The PRA-ANS is an ambient noise sensor to monitor changing ambient noise levels for automatic adjustment of announcement or background music levels (AVC - Automatic Volume Control). This ensures the public address audio is set at a configurable level above the ambient noise in order to guarantee intelligibility of announcements, yet at a comfortable loudness.

**Functions**

**IP-network connection**
- Direct connection to the IP-network. One shielded CAT5e cable is sufficient for Power over Ethernet and data exchange.
- The ambient noise sensor communicates ambient noise level data directly to the system controller. The system controller adjusts the output level of the involved amplifier channels accordingly.
- Because only level information is exchanged and no audio data, the occupied network bandwidth for this function is minimized and there is no risk of audio eavesdropping.

**Operation**
- The ambient noise level is measured using an accurate omni-directional MEMS microphone. An integrated DSP allows for frequency response adjustments for optimum tracking of disturbing noise signals and/or minimizing the influence of non-disturbing out-of-band signals.
- Up to four sensors can operate together to cover a large area; the ambient noise level information of these sensors is combined.

**Installation**
- The ambient noise sensor operates in a wide temperature range and with a wide range of ambient noise levels, fitting most applications and environments.
- A back box is included for mounting on solid ceilings and walls. Cable entry from side or rear.
- Without back box, the sensor can be flush mounted in hollow walls or suspended ceilings.
- Water resistant (IP65), with and without back box, for indoor and sheltered outdoor use.

- Fail-safe operation: upon failure or disconnection of the device, the announcement volume of the subscribing amplifier channels is automatically set to its maximum within the applicable control range.
- The device uses two modes for operation:
  - The sample-and-hold mode is used for live speech calls and playback of prerecorded messages. The noise level is sampled and the last level information is hold and used during the call, not affected by the sound of the call itself and its associated reverberation and echoes.
  - The tracking mode is used for background music. The noise level is tracked and the volume of the background music is continuously adapted. Because in this mode the ambient noise level is ‘polluted’ by the sound from the PA system itself, in this mode the ambient noise sensor must be mounted close to the expected noise location and away from the PA-loudspeakers to prevent volume runaway.
- Front side LEDs show the operational status.
Communications Systems - PRA-ANS Ambient noise sensor

- Sealed cable gland for cable entry.
- Comes with a black and a white front cover for unobtrusive installation.

**Connection and functional diagram**

![Diagram with components: MEMS microphone, Audio processing (DSP), Controller, Power over Ethernet, Front-side indicator, Front-side control, Rear-side interconnection, Mounting options]

- MEMS microphone
- Audio processing (DSP)
- Controller
- Power over Ethernet

**Front-side indicator**

<table>
<thead>
<tr>
<th>Power on</th>
<th>Device in identification mode</th>
<th>Green</th>
<th>Green blinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device fault present</td>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Front-side control (behind front cover)**

- Device reset (to factory default) | Button |

**Rear-side interconnection**

- Network port (PoE PD) |

**Mounting options**

- Flush in wall or ceiling
- For indoor use
- Shallow
- Front cover in black or white
- Flush in wall or ceiling
- Water resistant, for indoor and sheltered outdoor use
- Sealed cable entry
- Front cover in black or white

**Architects’ and engineers’ specifications**
The IP-networked ambient noise sensor shall be designed exclusively for use with Bosch PRAESENSA systems. It shall provide an interface for control data over OMNEO using Ethernet. It shall receive Power over Ethernet (PoE) via its network connection. The ambient noise sensor shall have an integrated DSP for software configurable frequency response adjustments to optimize tracking of disturbing noise signals and/or to minimize the influence of non-disturbing out-of-band signals. It shall be IP65 classified for solid particle and liquid ingress protection. The ambient noise sensor shall be certified for EN 54-16 and ISO 7240-16, marked for CE and be compliant with the RoHS directive. Warranty shall be three years minimum. The ambient noise sensor shall be a Bosch PRA-ANS.

**Regulatory information**

**Emergency standard certifications**

Europe | EN 54-16 (0560-CPR-182190000)
International | ISO 7240-16

**Regulatory areas**

- Safety | EN/IEC/CSA/UL 62368-1
- Emissions | EN 55032
- | EN 61000-6-3
- | ICES-003
- | FCC-47 part 15B class A
- Environment | EN/IEC 63000
- Plenum rating | UL 2043
- Railway applications | EN 50121-4

UL 62368-1 only for indoor use (UL 50E not applicable).
Communications Systems - PRA-ANS Ambient noise sensor

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### Parts included

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sensor base unit with front gasket</td>
</tr>
<tr>
<td>1</td>
<td>Back box</td>
</tr>
<tr>
<td>1</td>
<td>Connection cap with sealing gasket</td>
</tr>
<tr>
<td>1</td>
<td>Cable gland, 16 mm</td>
</tr>
<tr>
<td>1</td>
<td>Front cover black</td>
</tr>
<tr>
<td>1</td>
<td>Front cover white</td>
</tr>
<tr>
<td>5</td>
<td>Screws 3 x 12 mm, TX10</td>
</tr>
<tr>
<td>1</td>
<td>Screw 3 x 8 mm, TX10</td>
</tr>
<tr>
<td>3</td>
<td>Wood screws 3 x 30 mm, TX10</td>
</tr>
<tr>
<td>1</td>
<td>Quick Installation Guide</td>
</tr>
<tr>
<td>1</td>
<td>Safety information</td>
</tr>
</tbody>
</table>

### Technical specifications

#### Electrical

**Microphone**

- Ambient noise capture range: 50 — 100 dBSPL
- Frequency range: 50 Hz — 10 kHz
- Frequency response, +/-2dB: 100 Hz — 5.5 kHz
- Sensitivity tolerance, pink noise 50 Hz — 10 kHz: < 2 dB
- Directivity: Omni-directional

**Power transfer**

- Power over Ethernet: PoE IEEE 802.3af Type 1
- Power consumption: 1.6 W
- Nominal input voltage: 48 VDC
- Input voltage tolerance: 37 — 57 VDC

**Supervision**

- Controller continuity: Watchdog

### Network interface

- Ethernet speed: 100BASE-TX, 1000BASE-T
- Ethernet protocol: TCP/IP
- Control protocol: OMNEO (AES70)
- Control data security: TLS
- Ports: 1

### Reliability

- MTBF (extrapolated from calculated MTBF of PRA-AD608): 3,000,000 h

### Environmental

#### Climatic conditions

- Temperature, operating: -25 — 55 °C (-13 — 131 °F)
- Temperature, power up: -5 — 55 °C (23 — 131 °F)
- Temperature, storage and transport: -30 — 70 °C (-22 — 158 °F)
- Humidity: 5 — 100 %
- Air pressure: 560 — 1070 hPa
- Altitude, operating: -500 — 5000 m (-1640 — 16404 ft)
- Vibration amplitude, operating: < 0.7 mm
- Vibration acceleration, operating: < 2 G
- Bump, transport: < 10 G

### Mechanical

**Enclosure**

- Dimensions device (⌀xH): 131 x 35 mm (5.2 x 1.4 in)
- Dimensions device with back box (⌀xH): 131 x 71 mm (5.2 x 2.8 in)
- Dimensions device front cover (⌀xH): 131 x 10 mm (5.2 x 0.4 in)
- Ingress protection: IP65 / NEMA 4 (with mounted front cover)
- Material enclosure: Plastic (PC/ABS - UL94-5VA)
- Color enclosure: RAL9017
**Communications Systems - PRA-ANS Ambient noise sensor**

<table>
<thead>
<tr>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color front cover</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

**Ordering information**

**PRA-ANS Ambient noise sensor**
Network connected, PoE powered, ambient noise sensor.
Order number **PRA-ANS | F.01U.378.928**

**Services**

**EWE-PRAANS-IW 12 mths wrty ext amb noise sen**
12 months warranty extension
Order number **EWE-PRAANS-IW | F.01U.400.199**