

WS 500V I CM

Vandal resistant IP door station with full keypad and built-in camera



Vandal
resistant
IK 07

Weather-
proof
IP 65

Built-in
Camera &
Full keypad

16kHz
eHD Voice

New possibilities for secure access control

People live and work in buildings. These buildings must therefore provide protection and safety – not just in everyday life, but especially in extreme situations.

With the vandal resistant WS 500V I CM Intercom station, Commend offers the perfect solution for doors and gates.

A key feature of this powerful terminal is the combination of a full keypad and camera. This opens up a whole range of new possibilities for secure access control, especially in large-sized building complexes.

Three function keys (F1, F2, F3) can be programmed individually with specific call destinations or control functions such as "Light ON/OFF". A special "bell key" establishes an instant call connection to the Control Desk/receiving terminal, which can then open a door, for example, or forward the call to a specific subscriber. All audio calls can be complemented by live video via the built-in camera to provide additional security. What is more, the specially designed "key button" makes the input of access codes easier.

Functions and Highlights

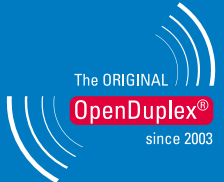




- Extremely robust, weatherproof and vandal resistant construction enables use in outdoor locations and public areas (IP 65, IK 07)
- The 3 mm stainless steel front panel with poke protection and special screws protects against vandalism
- Perfectly suited for secure access control applications in large-sized building complexes thanks to built-in camera and full keypad
- 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 (see page 2)
- 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
- Support of different installation options (flush-mounting or surface-mounting) ensure maximum flexibility



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.

 <p>Natural communication</p>	 <p>enhanced HD Voice</p>	 <p>High volume</p>	 <p>Background noise suppression</p>	 <p>Loudspeaker-Microphone monitoring</p>
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Audio // Basics

eHD Voice	Enhanced HD Voice by Commend transfers the audio signal at a bandwidth of 16,000 Hz , 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	High volume up to 99 dB SPL
Amplifier	High efficient class “D” amplifier with 2.5 W
Microphone	Omnidirectional electret 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

- Dynamic **background noise suppression** virtually eliminates all ambient noise
- **Automatic volume adjustment** to ambient noise conditions
- **Loudspeaker/microphone monitoring** – 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 shouting/screaming or predefined distress sounds – i.e., more security for users
- **Peer2Peer Audio** reduces network and server load to ensure efficient use of resources
- **Public Address functions**
- **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-Modus** for applications requiring controlled communication – e.g., security solutions based on the ‘push-to-talk/release-to-listen’ method

Technical data / System requirements

IP rating:	IP 65
Mechanical impact resistance acc. EN 62262:	IK 07
Front panel:	stainless steel, 3 mm (0.12 in)
Microphone:	Omnidirectional electret microphone for max. 7 m (23 ft) speaking distance
Loudspeaker:	Special membrane type for optimal sound quality, sound pressure: 85 dB/1 W/1 m (3.28 ft), 2x8 Ω
Amplifier:	integrated class "D" amplifier with 2.5 W
Sound pressure:	max. 99 dB
Handset, Headset:	EM sensitivity: 14 mV _{eff} EM impedance: 3.3 kΩ / EM supply: 2.5V EP level: 850 mV _{eff} at 0 dBm0 / EP impedance: 200 Ω
Input:	3 inputs for floating contacts (detection of 5 input states)
Output:	2 relay outputs (switch-over contacts) 30 V / 1 A
Line output:	for connection loudspeaker module
Call indication:	multifunction LED (colours: red, green, blue)
Call button:	alphanumeric full keypad, white backlight activation force: 3 N, 1 x 10 ⁶ cycles
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% non condensing
Connection:	- pluggable screw terminals - expansion plug for e.g. EB2E2A IP Uplink: shielded RJ 45 modular jacks
Power supply:	PoE or external supply 22-24 VAC or 20-35 VDC power consumption: max. 8.4 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:	VoIP-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
Measurements:	with flush mount kit: W 164 mm (6.46 in), H 279 mm (10.98 in), D 14 mm (0.55 in) with surface mount kit: W 164 mm (6.46 in), H 279 mm (10.98 in), D 50 mm (1.97 in) (Measurements without camera dome)
Weight incl. package:	approx. 1700 g (3.75 lbs)

Hybrid Camera

General data:

- Image sensor: 1/4 inch colour CMOS sensor
- Lens*: Focal distance 3.6 mm (0.14 inch), F2,8, fixed aperture, angle 67.4° (diagonal)
- Automatic adjustment of white fader-, colour-, contrast- and brightness parameters
- Angle adjustable up to 30° horizontally/vertically

IP video stream:

- Resolution: 320 x 240 or 640 x 480
- Video format: Motion JPEG (MJPEG)
- Picture rate: Up to 30 pictures per second
- Protocols: HTTP, ARP, UDP, TCP, IP, ICMP, DHCP (Client)
- Ethernet: 10/100 MBit/s, half-/full duplex
- Standard http-URL for display/integration in 3rd party systems (e.g. webbrowser): <http://<IPaddress>/video.cgi>
- Storage of 5 frames ("Snapshots") and call up via <http://<IPaddress>/snapshot<1-5>.jpg>, possible

Camera illumination/Camera heater:

- LED-white light illumination and camera heater automatically or manually configurable

Configuration:

- Via CCT 800 or
- Via webinterface <http://<IPaddress>>, recommended browsers: min. Internet Explorer 8, min. Mozilla Firefox 3.5

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
- Screws for mounting
- Snap ferrite
- Short reference

System requirements

- GE 800 (min. PRO 800 3.1) with G8-IP (min. G3-8-IP 4.0B01)
- GE 300 (min. PRO 800 3.1) with G3-IP (min. G3-8-IP 4.0B01)
- Configuration software min. CCT 800 3.1
- Configuration software IPStationConfig (included in setup of CCT 800 3.1)

Network requirements

Requirements to the network

IP-Addresses and Ports

- For the station the DHCP functionality is available.
If DHCP is not used, the station must have a fixed IP-address.
- In case of a changing public IP-address, dynamic registration of a WS 500V I CM is possible.
- Communication from the program IPStationConfig is done via Port 16399 (can not be configured).
- Communication from the station 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 500V I CM, for upload/download each: speech and data (no video) 96 kBit/s
- Speech is compressed according to G.722 standard

Required bandwidth for video transmission

The following tables show the required **bandwidth** in **Mbit/s** depending on the configured "Quality" and "Max. frame rate" **per IP stream**.

QVGA:

		Max. Frame rate →							
		1 FPS	2 FPS	5 FPS	10 FPS	15 FPS	20 FPS	25 FPS	30 FPS
Quality ↓	20%	0,06 Mbit/s	0,12 Mbit/s	0,29 Mbit/s	0,58 Mbit/s	0,87 Mbit/s	1,16 Mbit/s	1,46 Mbit/s	1,75 Mbit/s
	40%	0,08 Mbit/s	0,17 Mbit/s	0,42 Mbit/s	0,84 Mbit/s	1,26 Mbit/s	1,68 Mbit/s	2,10 Mbit/s	2,52 Mbit/s
	60%	0,11 Mbit/s	0,22 Mbit/s	0,55 Mbit/s	1,09 Mbit/s	1,64 Mbit/s	2,18 Mbit/s	2,73 Mbit/s	3,28 Mbit/s
	80%	0,13 Mbit/s	0,25 Mbit/s	0,63 Mbit/s	1,26 Mbit/s	1,89 Mbit/s	2,51 Mbit/s	3,14 Mbit/s	3,77 Mbit/s
	100%	0,16 Mbit/s	0,32 Mbit/s	0,80 Mbit/s	1,60 Mbit/s	2,39 Mbit/s	3,19 Mbit/s	3,99 Mbit/s	4,79 Mbit/s

VGA:

		Max. Frame rate →							
		1 FPS	2 FPS	5 FPS	10 FPS	15 FPS	20 FPS	25 FPS	30 FPS
Quality ↓	20%	0,15 Mbit/s	0,31 Mbit/s	0,77 Mbit/s	1,54 Mbit/s	2,31 Mbit/s	3,08 Mbit/s	3,86 Mbit/s	4,63 Mbit/s
	40%	0,23 Mbit/s	0,46 Mbit/s	1,15 Mbit/s	2,30 Mbit/s	3,46 Mbit/s	4,61 Mbit/s	5,76 Mbit/s	6,91 Mbit/s
	60%	0,31 Mbit/s	0,62 Mbit/s	1,54 Mbit/s	3,08 Mbit/s	4,62 Mbit/s	6,16 Mbit/s	7,70 Mbit/s	9,24 Mbit/s
	80%	0,36 Mbit/s	0,71 Mbit/s	1,78 Mbit/s	3,56 Mbit/s	5,34 Mbit/s	7,12 Mbit/s	8,90 Mbit/s	10,69 Mbit/s
	100%	0,45 Mbit/s	0,90 Mbit/s	2,24 Mbit/s	4,48 Mbit/s	6,72 Mbit/s	8,97 Mbit/s	11,21 Mbit/s	13,45 Mbit/s

Installation

Precautions

- When opening the stations ESD precautions must be observed.
- The stations may only be opened by authorised service engineers.

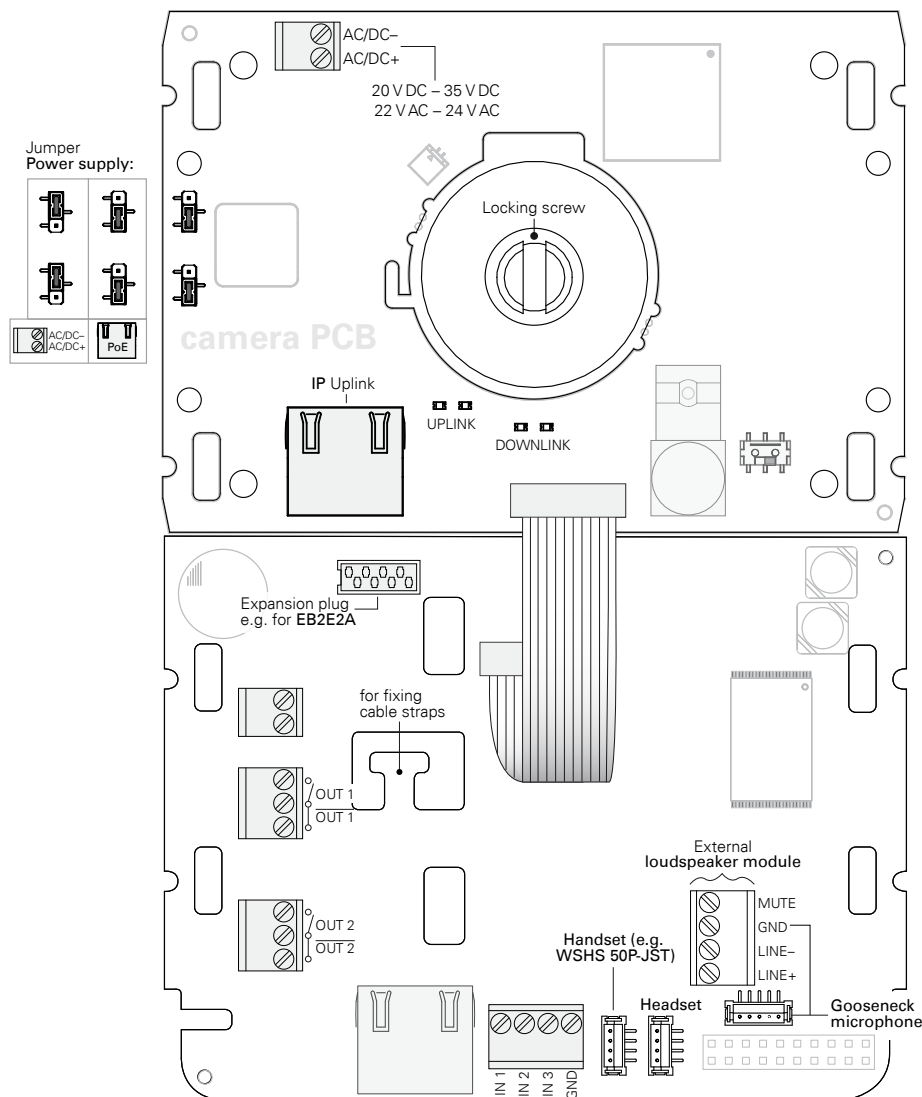
Restriction Video:

- **Video can not** be switched over **WAN networking** via G8-WAN, G3-WAN!

Power supply:

- Power supply must be **connected** to **camera PCB** (PoE or external supply)
- The device **can not** be supplied with **PoE** and **external power** supply **simultaneously**. But if desired, an appropriate configuration of the switch is required (Ethernet port may not be blocked)!

Connection



Tilting the camera:

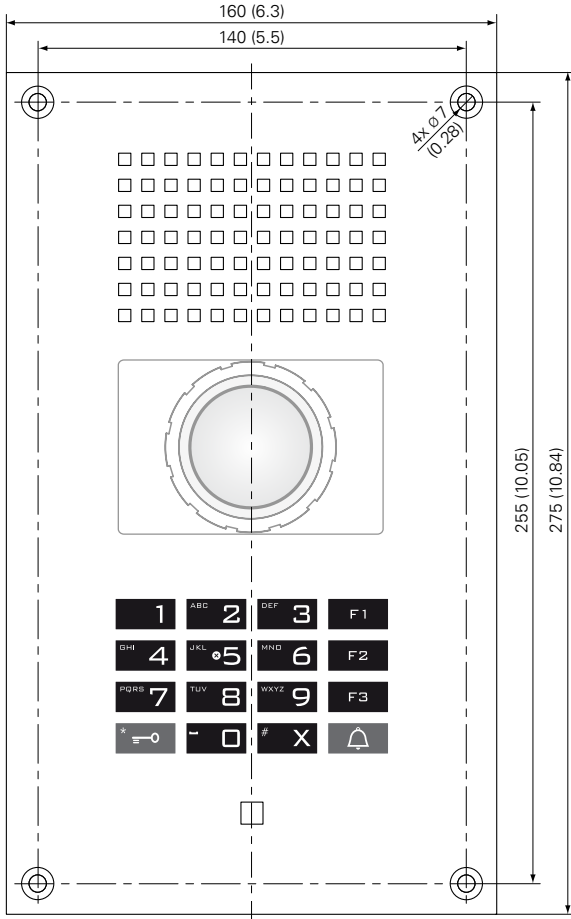
- Unscrew locking screw
- Tilt camera into desired position
- Tighten locking screw

Ethernet connection: The RJ 45 socket on the **camera PCB** must be used!

Installation

Measurements front panel

Front panel thickness: 3 mm (0.12")
 Measurements in mm (inch), not to scale!

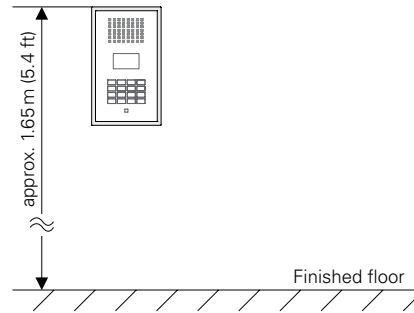


Mounting Instructions

- Do not expose the station to extreme temperature (see "Technical Data").
- For flush mounting a flush mount kit WSFB 50V (available separately) is required.
- For surface mounting a surface mount kit WSSH 50V (available separately) is required.

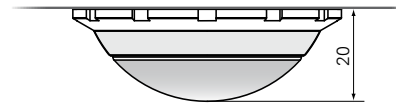
Recommended Mounting height

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



Measurements camera dome

Measurements in mm (inch), not to scale!



Configuration

General Configuration

Before the configuration of the buttons, please carry out the following configuration:

- IP-configuration of the intercom terminal at **Subscriber > Station properties > IP-Terminals**
 - Receive the current configuration
 - Click on **Subscriber > Station properties**
- Note:** Only with click on "Station properties" the virtual inputs of the stations will be created and a further configuration is possible.

Button Configuration

The button configuration allows an easy operation with access codes. To use access codes, please carry out the following configuration:

- **Subscriber > Door opener**
- Click on the station with the right mouse button 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"
- The desired access codes can be configured in the column "Access Code(s)"


Note:


Further information concerning the door opener configuration, please see manual PRO 800.


Button configuration

The buttons are virtual inputs and can be used as function buttons, this allows you to control e.g. lights or establish a call.

Virtual input 1 = 

Virtual input 2 = 

Virtual input 3 = 

Virtual input 4 = 

- **Inputs > ICX at input**
- Click on the input with the right mouse button and select "Add ICX at input"
 - Configure the ICX messages, which will be carried out at pressing the button

Note: For the desired ICX messages, please see manual „ICX-Protocol“
- **Inputs > Dial via Input > Input initiates dialling**
- Click on the input with the right mouse button and select "Add input initiates dialling"
 - For terminals it is possible to configure buttons, which are simulated by pressing the function button.

Note:

Further information concerning the configuration of inputs, please see manual PRO 800.

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**.

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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