



**FLUKE®**

**Calibration**

# Industrial temperature calibration selection guide

**Look inside for:**

**Field metrology wells**

**Infrared calibrators**

**Handheld and field dry-wells**

**Micro-baths**

**Environmental monitoring**

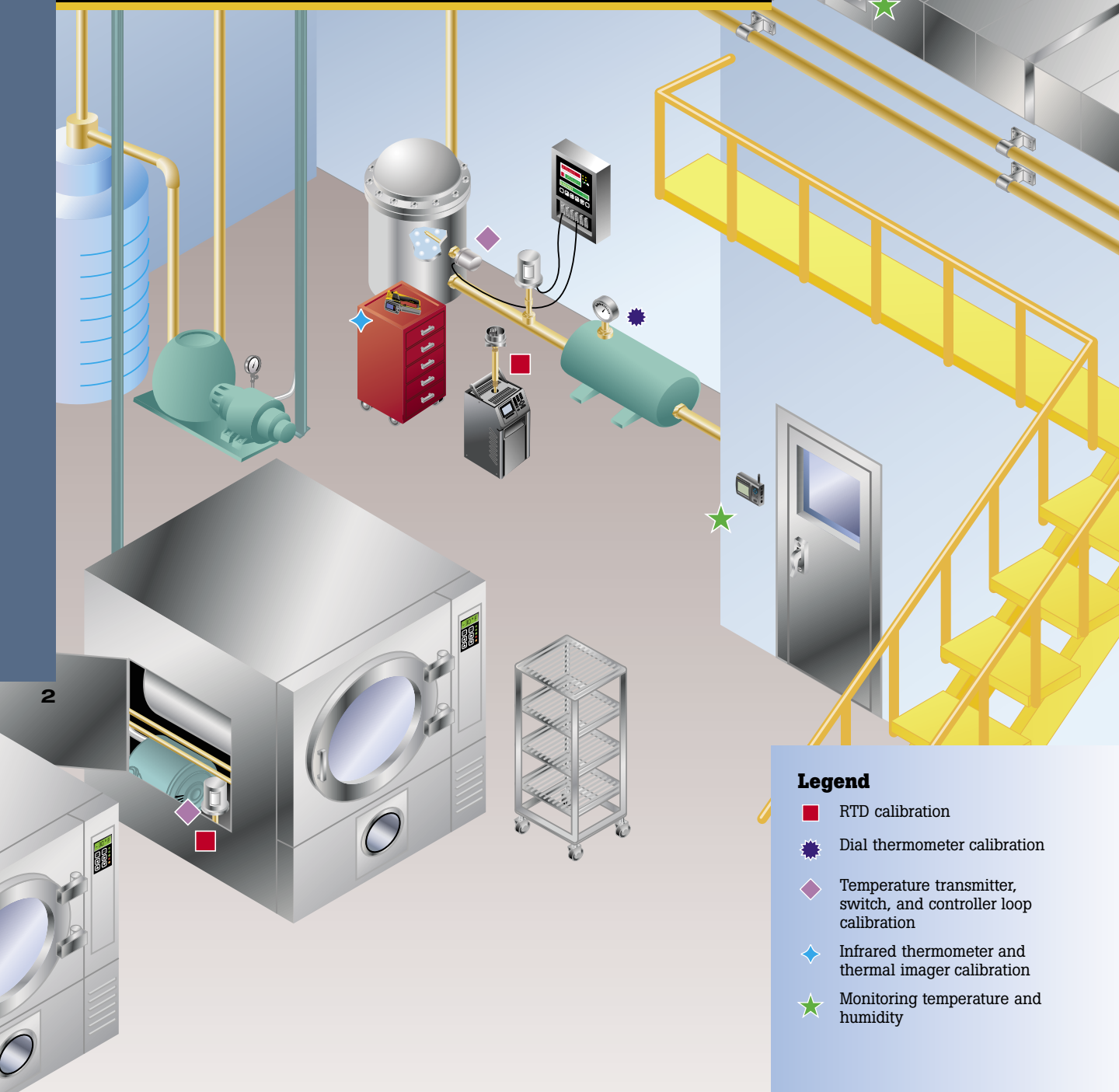
**Thermometer readouts**

**Reference sensors**

# Temperature measurement and calibration

*Tools for industrial instrumentation and calibration technicians*

# Selection guide



## Legend

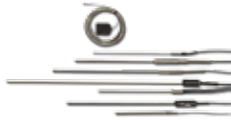
- RTD calibration
- ⚙ Dial thermometer calibration
- ◆ Temperature transmitter, switch, and controller loop calibration
- ◆ Infrared thermometer and thermal imager calibration
- ★ Monitoring temperature and humidity

# Selection guide

**FLUKE**®

**Calibration**

|               | Field metrology wells                                                             |                                                                                   |                                                                                   | NEW! Precision infrared calibrators                                               |                                                                                   | Handheld dry-wells                                                                  |                                                                                     |
|---------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|               |  |  |  |  |  |  |  |
| Model         | 9142/9142P<br>page 4                                                              | 9143/9143P<br>page 4                                                              | 9144/9144P<br>page 4                                                              | 4180<br>page 6                                                                    | 4181<br>page 6                                                                    | 9100S<br>page 8                                                                     | 9102S<br>page 8                                                                     |
| Range         | -25 °C to 150 °C<br>4-20 mA                                                       | 33 °C to 350 °C<br>4-20 mA                                                        | 50 °C to 660 °C<br>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<br>page 9                                                                    | 9103<br>page 10                                                                   | 9140<br>page 10                                                                   | 9141<br>page 10                                                                   | 9150<br>page 10                                                                   | PRT<br>page 15                                                                      | Thermistor<br>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<br>page 11                                                                     | 7102<br>page 11                                                                     | 7103<br>page 11                                                                     | 1551A/1552A<br>page 13                                                              | 1523/1524<br>page 13                                                                | 1529<br>page 14                                                                       | 1620A<br>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<br>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<br>± 2 %RH                                                                  |
| Channels      | n/a                                                                                 | n/a                                                                                 | n/a                                                                                 | n/a                                                                                 | 1 or 2                                                                              | 4                                                                                     | 2                                                                                     |
| Applications  | ◆                                                                                   | ◆                                                                                   | ◆                                                                                   | ■ ◆                                                                                 | ◆ ◆                                                                                 | ◆ ◆                                                                                   | ★                                                                                     |

# 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  $\pm 0.25^\circ\text{C}$
- RS-232 and Interface-it software included
- Interchangeable inserts
- 9103 goes as low as  $-25^\circ\text{C}$ .
- 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  $1200^\circ\text{C}$  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 MIST-traceable calibration.

## Ordering information

**9103** Dry-Well,  $-25^\circ\text{C}$  to  $140^\circ\text{C}$

**9140** Dry-Well,  $35^\circ\text{C}$  to  $350^\circ\text{C}$

**9141** Dry-Well,  $50^\circ\text{C}$  to  $650^\circ\text{C}$

**9150** Thermocouple Furnace,  $150^\circ\text{C}$  to  $1200^\circ\text{C}$

**9316** Rugged Carrying Case for 9103

**9308** Rugged Carrying Case for 9140

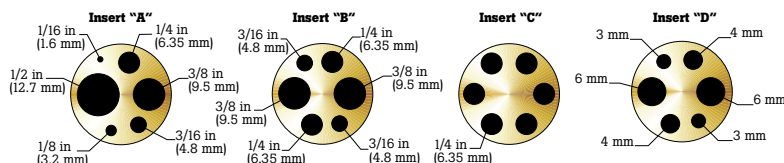
**9309** Rugged Carrying Case for 9141

**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



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.

## Training Seminars in American Fork, Utah

[www.flukecal.com/tempcal\\_training](http://www.flukecal.com/tempcal_training)

Get real training from real experts that lays out the basics and builds up to more advanced material for more advanced learners.

- Principles of Temperature Metrology
- Advanced Topics in Temperature Metrology
- Infrared Temperature Metrology
- Temperature Calibration Product Training

## Service

Some of the best service and lowest uncertainties are available in our primary and secondary calibration laboratories located in the US and Europe. We offer NVLAP accredited calibration services in the US and UKAS accredited calibration services are available in Europe. Don't forget to pay a visit to our calibration laboratory when you come for training.



**Fluke Calibration.** *Precision, performance, confidence.™*

|            |    |             |          |      |          |
|------------|----|-------------|----------|------|----------|
| Electrical | RF | Temperature | Pressure | Flow | Software |
|------------|----|-------------|----------|------|----------|

### Fluke Calibration

PO Box 9090, Everett, WA 98206 U.S.A.

### Fluke Europe B.V.

PO Box 1186, 5602 BD

Eindhoven, The Netherlands

### For more information call:

In the U.S.A. (877) 355-3225 or

Fax (425) 446-5116

In Europe/M-East/Africa +31 (0) 40 2675 200 or

Fax +31 (0) 40 2675 222

In Canada (800)-36-FLUKE or

Fax (905) 890-6866

From other countries +1 (425) 446-5500 or

Fax +1 (425) 446-5116

Web access: <http://www.flukecal.com>

©2011 Fluke Corporation.

Specifications subject to change without notice.

Printed in U.S.A. 9/2011 3246833B C-EN

Pub. ID: 11336-ENG, Rev 02

**Modification of this document is not permitted without written permission from Fluke Corporation.**