WS 211V I DA

Robust stations for barrier-free construction, housing and life

| IEC 60118-4 compliant | 16 kHz eHD Voice | Weather-proof IP66 | Vandal-resistant IK07 |

Our commitment to barrier-free communication

When developing WS 211V I 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 ("Two-Senses Principle", see SA | 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.
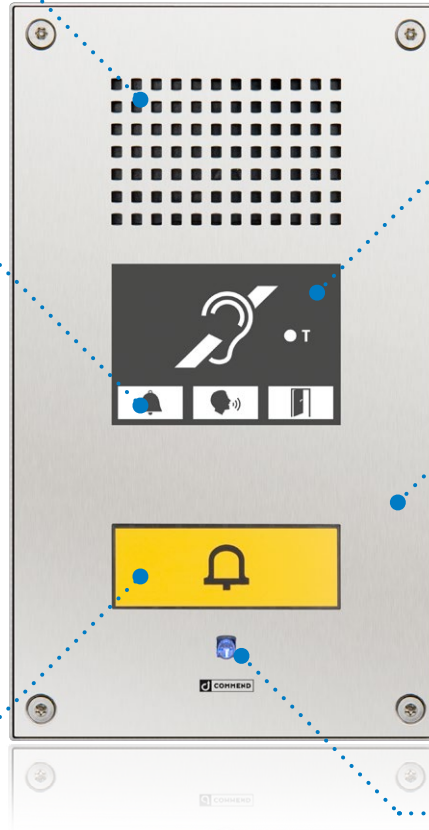
Features and highlights

– 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) make easy startup and faultless operation possible

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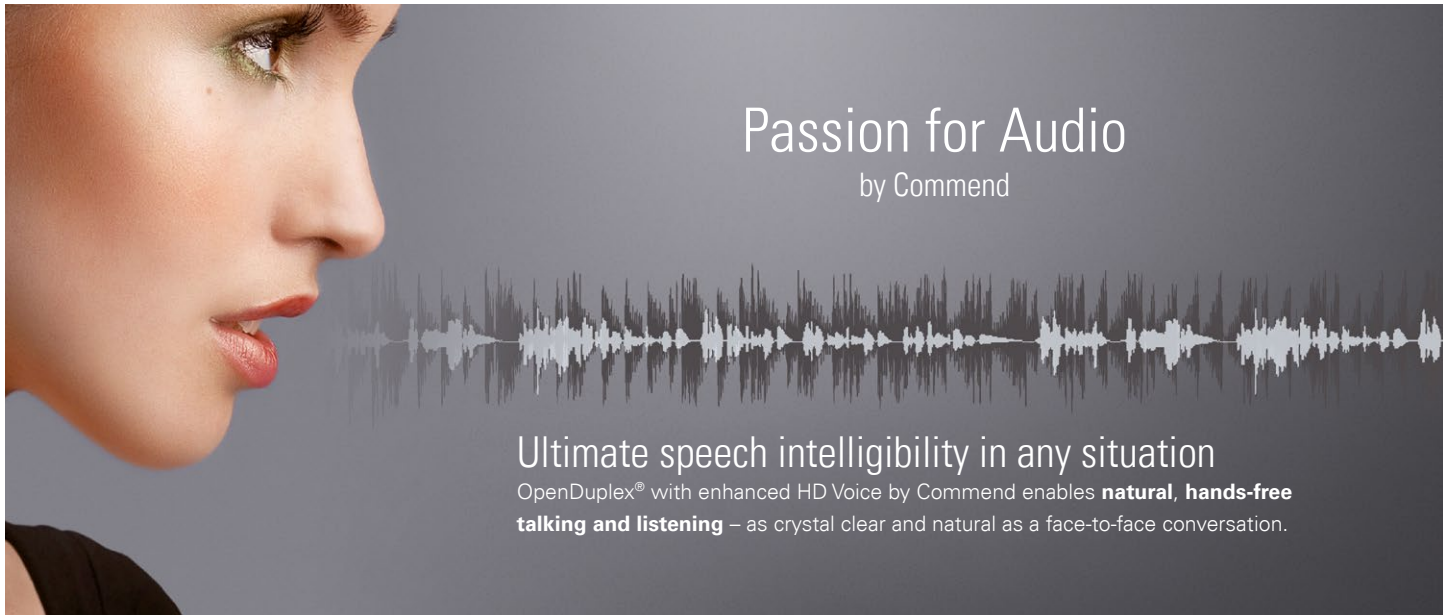
The **IEC 60118-4 compliant** induction loop system provides a sustained high level of functionality to support the hearing impaired. WS 211V I DA provides in a clean, compact device what other solutions can provide only with cumbersome constructions using external amplifiers and induction loops.

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 IP66 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 omnidirectional **electret condenser microphone** 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.

The ORIGINAL **OpenDuplex®** since 2003	**16 kHz** *e*HD Voice	High volume	IVC	Loudspeaker/microphone surveillance
Natural communication	enhanced HD Voice	High volume	Intelligent Volume Control	Loudspeaker/microphone surveillance

Audio // Basics

eHD Voice	Enhanced HD Voice by Commend transfers the audio signal at a bandwidth of **16 kHz**, 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 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

Learn more
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Audio // Functions

Loudspeaker/microphone surveillance – 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 defined noise levels for more security

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

Audio recording and lip synchronous audio/video 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 mode for applications requiring controlled communication – e.g. for security solutions based on the "push-to-talk/release-to-listen" method

OpenDuplex® for natural, hands-free communication

IVC (Intelligent Volume Control) automatically adjusts the device's volume setting to the ambient noise level

Public address functions

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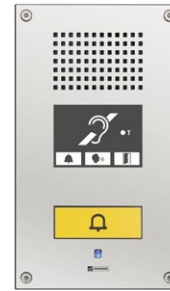# Technical Specifications

Technical data WS 211V I DA

IP rating acc. EN 60529:	IP66
Mechanical impact resistance acc. EN 62262:	IK07
Front panel:	1.4301/AISI 304, 3 mm (0.12 in)
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:	integrated class-D amplifier with 2.5 W
Sound pressure level:	max. 99 dB
Input:	3 inputs for floating contacts (detection of 5 input states)
Output:	2 relay outputs (switch-over contacts) max. 60 VDC, 2 A, 60 W [1] expected life: min. 5×10^4 (2 A), 10^5 (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 jack for e.g. EB2E2AHE IP uplink: shielded RJ45 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
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})!

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 to 1.0 Ω resistive or 1.5 Ω maximum reactive impedance
Frequency response:	80 Hz to 8 kHz (–3 dB)
MLC (Metal Loss Correction):	0 to –3 dB/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 plug (PAP-02v-s)

System requirements

- GE 800 (min. PRO 800 3.1) with G8-IP (min. G3-8-IP 5.3) or
- GE 300 (min. PRO 800 3.1) with G3-IP (min. G3-8-IP 5.3) or
- VirtuoSIS/S3/S6
- Min. upgrade licence PRO3U
- Configuration software min. CCT 800 3.1
- Configuration software IP Station Config (included in setup of CCT 800 3.1)

Network requirements

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 IP Station Config 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 and download each, speech and data: 96 kBit/s
- Speech is compressed according to G.722 standard

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

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.

* Technical data is valid for the Intercom station WS 211V D DA min. Rev. AC!

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WS 211V I DA
Installation Instructions

Mounting instructions

– Do not expose the station to extreme temperatures (see "Technical data").
– For flush mounting, the flush mount kit WSFB 50V is required (available separately).
– For surface mounting, the surface mount kit WSSH 50V is required (available separately).
– 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.
– 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)

Dimensions front panel

Measuring units in mm (inch), not to scale!
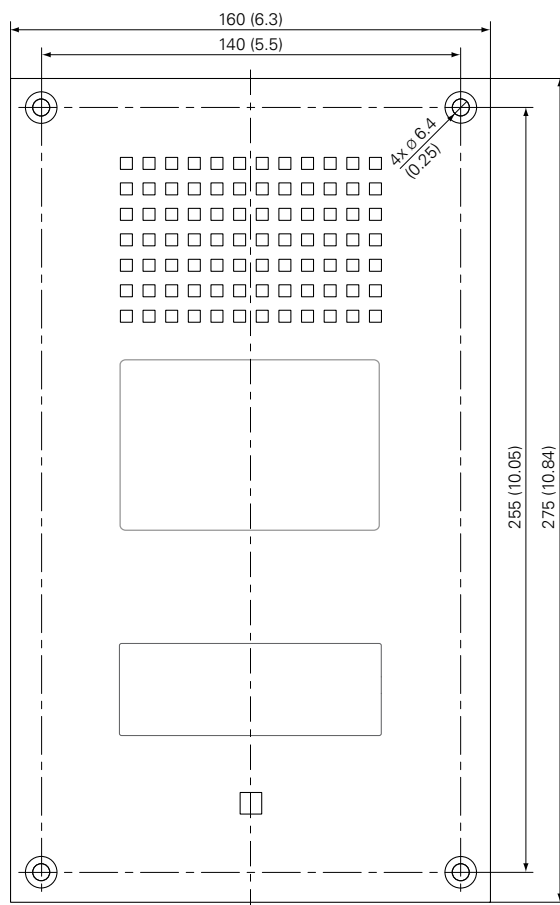
Recommended mounting height of the induction loop

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.
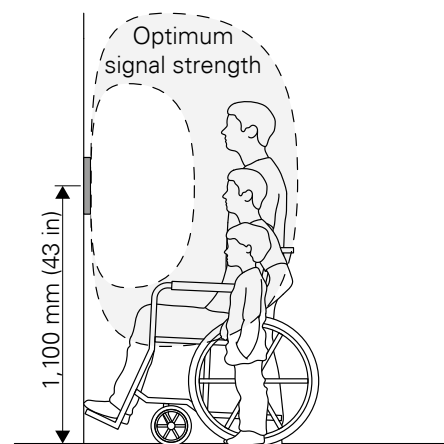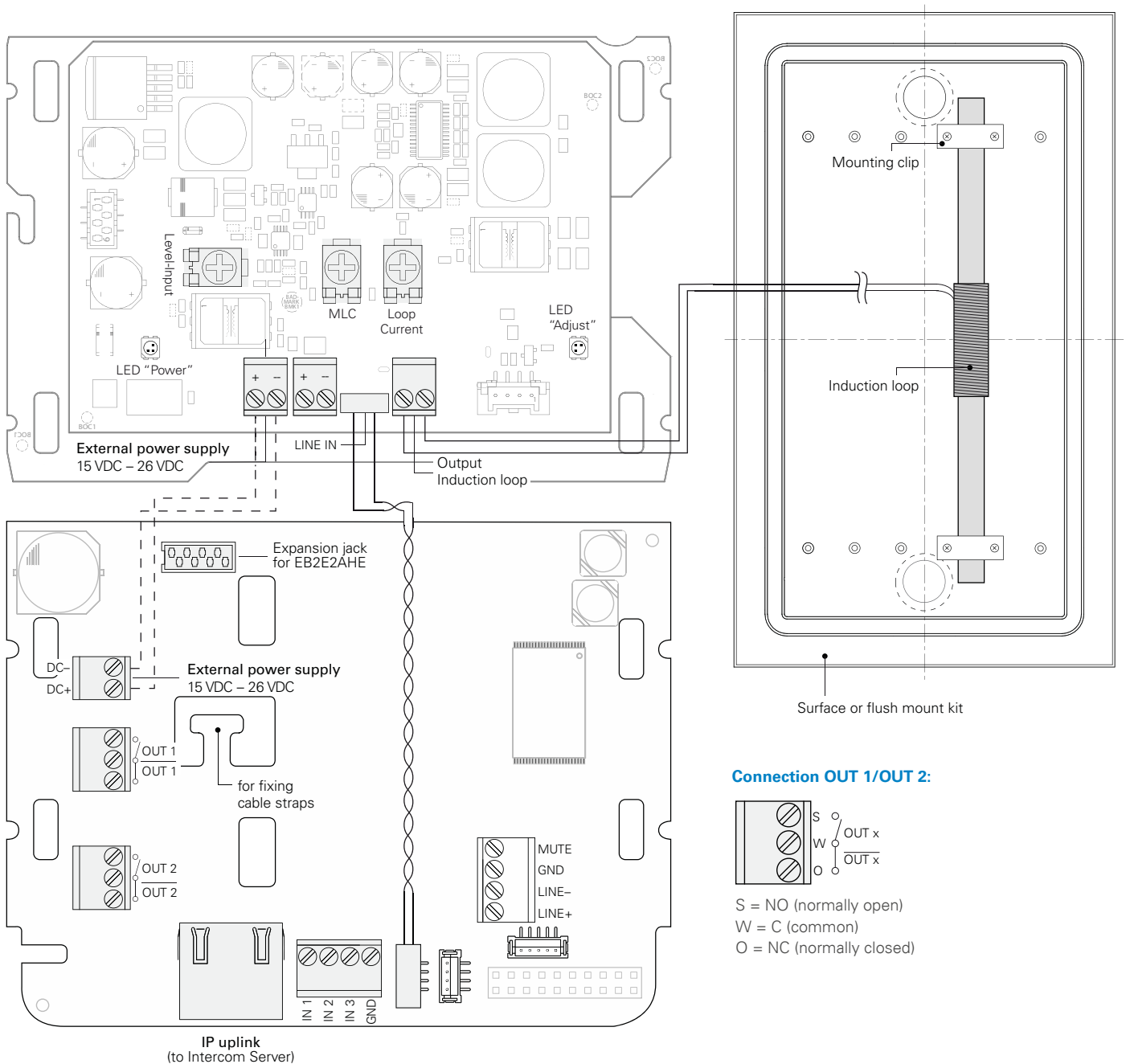

Recommended mounting height of operating elements

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.

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Quick start

– Carry out the connection of the induction loop, Intercom Server and power supply as follows:
  – Connect the loop cable via the screw terminals as shown in the picture below (polarity does not matter).
  – Connect power supply (15 – 26 VDC) as shown in the picture below.
    Attention: It is mandatory to use an external power supply for the intercom station. This external power supply also provides power for the induction loop amplifier module.
– 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 system performance with a loop receiver or a field strength meter. Adjust the power if necessary. Consider the respective standards when doing so.
  – Level-Input: Adjust the level of the input signal. The LED lights up green when the input level is sufficient.
  – Loop Current: Adjust the signal strength of the induction loop.
  – MLC: Metallic surfaces may reduce the transmission of higher frequencies. Adjust a sound that is too muffled by reducing low-frequency signal components.
– Mount the Intercom terminal (see short reference surface / flush mount kit).

Level-Input

MLC

Loop Current

LED "Adjust"

LED "Power"

External power supply
15 VDC – 26 VDC

LINE IN

Output
Induction loop

Mounting clip

Induction loop

Surface or flush mount kit

Expansion jack
for EB2E2AHE

DC–
DC+

External power supply
15 VDC – 26 VDC

OUT 1
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)

Connection OUT 1/OUT 2:

S
W
O

OUT x
OUT x

S = NO (normally open)
W = C (common)
O = NC (normally closed)

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WS 211V I DA
Complementary Information

Configuration of LED pictogram

For indication, the pictograms are used instead of the multifunction LED. Therefor, the LED template configuration is used for the pictograms. For an faultless operation, the LED colours have to be configured as follows:

LED template colours:
Red = Pictogram "call initiated" (left, pictogram colour "orange")
Green = Pictogram "conversation" (middle, pictogram colour "green")
Blue = Pictogram "door open" (right, pictogram colour "green")

Example for call request to a control desk – call in OpenDuplex®:

Create an LED template:
Intercom Server - Block No. > Templates (LED+TFT) > tab **Template Name**
– In the field **Template Name**, enter the names for the required number of templates.
Intercom Server - Block No. > Templates (LED+TFT) > tab **Color assignment - tones**
– Configure the DSP signal **Initiator call request** as follows:
  – **Template Name Colour off:** Select "off".
  – **Template Name Colour on:** Select "Red" (red = pictogram "call triggered").
  – **Template Name Blink mode on / off (ms):** Select "always on".
Intercom Server - Block No. > Templates (LED+TFT) > tab **Color assignment - states**
– Configure the State **Open Duplex** as follows:
  – **Template Name Colour off:** Select "Off".
  – **Template Name Colour on:** Select "Green" (Green = pictogram "call").
  – **Template Name Blink mode on / off (ms):** Select "always on".

Note:
The LED template also has to be configured for Simplex and Duplex calls. The configuration of a call type is required (call request or direct dialling).

Create a door opener
Subscriber > Door opener
– Right-click on the WS 211V I DA and select "Add door opener function".
– Select the folder of the door opener station. Outputs that shall be used as door openers can be added via right click "add output".

Outputs > ICX at output > created output
– Configure the ICX messages as follows:

Condition	Task	Type	Data	System no. receiver/sender
Active	60	90	Call no. WS 211V I DA + 069A31	0000
Inactive	60	90	Call no. WS 211V I DA + 009A31	0000

Allocate the template to the WS 211V I DA
Subscriber > DSP-Features > tab **General**
– In the field **LED template**, assign the created template to the WS 211V I DA.

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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