

PRA-CSBK Call station kit, basic

PRAESENSA



The basic call station kit is an open frame call station to create dedicated full custom operator panels for PRAESENSA Public Address and Voice Alarm systems. It has the same functionality as the PRA-CSLW, but without LCD user interface to facilitate easier mounting in operator desks or in wall-mounted fireman's panel enclosures.

It comes with a hand-held supervised omni-directional microphone for close talking with press-to-talk button and a small monitor loudspeaker.

The kit has a CAN-bus interface on RJ12 to a PRA-CSEK Call station extension kit for connection of selection switches and status indicator LEDs, or to connect to a full custom control board with switches and indicators. The interface is compatible with the PRA-CSE and one to four of these devices can be connected.

The kit only requires a connection to an OMNEO IP-network with Power over Ethernet (PoE) for communication and power supply combined. It can be configured as business and emergency call station. The PRA-CSBK is considered a component that must be installed in a final product. The final product must be reconfirmed to meet applicable EMC directives.

Functions

IP-network connection

- Direct connection to the IP-network. One shielded CAT5e cable is sufficient for Power over Ethernet, audio and control.
- For dual redundancy of network and power connection, a second shielded CAT5e cable can be connected.

- ▶ Basic open frame call station for custom call panel solutions without LCD
- ▶ Supervised hand-held microphone with helix cable and loudspeaker included
- ▶ CAN-interface for selection switches and status indicators
- ▶ Connections for power LED and status LEDs
- ▶ Dual OMNEO IP-network connection and redundant Power over Ethernet

- Integrated network switch with two OMNEO ports allows for loop-through connections to adjacent devices (at least one must provide PoE). Rapid Spanning Tree Protocol (RSTP) is supported to enable recovery from failing network links.

Business operation

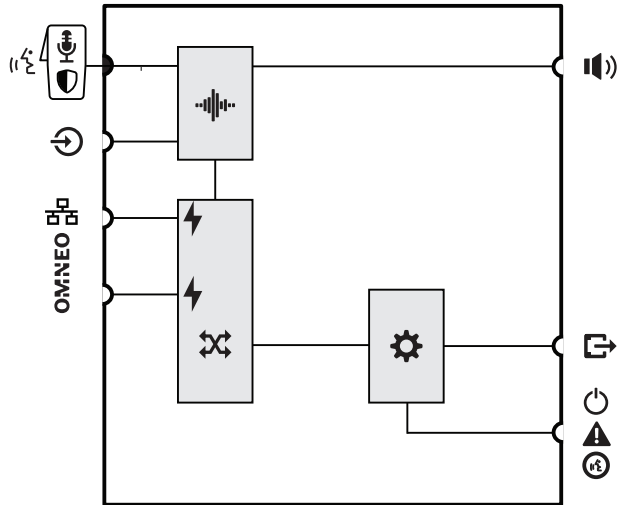
- Press-to-talk switch on hand-held microphone. Without call station extension panels connected, the press-to-talk switch can be used to make calls to a pre-configured set of zones.
- Fixed level monitor loudspeaker.
- Local audio line input (with stereo to mono conversion) for connecting an external audio source. The audio channel will be available on the network and can be played in any loudspeaker zone.
- CAN-bus interface with power supply on RJ12 connector for connection to a full custom user interface board with selection switches and status indicator LEDs. This connection can also be used for up to four cascaded PRA-CSE Call station extension panels or a PRA-CSEK Call station extension kit (availability to be announced).

Emergency operation

- The basic call station kit fully complies to the standards for voice alarm applications when configured correctly in combination with one or more call station extensions or a custom user interface panel. The PRA-CSBK is considered a component that must be installed in a final product. The final product must be reconfirmed to meet applicable voice alarm standards, or must be certified.

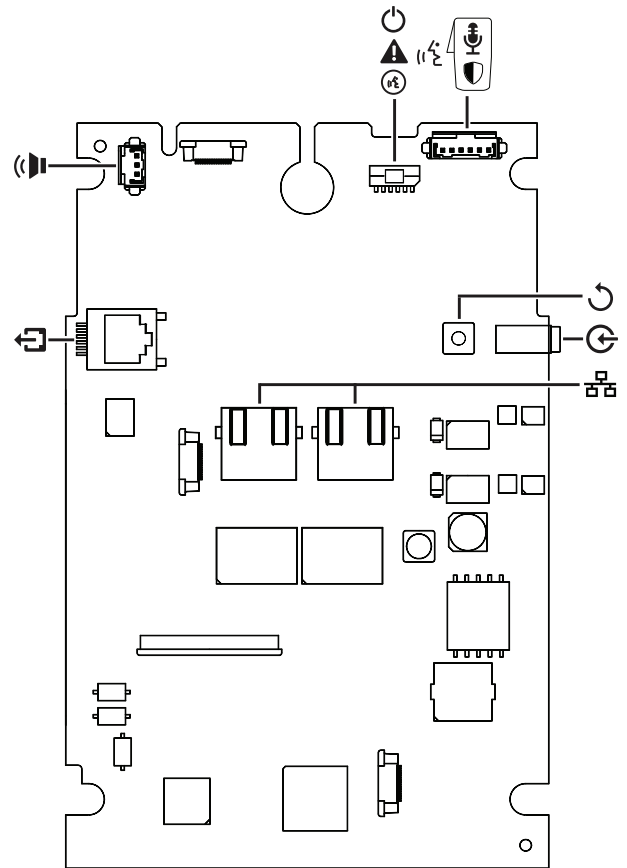
- Each of the two RJ45 network connectors accept PoE to power the call station. This provides fail-safe network connection redundancy, as one connection is sufficient for full operation.
- Supervision of all critical elements; the audio path is supervised, as well as the communication to the network.

Connection and functional diagram



	Supervised hand-held microphone with Press-To-Talk switch		Audio processing (DSP)
	Power over Ethernet		OMNEO network switch
	Controller		

Top-side



Top-side indicators

	100 Mbps network 1-2 1 Gbps network 1-2	Yellow Green
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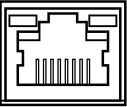







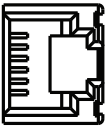




External indicators

	Power on Device in identification mode	Green Green blinking
	System fault present	Yellow
	Status business call Microphone active Chime/message active	Green Green blinking
	Status emergency call Microphone active Alarm tone/message active	Red Red blinking
	Identification mode / Indicator test	All LEDs blink



Top-side controls

	Device reset (to factory default)	Button
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Top-side interconnections

	Network port 1-2 (PoE PD)	
	Microphone with Press-To-Talk switch	
	Local source audio line input	
	Monitor loudspeaker	
	PRA-CSE interconnection (RJ12)	
  	LED indicators for power, system fault and call/ microphone status	

External components

	Microphone with Press-To-Talk switch	Included
	Monitor loudspeaker	Included

Architects' and engineers' specifications

The IP-networked call station kit shall be designed exclusively for use with Bosch PRAESENSA systems. The call station kit shall provide an interface for control data and multi-channel digital audio over OMNEO using dual Ethernet ports for redundant network connection, supporting RSTP and loop-through cabling. It shall receive Power over Ethernet (PoE) via either one or both network connections. The call station kit shall have a CAN-bus to interface with call station extensions or a custom built user interface panel for zone selection and other purposes. It shall provide control and routing of live speech calls, stored messages and music with volume control per zone. The call station kit shall have a hand-held omnidirectional microphone for live calls and a 3.5 mm jack line level input for background music, and provide software-configurable signal processing including sensitivity control, parametric equalization and limiting. The call station kit shall be marked for CE, and be compliant with the RoHS directive. Warranty shall be three years minimum. The call station kit shall be a Bosch PRA-CSBK.

Regulatory information

Regulatory areas	
Environment	EN/IEC 63000
Conformity declarations	
Europe	CE

Parts included

Quantity	Component
1	Call station circuit board
1	Microphone with coiled cable and cable feedthrough
1	Grommet lock for microphone cable feedthrough
1	Miniature loudspeaker
1	Interconnection cable for loudspeaker
1	Interconnection cable for indicators
1	Interconnection cable for extension
1	Set of mounting studs and grommets
4	Self-tapping screw (3 x10 mm TX10)
1	Microphone clip
1	Quick Installation Guide

Technical specifications

Quick overview

Operating voltage (VDC)	37 VDC – 57 VDC (PoE)
Power consumption (W)	4.40 W maximum
Microphone element type	Dynamic; Noise cancelling
Polar pattern	Omnidirectional
Maximum sound pressure input level (dB SPL)	120 dB SPL
Frequency response (Hz)	500 Hz – 8000 Hz
Audio input	line-in
Audio output	Loudspeaker
Number of Ethernet ports	2
Ethernet type	100BASE-TX; 1000BASE-T

Protocols / standards	OMNEO; AES 70
Sample rate (kHz)	48 kHz
Protection	Watchdog; RSTP
Operating temperature (°C)	-5 °C – 45 °C
Dimension (H x W x D) (mm)	20 mm x 110 mm x 162 mm
Weight (g)	120 g

Electrical

Microphone

Nominal acoustic input level (configurable)	89 – 109 dBSPL
Maximum acoustic input level	120 dBSPL
Signal to Noise Ratio (SNR)	> 73 dBA
Directivity	Omni-directional
Frequency response (+3 / -6 dB)	500 Hz – 8 kHz (noise cancelling)

Monitor loudspeaker

Maximum sound pressure level, at 1 m	75 dBSPL
Volume notification buzzer	0 dB
Volume message monitoring	-20 dB
Frequency range (-10 dB)	400 Hz – 10 kHz

Line input

Signal to Noise Ratio (SNR)	> 96 dBA
Total Harmonic Distortion + Noise (THD+N)	< 0.1%

Power transfer

Power over Ethernet (PoE 1-2) Nominal DC input voltage Standard	48 V IEEE 802.3af Type 1
Power consumption Call station (business use) Call station (emergency use) Call station extension (via RJ12)	3.2 W 4.4 W 5 W maximum

Power transfer

Input voltage tolerance	37 – 57 VDC
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Supervision

Supervision Microphone Audio path Press-to-talk switch Controller continuity PoE (1-2)	Impedance Pilot tone Impedance Watchdog Voltage
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Network interface

Ethernet Protocol Redundancy	100BASE-TX, 1000BASE-T TCP/IP RSTP
Audio/control protocol Network audio latency Audio data encryption Control data security	OMNEO 10 ms AES128 TLS
Ports	2

Reliability

MTBF (extrapolated from calculated MTBF of PRA-AD608)	1,000,000 h
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Environmental

Climatic conditions

Temperature Operating Storage and transport	-5 – 45 °C (23 – 113 °F) -30 – 70 °C (-22 – 158 °F)
Humidity (non-condensing)	5 – 95%
Air pressure (operating)	560 – 1070 hPa
Altitude (operating)	-500 – 5000 m (-1640 – 16404 ft)
Vibration (operating) Amplitude Acceleration	< 0.35 mm < 5 G
Bump (transport)	< 10 G

Mechanical

Enclosure (PRA-CSLW)

Dimensions (HxWxD)	20 x 110 x 162 mm (0.8 x 4.3 x 6.4 in)
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Enclosure (PRA-CSLW)

Weight (excluding accessories)	120 g (0.26 lb)
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Ordering information**PRA-CSBK Call station kit, basic**

Network connected, PoE powered, with hand-held microphone.

Order number **PRA-CSBK | F.01U.389.020**

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