

High voltage power supplies thyristor regulated Series HYN from 3,5 kV to 20 kV / 21kW to 50 kW



Design example

HYN 35000 - 3500
3,5kV / 10A

Features:

- Simple construction
- Extremely robust
- High efficiency
- Short circuit proof and unlimited operation with full current in short circuit condition
- Voltage and current regulation with automatic and sharp transition; control modes indicated by LEDs
- Voltage and current setting with 10-turn potentiometers with precision scale; the adjusting knob can be locked
- Limitation of inrush current on switching on
- Suitable also for inductive and capacitive loads
- Interlock loop to monitor the external load and internal loop as a standard
- Elapsed-hour meter as a standard

Function:

The mains voltage is transformed to high voltage potential. Either on the primary side or on the secondary side, a phase cutting circuit with thyristors is installed. The rectified voltage is smoothed by a LC - filter.

Design:

- Depending on voltage and power the units are built as single or double 19" cabinets of various height. The side covers are detachable, the rear door is lockable.
- All cabinets are equipped with fork-lift-compatible plinths and removable crane-eyes.
- Single 19"- cabinets up to 38U are easily transportable by fork-lift.
- Cooling is carried out via convection or built-in fans, with the air being exhausted (depending upon type) either via the rear or the top.

Output:

- Output isolation:
The required output polarity must be stated with the order. The requested output polarity will then be available at the HV connector and the "0V" terminal will be firmly connected to earth. A polarity reversal switch is optionally available.
- Output terminals:
All output terminals are located at the rear side of the cabinet. For Output current up to 10A high voltage connectors with the appropriate dielectric strength are installed. Mating connectors are delivered with the power supply.

Technical Data:

- Mains connection:
400V $\pm 10\%$ 47Hz to 53Hz, three-phase
- Ambient temperature:
0°C to +40°C

The following data applies for voltage and current regulation, and refers to the rated value (unless otherwise stated):
(For explanations please refer to Definitions and Terms on page 54.)

- Setting range:
from approx. 1% to 100%
- Setting resolution:
 $\pm 1 \times 10^{-4}$
- Residual ripple:
 $< 1 \times 10^{-2} \text{pp} + 100 \text{mVpp}$
- Recovery time:
<100ms to 500ms (depending on type) for load variations of $\pm 10\%$
- Setting time at nominal load:
<100ms to 2sec (depending on type) for changes of the output voltage from 10% to 90% or 90% to 10%
- Discharge time constant for output without load:
approx. 5sec. to 60sec., depending on type

- Deviation:
For $\pm 10\%$ mains voltage variation:
 $< \pm 1 \times 10^{-4}$
For no load / full load:
 $< \pm 1 \times 10^{-3}$
Over 8 hours under constant conditions:
 $< \pm 3 \times 10^{-4}$
Within the temperature range:
 $< \pm 3 \times 10^{-4} / \text{K}$

Possible Options:

- Analog programming (see page 44)
- Analog programming, floating (see page 44)
- Computer interfaces - IEEE 488, RS 232, RS 422, Profibus DP, LAN, USB (more on request) (see page 46)
- Polarity reversal switch. Please specify the output polarity, when ordering without polarity reversal switch. (see page 48)
- Internal resistance setting and regulation (see page 48)
- Power regulation with display (see page 48)
- Roller blades for cabinet units

More options and special solutions on request. Some options may involve changes to the description of the unit - especially concerning the mechanical design.

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Design example

HYN 200000 - 20000

20kV / 10A
special version,
customised design,
with 20A load capacity

Type	Voltage	Current	Width	Height	Depth	Weight
HYN 21000 - 3500	0 - 3500 V	0 - 6 A	19" / 600 mm	38 U / 2000 mm	800 mm	480 kg
HYN 28000 - 3500	0 - 3500 V	0 - 8 A	19" / 600 mm	38 U / 2000 mm	800 mm	600 kg
HYN 35000 - 3500	0 - 3500 V	0 - 10 A	19" / 600 mm	38 U / 2000 mm	800 mm	800 kg
HYN 70000 - 3500	0 - 3500 V	0 - 20 A	2 x 19" / 1200 mm	38 U / 2000 mm	800 mm	1400 kg
HYN 21000 - 6500	0 - 6500 V	0 - 3 A	19" / 600 mm	38 U / 2000 mm	800 mm	480 kg
HYN 28000 - 6500	0 - 6500 V	0 - 4 A	19" / 600 mm	38 U / 2000 mm	800 mm	600 kg
HYN 35000 - 6500	0 - 6500 V	0 - 5 A	19" / 600 mm	38 U / 2000 mm	800 mm	800 kg
HYN 70000 - 6500	0 - 6500 V	0 - 10 A	2 x 19" / 1200 mm	38 U / 2000 mm	800 mm	1400 kg
HYN 21000 - 12500	0 - 12500 V	0 - 1,5 A	19" / 600 mm	38 U / 2000 mm	800 mm	480 kg
HYN 28000 - 12500	0 - 12500 V	0 - 2 A	19" / 600 mm	38 U / 2000 mm	800 mm	600 kg
HYN 35000 - 12500	0 - 12500 V	0 - 2,5 A	19" / 600 mm	38 U / 2000 mm	800 mm	800 kg
HYN 50000 - 12500	0 - 12500 V	0 - 4 A	2 x 19" / 1200 mm	38 U / 2000 mm	800 mm	1200 kg
HYN 7000 - 20000	0 - 20000 V	0 - 300 mA	19" / 600 mm	29 U / 1500 mm	600 mm	230 kg
HYN 10500 - 20000	0 - 20000 V	0 - 500 mA	19" / 600 mm	29 U / 1500 mm	600 mm	340 kg
HYN 14000 - 20000	0 - 20000 V	0 - 600 mA	19" / 600 mm	38 U / 2000 mm	800 mm	400 kg
HYN 21000 - 20000	0 - 20000 V	0 - 1 A	19" / 600 mm	38 U / 2000 mm	800 mm	480 kg
HYN 28000 - 20000	0 - 20000 V	0 - 1,2 A	19" / 600 mm	38 U / 2000 mm	800 mm	600 kg
HYN 35000 - 20000	0 - 20000 V	0 - 1,5 A	19" / 600 mm	38 U / 2000 mm	800 mm	800 kg
HYN 50000 - 20000	0 - 20000 V	0 - 2,5 A	2 x 19" / 1200 mm	38 U / 2000 mm	800 mm	1200 kg

Mating high voltage connectors for units with up to 10A output current are included in the scope of delivery. Mating high voltage cables you'll find beginning with page 51.