FLUKE®

Calibration

Industrial temperature calibration selection guide

Look inside for:

- Field metrology wells
- Infrared calibrators
- Handheld and field dry-wells
- Micro-baths
- Environmental monitoring
- Thermometer readouts
- Reference sensors

Temperature measurement and calibration

Tools for industrial instrumentation and calibration technicians

Selection guide

Selection guide

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	Field metrology wells			NEW! Precision infrared calibrators		Handheld dry-wells	
							
Model	9142/9142P page 4	9143/9143P page 4	9144/9144P page 4	4180 page 6	4181 page 6	9100S page 8	9102S page 8
Range	–25 °C to 150 °C 4-20 mA	33 °C to 350 °C 4-20 mA	50 °C to 660 °C 4-20 mA	–15 °C to 120 °C	35 °C to 500 °C	35 °C to 375 °C	–10 °C to 122 °C
Best accuracy	± 0.2 °C	± 0.2 °C	± 0.35 °C	± 0.35 °C	± 0.35 °C	± 0.25 °C	± 0.25 °C
Applications	◆	◆	◆	✦	✦	■	■

	Field dry-wells					Sensors	
							
Model	9009 page 9	9103 page 10	9140 page 10	9141 page 10	9150 page 10	PRT page 15	Thermistor page 15
Range(s)	–15 °C to 350 °C	–25 °C to 140 °C	35 °C to 350 °C	50 °C to 650 °C	150 °C to 1200 °C	–200 °C to 670 °C	0 °C to 100 °C
Best accuracy	± 0.2 °C	± 0.25 °C	± 0.5 °C	± 0.5 °C	± 5 °C	See pages 14–15	See pages 14–15
Applications	■ ✹	■ ✹	■ ✹	■ ✹	thermocouples	◆ ■ ✹	◆ ■ ✹

	Micro baths			Thermometer readouts and environmental monitoring			
							
Model	6102 page 11	7102 page 11	7103 page 11	1551A/1552A page 13	1523/1524 page 13	1529 page 14	1620A page 12
Range	35 °C to 200 °C	–5 °C to 125 °C	–30 °C to 125 °C	–200 °C to 300 °C	–200 °C to 2315 °C	–200 °C to 962 °C	15 °C to 35 °C 20 %RH to 70 %RH
Best accuracy	± 0.25 °C	± 0.25 °C	± 0.25 °C	± 0.05 °C	± 0.015 °C	± 0.006 °C	± 0.25 °C ± 2 %RH
Channels	n/a	n/a	n/a	n/a	1 or 2	4	2
Applications	✹	✹	✹	■ ✹	◆ ✹	◆ ✹	★

Field metrology wells

Fluke Calibration 9142, 9143, 9144 Field Metrology Wells

- Lightweight, portable, and fast
- Cool to –25 °C in 15 minutes and heat to 660 °C in 15 minutes
- Built-in two-channel readout for PRT, RTD, thermocouple, 4–20 mA current
- True reference thermometry with accuracy to ± 0.01 °C
- Specifications guaranteed in an ambient range of 13 °C to 33 °C
- On-board automation and documentation
- Metrology performance in accuracy, stability, uniformity, and loading

Field Metrology Wells offer accuracy, portability, and speed for nearly all field calibration applications. These units are packed with functionality and are remarkably easy to use. Field Metrology Wells are light weight, small, and quick to reach temperature set points, yet also stable, uniform, and precise. This industrial product line is perfect for transmitter loop, comparison calibration, or a simple check of a thermocouple sensor. There is no need to have to carry additional tools into the field as the "process" option offers a built-in readout for resistance, voltage, and mA measurement, 24V loop power, and on-board documentation.

Typical applications:

- Loop calibration of temperature transmitters
- Thermocouple calibration or verification
- Calibrations of RTDs or PRTs
- Testing of thermostatic switches
- Verification of industrial thermometers

Each unit includes: Accredited report of calibration, insert, insert removal tool, power cord, user manual, 9930 Interface-*it* software, serial cable, test leads (process versions only), spare PRT connector (process version only)

Recommended accessories: carrying case, MET/TEMP II automated calibration software, reference temperature sensor

Ordering Information

9142-X Field Metrology Well, –25 °C to 150 °C
9142-X-P Field Metrology Well, Process Version, –25 °C to 150 °C
9143-X Field Metrology Well, 33 °C to 350 °C
9143-X-P Field Metrology Well, Process Version, 33 °C to 350 °C
9144-X Field Metrology Well, 50 °C to 660 °C
9144-X-P Field Metrology Well, Process Version, 50 °C to 660 °C
9142-CASE Case, Carrying, Field Metrology Wells
5616-12-A PRT 305 mm x 6.35 mm (11.75 in x 1/4 in) w/ NIST traceable calibration, –200 °C to 420 °C
5609-12-A PRT 305 mm x 6.35 mm (11.75 in x 1/4 in) uncalibrated, –200 °C to 660 °C
1923-4-7 Calibration, PRT –200 °C to 660 °C
X = insert (interchangeable). Specify "A", "B", "C", "D", "E", or "F"

Field metrology wells

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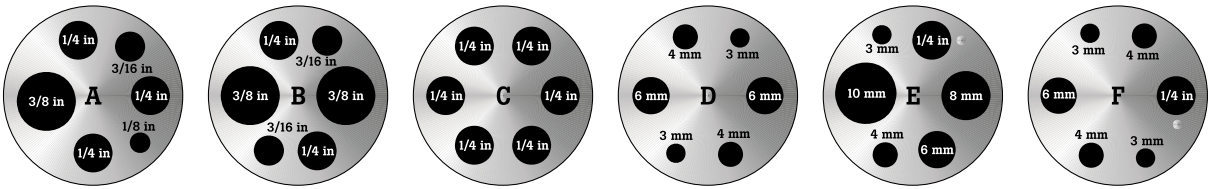
Calibration

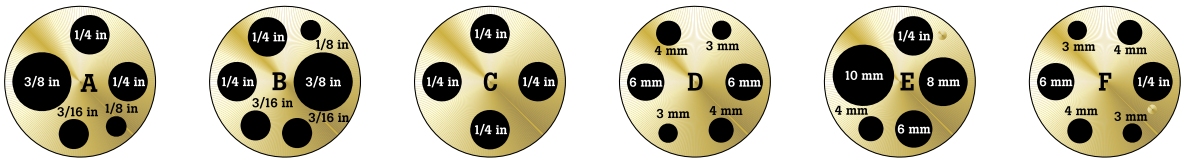
Summary specifications for 9142, 9143, and 9144

Model	9142/9142-P	9143/9143-P	9144/9144-P
Range	–25 °C to 150 °C	33 °C to 350 °C	50 °C to 660 °C
Display accuracy	± 0.2 °C	± 0.2 °C	± 0.35 °C (420 °C) ± 0.5°C (660 °C)
Stability	± 0.01 °C	± 0.02 °C (33 °C) ± 0.03 °C (350 °C)	± 0.03 °C (50 °C) ± 0.05 °C (660 °C)
Heating time (max)	23 min	5 min	15 min
Cooling time	15 min to –25 °C	14 min to 100 °C	25 min to 100 °C
Weight	8.2 kg (18 lbs)	7.3 kg (16 lbs)	7.7 kg (17 lbs)
Process version accuracy	± 0.01 °C at –25 °C ± 0.02 °C at 155 °C	± 0.02 °C at 50 °C ± 0.04 °C at 350 °C	± 0.02 °C at 50 °C ± 0.07 °C at 660 °C
RTD inputs (process version)	2–, 3–, 4–wire RTD. Resistance range of 0 to 400 ohms. Ni–120, PT–100 (385), PT–100 (3926), PT–100 (JIS), or Ω		
TC inputs (process version)	Type J, K, T, E, R, S, B, L, U, N, C, and mV		
mA specs (process version)	Range: 0–24 mA with 24–28 VDC loop power mA accuracy: 0.02% of rdg + 0.002 mA		

9142 insert options



9143/9144 insert options



Precision infrared calibrators

Fluke Calibration 4180 and 4181 Precision Infrared Calibrators

Accurate yet portable

- Combined temperature range of –15 °C to 500 °C
- Infrared display accuracy as good as ± 0.35 °C on both units
- Convenient handle and weight of 9.5 kg (21 lbs) or less for portability

Easy to get dependable results

- Each unit is given an accredited radiometric calibration for consistent, reliable, and traceable results
- Corrections for emissivity are performed automatically with no manual calculations
- Audio/visual stability indication provided for ease of use
- Stores thermometer calibration routines including temperature set-points, calibration distance, emissivity setting, and use of external aperture

A superior target

- 152 mm (6 in) diameter target addresses critical size-of-source effect issues for infrared thermometers and thermal imager calibration requirements
- Stability as good as ± 0.05 °C over 30 minutes for both models
- Uniformity as good as ± 0.1 °C over the inner 127 mm (5 in) diameter

Each unit includes: Accredited radiometric report of calibration, protective target cover, manual, 9930 Interface-*It* software

Recommended accessories: Protective carrying case

Do you calibrate your infrared thermometers and thermal imagers? Even those infrared thermometers that cannot be adjusted can benefit from a calibration that demonstrates the consistency and validity of your results. A trusted calibration means less worry, fewer questions and more time being productive. The 4180 Series of Precision Infrared Calibrators for infrared thermometers and thermal imagers is fast, accurate, and easy to use. It comes with an accredited calibration from one of the world's most trusted temperature calibration laboratories, sample calibration procedures for Fluke thermometers built right in, and everything you need to get started making high-quality infrared thermometer calibrations. This is the perfect solution for any infrared thermometer or thermal imager within its temperature range.

Ordering information

4180 Precision Infrared Calibrator, –15 °C to 120 °C
4181 Precision Infrared Calibrator, 35 °C to 500 °C
4180-CASE Protective carrying case
4180-DCAS Protective carrying case with wheels

Precision infrared calibrators

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Calibration

Excellent performance

The 4180 reaches temperatures from –15 °C to 120 °C and the 4181 has a temperature range from 35 °C to 500 °C. Check out the uniformity of the large six-inch targets shown in the thermal imager photo. The uniformity and stability are so good that variations can't be detected with a thermal imager. Uniformity is important in infrared temperature calibration work because an infrared thermometer will "see" as much as the entire target when placed at the appropriate calibration distance and each pixel of a thermal imager registers a temperature that needs to be both accurate and consistent across the imager.

Why calibrate?

Business decisions costing thousands of dollars are based on the results of your measurements, so they had better be right! It can be very expensive to shut down a line for repairs and maintenance but it might be catastrophic if the shut down is unplanned. To stand by your recommendations with confidence, you should definitely have your thermometers calibrated.

Application notes

For information on emissivity, size of source effect and radiometric calibration see the Fluke Calibration application note "Infrared Temperature Calibration 101" and have a look at our Guide to Infrared Thermometer Calibration to get started quickly with your new calibrator. You can download both documents from our web site.

Summary specifications for 4180 and 4181

	4180	4181
Temperature range (@ 23°C ambient and 0.95 emissivity)	–15 °C to 120 °C	35 °C to 500 °C
Infrared display accuracy	± 0.40 °C at –15 °C ± 0.04 °C at 0 °C ± 0.55 °C at 120 °C	± 0.35 °C at 35 °C ± 0.70 °C at 200 °C ± 1.6 °C at 500 °C
Display resolution	0.01 °	
Target size	152 mm (6 in) dia.	
Stability	± 0.1 °C at –15 °C ± 0.05 °C at 0 °C ± 0.1 °C at 120 °C	± 0.05 °C at 35 °C ± 0.2 °C at 250 °C ± 0.4 °C at 500 °C
Uniformity (5.0-inch diameter zone at the center of the target)	± 0.15 °C at –15 °C ± 0.1 °C at 0 °C ± 0.25 °C at 120 °C	± 0.1 °C at 35 °C ± 0.5 °C at 250 °C ± 1.0 °C at 500 °C
Heating time	15 min: –15 °C to 120 °C 14 min: 23 °C to 120 °C	20 min: 35 °C to 500 °C
Cooling time	15 min: 120 °C to 23 °C 20 min: 23 °C to –15 °C	100 min: 500 °C to 35 °C 40 min: 500 °C to 100 °C
Stabilization time	10 minutes	10 minutes

Handheld dry-wells

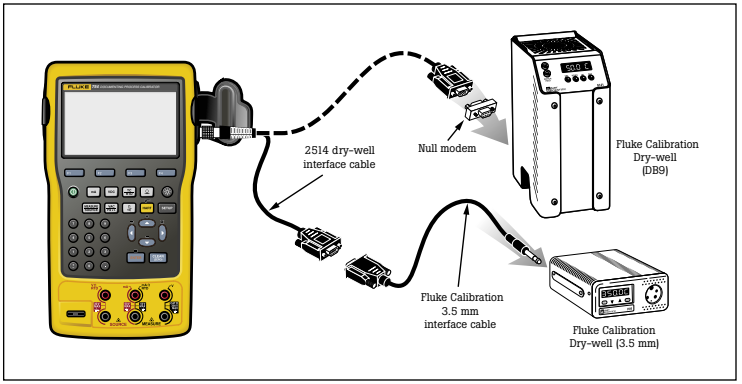
Temperature sensor calibration is easy with a handheld dry-well.

Fluke Calibration 9100S and 9102S Handheld Dry-Well Temperature Calibrators

- A temperature source that you can take anywhere
- Fast and easy calibrations of temperature sensors
- 9100S model weighs only 2 lbs, 3 oz (1 kilogram)
- Temperature ranges from –10 °C to 375 °C
- Stability during calibrations to ± 0.05 °C
- Direct interface to the Fluke 754 Documenting Process Calibrator

Each unit includes RS-232 interface, instrument control software and a NIST-traceable calibration.

Recommended accessories: carrying case, additional inserts, reference temperature sensor and indicator, battery pack

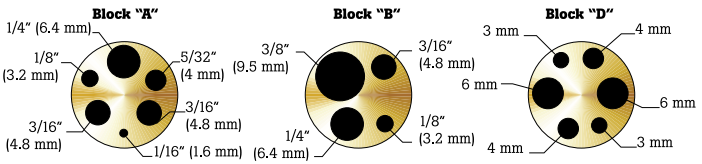


Easily connect a Fluke 754 to a dry-well for a fully automated temperature calibration that includes the temperature transmitter and temperature sensor.

Ordering information

9100S Handheld Dry-Well
9300 Rugged Carrying Case, 9100
9102S Handheld Dry-Well, comes with your choice of two 3102 inserts
9308 Hard Carrying Case, 9102/9132
9320A Battery Pack, 115V (9102S run time: 4 hrs)
3102-1 Insert, AL 1/16 in (1.6 mm)
3102-2 Insert, AL 1/8 in (3.2 mm)
3102-3 Insert, AL 3/16 in (4.8 mm)
3102-4 Insert, AL 1/4 in (6.4 mm) (Standard)
3102-6 Insert, AL 3/8 in (9.5 mm) (Standard)
3102-7 Insert, AL 7/16 in (11.1 mm) (Standard)
3102-8 Insert, AL 5/32 in (4 mm) (Standard)
2514 Dry-well interface cable to Fluke 754
Insert. Specify "A", "B", "D"

9100 fixed-block options



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Calibration

Fluke Calibration 9009 Industrial Dual-Block Calibrator

Cut your calibration time in half

- Calibrate temperature sensors fast
- Independently controlled cold and hot blocks
- –15 °C to 110 °C (cold block), 50 °C to 350 °C (hot block)
- Self-contained in a rugged watertight case
- Four removable inserts,
- Direct interface to Fluke 754

Each unit includes four removable inserts, including two with holes that are 6.4 mm (1/4 in) and two with holes that are 4.8 mm (3/16 in) in diameter. Each unit also includes a power cord, insert removal tool, RS-232 interface, instrument control software and a NIST-traceable calibration

Recommended accessories: additional inserts, reference temperature sensor and indicator

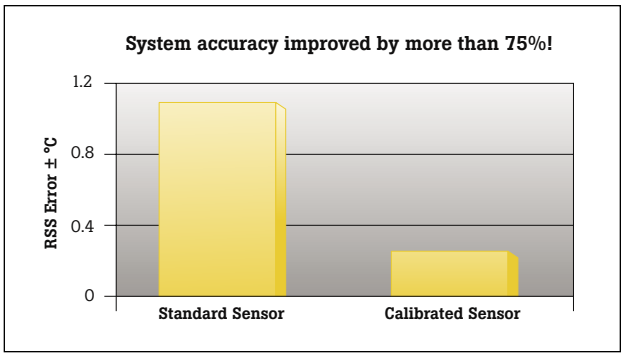
Now it's easy to work twice as fast.

Why calibrate thermometers? Because your performance will go up and your costs will come down. As suggested in the example in Table 1, the cost of inaccurate measurements can be quite high.

Tip: While you're checking your transmitter sensor at one temperature, the other well can be heating or cooling to your next set-point.

High Cost of Not Calibrating a Sensor	
Process fluid	Water
Flow rate	100 gallons per minute
Control temp	38 °F
Energy cost	*Rate* per kW-Hr
Energy cost	70,812 (*Rate*) per year

Table 1. Annual cost of energy due to a 1 °C temperature error



System accuracy improvement achieved with a calibrated Pt100 sensor.

Ordering information

9009-B Dual Block Dry-Well (Black), –15 °C to 350 °C
9009-Y Dual Block Dry-Well (Yellow), –15 °C to 350°C
3102-1 Insert 1.6 mm (1/16 in)
3102-2 Insert 3.2 mm (1/8 in)
3102-3 Insert 4.8 mm (3/16 in)
3102-4 Insert 6.4 mm (1/4 in)
3102-5 Insert 7.9 mm (5/16 in)
3102-6 Insert 9.5 mm (3/8 in)
3102-7 Insert 11.1 mm (7/16 in)
3102-8 Insert 4 mm (5/32 in)
2514 Dry-well interface cable to Fluke 754

Field dry-wells and furnaces

Fluke Calibration dry-wells interface directly to the Fluke 754 for fully automated calibration.

Fluke Calibration 9103, 9140 and 9141 Field Dry-Wells and 9150 Thermocouple Furnace

Temperature sensor test and calibration

- Lightweight and very portable
- Accuracy to ± 0.25 °C
- RS-232 and Interface-it software included
- Interchangeable inserts
- 9103 goes as low as –25 °C.
- 9140 is 6 pounds (2.7 kg) and 9141 is 3.6 kg (8 pounds)
- 9140 and 9141 reach max temp in 12 minutes
- 9150 extends up to 1200 °C covering a wide range of T/C types.
- Direct interface to Fluke 754

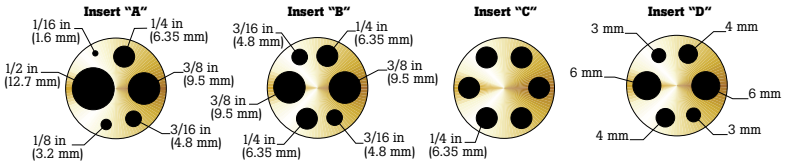
Recommended accessories: carrying case, additional inserts, reference temperature sensor and indicator

Each dry-well includes one of four available well inserts, an optional carrying case, RS-232 interface, instrument control software and a NIST-traceable calibration.

Ordering information

9103 Dry-Well, –25 °C to 140 °C
9140 Dry-Well, 35 °C to 350 °C
9141 Dry-Well, 50 °C to 650 °C
9150 Thermocouple Furnace, 150 °C to 1200 °C
9316 Rugged Carrying Case for 9103
9308 Rugged Carrying Case for 9140
9309 Rugged Carrying Case for 9141
9315 Rugged Carrying Case for 9150
2514 Dry-Well Interface Cable to Fluke 744
Insert (interchangeable). Specify "A", "B", "C", "D"

9103, 9140, 9141 and 9150 Insert Options



Micro-baths

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Calibration

Fluke Calibration 6102, 7102 and 7103 Micro-Baths

Portability and extreme stability

- Temperature sensor calibration
- Stability to ± 0.015 °C
- Ranges from –30 °C to 200 °C
- Accepts oddly shaped sensors
- Exceptional bath portability
- Direct interface to Fluke 754

Each unit includes a stir bar, power cord, RS-232 interface, instrument control software and a NIST-traceable calibration.

Recommended accessories: Fluid, case, reference probe and meter, extra stir bar, tank extension for LIG, MET/TEMP II

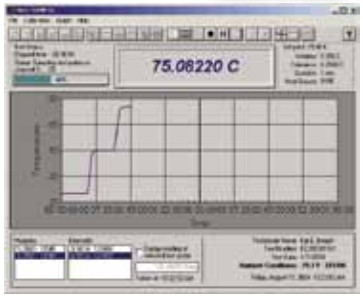
Tip: For improved accuracy, use an external reference temperature indicator and sensor such as a 1521 and 5615-12-I combination.

Fluke Calibration MET/TEMP II Software

FLUKE MET CAL® COMPATIBLE

Easy-to-use temperature calibration automation software

- Fully automated calibration of RTDs, thermocouples, thermistors and many heat sources
- Calibrates up to 100 sensors at up to 40 points
- Performs coefficient calculations and generates tables and reports
- Reports conform to ANSI and NCSL standards



Each unit includes: CD, RS-232 multiplexer box, adapter, and PC cable

Fluke Calibration Log*Ware* and Log*Ware* II Data Logging and Analysis Software

Turns any Fluke Calibration thermometer readout into a real-time data logger

- Calculates statistics and displays customized graphs
- User-selectable alarms, delayed start times, and sample intervals
- Logging intervals from 1 second to 24 hours
- User-settable alarm functions
- Choose LogWare II for readouts with more than one channel

See data logged in real-time.

Ordering information

7103 Micro-Bath, –30 °C to 125 °C
(includes a transport seal lid and a 2085 test lid)
7102 Micro-Bath, –5 °C to 125 °C
(includes a transport seal lid and a 2082-P test lid)
6102 Micro-Bath, 35 °C to 200 °C
(includes a transport seal lid and a 2082-M test lid)
5010-L Silicone Oil, type 200.05, 1 liter
(usable range: –40 °C to 130 °C)
5013-L Silicone Oil, type 200.20, 1 liter
(usable range: 10 °C to 230 °C)
9317 Carrying Case for 7103
9310 Carrying Case for 6102
9311 Carrying Case for 7102
9934-M Software, Log*Ware,* 1-channel, multi user
9934-S Software, Log*Ware,* 1-channel, single user
9935 Log*Ware* II, multiple channel logging software
9938 Software, MET/TEMP II
2514 Dry-Well Interface Cable to Fluke 754
** Software requires Windows® 98 or higher*

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Environmental monitoring

"DewK" 1620A High-Accuracy Thermo-Hygrometer

- Superior accuracy
- NEW! Network enabled
- NEW! Upgraded software
- Powerful logging and analysis tools
- Two interchangeable calibrated sensors
- Huge memory

Now you can easily monitor and record conditions throughout your entire facility with the DewK's new Ethernet and wireless capabilities, and set your upgraded Log*Ware* III software to notify you immediately of changing conditions. The 1620A accepts inputs from up to two sensors, which may be mounted directly on the unit or remotely (up to 100 feet away). Each sensor comes with a NVLAP-accredited calibration for temperature and relative humidity from Fluke Calibration, containing its own NIST-traceable calibration data, so recalibration doesn't require the main unit.

The 1620A-S reads temperature to ± 0.25 °C over its calibrated range of 15 °C to 35 °C. Relative humidity readings are to ± 2 % RH from 20 % RH to 70% RH.

Recommended accessories: Log*Ware* III software, protective case for spare sensor return for calibration

9936A Log*Ware* III software

- Remote monitoring and logging
- Supports Ethernet, RS-232, and wireless communications
- Customizable graphs, alarms, email settings and statistics
- Support for hot-swapping sensors
- Exports data to HTML, RTF or ASCII
- Security features that include passwords, groups, and customizable permissions

If you really want to get the most out of your DewK, Log*Ware* III is worth every penny. By adding Fluke Calibration's LogWare III software, you can simultaneously monitor an unlimited number of DewK sensors. The Windows-based software enables statistical and graphical analysis of real-time or previously recorded data, and can send emails to PDAs, pagers, and cell phones when triggered by user-defined events.

Have everything you need at a glance with LogWare III.

1622A-S "DewK" Thermo-Hygrometer with Log*Ware* III Software and wireless kit
1621A-S "DewK" Thermo-Hygrometer with Log*Ware* III Software
1620A-S "DewK" Thermo-Hygrometer
9328 Protective Case for 1620A and two sensors
2607 Protective Case for one spare sensor
2626-S Spare Sensor
9936A Log*Ware* III Software

Handheld thermometer readouts

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Calibration

Fluke Calibration 1551A/1552A "Stik" Thermometers

Probe and digital readout combined into one unit

- Accuracy of ± 0.05 °C (± 0.09 °F) over full range
- Intrinsically safe (ATEX and IECEx compliant)
- Two models to choose from (–50 to 160 °C or –80 to 300 °C)
- Optional data logging of up to 10,000 time-stamped measurements
- Display temperature in °C or °F
- 300-hour battery life on three AAA batteries

Recommended accessories: 1551-CASE

Fluke Calibration 1523/1524 Reference Thermometers

Measure, graph and record three sensor types with one tool

- Measure RTDs, PRTs, thermistors and thermocouples
- High accuracy: PRTs up to ± 0.011 °C and thermocouples: up to ± 0.24 °C
- 1523: Single channel with memory for 25 readings
- 1524: Two channels with datalogging of up to 15,000 time- and date-stamped measurements
- Graphical temperature trend feature
- Info-Con connectors store probe parameters
- 20-hour battery life on three AA batteries

Recommended accessories: PRT: 5609-9BND-P (no cal incl.), Thermistors: 5610-9-P, 2373-LPRT LEMO to mini-grabbers (4-wire), 2373-LTC LEMO to Universal TC Adapter, 2384-P Spare PRT INFO-CON Connector, 2384-T Spare TC INFO-CON Connector, 9935-S LogWare II software (single user).

Summary specifications for 1551A, 1552A, 1523 and 1524

	1551A	1552A	1523	1524
Sensor types	Fixed thin-film RTD	Fixed wire-wound PRT	One input: RTDs, PRTs, thermocouples and thermistors	Two inputs: RTDs, PRTs, thermocouples & thermistors
Temperature range	–50 °C to 160 °C (–58 °F to 320 °F)	–80 °C to 300 °C (–112 °F to 572 °F)	–200 °C to 2315 °C (–328 °F to 4199 °F)	
Accuracy	± 0.05 °C (combined probe and readout; full range)		PRT (readout only at 0 °C): ± 0.015 °C Thermistor (readout only at 0 °C): ± 0.002 ° C	
Temperature resolution	Selectable: 0.1, 0.01, 0.001		PRTs and thermistors: 0.001 Thermocouples: 0.01	
Operating range	–10 °C to 50 °C (14 °F to 122 °F)		13 °C to 33 °C (55 °F to 91 °F)	
Data logging	10,000 time-stamped readings to internal memory (optional)		25 readings w/stats	25 readings w/stats; 15,000 time and date stamped
Communications	RS-232 stereo jack (access calibration parameters only)		RS-232 (9940 I/O ToolKit software included)	
Size (HxWxD)	114 mm x 57 mm x 25 mm (4.5 in x 2.25 in x 1.0 in)		96 mm x 200 mm x 47 mm (3.75 in x 7.9 in x 1.86 in)	
Weight	196 g (7 oz)		650 g (22 oz)	
Calibration (included)	NVLAP-accredited		NIST-traceable (accredited available upon request)	

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Ordering information

1551A-9 Thermometer, Fixed RTD, –50 °C to 160 °C, 4.8 mm x 229 mm (3/16 in x 9 in)
1551A-12 Thermometer, Fixed RTD, –50 °C to 160 °C (-58 °F to 320 °F), 6.35 mm x 305 mm (1/4 in x 12 in)
1552A-12 Thermometer, Fixed PRT, –80 °C to 300 °C (–112 °F to 572 °F), 6.35 mm x 305 mm (1/4 in x 12 in)
1551A-CASE Case, 1551-2, Carrying
Note: Append "-DL" to any mainframe to include datalogging
1523 Thermometer Readout, Handheld, 1 Channel
1524 Thermometer Readout, Handheld, 2 Channel, Data Logger
1523-CAL 1523 Accredited Calibration
1524-CAL 1524 Accredited Calibration
5610-9-P Probe, Precision Thermistor, Stainless Steel, 0 °C to 100 °C, (1/8 in x 9 in)
5616-6-P Probe, PRT, 100 ohm, –200 °C to 300 °C, 4.8 mm x 152.4 mm (3/16 in x 6 in)
5609-12-P Probe, PRT, 100 ohm, –200 °C to 660 °C, 6.35 mm x 304.8 mm (1/4 in x 12 in)
5609-9BND-P Probe, PRT, 25 ohm, 90° Bend at 9 inches, –200 °C to 660 °C, 6.35 mm x 304.8 mm (1/4 in x 12 in),
Note: 5609 is not calibrated: (Request 1924-4-7 Calibration)
9935-S Software, LogWare II, single user
1523-CASE Case, 1523/1524 Readout and probe carrying
FLUKETPAK TPAK, Meter Hanging Kit
2373-LPRT Adapter, Lemo to Mini Grabbers (4-wire)
2373-LTC Adapter, Lemo to Universal TC (TC)
2384-P Smart Connector, PRT (Gray Cap), Spare
2384-T Smart Connector, TC (Blue Cap), Spare

Precision thermometer readout

Fluke Calibration 1529 Chub-E4 Thermometer

Lab-quality accuracy on four channels

- Four channels for PRTs, thermistors and thermocouples
- Simultaneous measurement on four channels
- Displays eight user-selected data fields
- Logs up to 8,000 readings
- Battery provides eight hours of continuous operation
- Compatible with LogWare and MET/TEMP II software

Recommended accessories: PRT (5626-12-L, 5615-12-L, or 5627A-12-L), thermistor (5611T-L or 5610-L), rugged carrying case (holds 1529 and four probes), LogWare II multi-channel logging software (see page 11).

Ordering Information

1529 Chub-E4, 2 TC and 2 PRT/Thermistor Inputs
1529-R Chub-E4, 4 PRT/Thermistor Inputs
1529-T Chub-E4, 4 TC Inputs
2506-1529 IEEE Option
9322 Rugged Carrying Case
5611T-L Flexible Teflon coated precision thermistor, 0 °C to 100 °C (32 °F to 212 °F)
5610-9-L Precision thermistor, 0 °C to 100 °C (32 °F to 212 °F)
5626-12-L Secondary PRT, –200 °C to 660 °C (–328 °F to 1220 °F), 12.7 mm x 6.35 mm (12 in x 1/4 in)
5616-6-L Probe, PRT, 100 ohm, –200 °C to 300 °C (–328 °F to 572 °F), 4.8 mm x 152.4 mm (3/16 in x 6 in), (request calibration 1922-4-N)
5616-9-L Probe, PRT, 100 ohm, –200 °C to 420 °C (–328 °F to 788 °F), 4.8 mm x 152.4 mm (3/16 in x 6 in), (request calibration 1922-4-8)
5616-12-L Secondary PRT, –200 °C to 420 °C (–328 °F to 788 °F), 12.7 mm x 6.35 mm (12 in x 1/4 in) (NIST-traceable cal included)
L = mini-spade lead wire termination
9935 LogWare II, multiple channel logging software

Summary specifications for 1529 PRT/RTD, 1529 Thermistor and 1529 Thermocouple

	1529 PRT/RTD	1529 Thermistor	1529 Thermocouple		
Inputs	2 channels PRT/thermistor and 2 channels TC, or 4 channels PRT/thermistor, or 4 channels TC, specify when ordering; PRT/thermistor channels accept 2, 3, or 4 wires; TC inputs accept B, E, J, K, N, R, S, T, and Au-Pt TC types				
Temperature range	–189 °C to 960 °C (–308 °F to 1760 °F)	–50 °C to 150 °C (–58 °F to 302 °F)	–270 °C to 1800 °C (–454 °F to 3272 °F)		
Measurement range	0 to 400 Ω	0 to 500 kΩ	–10 mV to 100 mV		
Characterizations	ITS-90, IEC-751(DIN"385"), Callendar-Van Dusen	Steinhart-Hart, YSI-400	NIST Monograph 175, 3-point deviation function applied to NIST 175, 6th-order polynomial		
Temperature accuracy, typical (meter only)	± 0.006 °C at 0 °C ± 0.009 °C at 100 °C	± 0.0025 °C at 0 °C ± 0.025 °C at 100 °C		**Ext. RJC**	**Int. RJC**
			K at 600 °C T at 200 °C	± 0.15 °C ± 0.1 °C	± 0.4 °C ± 0.3 °C
Temperature resolution	0.001°	0.0001°	0.01 to 0.001°		
Operating range	16 °C to 30 °C (60.8 °F to 86 °F)				
Logging intervals	0.1, 0.2, 0.5, 1, 2, 5, 10, 30, or 60 seconds; 2, 5, 10, 30, or 60 minutes				
Communications	RS-232, IEEE-488 (GPIB) optional				
Size (HxWxD)	102 x 191 x 208 mm (4.0 x 7.5 x 8.2 in)				
Weight	2 kg (4.5 lb)				
Calibration	Accredited NIST-traceable resistance calibration and NIST-traceable voltage calibration				

Temperature sensors

FLUKE®
Calibration

Each probe includes:

- Individual report of calibration
- Probe linearization coefficients
- Resistance vs. temperature table
- Termination to match your thermometer readout (see spec chart)

Tip: Improve the accuracy of your calibration by using an external reference thermometer. Calibrated temperature sensors and indicators can improve your results by a factor of 2 or more.

Recommended accessories: 2601 probe carrying case (for probes up to 12 in long), 2609 probe carrying case with handle (for probes up to 20 in long)

Summary specifications

PRT							
			Accuracy w/ Chub-E4 (includes drift)				
Model	**Range**	**Type of Cal**	**–200 °C**	**0 °C**	**Max °C**	**Dimensions**	**Unique Selling Point**
5626-12-X	–200 °C to 661 °C	Accredited	± 0.006	± 0.009	± 0.037	6.35 x 305 mm	Best reference
5609-12-X	–200 °C to 670 °C	Order 1930-4-7†	± 0.010	± 0.011	± 0.054	6.35 x 305 mm	Highest temperature
5608-12-X	–200 °C to 500 °C	Order 1930-4-R†	± 0.010	± 0.011	± 0.031	3.2 x 305 mm	Excellent immersion
5616-12-X	–200 °C to 420 °C	Traceable	± 0.012	± 0.013	± 0.035	6.35 x 298 mm	Best value
5615-12-X	–200 °C to 420 °C	Accredited	± 0.024	± 0.014	± 0.041	6.35 x 305 mm	Accredited calibration
5615-9-X	–200 °C to 420 °C	Accredited	± 0.024	± 0.014	± 0.041	4.76 x 229 mm	Accredited calibration
5615-6-X	–200 °C to 300 °C	Accredited	± 0.024	± 0.014	± 0.041	4.76 x 152 mm	Smallest
5627A-12	–200 °C to 420 °C	Accredited	± 0.030	± 0.050	± 0.125	4.76 x 305 mm	Most rugged
5627A-9	–200 °C to 300 °C	Accredited	± 0.030	± 0.050	± 0.100	4.76 x 229 mm	Most rugged
5627A-6	–200 °C to 300 °C	Accredited	± 0.030	± 0.050	± 0.100	4.76 x 152 mm	Most rugged
Thermistor							
5610-9-X	0 °C to 100 °C	Traceable	N/A	± 0.009	± 0.023	3.2 x 229 mm	High accuracy
5611T-X	0 °C to 100 °C	Traceable	N/A	± 0.009	± 0.023	3 x 6100 mm	Teflon, flexible

X= Lead termination. Specify "A" for 9142/9143/9144, "D" for Tweener, "L" for Chub-E4, and "I" for 1521/1522.
Accuracy calculated at k=2 95% confidence interval
†Calibration ordered separately. For individual probe calibration order the 1923-4-7 or 1923-4-R calibration.

Training

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Calibration

Calibration and metrology training from Fluke Calibration can help you and your staff become more knowledgeable in a wide variety of disciplines. Instructors are experts who work in electrical, temperature, pressure and flow calibration, and who really want to help you learn the foundation and techniques of metrology that you can put to immediate use in your workplace. Fluke Calibration offers introductory, intermediate, and advanced level courses in a variety of formats to meet your needs.

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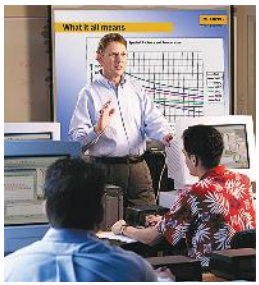

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