EF 962H

Compact vandal resistant IP Intercom stations

EF 962H

EF 962HM

16kHz eHD Voice

Ready for Symphony Cloud

Vandal resistant

Ultimate usability

Fully IP-based

Instant help in emergency situations

The Intercom station series EF 962H is easy to operate and provides clear speech intelligibility under all ambient conditions. Thanks to its simple design, the Intercom stations integrates smoothly into any environment.

Permanent function monitoring ensures reliable availability. The 3 mm stainless steel front panel with poke protection and special screws offers optimum protection against vandalism.

As it supports both IoIP connections and SIP solutions (hybrid), the Intercom station series EF 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 our website to find out about the services currently available and if they are already offered in your country.
cloud.commend.com

Features and highlights

– High volume capacity and superior speech quality
– 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 function (normally closed contact)
– Spring clamp terminals provide an easy and fast cable connection
– Cyclic connectivity and function checks ensure permanent availability of all functions while reducing the need for manual inspections and maintenance
– 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 enable persons wearing hearing aids with an induction loop to receive Intercom audio signals in clear, uninterrupted quality
– Three easily visible pictograms with LEDs keep users visually informed about the Intercom station's current operation status ("call initiated", "ongoing conversation" and "door open")
– Built-in inputs and outputs for connection of e.g. door openers – can be extended via expansion jack
– Housing with integrated RJ45 adapter and connection cable, for easy installation – no need for additional components/equipment
– Different installation options ensure maximum flexibility in terms of placement (flush-mounting or surface-mounting)

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Accessories

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

The compact and vandal resistant construction enables use in public areas.

The high-sensitivity microphone supports speaking distances of up to 7 m, making the device ideally suited, e.g. for wheelchair users.

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.
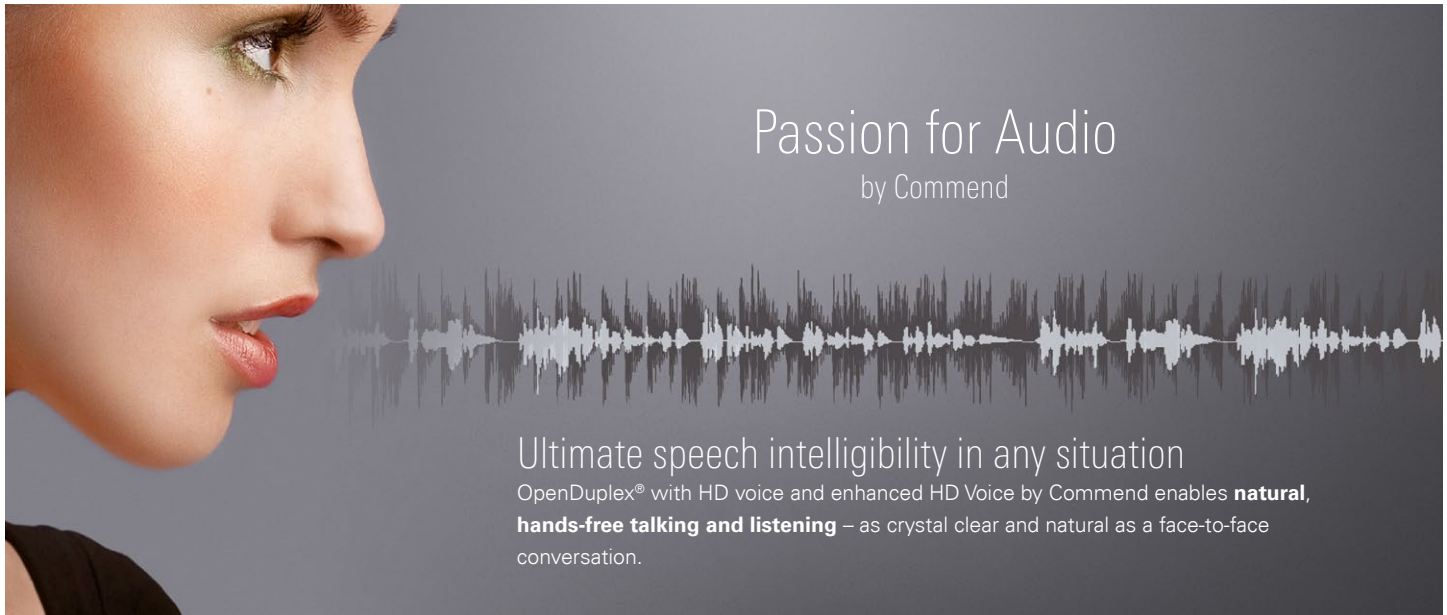
Three easily visible pictograms with LEDs keep users visually informed about the Intercom station's current operation status ("call initiated", "ongoing conversation" and "door open").

Stainless steel button (EF 962H) or red mushroom button (EF 962HM) for emergency calls, with self-checking function (normally open contact).
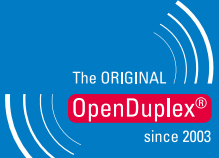
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Passion for Audio
by Commend

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			

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 10 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
audio.commend.com

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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EF 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 microphones polar pattern: omnidirectional
Loudspeaker:	special membrane type for optimal sound quality, 8 Ω
Sound pressure level:	85 dB/1 W/1 m (3.28 ft)
Amplifier:	integrated class-D amplifier with 10 W
Inputs:	2 inputs for floating contacts (IoIP: detection of 5 input states)
Outputs:	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)
Call button:	EF 62H: stainless steel button EF 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%, not 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 power consumption: 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
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 (W x H): 110 x 151 mm (4.33 x 5.95 in) depth funsh 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:	approx. 700 g (1.5 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 Intercom station.

Extent of supply

– Intercom station
– Connection cable
– Screws for mounting
– Device identification document
– Open source compliance information
– Short reference

System requirements

IoIP

Server

– GE 800 (min. PRO 800 5.0, min. base licence PRO 3 [2]) with G8-IP or
– GE 300 (min. PRO 800 5.0, min. base licence PRO 3 [2]) with G3-IP or
– IS 300 / G8-IP-32 (min. PRO 800 5.0, min. base licence PRO 1) or
– VirtuoSIS (min. PRO 800 5.0, min. base licence PRO 3)

Configuration software

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

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

SIP

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

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Network requirements for use as SIP device

Ports

– The communication with 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)

Network requirements for use as IoIP 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 a EF 962H is possible.
– Communication from the software 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

– One-way delay max. 100 ms
– Jitter max. 50 ms
– 0% packet loss for perfect audio quality

Bandwidth

See guideline "**IoIP Technology**".

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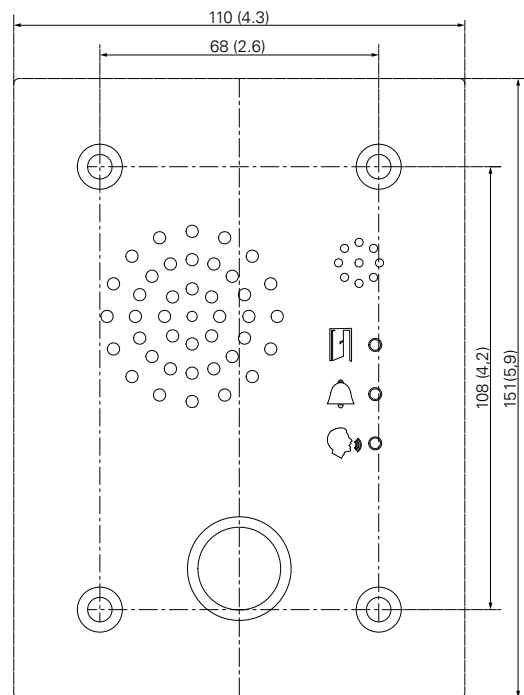## Installation instructions

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 Intercom 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.

Precautions

– Do not expose the Intercom station to extreme temperatures (see "Technical data").
– When opening the stations, ESD precautions must be observed.
– The Intercom stations may only be opened by authorised service engineers.
– The Intercom station may only be cleaned with cleaning agents for stainless steel – in NO case with cleaning agents containing chlorine!
– 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 harmful interference in which case the user will be required to correct the interference at his own expense.
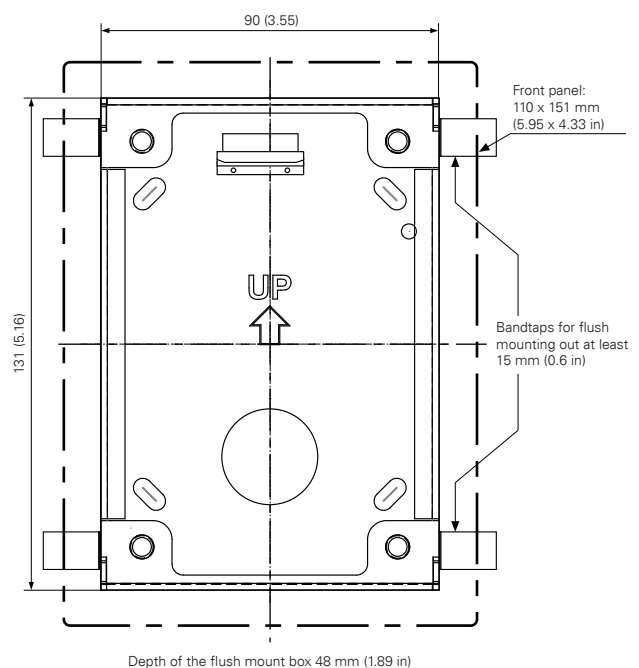
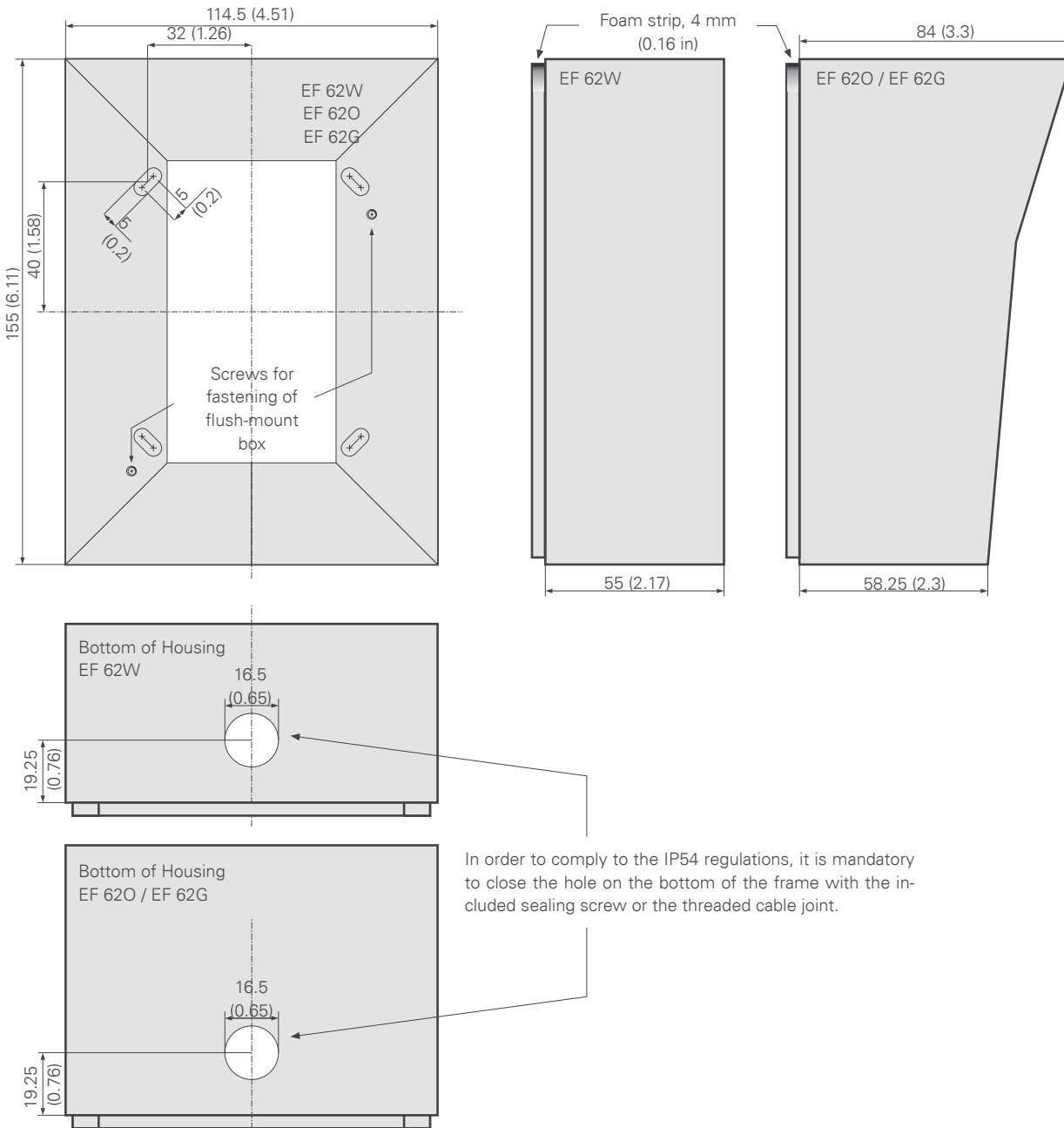## Dimensions front panel

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

Dimensions flush mount box GUEF 962

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

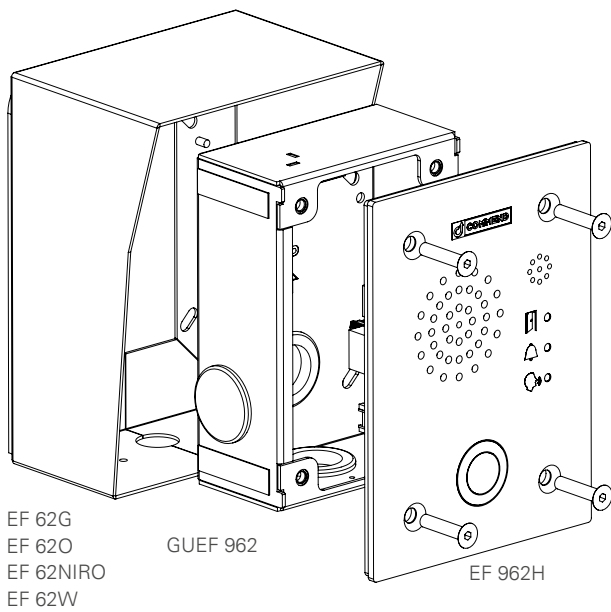
Depth of the flush mount box 48 mm (1.89 in)

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Dimensions surface mount box EF 62

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

114.5 (4.51)
32 (1.26)

EF 62W
EF 62O
EF 62G

155 (6.11)
40 (1.58)

5 (0.2)
5 (0.2)

Screws for
fastening of
flush-mount
box

Foam strip, 4 mm
(0.16 in)

EF 62W

84 (3.3)

EF 62O / EF 62G

55 (2.17)

58.25 (2.3)

Bottom of Housing
EF 62W

16.5
(0.65)

19.25
(0.76)

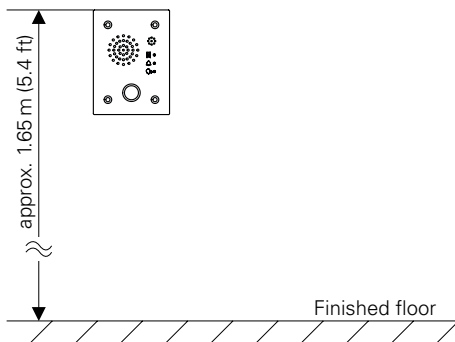Bottom of Housing
EF 62O / EF 62G

16.5
(0.65)

19.25
(0.76)

In order to comply to the IP54 regulations, it is mandatory
to close the hole on the bottom of the frame with the in-
cluded sealing screw or the threaded cable joint.

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Mounting

EF 62G
EF 62O   GUEF 962
EF 62NIRO
EF 62W
                                    EF 962H

Recommended mounting height

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

Connection (rear view)

ATTENTION:

The spring clamp terminal will be damaged when inserting a screwdriver into the cable opening.

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", see "Technical data").
– 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.

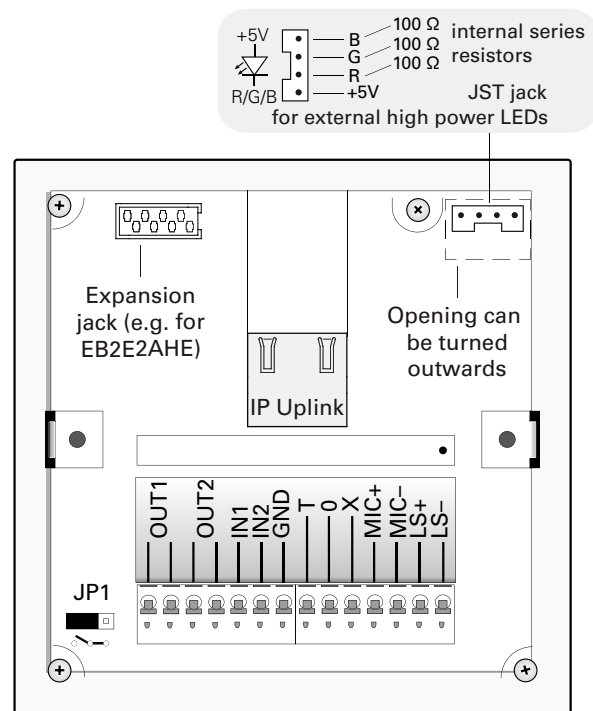## Quality tested. Reliable. Smart.

COMMEND products are developed and manufactured by Commend International in Salzburg, Austria.

The development and manufacturing processes are certified in accordance with **EN ISO 9001:2015**.

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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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