

TRX Series

Portable Multifunction Calibrator

- Simulates and Reads RTD's, thermocouples and ohms
- Sources and reads millivolts, volts, and milliamps
- Simulates , reads and powers 2 wire transmitters
- Simultaneous input and output readings
- Auto-Step for hands free calibration



TRX Series

Portable Multifunction Calibrator

A COMPLETE FIELD CALIBRATOR

The TRX series of portable multifunction calibrators are the culmination of many years of field experience with Druck's Unomat series of calibrators.

The TRX series are designed to simulate and measure RTD's, thermocouples and resistors. They also source and read milliamps, millivolts and volts. Input and output readings are displayed simultaneously and a transmitter power supply is provided. The TRX is a complete field calibrator and in addition to input/output capability it has a rugged enclosure, sealed positive action membrane keypad, durable carrying case and a neck strap which supports the calibrator horizontally for hands free operation. A quick reference user guide is also visible at all times and test leads, stored in the carrying case, are always readily available.

Easy to operate

The TRX's comprehensive functions are menu driven for ease and speed of use. Menu choices are simply selected using arrow/enter keys and the resulting input/output combinations are simultaneously displayed in a clear and logical format. Operational and connection errors, are continually monitored and reported; for example, loop resistance mismatch and the absence of a cold junction temperature sensor.

Source and simulation outputs

Source and simulation signals can be stepped manually or automatically, with adjustable span and dwell time, thus speeding calibration routines and allowing a single operator to check and commission control loops. For each output signal type, up to six steps can be programmed and memorised or fixed steps automatically generated. In addition, signals can be ramped manually or automatically at two speeds, slow or fast. Pre-configured test routines can be stored and quickly recalled using the keystroke memory.

Calibrating temperature transmitters

2 wire thermocouple and RTD temperature transmitters can be connected for closed loop calibration. The calibration temperature signal is simulated and the loop is powered and read by the TRX. Simulated temperature values in °C or °F can be stepped at 25% intervals or entered manually with the numeric key pad. These temperature values are automatically converted into millivolts or ohms and for thermocouple simulations the cold junction temperature is monitored and corrected for. Transmitter outputs are measured and displayed in both milliamps and °C or °F for easy comparison with the source value.

Transmitter simulation at control system input

The TRX simulates temperature transmitter outputs for quickly checking and calibrating control system hardware and software. The required value is entered in °C or °F and is converted to the appropriate milliamp output. The display shows both the set temperature and the resulting output in milliamps.





Ex ia IIC T6
An Intrinsically Safe version, (TRX-IS) is available.

Input safety parameters

V _{max in}	< 30	Volts
I _{max in}	< 215	mA
W _{max in}	< 0.75	Watts
C _{eq}	= 0.1	µF
L _{eq}	= 0	(negligible)

Output safety parameters

V _{max out}	: 17.5	Volts
I _{max out}	: 75	mA
C _{ext}	< 0.4	µF
L _{ext}	< 6.5	mH



Intrinsically Safe version, (TRX-IS)
supplied in a dark grey casing



TRX Series

Options and related products



MEASURE

Input	Range	Accuracy*	Resolution	Remarks
mV	0 – 120mV	+/- 0.025%	0.01mV	R – input >20 Φ
V	0 – 120V	+/- 0.05%	0.01V	R – input >20 Φ
mA	0 – 52mA	+/- 0.05%	0.01mA	R – input >10.5 Φ fused
Ohms	0 – 390 Φ	+/- 0.1 Φ	0.1 Φ	1.25mA excitation

*Accuracy % of span

SOURCE

Output	Range	Accuracy*	Resolution	Remarks
mV	-10 – 120mV	+/- 0.025%	0.01mV	R – output 0.2 Φ
V	0 – 12V	+/- 0.025%	0.001V	R – output 0.2 Φ
mA	0 – 24mA	+/- 0.05%	0.01mA	R – max. 900 Φ
Ohms	0 – 390 Φ	+/- 0.1 Φ	0.1 Φ	1.25mA excitation

*Accuracy % of span

MEASURE AND SOURCE

RTD	Range	Accuracy*	Resolution
PT100 *	-200/850°C	0.25°C	0.1°C
NI100 *	-60/250°C	0.25°C	0.1°C
NI120 *	-80/260°C	0.25°C	0.1°C
Cu10 *	-200/260°C	2°C	2°C

* = IEC 751, * = DIN 49760, * - MINCO 7, * = MINCO 16-9 *Best case, mid range accuracies

Thermocouples	Range	Accuracy*	Resolution
TC-J/L *, *	-210/1190°C	0.4°C	0.2°C
TC-K *	-230/1370°C	0.6°C	0.3°C
TC-T/U *, *	-250/400°C	0.5°C	0.2°C
TC-B *	-180/1818°C	2.5°C	1.1°C
TC-R/S *, *	-50/1760°C	2.0°C	0.9°C
TC-E *	-250/1000°C	0.3°C	0.2°C
TC-N *	-200/1300°C	0.6°C	0.3°C

* = IEC 584, * = DIN 43710 *Best case, mid range accuracies

SPECIAL FEATURES

Temperature units
°C or °F

Step
6 programmable or fixed 10% divisions.

Scaling
4 digits and sign on mA range.

Ramp
Fully programmable travel time (up/down and dwell).

Temperature transmitter calibration
Both input & output readings in temperature units. Calibration feature extended to all output functions.

Temperature transmitter simulation
mA output reads in temperature units.

Keystroking
Storage for 6 user defined test configurations.

ENVIRONMENTAL

Calibration reference
22 deg °C $\pm$ 1°C, R.H. 45% $\pm$ 10%

Accuracies
Specified for 15°C to 35°C. Outside these limits $\pm$ 1lsd on zero and $\pm$ 0.001% or range/°C

Temperature
Operation: 10°C to 50°C

Humidity
0-90% non-condensing

Sealing
IP 54

Conformity
EN50081-1, EN50082-1 CE Marked

Housing
Textured high-impact ABS plastic

Physical
0.9kg, 200x117x32mm (8.0"x 4.7"x 1.3") approx

Batteries
TRX: 4x1.5V, type LR 14 (size C). Ni-cad batteries can be fitted but are not supplied as standard.

An optional charger/eliminator is available.

TRX IS: Fixed internal NiMH rechargeable battery. Charger/eliminator supplied as standard.

ACCESSORIES

The TRX series is supplied with carrying case, test leads, user guide, handbook and calibration certificate as standard. The TRX IS is supplied with a battery charger/eliminator as standard.

CALIBRATION STANDARDS

Calibrators manufactured by Druck Limited are calibrated against precision calibration equipment traceable to international standards.

CALIBRATION STANDARDS

Portable field calibrators

Druck manufacture a wide range of portable pressure, temperature and electrical field calibrators. A selection of these are shown below.



Laboratory and workshop instruments

Druck also manufacture a comprehensive range of pressure indicators and controllers. Included in this range are the Pressurements industrial deadweight testers and the Ruska high precision controllers and primary standard piston gauges.

Pressure Transducers and transmitters

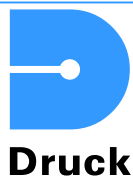
Druck instruments complement an extensive range of pressure transducers and transmitters, including the RTX and Smart/Hart® STX process pressure transmitters. Please refer to manufacturer for further information on related products.

ORDERING INFORMATION

Please state the following (where applicable):

1. Model number TRX or (for the IS version) TRX IS.
2. Optional TRX charger/eliminator state P/N 13603 and 230 or 100 Vac.
3. For TRX IS, state charger P/N 13603 IS and 230 or 100 Vac.

Continuing development sometimes necessitates specification changes without notice.



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TRX Series - 10/99

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商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

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商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

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