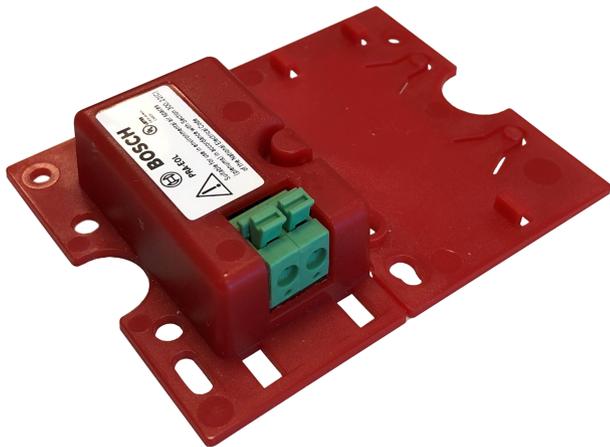


PRA-EOL End-of-line device

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.

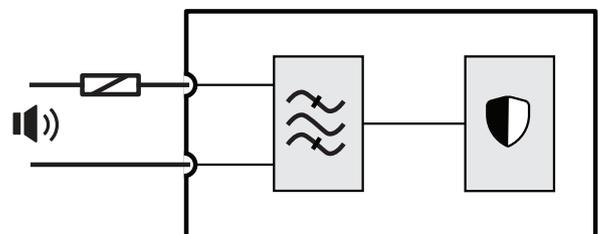
- ▶ Compact device for loudspeaker end-of-line supervision
- ▶ Reliable solution for (long) loudspeaker lines
- ▶ Fault detection in amplifier without additional wiring
- ▶ Low level, high frequency pilot tone
- ▶ Flexible mounting options

- 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). It comes with push terminal connected flying leads, containing a thermal fuse, for easy connection to the last loudspeaker of a loudspeaker line.
- 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). The enclosure contains a wiring strain relief for additional protection.
- 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



	Loudspeaker line		Bandpass filter
	Thermal fuse		Supervision receiver/ transmitter

Board shape view



Box shape view



Device connections

	Loudspeaker line	
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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 EN 54-16 / ISO 7240-16, marked for CE and be compliant with the RoHS directive. Warranty shall be three years minimum. The end-of-line device shall be a Bosch PRA-EOL.

Certifications and approvals

Emergency standard certifications	
Europe	EN 54-16
International	ISO 7240-16
Maritime applications	DNV GL Type Approval
Emergency standard compliance	
Europe	EN 50849
UK	BS 5839-8
Regulatory areas	
Safety	EN/IEC/CSA/UL 62368-1

Regulatory areas	
Immunity	EN 55103-2 (E1, E2, E3) EN 50130-4
Emissions	EN 55032 EN 61000-6-3
Environment	EN 50581
Plenum rating	UL 2043
Railway applications	EN 50121-4

Conformity declarations	
Europe	CE/CPR
United Arab Emirates	CoC Civil Defense

Parts included	
Quantity	Component
8	End of line device
8	Set of connection wires with thermal fuse
1	Quick Installation Guide
1	Safety information

The PRA-EOL can only be ordered in multiples of eight devices, packed in one box.

Technical specifications	
Quick overview	
Pilot tone level (V)	3 V
Minimum pilot tone level (V)	1,5 V
Power consumption (W)	0,10 W maximum
Pilot tone frequency (kHz)	25,50 kHz
Maximum input voltage (V)	100 V
Cable length (m)	1000 m maximum
Maximum cable capacitance (nF)	80 nF
Number of addresses	1
Connector type	2-pole spring terminal
Wire size (mm ²)	0,13 - 2,0 mm ²
Wire size (AWG)	26 - 14AWG

Fault detection	Line shorted; Line interrupted
Fault reporting	Via amplifier
Lens mounting	Board; Box
Plenum rating	Yes
Protection	Thermal fuse
Degree of protection (IEC 60529)	IP30
Operating temperature (°C)	-5 - 50 °C
Dimension (H x W x D) (mm)	16 x 60 x 78 mm
Weight (g)	25 g

Electrical

Control	
Pilot tone detection	
Frequency	25.5 kHz
Level	1.5 - 3 VRMS
Amplifier load	< 100 mW
Loudspeaker cable	
Maximum length	1000 m
Maximum capacitance	80 nF
Operating temperature	-20 to +50 °C (-4 to 122 °F)
Maximum input voltage	100 VRMS
Fault detection	Line shorted, line interrupted
Fault reporting	By amplifier

Reliability	
MTBF (extrapolated from calculated MTBF of PRA-AD608)	5.000.000 h

Environmental

Climatic conditions	
Temperature	
Operating	-5 to +50 °C (23 to 122 °F)
Storage and transport	-30 to +70 °C (-22 to 158 °F)
Humidity (non condensing)	5 to 95 %
Air pressure (operating)	560 to 1070 hPa
Altitude (operating)	-500 to +5000 m (-1640 to 16404 ft)
Vibration (operating)	
Amplitude	< 0.7 mm
Acceleration	< 2 G
Bump (transport)	< 10 G

Mechanical

Enclosure	
Dimensions H x W x D	
Board shape	60 x 78 x 16 mm (2.4 x 3.1 x 0.6 in)
Box shape	60 x 45 x 18 mm (2.4 x 1.8 x 0.7 in)
Ingress protection	IP30
Case	
Material	Plastic
Color	RAL3000
Weight	25 g (0.055 lb)

Ordering information

PRA-EOL End-of-line device

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

Order number **PRA-EOL | F.01U.325.045**

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