

EF 962H

Compact vandal resistant IP Intercom stations



EF 962H



EF 962HM

16kHz
eHD Voice

Ultimate
Usability

Vandal
resistant

IVC

Fully
IP-based

Instant help in emergency situations

The Intercom station series EF 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.

Because of its simple design, the Intercom station can easily be integrated into any environment.

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 (EF 962H) or red mushroom button (EF 962HM) for emergency calls, with self-checking functionality (N/C contact)
- Cyclical connectivity and function checks ensure permanent availability of all functions and low manual maintenance requirements
- Special audio functions ensure superior speech quality in any situation
- The high-sensitivity microphone supports speaking distances of up to 7 m from the microphone, 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
- 3 easily visible pictograms with LEDs inform users visually about the Intercom station's current operation status (call transmitted, on going conversation, door open)
- Integrated I/Os for connection of door openers etc.
- Housing with integrated RJ45 adapter and connection cable, for easy installation – no need for further components/equipment
- Support of different installation options ensure maximum flexibility (flush-mounting or surface-mounting)

Key benefits at a glance

Compact and vandal resistant construction enables use in public areas.

The built-in loudspeaker supports high audio volumes and superior acoustic intelligibility; sound output or playback of pre-recorded messages can be used to provide information and reassurance to callers.



Housing with integrated RJ45 adapter and connection cable, for easy installation – no need for further components/equipment

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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.

<p>Natural communication</p>	<p>IVC</p> <p>Intelligent Volume Control</p>	<p>High volume</p>	<p>Background noise suppression</p>	<p>Loudspeaker/microphone surveillance</p>
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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	High efficient class-D amplifier with 10 W
Microphone	Omnidirectional electret microphone for max. 7 m (23 ft) speaking distance
Loudspeaker	8 Ω loudspeaker with humidity-resistant special membrane type for optimum sound quality

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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	■	
Peer2Peer 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	■	



EF 962H

Technical Specifications

Technical Data

IP rating acc. EN 60529:	IP54
Front panel:	stainless steel, 3 mm (0.12 in)
Microphone:	built-in omnidirectional electret microphone
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. 5x10 ⁴ (2 A), 10 ⁵ (1 A)
Call button:	EF 962H: stainless steel button EF 962HM: red mushroom button
IoIP transmission bandwidth:	16 kHz
SIP transmission bandwidth:	7 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%, non condensing
Connections:	pluggable screw terminals expansion plug e.g. for EB2E2A IP Uplink: shielded RJ45 modular socket
Power supply:	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 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)
Codecs (SIP):	G.711 a-Law G.711 μ-Law G.722
Data rate:	10/100 MBit/s (Full/Half Duplex) Auto MDIX
Mounting:	flush mount box GUEF 962 required for flush and surface mounting (available separately) surface mount boxes EF 62G, EF 62W, EF 62O or EF 62NIRO
Dimensions:	front panel: 110 x 151 mm (4.33 x 5.95 in) depth flush mount: 48 mm (1.89 in) depth surface mount: 84 mm (3.3 in) except for EF 62W: 55 mm (2.2 in)
Weight incl. package:	700 g (1.5 lbs)

Note:

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 the IP Intercom station.

Extent of supply

- Intercom station
- Connection cable
- Screws for mounting
- Short reference

System requirements

IoIP – Intercom Server

- GE 800 (min. PRO 800 5.0, min. base licence PRO 3*) with G8-IP
- GE 300 (min. PRO 800 5.0, min. base licence PRO 3*) with G3-IP
- IS 300 / G8-IP-32 (min. PRO 800 5.0, min. base licence PRO 1)
- VirtuoSIS (min. PRO 800 5.0, min. base licence PRO 3)
- Configuration software (min. CCT 800 5.0 build 1017)
- Configuration software IP Station Config (included in setup of CCT 800 5.0)

* Certain features (e.g. IVC) require a higher licence

SIP

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

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 ILoIP device

IP addresses and ports

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

Compatibility SIP PBX

Basically, the SIP device can be used with any SIP server.

The following server types have been tested explicitly by Commend 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, 9
Digium	Asterisk	Versions 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	Versions 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.

EF 962H

Installation Instructions

Precautions

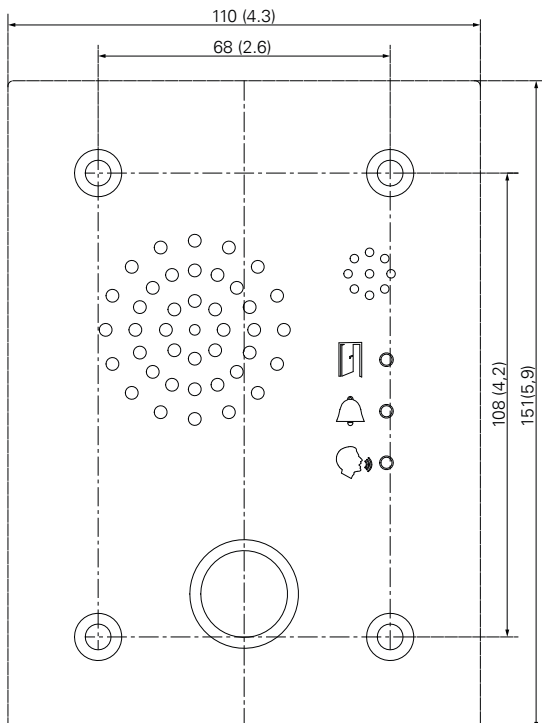
- When opening the stations, ESD precautions must be observed.
- The stations may only be opened by authorised service engineers.
- Do not expose the station to extreme temperatures (see “Technical Data”).
- The station may only be cleaned with cleaning agents for stainless steel – in **NO** case with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

Mounting instructions

- Observe the country specific standards for installation, mounting and configuration.
- For flush mounting, the flush-mount box GUEF 962 (available separately) is required. For surface mounting, the flush-mount box as well as one of the surface mount boxes is required (not in extent of supply).
- When the flush mount box is used, the mounting tabs must be bent out at least 15 mm (0.6 in) before applying plaster.
- Use of flush mount boxes in order to comply to the IP54 regulations, it is mandatory to close the hole on the bottom of the frame with the included sealing screw or the threaded cable joint. No warranty claim when not installed properly!
- For stations to be mounted in outdoor areas, the screws must be closed with a sealing compound.
- Do not mount the station with the front panel facing the weather side.

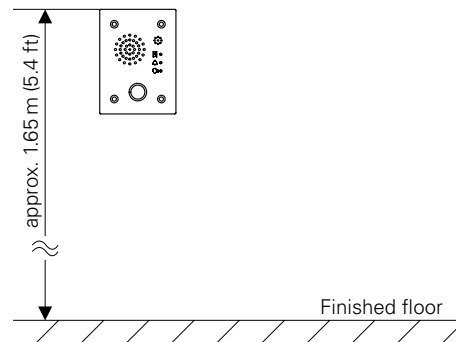
Dimensions

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



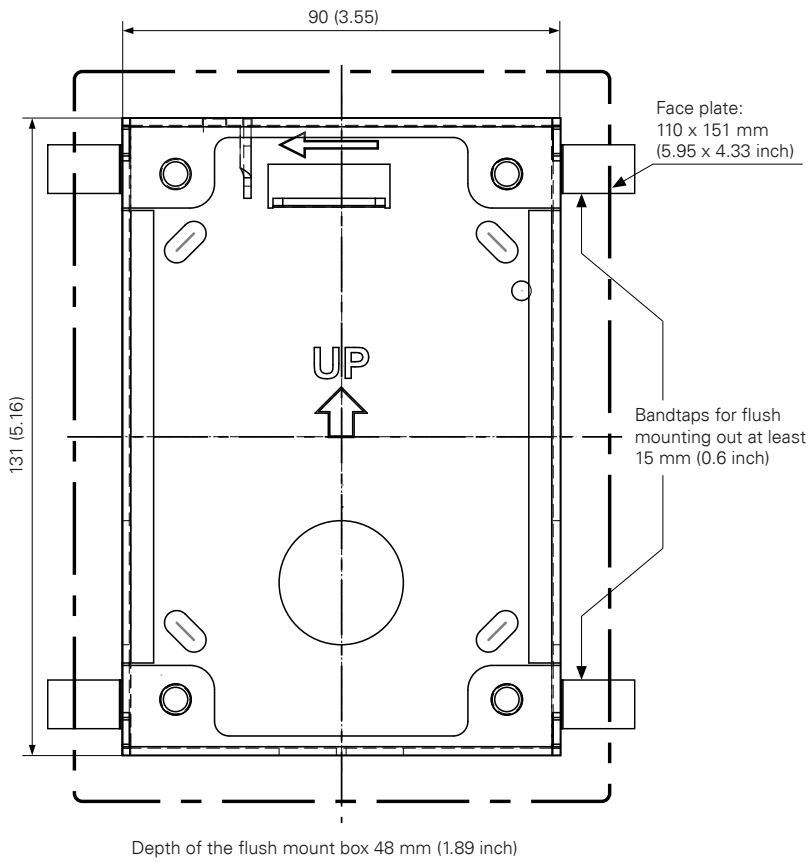
Recommended mounting height

The upper edge of the station approx. 1.65 m (5.4 feet) from the finished floor. Adapt the mounting height to the individual needs.

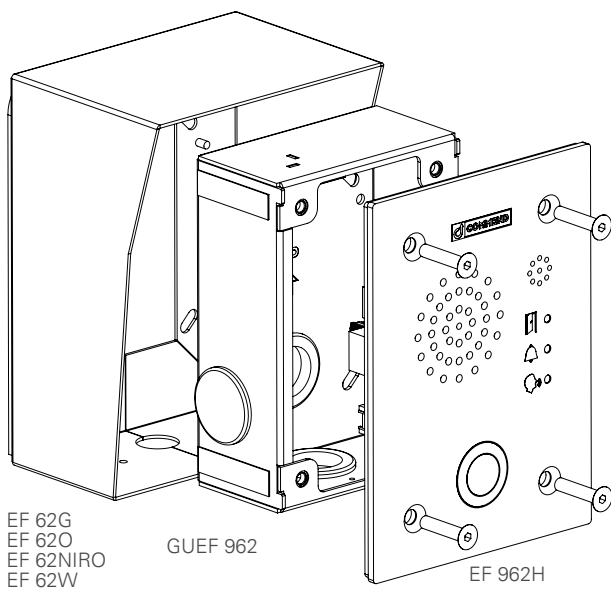


Dimensions flush mount box GUEF 962

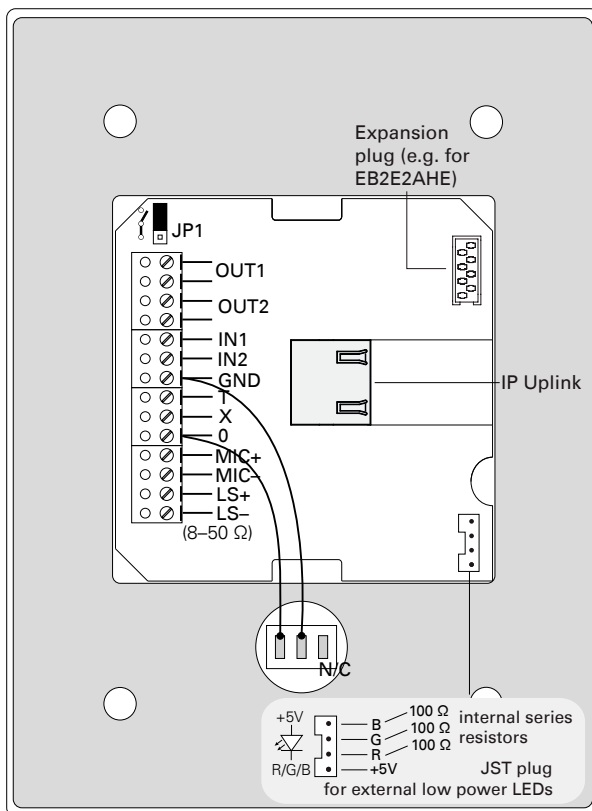
Measuring units in mm (inch), not to scale



Mounting



Connection



Note:

- **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
- Use the RJ45 connection cable in the extent of supply to connect the EF 962H ("IP Uplink") to the RJ45 connector of the flush mount box GUEF 962

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**.

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A strong worldwide network

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