

# VW Temperature Sensor



## Applications

The VW temperature sensor is used to monitor the heat of hydration in mass concrete.

## Operation

The VW temperature sensor consists of a stainless steel body, a wire held in tension within the body, an electromagnetic coil, and signal cable.

The body of the sensor expands and contracts with changes in temperature, increasing or decreasing the tension of the wire inside the body.

When a readout is connected to the sensor, it sends an electric pulse to coil, which plucks the wire and causes it to vibrate at its natural frequency. A second coil picks up the vibration and returns a frequency to the readout.

The frequency reading is converted to units of temperature by applying calibration factors.

## Advantages

**High Accuracy:** The VW temperature sensor has an accuracy better than  $\pm 0.1$  °C.

**VW Compatible:** The temperature sensor is read by the same devices that monitor other VW sensors at the site.

**Manual or Automatic Readings:** The sensor can be read manually using the VW Data Recorder or automatically using a data logger.

**Reliable Signal Transmission:** The strong VW signal can be transmitted reliably over long distances with properly shield cable.

**VW TEMPERATURE SENSOR**



**VW Temperature Sensor . . . . . 52631510**

**Sensor Type:** Pluck type vibrating wire sensor with built-in thermistor or RTD and transient protection device.

**Range:** -20 to 80°C (100° Span). Other ranges available on special order.

**Resolution:** 0.025% FS.

**Calibration Accuracy:** ±0.1% FS.

**Response Time:** 2.5 minutes for 60% of full thermal equilibrium.

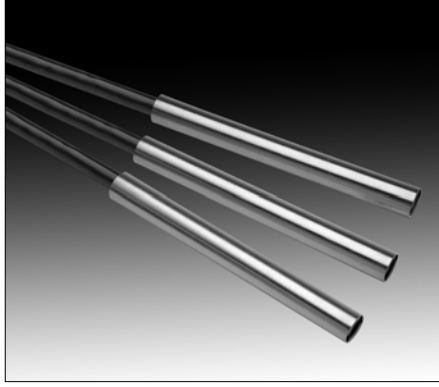
**Full Thermal Equilibrium:** 15 minutes.

**Dimensions:** 19 x 115 mm (0.75 x 4.5").

**Materials:** Brass body.

**Weight:** 145 g (0.32 lb.).

**RESISTANCE TEMPERATURE SENSORS**



**RTD Temperature Sensor . . . . . 92600056**

**Thermistor Temperature Sensor . 92600057**

These economical temperature sensors employ resistance temperature devices rather than vibrating wire transducers. When read by standard VW readouts, they return a reading in degrees C. Otherwise, they return a voltage reading that can be converted to units of temperature by applying calibration factors.

**Sensor Type:** RTD (2K ohm) or Thermistor (3 k ohm).

**Range:** -20 to 80°C. Other ranges available.

**Resolution:** 0.2°C with VW Data Recorder.

**Accuracy:** ±0.5°C.

**Dimensions:** 9.5 x 101 mm (0.375 x 4").

**Materials:** Brass body.

**Weight:** 50g (0.11 lb.).

**Signal Cable:** Same as VW temperature sensor.

**Readout and Data Loggers:** VW Data Recorder and most types of data loggers.

**SIGNAL CABLE**

**Signal Cable . . . . . 50613524**

Shielded cable with four copper conductors and cable jacket rated to 80°C. Specify cable length required for each sensor.

**High-Temperature Signal Cable . . 52602320**

Shielded cable with two copper conductors and thermal rubber jacket rated to 115°C. Requires special calibration. Note that thermistor or RTD is not available with this two-wire cable. Specify cable length required for each sensor.

**Universal Connector . . . . . 57705001**

**Universal Terminal Box . . . . . 57711600**

**READOUTS**

VW Data Recorder. See separate data sheet for features and specifications.

**DATA LOGGERS**

Campbell Scientific CR10X data logger system. AM416 multiplexer can accommodate 16 VW temperature sensors with resistive temperature devices or 32 VW temperature sensors without resistive temperature devices.