

Thyristor Controlled Power Supplies



The thyristor-controlled power supplies and battery chargers present the conventional method of rectifying and controlling electric power. The advantages of thyristor-controlled units are given by a simple technical concept resulting in robustness and reliability.

AC/DC POWER SUPPLIES & BATTERY CHARGERS from 500W to 500kW

- 1-phase Input voltage: 115 / 230V AC, single phase, 50 / 60Hz
- 3-phase Input voltage: 200/ 400/ 480/ 690V AC, 3-phase, 50 / 60Hz
- Output voltage: 12 / 24 / 48 / 60 / 72 / 110 / 220 / 360V
- Output current: up to 3250A
- Output power: 500W - 500kW

FEATURES

- Robust design
- High reliable
- 6-pulse performance
- Optional: 10% input current distortion for 12-pulse charger
- Turn Key solution
- Constant current & voltage operation
- Industrial grade components
- High level of humidity protection Concise & clear indication panel

SPECIFICATIONS

Input

Voltage range	nominal voltage $\pm 10\%$ (other voltage upon request)
Frequency	50 or 60Hz $\pm 5\%$
Protection	by fuse

General

Efficiency	80 – 90%
- Series QE	82– 92% for models <48V DC
- Series QD	85– 95% for models $\geq 48V$ DC
Operating temperature	-10 to +40°C, optional up to +65°C
Humidity	up to 95 % RH, non-condensing
Altitude	up to 1000 m asl
Cooling	natural convection or internal fans
Audible noise	50-70dB (A) depending on power
Safety / Construction	acc. to EN 60950-1 / EN 50178
EMI	acc. to EN 61000-6-4, class A
Enclosure	
- Protection category	IP20 acc. to EN 60529, optional up to IP55
- Color	RAL7035, others upon request
Transformer	acc. to IEC 76 / IEC14 / EN 60591 / DIN VDE 0532

Output

Voltage	adjustable from 90 – 120% of U_{nom} (other voltage upon request)
Line regulation ($\pm 10\%$)	$\pm 0.5\%$
Load regulation (10-90%)	$\pm 1\%$
Dynamic load (10-90-10%)	$\pm 10\%$ typical
Ripple	$\leq 5\%$ rms without battery, optional: < 2% rms or 2mV frequency weighted
Current	electronic current limitation adjustable from 60 – 105% of I_{nom}
Overload protection	short circuit protected by fuse and electronic current limitation
Charging characteristic	IU acc. to DIN 41773 for Pb batteries DIN 41774 for NiCd batteries
Charging voltage	
- float	2.23 – 2.27V / cell for Pb batteries / 1.4V / cell for NiCd batteries
- equalize	2.35 – 2.4V / cell for Pb batteries / 1.55V / cell for NiCd batteries
- boost (manual activated)	2.7V / cell for Pb batteries / 1.7V 7 cell for NiCd batteries

OPTIONS

Input

- MCB, MCCB or isolator
- inrush current limiting
- 690V AC input

Output

- parallel or redundant operation
- 12-pulse performance
- filtering up to 0.1% pp (corresponding to
0.035% rms) or 2mV frequency weighted
- voltage stabilization

Control (details see page 123)

- IU characteristic acc. to DIN 41773 and 41774
- manual selection of charging characteristic
(float/equalize/boost)
 - automatic selection of charging characteristic with timer
 - temperature compensated charging voltage

Battery

- MCB, MCCB or isolator
- deep discharge protection

Monitoring (details see page 123)

analogue or micro-processor-controlled

- input/ output voltage
- battery circuit
- ground insulation failure
- over temperature

Interface Card

- CAN Bus
- MOD Bus

Mechanics / environment:

- enclosures, IP20 up to IP55, for charger and / or batteries
- analogue or digital meters
- operating temperature
up to +65°C
- tropical protection
- earthquake-proof
- vermin-proof

Converters / Inverters

- switchmode DC / DC converters from 100W to 40kW
- switchmode DC / AC inverters, frequency converters and
static switches from 200 VA to 45k VA