

# M-612 Precision RTD Simulator



- **Calibration of temperature controllers**
- **Resistance range from 16.0000  $\Omega$  to 10.000 k $\Omega$**
- **Simulation of Pt and Ni sensors**
- **Accuracy +/- 0.02 °C**
- **Temperature stability < 1ppm / °C**
- **2, 3 and 4 wire connection**
- **Simulation of cable resistances**
- **Interface RS 232 (IEEE488 optionally)**

RTD simulator is aimed for calibrating of temperature controllers. It is suitable for calibration laboratories and service centers, where it can be used also as computer controlled resistance decade.

The instrument is supplied from accumulator or power line adapter. The Control is possible manually or remotely via serial interface RS-232 or IEEE488.

## Technical parameters

<b>Resistance range</b>	:	16,0000 – 10 000 $\Omega$
<b>Total power dissipation</b>	:	0,3 W
<b>Rated current</b>	:	100 mA (16 – 30 $\Omega$ ) 50 mA (30 – 100 $\Omega$ ) 20 mA (100 – 500 $\Omega$ ) 10 mA (500 – 3000 $\Omega$ ) 5 mA (3000 – 10 000 $\Omega$ )
<b>Range of temperature simulation</b>	:	-200 ... 850 $^{\circ}\text{C}$
<b>Simulated RTDs</b>	:	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni1000
<b>Temperature scales</b>	:	IPTS68, ITS90
<b>Type of Pt sensors</b>	:	DIN (1,385), US (1,392)
<b>Type of Ni sensors</b>	:	DIN 43760 (6 180)
<b>Total power dissipation</b>	:	0,3 W
<b>Operating voltage</b>	:	120 V DC, 50 Vef AC
<b>Connection</b>	:	2, 3 and 4 wire systems
<b>Remote control</b>	:	RS232 interface (optionally IEEE488)
<b>Supply</b>	:	internal accumulator, power line supply adapter 100-240V/50-60 Hz
<b>Reference temperatures</b>	:	+18 $^{\circ}\text{C}$ ... +28 $^{\circ}\text{C}$
<b>Working temperatures</b>	:	+5 $^{\circ}\text{C}$ ... +40 $^{\circ}\text{C}$
<b>Storage temperatures</b>	:	-10 $^{\circ}\text{C}$ ... +50 $^{\circ}\text{C}$
<b>Instrument case</b>	:	all - metal
<b>Dimensions</b>	:	W 364 mm, H 111 mm, D 316 mm (without holder)
<b>Weight</b>	:	4 kg

### Accuracy of Pt sensor simulation

Temperature	Pt100	Pt200	Pt500	Pt1000
-200.000 ... 200.000 $^{\circ}\text{C}$	0.02 $^{\circ}\text{C}$	0.02 $^{\circ}\text{C}$	0.02 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$
200.001 ... 500.000 $^{\circ}\text{C}$	0.03 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.15 $^{\circ}\text{C}$
500.001 ... 850.000 $^{\circ}\text{C}$	0.04 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.15 $^{\circ}\text{C}$	0.20 $^{\circ}\text{C}$

### Accuracy of Ni sensor simulation

Temperature	Ni100	Ni1000
-60.000 ... 300.000 $^{\circ}\text{C}$	0.02 $^{\circ}\text{C}$	0.1 $^{\circ}\text{C}$

### Accuracy of resistance

Range	Accuracy [ % of value ]
16.0000 $\Omega$ ... 399.99 $\Omega$	0.003 % + 3 m $\Omega$
400.00 $\Omega$ ... 2000.0 $\Omega$	0.005 %
2001 $\Omega$ ... 10000 $\Omega$	0.015 %

### Content of delivery

Precision RTD Simulator M612  
Power line adapter  
Cable RS 232 (for RS232 basic version only)  
Application software  
User's manual

### Ordering information – options

**Bus** M612-V1xxx - RS232  
M612-V2xxx – IEEE488

**Additional functions** M612-Vx0xx - none  
M612-Vx1xx – Short / Open

**Housing** M612-Vxx0x – table version  
M612-Vxx1x - module 19", 3HE