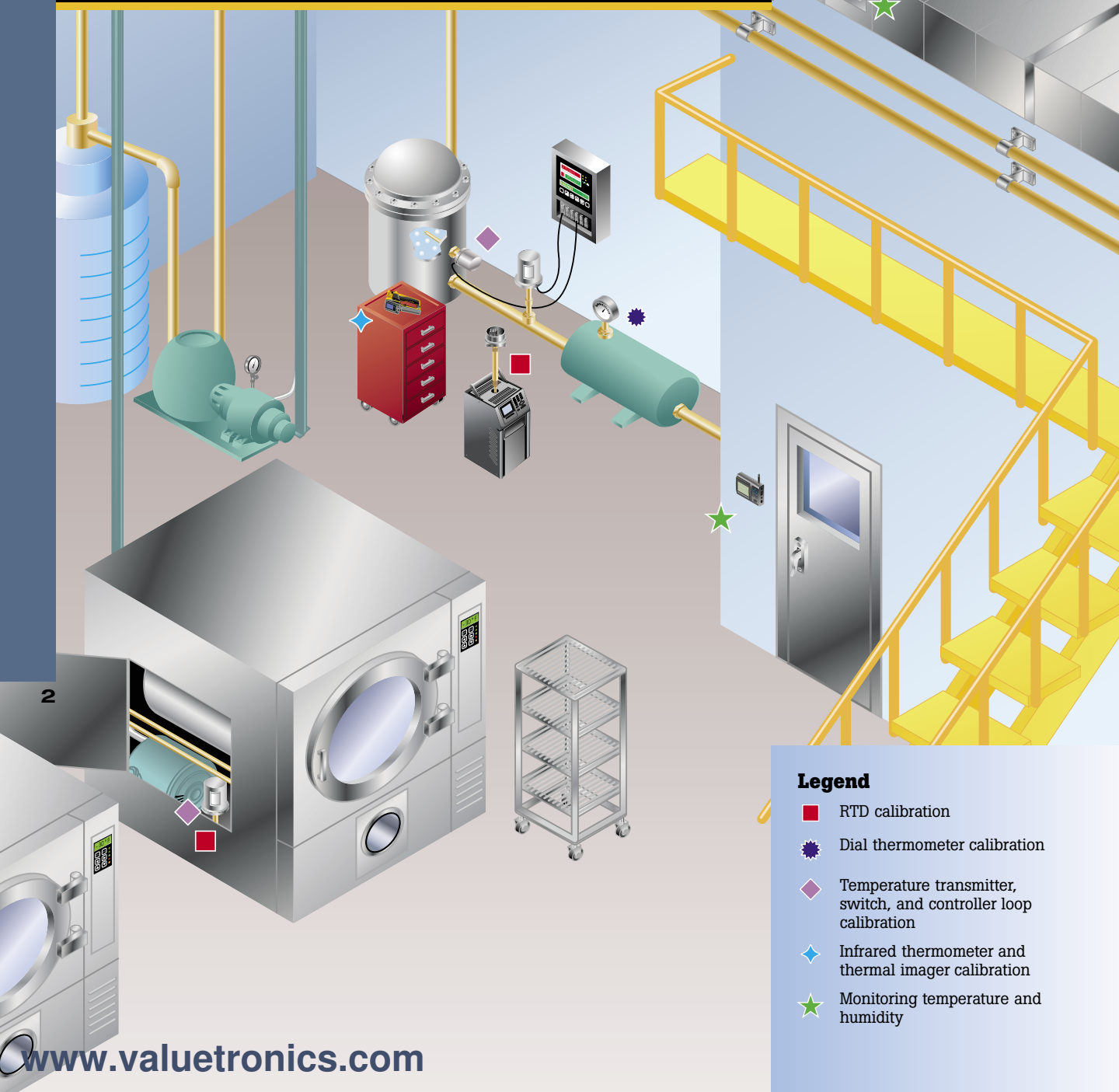# FLUKE ®

Calibration

Industrial temperature calibration selection guide

Temperature measurement and calibration

Tools for industrial instrumentation and calibration technicians

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Legend

■ RTD calibration

✸ Dial thermometer calibration

◆ Temperature transmitter, switch, and controller loop calibration

✦ Infrared thermometer and thermal imager calibration

★ Monitoring temperature and humidity

	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	✸	✸	✸	■	◆ ✸	◆ ✸	★

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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

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.
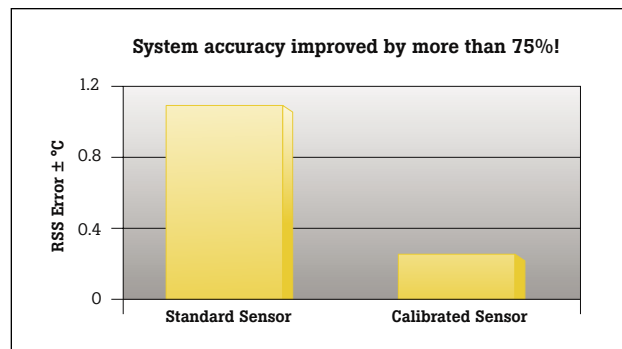

Now it's easy to work twice as fast.

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 improved by more than 75%!

System accuracy improvement achieved with a calibrated Pt100 sensor.

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