WS 810F D / WS 810P D

Multifunctional digital wallmount stations with colour TFT display

WS 810F D

WS 810P D

Weather-proof
IP66

Colour
TFT display

Audio +
Functionality

Back-lit
full keypad

The station series WS 810 puts a face to the voice

The multifunctional master stations of series WS 810F D / WS 810P D are equipped with colour TFT displays for graphical menu navigation and display of IP video streams or analogue video signals (PAL or NTSC). Besides communication, the stations can carry out control functions in other systems. The amplifier provides the necessary volume in areas with high ambient noise.

The stations are made in polycarbonate construction for internal and outdoor areas and are protected against dust, dirt and water jets, which may occur in industrial environments. The special foil on the front panel has a dirt-repellent effect and can be quickly and easily cleaned using normal cleaning agents and disinfectants. Large buttons make operation with protective gloves easy.
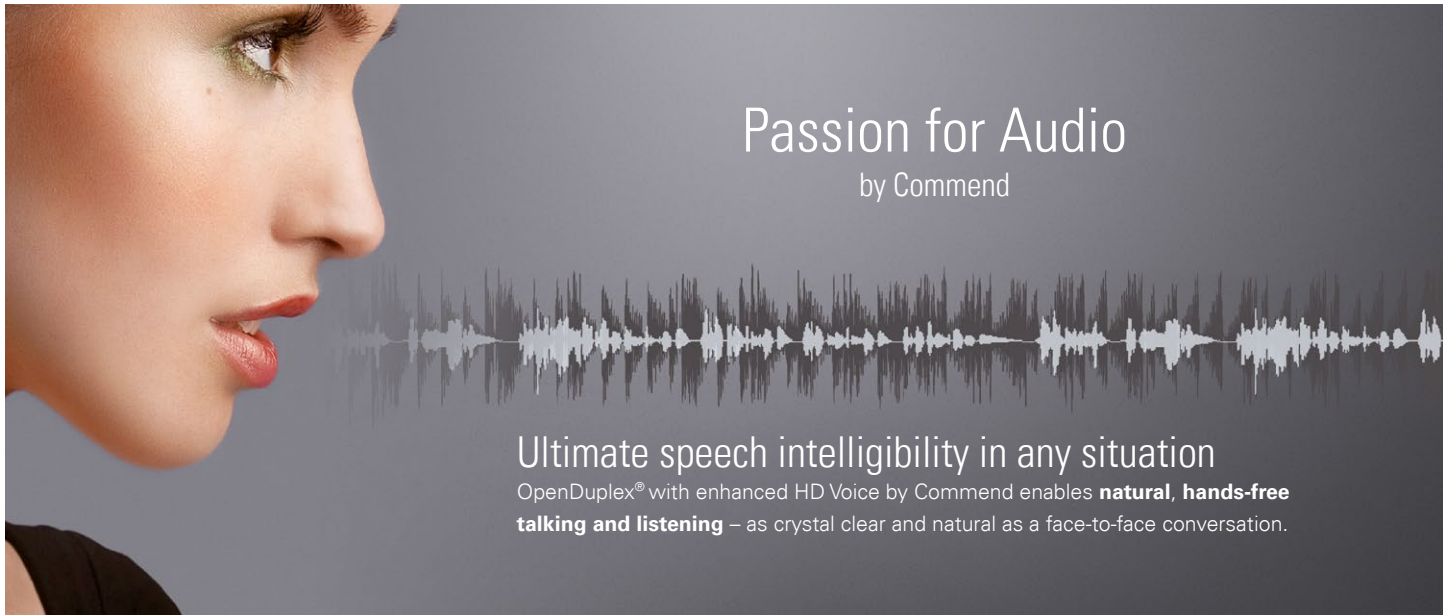
Typical applications:
Series WS 810F D: Production areas, workshops, clean rooms, canteen kitchens as well as internal and outdoor areas.
Series WS 810P D: Classrooms and social areas, stores, workshops, corridors, as outdoor Intercom station on works premises and parking areas.

Features and highlights

- Resistant polycarbonate construction
- High volume capacity and superior speech quality thanks to integrated class-D amplifier and eHD Voice
- 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
- 3,5" colour TFT display with integrated webinterface
- Display of IP video streams (MJPEG), static graphics (JPEG) or analogue CVBS video signal
- Back-lit full keypad and function buttons
- Series WS 810F D: Closed-sealed membrane surface, detergent and disinfectant resistant
- Integrated inputs and outputs for connection of door openers etc.
- Support of different installation options ensure maximum flexibility (flush mounting or surface mounting)

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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.

The ORIGINAL **OpenDuplex®** since 2003	16 kHz — eHD Voice	High volume	IVC	Loudspeaker/microphone surveillance
Natural communication	enhanced HD Voice	High volume	Intelligent Volume Control	Loudspeaker/microphone surveillance

Audio // Basics

eHD Voice	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.
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 level	**High volume** up to **99 dB**
Amplifier	High efficient class-D amplifier with 2.5 W
Microphone	Omnidirectional electret condenser 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
audio.commend.com

Audio // Functions

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

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

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WS 810F D / WS 810P D
Technical Specifications

Technical data

IP rating acc. EN 60529:	IP66
Front panel:	WS 810P D: polycarbonate WS 810F D: polycarbonate with closed-sealed membrane surface
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), 2 x 8 Ω
Amplifier:	integrated class-D amplifier with 2.5 W
Sound pressure level:	max. 99 dB
Handset, headset:	EM sensitivity: 14 mV$_{eff}$ EM impedance: 3.3 kΩ / EM supply: 2.5 V 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) max. 60 VDC, 2 A, 60 W [1] expected life: min. 5 x 10^4 (2 A), 10^5 (1 A)
Line output:	for connection loudspeaker module
Call indication:	multifunction LED (colours: red, green, blue)
Keypad:	alphanumeric full keypad, white backlight activation force: 3 N, 1 x 10^6 cycles
Display:	3,5" colour TFT display, graphical menu navigation display of IP video streams (MJPEG) or analogue video signals (PAL or NTSC) 320 x 240 pixel, 65,000 colours
Transmission bandwidth:	16 kHz
Operating temperature range:	–20 °C to +60 °C (–4 °F to +140 °F)
Storage temperature range:	–20 °C to +60 °C (–4 °F to +140 °F)
Relative humidity:	up to 95 %, not condensing
Connection:	pluggable screw terminals expansion plug for e.g. EB2E2AHE IP video signal: shielded RJ45 modular jack analogue video signal: BNC, 75 Ω
Power supply:	PoE or external supply 22 – 24 VAC or 20 – 35 VDC power consumption: max. 6 W
Cabling:	star feed, 2-wired, twisted
Signalling:	2B + D (2 x 64 kBit/s speech, 16 kBit/s data)
PoE (Power over Ethernet):	IEEE 802.3af power consumption of the terminal device: Class 0 (0.44 W to 12.95 W)
Mounting:	flush mount kit WSFB 50P surface mount kit WSSH 50P
Dimensions in mm (inch):	with flush mount kit: W 165 (6.5 in), H 280 (11 in), D 13 (0.51 in) with surface mount kit: W 165 (6.5 in), H 280 (11 in), D 51 (2 in)
Weight incl. package:	approx. 920 g (2 lbs)
Colour:	front panel: light-grey (like RAL 7035) front panel frame: graphite-grey (like RAL 7024)

[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

Using IP video
The maximum line length of Cat. 5 cabling in a LAN is 100 m (328 ft) – e.g. from switch to Intercom station.

Connection digital station
The indicated line length is valid for standard stations without connected expansion modules and power supply via PoE or external supply.

Cable type	Line length
Ethernet cable e.g. Cat. 5 Loop resistance: 125 Ω/km Capacity: 44 nF/km (13.4 nf/1,000 ft)	max. 2,800 m/9,186 ft
Telecommunication cable e.g. F-YAY; ø 0.6 mm; AWG: 22 Loop resistance:133 Ω/km Capacity: 100 nF/km (30.5 nf/1,000 ft)	max. 2,800 m/9,186 ft

Extent of supply

– Intercom station
– Snap ferrite
– Short reference
– Operating instructions

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Requirements

System requirements

Intercom Server
– GE 800 (min. PRO 800 1.1) with G8-GED (min. G3-8-SUB 3.2)
– GE 300 (min. PRO 800 1.1) with G3-GED (min. G3-8-SUB 3.2)
– IS 300 (min. PRO 800 1.1) with ET 901-D
– VirtuoSIS with ET 901-D

Configuration software
– min. CCT 800 1.1
– *Using IP video*: IP Station Config (included in setup of CCT 800 1.1)

Network requirements

Note: For HTTP authentication the modules support basic authentication only.

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

WS 810F D / WS 810P D
Installation Instructions

Precautions

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

Restricted video

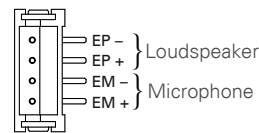– **Video cannot** be switched over **WAN networking** via G8-WAN, G3-WAN!

Power supply

– Power supply must be **connected** to the **TFT display PCB** (for supply via PoE and external supply).
– When using **analogue video**, an **isolated power supply unit** is mandatory.
– The device **cannot** 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)!

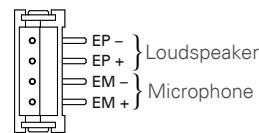**Note:** The use of the analogue video output is also possible with PoE.

Connection

Connection handset:
EP –
EP + } Loudspeaker
EM –
EM + } Microphone
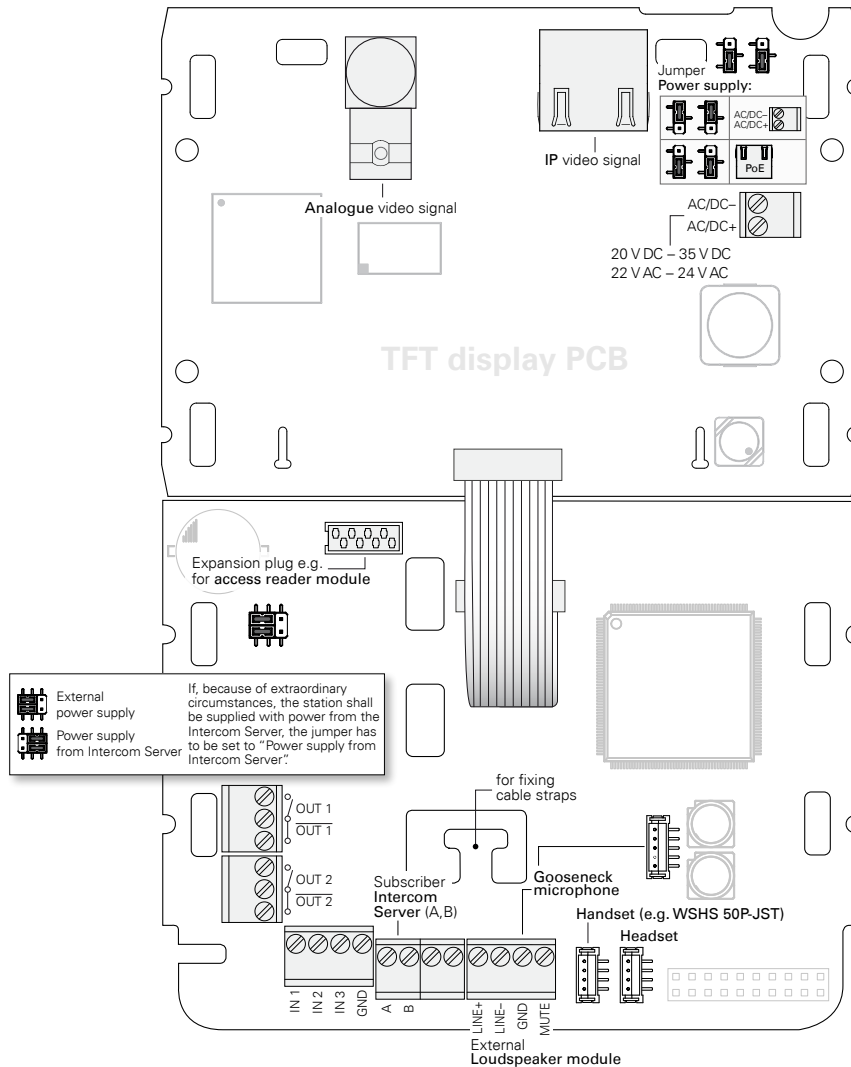
Connection headset:
EP –
EP + } Loudspeaker
EM –
EM + } Microphone

Note:
The headset jack has to be activated via an ICX message (see below).
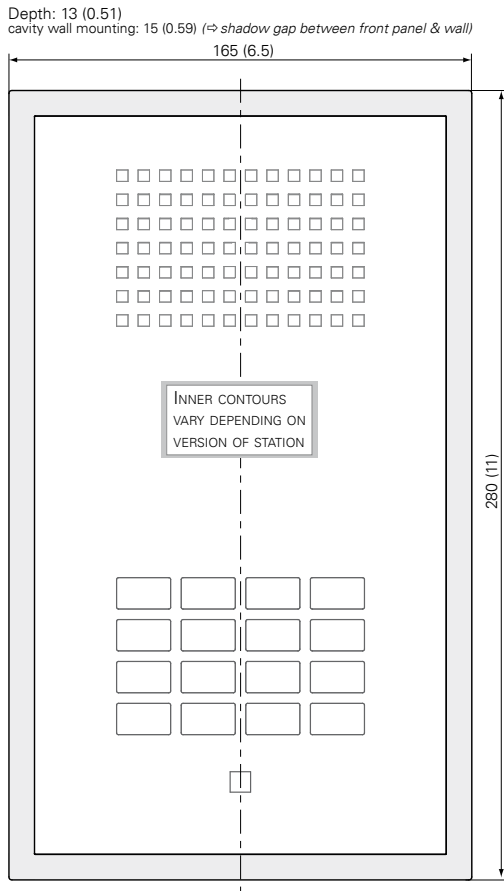
ICX message for connection of headset

Microphone / loudspeaker	Task	Type	Data (variable length)	Server-SW
Switchover microphone / loudspeaker (subscriber)	40	92	TTTT 050Z	Pro 800 2.1

Variable TTTT → 4-digit call number of the subscriber
Variable Z → 0 = deactivate; 1 = activate; 2 = toggle

Dimensions front panel

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

Depth: 13 (0.51)
cavity wall mounting: 15 (0.59) (⇨ shadow gap between front panel & wall)

165 (6.5)

INNER CONTOURS
VARY DEPENDING ON
VERSION OF STATION

280 (11)

Mounting instructions

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

Recommended mounting height

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

approx. 1.65 m (5.4 ft)

Finished floor
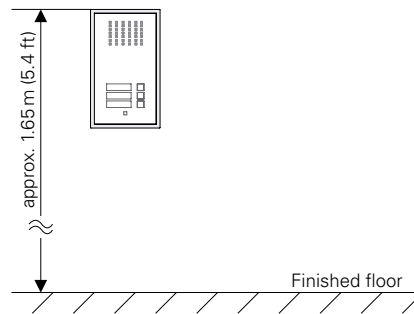
Mounting recommendations WS 810F

Due to sealed microphone and loudspeaker openings, closed-sealed membrane surface stations have acoustic limitations. For that reason, consider the recommendations below when planning the system:
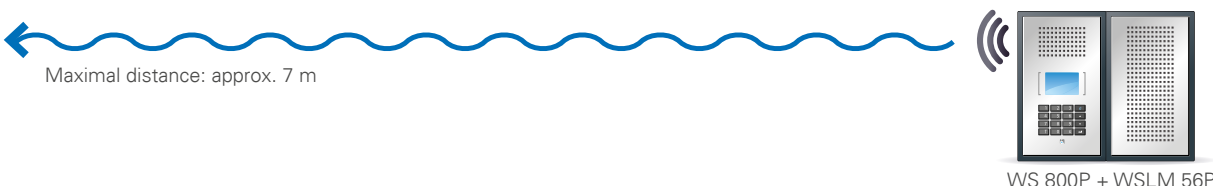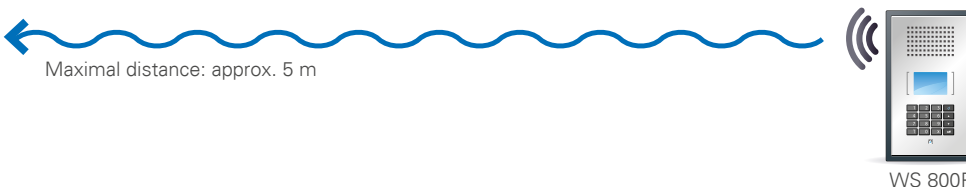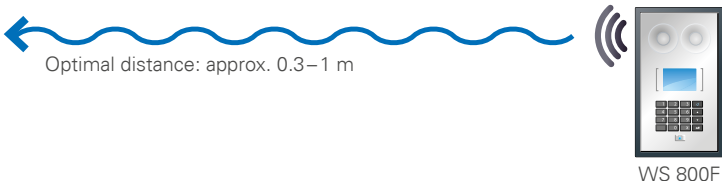
– Ideally, the station is mounted close to the speaker.
– The optimal speaking distance is between 0.3 m to 1 m.
– If it is not possible to mount the station in the recommended position (e.g. due to constructional limitations), a remote microphone can be installed in order to enhance speech quality.
– In case of high ambient noise (>75 dB) or great speaking distances, it is recommended to install additional loudspeakers (e.g. WSLM 52F or WSLM 56F).

Volume limitation WS 810F

If closed-sealed membrane surface stations are installed in rooms with long reverberation time and/or high reflection density (e.g. tiled clean rooms without sound absorbing elements), and are used in OpenDuplex® mode, the volume level has to be reduced due to high acoustic feedback. In case of particularly challenging conditions or conversations between two closed-sealed membrane surface stations, it is recommended to set the volume not higher than "level 8".
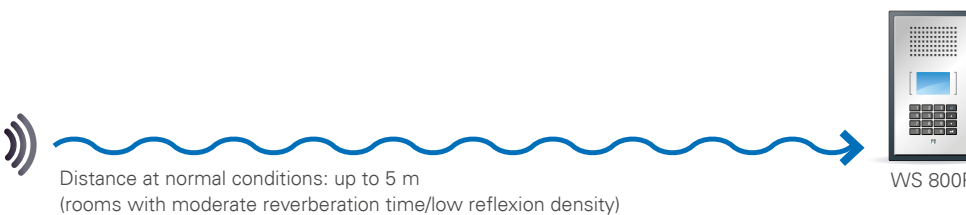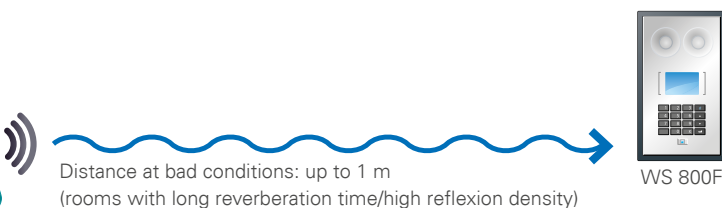
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Listening distance

Depending on the station's version, consider the following listening distances:

Optimal distance: approx. 0.3 – 1 m

WS 800F

Maximal distance: approx. 5 m

WS 800P

Maximal distance: approx. 7 m

WS 800P + WSLM 56P

Speaking distance

Depending on the station's version, consider the following listening distances:

Distance at bad conditions: up to 1 m
(rooms with long reverberation time/high reflexion density)

WS 800F

Distance at normal conditions: up to 5 m
(rooms with moderate reverberation time/low reflexion density)

WS 800P

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**.

AUSTRIA

OBSESSIVE ABOUT QUALITY

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A strong worldwide network

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