

How to select the correct Wireless Sensor



Overview

Cynergy3 produce a wide range of Wireless sensors. These include sensors for the measurement of pressure, Temperature, Digital status and sensors that connect to any existing 4-20mA loops.

The first choice is to determine what parameter is to be measured. If it is a digital or mA input the choice is simple as there is only one variant of each. If the parameter is Temperature or Pressure than the following guidelines should be used.

Our wireless temperature sensors are typically 6mm OD sensors with lengths varying from 150mm to 600mm, although other sizes are available. The sensor comprises the probe section which is immersed in the fluid to be measured and the head part which contains the wireless transmitter and battery.

Our wireless pressure sensors are devices which are able to provide an output signal relative to the pressure force being exerted upon it. Pressure sensors are continuous output devices and vary their output in relation to the applied pressure.



Uses

For applications where a continuous output is required to indicate a measured pressure or depth of liquid in a storage tank or reservoir, pressure sensors are often the measurement instrument of choice. Ranging from industrial process control to remote tank level measurement our wireless pressure sensors are a robust solution to pressure measurement applications.

The uses of Temperature sensors are many and varied but for our range of sensors all typically involve the measurement of a liquid or gas within a tank or pipework. The choice of RTD or thermocouple will depend on the temperature range and accuracy required. RTDs are used where repeatability and accuracy are important and the temperature measured will not exceed 850 °C. RTDs are also more susceptible to vibration. Thermocouples can be used up to around 1250 °C and are typically more durable than RTDs.

Function

Our wireless temperature sensors convert the measured temperature, pressure or other measured variable into a 16 bit digital value and transmit this value to the wireless receiver at the configured update rate, typically every 10s to every minute. The receiver then converts this signal to either a 4-20mA or 1-5V analogue output or stores the value as a Modbus register to be read by the measuring system connected.

Considerations

Cynergy3 wireless sensors are highly configurable to the users' needs. When selecting a pressure or temperature sensor for a given measurement application, it is vital the user has a clear understanding of the temperature sensing application and the media that needs to be measured. There are many factors that need to be considered, and in some cases, trade-offs will need to be made, to find the optimum temperature sensor configuration.

- Process media to be measured: gas, liquid, media temperature.
- Temperature range to be measured.
- Depth of pipework or tank will determine the length of temperature sensor required.
- Accuracy of the temperature reading required.
- Process connection: 1/4" BSP or 1/4" NPT threads are stocked but other threads are available on request.
- Pressure Accuracy: Typically $\pm 0.25\%$ /FS/ BFSL.
- Pressure datum: Absolute, Gauge or Sealed Gauge.
- Overpressure requirements: Consider sources for pressure spikes such as pumps, valves and actuators.
- Compatibility with the downstream measuring equipment.
- Is there a risk of vibration at the measured location, thermocouples are typically more resilient.

Types

The length of probe and the type of sensor required must be specified using the selection criteria above. For wireless Pressure the sensor is manufactured with either a 1/4" NPT or 1/4" BSP thread, again please specify at point of order.

For non-standard or OEM requirements please contact Sales using sales@Cynergy3.com.



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