ES 962H

Compact vandal resistant IP Intercom stations

Ready for Symphony Cloud

16 kHz eHD Voice	Vandal resistant
IVC	Fully IP-based

ES 962H

ES 962HM

Instant help in emergency situations

The Intercom stations series ES 962H is easy to operate and provides clear intelligibility under all ambient conditions.

Permanent function monitoring ensures in-service status of the system. The 3 mm stainless steel front panel with poke protection and special screws offers optimal protection against vandalism. The Intercom station series ES 962H is designed especially for mounting in American "2-Gang" boxes.

As it supports both IoIP connections and SIP solutions (hybrid), the Intercom station series ES 962H can easily be integrated into any Voice over IP system as well as any existing Commend Intercom system. The desired operation mode is selected via the configuration software.
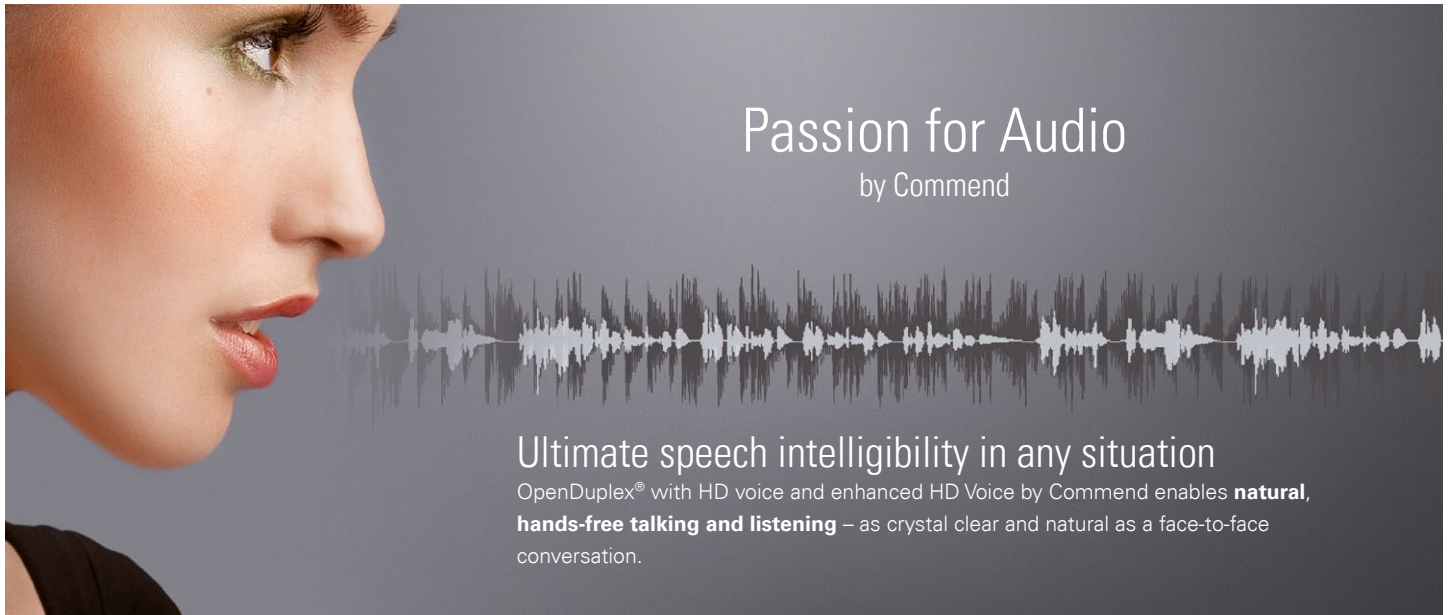
Ready for Symphony Cloud
The Intercom stations can be connected to Symphony Cloud and use its services. Symphony Cloud is the world's first cloud-based Intercom platform with "Privacy and Security by Design". Visit the website to find out about the services currently available and if they are already offered in your country.
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Features and highlights

– High volume capacity and superior speech quality, thanks to integrated 10 watt class-D amplifier and eHD Voice
– Compact and vandal resistant construction enables use in public areas
– Stainless steel button (ES 962H) or red mushroom button (ES 962HM) for emergency calls, with self-checking functionality (NC contact)
– Cyclical connectivity and function checks ensure permanent availability of all functions and low manual maintenance requirements
– Spring clamp terminals provide an easy and fast cable connection
– Special audio functions ensure superior speech quality in any situation
– The high-sensitivity microphone supports speaking distances of up to 7 m, making the device ideally suited, e.g. for wheelchair users
– Sound output or playback of pre-recorded messages can be used to provide information and reassurance to callers
– Fully PoE powered
– Ready for connection of induction loop systems, which enables persons wearing hearing aids with an induction loop to receive Intercom audio signals in clear, uninterrupted quality
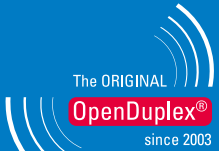– Built-in inputs and outputs for connection of door openers etc.

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Passion for Audio
by Commend

Ultimate speech intelligibility in any situation

OpenDuplex® with HD voice and 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	IVC	High volume	Background noise suppression	Loudspeaker / microphone surveillance
Natural communication	Intelligent Volume Control	High volume	Background noise suppression	Loudspeaker / microphone surveillance

Audio // Basics

eHD Voice (IoIP)	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.
HD Voice (SIP)	HD Voice by Commend transfers the audio signal at a bandwidth of **7 kHz**
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)
Amplifier	Highly efficient class-D amplifier with 2.5 W
Microphone	Omnidirectional electret condenser microphone for max. 7 m (23 ft) speaking distance
Loudspeaker	8 Ω loudspeaker with humidity-resistant special membrane type for optimum sound quality

Learn more
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Audio // Functions

	IoIP	SIP
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	▬	▬
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	▬	▬ [1]
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	▬	▬ [2]

[1] Audio recording option on a compatible VMS via ONVIF Profile S.
[2] Public address functions via multicast or ONVIF Profile S announcements from a compatible VMS.

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ES 962H
Technical Specifications

Technical data

IP rating:	IP54 (acc. EN 60529)
Mechanical impact resistance:	IK09 (acc. EN 62262)
Front panel:	stainless steel, 3 mm (0.12 in)
Microphone:	electret condenser microphone polar pattern: omnidirectional
Loudspeaker:	special membrane type for optimal sound quality, sound pressure level: 85 dB / 1 W / 1 m (3.28 ft), 8 Ω
Amplifier:	integrated class-D amplifier with 10 W
Input:	2 inputs for floating contacts (IoIP: detection of 5 input states)
Output:	2 relay outputs (1 switch-over contact, 1 normally open contact) max. 60 VDC, 2 A, 60 W[1] expected life: min. 5×10^4 (2 A), 10^5 (1 A)
Status indicator:	multifunction LED (colours: red, green, blue)
Call button:	*ES 962H*: stainless steel button *ES 962HM*: red mushroom button
IoIP transmission bandwidth:	16 kHz
SIP transmission bandwidth:	7 kHz
Operating temperature range:	–40 °C to 70 °C (–40 °F to 158 °F)
Storage temperature range:	–40 °C to 70 °C (–40 °F to 158 °F)
Relative humidity:	up to 95 %, non condensing
Connection:	spring clamp terminals, expansion jack, e.g. for EB2E2AHE, IP Uplink: shielded RJ45 modular jack
Power supply [2]:	PoE (Power over Ethernet): IEEE 802.3af standard power consumption of the terminal device: Class 0 (0.44 to 12.96 W)
Cabling:	min. Cat. 5
Protocols (IoIP):	IPv4, UDP, DHCP, RTP, RTCP, SNMPv2c, SNTPv4
Protocols (SIP):	IPv6, IPv4, TCP, UDP, HTTP (RFC 2617, RFC 3310), RTP (RFC 3550), TLS, SRTP, RTCP, DHCP, STUN, TFTP, SDP (RFC 2327), SIP (RFC 3261), SNMPv2, URI (RFC 2396), DTMF Decoding (RFC 2876, RFC 2833), SIP User Agent (UDP RFC 3261), SIP Refer Method (RFC 3515)
Audio codecs (SIP):	G.711 a-Law G.711 µ-Law G.722
Data rate:	10 / 100 MBit/s (Full / Half Duplex) Auto MDIX
Dimensions:	front panel: 115 x 115 mm (4.53 x 4.53 in) depth: 45 mm (1.8 in) without Ethernet cable 60 mm (2.4 in) with standard Ethernet cable
Weight incl. package:	560 g (1.2 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$_{eff}$)!

[2] Use PoE network switch or PoE injector only. PoE acc. IEEE 802.3af; output voltage 36–57 VDC; min. 12.95 W (per Ethernet port); LPS/PS2 or Class 2 output (IEC/EN/UL 62368-1).

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 the IP Intercom station.

Extent of supply

– Intercom station
– Device identification document
– Short reference

System requirements

IoIP

Intercom Server

– GE 800 (min. PRO 800 5.0, min. base licence PRO 1) with G8-IP or
– GE 300 (min. PRO 800 5.0, min. base licence PRO 1) with G3-IP or
– IS 300 / G8-IP-32 (min. PRO 800 5.0, min. base licence PRO 1) or
– S3/S6/VirtuoSIS (min. PRO 800 5.0, min. base licence PRO 3)

Configuration software

– CCT 800 5.0 min. build 1017
– IP Station Config (included in setup of CCT 800 5.0)

[2] Certain features (e.g. "IVC") require a higher licence.

SIP

– VirtuoSIS (min. PRO 800 5.0, min. base licence PRO 3) or
– Compatible SIP server (see separate document "**CP-Interoperability-List**") or
– Serverless

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Requirements to the network for use as SIP device

Ports

– The configuration via the web interface is done via TCP port 80 (cannot be configured).
– The communication from the SIP device to the SIP server is done via the following ports (both are configurable):
    – SIP: UDP port 5060
    – RTP: UDP port 16384 (incoming)

Requirements to the network for use as IoIP device

IP addresses and ports

– For the ES 962H, the DHCP functionality is available.
  If DHCP is not used, the ES 962H must have a fixed IP address.
– In case of a changing public IP address, dynamic registration of an ES 962H is possible.
– Communication from the program IP Station Config is done via Port 16399 (cannot be configured).
– Communication from the ES 962H 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

– For further information, see guideline "**IoIP Technology**".

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ES 962H
Installation Instructions

Precautions

– Do not expose the station to extreme temperatures (see "Technical data", TE | 1).
– When opening the stations, ESD precautions must be observed.
– The stations may only be opened by authorised service engineers.
– The station may only be cleaned with cleaning agents for stainless steel – in **NO** case with cleaning agents containing chlorine!

Mounting instructions

– Observe the country specific standards for installation, mounting and configuration.
– The stations are designed especially for building into American "2-Gang" boxes. Box and mounting screws are not included in the extent of supply.
– For stations to be mounted in outdoor areas, the screws must be closed with a sealing compound.
– Do not mount the station with the faceplate facing the weather side.
– In operation as a SIP version, this is a Class A product (standard EN 55032). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
– This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause hamful interference in which case the user will be required to correct the interference at his own expense.
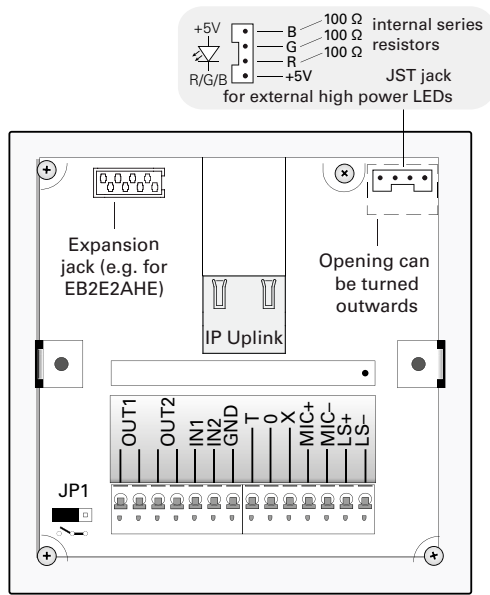
Dimensions

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

115 (4.53)
23 (0.91)
23 (0.91)
41.5 (1.64)
115 (4.53)
41.5 (1.64)
mounting holes (4x)
ø 5 (0.2)
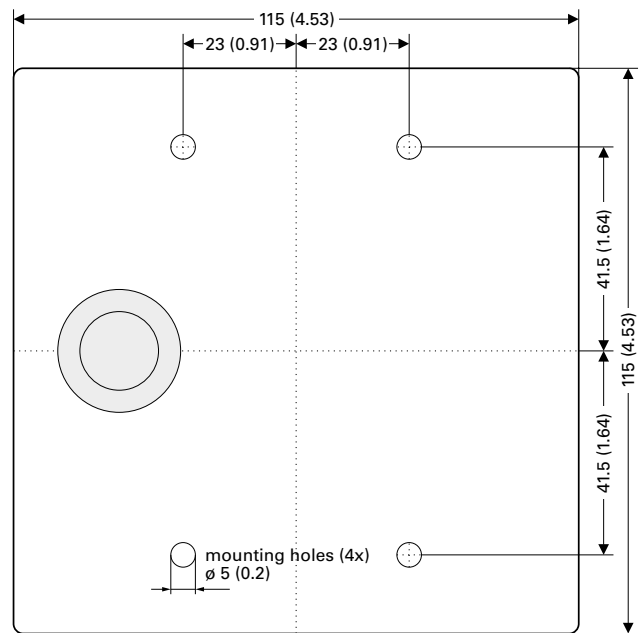
Connection

Rear view

Notes:

– The call button is connected to "GND" and "0" and is adjusted as normally closed contact.
– OUT 1 factory adjusted as normally open contact. With the jumper JP1, it can be converted into a normally closed contact.
– OUT 2 factory adjusted as normally open contact.
– PoE ("Power over Ethernet"):
  IEEE 802.3af standard
  Power consumption of the terminal device: Class 0

Attention:

– Due to limited space inside the housing (distance between RJ45 jack and housing), only RJ45 crimp connectors up to 30 mm total length shall be used.
– The spring clamp terminal will be damaged when inserting a screwdriver into the cable opening.

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**.

AUSTRIA — **OBSESSIVE ABOUT QUALITY**

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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