M50Q

Powersoft

4-Channel Power Amplifier for Portable and Permanently Installed Applications

☑ Touring
☑ Installation

4CH

1U

- ▶ Small to medium-scale systems, portable and installed
- ▶ Stage monitoring
- ▶ Hotels, restaurant and bars
- ▶ Amusement parks, themed entertainment
- ▶ Houses of worship, auditoriums
- ▶ Educational facilities
- ▶ Live and dance clubs
- ▶ Mobile DJ's

Equally versatile in both portable and installed system configurations, and with its 4 channels delivering up to 5,000 W all neatly packed in one single rack unit weighing just over 7 kg / 16 lb, the **M50Q** is a flexible, cost-effective solution for small to medium sound systems.

Benefitting from core technologies of Powersoft's flagship K Series, the **M50Q** sets a class standard in efficiency, leading to low power consumption, and consequently to substantial money savings on electricity, all in an eco-friendly way.

Minimum heat dissipation makes the **M50Q** suitable for hot or otherwise challenging environments.
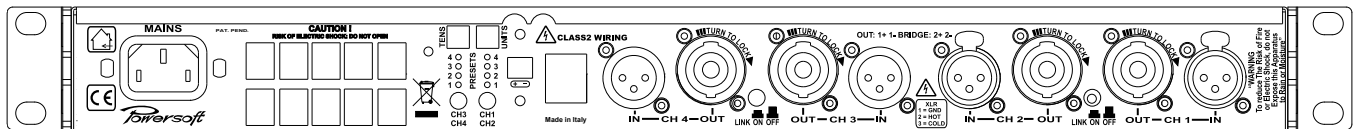
Added the legendary sound quality thanks to Powersoft's unique, patented Class D output stage design, the **M50Q** represents a fantastic value, practically as well as commercially.

The **M50Q** comes with 4 years warranty and, like all Powersoft products, is entirely designed and made in Italy.

4-channel mode				mono-bridged mode
4 Ω / Ch	8 Ω / Ch	70 V [1]	100 V [2]	8 Ω / Ch pair
1,250 W	750 W	1,000W	1,250 W	2,500 W

EIAJ Test Standard, 1 kHz, 1% THD

✓ **Legendary Powersoft efficiency:**
  - ▶ Compact and space saving: 4 channels in 1 RU at 358 mm / 14.1'' depth
  - ▶ Green Audio Power®: minimal "carbon footprint" and operational cost of electricity
  - ▶ More watts, less weight: up to 5,000 W in 7.3 kg / 16 lb

✓ **Unique Powersoft technology for efficient, reliable performance:**
  - ▶ Switch mode power supply, internally switchable 230/115 V nominal
  - ▶ Fixed frequency switch mode amplifier output stages
  - ▶ Patented amplifier output filters with ripple cancellation network

✓ **Driving distributed line systems:**
  - ▶ Able to drive 100 V distributed lines directly without the need for transformers [1]

✓ Optimized for 4 Ω loads, thus ideally matching real-world scenarios in targeted applications

✓ Fully protected circuit design:
  - ▶ AC protection: shuts down power supply when AC mains voltage is outside operating range
  - ▶ Clip limiter: prevents severely clipped waveforms from reaching loudspeakers, while still maintaining full peak power output
  - ▶ DC protection: protects against infrasonic signal at the outputs
  - ▶ VHF protections: protects the loudspeakers against destructive non-audible, non-musical high frequency signals
  - ▶ Short circuit protection: protects the amplifier from short circuit or similar events on the outputs; with automatic protection reset
  - ▶ Thermal protection: mutes outputs once output devices reach 75 °C / 167 °F; automatic unmute once temperature is down to 65 °C / 149 °F

✓ Temperature controlled continuous variable speed fan, front to rear airflow

✓ Recessed stepped level attenuators

✓ Full four years warranty

✓ Also available as M50Q HDSP+ETH with integrated DSP and Ethernet comm port

1) External high-pass filter and output voltage limiter required.
2) External high-pass filter required.

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M50Q

4-Channel Power Amplifier for Touring and Install Applications

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Specifications

General

		4-channel mode				mono-bridged mode
Number of channels		4				
Output power		**4-channel mode**				**mono-bridged mode**
EIAJ Test Standard, 1 kHz, 1% THD		4 Ω / Ch	8 Ω / Ch	70 V[1]	100 V[2]	8 Ω / Ch pair
		1,250 W	750 W	1,000 W	1,250 W	2,500 W
Max output voltage / current		$135\ V_{peak}$ / $65\ A_{peak}$				

AC Mains Power

		@ 230 V		@ 115 V	
Power supply		Universal, regulated switch mode			
Operating voltage / Inrush current		115 V / 230 V (factory selection) ± 15%, 50 Hz - 60 Hz / < 34 A_{RMS}			
Consumption / current draw		**@ 230 V**		**@ 115 V**	
Idle		64 W	0.51 A	64 W	0.6 A
1/8 of max output power @ 4 Ω		905 W	5.8 A	905 W	11.6 A
1/4 of max output power @ 4 Ω		1,772 W	11.1 A	1,772 W	22.2 A

Thermal

Environmental operating temperature		0° - 45° C / 32° - 113° F	
Thermal dissipation		Fan, continuously variable speed, temperature controlled, front to rear airflow	
Idle		218 BTU/h	55 kcal/h
1/8 of max output power @ 4 Ω		955 BTU/h	241 kcal/h
1/4 of max output power @ 4 Ω		1,781 BTU/h	449 kcal/h

Audio

Gain	32 dB, 30 dB, 28 dB, 26 dB, 24 dB, 22 dB, 20 dB, 18 dB, 14 dB, 4 dB, -∞, user selectable
Frequency response	10 Hz - 30 kHz (1 W @ 8 Ω, ± 3 dB)
S/N ratio (amplifier section)	>110 dBA (20 Hz - 20 kHz, A weighted)
Crosstalk separation	>70 dB @ 1 kHz
Input sensitivity @ 8 Ω	1.94 V / 7.97 dBu
Max input level	6 V / 17.8 dBu
Input impedance	10 k Ω
THD+N / SMPTE IMD	< 0.05% @ 1/2 of full power
DIM100 IMD	typ. <0.005% (<0.02% @ >0.1 W)
Slew rate	40 V/µs @ 8 Ω, input filter bypassed
Damping factor @ 8 Ω	>5000 @ 100 Hz

DSP (optional)

A/D converter	CS5381, 2 channels, 24 bit / 48 kHz, 120 dB SNR
D/A converter	CS4398, 2 channels, 24 bit / 48 kHz, 120 dB SNR
Frequency response @ -3 dB	7 Hz - 22 kHz
THD	< 0.01% (20 Hz - 20 kHz)
Presets	Bank of 4 presets, management and upload via Armonía Pro Audio Suite™
Delay for time alignment	10 ms per output
Crossover filters	Butterworth, Linkwitz-Riley, Bessel, 6 dB/oct to 48 dB/oct
Output equalizer	up to 12 biquad fully parametric per channel: peaking, hi/lo shelving, hi/lo pass, band pass, band stop, all pass.
Input equalizer	up to 5 biquad filters (PEQ, shelving, band pass, band stop, all pass)
Limiters	Peak limiter, RMS limiter, frequency dependent RMS limiter
Damping control	< 120 Hz, range ± 2 Ω
System Delay	up to 170 ms for 2 IN/2 OUT or 340 ms for 1 IN/2 OUT

Front Panel

Indicators	4 LEDs per channel: 3 × green, 1 × red 2 status LEDs: 1 × green, 1 × yellow
Controls	1 stepped level attenuator pot per channel; mains switch
Maintenance	Dust filter foam behind front panel

Rear Panel

Audio signal input connectors	4 × balanced Neutrik® XLR female
Loudspeaker output connectors	4 × Neutrik® Speakon NL4MD
Network data port RS485	1 × RJ45 with activity LED with 2 rotary address switches
DSP preset selection	2 × Pushbutton (stepping through bank of 4 presets) 2 × 4 LED preset indicators
Aux voltage	1 × 2-pin Phoenix type MC 1.5/2-ST-3.81
AC mains	IEC C13 16 A connector; AC mains cord with 3-pin plug 15 A for US, IEC Schuko 16 A for every other nation
Controls	2 × link switch, linking analog inputs 1 & 2 and 3 & 4

Construction

Dimensions	W 483 mm / 19", H 44.5 mm / 1 RU, D 358 mm / 14.1"
Chassis	1 mm (0.04") steel chassis and steel removable dust cover, 3 mm (0.12") steel front panel, screw hole protection, steel side reinforcement & rear support
Weight	7.3 kg / 16 lb

1) External high-pass filter and output voltage limiter required.
2) External high-pass filter required.

Data is subject to change without notice.
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