

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.

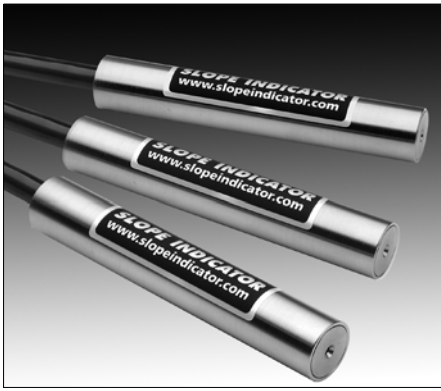
Advantages

High Accuracy: The VW temperature sensor has a standard accuracy better than ± 0.5 °C and can be ordered with accuracy better than ± 0.3 °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: ±0.5% FS or on special order, ±0.3% 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").

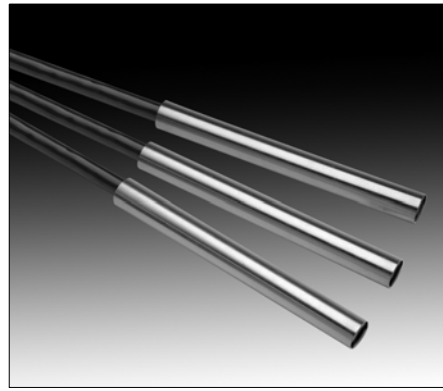
Materials: Brass body.

Weight: 145 g (0.32 lb.).

SIGNAL CABLE FOR VW SENSOR

Signal Cable 50613524

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



RTD AND THERMISTOR 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

High-Temperature Signal Cable . . 52602320

For use with RTDs or thermistors. Shielded cable with two copper conductors and thermal rubber jacket rated to 115°C.

READOUTS

VW Data Recorder 52613500

Jumper to Terminal Box 52613557

VW Data Recorder reads VW sensors and returns a reading in volts. It also reads RTDs and Thermistors and returns a reading in degrees C. See separate data sheet.

TERMINAL BOXES

Terminal Box for 6 sensors 57711606

Terminal Box for 12 Sensors 57711600

Terminal Box for 24 Sensors 97711624

Provides terminals for signal cable from 6, 12, or 24 sensors. Sensors are selected by rotary switch. Small 6-sensor box is 240 x 190 x 120 mm (9.5 x 7.5 x 4.75"). Larger 12 and 24-sensor box measures 290 x 345 x 135 mm (11.5 x 13.5 x 5.25").

DATA LOGGERS

VW Temperature Sensors: Campbell Scientific CR1000 with AVW200 has capacity for 2 VW sensors. With an AM16/32 multiplexer connected, capacity increases to 16 or 32.

Campbell Scientific CR1000 has capacity for 8 RTDs or Thermistors. With an AM16/32, capacity increases to 32 RTDs or Thermistors.