## TINYCAL T250 thermocouple calibrator

| | |
|---|---|
| **Signal:** | Thermocouple |
| **Type:** | E, J, K, R, S, T (as per IEC 584-1)<br>—15.00 to 75.00 mV<br>and equivalence in …C depending on thermocouple<br>E Thermocouple: 0…C to 800…C<br>J Thermocouple: —180…C to 750…C<br>K Thermocouple: —150…C to 1350…C<br>R Thermocouple: —50…C to 1700…C<br>S Thermocouple: —50…C to 1700…C<br>T Thermocouple: —250…C to 400…C |
| **Input impedance:** | >10 MΩ |
| **Accuracy at 23… – 3…C:** | 0,025% FS |
| **Accuracy 1 year:** | ± 0,05% FS |
| **Resolution:** | 0,01 mV and 1…C |
| **Function:** | Measurement and Generation / Simulation |
| **Cold joint compensation:** | Automatic or manual, from 0 to 50 …C |


## TINYCAL T260 pH calibrator

| | |
|---|---|
| **Signal:** | pH |
| **Ranges:** | —450 to +450 mV<br>0,00 to 14,00 pH |
| **Input impedance:** | >1000 GΩ |
| **Accuracy at 23… ( 3…C** | ± 0,025% FS |
| **Accuracy 1 year:** | ± 0,05% FS |
| **Resolution:** | 1 mV / 0,01 pH |
| **Function:** | Measurement and Generation / Simulation |

**Includes input impedance check function appropriate for the pH measurement equipment.**


## Other available calibrators

**TINYCAL T210**
Portable digital pressure gauge

**RTM1**
Digital reference thermometer

**TC-TEST**
Multiple automatic calibration system for temperature sensors (Pt100: TC)

Portable Calibrators/Simulators

# **TINYCAL** Series


## Models available

| | |
|---|---|
| **T220** | 4-20 mA |
| **T225** | 10-50 mA |
| **T230** | 0-10 V cc |
| **T240** | Pt 100 |
| **T250** | Thermocouple |
| **T260** | pH |

GOMETRICS

Pol gono Industrial Riera de Caldes
Basters, 17
08184 Palau-Solit i Plegamans (Barcelona)

Tel. 93 864 68 43
Fax 93 864 82 18

**comercial@gometrics.net**
**www.gometrics.net**

TCAL-0209-ENG

GOMETRICS

## Description

The new TINYCAL family of calibrators/ simulators is a set of portable instruments designed and manufactured by GOMETRICS for calibration of transmitters, converters, alarm modules, data loggers and any other process instrument with 4-20 mA, 10-50 mA, 0-10 V dc electronic signal sensors, Pt100 thermal resistances, thermocouples or pH.

All the instruments in the TINYCAL series are dual function: generation/simulation and measurement. Panel keys enable configuration for generation of set values in either engineering units or percentages. Keys on the instrument's front panel enable generation in steps that can be timed for 1 to 9 seconds per step, which it memorizes with its 6 configuration keys. Simulation from the instrument - T240 and T250 -can be configured to simulate the sensor response (Pt100 or type of thermocouple selected).

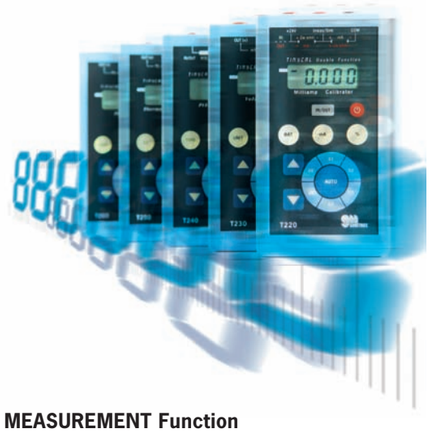
The measurement function is easily selectable with the IN/OUT button, as clearly indicated on the display, which indicates the value to be measured. To prevent possible connection or manipulation errors, the measurement circuit is protected against short-circuits and external voltage up to 30 V, guaranteeing the instrument longer service life. TINYCAL Models T220 and T225 are provided with an integrated 24-V dc supply, enabling power supply to the loop from the calibrator itself over appropriate connection (active mode), or voluntarily in passive mode.

The entire TINYCAL family is composed of precision, high-resolution instruments which are basic standards in the instrument workshop, because of their small size and light weight combined with their easy handling, reliability and convenient transport.

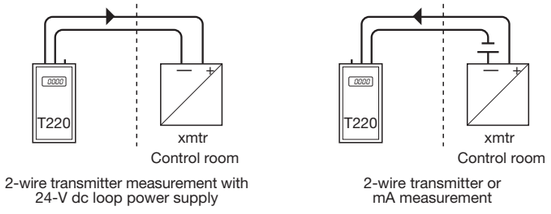
All the instruments are provided with rechargeable long-runtime NiMH batteries and connecting wires, battery charger, carrying case, Spanish-language manual, traceable calibration certificate (ENAC optional) and 2-year warranty.

## TINYCAL Series Technical specifications

- ¥ **Function:** Measurement and Generation/Simulation
- ¥ **Operating temperature:** 0 to 50...C
- ¥ **Temperature coefficient:** 0.003%/...C
- ¥ **Power supply to loop:** 24 V dc (models T220/T225)
- ¥ **Rechargeable batteries:** NiMH
- ¥ **Runtime:** 16 hours
- ¥ **Power supply to battery charger:** 230 V 50 Hz
- ¥ **Display:** LCD, 4 1/2 digits, 10-mm high
- ¥ **Dimensions:** 83x152x33 mm
- ¥ **Weight:** 240 to 300 g (depending on model)
- ¥ **Generation:** Manual or Automatic
- ¥ **Step time:** Programmable between 1 and 9 seconds
- ¥ **EC Label**
- ¥ **Warranty:** 2 years



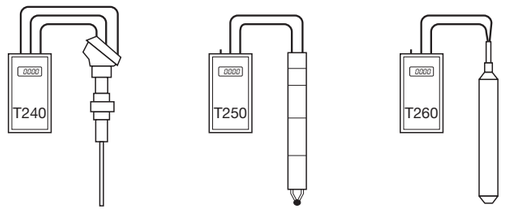
### MEASUREMENT Function 4-20 mA loops



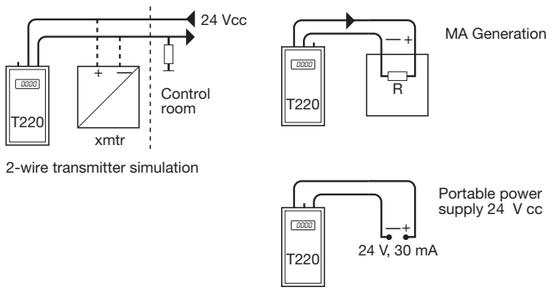

2-wire transmitter measurement with 24-V dc loop power supply

2-wire transmitter or mA measurement

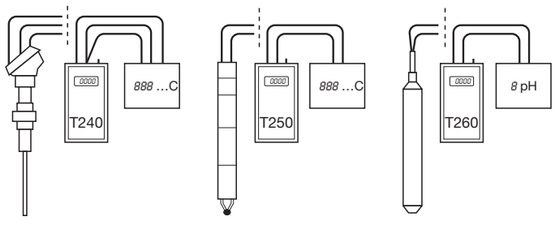
### MEASUREMENT Function




### GENERATION/SIMULATION Function 4-20 mA loops




### GENERATION/SIMULATION Function




## TINYCAL T220 Current calibrator

| | |
|---|---|
| **Signal:** | 4-20 mA |
| **Range:** | 0-24 mA |
| **Input impedance:** | 10 Ω |
| **Accuracy at 23... – 3...C:** | – 0.015% FS |
| **Accuracy 1 year:** | – 0.025% FS |
| **Resolution:** | 0.001/0.01 mA |
| **Function:** | Active or passive measurement and Generation selectable by connection |
| **Runtime:** | 150 hr measuring<br>11 hr generating 20 mA with internal supply |

**TINYCAL T225**

| | |
|---|---|
| **Signal:** | 10-50 mA |
| **Range:** | 0-51 mA |


## TINYCAL T230 voltage calibrator

| | |
|---|---|
| **Signal:** | 0-10 Vdc |
| **Range:** | 0-12.000 V |
| **Input impedance:** | >1 Ω |
| **Accuracy at 23... – 3...C:** | – 0.015% FS |
| **Accuracy 1 year:** | – 0.025% FS |
| **Resolution:** | 0.001 V |
| **Function:** | Measurement and Generation |


## TINYCAL T240 Thermal resistance calibrator

| | |
|---|---|
| **Signal:** | Resistance and PT100 (as per IEC 751) |
| **SIMULATION Range:** | 80 to 390 Ohms (—50 to 850...C)<br>(Simulation current is 0.1 to 2 mA) |
| **Simulation response:** | 2 mS (except pulsating transmitters/indicators) |
| **Accuracy at 23... – 3...C:** | —50 to 150...C: 0.1C up to 850...C: 0.2...C |
| **Accuracy 1 year:** | —50 to 150...C: 0.2...C up to 850...C: 0.4...C |
| **MEASUREMENT Range:** | 20 to 320 Ohms (—220 to 600...C)<br>(current applied approx. 1mA) |
| **Accuracy at 23... – 3...C:** | —220 to 150...C: 0.1...C (– 1 count)<br>up to 600...C: 0.2...C (– 1 count) |
| **Accuracy 1 year:** | —220 to 150...C: 0.2...C (– 1 count)<br>up to 600...C: 0.4...C (– 1 count) |
| **Resolution:** | 0.1 Ohm or 0.1...C / 0.2...C |
| **Function:** | Measurement and Generation / Simulation |