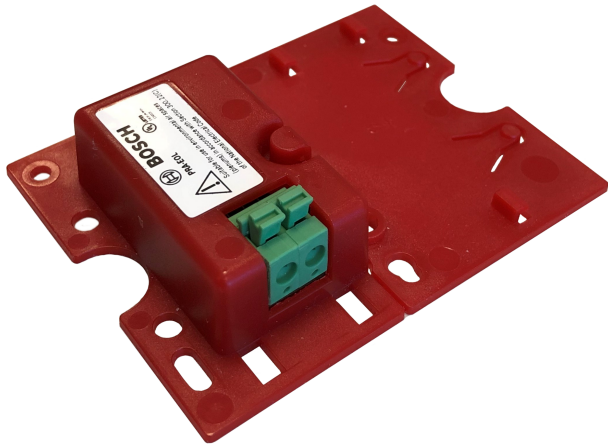


## PRA-EOL-US End-of-line device

### PRAESENSA



This end-of-line device is a reliable solution for loudspeaker line integrity supervision, which is a requirement for emergency sound systems. It is connected at the end of a loudspeaker line, after the last loudspeaker of a series of looped-through loudspeakers.

It communicates with the PRAESENSA amplifier channel driving that loudspeaker line, to confirm the integrity of the line.

Where impedance measurements may not detect a disconnected loudspeaker, depending on the number of connected loudspeakers and cable type, or report false faults, the end-of-line device provides a superior solution to report the correct status of the loudspeaker line.

The enclosure size is compatible with the mounting provisions in most Bosch loudspeakers for supervision boards or devices. It can also be reduced in size to fit most cable junction boxes.

#### Functions

##### Supervision

- Reliable supervision of a single loudspeaker line, using loudspeakers connected in a loop-through fashion.
- Operation is based on pilot tone detection from the amplifier with feedback to the amplifier using the loudspeaker line itself. No additional wiring is needed for fault or status reporting.
- The A/B outputs of a PRAESENSA amplifier channel are supervised individually, with separate end-of-line devices.
- To reduce power consumption, PRAESENSA amplifier channels use pilot tone modulation.

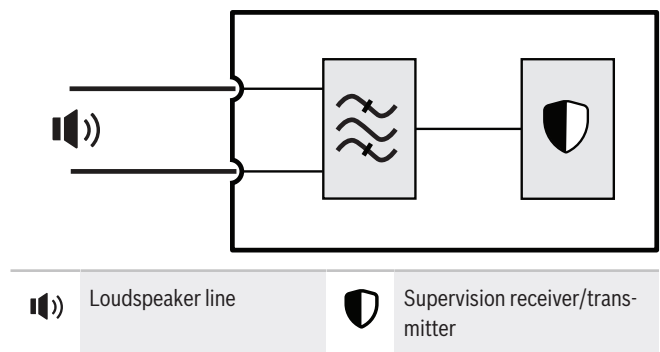
- ▶ Compact device for loudspeaker end-of-line supervision
- ▶ Reliable solution for (long) loudspeaker lines
- ▶ Fault detection in amplifier without additional wiring
- ▶ Low level, high frequency pilot tone
- ▶ Flexible mounting options

- The audibility of the pilot tone is virtually eliminated by using a pilot tone amplitude of only 3 VRMS with a frequency of 25.5 kHz, amply outside the human hearing range, even for young children.

##### Mounting

- The PRAESENSA end-of-line device is small, lightweight and fits to the mounting provisions in most Bosch loudspeakers for supervision boards (board shape).
- Part of the mounting plate of the device can be broken off and snapped in place as bottom plate, making the device enclosure IP30 compliant, for use outside a loudspeaker enclosure (box shape).
- Various mounting holes in the enclosure allow for mounting the device in most standard cable junction boxes. In this case the loudspeaker line enters the box via a standard cable gland and is connected using the push terminal.

##### Connection and functional diagram





Bandpass filter

### Board shape view



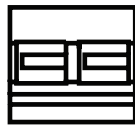
### Box shape view



### Device connections



Loudspeaker line



### Architects' and engineers' specifications

The end-of-line device shall be designed exclusively for use with Bosch PRAESENSA systems. The end-of-line device shall only require a connection with the end of the loudspeaker line to supervise its integrity. Supervision reliability shall not depend on the number of connected loudspeakers. Supervision shall be inaudible and not interrupt audio content. The end-of-line device shall be certified for UL 2572 and be compliant with the RoHS directive. Warranty shall be three years minimum. The end-of-line device shall be a Bosch PRA-EOL-US.

### Regulatory information

#### Emergency standard certifications

|                                                      |         |
|------------------------------------------------------|---------|
| Mass Notifications Systems                           | UL 2572 |
| Control Units and Accessories for Fire Alarm Systems | UL 864  |

#### Regulatory areas

|               |                          |
|---------------|--------------------------|
| Safety        | CSA/UL 62368-1           |
| Immunity      | EN 55035                 |
| Emissions     | EN 55032<br>EN 61000-6-3 |
| Environment   | EN/IEC 63000             |
| Plenum rating | UL 2043                  |

### Parts included

| Quantity  | Component              |
|-----------|------------------------|
| 1         | End of line device     |
| 1 per box | Screw set for mounting |
| 1 per box | Safety information     |

This device can only be ordered in multiples of eight devices, packed in one box.

### Technical specifications

#### Electrical

|                                |                                            |
|--------------------------------|--------------------------------------------|
| Pilot tone frequency (kHz)     | 25.50 kHz                                  |
| Pilot tone level (V)           | 1.5 V – 3 V                                |
| Maximum input power (mW)       | 100 mW                                     |
| Maximum input voltage (V)      | 100 V                                      |
| Supervision                    | End-of-line                                |
| Fault detection                | Line shorted; line interrupted             |
| Fault reporting                | Via amplifier                              |
| Connector type                 | 2-pole spring terminal                     |
| Wire size (mm <sup>2</sup> )   | 0.13 mm <sup>2</sup> – 2.0 mm <sup>2</sup> |
| Wire size (AWG)                | 26AWG – 14AWG                              |
| Cable length (m) (maximum)     | 1,000 m                                    |
| Maximum cable capacitance (nF) | 80 nF                                      |
| Cable temperature range (°C)   | -20 °C – 50 °C                             |
| Cable temperature range (°oF)  | -4 °F – 122 °F                             |

#### Reliability

|                                                       |             |
|-------------------------------------------------------|-------------|
| MTBF (extrapolated from calculated MTBF of PRA-AD608) | 5,000,000 h |
|-------------------------------------------------------|-------------|

#### Environmental

|                            |                 |
|----------------------------|-----------------|
| Operating temperature (°C) | -25 °C – 50 °C  |
| Operating temperature (°F) | -13 °F – 122 °F |
| Storage temperature (°C)   | -30 °C – 70 °C  |
| Storage temperature (°F)   | -22 °F – 158 °F |

|                                                 |                         |
|-------------------------------------------------|-------------------------|
| Operating relative humidity, non-condensing (%) | 5% – 95%                |
| Air pressure (hPa)                              | 560 hPa – 1,070 hPa     |
| Installation altitude (m)                       | -500 m – 5,000 m        |
| Installation altitude (ft)                      | -1,640 ft – 16,404 ft   |
| Operating vibration amplitude                   | < 0.7 mm                |
| Operating vibration acceleration                | < 2 G                   |
| Bump (transport)                                | < 10 G (IEC 60068-2-27) |

### Mechanical

|                                          |                                |
|------------------------------------------|--------------------------------|
| Dimensions (H x W x D) (mm), board shape | 60 mm x 78 mm x 16 mm          |
| Dimensions (H x W x D) (in), board shape | 2.40 in x 3.10 in x 0.60 in    |
| Dimension (H x W x D) (mm), box shape    | 60 mm x 45 mm x 18 mm          |
| Dimension (H x W x D) (in), box shape    | 2.40 in. x 1.80 in. x 0.70 in. |
| IP rating                                | IP30                           |
| Material                                 | Plastic                        |
| Color in RAL                             | RAL 3000 Flame red             |
| Weight (g)                               | 25 g                           |
| Weight (lb)                              | 0.0550 lb                      |

### Ordering information

#### PRA-EOL-US End-of-line device

Device for loudspeaker line integrity supervision in Public Address and Voice Alarm applications.

Order number **PRA-EOL-US | F.01U.393.422**

#### Represented by:

**Europe, Middle East, Africa:**  
Bosch Security Systems B.V.  
P.O. Box 80002  
5600 JB Eindhoven, The Netherlands  
Phone: + 31 40 2577 284  
[www.boschsecurity.com/xc/en/contact/](http://www.boschsecurity.com/xc/en/contact/)  
[www.boschsecurity.com](http://www.boschsecurity.com)

**Germany:**  
Bosch Sicherheitssysteme GmbH  
Robert-Bosch-Ring 5  
85630 Grasbrunn  
Tel.: +49 (0)89 6290 0  
Fax: +49 (0)89 6290 1020  
[de.securitysystems@bosch.com](mailto:de.securitysystems@bosch.com)  
[www.boschsecurity.com](http://www.boschsecurity.com)

**North America:**  
Bosch Security Systems, LLC  
130 Perinton Parkway  
Fairport, New York, 14450, USA  
Phone: +1 800 289 0096  
Fax: +1 585 223 9180  
[onlinehelp@us.bosch.com](mailto:onlinehelp@us.bosch.com)  
[www.boschsecurity.com](http://www.boschsecurity.com)

**Asia-Pacific:**  
Robert Bosch (SEA) Pte Ltd, Security Systems  
11 Bishan Street 21  
Singapore 573943  
Phone: +65 6571 2808  
Fax: +65 6571 2699  
[www.boschsecurity.com/xc/en/contact/](http://www.boschsecurity.com/xc/en/contact/)  
[www.boschsecurity.com](http://www.boschsecurity.com)