
The **IEC 60118-4 compliant** induction loop system provides a sustained high level of functionality to support the hearing impaired. WS 211V I DA provides in a clean, compact device what other solutions can provide only with cumbersome constructions using external amplifiers and induction loops.

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

The **robust stainless** steel construction and IP 65 rating ensure uninterrupted, trouble-free operation in publicly accessible outdoor areas.

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 day.

An **electret microphone** with omnidirectional directivity supports talking distances of up to 7 m. 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 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.
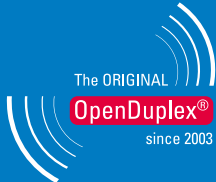
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Passion for Audio
by Commend

Ultimate speech intelligibility in any situation

OpenDuplex® with enhanced HD Voice by Commend enables natural, hands-free talking and listening – as crystal clear and natural as a face-to-face conversation.

Natural communication	enhanced HD Voice	High volume	Background noise suppression	Loudspeaker-Microphone monitoring

Audio // Basics

eHD Voice	Enhanced HD Voice by Commend transfers the audio signal at a bandwidth of **16,000 Hz**, thus capturing the entire frequency spectrum of the human voice.
STI	Speech Transmission Index **0.96** – measured under acoustic laboratory conditions; STI is a standard measure for speech intelligibility. It has a possible maximum value of 1.00, which corresponds to perfect intelligibility.
Sound pressure	**High volume** up to **99 dB** SPL
Amplifier	High efficient class "D" amplifier with 2.5 W
Microphone	Omnidirectional electret 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

Learn more
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Audio // Functions

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

– **Automatic volume adjustment** to ambient noise conditions

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

– **Audio Monitoring** – Fully automated emergency calls triggered by shouting/screaming or predefined distress sounds – i.e., more security for users

– **Peer2Peer Audio** reduces network and server load to ensure efficient use of resources

– **Public Address functions**

– **Audio recording** and lip synchronous Audio recording of conversations for documentation and evidence keeping purposes

– **Conference Call function** for simultaneous talking with multiple conversation partners

– **Speech activity detection** senses when calls are finished (no microphone signal) and terminates the connection automatically

– **Simplex-Modus** for applications requiring controlled communication – e.g., security solutions based on the 'push-to-talk/release-to-listen' method

– **Equalizer** for fine-tuning to ambient acoustic conditions

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Technical data / System requirements

Technical Data

IP rating:	IP 65
Mechanical impact resistance acc. EN 62262:	IK 07
Front panel:	stainless steel, 3 mm (0.12 in)
Microphone:	Omnidirectional electret microphone for max. 7 m (23 ft) speaking distance
Loudspeaker:	Special membrane type for optimal sound quality, sound pressure: 85 dB/1 W/1 m (3.28 ft), 2×8 Ω
Amplifier:	integrated class "D" amplifier with 2.5 W
Sound pressure:	max. 99 dB
Input:	3 inputs for floating contacts (detection of 5 input states)
Output:	2 relay outputs (switch-over contacts) 30 VDC / 1 A
Call button:	large yellow emergency call button with bell symbol
Transmission bandwidth:	16 kHz
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
Connection:	- pluggable screw terminals - expansion plug for e.g. EB 2E2A - IP Uplink: shielded RJ 45 modular jacks
Power supply:	external supply 15 – 26 VDC power consumption: max. 16.5 W
Cabling:	min. Cat. 5
PoE (Power over Ethernet):	IEEE 802.3af standard Power consumption of the terminal device: Class 0 (0.44 W to 12.95 W)
Protocol:	IoIP-Protocol based on UDP/IP
Data rate:	10/100 MBit/s (Full/Half Duplex)
Mounting:	flush mount kit WSFB 50V surface mount kit WSSH 50V
Measurements:	with flush mount kit: W 164 mm (6.46 in), H 279 mm (10.98 in), D 14 mm (0.55 in) with surface mount kit: W 164 mm (6.46 in), H 279 mm (10.98 in), D 50 mm (1.97 in)
Weight incl. package:	approx. 1650 g (3.64 lbs)

Technical Data Induction Loop Module *

Input:	Input impedance 10kΩ Sensitivity - 15dBu for max output Overload level +10dBu
Output:	Drive Voltage: max. 6.5 V$_{rms}$ Drive Current: 2.8 A continuous 1kHz sine wave Loop resitance: 0.1Ω to 1.0Ω resistive or 1.5Ω maximum reactive impedance
Frequency response:	80 Hz to 8 kHz: - 3dB
MLC (Metal Loss Correction):	0 to -3dB/ octave
Connection:	- pluggable screw terminals - JST plug (type: PAP-02v-s)

* Technical datas are valid for the Intercom Terminal WS 211V I DA min. Rev. AC!

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 Terminal inclusive induction loop
– Clip and screws for the induction loop
– Screws for mounting
– Short reference

System requirements

– GE 800 (min. PRO 800 3.1) with G8-IP (min. G3-8-IP 5.3)
– GE 300 (min. PRO 800 3.1) with G3-IP (min. G3-8-IP 5.3)
– Configuration software min. CCT 800 3.1
– Configuration software IPStationConfig (included in setup of CCT 800 3.1)
– Min. upgrade licence PRO3U

Configuration Notes

– Min. PRO 800 3.1 no LED template configuration is required. With PRO 800 3.1 a configuration is possible but without function.
– Min. PRO 800 4.0 the LED template dialogue is greyed out
– Call button works as button "0".
– Door opener has to be configured separately.

Requirements to the network

IP-Addresses and Ports
– For the WS 211V I DA the DHCP functionality is available. If DHCP is not used, the WS 211V I DA must have a fixed IP-address.
– In case of a changing public IP-address, dynamic registration of a WS 211V I DA is possible.
– Communication from the program IPStationConfig is done via Port 16399 (can not be configured).
– Communication from the WS 211V I DA to the Intercom Server (UDP protocol) is done via port 16400 (configurable).

QoS Requirements
– Maximum One-Way-Delay 100 ms
– Delay-Jitter not above 50 ms
– 0% packet loss for perfect audio quality

Bandwidth
– Required Bandwidth incl. protocol overhead per WS 211V I DA, for upload/download each: speech and data 96 kBit/s
– Speech is compressed according to G.722 standard

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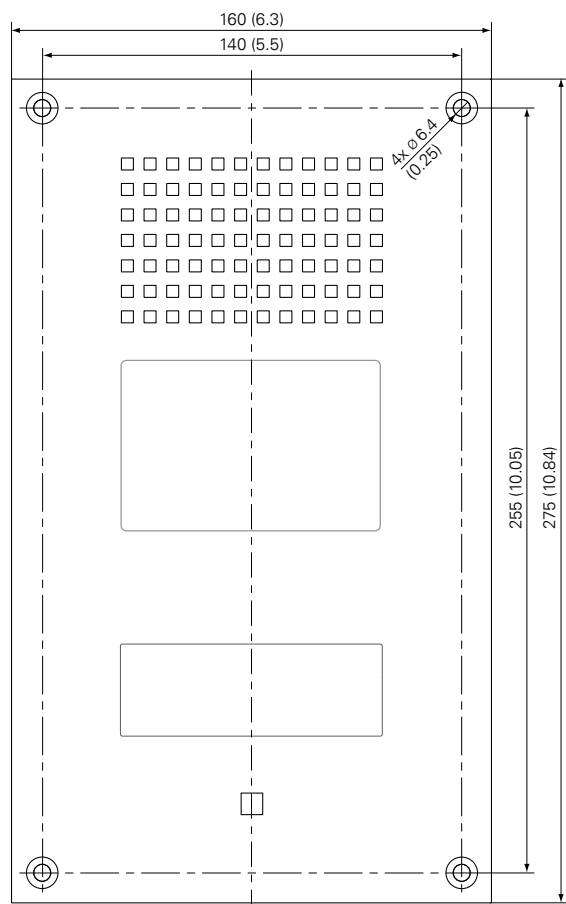COMMEND

Installation

Mounting instructions

– Do not expose the station to extreme temperature (see "Technical Data" on page 2).
– 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 mounting with a rain protection roof (WSRR 50V) is possible
– 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 correctly installed)
– 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)

Measurements front panel

Measurements in mm (inch), not to scale!

Recommended Mounting height

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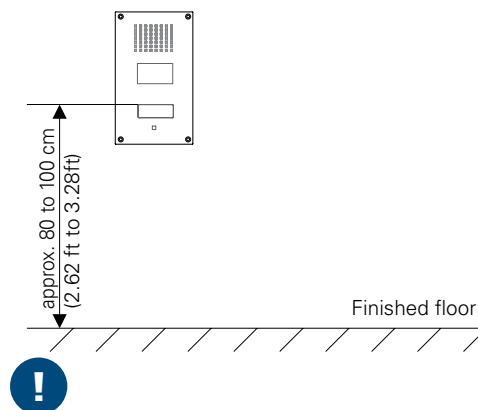

Info

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

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Quick Start

Please follow the following instruction for the installation of the Intercom Terminal:
– Open the WS Station - instruction see respective short reference
– Mount the Induction Loop on the surface or flush mount box as shown in the following picture

Mounting clip

Induction loop

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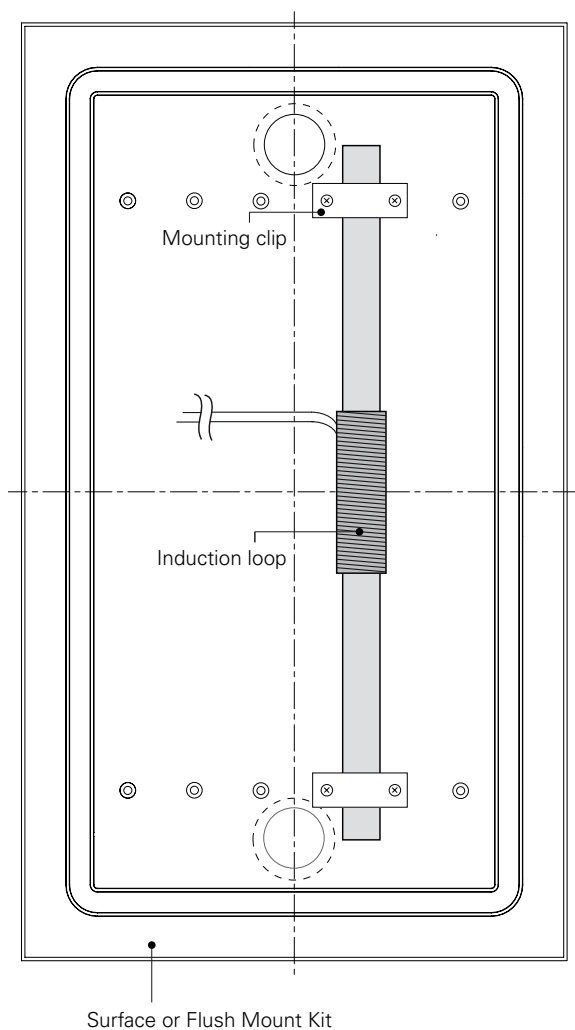
Note:
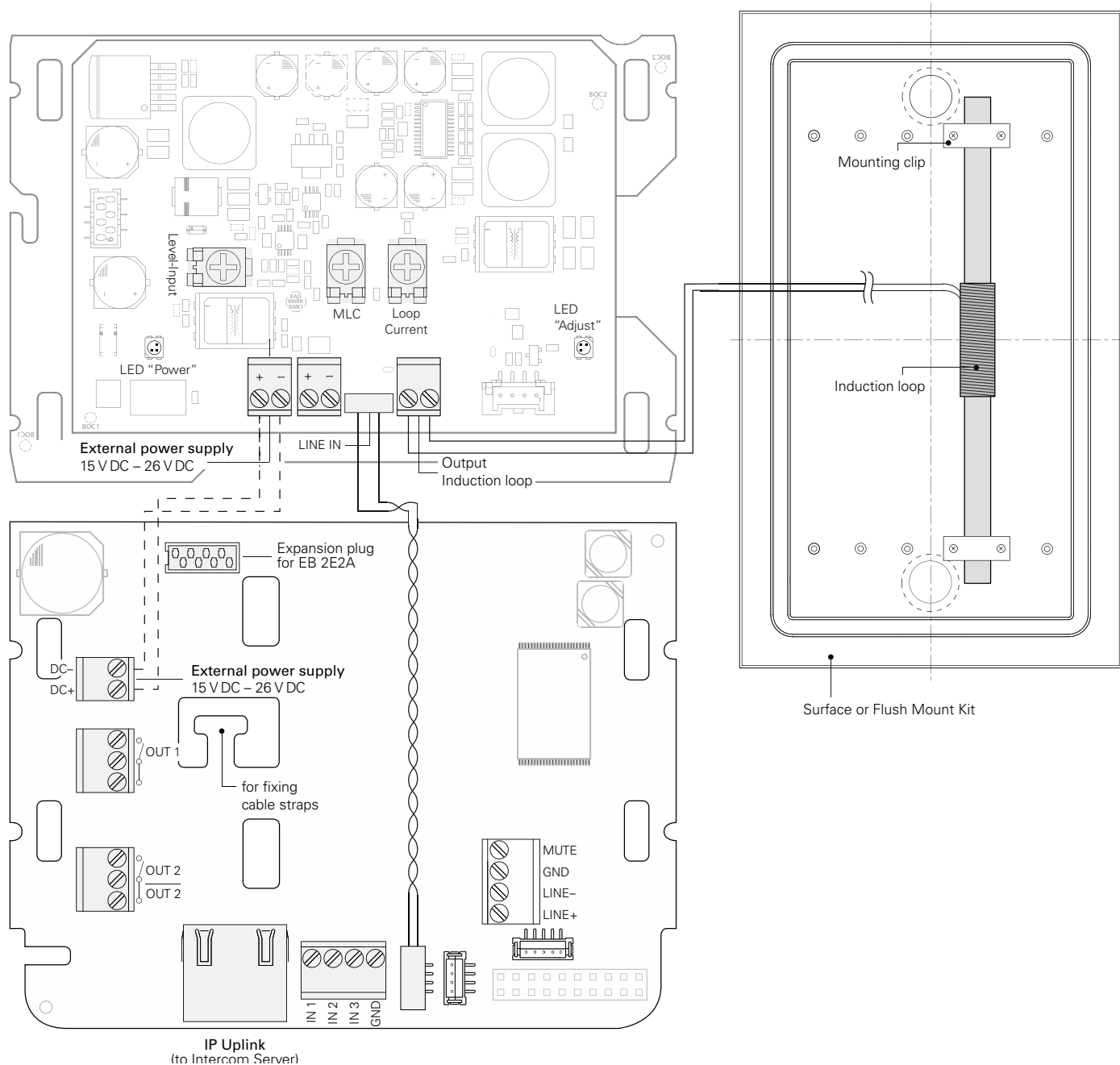It is mandatory to install the induction loop on the right side of the housing, as shown in the connection diagram. Otherwise disturbing hum may occur. For the installation use the attached mounting clips and screws (in extent of supply).

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Quick Start

– Carry out the connection of the induction loop, Intercom Server 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 - 26 VDC) as shown in the following picture.
     Note: If an external power supply is used for the terminal, it is possible to use this power supply also for the Induction Loop Amplifier Module.

Mounting clip

Induction loop

Surface or Flush Mount Kit

Level-Input

MLC   Loop Current

LED "Adjust"

LED "Power"

External power supply 15 V DC – 26 V DC

LINE IN

Output Induction loop

Expansion plug for EB 2E2A

DC–
DC+

External power supply 15 V DC – 26 V DC

OUT 1

for fixing cable straps

OUT 2
OUT 2

MUTE
GND
LINE–
LINE+

IN 1 IN 2 IN 3 GND

IP Uplink
(to Intercom Server)

– Switch on the external power supply and check if the green "Power" LED illuminates!
– The potentiometers "Level-Input", "MLC" and "Loop Current" are preset at factory delivery.
– 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 Intercom Terminal - 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 9001:2008**.

A strong worldwide network

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

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