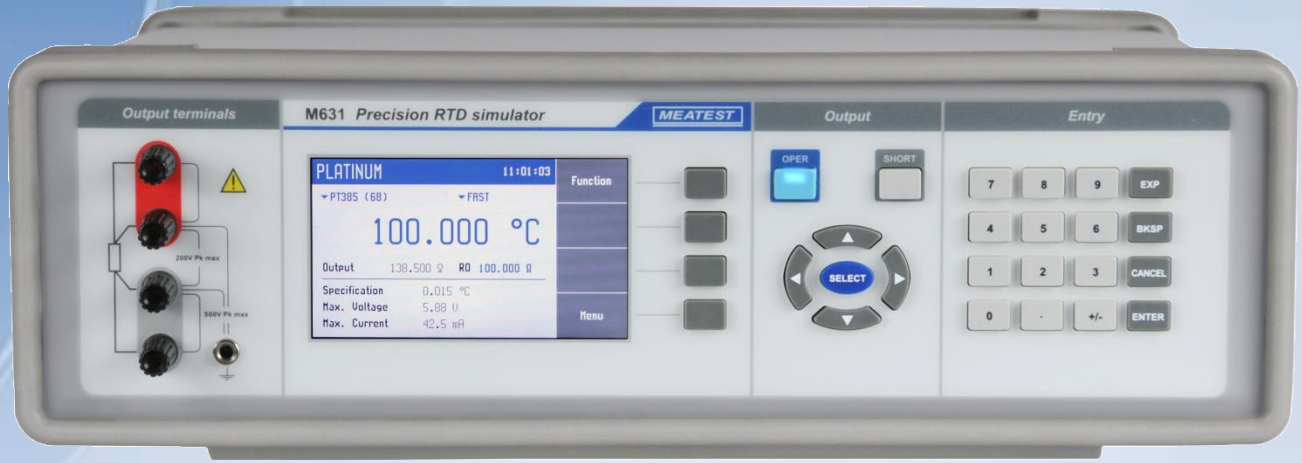


M600 Series

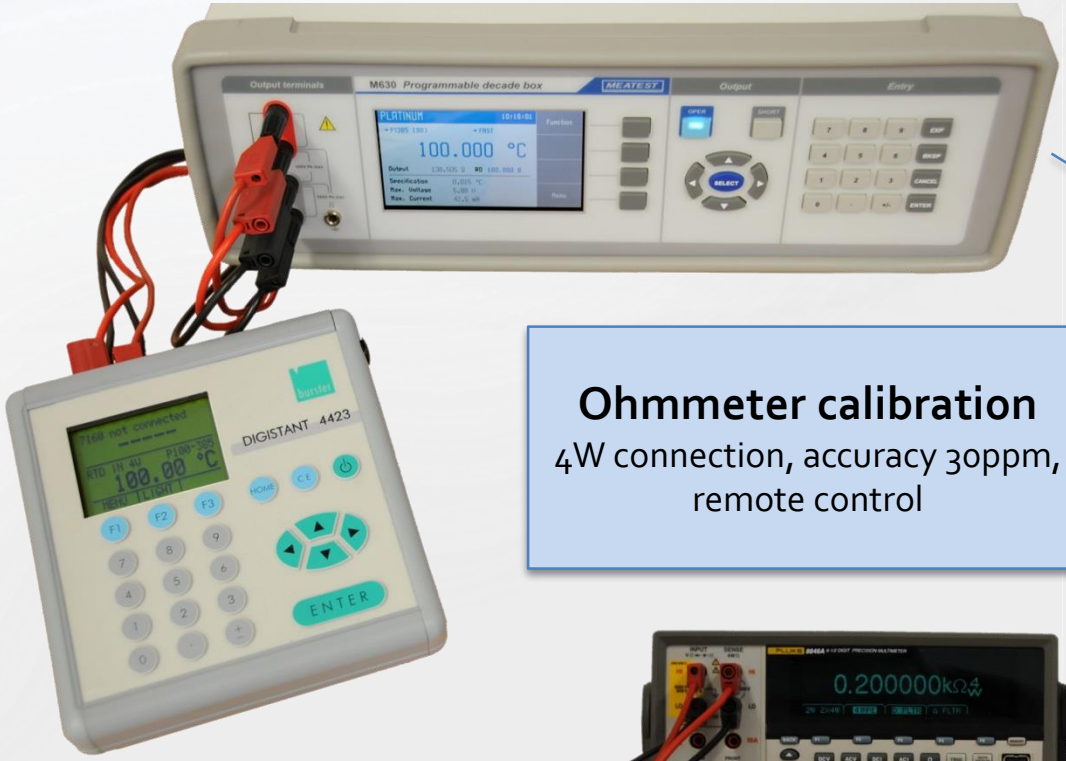
Programmable Resistance Decades and RTD Simulators

MEATEST

Main features

- ✓ Parallel binary decade with relay switching
- ✓ Extremely high resolution over low resistance values (1μΩ)
- ✓ Very low thermoelectric voltage
- ✓ No residual resistance Ro
- ✓ Easy recalibration using front panel keyboard
- ✓ IEEE488 / RS232 / USB / Ethernet remote control

Application



Thermometer calibration
4W connection, accuracy 0.01°C, remote control

Ohmmeter calibration
4W connection, accuracy 30ppm, remote control

M600 Series Programmable Resistance Decades and RTD Simulators

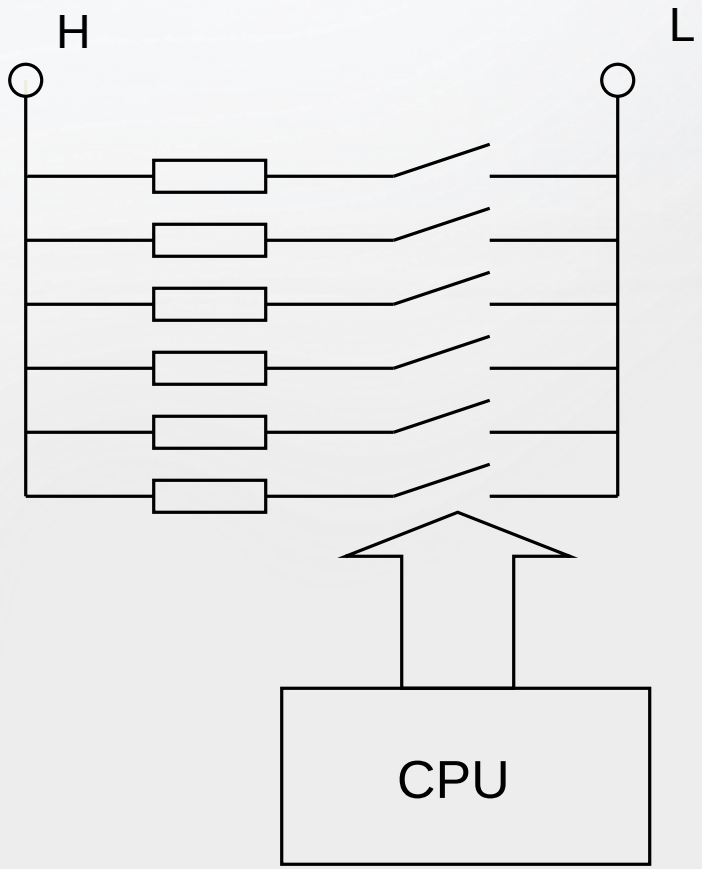
Application

Checking of meters (evaluation units) connected to resistance based sensors:

- position sensors
- rotary sensors
- temperature sensors

Very accurate and fast computer controlled simulation.

Electric principle



- Parallel combination of resistors
  - Fine resolution over low resistances
- Special relays
  - Low residual parameters
  - Low thermo voltage
- Precise foil resistors
  - Excellent metrology parameters

M632 Precision Resistance Decade

Highest accuracy, wide range

Range

1Ω … 1.2 MΩ

Accuracy

20 ppm

Resolution

10 μΩ

Maximum load

0.25 W, 200 V, 0.5 A

M631 Precision RTD Simulator

Highest accuracy, limited range

Range

16Ω … 400 kΩ

Accuracy

0.01°C

Resolution

0.001°C

Maximum load

0.25 W, 200 V, 0.5 A

M642 Programmable Resistance Decade

high load limit, widest range

Range

0.1 Ω … 20 MΩ

Accuracy

0.02%

Resolution

1 µΩ

Maximum load

5 W, 200 V, 0.5 A

M641 Programmable RTD Simulator

High load limit, limited range

Range

10 Ω … 300 kΩ

Accuracy

0.1°C

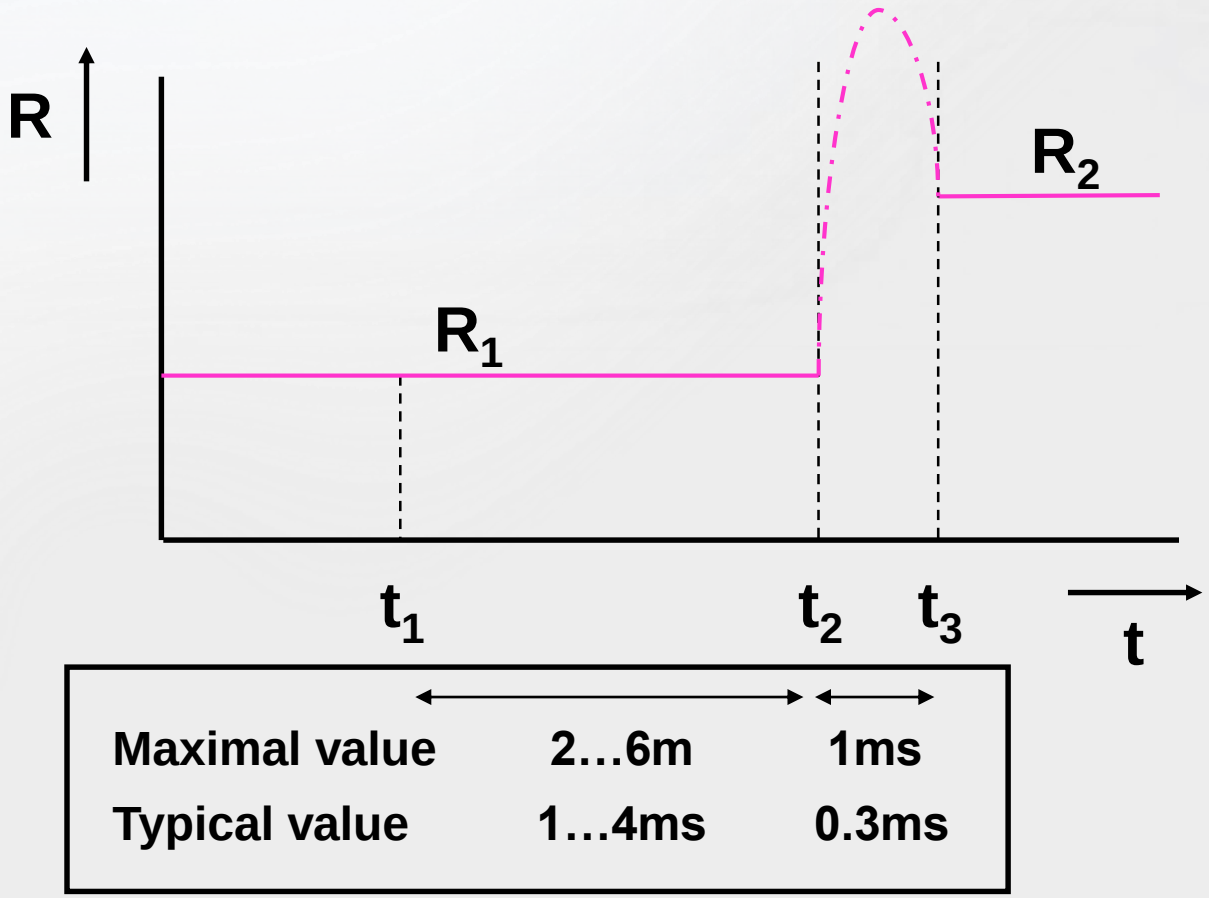
Resolution

0.01°C

Maximum load

5 W, 200 V, 0.5 A

Switching diagram

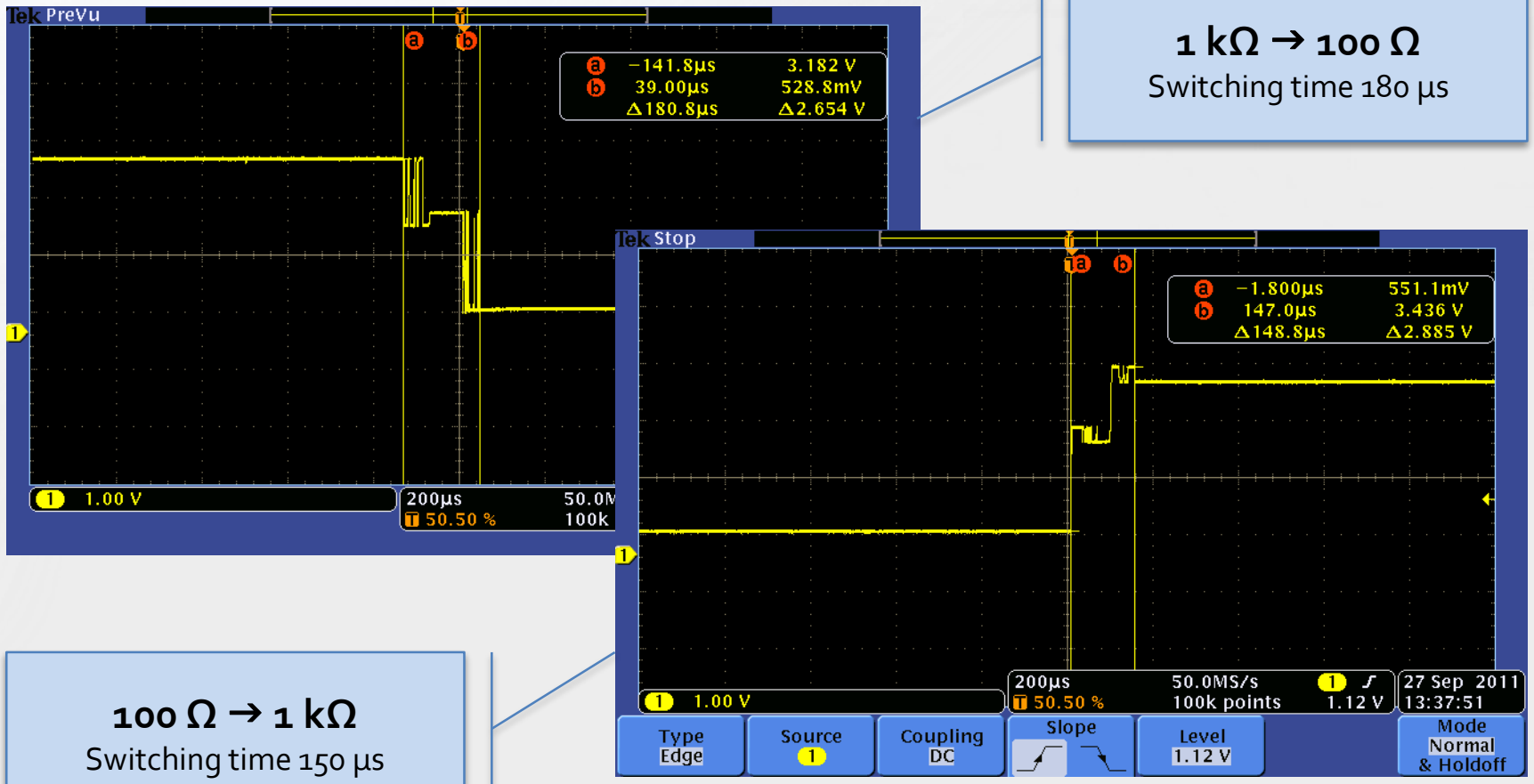


t_1 – change request

t_2 – start of switching

t_3 – end of switching

Switching diagram - example



1 kΩ → 100 Ω
Switching time 180 µs

100 Ω → 1 kΩ
Switching time 150 µs

Industrial version

Design for industry – 19“ rack module, height 3HE

Overview

	Usage	Range	Resolution	Max. load	Interfaces (RS232 std.)	Accuracy
M632	Resistance Decade	1 Ω – 1.2 MΩ	10 μΩ	0.25 W	USB,GPIB,LAN	0.002 %
M642		0.1 Ω – 20 MΩ	1 μΩ	5 W	USB,GPIB,LAN	0.02 %
M631	RTD Simulator	16 Ω – 400 kΩ	0.001°C	0.25 W	USB,GPIB,LAN	0.01°C
M641		10 Ω – 300 kΩ	0.01°C	5 W	USB,GPIB,LAN	0.1°C