M632

Precision Resistance Decade Box

HIGHLIGHTS

- **Real resistors switched by relays**
- **Resistance range 1.000 00 Ω – 1.200 00 MΩ**
- **Accuracy from 20 ppm / 0.01 °C**
- **Custom units and time sequences**
- **No residual resistance**
- **Six language packs**

DESCRIPTION

M632 is 20 ppm programmable real-resistance decade box for calibration laboratories and flagship of Meatest's resistance calibration. Containing some of the most stable (and expensive) foil resistors available, the M632 has just 1 ppm/°C temperature coefficient and can be used for AC applications as well, typical frequency responses are listed below.

M6xx series was made to make resistance calibration as easy as it gets. Large LCD shows all related parameters including total accuracy. And there is no residual resistance or hidden absolute error so you don't have to calculate it by yourself, accuracy you see is what you get. And that's not the only thing that firmware sorts out for you. Would you like the resistance shown in temperature units? Distance? Force? RTD and user function will do this for you. Complete recalibration? Ten minutes and off you go.

All decades' functions can be remotely controlled via RS232, USB, LAN or GPIB interface. This way you can introduce calibration/test stage directly into production line of any resistance based sensor and reduce time required for final quality tests dramatically.

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.

Resistance

Range summary	1 Ω – 1.2 MΩ
Maximum load ratings	200 Vpk, 0.5 A, 0.25 W (whichever is lower)
Reaction time	< 6 ms

Ranges, resolution, 1 year accuracy

Range	Accuracy
1.000 00 Ω – 2.000 00 Ω	0.002 % + 2 mΩ
2.000 1 Ω – 20.000 0 Ω	0.002 % + 2 mΩ
20.001 Ω – 200.000 Ω	0.002 % + 2 mΩ
200.01 Ω – 2000.00 Ω	0.003 %
2.000 1 kΩ – 20.000 0 kΩ	0.003 %
20.001 kΩ – 200.000 kΩ	0.003 %
200.01 kΩ – 1200.00 kΩ	0.005 %

AC-DC difference (typical, absolute value)

Resistance	100 Hz	1 kHz	10 kHz
1 Ω	0.01 %	0.02 %	0.20 %
10 Ω	0.01 %	0.01 %	0.04 %
100 Ω	0.01 %	0.05 %	0.50 %
1 kΩ	0.05 %	0.50 %	5.00 %
10 kΩ	0.50 %	5.00 %	
100 kΩ	5.00 %		

RTD Simulation

Platinum scales	IPTS68 (1.3850) ITS90 (1.3851) 1.3916 1.3926
Other scales	Nickel (6180) custom

Pt simulation accuracy

Range	Pt10 – Pt99	Pt100 – Pt20000
-200.000 – 0.000 °C	0.05 °C	0.01 °C
0.001 – 200.000 °C	0.06 °C	0.015 °C
200.001 – 500.000 °C	0.08 °C	0.03 °C
500.001 – 850.000 °C	0.1 °C	0.04 °C

Ni simulation accuracy

Range	Ni10 – Ni99	Ni100 – Ni20000
-60.000 – 300.000 °C	0.05 °C	0.01 °C

GENERAL DATA

Reference temperature	+20 °C – +26 °C
Operating temperature	+5 °C – +40 °C
Storage temperature	-10 °C – +50 °C
Temperature coefficient	< 1 ppm/ °C
Terminals	4mm gold plated
Power supply	115/230 Vac, 50/60 Hz
Dimensions (W x H x D)	390 x 128 x 310 mm
Weight	5.2 kg
Interfaces	RS232, IEEE488 + USB + Ethernet (optional)
Languages	English, German, French, Spanish, Russian, Czech