

# DMPS SERIES

## HIGH PRECISION POWER SUPPLY FOR DIPOLE MAGNETS MODULAR CABINET

For the power supply of dipole magnets of big size in the field of particle accelerators, EEI designed and built converters of EEI-DMPS series. EEI-DMPS series power supplies offer the very high precision features that characterize the drives manufactured by EEI for physics sector, with the ability to provide a highly stabilized output current up to 4000A +/- 1500 V in a modular cabinet.

### MAIN APPLICATION

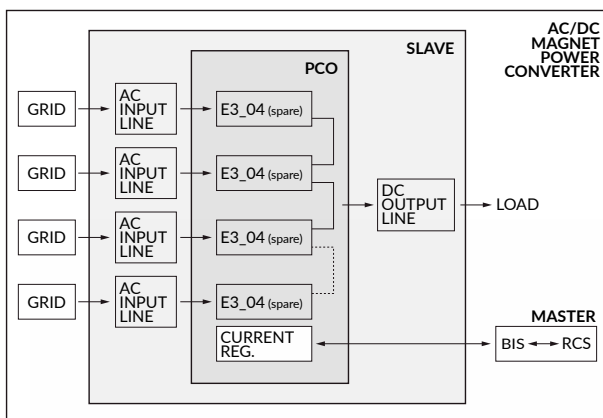
- Dipole magnets for particle accelerator

In their standard version cabinets have a DC-link busbar fed by a AFE (regenerative inverter) rectifying stage.

DC output stage is composed of IGBT boosters with modular architecture, in order to enable a better energy quality output. For a further reduction of output voltage ripple, linear regulation stage is available upon request.

### OPTIONS

- Active Front End/ Diode-Thyristor bridge rectifier
- Multipulse input
- Dynamic breaking module
- Increased DC-link capacitor bank size
- Output crowbar
- Earth fault detection circuit
- Customer regulation boards
- Customer transducers
- Local/remote control





## MODEL

## EEI - DMPS

### MAIN PARAMETERS

Nominal output current	3000A
Nominal output voltage	+/- 1500 V
Nominal output power	900 kW
Line input voltage	400 +/-10% /3p; 47...63Hz (other on request)
Power factor (with output power >20%)	≥ 95%
Minimum efficiency (Inom, 50% output power)	≥ 85%
DC output voltage resolution	up to 30 ppm of Vnom
Small signal voltage control bandwidth (-3dB)	> = 500 Hz
Output Voltage rise time (10%-90%)	< 3 ms
Output current resolution	up to 10 ppm of Inom
Current regulation bandwidth (-3dB)	100 Hz

### MECHANICAL DATA

Architecture	Cabinet
Dimensions (LxDxH)	upon customer specifications
Cooling	Water cooling
Acoustic noise at 1m	< 65 dBa
Ambient temperature	0 - 40°C

### INTERFACE AND REGULATION

Regulation mode	CC or CV mode, selectable
Displays	Touch-panel HMI; LED indications for failures
Interface analog	Analog interface for current & voltage measuring and setting
Interface digital	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
DAC resolution	16 bit (12 bit)
ADC resolution	16 bit (12 bit)

### OPERATION AND MAINTENANCE

Total number of cycles	> 10 <sup>8</sup>
MTBF	> 50000 h
MTTR	< 4 h
MTTR (semiconductors and capacitors)	< 1 h