

# M194

# High Resistance Decade



## HIGHLIGHTS

- Calibration of insulation testers and megohmmeters
- Resistance range 10.00 kΩ - 100.0 GΩ
- Resistance accuracy 0.1 to 1 %
- Maximum test voltage 6 kV
- Short current mA - meter
- Hot switching
- Timing function
- RS232 (optionally USB, IEEE488, Ethernet)

## DESCRIPTION

M194 High Resistance Decade is based on M6xx Series Real-Resistance Programmable Decades, providing cutting-edge performance, user-friendly calibration of resistance ranges as well as test meter ranges, timer and short current testing of UUTs. Main feature of M194 is adjustable high resistance decade in continuous range from 10 kΩ to 100 GΩ with 4 digit resolution. Designed for maximum operating voltages of up to 6 kVDC this decade is great for calibration of meggers, megohmmeters and insulation testers. Accuracy from 0.1 %.

Full remote control and automated calibration support is a standard for all Meatest instruments. On top of that, M194 comes with 4 interfaces (RS232, USB, LAN and GPIB) to match your system more easily.

## SPECIFICATION

Specifications below describe 1-year absolute accuracy, 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 time	15 minutes
Reference temperature	+21 °C – +25 °C
Operating temperature	+5 °C – +40 °C
Storage temperature	-10 °C – +50 °C
Temperature coefficient	10 % of accuracy / °C outside Tref
Max relative humidity	< 70 % RH, < 50 % RH above 10 GΩ
Power supply	115/230V - 50/60 Hz
Dimensions (W x H x D)	390 x 128 x 425 mm
Weight	4,5 kg
Interfaces	RS232, (optionally IEEE488, USB, Ethernet)

### Resistance

#### Range, resolution, 1 year accuracy

Range	Accuracy <sup>1</sup>	Maximum test voltage <sup>2</sup>
10.00 kΩ – 99.99 kΩ	0.1 %	65 V
100.0 kΩ – 999.9 kΩ	0.1 %	315 V
1.00 MΩ – 1.99 MΩ	0.1 %	1250 V
2.00 MΩ – 9.999 MΩ	0.1 %	2500 V
10.00 MΩ – 99.99 MΩ	0.1 %	6000 V
100.0 MΩ – 999.9 MΩ	0.2 %	6000 V
1.000 GΩ – 9.999 GΩ	0.5 %	6000 V
10.00 GΩ – 100.0 GΩ <sup>3</sup>	1.0 %	6000 V

<sup>1</sup> Accuracy is valid within reference temperature range  $23 \pm 2$  °C with RH < 50%.

<sup>2</sup> Maximum measured DC test voltage is 5% over the specified range.

<sup>3</sup> 1 minute settling time for full accuracy.

### Short current measurement

Current range	0.00 – 10.00 mA DC
Input resistance	100 Ω nom.
Current meter accuracy	0.2 % + 25 μA

### Test voltage measurement

Voltage ranges	5 V – 400 V up to 1 MΩ 0.05 kV – 6 kV from 1 MΩ up to 100 GΩ
Uncertainty	0.5 % + 2 V up to 1 MΩ 0.5 % + 10 V from 1 MΩ up to 100 GΩ