Time Electronics
Calibration, Test and Measurement

User Manual

1049
Pt100 Simulator

Version 1.2
11-22

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This also applies to any schematics, drawings and diagrams contained herein.

This manual provides operating and safety instructions for the Time Electronics product. To ensure correct operation and safety, please follow the instructions in this manual.

Time Electronics reserves the right to change the contents, specifications and other information contained in this manual without notice.

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1 Introduction



The 1049 is a handheld precision simulator for Pt100 0.3850 platinum resistance elements used for accurate temperature measurement. It follows the Pt100 scale from -200 °C to +800 °C with 23 set points. High performance metal film resistors are used to ensure a good temperature coefficient and long term stability. Being designed with passive resistors throughout, the instrument does not require batteries to power up, making it a convenient and compact solution for field calibration and testing work.

The specification is in accordance with DIN EN 60751 (ITS 90). Offering high accuracy across the full operating range of Pt100 devices it exceeds the performance of class A and B. The 1049 is particularly suitable for users operating in the -50 to +60 °C range and requiring performance exceeding class A (better than ± 0.15 °C at 0 °C).

Since the 1049 output is a purely passive resistance it will operate with all types of Pt100 measuring equipment including the live systems using pulsed, or interrupted excitation current. The pocket sized design (112 x 61 x 55 mm) makes it easily portable for field use. The instrument is supplied as standard with a carry case.

Features

- –200 °C to +800 °C
- ± 0.3 °C accuracy
- Based on ITS 90 EN 60751
- 23 set points
- Exceeds class A
- Good temperature stability
- Passive resistance source

2 Specifications

Set Points °C	-200, -100, -50, -20, -10, 0, 10, 20, 30, 40, 50, 60, 80, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800.	
Accuracy	-200 to -100°C	± 0.3 °C
	-50 to +60°C	± 0.15 °C
	+80 to +200°C	± 0.3 °C
	+250 to +500°C	± 0.5 °C
	+600 to +800°C	± 0.65 °C
Temperature Coefficient	Less than 50 ppm/°C	
Maximum current	50 mA	

Connections ..... 2 x 4 mm active terminal posts.

Dimensions ..... 61 x 112 x 55 mm (2.4 x 5 x 2.2 ”).

Weight ..... 170 gm (6 oz).

Options ..... Calibration certificates:
Traceable (Factory) and accredited (ISO 17025).

Supplied with ..... Carry case and user manual.

Country of origin ..... United Kingdom.

Ordering Information

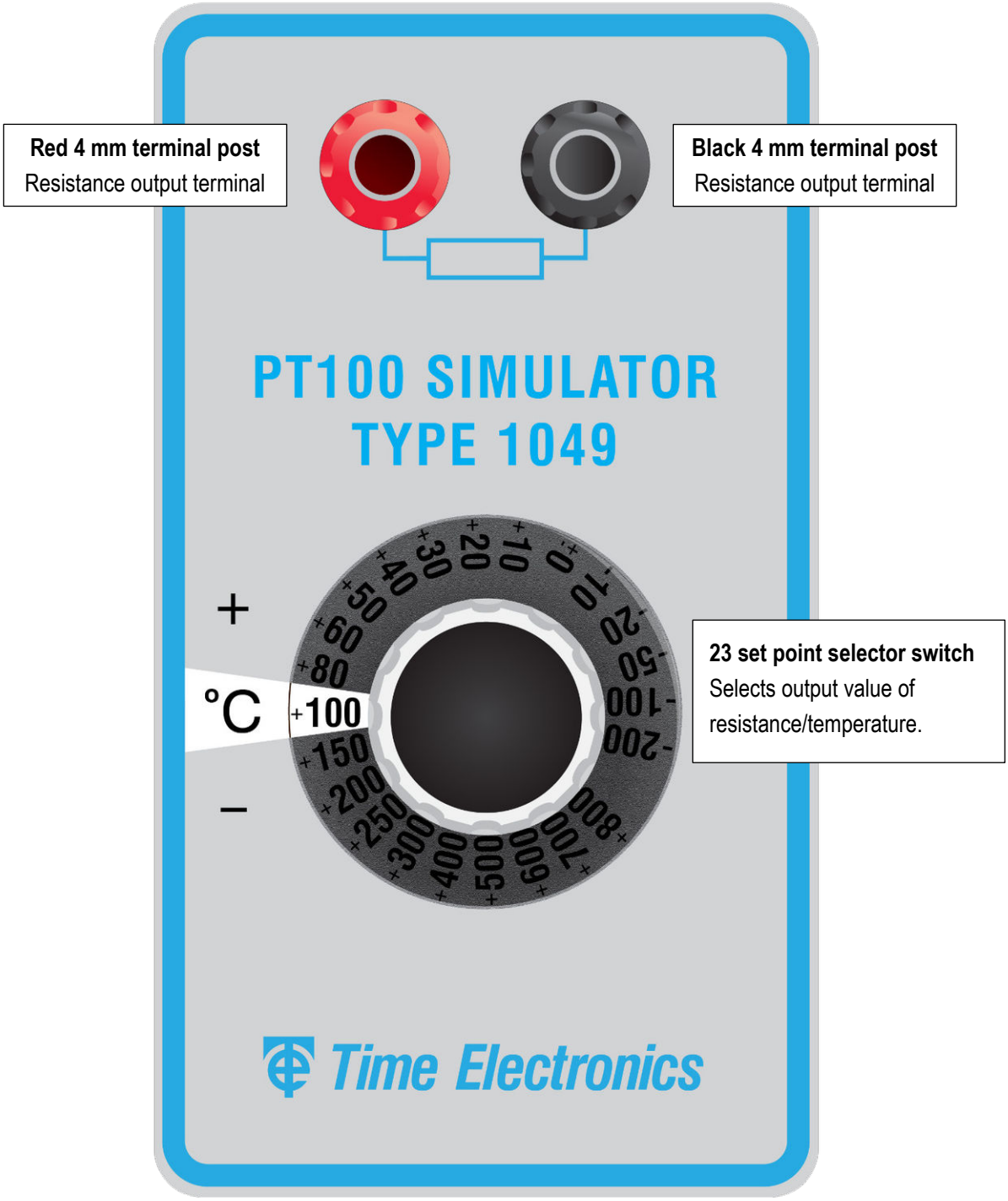
1049 ..... **Pt100 Simulator** (°C version)

C161 ..... Traceable calibration certificate (Factory)

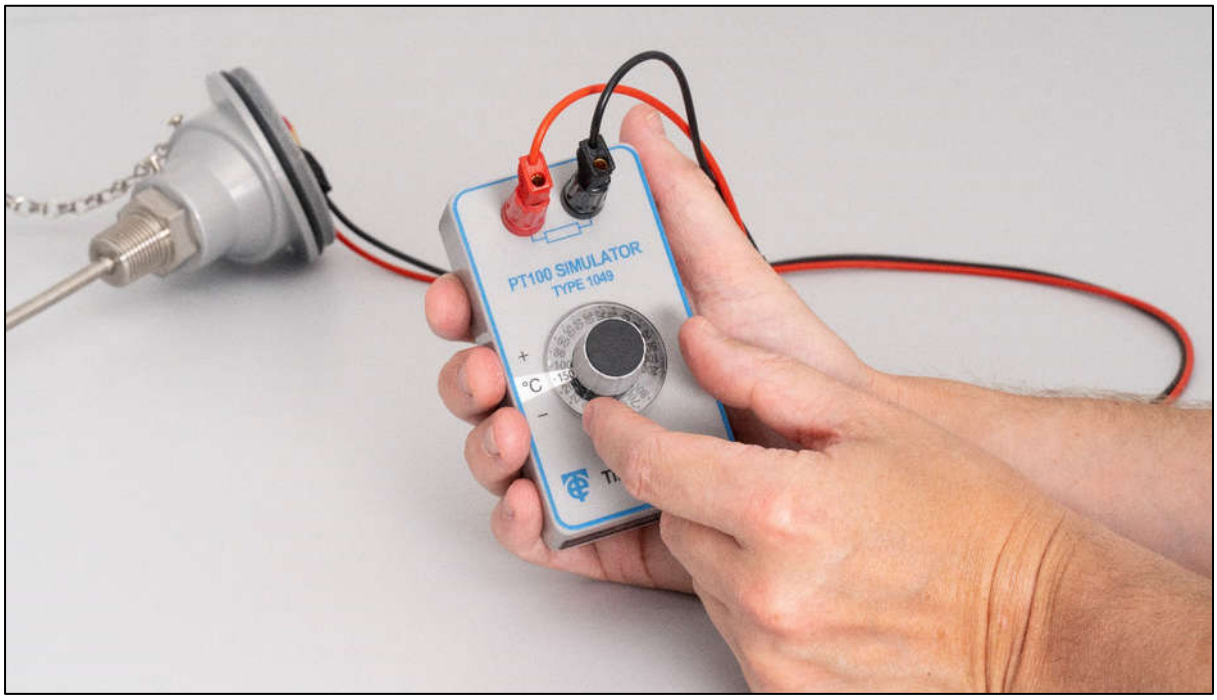
C114 ..... Accredited calibration certificate (ISO 17025)

3 Operation

3.1 Front Panel Controls and Connections



3.2 Operating Instructions

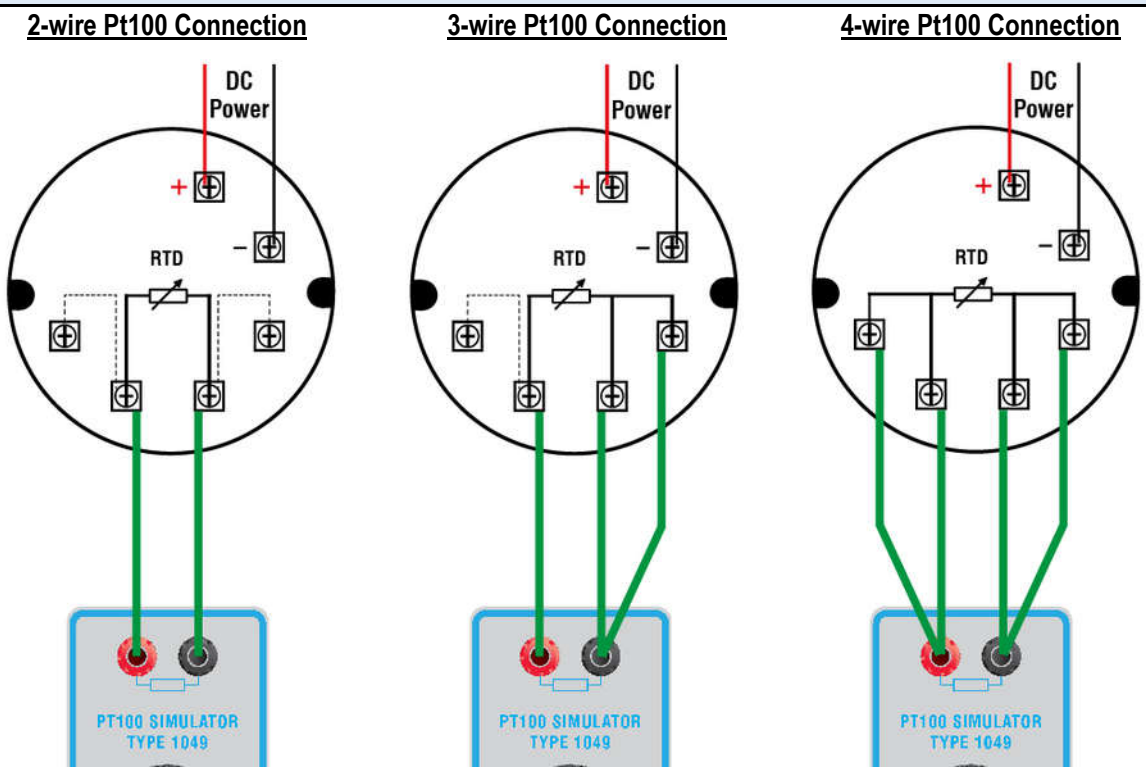


Connection to the 1049 is via 4mm standard plugs, or clamped bare twisted wires.

Two connections red and black connect to the simulated temperature resistive element.

To select the temperature, rotate the dial until the required temperature is displayed in the selector window.

Typical connections for 2, 3 and 4 wire resistance thermometers



4 Warranty and Servicing

Warranty

Time Electronics products carry a one-year manufacturer's warranty as standard.

Time Electronics products are designed and manufactured to the highest standards and specifications to assure the quality and performance required by all sectors of industry. Time Electronics products are fully guaranteed against faulty materials and workmanship.

Should this product be found to be defective, please contact us using the below details. Inform us of the product type, serial number, and details of any fault and/or the service required. Please retain the supplier invoice as proof of purchase.

This warranty does not apply to defects resulting from action of the user such as misuse, operation outside of specification, improper maintenance or repair, or unauthorized modification. Time Electronics' total liability is limited to repair or replacement of the product. Note that if Time Electronics determine that the fault on a returned product has been caused by the user, we will contact the customer before proceeding with any repair.

Product Registration

You can register your product at: www.timeelectronics.com/contact/product-registration. Registering your product will enable us to maintain a record of purchase for your warranty. You can also use the web form to provide feedback about our products and services.

Calibration and Repair Services

Time Electronics offers repair and calibration services for all the products we make and sell. Routine maintenance by the manufacturer ensures optimal performance and condition of the product. Periodic traceable or accredited calibration is available.

Contacting Time Electronics

Online:
Please visit www.timeelectronics.com and select Technical Support from the Contact links. From this page you will be able to send information to the Time Electronics service team who will help and support you.

By phone:
+44 (0) 1732 355993

By email:
mail@timeelectronics.co.uk

Returning Instruments

Prior to returning your product please contact Time Electronics. We will issue a return merchandise authorization (RMA) number that is to accompany the goods returning. Further instructions will also be issued prior to shipment. When returning instruments, please ensure that they have been adequately packed, preferably in the original packing supplied. **Time Electronics Ltd will not accept responsibility for units returned damaged.** Please ensure that all units have details of the service required and all relevant paperwork.

Send the instrument, shipping charges paid to:

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Web Site: www.timeelectronics.com

Disposal of your old equipment



1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or return to Time Electronics.