BOSCH

PRA-LIM Line isolator module
PRAESENSA

▶ Detects and isolates loudspeaker line failures

▶ Equipped with WAGO push terminals

▶ EN 54 compliant

The PRA-LIM 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

Maximum availability and loop integrity
The Line isolator module (PRA-LIM) is used to detect and isolate loudspeaker line failures. A loudspeaker line failure between two Line isolator modules in the loop is automatically isolated in order to ensure maximum availability of the remaining loudspeakers on that same loop. The device protects the loop integrity against any wire-to-wire short-circuit and detects open line on T-Branch.

Certifications and approvals

Emergency standard certifications

Europe	EN 54-16
	EN 54-17

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/CPR

Region	Regulatory compliance/quality marks	
Europe	DOP	FIM(PRA-LIM)_DoP
	CE	FIM(PRA-LIM)_DoC

Parts included

Quantity	Component
1	PRA-LIM Line Isolator Drive
1	Release tool
1	Compression gland for speaker mounting
2	Tie-wrap

Technical specifications

Electrical

DC Power supply (powered via loop from LDB)	19 - 30 VDC, nominal 30 VDC
DC Power consumption	
Idle current	100 µA continuous
Max. power consumption	20 mW
LOOP connection	
DC	30 V, max. cont. 130 mA
AC Voltage	Max. cont. 100 V^{RMS}, 300 V^{PP}
AC Current	Max. cont. 8 A
AC Frequency range	40 Hz ~ 20 kHz (-3dB)
AC THD	Max. 10% (according to EN 54-16)
T-branch output	
DC	560 mV, max. 15 µA, cont. 1 µA
AC	Same as LOOP
Maximum AC load	50 W
Wiring	2-wire, max. 2.5 mm^2, loop max. length 1 km, outer cable diameter max. 13 mm
Grounding	Optional 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's, single loop	200

Maximum number of loudspeakers	
Between FIM's	Infinite within the maximum loop-load of 800W (National standard may limit the number of loudspeakers between FIM's)
T-branch	Infinite within the maximum T-branch load of 50W (National standard may limit the number of loudspeakers)
Short detection	< 90 Ω (L+ to L-)
Open detection (only T-branch with EOL monitoring)	> 360 kΩ (L+ to L-)
Functional: (interfacing)	
Status indicators	2 x two-color LED (orange/blue), 1 x output to optional external fault LED
User buttons	Reset + EOL detection switch
Fault report	Open relays
Reset	Manual, by FIM reset button or by LDB reset
Reset time	< 3s
Full charging time (from complete discharge)	< 50s
Fault detection time	
Loop short, T-branch short	< 1 s
T-branch open (only with EOL monitoring)	< 5 s
Audio recovery time	
Loop short	< 4 s
Other faults	0 s (no audio interruption)

Environmental

Operating temperature	-25˚C ~ +55˚C
Storage temperature	-20˚C ~ +70˚C
Relative humidity	15% - 93%

Mechanical

Housing	Plastic body (ABS/PC-V0) with transparent cover (PC-V0)
Protection rating	IP 33
Dimensions (W x H x D)	IP 33 housing, 110 x 130 x 55 mm
Weight	150 g
Mounting	Surface mounting, on-speaker mounting
Connections	
LOOP / T-branch	3-way 5 mm WAGO push-in terminal block (L+,L-,GND) 0.8 - 2.5 mm2
Ext. LED	2-way 3.5 mm screw terminal block

Ordering information

PRA-LIM Line isolator module
Line isolator module to detect and isolate loudspeaker line failures.
Order number **PRA-LIM | F.01U.393.727**