WS 311V CM DA

Wallmount station for barrier-free building, habitation and living

High Volume	SIP video	IEC 60118-4 compliant
Ready for Symphony Cloud	Vandal resistant IK09	Weather-proof IP66

Our commitment to barrier-free communication

While developing WS 311V CM 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".

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. This induction loop system offers a wider frequency response, has got a larger area coverage and people with hearing aids are able to get a superior sound quality.

The 3 mm thick stainless steel front panel with tamper protection and special screws offers protection against vandalism. The robust construction also provides full protection against water, dirt and dust and is IP66-rated.

The Intercom station is equipped with a sensitive camera sensor that offers a superior dynamic range. Despite the flat front glass the camera still has a very wide viewing angle, both horizontally and vertically.

Ready for Symphony Cloud Services

The Intercom stations can be connected to Symphony and use its services. Symphony is the world's first cloud-based Intercom platform with "Privacy and Security by Design". Visit the Symphony website to find out about the services currently available and if they are alredy offered in your country.

symphony.commend.com

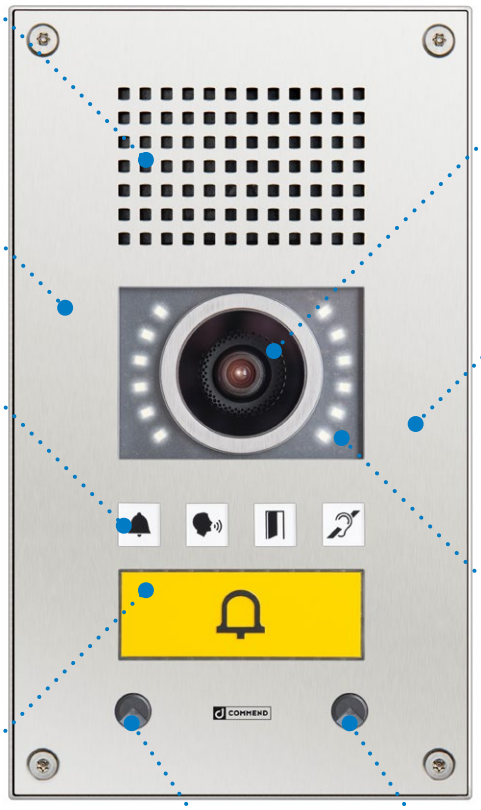
Features and highlights

The two built-in loudspeakers support **high audio volumes and superior acoustic intelligibility**; they also allow 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 311V CM 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.

Small feature, big effect: 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 **camera** provides a very large viewing angle (150° diagonally) as well as an ultra high dynamic range. In addition, the station is equipped with flat scratch-resistant camera glass for extra sabotage protection.

The **robust stainless steel construction and IP66 rating** ensure uninterrupted, trouble-free operation in publicly accessible outdoor areas while providing full protection against water, dirt and dust.

12 white LEDs make a big difference, as they make colours visible even at night – another feature that sets the station series above other Intercom stations on the market.

Two **digital MEMS microphones** ensure high sound quality, reliability, durability and robustness. The bevelled edge of the microphones adds to the stability of the series WS 311V CM DA stations.

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

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.

Always at your service, thanks to redundancy

- Stations can be logged in at several 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

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) 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)

* Only with IP Secure Connector, EB1E1A; EB8E8A or EB3E2A-AUD.

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.

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.

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

Stations can be integrated 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
- USB ports for add-on modules or expansion modules
- MLC (Metal Loss Correction) and AGC (Automatic Gain Control) for easy startup and faultless operation

Accessories

Safety switch box IP Secure Connector

The IP Secure Connector provides high performance and high, absolute security, even if the connected Intercom station is located outdoors: If an unauthorised attempt is made to remove the Intercom station, e.g. to access the connected Ethernet cable, the IP Secure Connector interrupts the connection to Intercom station and LAN. This ensures that it is neither possible to access the network nor to open a door or gate. Furthermore, the IP Secure Connector provides power supply in form of PoE+ and has two inputs and three outputs.

Power injector PA 25W POE-DC

In applications where PoE sourcing equipment is not available, the optional power injector PA 25W POE-DC offers a compact, convenient solution. It supports a wide DC input range (24–48 V) and is IEEE 802.3af/at compliant. The power injector connects easily and conveniently to an Intercom station via Ethernet cable.

Notes:

- EB3E2A-AUD and PA 25W POE-DC are optimised for installation within the flush mount box WSFB 50V or the surface mount box WSSH 50V.
- The device supports connecting 1 USB device of the same type at any time. Example: 1 EB3E2A-AUD and 1 EB1E1A.

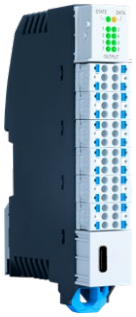
Expansion module EB3E2A-AUD

The EB3E2A-AUD expansion module provides an easy way to expand the I/O and audio capabilities of a station. The expansion module is suitable for any applications where inputs and outputs are required. It has three inputs, two output relays and ports for direct connection of an external loudspeaker, external microphones and handset. Line-in and line-out connectors provide additional flexibility. The board can be connected to the station PCB through a USB cable and is immediately available in the system.

USB I/O module EB1E1A

With the USB I/O module EB1E1A, a base module can be expanded with an input and a relay output (normally open contact). The EB1E1A can be connected to a free USB port. By doing this, a input as well as a floating, galvanically-isolated output contact is available immediately – e.g. for use with a door opener.

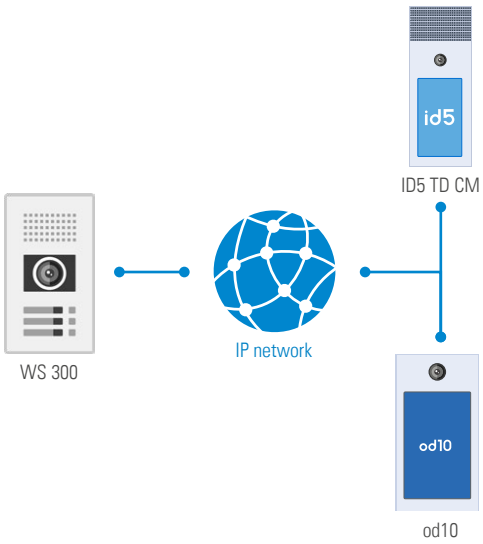
USB I/O module EB8E8A



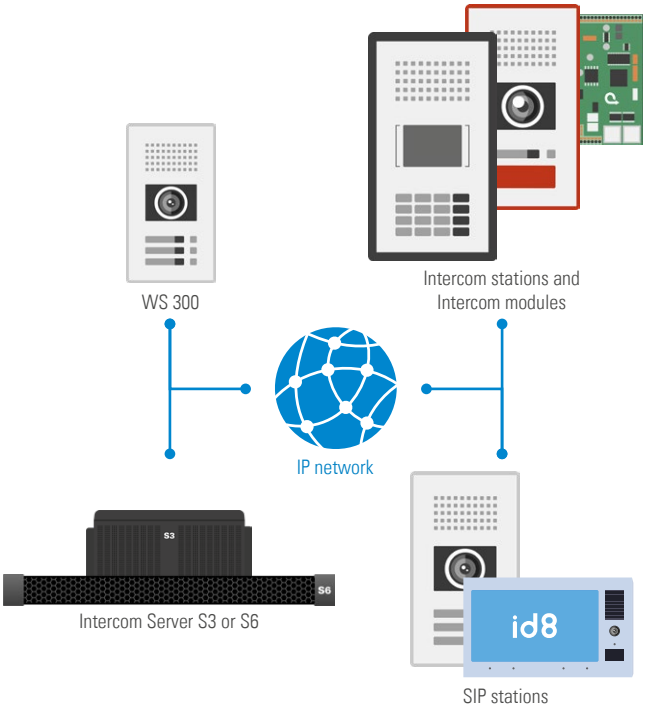
A device can be quickly expanded with inputs and outputs using the USB I/O module. The total of 8 inputs and 8 outputs of the EB8E8A enable an easily scalable solution. The EB8E8A complies with Commend's strict cyber security guidelines, e.g. for switching outputs. The module is connected using USB.

System overview

Operation with Symphony Mesh

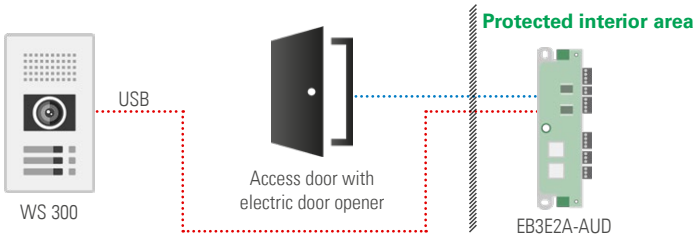


Operation with Symphony On-Prem

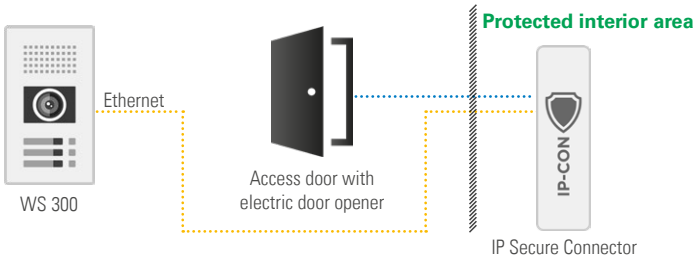


Wall application examples

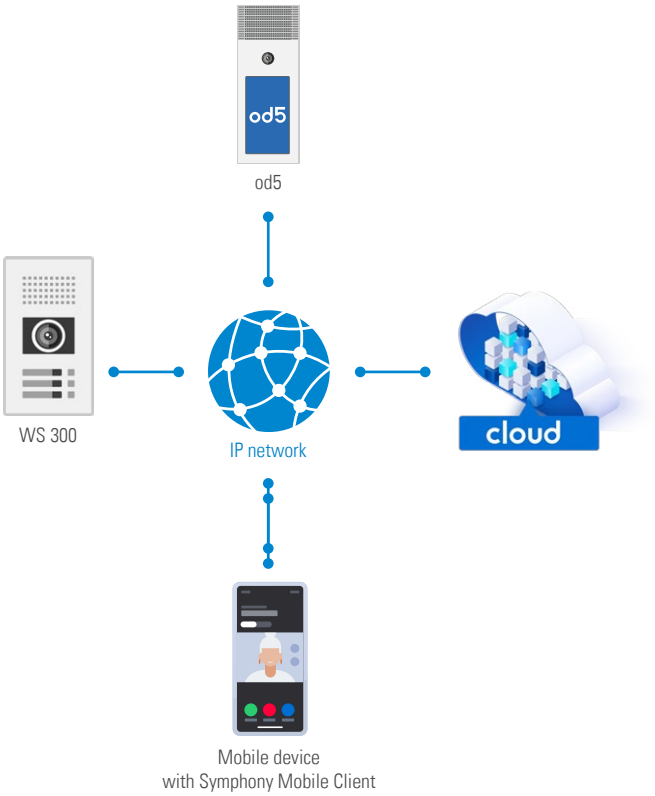
od10 with EB3E2A-AUD (3 inputs, 2 outputs, connected via USB)

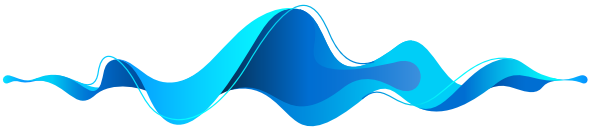


od10 with IP Secure Connector (door opener, network security and PoE, connected via Ethernet)



Operation with Symphony Cloud





CERTIFIED ACC. TO ISO 27001 IEC 62443-4-1

Passion meets audio

Ultimate speech intelligibility

Because every word matters, high speech intelligibility is crucial in security and communication solutions. In everyday life, it enables natural and brilliant communication; in operational processes, it ensures improved efficiency and in an emergency often buys life-saving time.

AI CLEANS VOICE FROM NOISE

Echo cancellation

Our advanced echo cancellation technology leverages the power of Commend's proprietary **deep neural networks** to deliver unparalleled clarity. Experience smooth and natural conversations without any noticeable echoes or delays, ensuring effective communication every time.

Background noise suppression

To ensure that the other party clearly understands what is being said despite high levels of ambient noise, dynamic background noise suppression together with **beamforming** reduces interfering signal components effectively.

Dynamic volume adjustment

IVC (Intelligent Volume Control) automatically adjusts the loudspeaker volume of the Intercom station depending on the environment noise level – because both, too low and too high a volume, significantly reduces speech intelligibility and the user experience.

Hands-free communication through OpenDuplex®

This technology from Commend, combined with highly sensitive microphones as well as a high volume, allows natural and hands-free communication within a unique radius of several metres.

High volume

When there is ambient noise, the Intercom station has sufficient reserves to put out the audio signal of the other party at a higher volume than any distracting background sounds.

Audio functions adding value

- **Loudspeaker-microphone surveillance** – constant availability of Intercom stations while greatly reducing the manual testing effort.
- **Simplex mode** – for applications requiring controlled communication, e.g. security or industrial solutions based on the push-to-talk/release-to-listen principle.
- **Audio monitoring** – fully automated (emergency) call triggering at defined sound pressure levels for more security.
- **Live sound pressure level** – continuous measurement of ambient noise with optional transfer to a management system through SNMP or HTTPS (e.g. to visualise noise volumes).
- **Equalizer** – for fine-tuning to ambient acoustic conditions.
- **Public address functions** – as an essential element of a holistic solution approach, announcements can be made or played back at every Intercom station as well as responded to directly.

For more information, visit:
audio.commend.com

Cyber security at Commend

Uncompromising protection against threats

IT infrastructures are facing a growing variety of cyber threats. This means that the defensive capabilities of each product in the system environment are key.

Security is above all a question of trust. At Commend, cyber security as a core competence has always been given a very high priority. From the initial product idea through implementation and operational support, privacy and security by design (PSBD) is the uncompromising target and promise to our customers against which product features and functions must be measured.

Cyber security as top priority

- Commend as well as the hardware and software development process is rigurously certified according to the standard **IEC/ISO 27001** and subject to a company-wide information security management system (ISMS)
- Commend is a member of the **Center for Internet Security** (CIS)
- Commend's Cyber Security Board ensures the handling and transparent communication of security vulnerabilities as well as the strategic hardening of Commend systems
- Commend is certified in accordance with the **IEC 62443-4-1** standard. The Commend development team implements secure communication and automation solutions in agreement with „Security by Design" guidelines.
- Commend continuously publishes software updates with security patches and improvements

Physical security

- Robust devices and vandal-resistant product versions
- Tamper detection through electromechanical contacts
- USB and port-debugging protection

Network security

- **Standard IEEE 802.1x** for authentification (network access)
- **Standard IEEE 802.1q** for VLANs (network segmentation)
- Commend IP Secure Connector for automatic interruption of the network connection in the event of a tampering attempt

Data security

- **Encrypted and authenticated communication**
- **SIP over TLS v1.2** with secure cipher suites (> 128 bit)
- **SRTP** for tap-proof encrycption of voice data
- **X.509 client certificates** for authentification and encryption
- TLS transport encryption for the protocols **HTTPS**, **SIPS** and **MQTTS** to protect the web interface, APIs and video

Application security

- Mandatory change of the default password during the first login
- Minimum password length: 12 characters
- Detection of brute-force attacks at login
- Documentation and securing of network ports

Information about the cyber security of other Commend products can be found in the respective data sheets and product manuals.

For more information, visit:
trust.commend.com

WS 311V CM DA
Technical specifications

Technical data WS 311V CM DA

IP rating:	IP66 (acc. EN 60529)
Mechanical impact resistance:	IK09 (acc. EN 62262)
Front panel:	stainless steel, 3 mm (0.12 in)
Microphone:	2 x digital MEMS microphones
Loudspeaker:	special membrane type for optimal sound quality, 2 x 8 Ω
Amplifier:	integrated class-D amplifier with 2.5 W
Sound pressure level:	max. 99 dB
Call indication:	2 x multifunction LED (multi-coloured)
Call button:	1 back-lit large yellow call button with tactile bell symbol
Audio bandwidth:	up to 20 kHz
Audio codecs:	Opus, G.722, G.711 a-law and G.711 u-law
Video features:	codecs: H.264 (SIP video and ONVIF), Motion JPEG (HTTP video and ONVIF) and RTSP ONVIF specification: ONVIF Profile S
IT security:	SIP over TLS, SRTP, IEEE 802.1X, MJPEG via HTTPS, HTTPS for accessing the web interface and interfaces
Protocols:	IPv4, IPv6, TLS, TCP, UDP, HTTP (RFC 2617, RFC 3310), HTTPS (RFC 2818), RTP (RFC 3550), 802.1x EAP-TLS (RFC 5216), 802.1x EAP-MD5 (RFC 2284), RTCP, RTSP (RFC 2326), DHCP, DHCPv6, DNSv4, DNSv6, mDNS, SDP (RFC 2327, RFC 4566), SSDP, SIP (RFC 3261), SIP over TLS, SNMPv2c, STUN (classicstun), SMTP, DTMF Decoding (RFC 2976, RFC 2833, SIP Info), ICMPv6 (Router discovery), MQTT (ISO/IEC 20922)
Operating temperature range:	–40 °C to +65 °C (–40 °F to +149 °F)
Storage temperature range:	–40 °C to +65 °C (–40 °F to +149 °F)
Relative humidity:	up to 95%, not condensing
Connections:	RJ45 jack for Ethernet and PoE (10/100 Mbit/s) USB (Type A) and mini USB (Type A) for external devices connection for induction loop
Power supply:	PoE+: IEEE 802.3at Type 2 Class 4
Power consumption:	idle: 3.3 W (without accessories) max.: 14.7 W (full load, with accessories)
Cabling:	min. Cat. 5, shielded [1]
Approvals and compliances:	EN 61000-6-2, EN 61000-6-3, EN 55032 Class B, EN 55024, EN 60529 IP66, EN 62262 IK09, FCC Part 15 Class B, ICES-003 Class B, EN 60950-1, EN 60950-22, EN 62368-1
Mounting:	flush mount kit WSFB 50V surface mount kit WSSH 50V
Dimensions (H x W x D):	mounting with flush mount kit: 279 x 164 x 14 mm (10.98 x 6.46 x 0.55 in) mounting with surface mount kit: 279 x 164 x 50 mm (10.98 x 6.46 x 1.97 in)
Weight incl. package:	1,400 g (3.1 lbs)
Optional accessories:	PA 25W POE-DC (power injector) EB1E1A (USB I/O module) EB8E8A (USB I/O module) EB3E2A-AUD (expansion module) [2] IP Secure Connector (safety switch box)

[1] The maximum line length of Cat. 5 cabling in a LAN is 100 m (328 ft) – e.g. from switch to Intercom station.
[2] In order to use direct dialling button modules (e.g. WSDD 53V or WSDD 59V), an EB3E2A-AUD is required.

Technical data camera

Image sensor:	1/3 inch RGB CMOS
Lens:	F2.4, fixed aperture, 130° diagonal angle, 125° horizontal angle, 100° vertical angle
Minimum illumination:	B/W: 1 lux colour: 1.5 lux
Camera illumination:	12 white LEDs
Resolution (W x H):	1280 x 960 px
Frame rate:	up to 30 fps
Video streaming:	simultaneously up to 6 HTTP(S)/RTSP H.264 video streams with individual resolution or frame rate and simultaneously up to 6 HTTP(S) MJPEG video streams with individual resolution or frame rate

Technical data induction loop (IEC 60118-4)

Drive voltage:	max. 6.5 V_{eff}
Drive current:	2.8 A continuous at 1 kHz sine wave
Loop resistance:	0.1 Ω to 1.0 Ω resistive or max. 1.5 Ω reactive impedance

Extent of supply

- SIP station incl. fixed induction loop
- Screws for mounting (4 x Torx TR25 security countersunk screws, M5x10)
- Claiming code
- Short reference
- Tamper detection plate

System requirements

Server

- VirtuoSIS (min. version 5.0) or
- S3/S6 (min. version 7.1) or
- Compatible SIP server or
- Serverless operation

Configuration software

- Set-UP min. version 1.5.3

Access

The device can be accessed through IPv4 (DHCP), IPv6 (link-local) and zero-conf. For information on accessing the web interface, see the product manual.

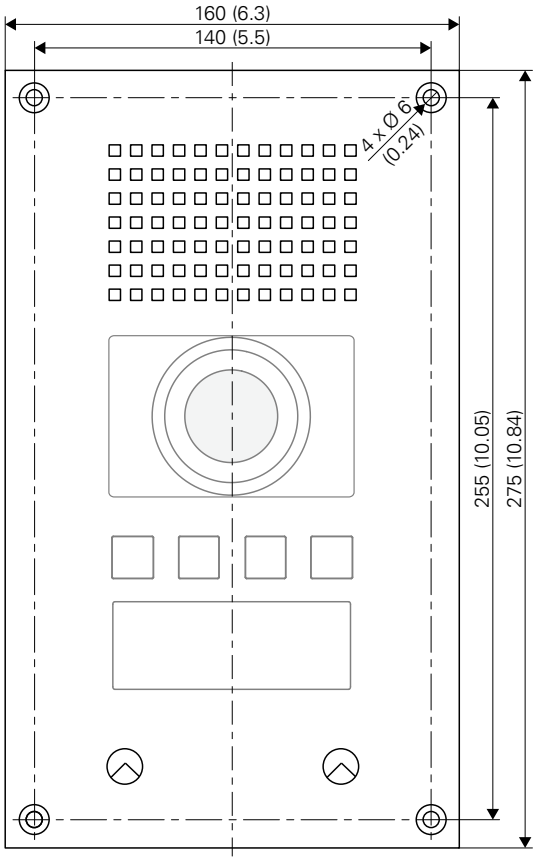
WS 311V CM DA
Installation instructions

Mounting instructions

- Do not expose the Intercom station to extreme temperatures (see "Technical data" on TE | 1).
- This Intercom station shall be installed or replaced by trained and qualified personnel only.
- Do not install the Intercom station on unstable walls or on surfaces, which cannot support the device's weight.
- Observe the country-specific standards for installation, mounting and configuration.
- Observe the precautions for handling of electrostatic sensitive devices.
- Only use recommended tools when installing the Intercom station.
- Only accessories that comply with the Intercom station's technical specifications shall be used.
- Use shielded Ethernet cables only.
- All connected circuits shall fulfil the following requirements:
  - Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/EN 60950-1 or
  - ES1, PS2 circuits and Annex Q (Limited Power Source) according to IEC/EN/UL 62368-1.

Dimensions front panel

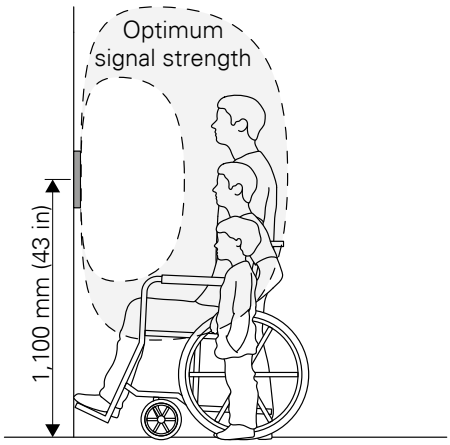
Measuring units in mm (in), not to scale!
Front panel thickness: 3 mm (0.12")



- Before using the Intercom station, ensure all cables are correctly connected and not damaged.
- Disconnect the Ethernet cable for any maintenance of the device.
- Allow the device to cool down completely before touching parts inside.
- Do not make any unauthorised modifications to the Intercom station.
- The requirements of the standard IEC 60118-4 are met by the installation at the specified height and at the correct distance from a single person when properly commissioned.
- Metal structures significantly affect the performance of the induction loop system. The magnetic field generated by an induction loop system induces a current in surrounding metal structures, which weakens the magnetic field and may cause losses. Examples of metal structures:
  - Reinforced concrete
  - Beams, girders, constructions made of metal
  - Metal facade cladding and walls
  - Metal box constructions (escalator, lift)
- For flush mounting, a flush mount kit WSFB 50V is required (available separately).
- For surface mounting, a surface mount kit WSSH 50V is required (available separately).
- Optionally, the rain protection roof WSRR 50V is available.
- If the Intercom station is installed in a third-party column, ensure sufficient air circulation to prevent condensation and extreme heat generation (e.g. by means of ventilation slots at the top and bottom of the column). It is recommended to use ventilation grilles with small animal protection.

Recommended mounting height of the induction loop

With a mounting height of approx. 1,100 mm (43 in), AFIL signals are ideally transmitted for children, wheelchair users and standing adults. A distance of approx. 500 mm (20 in; arm's length) is recommended between the Intercom station and the inductive hearing aid. If required, adjust the mounting height to the respective requirements and local regulations.



Recommended mounting height of operating elements

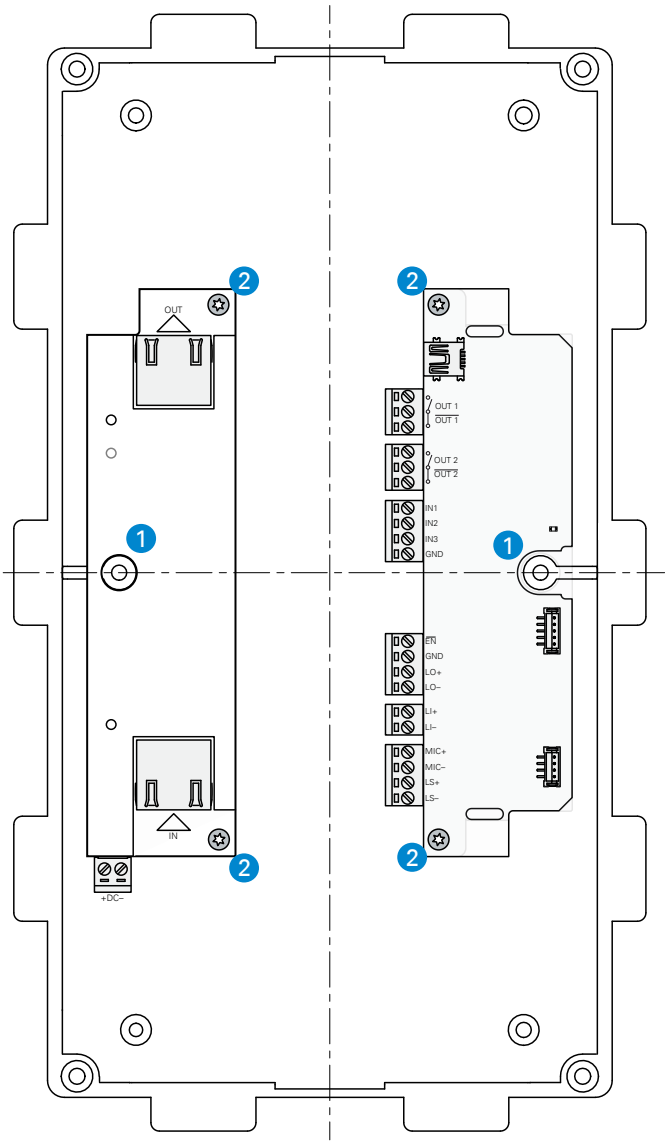
For barrier-free operation, operating elements should be mounted with enough space to walls and corners. Operating elements such as call buttons should be installed between 800 mm and 1,000 mm above the finished floor. For ideal use by children, wheelchair users and standing adults, it may be necessary to install two Intercom stations above each other or to use additional remote button modules or induction loop amplifier modules. If required, adjust the mounting height to the respective requirements and local regulations.

Mounting of EB3E2A-AUD and PA 25W POE-DC

The following illustration shows the mounting of both modules (expansion module and power injector) within a flush mount box – e.g. flush mount kit WSFB 50V or surface mount kit WSSH 50V.

NOTES:

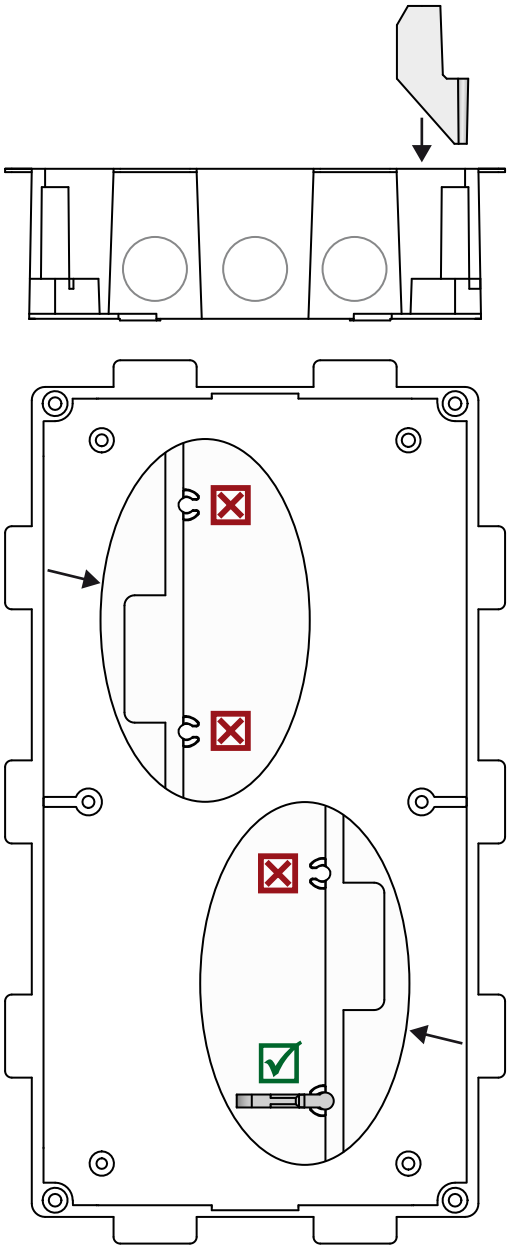
- The power injector must always be placed on the left side within the flush mount box.
- The expansion module comes with a back cover. For mounting within the flush mount kit WSFB 50V or surface mount kit WSSH 50V, the back cover must be removed. The screws for the back cover can be used to mount the expansion module into the flush mount box.



1. Put the modules onto the designated assembly pins within the flush mount box (no screws).
2. Use the supplied screws to fasten the modules to the flush mount box.

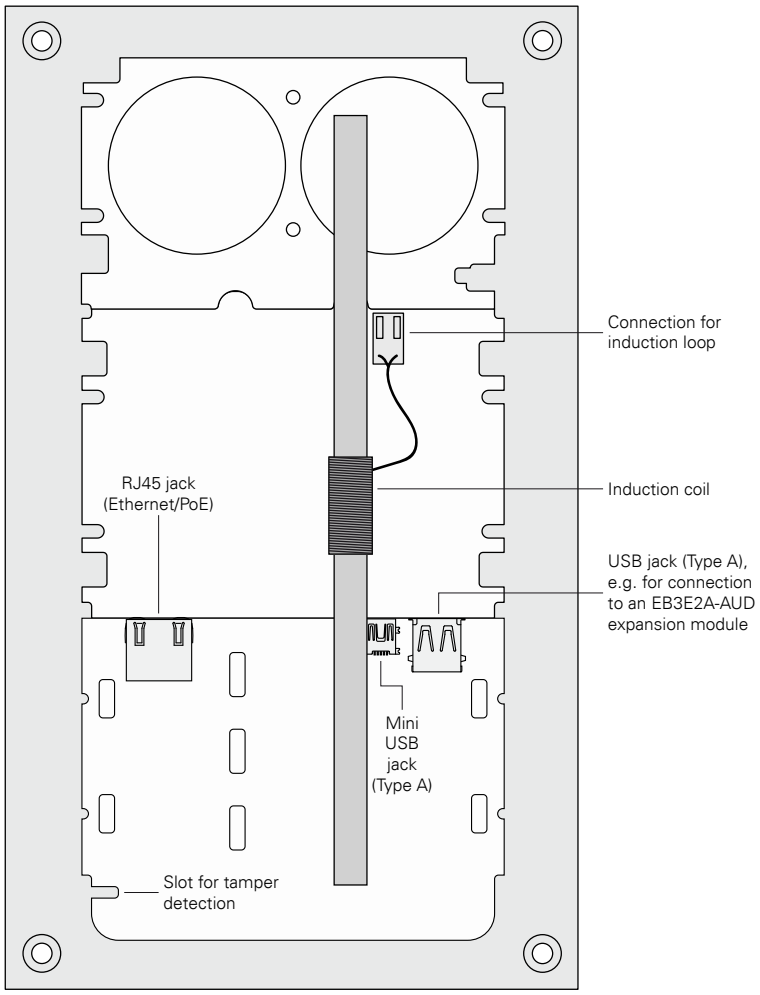
Mounting of tamper detection plate

Install the tamper detection plate (for triggering the tamper detection alarm; in extent of supply) into the flush or surface mount box as shown in the following assembly drawing.



Connection

The WS 311V CM DA is delivered with a fixed induction loop.
The following illustration shows the connection of the power injector or a switch and expansion module to the Intercom station.



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.

www.commend.com