

SYSTEM 8800 – Model 883 Power Converter

With the DANFYSIK SYSTEM 8800 power converter program we are offering our customers a new generation of high performance power converters. The Model 883, which is a current controlled power converter incorporate primary soft switching technology with IGBT's operating at 20 kHz.



MAIN FEATURES:

- Power range from 5 to 25 kW
- Current range up to 600 A
- Full bridge primary converter
- Short circuit and open circuit operation
- 25 ppm current stability class
- Very high efficiency - typical 90%
- Low acoustic noise
- All power components water cooled to reduce ambient thermal load

APPLICATIONS:

- Beamline magnets
- Mass analyzer magnets for ion implanters

FEATURING:

The **Model 883** is a primary full bridge phase-modulated, zero voltage switching converter, which offers several benefits compared with well-known traditional hard switching technology:

- * The trapezoidal current in the IGBT's, the transformers and secondary rectifier diodes avoids hard "snap off", i.e. the converter has very good EMC performance.
- * Primary transformer windings always clamped by the IGBT's prevent primary side oscillations.
- * Turn on losses of the transistors is eliminated, resulting in very high efficiency.
- * A compact modular design is a cost saver in space, allowing very easy and fast serviceability.
- * All power components, including transformers, filter coils, IGBT's, and rectifiers, are water cooled.

POWER CONVERTER MODEL 883 DATASHEET
-SYSTEM 8800

SPECIFICATIONS for standard model *)	
DC OUTPUT RATINGS	
- Power range	-25kW
- Standard current range	-600A
- Standard voltage range	-90V
REGULATION TOPOLOGY	Soft Switch Mode
PERFORMANCE	
- Warm up time (cold)	30 min.
- Warm up time (stand-by)	15 min.
- Drift:	
Long term 8 hours (fwhm)	
Standard	± 25ppm
- Line regulation:	
± 10% slow, T > 1 min.	± 25ppm
± 1% fast, T > 3 m sec.	± 25ppm
- Load regulation:	
± 10% resistance change	< 5ppm
- Output ripple and noise	
Voltage - peak to peak	<1% of V _{out} @ 40kHz
Current (RMS)	1mA in 1mHy
- Temperature coefficient:	
Ambient	± 1ppm/°C
Cooling water	± 1ppm/°C
- DC output isolation resistance	< 1Mohm
- Current setting resolution	15ppm
- Current reproduceability	± 50ppm
- Absolute current calibration	500ppm
- Current readback resolution	
Standard	16ppm
- Current control range	1 - 100%
- Normal operating range	10 - 100%

SPECIFICATIONS for standard model *)

CONTROL PANEL

Monitoring on 8-line graphic display:

AC main input status:

- Phase voltages [V]
- Phase currents [A]
- Ground leakage [mA]

DC output status:

- Set current [A]
- Output current [A]
- Output voltage [V]
- Polarity [pos/neg]

Interlock status:

- Temperature [°C]
- Water flow status
- Spare interlocks

Aux. readout:

- Optional ADC [%]
- Delta temperature [°C]

Current ramp:

- Actual current [A]
- Set final current [A]
- Ramp time [A/sec]

Push buttons and LED's

- Individual phase indication [LED]
- Reset button [LED]
- Global off [LED]
- Local/remote button [LED]
- Stand by [LED]
- On [LED]
- Start button [LED]
- Select DC display
- Select AC display
- Select interlock display
- Select aux display
- Select current ramp

Remote control/interfaces

- Internal CPU controllable via RS422
RS232 and RS485 are available on request
- Optional RS232 fibre optic
- External reference 0-10V

SPECIFICATIONS for standard model *)	
TEMPERATURE RATINGS - Operating temperature: Ambient Water - Storage temperature - Main cooling - Cooling water pressure: Minimum diff. Max. absolute Test pressure	5 – 40°C 15 – 35°C 5 – 40°C, non-condensing Water 3bar 12bar 20bar
AC INPUT - Mains voltage, 3 phase, 4 wire, 50-60Hz, standard Europe USA	400V ± 10% 208V ± 10%
CABINET - Material - Dimensions W x D x H	Steel 482 x 740 x 354 mm 19 inch rack mount

All ppm figures refer to max. output current. Specifications are subject to change without notice.

(*): Customized design is available on request - please contact DANFYSIK.