

# Series EE 7000D

Industry stations for rough environments



Rugged  
housing

Weather-  
proof  
IP66

Audio +  
functionality

16kHz  
eHD Voice

## Durable communication solution

By focusing on the highest safety levels, simple operation and future-proof scalability, Comend's Series EE 7000D industry stations are designed for communication in rough environments.

A wide product range means that Intercom stations are available for any application: three different keypads with a variety of features can be combined with or without built-in loudspeaker and/or handset. Additionally, there is the option to use an AC power supply (100–240 VAC) or a DC power supply (22–60 VDC or 18–30 AC). In total, there are 24 Series EE 7000D station versions to provide exactly what the user and the local regulations require.

Based on a rugged, corrosion-resistant and lightweight polycarbonate housing, the Series EE 7000D enables simple and rapid installation, eliminates expensive routine servicing and drastically reduces maintenance costs. Additionally, the IP66 certification and a wide permissible temperature range make the Intercom stations the perfect choice for a wide range of applications.

Thanks to the dust- and water-insensitive microphones and the 16 kHz eHD Voice audio quality, the Series EE 7000D comes with highest speech intelligibility. Even in very noisy environments, two powerful amplifiers for the optional built-in loudspeaker and a connectable PA loudspeaker ensure a crystal clear sound. Furthermore, the microphone and the IVC feature (Intelligent Volume Control) allow to adjust the volume automatically to the ambient noise – even during playback.

Discover more  
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## Key benefits at a glance

## Designed for the most demanding environments

- The rugged and corrosion-resistant housing withstands an **expanded temperature range** (see also “Technical data”)
- **IP66 certification** ensures reliable operation in any climatic condition
- Optimised **large tactile button panel** for ease of use with protective gloves eliminates moving parts
- Integrated **flashing beacon control** allows automatic initiation of multiple visual signalling devices in high noise areas
- Bright **orange-coloured housing** for easy location of the Intercom station
- **Three integrated LEDs** for signalisation of active calls and various important system messages

## Cost-effective installation and flexible system planning

- **2-wire digital technology** helps to reduce cabling requirements and installation costs
- Simple but absolutely **secure IP network integration** using Command specific Ethernet interfaces (ET 901-D)
- Flexible AC (100–240 VAC) or DC (22–60 VDC or 18–30 AC) **power supply options**
- Redundant **backup power supply** mode via 2-wire data connection
- **Lightweight housing** (“Ex e”) enables reduced transport costs, avoids costly “Ex d” cable glands, speeds up installation time, can be installed by only one person, eliminates expensive routine services and drastically reduces maintenance costs
- **Wide product range** with different features

Without built-in loudspeaker for use as microphone access panel and/or with a separate loudspeaker



Tactile button panel with 8 programmable function buttons

Built-in loudspeaker powered by a highly efficient class-D amplifier



Tactile button panel with Party Line keypad and 4 programmable function buttons

Handset for noisy environments or private communication



Tactile button panel with full keypad and 4 programmable function buttons

## Outstanding speech intelligibility with unique features

- Fully-automated, **real-time volume adjustment** to ambient acoustic conditions via IVC (Intelligent Volume Control) to ensure perfect speech intelligibility
- **Built-in loudspeaker** and class-D amplifiers allow high sound pressure levels of up to 118 dB
- Additional **powerful class-D amplifier** for direct connection of an external loudspeaker
- **Optional handset** for environments with extreme background noise or private conversations
- Completely **dust- and water-resistant microphone** that can be configured as close-talking microphone for high noise environments
- Superior audio quality thanks to **16 kHz eHD Voice**
- Whether manual communication direction control (**simplex**) or open communication lines in both directions for natural, fully hands-free conversations (**OpenDuplex®**)

## Essential functions based on decades of experience

- **Point-to-point and multi-channel conference** communication (Party Lines) as well as paging and PA capability for cost-saving cabling and installation requirements
- Push button **Party Lines** functionality enables open channel and selective communication
- **PAGA readiness** enable the integration of communication channels across the site and provides mission critical voice and alarm broadcast package
- Secure, direct and instant communication **without any dialling and connection delay**
- Full range of **more than 150 proven Command Intercom features** (e.g. redundancy, audio monitoring, background noise suppression and loudspeaker/microphone surveillance)
- **Monitoring, controlling, automation and interfacing** enable professional industrial workflows for increasing efficiency and security
- Combinable with **virtual server landscapes** via VirtuoSIS – provides all the benefits without the need for extra hardware
- **Easy system maintenance** – e.g. upgrade and analysis

## Versions

### Series EE 7000D Intercom stations with 8 function buttons

Article code	Features	Picture
<b>EE 7008D AC</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>AC power supply</li> </ul>	
<b>EE 7008D DC</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>DC power supply</li> </ul>	
<b>EE 7008D AC H</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7008D DC H</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Handset</li> <li>DC power supply</li> </ul>	

Article code	Features	Picture
<b>EE 7008D AC S</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Built-in loudspeaker</li> <li>AC power supply</li> </ul>	
<b>EE 7008D DC S</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Built-in loudspeaker</li> <li>DC power supply</li> </ul>	
<b>EE 7008D AC S H</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7008D DC S H</b>	<ul style="list-style-type: none"> <li>8 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>DC power supply</li> </ul>	

### Series EE 7000D Intercom stations with Party Line keypad and 4 function buttons

Article code	Features	Picture
<b>EE 7P04D AC</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>AC power supply</li> </ul>	
<b>EE 7P04D DC</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>DC power supply</li> </ul>	
<b>EE 7P04D AC H</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7P04D DC H</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Handset</li> <li>DC power supply</li> </ul>	

Article code	Features	Picture
<b>EE 7P04D AC S</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>AC power supply</li> </ul>	
<b>EE 7P04D DC S</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>DC power supply</li> </ul>	
<b>EE 7P04D AC S H</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7P04D DC S H</b>	<ul style="list-style-type: none"> <li>Party Line keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>DC power supply</li> </ul>	

### Series EE 7000D Intercom stations with full keypad and 4 function buttons

Article code	Features	Picture
<b>EE 7504D AC</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>AC power supply</li> </ul>	
<b>EE 7504D DC</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>DC power supply</li> </ul>	
<b>EE 7504D AC H</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7504D DC H</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Handset</li> <li>DC power supply</li> </ul>	

Article code	Features	Picture
<b>EE 7504D AC S</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>AC power supply</li> </ul>	
<b>EE 7504D DC S</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>DC power supply</li> </ul>	
<b>EE 7504D AC S H</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>AC power supply</li> </ul>	
<b>EE 7504D DC S H</b>	<ul style="list-style-type: none"> <li>Full keypad</li> <li>4 function buttons</li> <li>Built-in loudspeaker</li> <li>Handset</li> <li>DC power supply</li> </ul>	

## System overview

Thanks to the variety of options, Series EE 7000D Intercom stations can be used for a wide range of applications. A few examples are provided in the following:

### Series EE 7000D as microphone access panel

Microphone access panel without built-in or external loudspeaker and without handset – for announcements, group calls, All Calls and configurable functions.



e.g. EE 7008D

### Series EE 7000D as standard Intercom station

Standard Intercom station with built-in or separate external loudspeaker – for enhanced OpenDuplex® and large speaking distances.



e.g. EE 7504D S



e.g. EE 7504D

AMP1



External loudspeaker

#### External equipment

E.g. with separate external loudspeaker (connected to "AMP1"), supplied directly via the Intercom station.

### Series EE 7000D as Intercom and paging station

Standard Intercom station with built-in or separate external loudspeaker and PA functions – for use in high noise environments.



e.g. EE 7008D S



e.g. EE 7008D

AMP2 <sup>1)</sup>

OUT1 <sup>1)</sup>

AMP1

AMP2 <sup>1)</sup>

OUT1 <sup>1)</sup>



External loudspeaker



External PA loudspeaker



Beacon light

#### External equipment

E.g. with built-in or separate external loudspeaker (connected to "AMP1"), external PA loudspeaker (connected to "AMP2") and beacon light (connected to "OUT1"), all supplied directly via the Intercom station.

### Series EE 7000D as Intercom station for high noise environments

Intercom station with built-in loudspeaker connected to "AMP2" in stead of "AMP1" (default configuration) – without external loudspeaker.



e.g. EE 7P04D S

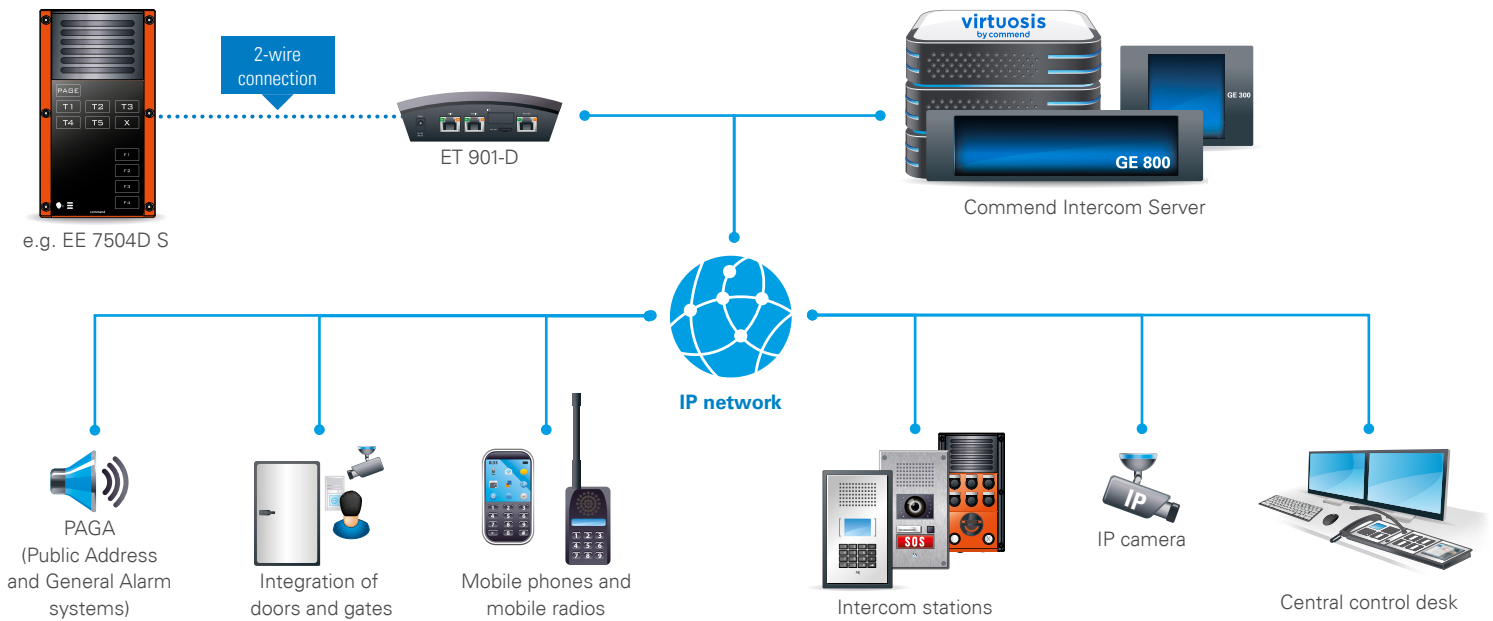
AMP2 <sup>1)</sup> (connected within the housing by cable)

<sup>1)</sup> Requires the additional software licence LEX-AF-OUT.



### Series EE 7000D Intercom stations in an IP network

It is possible to integrate a Series EE 7000D Intercom station into an IP network by means of an ET 901-D. An example for a Series EE 7000D Intercom station in an IP network is shown in the following:



# Series EE 7000D

## Technical specifications

### Technical data

<b>IP rating:</b>	without handset: IP66 (acc. to EN 60529) handset: IP44 (acc. to EN 60529)
<b>Mechanical impact resistance:</b>	without handset: IK10 (acc. to EN 62262) handset: IK09 (acc. to EN 62262)
<b>Keypad <sup>1)</sup>:</b>	EE 7008D: 8 function buttons EE 7P04D: Party Line keypad and 4 function buttons EE 7504D: full keypad and 4 function buttons
<b>Housing:</b>	robust polycarbonate
<b>Microphone:</b>	MEMS microphone
<b>Built-in loudspeaker <sup>1)</sup>:</b>	special membrane for optimal sound quality, max. sound pressure level, built-in loudspeaker connected to "AMP1": 112 dB/0.3 m (1 ft), 102 dB/1 m (3.3 ft) max. sound pressure level, built-in loudspeaker connected to "AMP2": 118 dB/0.3 m (1 ft), 108 dB/1 m (3.3 ft) <sup>2)</sup>
<b>Amplifier:</b>	class-D amplifiers, total audio power: 25 W "AMP1": output power: 5 W, resistance: min. 8 Ω "AMP2": output power: 20 W, resistance: min. 8 Ω <sup>2)</sup>
<b>Call and status indication:</b>	3 LEDs (colours: red, green, blue)
<b>Inputs:</b>	2 inputs for floating contacts
<b>Outputs:</b>	"OUT1": voltage-controlled relay contact <sup>2)</sup> max. switching power: 150 W, 1,200 VA, max. switching current: 5 A <sup>3)</sup> "OUT2": floating relay output with NO and NC contact max. switching power: 60 W, 62.5 VA, max. switching current: 2 A
<b>Transmission bandwidth:</b>	16 kHz
<b>Operating temperature range:</b>	without handset: -40 °C to +60 °C (-40 °F to 140 °F) handset: -25 °C to +55 °C (-13 °F to 131 °F)
<b>Storage temperature range:</b>	without handset: -40 °C to +60 °C (-40 °F to 140 °F) handset: -25 °C to +55 °C (-13 °F to 131 °F)
<b>Relative humidity:</b>	up to 95%, not condensing (acc. to EN 60068-2-30)
<b>Handset cable length <sup>1)</sup>:</b>	700 mm (27.56 in)
<b>Power supply <sup>1)</sup>:</b>	power consumption: max. 25 W <sup>4)</sup> versions EE 7x0xD AC x x: 100–240 VAC (50/60 Hz) <sup>5)</sup> versions EE 7x0xD DC x x: 22–60 VDC or 18–30 VAC (50/60 Hz) <sup>6)</sup>
<b>Cabling to Intercom Server:</b>	star feed, 2-wire twisted
<b>Signalling:</b>	2B + D (2 x 64 kBit/s speech, 16 kBit/s data)
<b>Emergency operation:</b>	max. 3 W from the Intercom Server
<b>Dimensions (W x H x D):</b>	without handset, without loudspeaker: 175 x 315 x 102 mm (6.89 x 12.40 x 4.02 in) without headset, with loudspeaker: 175 x 315 x 127 mm (6.89 x 12.40 x 5.00 in) with handset, with/without loudspeaker: 251 x 315 x 143 mm (9.88 x 12.40 x 5.63 in)



<b>Weight incl. package:</b>	approx. 3 kg (6.62 lbs)
<b>Colour:</b>	orange and black

- <sup>1)</sup> For detailed information about the different Series EE 7000D station versions, see "Versions".
- <sup>2)</sup> For the amplifier "AMP2" and the relay output "OUT1", the additional software licence L-EX-AF-OUT is required.
- <sup>3)</sup> The output voltage of relay output "OUT1" equals the Intercom station's supply voltage.
- <sup>4)</sup> The max. power consumption applies only if the relay output "OUT1" is not used.
- <sup>5)</sup> The mains supply is suitable for locations with overvoltage category II. For higher overvoltage categories, additional protective measures have to be carried out.
- <sup>6)</sup> The voltage connection may only be connected to an ES1 (SELV) circuit as per IEC/EN 62368-1. The ES1 (SELV) circuit must not exceed 60 VDC or 30 VAC<sub>RMS</sub>.

### Extent of supply

- Intercom station
- 3 x M20 cable glands
- 4 x dummy plugs
- Snap ferrite (EE 7x0xD AC x x only)
- Short reference

### System requirements

#### Intercom Server

- GE 800 (min. PRO 800 6.3 build 12) with G8-GED (firmware version min. 4.4) or
- GE 300 (min. PRO 800 6.3 build 12) with G3-GED (firmware version min. 4.4) or
- VirtuoSIS/S3/S6 (min. 8.1) with ET 901-D (firmware version min. 5.0)

#### Configuration software

- CCT 800 (min. version 8.1)

#### Device firmware

- DSP800B (min. version 2.5 Build 4)

#### ATTENTION: Downgrade

Downgrading to firmware version DSP800B 2.5 build 3 or lower is not supported.

## Emergency operation

The device automatically switches to emergency mode in case of a main power supply failure. This results in a decrease of volume of –15 dB (relative to the max. volume). In emergency operation, the device (“AMP1”) is therefore limited to max. volume level “4”, the amplifier “AMP2” is deactivated and switched relay outputs (“OUT1”/“OUT2”) are opened. When normal operation is resumed, the relay outputs are set into the appropriate states and the amplifier “AMP2” is reactivated. For this, no configuration in CCT 800 is necessary.

### Planning tips for emergency operation

In order to ensure emergency operation at a main power supply failure of the Intercom station, max. 20 units of the Series EE 7000D can be operated with an Intercom Server GE 800 or GE 300.

### Recommended power supply

- **GE 800:** 30 VDC/80 W, 24 VA/80 VA
- **GE 300:** 24 VDC/60 W

Note that the overall Intercom Server power supply must be appropriate for all connected Intercom stations.

### NOTE: Line monitoring

It is recommended to activate “line monitoring”. For appropriate configuration, see manual “**Intercom Server Configuration**”.

## Line length

Cable type	Normal operation	Emergency operation <sup>1)</sup> (GE 800/GE 300)	Emergency operation <sup>1)</sup> (ET 901)
<b>Ethernet cable, e.g. Cat. 5</b> Loop resistance: 190 Ω/km Capacity: 48 nF/km (14.4 nF/1,000 ft)	2,600 m (8,530 ft)	900 m (2,953 ft)	600 m (1,969 ft)
<b>Telecommunication cable, e.g. F-YAY; ø 0.6/0.8 mm; AWG: 22/20</b> Loop resistance: >135 Ω/>73 Ω/km Capacity: 100 nF/km (30.5 nF/1,000 ft)	1,600 m (5,249 ft)	1,200 m (3,937 ft)	600 m (1,969 ft)

<sup>1)</sup> The indicated max. line length applies to versions with built-in loudspeaker.

## Table of loudspeaker control

Per default, the amplifiers “AMP1” and “AMP2” are controlled in parallel. In order to achieve the loudspeaker control behaviour as shown in the table below, a configuration in CCT 800 is required. For this, activate the checkbox **Separate control loudspeakers** at **Subscriber > Audio - Features > tab General** and activate the software licence L-EX-AF-OUT.

State	AMP1 (built-in or external loudspeaker)	AMP2 <sup>2)</sup> (external loudspeaker)
Privacy	✓	–
Music	– <sup>3)</sup>	✓
Simplex (listen)	✓	–
Duplex	✓	–
OpenDuplex	✓	–
Busy	✓	–
Alarm	✓	✓
All Call	✓	✓
Radio conference	✓	–
Conference	✓	–
Duplex conference	✓	–
Normal call	✓	–
Emergency call	✓	–
Error	✓	–

<sup>2)</sup> Requires the additional software licence L-EX-AF-OUT.

<sup>3)</sup> If the checkbox **Separate control loudspeakers** is activated but no software licence L-EX-AF-OUT is available, music is put out via the amplifier “AMP1”.

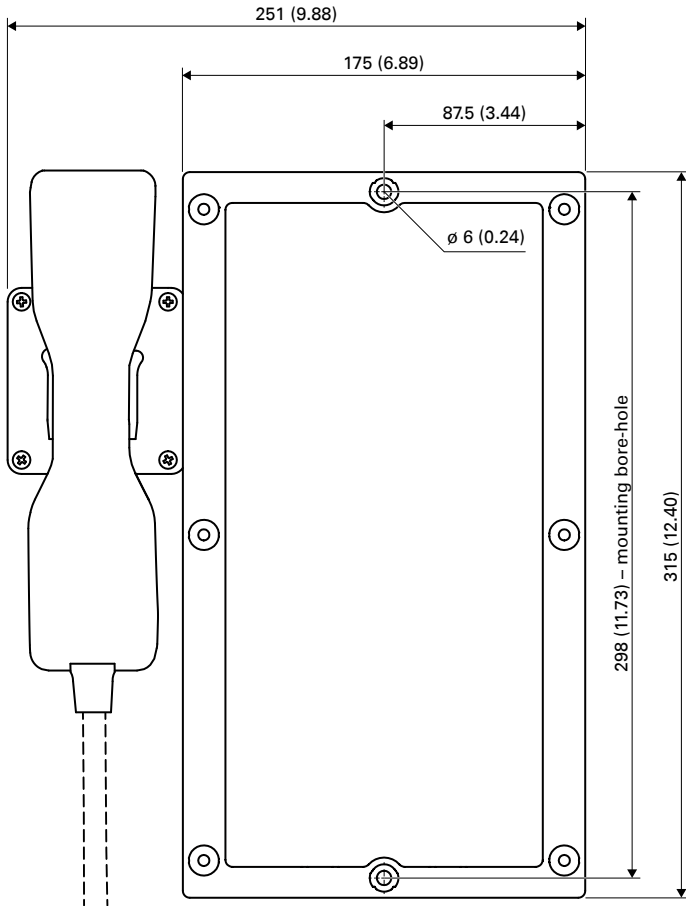
### NOTE: ICX messages

An adjustment of the loudspeaker control via ICX message is possible. For further information, see manual “**ICX Protocol**”.

# Series EE 7000D Installation instructions

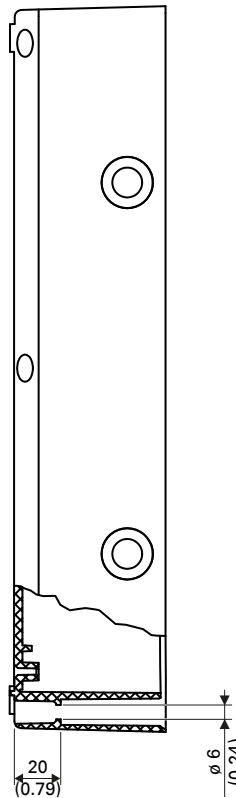
## Dimensions front view and side view

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



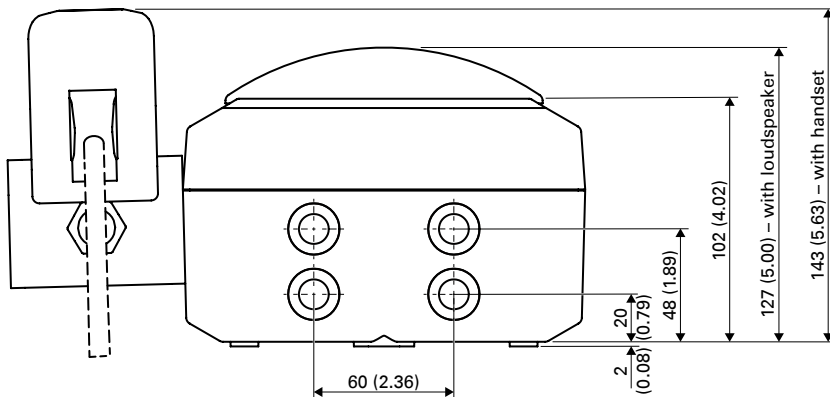
### NOTE: Station versions

For detailed information about the different Series EE 7000D station versions, see "Versions".



## Dimensions bottom view

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



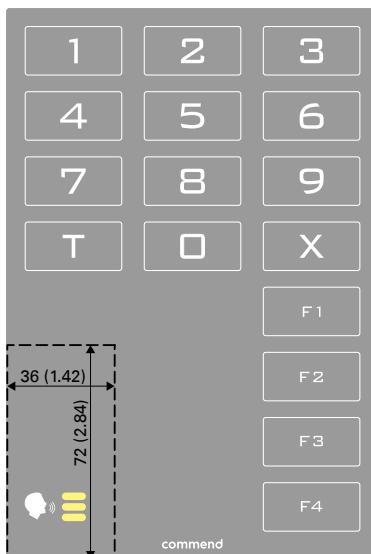


## Mounting instructions

- This device is intended to be mounted, handled and used by skilled persons only.
- This device may only be operated with appropriate Commed Intercom systems.
- Prior to installation, the Intercom station should be carefully inspected internally and externally checking for damage to the housing – e.g. cracks, fissures, sealing gasket integrity, security of all components and tightness of all fastenings.
- This device may not be exposed to direct sunlight and, if necessary, must be protected by a canopy to avoid exceeding the maximum operating temperature.
- Aggressive substances may dictate extra protection to the device to ensure its integrity.
- Before using this device, ensure all cables are connected correctly and are not damaged.
- 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.
- In case of outdoor mounting, it is recommended to cut out the two water outlets on the bottom of the housing.
- The required tightening torque for the six cover screws is 2.5 Nm.

## Labelling

Labels for the function buttons can be attached directly to the membrane keypad. Ensure to not label the area shown below:



### ATTENTION: Decreasing intelligibility

The intelligibility can be influenced negatively by labelling the area around the microphone (e.g. by attaching a sticker).

### NOTE: Membrane keypad

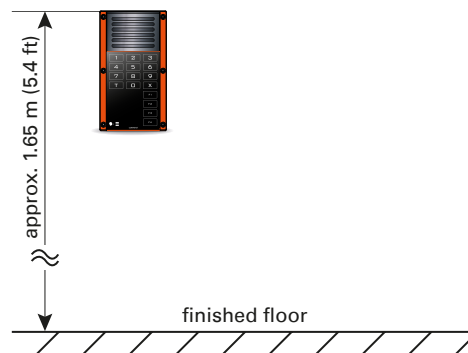
The need to avoid covering the marked keypad area applies to all versions of the Series EE 7000D. For detailed information, see "Versions".

## Safety warnings

- Disconnect the power cable for any maintenance of the device.
- Allow the device to cool down completely before touching parts inside.
- The manufacturer cannot be responsible in any manner for errors and problems due to an incorrect installation or configuration.
- All changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Mounting height

It is recommended to mount Series EE 7000D Intercom stations with a height of 1.65 m (5.4 ft) from the finished floor to the upper edge of the housing. Adapt the mounting height to the individual needs.

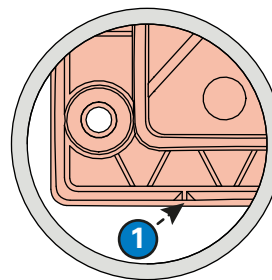


### ATTENTION: Installation

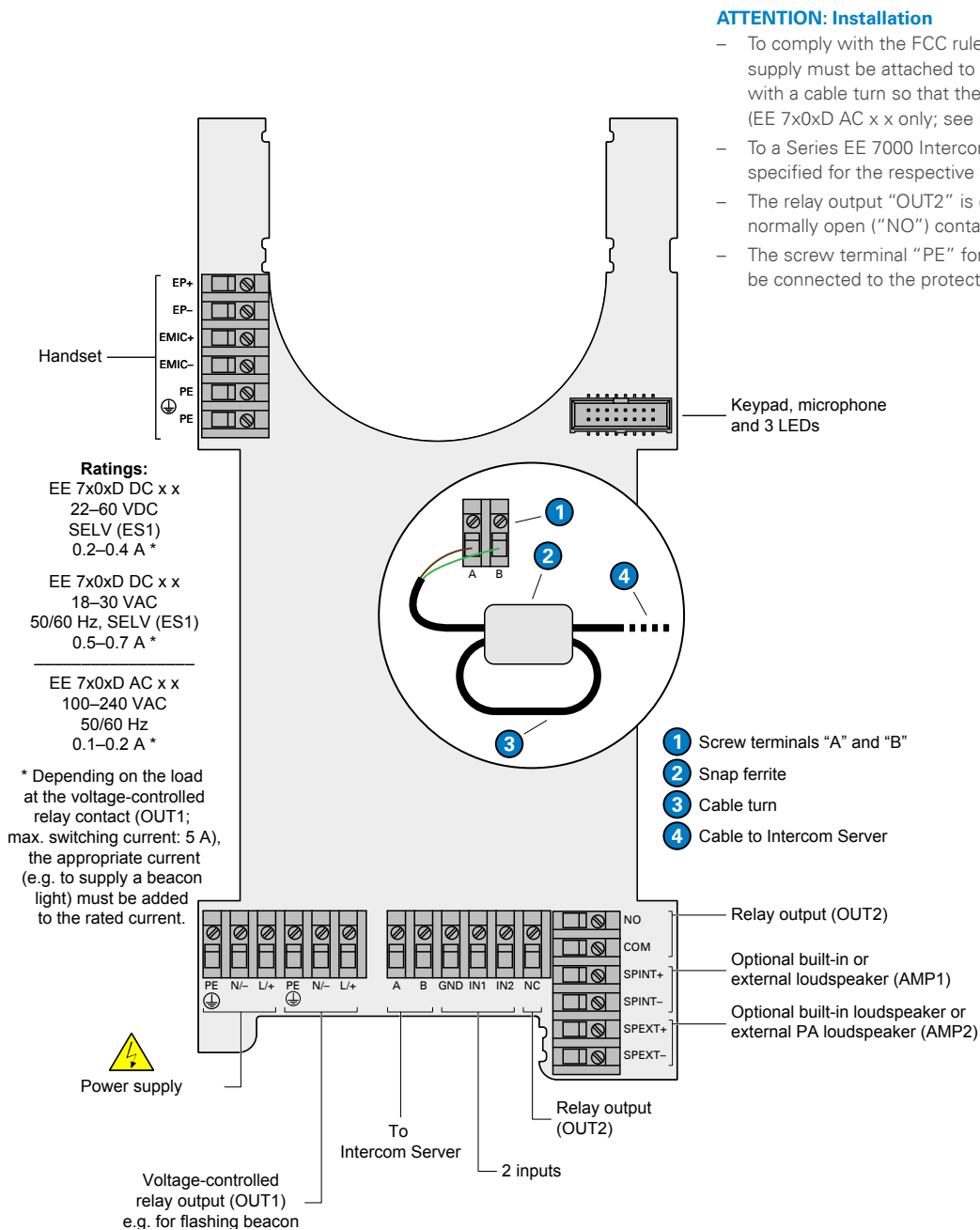
Do not install the device on unstable walls or on surfaces that cannot support the weight of the device.

## Outdoor mounting

In case of outdoor mounting, it is recommended to cut out the two water outlets on the bottom of the housing **1**.



## Mounting instructions



### ATTENTION: Installation

- To comply with the FCC rules, the snap ferrite included in extent of supply must be attached to the subscriber cable inside the housing with a cable turn so that the cable passes the snap ferrite two times (EE 7x0xD AC x x only; see illustration above).
- To a Series EE 7000 Intercom station, only the voltage range and polarity specified for the respective version may be connected.
- The relay output "OUT2" is designed as a normally closed ("NC") and a normally open ("NO") contact.
- The screw terminal "PE" for the power supply within the housing must be connected to the protective earth.

## 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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