

High Voltage Current Measurement Unit



Main Applications

- ▶ Radiation and particle detectors
- Semiconductor characterization
- Insulation testing
- Optoelectronics

Main Features

- ▶ High-side DC current measurement
- Low measurement error
- Maximum working voltage up to ± 3 kV DC
- Short circuit withstand capability
- Low burden voltage
- Lightweight, portable stand-alone instrument
- Compatible with existing equipment
- Very low leakage current



High Voltage Current Measurement Unit HVCMU 3K

The HVCMU 3K is a portable stand-alone instrument designed for high-resolution measurement of very small DC currents at working voltages up to ± 3 kV DC to ground. It can be used, for example, to measure leakage currents of high-voltage radiation detectors.

The device performs high-side current measurements with very low burden voltage, which results in reliable and stable operation with excellent measurement resolution. The instrument provides three selectable current ranges and supports both positive and negative high-voltage polarity, making it suitable for a wide range of low-current DC measurements. All data acquisition and calculations are performed inside the device and measured current value is displayed on a bright LED dot-matrix display.

Thanks to the very low leakage current between the HV measurement path and ground, this device can be used with low-power high-voltage power supplies, which have very limited output current.

Specifications

Available device variant

High-Resolution (HR)			Standard-Resolution (SR)		
Range, μA	Resolution, μA	Error (typ), μA	Range, μA	Resolution, μA	Error (typ), μA
.1000	0.0001	± 0.0001	1.000	0.001	± 0.001
1.000	0.001	± 0.001	10.00	0.01	± 0.01
10.00	0.01	± 0.01	100.0	0.1	± 0.1

Technical specifications

Parameter	Value
Power supply voltage	$+ 6 \pm 0.5$ V DC
Power supply current	< 200 mA
Operating temperature range	$0 \dots 50^\circ\text{C}$
Internal output capacitance	≈ 2.2 nF
HV input voltage	± 3 kV DC
Leakage current (HV to GND)	< 500 pA
Output ripple	≈ 5 mVp-p
Continuous short-circuit current	< 80 mA
Weight	350 g
Dimensions	131.2 x 87.0 x 31.5 mm
Input cable length	520 ± 20 mm
Input connector	SHV cable plug
Output connector	SHV receptacle

