M109R

High Resistance Decade

HIGHLIGHTS

- **Calibration of insulation meters and megaohm meters**
- **4 decades**
- **Range 1 MΩ – 12 GΩ**
- **Maximum working voltage 5 kV DC**
- **Internal accumulator / power line adapter**
- **Serial interface RS232 control**

DESCRIPTION

High resistance decade box is aimed for calibrating of insulation meters and megaohm-meters. It is suitable for calibration laboratories and service centers, where it can be used also for testing or setting of high resistance meters. High voltage relays with extremely high insulation resistance are used for switching of resistance components.

M-109R is equipped with indication of input terminal overload. Instrument is supplied from accumulator or power line adapter. Control is possible manually or remotely via serial interface RS232

SPECIFICATION

Specifications below describe 1-year absolute accuracy of this product including long-term stability, linearity, load and line regulation and reference standard measurement uncertainty as well as ambient conditions within specified limits.

GENERAL DATA

Warm up	1 hour
Reference temperature	23 °C ± 5 °C
Reference humidity	10 - 50 %
Power supply	Internal accumulator, power line supply adapter 15V (100-240V/50-60 Hz)
Dimensions	390 x 128 x 310 mm
Weight	4 kg
Interfaces	RS232

Resistance

Range summary	1 MΩ – 12.221 GΩ
Maximum voltage	5 kV DC between terminals H-L , H-⊥, L-⊥
Connection	Two-terminal, three-terminal (GUARD)
Type of terminals	High voltage terminals with ERTALYTE isolation
Isolation resistance of relays	$> 10^{15}$ Ω
Surface resistance of ERTALYTE	$> 10^{16}$ Ω
Specific resistance of ERTALYTE	$> 10^{16}$ Ωcm

Ranges, 1 year accuracy

Range	Nominal value accuracy	Voltage coefficient [±ppm / V]	Temperature coefficient [±ppm / °C]	Maximum voltage [DCV / RMS]
1 MΩ - 11 MΩ	0.1 %	1	< 100	1000 / 700
10 MΩ - 110 MΩ	0.2 %	1	< 100	2500 / 1700
100 MΩ - 1.1 GΩ	0.5 %	2	< 100	5000 / 3500
1 GΩ - 11 GΩ	1.0 %	2	< 100	5000 / 3500

Note: In voltage range 0-1kV and in temperature range 18-28° C is total accuracy given by basic accuracy of nominal value. In voltage range 1-5kV and in temperature range without 18-28° C is total accuracy given by basic accuracy of nominal value + influence of voltage coefficient + influence of temperature coefficient.