

## Sensors

## Overview

Honeywell produces a wide variety of sensors to measure temperature. These sensors translate the variables into equivalent voltage or resistance signals. Temperature sensors include thermocouples, resistance thermometer detectors, and radiant energy temperature detectors.

### Thermocouples

**Thermocouples with Protecting Tubes or Wells** sense temperatures from  $-200^{\circ}\text{C}$  to  $1950^{\circ}\text{C}$  ( $-300^{\circ}\text{F}$  to  $3452^{\circ}\text{F}$ ). These assemblies consist of wires in double bore insulators, a protecting tube or well, a terminal block, and a terminal head. They are available in Type T, J, K, R, S, B, 40 % Iridium 60 % Rhodium-Iridium, Tungsten 5 % Rhenium-Tungsten 26 % Rhenium & Tungsten-Tungsten 26 % Rhenium, calibrations with straight or angled, metal or ceramic, protecting tubes.

**MegopaK Thermocouples** sense temperatures from  $-200^{\circ}\text{C}$  to  $1093^{\circ}\text{C}$  ( $-300^{\circ}\text{F}$  to  $2000^{\circ}\text{F}$ ). Honeywell MegopaK is a combination of thermocouple wires, mineral oxide insulation, and a metal protecting sheath compacted into a solid mass. Bulk material, elements and assemblies are available in Type T, K, J and E thermocouple calibrations. Measuring junctions can be integral (grounded), exposed, or remote (insulated).

### Resistance Temperature Detectors

**High Speed Nickel A Resistance Thermometer Bulbs** measure temperature between  $-79^{\circ}\text{C}$  and  $149^{\circ}\text{C}$  ( $-110^{\circ}\text{F}$  to  $300^{\circ}\text{F}$ ). Bulb assembly construction types are flexible cable, bulbs with head, marine type-spray proof, and assemblies with separable wells.

Bulbs are constructed for use in three-wire circuits.

**Platinum Resistance Thermometer Detectors** measure temperatures between  $-185^{\circ}\text{C}$  and  $480^{\circ}\text{C}$  ( $-300^{\circ}\text{F}$  and  $900^{\circ}\text{F}$ ). Resistance element is 100 ohms.

**Rayotube Detectors** for temperature measurement in the range from  $200^{\circ}\text{F}$  to  $5000^{\circ}\text{F}$ . A non-contact sensor that is ideal for reading temperature where direct contact is not practical. Excellent speed of response makes this sensor a good selection for scanning and sighting of moving objects.

**Radiamati II Infrared Temperature Sensors** measure temperature in the range between  $320^{\circ}\text{F}$  and  $5700^{\circ}\text{F}$  ( $160^{\circ}\text{C}$  to  $3150^{\circ}\text{C}$ ). Accuracy is  $\pm 0.5\%$  of full scale with a response time of 50-100 milliseconds. Input voltage is between 18-20 Vdc and the output is 4-20 ma.