Temperature Bath

- **Fluke Calibration 9142 Field Metrology Well**

  The 9142 Field Metrology Wells extend high performance to the industrial process environment by maximizing portability, speed, and functionality with little compromise to metrology performance.

1. **Fluke Calibration 9142 Field Metrology Well**

➢ **Key Features**

- Lightweight, portable, and fast
- Built-in two-channel readout for PRT, RTD, thermocouple, 4-20 mA current
- True reference thermometry with accuracy to ±0.01 °C
- On-board automation and documentation
- Metrology performance in accuracy, stability, uniformity, and loading

- Specifications: Fluke Calibration 9142 Field Metrology Well

Base Unit Specifications	
Temperature range at 23°C	–25°C to 150°C (–13°F to 302°F)
Display accuracy	±0.2°C full range
Stability	±0.01°C full range
Axial uniformity at 40 mm (1.6 in)	±0.05°C full range
Radial uniformity	±0.01°C full range
Loading effect (with a 6.35 mm reference probe and three 6.35 mm probes)	±0.006°C full range
Hysteresis	0.025

Operating conditions	0°C to 50°C, 0% to 90% RH (non-condensing)
Environmental conditions (for all specifications except temperature range)	13°C to 33°C
Immersion (well) Depth	150 mm (5.9 in)
Insert OD	30 mm (1.18 in)
Heating time	16 min: 23°C to 140°C 23 min: 23°C to 150°C 25 min: –25°C to 150°C
Cooling time	15 min: 23°C to –25°C 25 min: 150°C to –23°C
Resolution	0.01°
Display	LCD, °C or °F user-selectable
Size (H x W x D)	290 x 185 x 295 mm (11.4 x 7.3 x 11.6 in)
Weight	8.16 kg (18 lb)
Power requirements	100 V to 115 V (±10%) 50/60 Hz, 635 W 230 V (±10%) 50/60 Hz, 575 W
Computer interface	RS-232 interface
Calibration	NVLAP accredited calibration included
Automation	Use the 1586A Super-DAQ to automate temperature sensor calibration
-P Specifications	

Built-in reference thermometer readout accuracy (4-Wire Reference Probe)[1]	±0.010°C at -25°C ±0.015°C at 0°C ±0.020°C at 50°C ±0.025°C at 150°C ±0.030°C at 200°C ±0.040°C at 350°C ±0.050°C at 420°C ±0.070°C at 660°C
Reference resistance range	0 ohms to 400 ohms
Reference resistance accuracy[2]	0 ohms to 42 ohms: ±0.0025 ohms 42 ohms to 400 ohms: ±60 ppm of reading
Reference characterizations	ITS-90, CVD, IEC-751, Resistance
Reference measurement capability	4-wire
Reference probe connection	6-pin Din with Infocon Technology
Built-in RTD thermometer readout accuracy	NI-120: ±0.015°C at 0°C PT-100 (385): ±0.02°C at 0°C PT-100 (3926): ±0.02°C at 0°C PT-100 (JIS): ±0.02°C at 0°C
RTD resistance range	0 ohms to 400 ohms
RTD resistance accuracy[2]	0 ohms to 25 ohms: ±0.002 ohms 25 ohms to 400 ohms: ±80 ppm of reading
RTD characterizations	PT-100 (385),(JIS),(3926), NI-120, Resistance
RTD measurement capability	4-wire RTD (2-,3-wire RTD w/ Jumpers only)
RTD connection	4 terminal input

Built-in TC thermometer readout accuracy	Type J: ±0.7°C at 660°C Type K: ±0.8°C at 660°C Type T: ±0.8°C at 400°C Type E: ±0.7°C at 660°C Type R: ±1.4°C at 660°C Type S: ±1.5°C at 660°C Type M: ±1.4°C at 660°C Type L: ±0.7°C at 660°C Type U: ±0.75°C at 600°C Type N: ±0.9°C at 660°C Type C: ±1.1°C at 660°C
TC millivolt range	–10 mV to 75 mV
Voltage accuracy	0.025% of reading + 0.01 mV
Internal cold junction compensation accuracy	±0.35°C (ambient of 13°C to 33°C)
TC connection	Small connectors
Built-in mA readout accuracy	0.02% of reading + 2 mV
mA range	Cal 4-22 mA, Spec 4-24 mA
mA connection	2 terminal input
Loop power function	24 V DC loop power
Built-in electronics temperature coefficient (0°C to 13°C, 33°C to 50°C)	±0.005% of range per °C

1. The temperature range may be limited by the reference probe connected to the readout. The Built-In Reference Thermometer Readout Accuracy does not include the sensor probe accuracy. It does not include the probe uncertainty or probe characterization errors.
2. Measurement accuracy specifications apply within the operating range and assume 4-wires for PRTs. With 3-wire RTDs add 0.05 ohms to the measurement accuracy plus the maximum possible difference between the resistances of the lead wires.