DANFYSIK

SYSTEM 8500

Model 854

Magnet Power Supply

SYSTEM 8500 Magnet Power Supply

Model 854
The System 8500 Power Supply program offers the ultrastable Model 854 specially designed for powering magnets in MRI applications.

With this power supply we have achieved not only the ultimate regarding stability – the 0.1ppm class - but also introduced excelent standards regarding extremely low ripple and filtering technology.

The modular concept of the system 8500 power supply program is the industrial approach towards easy and fast service.

The power supply can be delivered for either full current range or limited "window" with 1ppm resolution. The basic concept is designed for easy adaption to customer designed interfaces.

We have the expertise in current stabilized power supplies and a continuously on-going developmentprogram, which is your guarantee for a "state of the art" power supply for MRI equipment of tomorrow.

It is based on a thyristor or diode primary rectifier followed by a transistor based post regulator to achieve low output voltage ripple.

System 8500
The System 8500 is a generation of high performance power supplies.

The System 8500 power supply family is current regulated power supplies. The output current is programmable and can be ramped or constant. The power supply is designed for applications that requires very high stability and low noise combined with reliability and ease of use.

The system 8500 is available as a range of power, control and interface modules, and configured to meet specific application requirements, with guaranteed performance.

Precision ULTRASTAB® current transducer to achieve new performance levels for stability and linearity over a wide current range.

The menu-driven graphical display gives access to commands and information.

Arbitrary waveform generation of the output current, pre-programming of start-up sequences, time log of interlock functions, extended read back and diagnostics.

The current and voltage loops in System 8500 are designed to obtain greater stability and higher bandwidth. A code module is used to obtain specific load matching.

The power supply features
- Power range from 5-500 kW
- Current range from 50 to 3000 A
- 0.1 ppm stability class
- Incorporates Ultrastab Current Transducer
- Very low noise output
- Very high immunity against EMI
- Available for super conducting magnet applications (Optional)

Applications
- Resistive magnets for MRI
- Callibration and reference current source
- Ultrastable supply for spectrometers

Performance

All drift and regulation data are given for max. current output.

Warm up time (cold)	: 60 min.
Warm up time (stand-by)	: 15 min

Drift

Short term 3 min. (fwhm)	: <0.3ppm
Long term 8 hours stability (fwhm)	: <2ppm

Line regulation

±10% slow, T > 1 min.	: <0.1ppm
±1% fast, T > 3 m sec.	: <0.1ppm

Load regulation

±10% resistance change	: <0.2ppm

Ripple

AC Voltage ripple 50-60 Hz	: <5 mVpp
300-360 Hz	: <15 mVpp

Output filtering
Filter design according to customer specifications

Temperature coefficient

Ambient	: 0.2ppm/°C
Cooling water	: 0.05ppm/°C

DC output isolation resistance : >1 Mohm

Output polarity

Standard	: Unipolar
Super conducting	: (2-quadrant)

Current setting resolution
With total current range (100% window) : 18 bit (4ppm)
With window current range (6% window): 16 bit (1ppm)

Absolute current calibration : 0; +400ppm

Current readback resolution

Standard	: 8 bit (3906ppm)
Optional	: 16 bit (15ppm)

Control panel

Alphanumeric LCD display:

Pre-set output current	: 6 digits [ppm or A]
Actual output current	: 5 digits [ppm or A]
Output voltage	: 2 digits [ppm or V]
Interlock status	: text string
Menu system	: local control

Push buttons and status Indicators

OFF	: [Button] / [LED]
Reset (interlock)	: [Button] / [LED]
ON	: [Button] / [LED]
Menu	: [Button]
Ready (in regulation)	: [LED]

Remote control interface

RS-422/RS-485 as standard (RS-232 are available on request)
Ethernet interface are optional

Interlock status

Over voltage
Over current
Over temperature
Fan fault
Earth leakage
AC fault
External interlock (ext. 1 – 4)

Ramp profile digitally

- Arbitrary ramp profile
- Equal time slot
- Auto ramp

Operator Control Panel

Dimensions (W x H x D)	: 19 inch rack mount x 88 x 75 mm
Removable via cable	: 100 m (Cable optional)

Function Status	Command	Read-back
ON/OFF	Yes	Yes
RESET	Yes	
REMOTE STATUS	Yes	Yes
OUTPUT CURRENT	Yes (Current set value)	Yes
OUTPUT VOLTAGE	Yes (Voltage set value)	Yes
AMBIENT TEMPERATURE		Yes
RAMP PROFILE CONTROL (OPTIONAL)	Yes	

Analog Control Interface (Optional)

Analog inputs signals: 0-10 V (±10 V for bipolar)

Function Status	Command	Read-back
OUTPUT CURRENT	Yes (Current set value)	Yes
OUTPUT VOLTAGE	Yes (Voltage set value)	Yes
EXTERNAL TRIGGER RAMP PROFILE CONTROL (OPTIONAL)	Yes	

Technical specifications

AC Input

Control Voltage

Single phase, 50-60 Hz, standard	: Europe 230 V (±10%) &
	: USA 115 V (±10%)
Available on request	: 110 V
	: 240 V

Main voltage

3 phase, 4 or 5 wire, 50-60 Hz, standard	: Europe 400 V (±10%)
	: USA 480 V (±10%)
Available on request	: 208 V
	: 415 V
	: 565 V

DC Output ratings

Power range	: 5-500 kW
Standard current range	: 50-3000 A

Voltage range

Standard	: <400 V
Super conducting	: ±5 V; ±25 V

Customer Interface – Optional

Designed according to customer specifications

Temperature ratings

Operating

Ambient	: 15 to 35 °C
Water	: 15 to 35 °C
Storage	: -20 to 50 °C
Main cooling	: Water

Cooling requirements

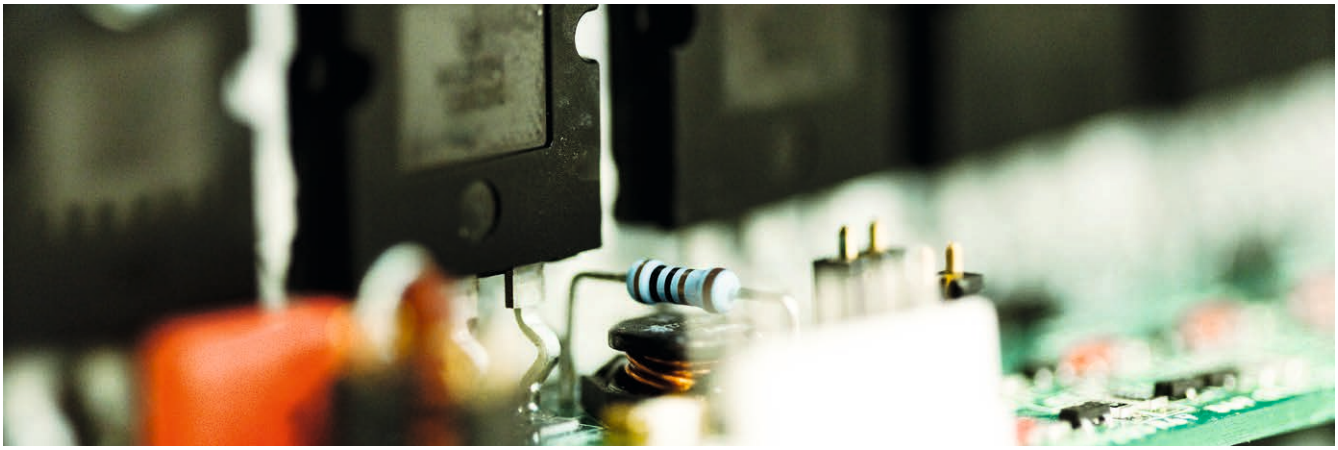
Main cooling	: Water
Differential pressure	: 3-12 bar
Max. absolute	: 12 bar
Test pressure	: 20 bar
Flow 5-50 kW	: Figures are very dependent on load conditions, window size and output power

Cabinet

Material	: Steel cabinet with aluminum front plate

Dimension examples (W x D x H)

≤6 kW	: 612 x 650 x 443 mm
≤12 kW	: 615 x 800 x 1400 mm
≤24 kW	: 615 x 800 x 1800 mm
≤50 kW	: 1230 x 800 x 1800 mm



Company Address

Danfysik A/S
Gregersensvej 8
DK-2630 Taastrup
Denmark

Phone +45 7220 2400
Fax +45 7220 2410
Email sales@danfysik.dk
www.danfysik.dk

Production facilities

Gregersensvej 7-8
DK-2630 Taastrup

Auditors
KPMG, Copenhagen

Specifications are subject to change without notice.
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