

34420/SPRT and 34420/PRT

NanoVolt/Micro-Ohm Meter

Instruction Sheet

Introduction

The HP 34420/SPRT and HP 34420/PRT are standard Hewlett-Packard 34420A NanoVolt/Micro-Ohm Meters that have been configured with the calibration constants for either a Rosemount 162CE SPRT (Standard Platinum Resistance Thermometer) or a Hart 5628 Precision PRT. These special service products from Fluke are offered as calibration tools for your temperature calibration and measurement needs.

The following constants associated with your probe were entered into your HP 34420A during system assembly at Fluke Corporation.

- Ro
- A4, B4
- A7, B7, C7

These constants are retained in the HP 34420A's memory until changed from the front panel temperature menu.

Cautions

The calibration values entered in your HP 34420A may be inadvertently changed by a user unfamiliar with the meter. Therefore, you should verify the calibration values before each use.

The precision temperature probes that accompany the HP 34420/SPRT and HP34420/PRT are fragile. These probes are sensitive to mechanical shock and vibration, which can cause calibration errors. Take care in daily use and when transporting these probes.

For complete instructions on using the HP 34420A meter and the Rosemount or Hart probe, refer to the *HP 34420A Users Manual* and the Rosemount or Hart probe documentation.

Contacting Fluke

To contact Fluke, call one of the following telephone numbers:

USA: 1-888-99-FLUKE (1-888-993-5853)

Canada: 1-800-36-FLUKE (1-800-363-5853)

Europe: +31 402-678-200

Japan: +81-3-3434-0181

Singapore: +65-738-5655

Anywhere in the world: +1-425-446-5500

Or, visit Fluke's Web site at www.fluke.com.

Standard Equipment

The 34420/SPRT comes with the following:

- 1 HP 34420A NanoVolt/Micro-Ohm Meter
- 1 Rosemount 162CE SPRT
- *34420/SPRT and 34420/PRT NanoVolt/Micro-Ohm Meter Instruction Sheet*

The 34420/PRT comes with the following:

- 1 HP 34420A NanoVolt/Micro-Ohm Meter
- 1 Hart Scientific 5628 Precision PRT
- *34420/SPRT and 34420/PRT NanoVolt/Micro-Ohm Meter Instruction Sheet*

For specific information on the equipment included with the meter or probe, refer to the documentation included with each product.

Setting Up to Measure Temperature

To set the meter up to measure temperature, proceed as follows:

1. Connect the SPRT or PRT to the front panel Lemo connector on the HP 34420A.
2. Turn on the HP 34420A.
3. On the front panel, press the **SHIFT** button; then the **TEMP** button. The unit will display temperatures in °C.

Changing the Calibration Constants

Refer to the *HP 34420A Users Manual* under “SPRT measurements and ITS-90 Conversions”. The constant values for your specific probe can be found with your probe calibration certificate.

Maintenance

For maintenance procedures for the HP 34420A meter, the Rosemount 162CE SPRT, or the Hart 5628 Precision PRT, refer to the documentation accompanying each product.

Getting Service or Replacement Parts

For information on getting service or replacement parts for the HP 34420A meter or the Rosemount or Hart temperature probes, contact Fluke.

Specifications

For additional specifications on the meter or the temperature probe, refer to the documentation accompanying those instruments.

System Specifications ¹	HP 34420A/SPRT	HP 34420A/PRT
Temperature Range	-200 °C to +661 °C (74 K to 935 K)	-200 °C to +660 °C (74 K to 934 K)
Probe Type	Rosemount 162CE Diameter: 0.219 in (5.56 mm) Length: 18 in (457 mm) Pt 25.5 Ω	Hart Scientific 5628 Diameter: 0.25 in (6.34 mm) Length: 12 in (304 mm) Pt 25.5 Ω
System uncertainty ^{2,3} 4 hr, 24 hr 90 day, 1 yr	0.003 K ⁴ , 0.006 K, 0.013 K, 0.020 K	0.005 K ⁴ , 0.007 K, 0.024 K, 0.053 K
Stability / Drift Rate	<0.01 K/yr	< 0.05 K/yr
Lead Length	8 ft (2.4 m)	7 ft (2.1 m)
Sheath material	Inconel	Inconel
System Resolution	0.001 K	0.001 K
<ol style="list-style-type: none"> 1. Probe and HP 34420A using programmed probe constants. 2. Probe at 0 °C, HP 34420A at 23 °C. 3. Typical specification. Absolute drift is highly dependent upon probe handling and usage. 4. When the probe is used within 4 hours of Rtpw (resistance at the triple point of water) calibration. 		

LIMITED WARRANTY AND LIMITATION OF LIABILITY

Each Fluke product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is one year and begins on the date of shipment. Parts, product repairs, and services are warranted for 90 days. This warranty extends only to the original buyer or end-user customer of a Fluke authorized reseller, and does not apply to fuses, disposable batteries, or to any product which, in Fluke's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation or handling. Fluke warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on non-defective media. Fluke does not warrant that software will be error free or operate without interruption.

Fluke authorized resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Fluke. Warranty support is available only if product is purchased through a Fluke authorized sales outlet or Buyer has paid the applicable international price. Fluke reserves the right to invoice Buyer for importation costs of repair/replacement parts when product purchased in one country is submitted for repair in another country.

Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that service center, with a description of the difficulty, postage and insurance prepaid (FOB Destination). Fluke assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB Destination). If Fluke determines that failure was caused by neglect, misuse, contamination, alteration, accident, or abnormal condition of operation or handling, including overvoltage failures caused by use outside the product's specified rating, or normal wear and tear of mechanical components, Fluke will provide an estimate of repair costs and obtain authorization before commencing the work. Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

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Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

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