



RK TECHNOLOGIES

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RK15+

Process Calibrator

✦ DMM + SOURCE + LOOP | 0.05% ACCURACY | IP65 | CAT IV 600V

Battery Powered | DC Voltage / Resistance | TC & RTD Measure & Source



PRODUCT OVERVIEW

The RK15+ is a professional industrial process calibrator that combines a 55000-count True RMS digital multimeter with a precision process signal source — all in a single IP65-rated handheld instrument. Designed for field and bench use, it measures and sources DC/AC voltage & current, resistance, frequency, capacitance, thermocouple (8 types), and RTD (5 types).

The built-in 24 V loop power supply with optional 250 Ω HART resistor eliminates the need for separate power supplies or load resistors. The SIMULATE function allows the RK15+ to act as a 4–20 mA transmitter for testing control loops. Safety rated to CAT IV 600 V / CAT III 1000 V.

KEY FEATURES

Measurement (DMM)	Source / Output	Loop & Special
<ul style="list-style-type: none"> ✦ DC voltage measurement (100mV / 1V / 30V) ✦ Resistance measurement (500Ω / 5KΩ) ✦ Thermocouple measurement (11 types: R/S/K/E/J/T/N/B/A/C/D) ✦ RTD measurement (PT100/PT200/PT500/PT1000/Cu50) ✦ 2W / 3W / 4W resistance wire system ✦ Cold-end compensation: Auto or Manual ✦ Display refresh rate: 2–3 times/second ✦ Max input voltage: 60V peak 	<ul style="list-style-type: none"> ✦ DC voltage output: 100mV / 1V ✦ Resistance output: 400Ω / 4KΩ ✦ TC simulation: R/S/K/E/J/T/N/B/A/C/D ✦ RTD simulation: PT100/PT200/PT500/PT1000/Cu50 ✦ Excitation current: 1mA / 0.1mA (selectable) ✦ Max output voltage (SOURCE): 30V peak ✦ ZERO button to reset output to default ✦ Output accuracy: 0.05% + count 	<ul style="list-style-type: none"> ✦ 3 \times AA LR6 alkaline batteries ✦ Backlight & built-in flashlight ✦ Auto shutdown: configurable (0–60 min) ✦ Flashlight with auto-off timer ✦ RJ-ON button for TC cold-end compensation ✦ CONFIG button for wire system & excitation ✦ Protective case, pen tray & bracket included ✦ Dimensions: 180mm \times 90mm



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INPUT MEASUREMENT SPECIFICATIONS

Used within 1 year after calibration | 23°C ± 5°C | 20–70% RH | Accuracy = ± (% set value + reading)

Function	Range	Measuring Range	Resolution	Accuracy
DC Voltage				
DC Voltage	100 mV	-110.000 to 110.000 mV	0.001 V	0.05% + 0.03mV
DC Voltage	1 V	-1.1000 to 1.1000 V	0.001 V	0.05% + 5
DC Voltage	30 V	-30.000 to 30.000 V	0.001 V	0.05% + 5
DC Voltage	—	N/A	0.001 V	0.05% + 5
DC Voltage	—	N/A	0.01 V	0.1% + 5
DC Voltage	—	N/A	0.1 V	0.1% + 5
N/A				
N/A	30 V	N/A	0.001 V	N/A
N/A	—	N/A	0.001 V	N/A
N/A	—	N/A	0.01 V	N/A
N/A	—	N/A	0.1 V	N/A
N/A - Not Available				
N/A	—	N/A	—	0.1% + 5
N/A	—	N/A	—	0.1% + 5
N/A	—	N/A	—	—
N/A	—	N/A	—	—
Resistance				
Ohm	500 Ω	0–550.00 Ω	0.01 Ω	0.05% + 10
Ohm	5 kΩ	0–5.5000 KΩ	0.0001 kΩ	0.05% + 5
Ohm	—	N/A	0.001 kΩ	0.05% + 5
Ohm	—	N/A	0.01 kΩ	0.05% + 5
Ohm	—	N/A	0.0001 MΩ	—
Ohm	—	N/A	0.001 MΩ	—
Thermocouple (Measure) — ITS-90 scale Accuracy excludes cold-end compensation error				
TC K	K	-100.0°C to 1372.0°C	0.1°C	0.1% + 2°C (>-100°C) 0.1% + 2°C (≤-100°C)
TC J	J	-60.0°C to 1200.0°C	0.1°C	0.05% + 2
TC E	E	-50.0°C to 1000.0°C	0.1°C	0.05% + 2
TC T	T	-100.0°C to 400.0°C	0.1°C	0.05% + 2
TC N	N	-200.0°C to 1300.0°C	0.1°C	0.05% + 2
TC R	R	0°C to 1767°C	1°C	0.1% + 3°C (≤100°C) 0.1% + 2°C (>100°C)
TC S	S	0°C to 1767°C	1°C	0.1% + 3°C (≤100°C) 0.1% + 2°C



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				(>100°C)
TC B	B	600.0°C to 1820.0°C	1°C	0.1% + 3°C (≤800°C) 0.1% + 2°C (>800°C)
RTD / Thermal Resistance (Measure) — Pt-385 scale 0.8 mA excitation				
RTD	Pt100	-200.0°C to 800.0°C	0.1°C	0.05% + 0.6°C
RTD	Pt1000	-200.0°C to 630.0°C	0.1°C	0.05% + 0.6°C
RTD	Cu50	-50.0°C to 150.0°C	0.1°C	0.05% + 0.6°C
N/A - Not Available				
Freq	10 Hz	0 to 9.9999 Hz	0.0001 Hz	0.02% + 4
Freq	1 kHz	0 to 999.99 Hz	0.01 Hz	0.02% + 4
Freq	10 kHz	0 to 5.0000 kHz	0.0001 kHz	0.02% + 4
Cap	10 nF	0 to 11.00 nF	0.01 nF	5% + 50
Cap	100 µF	0 to 110.0 µF	0.1 µF	5% + 5
Cap	1000 µF	0 to 1100 µF	1 µF	5% + 50

ANALOG OUTPUT / SOURCE SPECIFICATIONS

Used within 1 year after calibration | 23°C ± 5°C | 20–70% RH | Accuracy = ± (% set value + reading)

Function	Range	Output Range	Resolution	Accuracy / Remarks
DC Voltage	100 mV	-10.000 to 110.000 mV	0.01 mV	0.05% + 0.03mV Max output 0.5 mA
DC Voltage	1 V	-0.1000 to 1.1000 V	0.0001 V	0.05% + 0.3mV Max output 2 mA
DC Voltage	10 V	N/A	—	N/A
N/A	—	N/A	—	0.05% + 4 Load ≤ 1 kΩ (20 mA) / 600 Ω (30 mA)
N/A	-30 mA	N/A	—	N/A
Resistance	400 Ω	0–400.0 Ω	0.1 Ω	0.05% + 0.2Ω Excitation 1mA/0.1mA
Resistance	4 kΩ	0–4.000 KΩ	1 Ω	0.05% + 2Ω
N/A	100 Hz	N/A	0.1 Hz	N/A
N/A	1 kHz	N/A	1 Hz	0.05% + 2Ω
N/A	10 kHz	N/A	100 Hz	0.05% + 2Ω
TC Source (Simulate) — ITS-90 Accuracy excludes cold-end compensation				
TC K	-200.0 to 1372.0°C	0–33.000 mA	0.1°C	0.05% + 10
TC J	-200.0 to 1200.0°C	0–33.000 mA	0.1°C	0.05% + 10
TC E	-200.0 to 1000.0°C	0–33.000 mA	0.1°C	0.05% + 10
TC T	-250.0 to 400.0°C	0–33.000 mA	0.1°C	0.05% + 10
TC N	-200.0 to	0–33.000 mA	0.1°C	0.05% + 10



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	1300.0°C			
TC R	0 to 1767°C	0–33.000 mA	0.1°C	0.05% + 3 (≤100°C) 0.05% + 2 (>100°C)
TC S	0 to 1767°C	0–33.000 mA	0.1°C	0.05% + 3 (≤100°C) 0.05% + 2 (>100°C)
TC B	600 to 1820°C	0–33.000 mA	0.1°C	0.05% + 3
RTD Source (Simulate) — Pt-385 Excitation ±0.1–5 mA				
Pt100	-200.0 to 850.0°C	0–400 Ω / 4 kΩ	0.1°C	0.05% + 0.6°C
Pt1000	-200.0 to 630.0°C	0–4000 Ω	0.1°C	0.05% + 0.6°C
Cu50	-50.0 to 150.0°C	0–400 Ω	0.1°C	0.05% + 0.6°C

GENERAL SPECIFICATIONS

Parameter	Specification
Display & Measurement	
Display	Large dual LCD display Main display + secondary display Backlight + Flashlight
Basic Accuracy	0.05%
Measurement Rate	2–3 times/second
True RMS	DC measurement only
Safety & Protection	
Safety Rating	Max input 60V peak Max output 30V peak
IP Rating	N/A
Input Protection	Max input: 60V peak
Withstand Voltage	N/A
Insulation	N/A
Loop & Special Functions	
Loop Power	N/A
HART Resistor	N/A
SIMULATE Mode	N/A
VFC Mode	N/A
TC Compensation	Auto (ambient sensor) or Manual (-10 to 50°C) cold-end compensation
Power Supply & Physical	
Power Supply	3 × AA (LR6) alkaline batteries
Calibration Period	1 year
Dimensions	180 (L) × 90 (W) mm
Weight	Approx. 300 g (with batteries)
Housing	ABS housing with rubber protective case Pen tray and bracket included



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Environmental	
Operating Temp / Humidity	0°C to 50°C 20%–80% RH (non-condensing)
Storage Temp / Humidity	-20°C to 60°C ≤ 80% RH
Operating Altitude	Standard operating altitude
Standards & Certifications	
Electrical Safety	EN 61010-1, EN 61010-031
EMC	EN 61326-1:2006 (Performance Criterion 2)
Shock & Vibration	IEC 60068-2-64:2008 IEC 60068-2-32:2008 2g, 5–500 Hz 1 m drop
Quality	ISO 9001 (CQC certified) CE marked

STANDARD PACKING LIST

Item	Qty	Remarks
RK15+ Process Calibrator (main unit)	1 pc	
Industrial test leads (H000001-00)	1 set	
Thermocouple conversion plug	1 pair	
Latch key (C110221-00)	1 pc	Spare
AA Alkaline Batteries (LR6)	3 pcs	Installed
Soft Carrying Bag	1 pc	
User Manual	1 pc	English

Optional: Linear DC 5 V Power Adapter (1 item) — for continuous bench use without battery drain.

TYPICAL APPLICATIONS

Loop Calibration	Sensor Simulation	Field Maintenance	Panel / Bench
<ul style="list-style-type: none"> DC voltage measurement & sourcing Resistance measurement & simulation TC temperature measurement RTD temperature measurement 	<ul style="list-style-type: none"> TC & RTD simulation (SOURCE mode) Temperature controller calibration PLC / DCS input verification Alarm setpoint checking 	<ul style="list-style-type: none"> Resistance wire 2W/3W/4W measurement Thermocouple cold-end compensation Multi-type TC & RTD support On-site field calibration 	<ul style="list-style-type: none"> Bench calibration of indicators Sensor simulation for controller testing Battery-powered portable field use Factory & maintenance calibration

Contact RK Technologies for Pricing, Demo & Calibration Services

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