Digital Pt 100 - Simulator

Type 4501

Code:	4501 E
Manufacturer:	burster
Delivery:	ex stock
Warranty:	12 months
Issue:	1.7.2001

4501-E

- **Simulation range -100 °C up to +500 °C**
- **Resolution 0.1 °C**
- **Calibration in accordance to DIN EN 60751**
- **Simulation of line resistance 10 Ω, 20 Ω or 30 Ω**
- **Compact, easy to handle aluminium-housing**

Application

Wherever temperatures are measured, temperatures must also be simulated. The Pt-simulator is suitable for a wide area of applications. It has a wide range of simulation, which is resolved in 0.1 deg. C steps and makes many assignments in chemistry-, measuring-, controlling-, medicine and household applications, food industry, vehicle construction, air- and space travel and power plants easy to solve. Often in the past several simulators had to be used alongside to achieve either resolution or the range of the relevant application. As an extra advantage to the user temperatures can be entered in degrees celsius. Additional extensive conversions and readings in tabulation sheets are no longer necessary.

Description

There are five precision decade switches in a sturdy metal housing. The desired temperature value is selected in four steps with a 0.1 degree celsius resolution in ranges from - 100 degree celsius to max. 500 degree celsius. According to DIN EN 60751 the precision resistors simulate the temperature values for the Pt 100 resistor. The simulated temperature value is called on the output plugs "R". If required, the line resistance can also be simulated in steps of 10, 20 and 30 Ω. The celsius scale, displaced by 273,15 K opposite the absolute temperature stipulates that an additional switch-over of polarity is performed at negative celsius temperature values. The simulator is high ohmic at wrongly entered + or signs. An unintentional misuse is practically impossible. The switches are implemented in a short-circuit control manner. The precision resistors in the 100 deg. decade will therefore be switched parallelly at the moment of switch-over, in all other decade steps there is no effect at switch-over. The used resistor material MANGANIN® has a temperature coefficient smaller 10 ppm/K. This makes a consideration of the environmental temperature normally superfluous.

Technical Data

Simulation range:	-100 °C bis + 500 °C
Absolute accuracy:	± 0.5 °C
Resolution:	0.1 °C
Calibration:	According to DIN EN 60751
Switches:	5 precision switches in very low-ohmic design
Temperature coefficient:	$\pm (8 \cdot 10^{-3} + 3 \cdot 10^{-5} \cdot t) \cdot \Delta \vartheta$ [t = simulated temperature in degrees C, $\Delta \vartheta$ = difference of surrounding temperature to 23 degrees C]
Measuring current:	max. 50 mA
Operating temperature:	+ 5 °C ... + 23 ... + 50 °C, ... 80 % relative humidity, non-condensing
Storage temperature:	0 ... 60 °C
Insulation resistance:	> 100 MΩ
Connection:	4-wire
Connection plugs:	ø 4 mm
simulation of connecting cable resistances: 10 Ω, 20 Ω, 30 Ω ±1%	
Long-term stability:	< 0.1 K/year
Resistance material:	MANGANIN®, T_K < 10 ppm/K
Housing: aluminium case; shields well against electric interferences	
Dimensions (W x H x D):	150 x 70 x 105 [mm]
	6 x 2 3/4 x 4 1/8 [inches]
Weight:	500 g

Order Information

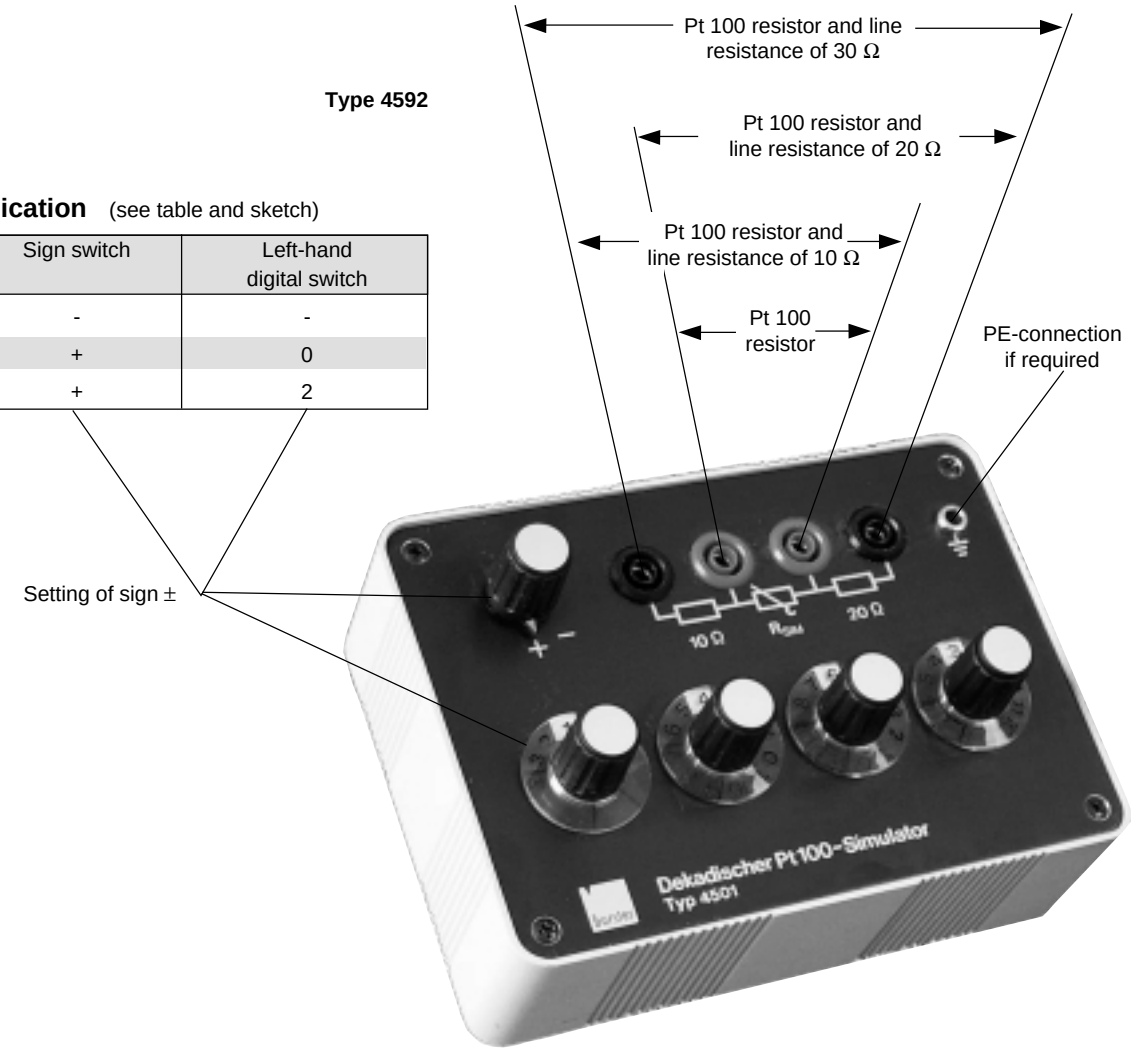
Digital Pt 100-Simulator **Type 4501**

Accessories

Leather bag **Type 4592**

Examples for Application (see table and sketch)

Temperature to simulate	Sign switch	Left-hand digital switch
- 89.5 °C	-	-
+ 89.5 °C	+	0
+ 200 °C	+	2



Technical Data reserved