

PRA-LID Line isolator drive PRAESENSA



The PRA-LID is one of the two core components of the Loudspeaker line isolator system for PRAESENSA public address voice alarm solution.

Loudspeaker line isolator system

The Loudspeaker line isolator system is the cost-efficient solution for preventing loss of audio function in public address and voice alarm systems, as a result of loudspeaker line faults.

It largely eliminates the need for expensive E30 cabling by making use of the so-called loop wiring method. The system is EN 54-16 compliant and is perfectly suited for use in commercial premises, such as office buildings and hotels.

Functions

The Line isolator drive (PRA-LID) is connected to the PRAESENSA system one side, and driving up-to 200 Line isolator modules on the other side.

Connection to PRAESENSA

- The amplifier channel outputs for the audio transmission.
- Powered from the PRA-MPS3 unit to ensure redundant power.
- Contact closure input is used to report relevant status/faults.

- ▶ Drives up to 200 Line isolator modules
- ► Compact DIN-rail mountable unit
- ► EN 54-16 compliant

Certificat	ions and	approvals
------------	----------	-----------

	a approving	
Emergency standard ce	Emergency standard certifications	
Europe	EN 54-16	
Regulatory areas		
Safety	EN 62368-1 EN 62479	
Immunity	EN 50130-4 EN 55035	
Emissions	EN 61000-6-3 EN 61000-6-4 EN 55032	
Environment	EN IEC 63000	
Conformity declarations		
Europe	CE	

Parts i	

CE

Region

Europe

Quantity	Component
1	Line Isolator Drive
1	5-pole DIN-rail bus connector

Regulatory compliance/quality marks

DECL EC LDB (CTN PRA-LID)

Electrical DC Power supply 18-50 VDC DC Power consumption Inrush 1.44 W LDB only 1.9 W LDB full load (plus 200 x FIM) 2.4 W AMP input (100 V audio) max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connection-pin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, 200 Short detection < 90 \(\Omega \) (L+ to L-) Open detection < \(\Omega \) 03 k\(\Omega \) (L+/L- or AMP+/AMP- to GND) Functional (Interfacing) Status indicators 3 x LED indicator	Technical specifications	
DC Power consumption Inrush Inrush LDB only LDB full load (plus 200 x FIM) LDB full load (plus 200 x FIM) 2.4 W AMP input (100V audio) max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, 200 single loop Short detection 90 Ω (L+ to L-) Open detection <30 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection <30 kΩ (L+/L- or AMP+/AMP- to GND) Functional (Interfacing)	Electrical	
Inrush LDB only LDB full load (plus 200 x FIM) AMP input (100V audio) max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, 200 single loop Short detection 90 Ω (L+ to L-) Open detection 430 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection 430 kΩ (L+/L- or AMP+/AMP- to GND)	DC Power supply	18 - 50 VDC
LDB only LDB full load (plus 200 x FIM) 2.4 W AMP input (100V audio) max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection > 1.8 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection Short (Interfacing)	DC Power consumption	
LDB full load (plus 200 x FIM) 2.4 W AMP input (100V audio) max cont. 100 VRMS, 300 VPP max. AC voltage max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop 200 Short detection < 90 Ω (L+ to L-)	Inrush	1.44 W
AMP input (100V audio) max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz - 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop 200 Short detection < 90 Ω (L+ to L-)	LDB only	1.9 W
max. AC voltage max cont. 100 VRMS, 300 VPP max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connection-pin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop 200 Short detection < 90 Ω (L+ to L-)	LDB full load (plus 200 x FIM)	2.4 W
max. AC current max cont. 8 A Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connection-pin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop 200 Short detection < 90 Ω (L+ to L-)	AMP input (100V audio)	
Frequency range 40 Hz ~ 20 kHz (-3dB) THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection <90 Ω (L+ to L-) Open detection >1.8 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection <30 kΩ (L+/L- or AMP+/AMP- to GND) Functional (Interfacing)	max. AC voltage	max cont. 100 VRMS, 300 VPP
THD max 10% (according to EN 54-16) LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection <90 Ω (L+ to L-) Open detection <30 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection Functional (Interfacing)	max. AC current	max cont. 8 A
LOOP output AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connection-pin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop 200 Short detection < 90 Ω (L+ to L-)	Frequency range	40 Hz ~ 20 kHz (-3dB)
AC same as AMP input DC voltage 30 V DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection <90 Ω (L+ to L-) Open detection > 1.8 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection <30 kΩ (L+/L- or AMP+/AMP- to GND) Functional (Interfacing)	THD	max 10% (according to EN 54-16)
DC voltage DC current max. cont. 130 mA Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connection-pin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection < 90 Ω (L+ to L-) Open detection > 1.8 kΩ (PRI to SEC; AMP+ to AMP-) Ground leakage detection < 30 kΩ (L+/L- or AMP+/AMP- to GND) Functional (Interfacing)	LOOP output	
DC currentmax. cont. 130 mAWiring $2\text{-wire. Max. }2.5 \text{ mm2 / Max. Loop} \text{ length: }1000 \text{ m}$ GroundingEarth loop through third connection-pinLoop relay contact rating $\max. 250 \text{ VAC / 8 A (Dual-state type)}$ Maximum total loop load 800 W Loudspeaker typeonly with DC blocking capacitorMaximum number of FIM connected, single loop 200 Short detection $< 90 \Omega \text{ (L+ to L-)}$ Open detection $> 1.8 \text{ k}\Omega \text{ (PRI to SEC; AMP+ to AMP-)}$ Ground leakage detection $< 30 \text{ k}\Omega \text{ (L+/L- or AMP+/AMP- to GND)}$ Functional (Interfacing)	AC	same as AMP input
Wiring 2-wire. Max. 2.5 mm2 / Max. Loop length: 1000 m Grounding Earth loop through third connectionpin Loop relay contact rating max. 250 VAC / 8 A (Dual-state type) Maximum total loop load 800 W Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection $< 90 \Omega$ (L+ to L-) Open detection $> 1.8 k\Omega$ (PRI to SEC; AMP+ to AMP-) Ground leakage detection $< 30 k\Omega$ (L+/L- or AMP+/AMP- to GND)	DC voltage	30 V
length: 1000 m $Grounding$	DC current	max. cont. 130 mA
$\begin{array}{c} \text{pin} \\ \text{Loop relay contact rating} \\ \text{max. } 250 \text{VAC} / 8 \text{A (Dual-state type)} \\ \\ \text{Maximum total loop load} \\ \text{Soo W} \\ \\ \text{Loudspeaker type} \\ \text{only with DC blocking capacitor} \\ \\ \text{Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Short detection} \\ \text{Open detection} \\ \text{Open detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Short detection} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ \text{Soo Maximum number of FIM connected, single loop} \\ Soo Maximum number of FIM $	Wiring	
$type) \\ Maximum total loop load \\ 800 W \\ Loudspeaker type \\ only with DC blocking capacitor \\ Maximum number of FIM connected, 200 \\ single loop \\ Short detection \\ < 90 \Omega (L+ to L-) \\ Open detection \\ > 1.8 k\Omega (PRI to SEC; AMP+ to AMP-) \\ Ground leakage detection \\ < 30 k\Omega (L+/L- or AMP+/AMP- to GND) \\ Functional (Interfacing)$	Grounding	
Loudspeaker type only with DC blocking capacitor Maximum number of FIM connected, single loop Short detection $< 90 \Omega$ (L+ to L-) Open detection $> 1.8 \text{ k}\Omega$ (PRI to SEC; AMP+ to AMP-) Ground leakage detection $< 30 \text{ k}\Omega$ (L+/L- or AMP+/AMP- to GND) Functional (Interfacing)	Loop relay contact rating	
$\begin{array}{ll} \text{Maximum number of FIM connected,} \\ \text{single loop} \\ \text{Short detection} & < 90~\Omega~\text{(L+ to L-)} \\ \\ \text{Open detection} & > 1.8~k\Omega~\text{(PRI to SEC; AMP+ to AMP-)} \\ \\ \text{Ground leakage detection} & < 30~k\Omega~\text{(L+/L- or AMP+/AMP- to GND)} \\ \\ \text{Functional (Interfacing)} \end{array}$	Maximum total loop load	800 W
$\begin{array}{lll} \text{Single loop} & & & \\ & \text{Short detection} & & < 90~\Omega~(\text{L+ to L-}) \\ \\ & \text{Open detection} & & > 1.8~k\Omega~(\text{PRI to SEC; AMP+ to AMP-}) \\ \\ & \text{Ground leakage detection} & & < 30~k\Omega~(\text{L+/L- or AMP+/AMP- to GND}) \\ \\ & \text{Functional (Interfacing)} & & \\ \end{array}$	Loudspeaker type	only with DC blocking capacitor
Open detection $> 1.8 \text{ k}\Omega$ (PRI to SEC; AMP+ to AMP-) Ground leakage detection $< 30 \text{ k}\Omega$ (L+/L- or AMP+/AMP- to GND)		200
$\begin{array}{c} \text{AMP-)} \\ \text{Ground leakage detection} \\ \text{< 30 k}\Omega \text{(L+/L- or AMP+/AMP- to GND)} \\ \\ \text{Functional (Interfacing)} \end{array}$	Short detection	< 90 Ω (L+ to L-)
GND) Functional (Interfacing)	Open detection	
	Ground leakage detection	
Status indicators 3 x LED indicator	Functional (Interfacing)	
	Status indicators	3 x LED indicator

User buttons	Reset button + Service button
General Fault contact	Pin-to ground (programmable)
Serial data communication	RS-485
Maximum supply current, single DIN rail	8 A
Bus address range	00 - FF (0-255) / max. 32 on single DIN-rail bar
Reset	manual: by reset button or via PC application (access level 3 or 4, EN 54-16)
Reset time	60 s
Fault detection time	
Loop short	<1s
Loop open	< 5 s
Earth leakage	10 s
Audio recovery time	
Loop short	<4s
Other faults	0 s (no audio interruption)

Environmental

Operating temperature	-5°C ~ +40°C
Storage temperature	-20°C ~ +70°C
Relative humidity	15% ~ 93%

Mechanical

Housing	Bopla Combinorm-Connect - DIN rail version - IP30
Protection rating	IP 30
Dimensions (W x H x D)	17.5 mm x 114.5 mm x 99 mm
Weight	200 g
Mounting	Quick-snap on DIN-rail, inside rack housing
Connections	

Loopdrive bus	DIN rail connector 5-points 3.5 mm screw terminal block
AMP in	2-point 5 mm screw terminal block (+, -)
LOOP out (PRI/SEC)	3-point 5 mm screw terminal block (L+, L-, optional GND)

Ordering information

PRA-LID Line isolator drive

Line isolator drive to drive and control Line isolator modules (PRA-LIM).

Order number PRA-LID | F.01U.393.728

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 emea.securitysystems@bosch.com emea.boschsecurity.com Germany: Bosch Sicherheitssysteme GmbH Robert-Bosch-Ring 5 85630 Grasbrunn Germany 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
www.boschsecurity.us

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: 465 6571 2808
Fax: 465 6571 2699
apr.securitysystems@bosch.com
www.boschsecurity.asia