DENVER
metrología electrónica, S.L.

M-109R *High Resistance Decade*

- **calibration of insulation meters and megaohm meters**
- **4 decades**
- **range 1 MOhm – 12 GOhm**
- **maximum working voltage 5 kV DC**
- **internal accumulator / power line adapter**
- **serial interface RS 232 control**

MEATEST

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Specification

High Resistance Decade Box M-109R

Range of resistance	:	1 MΩ - 12.221 GΩ
Maximum voltage	:	5kV DC between terminals H-L, H-⊥, L-⊥
Connection	:	two-terminal, three-terminal (GUARD)
Type of terminals	:	high voltage terminals with ERTALYTE isolation
Remote control	:	serial interface RS-232
Supply	:	internal accumulator, power line supply adapter 15V (100-240V/50-60 Hz)
Temperature range	:	23 °C ± 5 °C
Relative humidity	:	10 - 50 %
Dimensions	:	364 mm x 111 mm x 316 mm
Weight	:	4 kg

Range	Nominal value accuracy	Voltage coefficient	Temperature coefficient	Maximum voltage
	[%]	[± ppm/V]	[± ppm / °C]	[V DC/ RMS]
1 MΩ - 11 MΩ	**0.1**	**1**	**< 100**	**1000/700**
10 MΩ - 110MΩ	**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

For example: (1GOhm, 5kV, 38°C)
*Total accuracy : 0,5% + (5000V-1000V)*2ppm/V + (38° C-28°C)*100ppm/°C =1,4%*

Isolation resistance of relays	$> 10^{15}$ Ω
Surface resistance of ERTALYTE	$> 10^{16}$ Ω
Specific resistance of ERTALYTE	$> 10^{16}$ Ω.cm

High resistance decade box is aimed for calibrating of insulation meters and megaohm-meters. It is suitable for calibration laboratories and service centres, where 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 RS-232.

Content of delivery

High resistance decade M - 109R
Power line adapter
Cable RS-232
Software
User's manual

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