



\*9103 shown with HV option

### description

The 9103 is a versatile, general-purpose picoammeter designed to accurately measure DC current from the nA to mA range. The easy-to-read user interface is designed to provide optimal control and quick access to all functions. Features such as an ASCII programming language and data recording/graphing are standard.

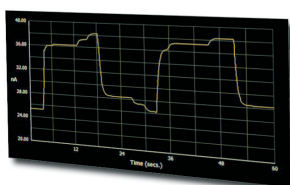
The 9103 is available with high-speed and high-voltage options, for sample rates up to 500 reads/sec, and the ability to float up to 5 kV DC.

### applications

- Electron & ion beam current measurements
- Mass spectrometer current measurements
- Photodiode current & leakage measurements
- Beam and particle monitoring
- Spectrometer measurements
- Data logging current comparisons



### benefits



**USB Interface:** PC software included

**Data Recording:** Sample data can be recorded and saved

**Data Graphing:** Real-time graphing with polarity options

**Programmable:** ASCII command interface

**Sync:** Multiple 9103's can be synchronized using RBD's Actuel software to create a multichannel current data logger

**Bias (Optional):** Increases accuracy of electron or ion beam current measurements by reducing secondary electron emission (*not available on High-Voltage models*)

### configurations

The 9103 is available in 4 configurations:

- **Standard:** sample rate 40 reads/sec.
- **High-Speed:** sample rate 500 reads/sec.
- **High-Voltage:** sample rate 40 reads/sec., floats up to 5 kV DC
- **High-Speed / High-Voltage:** sample rate 500 reads/sec., floats up to 5 kV DC

# usb graphing picoammeter

9103

## specifications

### Resolution & Accuracy per Range

Range	Resolution	Accuracy / Offset	(18° – 28°C, 0 - 70% RH)*
2 nA	100 fA	0.5 ± %	+500 fA
20 nA	1 pA	0.5 ± %	+3 pA
200 nA	10 pA	0.4 ± %	+20 pA
2 µA	100 pA	0.4 ± %	+200 pA
20 µA	1 nA	0.4 ± %	+2 nA
200 µA	10 nA	0.4 ± %	+20 nA
2 mA	100 nA	0.4 ± %	+200 nA

\*Temperature Coefficient: 0°–18°C & 28°–50°C. For each °C, add  $0.1 \times (\% \text{ rdg} + \text{offset})$  to accuracy spec.

### General:

USB Interface	160 mW power consumption
2 nA Min. DAC Resolution	2 nA Min. : 0.1 pA, 2 mA Min. 100 nA
Sampling Rate	Standard: 40 reads/sec. High-Speed option: 500 reads/sec.
Range	2 nA to 2 mA with 100 fA resolution
Input Protection	50 mA (fused)
Recorder Output Voltage	± 2.000 V per range <i>not available with High-Voltage option</i>
Warm-up	1 hour to rated accuracy
Environment	Operating 0° C to 50 ° C
Mechanical Dimensions	55H x 170W x 165L (mm) 2.11H x 6.68W x 6.30L (inches)
Net. Weight	0.816 kg / 1.5 lbs
Connections <i>Standard-Voltage</i>	Input: Isolated BNC. Recorder Option Analog Output: Banana jacks
Connections <i>High-Voltage</i>	HV Input: SHV HV Reference: MHV
Bias Options	No Bias; Internal (fixed +90 V DC); External (Dual BNC) <i>not available with High-Voltage option</i>
Safety	Conforms to USB Power Specification - for use by qualified personnel who are trained in the use of test and measurement instrumentation
High Voltage Option	5 kV DC Isolation
Accessories Included	Installation and operation manuals, USB driver,, Actuel software, USB power cable, low-noise BNC cable ( <i>not available with HV option</i> )

All specifications are subject to change without notice.



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