SHR Series

2kV/6mA - 6kV/2mA
SWITCHABLE HIGH END HIGH PRECISION
AC/DC DESKTOP HV SUPPLIES

• FEATURES
  - 2/4 Channels, 2kV/6kV Versions
  - Electronically switchable polarity
  - 6kV channel with electronically switchable modes:
    up to 2kV/4mA, 4kV/3mA or 6kV/2mA
  - High precision / very low ripple and noise
  - Ethernet / USB interfaces, integrated iCS on ARM Linux server hardware
  - 4.3” TFT capacitive touch display
  - Logging, diagrammatic display, script control
  - Made in Germany

The SHR series represents a standalone High Precision HV laboratory SMU - Source Measuring Unit - equipped with the finest High Voltage generation technology and iCS control system.

The SHR provides up to four HV channels, each with independent voltage and current control and reversible polarity.

A completely new developed flexible 6kV channel provides a maximum versatility. With three electronically switchable HV-generation modes it can supply 4mA up to voltages of 2kV, 3mA up to 4kV or 2mA up to 6kV. Alternatively the SHR can be equipped with cost efficient 2kV/6mA fixed channels.

A high quality 4.3” TFT shows detailed information and can be controlled by capacitive touch. All comprehensive features like logging, graphical display and customer specific plugins are also available by the precise jog wheel and buttons.

<table>
<thead>
<tr>
<th>Max. Output Voltage</th>
<th>Max. Output Current</th>
<th>Channels</th>
<th>Model</th>
<th>HV Modes (VMODE/IMODE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2kV</td>
<td>6mA</td>
<td>2</td>
<td>SHR 20 20</td>
<td>2kV/6mA</td>
</tr>
<tr>
<td>2kV</td>
<td>6mA</td>
<td>4</td>
<td>SHR 40 20</td>
<td>2kV/6mA</td>
</tr>
<tr>
<td>6kV</td>
<td>4mA</td>
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<td>SHR 20 60</td>
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</tr>
</tbody>
</table>

• SPECIFICATIONS
  
Polarity: electronically switchable
  
Ripple and Noise:
  - < 10mV [standard precision]
  - < 3mV [high precision]
  
Temperature Coefficient:
  - 50ppm/°C [standard precision]
  - 30ppm/°C [high precision]
  - 10ppm/°C [high precision, option TC]
  
Resolution Voltage Setting:
  - 2 * 10^-6 * VNOM
  
Resolution Current Setting:
  - 2 * 10^-6 * INOM
  
Resolution Voltage Measurement:
  - 2 * 10^-6 * VNOM [standard precision]
  - 1 * 10^-6 * VNOM [high precision]
  
Resolution Current Measurement:
  - full range:
    - 2 * 10^-6 * INOM [standard precision]
    - 1 * 10^-6 * INOM [high precision]
  - 2nd range:
    - 50µA [IOUT < 20µA] [high precision]
Accuracy Voltage Measurement:  
± [0.01% × V_{OUT} + 0.02% × V_{NOM}] (standard precision)  
± [0.01% × V_{OUT} + 0.01% × V_{NOM}] (high precision)

Accuracy Current Measurement:  
full range:  
± [0.01% × I_{OUT} + 0.02% × I_{NOM}] (standard precision)  
± [0.01% × I_{OUT} + 0.01% × I_{NOM}] (high precision)  
2nd range:  
± [0.01% × I_{OUT} + 4nA] (high precision)

Rate of Voltage Change:  
1 × 10^{-6} × V_{MODE}/s up to 0.2 × V_{MODE}/s

Supply Voltage:  
100 - 240VAC / 50 - 60Hz

Protection:  
INHIBIT, safety loop, short circuit, overload, hardware V/I limits

Interfaces:  
Ethernet
USB[A] 2.0 (Host: WiFi, Logging, Webcam)
USB[B] [remote control]

HV Connector:  
SHV

Case:  
desktop case

Dimensions (L x W x H):  
331 x 257 x 103mm³

All specifications guaranteed for 1% × V_{MODE} < V_{OUT} < V_{MODE}

• OPTIONS

TC  Lower temperature coefficient
L  Lower current (100μA, high precision version only)
VCT  Voltage correction by temperature
IHB  Single channel inhibit - BNC connectors
IHD  Detector inhibit (Ortec, Canberra)

Disclaimer
The information given in this data sheet is technical data, not assured product characteristics. It has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. The user has to ensure by adequate tests that the product is suitable for his application regarding safety and technical aspects. hivolt.de GmbH & Co. KG does not assume any liability arising out of the application or use of any product described.

Safety Advice
Design, installation and inspection of machinery and devices carrying high voltage require accordingly trained and qualified personnel. Appropriate safety rules and directives must be complied with.
Improper handling of high voltage can mean severe injuries or death and may cause serious collateral damage.