PRA-SCS System controller, small
PRAESENSA

- Full control of PRAESENSA devices and audio routing
- Built-in supervised storage for messages and tone files
- Support for Dante audio input and output streams
- Open interface to third party applications
- IP-networked on OMNEO for audio and control

The small system controller PRA-SCS is the budget variant in the range of PRAESENSA system controllers. The small controller has all the features of the large system controller PRA-SCL except for some limitations regarding the size of the system. The system controller manages all system related functions in a PRAESENSA Public Address and Voice Alarm system. It routes all audio connections between network-connected PRAESENSA audio sources and destinations. It supervises and plays back messages and tones, stored on its flash memory, either scheduled or manually started from a call station or PC. It manages the routing of background music streams, along with business calls and emergency calls, all based on priority level and zone occupancy. It collects all status information of connected system devices, manages the event logs and reports faults.
The system controller is network-connected via OMNEO and DC-powered from a multifunction power supply with integrated battery backup, accommodating both centralized and decentralized system topologies. Connections to other devices in the system are made using the built-in 5-port switch, supporting RSTP. The built-in web server allows for system configuration using a browser.

Functions

System control and audio routing

- Capability to control PRAESENSA systems with a maximum of six amplifiers. In combination with the PRA-AD608 amplifiers, the PRA-SCS is sufficient to control up to 48 zones. Use the PRA-SCL to address more zones or if you need more power.
- The number of dynamic OMNEO channels that can be routed is unlimited, which allows for many simultaneous calls. However, the number of static Dante audio streams to use as interface with 3rd party systems is limited to eight.
- Native support for switched single-subnet networks, with add-on support for routed multi-subnet topologies.
- Dynamic allocation of multiple and simultaneous audio channels to save on network bandwidth; audio connections are created when a call or a message is broadcast, and freed up immediately afterwards.
- Secure interconnections using Advanced Encryption Standard (AES128) for audio data and Transport Layer Security (TLS) for control data.
- Receiver for up to eight Dante or AES67 audio channels from external sources, with dynamic re-routing to secure OMNEO channels.
- SIP/VoIP interface for telephone paging and for audio to PRAESENSA and control from 3rd party systems.
- Internal storage capacity for messages and tones; up to eight messages can be played back simultaneously.
- Internal real time clock for scheduled events and event time stamping; support for Network Time Protocol (NTP) with automatic adjustment for Daylight Saving Time (DST).
- Internal system event and fault event log.
- Networked control interface for third party applications.
- Built-in webserver for configuration and file management using a browser.

- Dual redundant system controller option for highest system availability in mission-critical applications.

Sound quality

- Audio-over-IP, using OMNEO, the Bosch high-quality digital audio interface, compatible with Dante and AES67; audio sample rate is 48 kHz with 24-bit sample size.
- Messages and tones are stored as high definition uncompressed wav-files.

Supervision

- Supervision of stored messages and tones.
- Supervision of data integrity of site specific data.
- Internal watchdog timers to detect and recover from processing errors.
- Faults or problems of all system devices are collected, reported and logged.

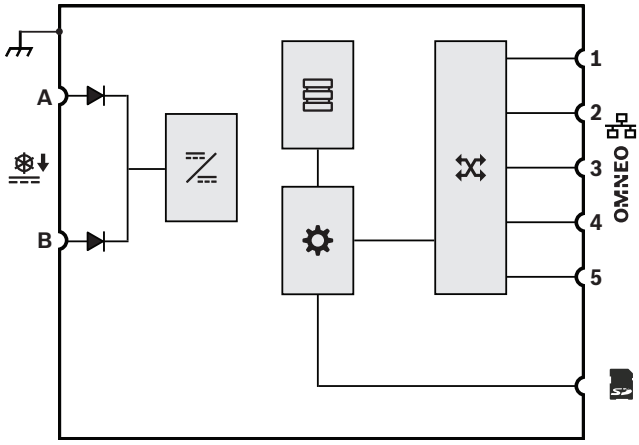
Fault tolerance

- Five OMNEO network connection ports, supporting RSTP.
- Dual DC-inputs with polarity reversal protection.

Variants of the PRAESENSA system controller

Variant	PRA-SCL	PRA-SCS
Dynamic OMNEO audio channels (secure)	Unlimited	Unlimited
Dynamic OMNEO tone/ message playback channels (secure)	8	8
Static Dante or AES67 audio channels (secure, input and/or output)	Pool of 8	Pool of 8
Static Dante or AES67 audio channels (open, input)	112	–
Number of amplifiers in the system	Unlimited	6

Connection and functional diagram



	Diode		DC to DC converter
	Message and tone storage		Controller
	OMNEO network switch		

Front view

Front panel indicators

	Device fault present	Yellow
	Network link present Network link lost Standby for redundancy	Green Yellow Blue
	Power on	Green

Rear view

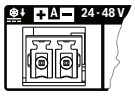
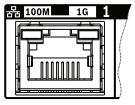
Rear panel indicators

	100 Mbps network 1 Gbps network	Yellow Green
	Power on Device in identification mode	Green Green blinking
	Device fault present	Yellow
	SD card busy; do not remove	Green

Rear panel controls

	Device reset (to factory default)	Button

Rear panel connections

24 to 48 VDC input A-B	
Memory card	
Network port 1-5	
Chassis ground	

Architects' and engineers' specifications
The IP-networked system controller shall be designed exclusively for use with Bosch PRAESENSA systems. The system controller shall dynamically assign network audio channels for audio routing between system devices across multiple subnets. It shall support >100 simultaneous high-resolution audio channels (24-bit, 48 kHz) for music routing and making calls, with encryption and authentication to protect against eavesdropping and hacking. It shall be capable of receiving Dante and AES67 audio streams. A SIP/VoIP telephone interface shall be available. The system controller shall provide an interface for control data and multi-channel digital audio over OMNEO using an integrated 5-port Ethernet switch for redundant network connections, supporting RSTP and loop-through cabling. The system controller shall have dual power supply inputs and power supplies. The system controller shall manage all devices in the system to provide the configured system functions. It shall incorporate a supervised storage for message and tone files with networked playback of up to eight streams simultaneously. It shall keep an internal log of fault events and call events. The system controller shall provide a secure TCP/IP open interface for remote control and diagnostics. The system controller shall provide front-panel LED indications for the status of power supplies and the presence of faults in the system and provide additional software monitoring and fault reporting features. The system controller shall be rack mountable (1U). It shall be possible to connect a backup system controller for dual redundancy with automatic fail-over. The system controller 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. If the system size permits, the system controller shall be a Bosch PRA-SCS, otherwise a Bosch PRA-SCL.

Regulatory information

Emergency standard certifications	
Europe	EN 54-16 (0560-CPR-182190000)
International	ISO 7240-16

Emergency standard compliance	
Europe	EN 50849
UK	BS 5839-8

Regulatory areas	
Safety	EN/IEC/CSA/UL 62368-1
Immunity	EN 55035 EN 50130-4
Emissions	EN 55032 EN 61000-6-3 ICES-003 ANSI C63.4 FCC-47 part 15B class A EN 62479
Environment	EN/IEC 63000
Railway applications	EN 50121-4

Parts included

Quantity	Component
1	System controller
1	Set of 19"-rack mounting brackets (pre-mounted)
1	Set of screw connectors and cables
1	Quick Installation Guide
1	Safety and security information

Technical specifications

Electrical

System	
Routing (audio, dynamic): OMNEO channels	Unlimited
Tone/Message playback (dynamic): OMNEO channels	8
Number of inputs (audio, static): Dante or AES67 channels	8

Number of outputs (audio, static): Dante channels	8
Number of events: Logging (internal storage)	3,000
Call events	1000
Fault events	1000
General events	1000
Real time clock synchronization	NTP
Accuracy with NTP	< 1 s/yr off
Accuracy without NTP	< 11 min/yr off
Daylight saving time correction	Automatic
Backup battery type	Lithium
Battery size	CR2032
Tone/Message storage (min) (mono, uncompressed, 48 kHz, 16 bit)	90 min
SD Memory card capacity (GB)	32 GB
System size	
Networked devices (single subnet)	250
Networked amplifiers	6
Zones (with PRA-AD608 amplifiers)	48
Configuration	Web server/browser

Power transfer

Operating voltage (VDC) range	24 VDC – 48 VDC
Operating voltage (VDC) tolerance	20 VDC – 60 VDC
Power consumption (W) duty mode	3.90 W
Power consumption (W) per active port	0.4 W

Supervision

Run fault (watchdog reset)	All processors
Fault report time (s)	< 100 s
Site specific data integrity fault report time (h)	< 1 h
Protection	Watchdog; RSTP

Network interface

Protocols / standards	TCP/IP; OMNEO; Dante; AES70; AES67
Ethernet type	100BASE-TX; 1000BASE-T
Latency (ms)	10 ms
Encryption	TLS
Audio encryption	AES 128
Number of Ethernet ports	5

Reliability

Mean time between failures (MTBF) (h) (extrapolated from calculated MTBF of PRA-AD608)	1,000,000 h

Environmental

Operating temperature (°C)	-5 °C – 50 °C
Operating temperature (°F)	23 °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
Acceleration	< 2 G
Bump (transport)	< 10 G (IEC 60068-2-27)

Mechanical

Dimensions (H x W x D) (mm)	44 mm x 483 mm x 400 mm
Dimensions (H x W x D) (in)	1.75 in x 19 in x 15.7 in
Rack unit (U)	1 U, 19 in
IP rating	IP30

Material	Steel; Zamak
Color in RAL	RAL 9017 Traffic black; RAL 9022 Pearl light grey
Weight (kg)	5.80 kg
Weight (lb)	12.80 lb

Ordering information

PRA-SCS System controller, small
Network-connected, DC-powered, system controller and message manager for Public Address and Voice Alarm applications.
Order number **PRA-SCS | F.01U.325.040**

Services

EWE-PRASCS-IW 12 mths wrty ext Praes Syst Contr Sml
12 months warranty extension
Order number **EWE-PRASCS-IW | F.01U.387.313**

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/
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
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.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/
www.boschsecurity.com