PL508 Power supply System

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The PL508 is a high sophisticated, high density, programmable 8-channel moderate floating low-voltage power supply system. Using the remote monitoring and control features it can be used to supply a large numbers of external load-channels with high power consumption also over long distances.

Dynamic behavior is adjustable via internal jumpers (long-medium-short sensed distances to loads). Voltages, currents, temperatures and output power are programmed and controlled by the internal processor and illegal modes as well as failure will be detected.

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 8 independent processor controlled, potential free low voltage DC outputs, with up to 3 kW/ 6 kW output power
- Fully microprocessor controlled, programmable voltages, current limits and trip levels
- Extremely low noise and ripple
- Optional with display and local / remote control interface (Ethernet, CAN-bus)
- 94V - 265VAC world-wide auto-range AC input, with power factor correction

PL508

- Up to 8 independent, potential free outputs, total up to 3/6 kW DC output power
- Fully self controlled (under / over voltage, over temperature, over current), programmable trip levels, voltage or current controlled operation
- Programmable voltages and thresholds on voltages, currents and temperatures
- Extremely low noise and ripple
- CE conform EN 50 081/82 part 1 (EN 50 022 B), safety in accordance with EN 60 950
- 94V - 265VAC world-wide auto-range AC input, with power factor correction / sinusoidal mains current EN 61000-3-2,
- CAN-bus interface for remote monitoring and control available on all PL508s
- optionally with Power fail- and System Reset- Signals
- Optional direct water cooling with same size as air cooled ones

PL508 consists of:

=> Power Bin: 19" enclosure with CANbus (optional display / Ethernet) hosting Power Box

- LX option: Alphanumeric display and CANbus connector on front panel
- EX option: Alphanumeric display, Ethernet (TCP/IP), web interface
- ELV option: "Easy Lever" power box extraction mechanism

Type	Dimensions	Features
PBN508 LX – 3U	3U x 19''	CANbus on front panel, Display, bottom air entry
PBN508 EX – 3U	3U x 19''	Display, Ethernet, bottom air entry
PBN508 RAAO – 3U	3U x 19''	Locking guides for power box extraction lever, no front panel
PBN508 LX – 4U	4U x 19''	CANbus on front panel, Display, front/bottom air entry
PBN508 EX – 4U	4U x 19''	Display, Ethernet, front/bottom air entry
PBN508 LX – 7U	6U x 19''	CANbus on front panel, Display, front/bottom air entry
PBN508 EX – 7U	6U x 19''	Display, Ethernet, front/bottom air entry

=> Power Box containing a PFC mains input module, a control card and 5 to 10 slots

- I option: Interlock input
- GR option: Direct ON/OFF mains switch
- ELV option: "Easy Lever" power box extraction mechanism

Type	Dimensions	Interlock	Slots for MEH, MDH, MDL	ON/OFF Switch
PBX508 – 3U	3U x 19''	Option – I	5 (3kW)	Option – GR
PBX508 – 3U+	3U x 19''	Option – I	6 (3kW)	Option – GR
PBX508 – 6U	6U x 19''	Option – I	10 (3kW)	Option – GR
PBX508 – 6UK	6U x 19''	Option – I	10 (6kW)	Option – GR

=> Power Modules integrated into Power Box slots for a maximum of 5 modules (3U box) or 10 modules (6U box) with a maximum of 8 channels, single channel power modules are named MEH, two channel MDH or MDL.

Type	Voltage range	Channels per module	Peak output / Power
MEH	2V ... 7V	1	115A / 550W
MEH	7V ... 16V	1	46A / 550W
MEH	12V ... 30V	1	23A / 550W
MEH	30V ... 60V	1	13,5A / 650W
MDH	2V ... 7V	2	+/- 30A / 210W (420W total)
MDH	7... 16V	2	+/- 20A / 250W (500W total)
MDL	7... 24V	2	+/- 11,5A / 275W (550W total)
MDH	30V ... 60V	2	+/- 6A / 250W (500W total)

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	0....50°C without derating, storage: -30°C till 85°C

temperature:	
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
Voltage rise:	Monotone and synchron. 50ms ramping (factory settings), other slope and different timing 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

PL508 Power supply System:	Print Product Data Sheet

Documentation

Manual:	Power supply PL508 manual
	RemoteControl
Introduction:	WIENER Power Supplies intro

Downloads

UEP6Control:	Download
SNMP:	Download
OPC-Server:	Download
USB-to-IP:	Download
Firmware	Download