

Averaging and Multi-Point Temperature Measurement for Level, Air, and Bulk Materials

Many temperature applications can be solved with discrete single point measurements. When the measurement of interest is a tank, room, air duct or other large area, a single point measurement will not appropriately represent the temperature throughout the entire area. Averaging sensors or multi-point sensors provide a truer picture of the temperature in these more complex and large volume applications.

The technical documents presented in this [compendium](#) provide solutions for these measurement challenges.

Averaging Sensors are typically resistive elements extending the length of the sensor. They are designed with stainless steel or aluminum sheaths to provide durability or flexibility depending on the environment to be monitored. Averaging sensors can be coiled or shaped to fit the measurement area and are available in lengths up to 60 feet. Common applications include HVAC ducting, clean rooms, storage areas, and bulk materials where temperature gradients are present and general control is necessary.

Multi-Point Sensors can be RTD or Thermocouple based instruments, containing from 2 to 20 (or more) discrete measurement points spaced along the length of the sensor. They are typically mounted in a vertical position in a tank to provide a level indication or insight into temperature variation related to mixing effects or chemical reactions at various levels in a mixture.

This [compendium](#) of application notes and drawings will provide an overview of these unique temperature measurement instruments and the environments they serve.