Simulator KA 7531-1



Simulator
for Pt100, thermocouples,
mV, V, mA, Hz
Option PC interface

Technical features

- Universal manual simulator for simulating temperature sensors and process variables when testing measuring instruments, regulators, and other equipment
- Pt100 simulation with 5 fixed resistors in 4-conductor technology. Voltage and thermocouples simulation with 15-bit D/A converter. Current simulation with 15-bit D/A converter. Frequency and pulse generator with quartz-crystal oscillator. Continuity check with settable threshold
- All signals are available at the same time.
- Signals can be set either manually or automatically, in step or ramp form.
- All signals and all the programming can be shown on the illuminated graphics display.
- Connection of peripherals via ALMEMO® clamp connectors, cable with anti-kink protective sleeve and strain relief
- Power supply via battery or mains unit
- Modern, compact housing - also suitable for DIN top-hat rail mounting
- Option of PC-controlled operation via all ALMEMO® data cables.

Technical data

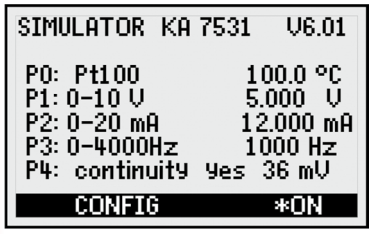
Signal Pt100	5 discrete resistance values in 4-conductor technology
	0 / 50 / 100 / 200 / 300 °C
Accuracy	±0.1 °C
Temperature drift	0.01 °C / K
Signal voltage	15-bit DAC electr. isolated
-10 to +60.000 mV	load > 1 MΩ
-3 to 10.000 V	load > 100 kΩ
Accuracy	± 0.05 % of measured value
	± 0.05 % of final value
Temperature drift	20 ppm / K
Time constant	100 µs
Thermocouples	type K, N, T, J (ITS90)
	resolution: 0.1 K
	type S, R, B (ITS90)
	resolution: 1 K
Accuracy	± 0.05 % of measured value
	± 0.05 % final value
CJ - temperature	-30..100 °C
Signal current	15-bit DAC electr. isolated
0 to 20.0 mA	load < 500 Ω
Accuracy	± 0.05 % of measured value
	± 0.05 % of final value
Temperature drift	20 ppm / K
Time constant	100 µs

signal frequency	1..4000 Hz, 0.01..10.00 kHz,
	0.1..40.0 kHz, 1..100 kHz
Pulse width	1 to 99 %
Accuracy	corresponds to the resolution
Pulse range	
Period	2 µs...99.999 ms, 2 ms...99.999 s
Pulse	1 µs...99.998 ms, 1 ms...99.998 s
Accuracy	0.01 %
Continuity	current approx. 1 mA
Threshold	0 to 1000 mV
Power supply	10..12 V DC
Battery	3 Mignon Alcaline
Current consumption	(Battery): approx. 30 mA
Voltage and Current output	approx. 80 mA + 4 x IOUT,
with illumination	approx. 40 mA additional
Display	graphics 128 x 64 (55 x 30 mm)
Illumination	2 white LEDs
Keypad	7 silicone keys (4 soft-keys)
Housing	(LxWxH) 127 x 83 x 42 mm
	ABS (-10 to +70 °C), 290 g
Operating range	
Operating temperature	-10 ... +50 °C
(Storage temperature	-20 ... +60 °C)
Ambient humidity	10 ... 90 % rH (non-condensing)

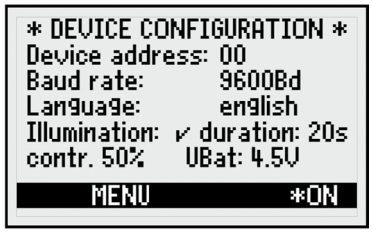
11/2025 • We reserve the right to make technical changes.

Test Instrument

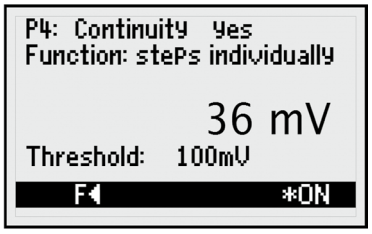
Displays (examples)



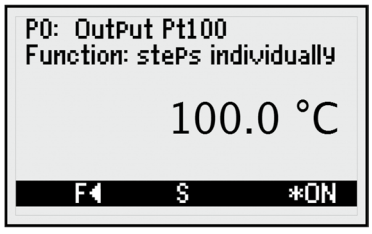
Main menu



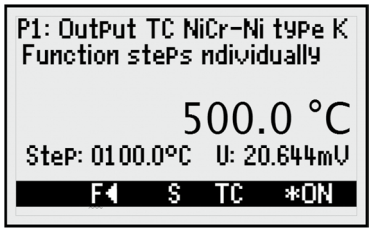
Device configuration



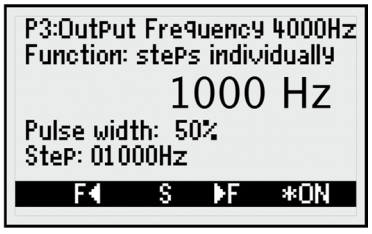
Continuity tester



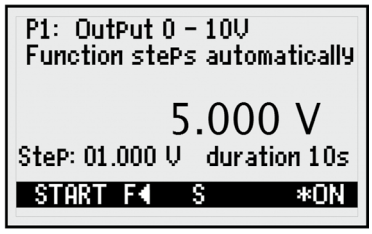
Pt100 resistance values



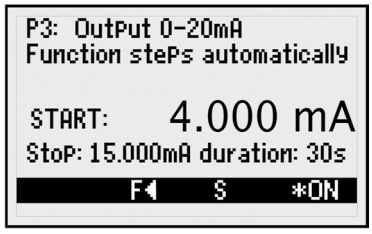
NiCr-Ni step generator



Frequency pulse generator



0 to 10 V step generator



0 to 20 mA ramp generator

Accessories

	Order no.
ALMEMO® clamp connector (for Pt100 or universal use)	**ZA1000TS**
ALMEMO® connecting cable with 2 banana plugs and 2 test probes	**ZA1000TK**
Mains adapter 12 V / 1.5 A	**ZA1312NA12**
USB data cable, electrically isolated	**ZA1919DKU**
V24 data cable, electrically isolated	**ZA1909DK5**
Fixture for top-hat rail mounting	**ZB2490HS**
Rubber guard, gray	**ZB2490GS2**

Options

Order no.

DAkkS accredited calibration certificate for Simulator KA7531:
DAkkS accredited calibration fulfills the requirements of DIN EN ISO/IEC 17025 for test equipment (e.g. for monitoring production processes or quality assurance of products). Calibration is carried out by a DAkkS accredited laboratory using the comparison method against reference standards that are traceable to national standards.
Calibration in 6 measuring ranges: Pt100 (5 points) and (3 points each) voltage 10 V, voltage 50 mV, current 20 mA, thermocouple type K, frequency Hz, package offer **KE9006D**

Factory calibration certificate for Simulator KA7531:
Electrical Calibration according to the comparison method compared reference standards that are traceable to national standards.
Calibration in 6 ranges: Pt100 (5 points), and (3 points each) voltage 10 V, voltage 50 mV, current 20 mA, thermocouple type K, frequency Hz
Package Offer **KE9006W**
Addressable PC interface **OA7531I**

Included as standard

Order no.

Simulator, 5 sockets for Pt100, thermocouples or -4 to 10 V, 0 to 20 mA, frequency, continuity tester, Graphics display and keypad, sockets DC, A1, batteries, including manufacturer's test certificate, 1 ALMEMO® clamp connector (for Pt100) and ALMEMO® connecting cable with 2 banana plugs and 2 test probes **KA75311**