PHV4002-3

100MHz, 20kV DC / 40kV PULSE, 1000:1
HIGH VOLTAGE PASSIVE PROBE

- CeramCore™ Hybrid Probe
- Coaxial Design
- Optional Read-Out
- System Bandwidth >100MHz
- 20kV DC incl. AC Peak
- Up to 40kV Pulse Peak
- Optional Cable Length up to 12m

High Voltage Probes of the PHV4002 Series are the most powerful probes for performance measurements of fast high voltage signals. Applications include measurements of ignition voltages, glitch-detection in low-voltage and medium-voltage systems, laser technology, drive technology, large-scale operations of frequency converters and many more. With a system bandwidth greater than 100 MHz, even fast events can be captured.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuation Ratio (1)</td>
<td>1000:1 ±2% at DC</td>
</tr>
<tr>
<td>Voltage Coefficient</td>
<td>0.00025%/V (typical)</td>
</tr>
<tr>
<td>System Bandwidth</td>
<td>100MHz (-3dB)</td>
</tr>
<tr>
<td>System Risetime</td>
<td>3.5ns (10% – 90%) (typical)</td>
</tr>
<tr>
<td>Maximum non-destructive Input Voltage</td>
<td></td>
</tr>
<tr>
<td>Direct Current</td>
<td>20kV DC</td>
</tr>
<tr>
<td>Alternating Current</td>
<td>14kV AC rms 50/60Hz Sinus</td>
</tr>
<tr>
<td>HF-Sinus-AC</td>
<td>see “Typical Voltage Derating” Graph</td>
</tr>
<tr>
<td>Pulse Voltage</td>
<td>40kV Pulse (observe graphs on page 2)</td>
</tr>
</tbody>
</table>

(1) Connected to oscilloscope with an Input Impedance of 1MΩ ±1%.

The instrument should have warmed up for at least 20 minutes and the environmental conditions must not exceed the specified limits of the probe.

**VOLTAGE DERATING**

![Typical Voltage Derating PHV 4002-3](image)

Note that the max. Input Voltage rating of the probe decreases as the frequency of the applied signal increases.
DATA ON MAX. NON-DESTRUCTIVE PULSE VOLTAGES

For Pulse Voltages make sure to always comply with the data shown below.

INPUT IMPEDANCE

Note that the input impedance of the probe decreases as the frequency of the applied signal increases.
**MECHANICAL CHARACTERISTICS**

- Weight (probe only): 465g
- Cable Length: 3m
- Probe Tip Diameter: 4mm Thread Terminal (M4)
- Ground Connector: 2.5 mm Riveting Nut (M2.5)

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>4.0</td>
</tr>
<tr>
<td>Length</td>
<td>285</td>
</tr>
<tr>
<td>Height</td>
<td>255</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL SPECIFICATIONS**

- Altitude
  - Operating: up to 2000m
  - Non-operating: up to 15000m
- Temperature range
  - Operating: 0°C to +50°C
  - Non-operating: -40°C to +71°C
- Maximum relative humidity
  - Operating: 80% relative humidity for temperatures up to +31°C, decreasing linearly to 40% at +50°C

**SCOPE OF DELIVERY**

- Adjustment Tool HQ
- Ground Lead to Safety-Aligator clip 15cm
- Instruction Manual
- Probe
- Screw-In Hook PHV4002 Ni
- Solid Tip HV 4mm

**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.

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**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!