

A Flexible, All-In-One Temperature Calibration Solution



A large pharmaceutical manufacturer had a need to use both liquid and dry-block calibrators to maintain the proper temperature within their processes. Due to safety concerns with liquid baths, there had been a push to move exclusively to dry-block systems. But as they employed a combination of short and sanitary sensors along with standard straight probes, there were sensors that required liquid baths.

Dry Block Versus Liquid Bath Systems

When considering temperature calibration options, technicians traditionally had to make the choice between using a dry-block or liquid temperature bath calibrator. Each solution had distinct advantages over the other, but they also came with different drawbacks.

Advantages of Dry-Block Calibration

- No hazardous or hot liquids.
- Easier to handle inserts than liquid.
- More convenient to carry.
- 100% repeatability due to the fixed sensor position in the block.

Advantages of Liquid Bath Calibration

- Different inserts aren't required.
- Calibrate any type of odd-shaped sensor that wouldn't fit in an insert.
- Calibrate glass thermometers and gas- or liquid-filled sensors

Our Solution

Although customers of our previous models of temperature calibrators enjoyed the flexibility of switching from dry-block to liquid bath modes, making the switch had its challenges, especially when switching from wet to dry: draining the calibrator, combined with cleanup and preparation for transitioning to dry calibration, could be a tedious and time consuming exercise.

Building on the knowledge gained from the development of two previous combination dry-block/liquid bath temperature calibrators, the engineering team at AMETEK STC developed the RTC-168 Reference Temperature Calibrator, featuring industry-first innovations includ-

ing a removable liquid insert/container, that makes switching from wet to dry easier, faster, and much cleaner. Simply remove the liquid container, and it's a dry-block calibrator again. And as the container can be covered and sealed with a dedicated, threaded lid, liquid can be stored and reused the next time that a liquid bath calibration is called for.

Continued on next page ►



The RTC-168 Reference Temperature Calibrator

Calibration in the Dry Block Configuration

The RTC-168's dry-block calibration solution starts with a custom insert that includes a cable groove which allows users to slide our new STS-102 A 035 reference sensor under the flange of the sanitary sensor. Place the sanitary sensor into the middle of the insert, and you're ready to calibrate. As sanitary sensors and sensor tips are available in countless shapes and designs, we can design and produce special inserts and deliver a genuinely plug n' play sanitary sensor calibration system.



Sanitary Sensor and Insert.



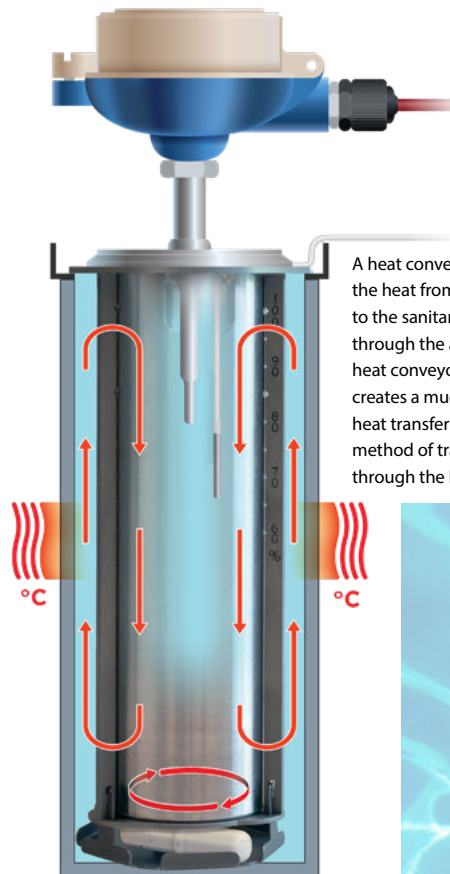
STS-102 A 035 sensor in an insert.



STS-102 A 035 sensor and sanitary sensor in an insert, mounted in an RTC-168 calibrator.

Calibration in Our Temperature Bath

Our new patent-pending temperature calibration technique allows users to calibrate large diameter, short sanitary sensors in situations that closely mirror the sensor's day-to-day use. By isolating the liquid in the main block from the excess liquid around the flange, we have removed the liquid flow effect and the need for a precise liquid level, two traditional sources of error. The RTC-168 is the industry's only portable temperature calibrator capable of high-accuracy wet calibrations of sanitary sensors up to 84 mm in diameter.



A heat conveyor block transfers the heat from the calibrator to the sanitary sensor directly through the aluminum of the heat conveyor. This method creates a much more consistent heat transfer than the traditional method of transferring heat through the liquid.

The Liquid Container allows you to transition quickly from a dry-block to a liquid bath configuration. If your lab uses multiple liquid types, you can keep a container for each type and switch back and forth as needed.

