

# Power Supplies NGRU

**NGRU35: 0 to 35 V/0 to 10 A**

**NGRU50: 0 to 50 V/0 to 5 A**

**NGRU100: 0 to 100 V/0 to 3 A**

## Brief description

Power Supplies of the NGRU series are precision laboratory units providing high accuracy and repeatability of voltage and current settings via digital potentiometers.

The power supplies can be used as constant-voltage or constant-current sources. The maximum output power is 150 W and remains constant over a wide voltage range. The current loadability depends on the output voltage.

## Main features

- Compact bench models
- High resolution and reproducibility through digital potentiometers
- Output voltage continuously variable with calibrated potentiometer
- Automatic power matching ensuring full power over wide output voltage range
- Digitally settable overvoltage protection
- Output voltage can be modulated – simulation of interference factors



Photo 31 460

- Remote programming of voltage and current
- Panel meter for voltage and current indication in three ranges
- Large LED indicators for overload, overtemperature, overvoltage protection and selected operating mode
- Switch-selectable output capacitor
- Remote sensing

## Operation

The voltage can be set in five digits and continuously varied by  $\pm 25\%$  with a calibrated potentiometer.

The current can be set in four digits within two ranges. The low range is 100 mA for all NGRU models so that even currents in the  $\mu\text{A}$  range can be reliably regulated.

The overvoltage protection is also set via digital potentiometer. In addition to manual operation, remote programming of voltage and current is possible by means of analog control signals.

## Specifications in brief

Voltage setting	NGRU 35	NGRU 50	NGRU 100
in 5 digits	<1 mV to 35 V	<1 mV to 50 V	<1 mV to 100 V
Resolution	1 mV	1 mV	1 mV
Max. error at 20°C analog (continuously)	$\pm 10^{-4}$ of set value $\pm 20$ mV		
Resolution	$\pm 25\%$	$\pm 0.5\%$	of scale $\pm 25\%$

Current setting (2 ranges in 4 digits)	NGRU 35	NGRU 50	NGRU 100
High range	<1 mA to 10 A	<1 mA to 5 A	>12 mA to 3 A
Resolution	1 mA	1 mA	1 mA
Max. error at 20°C	$\pm 2 \times 10^{-3}$ of set value $\pm 10$ mA		
Low range	<10 $\mu\text{A}$ to 100 mA		
Resolution	10 $\mu\text{A}$	10 $\mu\text{A}$	10 $\mu\text{A}$
Max. error at 20°C	$\pm 2 \times 10^{-3}$ of set value $\pm 0.2$ mA		

<b>Max. constant current</b> (150 W)	<b>NGRU 35</b>	<b>NGRU 50</b>	<b>NGRU 100</b>
	up to 15 V: 10 A	up to 30 V: 5 A	up to 50 V: 3 A
	20 V: 7.5 A	40 V: 3.8 A	75 V: 2 A
	35 V: 4.3 A	50 V: 3 A	100 V: 1.5 A

### Constant-voltage source

Deviation of output voltage with			
±10% AC supply variation		<±10 <sup>-5</sup>	
between 0 and 40°C		<±10 <sup>-4</sup> /K	
with 10 to 90% load		<10 <sup>-4</sup>	
PARΔ (V <sub>rms</sub> )	<0.3 mV	<0.5 mV	<1 mV
Transient recovery time	<75 μs	<75 μs	<75 μs

### Constant-current source

Deviation of output current with			
±10% AC supply variation		<±2 x 10 <sup>-5</sup>	
between 0 and 40°C		<±2 x 10 <sup>-4</sup> /K	
from 10 to 90% load		<2 x 10 <sup>-4</sup>	
PARΔ			
in high range (I <sub>rms</sub> )	<2 mA	<1 mA	<0.3 mA
in low range (I <sub>rms</sub> )	<20 μA	<20 μA	<20 μA
Sensing sockets			
Max. voltage compens.	<0.5 V	<1 V	<1.5 V

### Common data

Modulation of output voltage (BNC female, floating)	V <sub>pp</sub> = 10 V for 10 V modulation, 50 Hz to 1 kHz ±3 dB
Input impedance	approx. 3.5 kΩ

Overvoltage protection	
Setting range	1 to 99 V (response threshold approx. 5% higher)

### Programming (external, analog)

for output voltage	0 to 10 V
0 to 100%	0 to 10 V
for output current 0 to 100%	<3 ms (to within ±1%)
Setting time	5-contact Tuchel female
Connector	approx. 10 kΩ
Input impedance	positive terminal
Reference potential	

### General data

Meter accuracy	±2.5% of full scale
AC supply	110/120/220/240 V ±10%, 47 to 63 Hz,
Dimensions (W x H x D); weight	190 mm x 180 mm x 330 mm; 9 kg

## Ordering information

<b>Power Supply</b>	NGRU 35	0192.0210.03
	NGRU 50	0192.0210.05
	NGRU 100	0192.0210.08