

## NEW! TC621 • TC622 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

### 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.

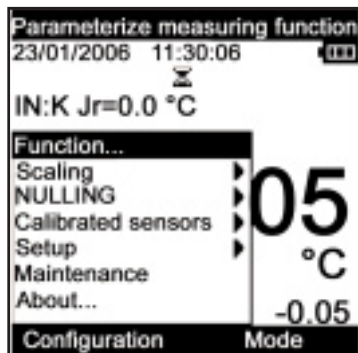


TC621

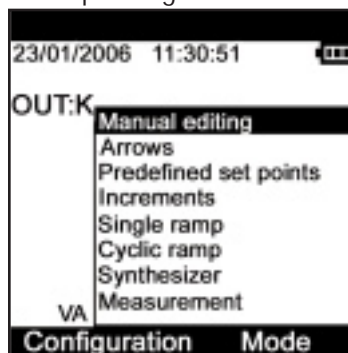
### GRAPHIC DISPLAY

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

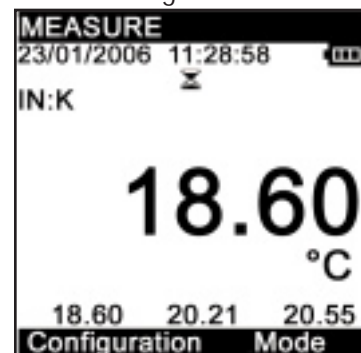
Function Menu



Operating Menu



Reading Menu



Specifications subject to change without notice

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### 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	0.20°C	0.90°C	-240°C to -50°C	0.20°C	0.80°C
	-200°C to -120°C	0.10°C	0.3°C	-50°C to +120°C	0.10°C	0.30°C
	-120°C to -50°C	0.05°C	0.02% R + 0.12°C	+120°C to +1372°C	0.05°C	0.020% R + 0.11°C
	-50°C to +1372°C	0.05°C	0.02% R + 0.11°C			
T	-250°C to -200°C	0.2°C	0.80°C	-240°C to -100°C	0.20°C	0.50°C
	-200°C to -50°C	0.05°C	0.25°C	-100°C to -40°C	0.05°C	0.25°C
	-50°C to +400°C	0.05°C	0.02% R + 0.09°C	-40°C to +400°C	0.05°C	0.020% R + 0.10°C
J	-210°C to -200°C	0.05°C	0.30°C	-210°C to +50°C	0.05°C	0.35°C
	-200°C to -120°C	0.05°C	0.25°C	+50°C to +500°C	0.05°C	0.020% R + 0.11°C
	-120°C to +60°C	0.05°C	0.020% R + 0.11°C	+500°C to +1200°C	0.05°C	0.020% R + 0.09°C
	+60°C to +1200°C	0.05°C	0.020% R + 0.09°C			
E	-250°C to -200°C	0.1°C	0.55°C	-240°C to -100°C	0.1°C	0.55°C
	-200°C to -100°C	0.05°C	0.20°C	-100°C to +40°C	0.1°C	0.20°C
	-100°C to +450°C	0.05°C	0.020% R + 0.07°C	+40°C to +1000°C	0.05°C	0.020% R + 0.06°C
	+450°C to +1000°C	0.05°C	0.020% R + 0.05°C			
R	-50°C to +150°C	0.50°C	0.95°C	-50°C to +350°C	0.50°C	0.95°C
	+150°C to +550°C	0.20°C	0.40°C	+350°C to +900°C	0.20°C	0.5°C
	+550°C to +1768°C	0.10°C	0.020% R + 0.30°C	+900°C to +1768°C	0.10°C	0.020% R + 0.30°C
S	-50°C to +150°C	0.5°C	0.85°C	-50°C to +350°C	0.50°C	0.90°C
	+150°C to +550°C	0.2°C	0.020% R + 0.4°C	+350°C to +900°C	0.20°C	0.020% R + 0.40°C
	+550°C to +1768°C	0.1°C	0.020% R + 0.3°C	+900°C to +1768°C	0.10°C	0.020% R + 0.30°C
B	+400°C + 900°C	0.2°C	0.95°C	+400°C + 850°C	0.20°C	0.95°C
	+900°C + 1820°C	0.1°C	0.50°C	+850°C + 1820°C	0.10°C	0.50°C
U	-200°C to -100°C	0.05°C	0.35°C	-200°C to -70°C	0.05°C	0.35°C
	-100°C to +600°C	0.05°C	0.20°C	-70°C to +600°C	0.05°C	0.20°C
L	-200°C to -100°C	0.05°C	0.30°C	-200°C to -70°C	0.05°C	0.30°C
	-100°C to +900°C	0.05°C	0.20°C	-70°C to +900°C	0.05°C	0.25°C
C	-20°C + 900°C	0.1°C	0.30°C	-20°C to + 900°C	0.10°C	0.35°C
	+900°C + 2310°C	0.1°C	0.020% R + 0.15°C	+900°C to + 2310°C	0.10°C	0.020% R + 0.15°C
N	-240°C to -190°C	0.2°C	0.60°C	-240°C to +10°C	0.20°C	0.90°C
	-190°C to -110°C	0.1°C	0.25°C	+10°C to +250°C	0.10°C	0.20°C
	-110°C to -0°C	0.05°C	0.15°C	+250°C to +1300°C	0.05°C	0.020% R + 0.09°C
	+0°C to +1300°C	0.05°C	0.020% R + 0.07°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

# NEW! TC621 • TC622 Pocket Calibrators

## Wahl Pocket Calibrators

### 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.

Specifications subject to change without notice

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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.

### 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 on CD Rom, Wrist Strap, 2 Measurement Leads, NIST Calibration Certificate, and Carrying Case

**Optional Accessories:** Rechargeable Batteries and Charger

### ORDERING INFORMATION

TC621: Pocket Thermocouple Calibrator

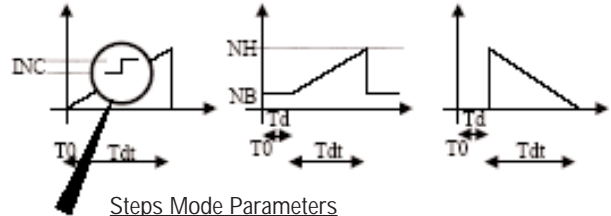
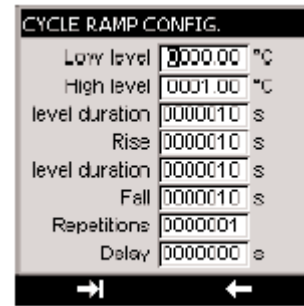
TC622: Pocket RTD Calibrator

12436-01: Rechargeable Batteries and Battery  
Charger

NIST: subsequent NIST Certification for TC621

NIST: subsequent NIST Certification for TC622

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



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

Burst 'SALVE:

Start date: --/--/---- 16:12:36

N°	Time	°C
1	00:00:00.0	21.45
2	00:00:00.9	21.84
3	00:00:01.7	22.75
4	00:00:02.9	23.39
5	00:00:03.8	23.97
6	00:00:04.7	24.49
7	00:00:05.5	24.94

Graph ...

