

PL506 Power Supply System

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The PL 506 is a high sophisticated, high density, programmable 6-channel floating low-voltage power supply system. Using the remote monitoring and control features either via USB or Ethernet it can be used to supply external load-channels with high power consumption also over long distances. Up to 3kW (3Ubox) DC output power can be provided.

Voltages, currents, temperatures and output power are programmable and controlled by the internal processor. Illegal modes as well as failure conditions will be detected. Dynamic behavior is programmable via USB port (long-moderate-short sensed distances to loads).

The modular construction with a 19" rack mountable power bin and a plug-in power supply box allows to swap the power supply without any tools and within shortest time.

Main Features

- up to 6 independent, potential free low voltage DC outputs, with up to 3 kW output power
- Fully microprocessor controlled, programmable warning and trip levels
- Programmable voltages, current limits, ramping up/down and group behavior
- Sense line compensation or impedance control selectable
- Extremely low noise and ripple

PL506 Features

- Up to 6 independent, potential free DC outputs, 600W each, total up to 3 kW output power
- Extremely low noise and ripple
- Channels can be operated in Master-Slave mode for paralleling of two or more outputs (current boosting).
- Floating range: +/-100V (default, optimal for low noise). Can be increased up to +/- 500V
- Programmable voltages and thresholds on voltages, currents and temperatures, ramp rates, fully controlled, programmable trip levels and action / group behavior, voltage or current controlled mode
- CE conform EN 50 081/82 part 1 (EN 50 022 B), safety in accordance with EN 60 950
- Ethernet and USB interfaces for remote monitoring and control, Web interface / SNMP
- 94V - 265VAC world-wide auto-range AC input, with power factor correction / sinusoidal mains current EN 61000-3-2, CE
- DC Output connections: 6mm threaded bolts (M6-150A), Sense and temperature sensor connections: 9 pin Sub D female connector for 2 channels, senses wired to terminals on rear side.
- Optional alphanumeric display
- Optional with Power fail- and System Reset- Signal
- Optional with Interlock input
- Optional direct water cooling with same size as air cooled ones
- Dimensions: 430mm x 3U (133mm) x 325mm [whd], weight: from 9.6 to 19 kg depending on the number of power modules

PL506 consists of:

=> **Power Bin**: 19" bin for rack mounting hosting a power box

Type	Dimensions	Features
<i>PBN506 – 3U RASO</i>	3U x 19" x 445mm	Folded metal case
<i>PBN506 – 4U</i>	4U x 19" x 445mm	Aluminum side panels

=> **Power Box** containing a PFC mains input module, a control card and slots for up to 6 modules (MEH type, single channel, 550W to 650W) for a maximum of 6 channels. The power box includes the Ethernet/USB combo card and can be outfitted with an optional display (EX version) as well as individual channel interlock feature (**I option**)

Type	Dimensions	Features
<i>PBX506</i>	3U x 19" x 445mm	Ethernet, USB, "Easy Lever" extraction mechanism
<i>PBX506 – EX</i>	3U x 19" x 445mm	Display, Ethernet, USB, "Easy Lever" extraction mechanism

=> **Power Modules** integrated into Power Box slots for a maximum of 6 modules / 6 channels

Standard MEH power modules (up to 6)

Type	Optimal Voltage range	Channels	Peak output / Power
<i>MEH – 02/07</i>	2V ... 7V	1	115A / 550W
<i>MEH – 06/10</i>	6V ... 10V	1	80A / 550W
<i>MEH – 07/16</i>	7V ... 16V	1	46A / 550W
<i>MEH – 12/30</i>	12V ... 30V	1	23A / 550W

MEH – 30/60

30V ... 60V

1

13,5A / 650W

Regulation (fast circuit for short sensed distance)**Static:**

MEH 550W/650W <15mV +/-100% load, +/- full mains range

MDH (20A) <0.05% +/-100% load, +/- full mains range

MDL, MDH <0.1% +/-100% load, +/- full mains range

Dynamic (0,5 m wire)

MEH, MDH <100mV +/-25% load

MDL, MDH <0.7% +/-25% load

Recovery time (0,5 m wire) +/-25% load**within +/-1% deviation****within +/-0.1% dev.**

Modules 550W

0.2ms

0.5ms

Modules 650W >30V

0.5ms

1.0ms

MDL, MDH

0.0ms

1.0ms

Conditions: Current slope <1000A/ms, 20mF per 100A parallel to load**Regulation (slow circuit for long sensed distance)****Static:**

MEH 550W/650W <15mV +/-100% load, +/- full mains range

MDL, MDH <0.05% +/-100% load, +/- full mains range

Dynamic deviation depends on current slope resp. filter capacitors at load side only**Recovery time (40 m wire) 5V at load side, V drop < 2V****within +/-10% deviation****within +/-1% deviation**

MEH, MDH

<150ms

250ms

MDL

<150ms

320ms

Regulation timing adaptable to dynamic conditions (induced by cable length, voltage drops, sinker and filter capacities at load side)**DC output characteristics**

Sense compensation range limited to < 10V or nom voltage (except special versions)

Sense mode closed loop and continuously controlling regulator to load

Floating Range PL508

>nominal output voltage for MEH,
min. +/-10V for voltage ranges < 7V MEH and MDL**Noise and ripple**

0.5 m wire (< 7V)	<10mV peak to peak	0-20 MHz
0.5 m wire (> 7V)	<15mV peak to peak	0-20 MHz
10 m wire	<3mV peak to peak	0-300 MHz

Conditions at load side: parallel (X) 330µF and 1µF ceramic, 100nF HF conducting to case (Y) each line**EMC compatibility**

EN 61 000-6-3:2001	[RF emission]
EN 55 022:1998 + Corr:2001 + A1:2000 Class B	conducted noise
EN 55 022:1998 + Corr:2001 + A1:2000 Class B	radiated noise
EN 61 000-3-2:2001	harmonics
EN 61 000-3-3:1995 +Corr:1997 +A1:2001	flicker
EN 61 000-6-2:2001	[immunity]
EN 61 000-4-6:1996 + A1:2001	injected HF currents
EN 61 000-4-3:1996 + A1:1998 + A2:2001	radiated HF fields, "900MHz"
EN 61 000-4-4:1995 + A1:2001	burst
EN 61 000-4-5:1995 + A1:2001	surge
EN 61 000-4-11:1994 + A1:2000	voltage variations
EN 61 000-4-2:1995 + A1:1998 + A2:2001	ESD

Parameter

Emission:	CE EN 50081-1 (EN 55 022-B)
Immunity:	CE EN 50082-1 or 2
Operation temperature:	0...50°C without derating, storage: -30°C till 85°C
Temperature coefficient:	< 0.2% / 10K
Stability (condition const.):	<5mV or 0.1% within 24 h, <25mV or 0.3% within 6 months
Current limiting:	100% of nominal values, programmable to lower values via Interface or display tableau. In case of overcurrent: I _{lim} defines a constant current level, if status U _{min} set to 0V for the concerned channel, I _{max} defines the global trip off setpoint independant of status voltage window
	Monotone and synchron. 50ms ramping (factory settings), other slope and different timing

Voltage rise:	programmable
Voltage set:	discharge of output capacitors after DC off.
OV protection:	Factory setting to 125% of nominal values
Status control: DC Off (trip off):	within 3ms if >2% (default) deviation from nominal or programmed values , after overload, overheat (temperature limits 90/110°C heat sink, 70°C ambient), overvoltage, undervoltage , all trip off points processor controlled and programmable / disabling
DC Off / On, channel wise	By setting status Umin and output Voltage of selected channel both to 0V
Interlock input:	High level or open: All outputs DC off (optional feature)
Temperature limits:	90°C mains input, 110°C modules (heat sink), 70°C ambient internal
Efficiency:	Power module: 75% 2V/ -83% >5V/ -85% >12V/-90% >48V for 230VAC input voltage
M T B F:	>65,000 h (blower), electronics > 100,000 h at 40°C ambient

Product Data Sheet

PL506 Power Supply System: [Print Product Data Sheet](#)

Documentation

Manual and Tech-Notes : [Manual PL506-PL512](#)

[RemoteControl](#)

Introduction: [WIENER Power Supplies intro](#)

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