

PCU

High Precision MAGNET Power Supplies



PCU Series Highlights

- Voltage: 50V
- Current: 100A – 340A
- Power: 5/10/15 kW
- Maximum accuracy and stability ($\leq 5\text{ppm}/8\text{h}$)
- Temperature coefficient $\leq 5\text{ppm}$
- Zero-Voltage-Switching Technology
- DCCT current measurement
- Programmable current ramp function
- 2-part LCD display with text indicator and preset function
- Analog (0 to 10V) and digital interfaces (RS422)
- Controller configuration / load balancing possible
- Current- or voltage-controlled modes possible
- „Last setting“ memory
- Air cooling (optional water cooling)
- Trigger input for measurement signals
- Output is short-circuit and open-circuit proof

Magnet Power Supplies for particle accelerators and medical technology

Meeting the highest demands to accuracy and control capacity.

The power supply units of the Heinzinger PCU series are optimized for use as power supplies for magnets. The power supplies provide high-precision DC voltage with excellent current stability and extremely low ripple. These units are available in the typical voltage categories as power supplies for magnetic applications and make use of a modular design. Various currents between 100A and 340A are available for each power supply. In applications requiring more power, the power supplies can be used in master/slave mode in parallel. The switching power supply technology in use makes them extremely efficient. The power supply units of the PCU series can currently be found at renowned research institutes where they are used as reliable magnetic current supplies round-the-clock. The optimal relationship between

power density and maximum precision ensures that the unit is able to comply with the prescribed technical specifications in highly demanding, long-term applications. In all magnetic current applications demanding the highest in quality, precision and accuracy, our units from the PCU series are your reliable power supply. The power categories of the various Heinzinger PCU units extend as high as 15kW. The many manual operating and programming features make it easy to customize the units for a range of loading conditions and requirements. Using the analog and digital interfaces – available as a standard option – you can read and write values to the power supply in a wide variety of remote control applications. Magnet Power Supplies for power >15kW we can offer also out of our PTNM series.

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Technical description

Model (PCU)	50-100	50-200	50-300	30-340
Nominal output current (A)	100	200	300	340
Nominal output voltage (V)	50	50	50	30
Nominal output power (W)	5000	10,000	15,000	10,000
Line input voltage (V) +/-10 %	400/3p; 47...63Hz (other on request)			
Ambient temperature	0 - 40°C			
Minimum efficiency (full load) (%)	≥90			
Power factor (%)	≥90			
Setting range (%)	1 - 100			
Regulation mode	CC or CV mode, selectable			
Displays	2-line LCD display: 5 digits for current, 4 digits for voltage, CC or CV mode, alarm message; LED indications for failures			
Interface analog	0...10V analog interface for current & voltage measuring and setting			
Interface digital	RS422 digital interface for current & voltage measuring and setting, output ON/OFF with status; indication and reset of alarms; polarity indication			
Ramp function	Programmable di/dt ramp function			
Current loop adjustment	Via plug on components			
DAC resolution	16 bit			
ADC resolution	16 bit			
Rise time (10 - 90 %) full load	Depending on load (R,L), typically 30ms			
Residual voltage ripple p/p up to 10kHz	200...300mV			
Current deviation for +/- 10 % of mains variation	≤5 ppm			
Current deviation for +/- 10 % of load variation	≤5 ppm			
Current stability over 8 hours	≤6 ppm			
Current deviation in temperature range (ppm/°C)	≤5 ppm			
Absolute current accuracy deviation	2mA	4mA	6mA	7mA
Current reproducibility deviation	5mA	10mA	15mA	7mA
MTBF (hrs)	≥100,000			
Input/output insulation (kV r.m.s. 1min)	2.3			
Cooling	Air cooling (water cooled optionally)			