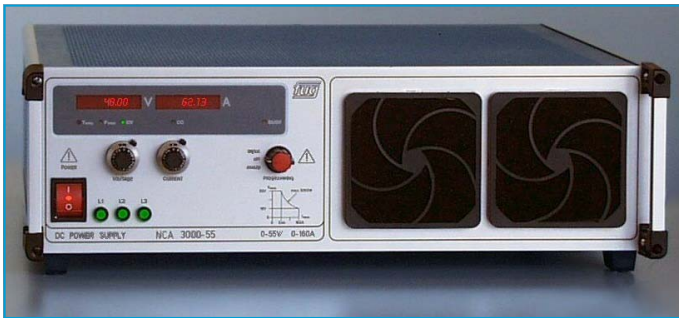


Autoranging power supplies

Series NCA / MCA from 55 V to 3000 V / 750 W to 9000 W



Features:

- Autoranging characteristic with constant power limitation
- 5 power classes: from 750W to 9kW
- 6 Voltages: 55V to 3000V
- Up to 1500V with floating output
- Compact size (19" case)
- Light-weight
- High efficiency
- Short-circuit proof
- Unlimited operation with nominal power (even in short-circuit conditions)
- Voltage and current regulation with automatic, sharp transition and additional power limitation
- Control mode indicated by LED
- Voltage and current setting with 10-turn potentiometers with precision scale; the adjusting knob can be locked
- 4½ digit DVM for voltage and current
- Suitable also for capacitive loads
- Sense connections to compensate voltage drop at the load cables for NCA
- Active down control for NCA

Function:

The NCA/MCA series is an autoranging power supply design in which the power supplies operate over the full range of their output voltage & current - up to the units maximum rated output power. This results in an operating range which is up to 3-times wider than that of a more conventional power supply. When fitted with the optional computer interface, the MCA/NCA series become versatile programmable power supplies.

In principle, the rectified line voltage drives a square wave generator, whose AC voltage is transformed, rectified and filtered, producing the output voltage. For regulation, the square wave voltage is pulse width modulated.

Design:

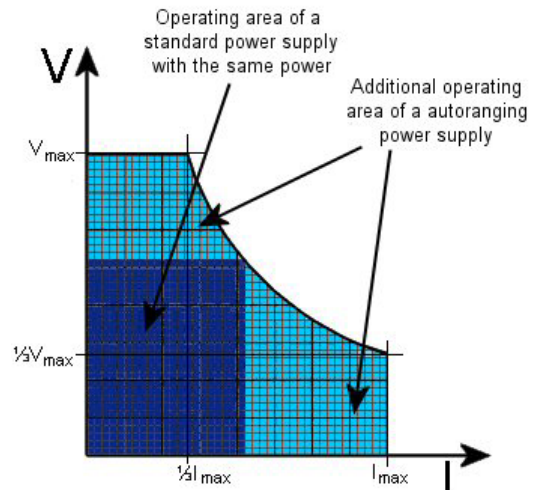
- 19" table-top case (19" rack adapters available)

Output:

- Output isolation: up to 1500V nominal voltage the output is floating. Either the positive or the negative pole may be connected to earth. (Not valid with the option analogue programming. If the floating function should remain, the floating analogue programming must be chosen).
Maximum isolation voltage: Up to 400V nominal voltage: $\pm 500V$.
At 750V nominal voltage: $\pm 1000V$.
At 1500V nominal voltage: $\pm 2000V$.
At 3000V nominal voltage one pole is earthed, the polarity must be indicated when ordering.
- Output terminals: Units up to 750V nominal voltage have 4mm safety connectors. From 1500V nominal voltage on SHV connectors are provided. HV-cable connectors are included. Units from 24A nominal current on have binding posts.

Design example

NCA 3000 - 55
55V / 160A, max. 3000W



Technical Data:

- Mains connection: Up to 1500W nominal power: 230V $\pm 10\%$ 47Hz to 63Hz;
For nominal power 3000W and higher: 400V $\pm 10\%$ 47Hz to 63Hz 3-phase
- Ambient temperature: 0°C to +40°C
- Setting time at nominal load: <300ms for changes of the output voltage from 10% to 90% or 90% to 10%
- Discharging time constant for output without load: approx. 10sec for MCA NCA have active down regulation.
- Deviation: for $\pm 10\%$ mains voltage variation: $\pm 1 \times 10^{-5}$ for no load / full load: $< 5 \times 10^{-4}$ over 8 h under constant conditions: $< \pm 2 \times 10^{-4}$ within the temperature range: $< \pm 1 \times 10^{-4} / K$
- 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 61.)
- Setting range: from approx. 0,1% to 100%
- Setting resolution: $\pm 1 \times 10^{-4}$
- Residual ripple: $< 2 \times 10^{-4} pp + 200mVpp$
- Recovery time: Voltage control: <1ms for load changes from 10% to 100% or from 100% to 10%.
Current control: <10ms for load changes causing an output change of less than 10% of the rated voltage

Possible Options:

- Analogue programming (One of the outputs on "0V" - potential; see also page 52)
- Analogue programming, floating (see page 52)
- Computer interface - IEEE 488, RS 232, RS 422, Profibus DP, USB, LAN (more on request) (see page 54)

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

Autoranging power supplies

Series NCA / MCA from 55 V to 3000 V / 750 W to 9000 W



Type	Pow. (max.)	Voltage	Current	Width	Height	Depth	Weight
NCA 750 - 55	750 W	0 - 55 V	0 - 40 A	19" / 443 mm	3 U / 133 mm	350 mm	12 kg
NCA 1500 - 55	1500 W	0 - 55 V	0 - 80 A	19" / 443 mm	3 U / 133 mm	550 mm	20 kg
NCA 3000 - 55 3)	3000 W	0 - 55 V	0 - 160 A	19" / 443 mm	3 U / 133 mm	650 mm	25 kg
MCA 750 - 150 ●	750 W	0 - 150 V	0 - 15 A	19" / 443 mm	3 U / 133 mm	350 mm	10 kg
MCA 1500 - 150	1500 W	0 - 150 V	0 - 30 A	19" / 443 mm	4 U / 177 mm	450 mm	16 kg
MCA 3000 - 150 3)	3000 W	0 - 150 V	0 - 60 A	19" / 443 mm	4 U / 177 mm	650 mm	37 kg
MCA 6000 - 150 3)	6000 W	0 - 150 V	0 - 120 A	19" / 443 mm	8 U / 355 mm	650 mm	61 kg
MCA 9000 - 150 3)	9000 W	0 - 150 V	0 - 180 A	19" / 443 mm	12 U / 535 mm	650 mm	90 kg
MCA 750 - 400 ●	750 W	0 - 400 V	0 - 6 A	19" / 443 mm	3 U / 133 mm	350 mm	10 kg
MCA 1500 - 400	1500 W	0 - 400 V	0 - 12 A	19" / 443 mm	4 U / 177 mm	450 mm	16 kg
MCA 3000 - 400 3)	3000 W	0 - 400 V	0 - 24 A	19" / 443 mm	4 U / 177 mm	650 mm	35 kg
MCA 6000 - 400 3)	6000 W	0 - 400 V	0 - 48 A	19" / 443 mm	8 U / 355 mm	650 mm	61 kg
MCA 9000 - 400 3)	9000 W	0 - 400 V	0 - 72 A	19" / 443 mm	12 U / 535 mm	650 mm	90 kg
MCA 750 - 750 ●	750 W	0 - 750 V	0 - 3 A	19" / 443 mm	3 U / 133 mm	350 mm	10 kg
MCA 1500 - 750	1500 W	0 - 750 V	0 - 6 A	19" / 443 mm	4 U / 177 mm	450 mm	16 kg
MCA 3000 - 750 3)	3000 W	0 - 750 V	0 - 12 A	19" / 443 mm	4 U / 177 mm	650 mm	33 kg
MCA 6000 - 750 3)	6000 W	0 - 750 V	0 - 24 A	19" / 443 mm	8 U / 355 mm	650 mm	61 kg
MCA 9000 - 750 3)	9000 W	0 - 750 V	0 - 36 A	19" / 443 mm	12 U / 535 mm	650 mm	90 kg
MCA 750 - 1500 ●	750 W	0 - 1500 V	0 - 1,5 A	19" / 443 mm	3 U / 133 mm	350 mm	10 kg
MCA 1500 - 1500	1500 W	0 - 1500 V	0 - 3 A	19" / 443 mm	4 U / 177 mm	450 mm	16 kg
MCA 3000 - 1500 3)	3000 W	0 - 1500 V	0 - 6 A	19" / 443 mm	4 U / 177 mm	650 mm	32 kg
MCA 6000 - 1500 3)	6000 W	0 - 1500 V	0 - 12 A	19" / 443 mm	8 U / 355 mm	650 mm	61 kg
MCA 9000 - 1500 3)	9000 W	0 - 1500 V	0 - 18 A	19" / 443 mm	12 U / 535 mm	650 mm	90 kg
MCA 750 - 3000 ●	750 W	0 - 3000 V	0 - 0,75 A	19" / 443 mm	3 U / 133 mm	350 mm	10 kg
MCA 1500 - 3000	1500 W	0 - 3000 V	0 - 1,5 A	19" / 443 mm	4 U / 177 mm	450 mm	16 kg
MCA 3000 - 3000 3)	3000 W	0 - 3000 V	0 - 3 A	19" / 443 mm	4 U / 177 mm	650 mm	32 kg
MCA 6000 - 3000 3)	6000 W	0 - 3000 V	0 - 6 A	19" / 443 mm	8 U / 355 mm	650 mm	61 kg
MCA 9000 - 3000 3)	9000 W	0 - 3000 V	0 - 9 A	19" / 443 mm	12 U / 535 mm	650 mm	90 kg

3) Three phase mains connection
● short term delivery

For orders of power supplies with 3000V nominal voltage please state the required output polarity.

For 1500V and higher, the mating high voltage connectors are included in the scope of delivery. Mating high voltage cables you'll find beginning with page 59.