

PRA-PSM48 Power supply module 48V

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Invented for life



- ▶ Universal mains input voltage
- ▶ Power factor correction
- ▶ Protection with automatic recovery
- ▶ Approved to power a PRAESENSA 600 W amplifier
- ▶ Compact and DIN-rail mountable

The PRA-PSM48 power supply module is a compact DIN-rail mounted power supply, delivering 48 V at up to 5 A continuously. This power supply is an OEM power supply, made for Bosch by Delta Power Supply, as a cost effective alternative to the PRAESENSA multifunction power supply PRA-MPS3 to power a PRAESENSA power amplifier in case the additional functions and characteristics of the multifunction power supply are not needed. It is not certified for EN 54-4 and similar standards.

Because of its ability to deliver high peak currents, this power supply module can supply sufficient power to a single fully loaded PRAESENSA 600 W power amplifier.

Functions

Mains power supply

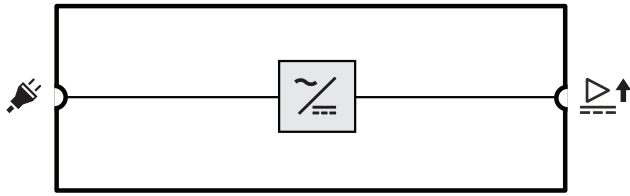
- Compact DIN-rail mounted power supply, delivering 48 V at up to 5 A continuously, for powering one fully loaded PRAESENSA 600 W amplifier. Because the long term effective power consumption of the amplifier is much lower than the short term burst power consumption, related to the crest factor of speech and music, this power supply is sufficiently powerful.

- Universal mains input with power factor correction to maximize the amount of power that can be taken from a single phase power distribution network.
- The mains is supplied via a 3-pole screw plug that requires the module to be installed by professional installers and mounted in a safe place, without user access.
- Adjustable output voltage, 48 to 56 V, of which the range 48 to 50 V can be used because the PRAESENSA power amplifiers are tolerant up to 50 V.
- For fail safe redundancy it is possible to use two 48 V power supplies for one amplifier, one connected to its 48 V input A and the other to input B. In that case the amplifier load will be shared by both power supplies, even if the supply voltages are adjusted to be slightly different.

Protections

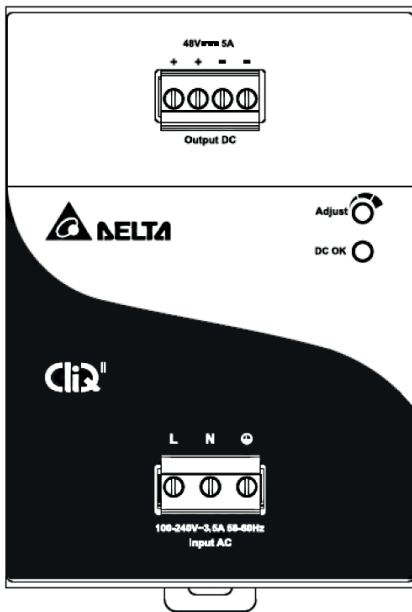
- Overvoltage protection with automatic recovery.
- Overload protection with automatic recovery.
- Over-temperature protection with automatic recovery.

Connection and functional diagram



Mains to DC converter

Front view



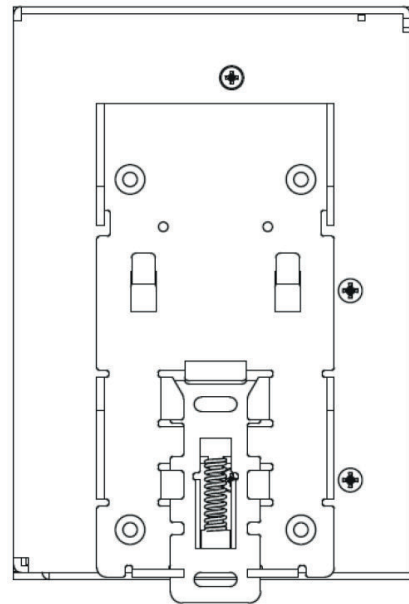
Front panel control and indicator

Adjust	Output voltage adjustment	Rotary control
DC OK	Output voltage present	Green

Front panel connections

	48 VDC output to amplifier	
	Mains input	

Rear view



Architects' and engineers' specifications

The 48 V power supply module shall contain a mains input with power factor correction and a 48 V output. Output current capability shall be 5 A continuous and 7.5 A peak. It shall be approved to power one 600 W Bosch PRAESENSA amplifier. The power supply shall be DIN-rail mountable with convection cooling. The power supply shall be marked for UL and CE and be compliant with the RoHS directive. Warranty shall be three years minimum. The power supply module shall be a Bosch PRA-PSM48.

Certifications and approvals

Regulatory areas	
Safety	EN/IEC/CSA/UL 60950-1
Immunity	EN 55024 EN 61000-6-1 EN 61000-6-2
Emissions	EN 55032 EN 55011 CISPR 32 CISPR 11 FCC-47 part 15B class B EN/IEC 61000-3-2, Class A
Environment	EN 50581
Railway applications	EN 50121-4 (PRA-PSM48 only)
Maritime applications	DNV-GL Type Approval (PRA-PSM48 only)

Conformity declarations

Europe	CE
USA/Canada	FCC/c-UL/CSA

Conformity declarations

China	CCC
Korea	KE
Australia	RCM
Taiwan	BSMI
Russian Federation	EAC
India	BIS

Parts included

Quantity	Component
1	Power supply module 48 V
1	Set of screw connectors
1	Manufacturer's datasheet

Technical specifications

	PRA-PSM48 Power supply module 48V
Operating voltage (VAC)	85 - 365 VAC
Power consumption (W)	265 W maximum
Inrush current (mA)	35000 mA maximum
Output voltage (VDC)	48 - 56 VDC
Output current (A) (maximum continuous)	5 A
Output current (A) (maximum peak)	7,5 A
Nominal voltage (VDC)	48 VDC
Maximum heat loss (BTU/h)	85 BTU/h
Power factor	0,90
Air pressure (hPa)	750 - 1070 hPa
Material	Aluminum
Cooling	Convection
Mounting type	rail-mounted; wall-mounted
Protection	Overheat; Overload; Over voltage
Degree of protection (IEC 60529)	IP20
Operating temperature (°C)	-25 - 80°C
Operating relative humidity, non-condensing (%)	5 - 95%
Storage temperature (°C)	-40 - 85°C
Dimension (H x W x D mm)	121 x 85 x 124 mm
Weight (g)	960 g

Electrical

Power transfer

Mains power supply input	
Input voltage range	100 to 240 VAC
Input voltage tolerance	85 to 264 VAC
Frequency range	50 to 60 Hz
Inrush current	< 35 A (115 V, 230 V)
Power factor (PF)	0.9 to 1.0
Leakage current to safety ground	< 1 mA (240 V)
48 VDC output	
Nominal DC output voltage	48 V
Output voltage range	48 to 56 V
Maximum continuous current	5 A
Derating	-0.125 A/°C above 50°C
Maximum peak current	7.5 A
Heat loss	
Active mode, rated power	90 kJ/h (85 Btu/h)

Protection

Overvoltage	Automatic recovery
Overload	Automatic recovery
Over-temperature	Automatic recovery

Reliability

MTBF	> 500.000 h
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Environmental

Climatic conditions

Temperature	
Operating	-25 to +80 °C (-13 to 176 °F)
Storage and transport	-40 to +85 °C (-40 to 185 °F)
Humidity (non condensing)	5 to 95 %
Air pressure	750 to 1070 hPa
Altitude (operating)	0 to 2500 m (0 to 8200 ft)
Vibration (operating)	
Amplitude	< 0.35 mm
Acceleration	< 3 G
Bump (transport)	< 10 G

Airflow

Cooling	Convection
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Mechanical

Enclosure

Dimensions (WxHxD)	85 x 121 x 124 mm (3.35 x 4.76 x 4.86 in)
Ingress protection	IP20

Enclosure

Mounting rail	TS35 DIN Rail (EN 60715)
Case	Aluminum
Weight	0.96 kg (2.12 lb)

Ordering information

PRA-PSM48 Power supply module 48V
48 V DIN-rail mountable power supply, full aluminum body
Order number **PRA-PSM48**

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