

Pt100 Simulators

Model 4503E/S/SE, 4504E, 4503S-MET 400

Code:	4503 EN
Delivery:	ex stock/6 weeks
Warranty:	24 months

New!
Calibrator for
medical electro thermometers
series MET 400 resp. YSI 400



- 30 fixed points in a wide temperature range
- Calibration to DIN EN 60751
- Simulation of cable resistances up to 40 Ω
- Resistor material MANGANIN®, TK < 10 ppm/K
- Sturdy aluminium-housing
- Simulation range from - 200 °C up to 850 °C

Application

An instrument that simulates Pt100 resistance thermometers accurately over a wide temperature range is very useful for the testing of industrial temperature measuring and control devices.

The Pt100 simulators of the models 4503, 4503S and 4504 are the answer to such requirements. A special advantage of these simulators is the direct reading of 30 calibration points in centigrades (°C), whereby any trouble some checking with tables is rendered unnecessary .

The standard simulator model 4503 has 30 fixed calibration points within a range from - 200 °C to 800 °C. Many years of experience have shown the need for the Pt100 simulator model 4504 with 30 calibration points a restricted range from - 30 °C to 100 °C. Such a restricted temperature ranges is of great interest, e.g. the food industry. In dairies, breweries, at ice-cream factories and similar plants the Pt100 simulator model 4504 is the measuring instrument for daily use. Also this simulator is used in industries associated with household appliances, in power and heating plants and the like.

The Pt100 simulator model 4503S is required, if measurement and control units have to be adjusted or checked. Of course, the simulator is also used, if there are problems with the fixed temperature values of standard model.

The Pt100 simulators are small-sized, rugged and designed for field applications. A functional leather carrying case, which is available as an accessory, serves to protect the instrument. Pt100 simulators are also well-suited for laboratory use.

Description

A compact, sturdy alu-housing, provided with 4 mm terminals in industrial standard, accommodates a high-class switch with wire-wound precision resistors of MANGANIN®. By this selector switch 30 fixed temperature values according to DIN EN 60751 (specification for the resistance thermometer Pt100) are simulated. The simulated resistor value which corresponds to the selected temperature will be picked up at the output terminals "R_{sim}".

Another three terminal sockets are used to simulate connecting cable resistances between 0 and 40 Ω. The selector switch of model 4503 S is programmed with 30 temperature calibration points as individually given by the customer within a range from - 200 °C to + 850 °C in this range every temperature value possible.

The used resistance material MANGANIN® in the instrument has a temperature coefficient of < 10 ppm/K. Therefore the ambient temperature needs not to be taken into account.

A particular advantage of all simulators is that the desired temperature can be set in °C and the corresponding resistance value is directly available at the output sockets. NTC and other measurements of resistance in ranges up to 100 kΩ are possible.

Technical Data

Model	Kind of Simulation	Adjustable Temperature Values in [°C]						Delivery Time*
4503 4503 E*	Pt100 standard	- 200 0 + 60 + 250 + 550	- 150 + 10 + 80 + 300 + 600	- 100 + 20 + 100 + 350 + 650	- 50 + 30 + 120 + 400 + 700	- 20 + 40 + 150 + 450 + 750	- 10 + 50 + 200 + 500 + 800	ex stock
4503 S 4503 SE*	Pt ... according to customer specifications	Please indicate 30 values within the range, from - 200 bis + 850 °C in this range every is possible						approx. 6 weeks
4503S MET 400	MET 400 and/or YSI Series 400	0 + 39	+ 10 + 41	+ 20 + 45	+ 30 + 50	+ 35 0 Ω	+ 37	approx. 8 weeks
4504 4504 E*	Pt100 standard	- 30 - 6 + 6 + 30 + 60	- 25 - 4 + 8 + 35 + 65	- 20 - 2 + 10 + 40 + 70	- 15 0 + 15 + 45 + 80	- 10 + 2 + 20 + 50 + 90	- 8 + 4 + 25 + 55 + 100	ex stock

*built-in version (without case)

Temperature values: 30 fix temperature values see table

Calibration: according to DIN EN 60751

Accuracy:

$$\pm (0.082 + 0.0003 \cdot t) \text{ in } ^\circ\text{C} \quad [t = \text{input value in } ^\circ\text{C}], \quad \text{for } t > - 50 \text{ } ^\circ\text{C}$$

$$\pm (0.16 + 0.0006 \cdot t) \text{ in } ^\circ\text{C}, \quad \text{from } t - 200 \text{ } ^\circ\text{C to } - 50 \text{ } ^\circ\text{C}$$

Simulation of connecting cable resistances:

0, 5, 10, 20, 25, 30, 40 Ω

Temperature coefficient:

< 10 ppm/K
a wire-wound MANGANIN®-resistor is used for each temperature value

Longterm stability:

0.02 % over years

Precision switch:

short-circuit switching

Switch contacts:

electrolytic copper plated with silver and gold

Housing:

aluminium case for good shielding

against electric interferences

Weight:

approx. 600 g

Order Information

Pt100 simulator model 4503 S / - 40, - 15, 0, + 15 ... °C (30 values)

Pt100 simulator, built-in version, - 200 °C to + 800 °C, model 4503

Accessories

Modern, functional bag with carrying straps for protection and transport of all models

Model 4592

1 pair banana plugs (red/black) with clamp-connection

Model 4498

	2-Wire Connection	3-Wire Connection	4-Wire Connection
Additional resistance	≤ 8 mΩ	≤ 4 mΩ	no additional error
Additional temperature error	≤ 0.02 K	≤ 0.01 K	

DKD calibration or factory calibration

A total of 30 values for the resistance and the associated calculated temperature values are stated on the calibration certificate.

The specified measurement uncertainty on the DKD calibration certificate is better than the factory calibration certificate by a factor of at least 3.

Order Code: 45 DKD-4503/04

Order Code: 45 DKD-4503S

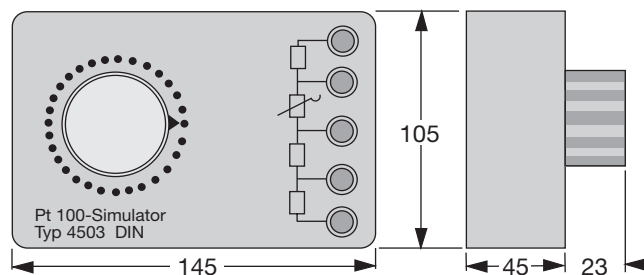
Order Code: 45 WKS-4503/04

Order Code: 45 WKS-4503S

Order Code: 45 DKD-4503S-MET 400

Order Code: 45 WKS-4503S-MET 400

Dimensions



Connection example calibration of a test circuit

