



Programmable Decades OCM631 and OCM632



- ✓ 1.00000 Ohm - 1.20000 MOhm
- ✓ Accuracy ± 30 ppm
- ✓ Operating Voltage to 200V
- ✓ Simulation of RTD
- ✓ Simulation Accuracy $\pm 0.01^\circ\text{C}$
- ✓ Customized Tables
- ✓ RS232, Option: USB, IEEE488, LAN

Versions

OCM631 **16 Ohm - 400 kOhm**
Suitable for temperature simulation

OCM632 **1 Ohm - 1.2 MOhm**
Suitable for universal use

OCM631 and **OCM632** are precision Resistance Decades with free setting of resistor value within 1 Ohm and 1.2 MOhm and base accuracy of 0.003%. The best resolution of the lowest range is 10 μOhm . The instruments contain high stable foil resistors with extremely low temperature coefficient switched by low thermal voltage relays. The internal microcontroller calculates parallel and serial combinations of internal firm resistors in order to achieve best accuracy of the selected value.

The build-in software contains function of RTD temperature sensor simulation with parameters

according to IEC (DIN) or US standards. The temperature can be set in degree Celsius or Fahrenheit. Remote control via RS232, USB, GPIB or LAN is available.

The Decades are sophisticated instruments with their own recalibration procedure which enables to correct any deviation in resistance without mechanical adjustments.

They are designed for checking parameters of resistance meters, regulators and process meters using external resistance sensors.

Resistance

RESISTANCE	14:33:45	Function
100.000	Ω	
Output	100.000 Ω	
Specification	0.0040 %	
Max. Voltage	5.00 V	
Max. Current	50.0 mA	
	Menu	

Temperature

PLATINUM	10:18:59	Function
100.000	$^\circ\text{C}$	
Output	138.505 Ω RD 100.000 Ω	
Specification	0.015 $^\circ\text{C}$	
Max. Voltage	5.88 V	
Max. Current	42.5 mA	
	Menu	

Recalibration

CALIBRATION	Previous
Resistance	1 / 37
Nominal resistance	1.95 Ω
Requested accuracy	1 m Ω
Last calibrated	07-02-2012
\updownarrow 1.9443810 Ω	Close

SPECIFICATIONS (Reference Temperature 20°C ... 26°C)

OCM631 Accuracy

Range / Resolution	Accuracy
16.000 0 Ω - 20.000 0 Ω	0.002 % + 2 mΩ
20.001 Ω - 200.000 Ω	
200.01 Ω - 1000.00 Ω	0.003 %
1000.1 Ω - 3000.0 Ω	0.005 %
3001 Ω - 10000 Ω	0.015 %
10.01 kΩ - 30.00 kΩ	0.03 %
30.1 kΩ - 100.0 kΩ	0.1 %
101 kΩ - 400 kΩ	0.4 %

OCM632 Accuracy

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

OCM631 Pt Simulation Accuracy

Temperature	Accuracy Pt100 ... Pt500	Accuracy Pt1000
-200.000...0.000 °C	0.01 °C	0.01 °C
0.001...200.000 °C	0.015 °C	0.02 °C
200.001...500.000 °C	0.03 °C	0.04 °C
500.001...850.000 °C	0.04 °C	0.1 °C

OCM632 Pt Simulation Accuracy

Temperature	Accuracy Pt100 ... Pt10000
-200.000...0.000 °C	0.01 °C
0.001...200.000 °C	0.015 °C
200.001...500.000 °C	0.03 °C
500.001...850.000 °C	0.04 °C

Typical Frequency Response OCM631

R	AC/DC Difference		
	100Hz	1kHz	10kHz
16Ω	0.01 %	0.01 %	0.04 %
100 Ω	0.01 %	0.03 %	0.30 %
1 kΩ	0.03 %	0.30 %	3.00 %
10 kΩ	0.30 %	3.00 %	
100 kΩ	3.00 %		

Typical Frequency Response OCM632

R	AC/DC Difference		
	100Hz	1kHz	10kHz
1Ω	0.01 %	0.02 %	0.2 %
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 %		

OCM631 Simulation Accuracy

Temperature	Accuracy Ni10...Ni99	Accuracy Ni100...Ni20000
-60...0.00 °C	0.01 °C	0.01 °C
0.001...300 °C	0.01 °C	0.02 °C

OCM632 Simulation Accuracy

Temperature	Accuracy Ni10...Ni99	Accuracy Ni100...Ni20000
-60...300 °C	0.05 °C	0.01 °C

Temperature Coefficient OCM631

< 1 ppm /°C (16 Ω ... 2 kΩ)
 < 5 ppm /°C (2 kΩ ... 10 kΩ)
 < 50 ppm /°C (10 kΩ ... 400 kΩ)

Temperature Coefficient OCM632

< 1 ppm /°C

General Specifications

Maximum Voltage 200V p-p
 Maximum Load 0.25W
 Reaction Time 6 ms

Switching methods Fast / Smooth / Via Short / Via Open
 Terminals gold plated 4mm
 Remote Control RS232. Options: USB, IEEE488, LAN
 Supply 115/230VAC, 50-60Hz
 Reference Temperature 20°C ... 26°C
 Working Temperature 5°C ... 40°C
 Storage Temperature -10°C ... 50°C
 Dimensions, Weight 390 x 128 x 310mm (B x H x T), 5,2kg

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