NEW! TC621 • TC622 Pocket Calibrators

Wahl Pocket Calibrators

Measurement and Generation

Rugged IP54 Construction for On Site Use

Process Control Simulation

User friendly and robust, the New Wahl TC Series Pocket Calibrators are designed to simplify temperature transmitters and probes maintenance and commissioning. They feature **0.02% Accuracy** and measure and simulate Thermocouples or RTD's. Resolution is programmable for better reading by user with up to 1mΩ or 1uV.

TC621: Pocket Thermocouple Calibrator

TC622: Pocket RTD Calibrator

TC621

FEATURES

- **Well adapted for different process job procedures due to their wide choice of ranges and specific functions such as scaling and ramping**
- **High Accuracy: 0.02% of Reading**
- **Very low temperature coefficient: as low as 15 ppm / °C in thermocouples and 10 ppm / °C in resistance**
- **Accuracy is maintained even in harsh environmental conditions**
- **Measurement and Simulation of 14 thermocouples and 12 RTD types**

Language - 5 user selected languages (English, French, Spanish, German and Italian).

Display - Graphical LCD with adjustable contrast and backlight.

Display Resolution - 3 user selectable resolutions (up to 3 decimal places: High, Middle or Low resolution.

Date and Time Display - Continuously displayed.

Statistics - Maximum, Average, and Minimum are displayed. Reset function allows re-calculating of the values.

Hold - Freezes the display.

Filter - A filter can be applied to avoid fluctuation of the value.

Delay Function - When simulating steps or ramps, this function allows delayed start.

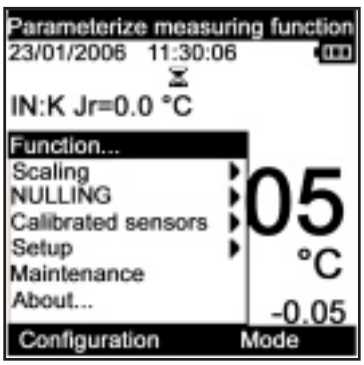
TRACEABLE TO NIST

ONE YEAR 1 WARRANTY

GRAPHIC DISPLAY

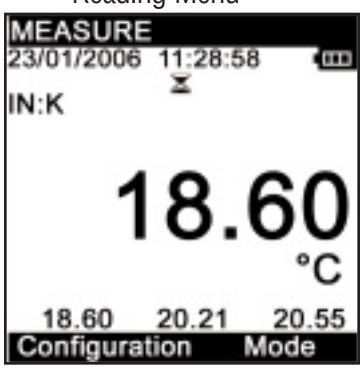
TC621 and TC622 Pocket Calibrators use a graphic display making programming and reading easier.

Function Menu



Operating Menu

Reading Menu



Specifications subject to change without notice

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03/07 Rev A

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TC621 SPECIFICATIONS

DC VOLTAGE				
Function	**Range**	**Resolution**	**Accuracy / 1yr**	**Range**
IN	±100mV	1µV	0.020%R + 3µV	-10mV / 100mV
OUT	±80mV	1µV	0.020%R + 3µV	-9.5mV / 80mV

Temperature Coefficient < 15 ppm R / °C from 0°C to 18°C and 28°C to 50°C.

TEMPERATURE WITH THERMOCOUPLES						
	IN			OUT		
Sensor	**IN Range**	**Resolution**	**Accuracy/1Yr**	**OUT Range**	**Resolution**	**Accuracy/1Yr**
K	-250°C to -200°C -200°C to -120°C -120 °C to -50°C -50°C to +1372°C	0.20°C 0.10°C 0.05°C 0.05°C	0.90°C 0.3°C 0.02% R + 0.12°C 0.02% R + 0.11°C	-240°C to -50°C -50°C to +120°C +120°C to +1372°C	0.20°C 0.10°C 0.05°C	0.80°C 0.30°C 0.020% R + 0.11°C
T	-250°C to -200°C -200°C to -50°C -50°C to +400°C	0.2°C 0.05°C 0.05°C	0.80°C 0.25°C 0.02% R + 0.09°C	-240°C to -100°C -100°C to -40°C -40°C to +400°C	0.20°C 0.05°C 0.05°C	0.50°C 0.25°C 0.020% R + 0.10°C
J	-210°C to -200°C -200°C to -120°C -120°C to +60°C +60°C to +1200°C	0.05°C 0.05°C 0.05°C 0.05°C	0.30°C 0.25°C 0.020% R + 0.11°C 0.020% R + 0.09°C	-210°C to +50°C +50°C to +500°C +500°C to +1200°C	0.05°C 0.05°C 0.05°C	0.35°C 0.020% R + 0.11°C 0.020% R + 0.09°C
E	-250°C to -200°C -200°C to -100°C -100°C to +450°C +450°C to +1000°C	0.1°C 0.05°C 0.05°C 0.05°C	0.55°C 0.20°C 0.020% R + 0.07°C 0.020% R + 0.05°C	-240°C to -100°C -100°C to +40°C +40°C to +1000°C	0.1°C 0.1°C 0.05°C	0.55°C 0.20°C 0.020% R + 0.06°C
R	-50°C to +150°C +150°C to +550°C +550°C to +1768°C	0.50°C 0.20°C 0.10°C	0.95°C 0.40°C 0.020% R + 0.30°C	-50°C to +350°C +350°C to +900°C +900°C to +1768°C	0.50°C 0.20°C 0.10°C	0.95°C 0.5°C 0.020% R + 0.30°C
S	-50°C to +150°C +150°C to +550°C +550°C to +1768°C	0.5°C 0.2°C 0.1°C	0.85°C 0.020% R + 0.4°C 0.020% R + 0.3°C	-50°C to +350°C +350°C to +900°C +900°C to +1768°C	0.50°C 0.20°C 0.10°C	0.90°C 0.020% R + 0.40°C 0.020% R + 0.30°C
B	+400°C + 900°C +900°C + 1820°C	0.2°C 0.1°C	0.95°C 0.50°C	+400°C + 850°C +850°C + 1820°C	0.20°C 0.10°C	0.95°C 0.50°C
U	-200°C to -100°C -100°C to +600°C	0.05°C 0.05°C	0.35°C 0.20°C	-200°C to -70°C -70°C to +600°C	0.05°C 0.05°C	0.35°C 0.20°C
L	-200°C to -100°C -100°C to +900°C	0.05°C 0.05°C	0.30°C 0.20°C	-200°C to -70°C -70°C to +900°C	0.05°C 0.05°C	0.30°C 0.25°C
C	-20°C + 900°C +900°C + 2310°C	0.1°C 0.1°C	0.30°C 0.020% R + 0.15°C	-20°C to + 900°C +900°C to + 2310°C	0.10°C 0.10°C	0.35°C 0.020% R + 0.15°C
N	-240°C to -190°C -190°C to -110°C -110°C to -0°C +0°C to +1300°C	0.2°C 0.1°C 0.05°C 0.05°C	0.60°C 0.25°C 0.15°C 0.020% R + 0.07°C	-240°C to +10°C +10°C to +250°C +250°C to +1300°C	0.20°C 0.10°C 0.05°C	0.90°C 0.20°C 0.020% R + 0.09°C
Platinum	-100°C to +1400°C	0.05°C	0.3°C	-100°C to +1400°C	0.05°C	0.35°C
Mo	0°C to +1375°C	0.05°C	0.020% R + 0.10°C	+0°C to +1375°C	0.05°C	0.25°C
NiMo/NiCo	-50°C to +1410°C	0.05°C	0.020% R + 0.35°C	-50°C to +1410°C	0.05°C	0.020% R + 0.35°C

CJC Accuracy: ±0.3°C
Temperature Coefficient < 10% of accuracy / °C

Specifications @23°C ±5°C, and between 45% and 75% of relative humidity.

Specifications subject to change without notice

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TC622 SPECIFICATIONS

RESISTANCE					
Function	**Range**	**Resolution**	**Accuracy / 1yr**	**Range**	**Notes**
IN	400 Ohm	1 mΩ	0.012% R + 10 mΩ	0 Ω to 400 Ω	Automatic detection: 2, 3 or 4 wires
	3600 Ohm	10 mΩ	0.012% R + 100 mΩ	0 Ω to 3600 Ω	Automatic detection: 2, 3 or 4 wires
OUT	400 Ohm (DC Current)	1 mΩ	0.012% R + 30 mΩ	0 Ω to 400 Ω	Acceptable current: 0.1mA to 1mA
	3500 Ohm (DC Current)	10 mΩ	0.012% R + 300 mΩ	0 Ω to 3500 Ω	Acceptable current: 0.1mA to 1mA

Temperature Coefficient < 10 ppm R / °C from 0°C to 18°C and 28°C to 50°C.
Rising time in simulation < 1ms
R internal < 1Ω
Noise VLF < 1mV (@ G < 100Hz)

RESISTIVE PROBES: MEASUREMENT & EMISSION				
Sensor	**Range**	**Resolution Measurement**	**Accuracy/1Yr Measurement**	**Accuracy/1 Yr Emission**
Pt 50 (α = 3851)	-220°C +850°C	0.01°C	0.012% + 0.06°C	0.012% + 0.18°C
Pt 100 (α = 3851)	-220°C +850°C	0.01°C	0.012% + 0.05°C	0.012% + 0.12°C
Pt 100 (α = 3916)	-200°C +510°C	0.01°C	0.012% + 0.05°C	0.012% + 0.12°C
Pt 100 (α = 3926)	-210°C +850°C	0.01°C	0.012% + 0.05°C	0.012% + 0.12°C
Pt 200 (α = 3851)	-220°C +1200°C	0.01°C	0.012% + 0.12°C	0.012% + 0.33°C
Pt 500 (α = 3851)	-220°C +1200°C	0.01°C	0.012% + 0.07°C	0.012% + 0.18°C
Pt 1000 (α = 3851)	-220°C +760°C*	0.01°C	0.012% + 0.05°C	0.012% + 0.08°C
Ni 100 (α = 618)	-60°C +180°C	0.01°C	0.012% + 0.03°C	0.012% + 0.08°C
Ni 120 (α = 672)	-40°C +205°C	0.01°C	0.012% + 0.03°C	0.012% + 0.08°C
Ni 1000 (α = 618)	-60°C +180°C	0.01°C	0.012% + 0.03°C	0.012% + 0.08°C
Cu 50 (α = 427)	-70°C +150°C	0.01°C	0.012% + 0.18°C	0.012% + 0.10°C
Cu 50 (α = 428)	-50°C +150°C	0.01°C	0.012% + 0.06°C	0.012% + 0.15°C

* 715°C in Emission
Temperature Coefficient < 10% of accuracy / °C
For measurement, accuracy is given for a 4 wire connection
Sensor accuracy is not taken into account in the accuracy
Automatic detection: 2, 3 or 4 wires
Measuring current: 0.65 mA
Simulation current: 0.1 mA to 1mA (depending on range)
Minimal current pulse duration: < 1 ms

Specifications @23°C ±5°C, and between 45% and 75% of relative humidity.

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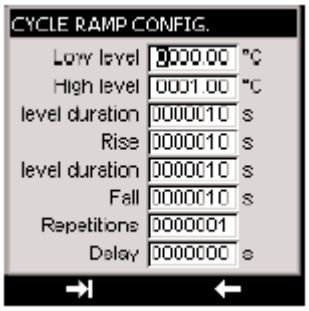
SIMULATION FUNCTION

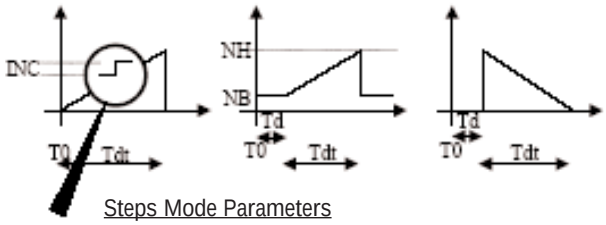
Simple and Cyclical Ramps: Ramps can be generated by setting high and low values, rising and falling times, and stabilization and delay times. Delay time (programmable between 1 to 3600 seconds) allows a single user to launch ramp and go to the control panel.

Synthesizer Mode: This mode allows sending of predefined values with programmable frequency.

Steps Mode: This mode allows sending of values with programmable amplitude and frequency.

Scaling: This operation allows correction of probe errors. Scaling is performed using up to 10 segments, in order to fit with the real calibrated value.





Steps Mode Parameters

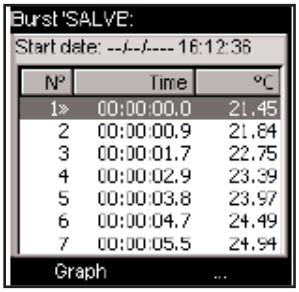
T0: Starting Time
Td: Delay Time
INC: Step Value in °C or °F)
Tdt: Total Time
NB: Low Level
NH: High Level

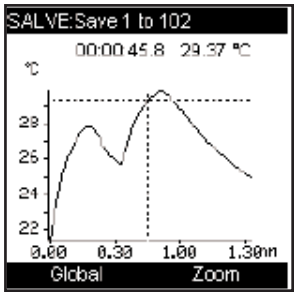
MEASUREMENT FUNCTIONS

Calibrated Sensors: A database can be created to design curves for sensors after calibration in relation with the corrections shown on a calibration report.

Scaling: This operation allows correction of probe errors. Scaling is performed using up to 10 segments, in order to fit with the real calibrated value.

Data Recording: Data is recorded whether manually on event or automatically with programmed frequency. Data is time stamped, and can be displayed as list or curves.





ENVIRONMENTAL CONDITIONS

Reference Conditions: 23°C ±5°C, Relative Humidity: 45% to 75%
Nominal Operating Conditions: -10°C up to +50°C, Relative Humidity: 20% up to 80% non-condensing
Maximum Operating Conditions: -10°C up to +55°C, Relative Humidity: 10% up to 80% (70% at 55°C)
Maximum Storage Temperature: -30°C up to +60°C (without battery)
Electrical Security: EN 61010
Electromagnetic capability: EN61326
Thermocouple Connection: mini compensated connector
RTD Connection: 4 pin round connector or 4 banana plugs
USB Connection: for PC connection (software upgrade and application with DATACAL)
Power Supply: 4 AA batteries. Optional rechargeable battery pack with charger is available
Battery Life: IN: 40 hours, OUT: 33 hours
Dimensions: (without protection boot): 6.18 x 3.35 x 1.77 inches (157 x 85 x 45mm)
Weight: 10.79 ounces (306 g)
IP Rating: IP54 according to EN 60529
Included Accessories: Protective Boot, 4 AA Batteries, User Manual, Wrist Strap, 2 Measurement Leads, and Carrying Case.
Optional Accessories: Rechargeable Batteries and Charger

ORDERING INFORMATION

TC621: Pocket Thermocouple Calibrator
TC622: Pocket RTD Calibrator
12436-01: Rechargeable Batteries and Battery Charger

Optional Thermocouple and RTD Probes available in the Wahl Heat Prober® catalog.

TRACEABLE TO NIST
ONE YEAR 1 WARRANTY

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