

## | WIRELESS SENSORS

Wireless Sensors take the accuracy, reliability and durability of our established range of wired sensors and add the convenience of wireless connectivity. This area is one we believe will continue to grow as the world moves towards wireless technology and the IIOT. The benefits of going wireless are many; no expensive wiring to remote locations, sensors are easy to install and relocate and they can be used in most environments including outdoors.

Our wireless sensors are already widely used in water treatment plants to assess tank level and flow, in monitoring the condition of railway embankments, as temperature sensors at solar energy farms to monitor hot spots in substations and to monitor the condition of critical production motors at a major UK car manufacturer.

### TYPICAL APPLICATIONS

- Water treatment plants
- Water tank monitoring
- Silo Level measurement
- Solar farm temp monitoring
- Embankment monitoring
- Reservoir Level Monitoring



#### PRESSURE SENSORS

The IWPT range of wireless Pressure transmitters can measure pressure ranges from 0-50 mbar up to 0-400 bar. The range is up to 750m clear line-of-sight and the sensors have a battery life of over 5 years with a 10s transmission rate. The sensors feature a stainless-steel sensor body with either ceramic or silicon-based sensing elements.



#### TEMPERATURE SENSORS

Standard IWTT wireless temperature sensors come complete with either K or J Type thermocouples or 3-wire PT100 sensor elements. Other thermocouple types are available on request. The standard probe diameter is 6mm and lengths vary from 100mm up to 600mm. They feature the same range and long life battery characteristics of the IWPT Pressure sensors.



#### INDUSTRIAL RECEIVERS

The IWR-1 and IWR-5 receivers feature 4-20mA or 1-5Vdc outputs as well as an alarm relay. The IWR-1 is a single channel unit whilst the IWR-5 can receive readings from up to 5 IWT wireless transmitters. The relay may be used to indicate a high or low alarm condition and also act as an alarm if the signal from an IWT transmitter is lost.



#### RECEIVERS WITH COMMUNICATIONS

A range of Receivers with Communications outputs are also available. These include:

- IWR-USB – allows display & logging on any PC
- IWR-PORT – Has RS232/485 or ethernet Ports
- IoT-Gateway- Built-in cellular modem allows full IoT applications to be achieved

## Key Products

### IWPT Transmitter and IWR-1 Receiver

Used together the IWPT wireless transmitter and IWR-1 single channel receiver form a wireless 4-20mA output pressure transmitter. The range of the IWPT can be anything from 0-50mbar to 0-400 barg. As well as the 4-20mA output the IWR-1 can switch a relay and LED to indicate a pressure alarm high/low alarm or a loss of signal.

Typical applications include the installation of pressure and level instruments in locations where wiring would be either difficult or expensive.



#### IWPT Transmitter

- Pressure ranges from -1 to +400 bar gauge
- Up to 750m line-of-site range (depending on receiver)
- Piezo-resistive thick film ceramic sensor with stainless steel body
- Five year battery life at 10 second transmission update rate
- Simple DIL switch pairing with the single or five channel receiver
- Single or five channel receivers available
- User-selectable transmission update rates
- User-selectable 1-5V or 4-20mA receiver outputs
- Receiver clean contacts provide process alarm functions
- Suitable for liquids and gases



### IWR-PORT Receiver

The IWR-PORT receiver can receive signals from up to 128 IWT wireless transmitters. It stores the current readings in Modbus registers together with the Link Quality Index (LQI) of the last signal received from each sensor and also the number of seconds since each sensor reported in.

The IWR-PORT can be fitted with any of the following communications port options:

- RS 232
- RS485
- Ethernet



#### IWR-1 Receiver

- Pairs with the IWPT/U & IWTT/U wireless pressure & temperature transducers
- User-selectable 1-5V or 4-20mA receiver output
- Clean contact output for process, low battery or loss of signal alarm function
- Simple DIL switch pairing with the IWPT/U & IWTT/U transmitters
- Up to 750m range, line-of-sight
- 12 to 32 Vdc powered
- End-to-end accuracy of 0.25% FS BFSL
- LED indication of wireless link
- DIN rail or wall mounting kits available
- Five channel receiver available: IWR-5

### IoT-GATEWAY

The IoT-GATEWAY receiver links to up to 128 IWT wireless transmitters and stores the data locally before sending it to remote servers using its internal Cellular IoT modem. Features include:

- Receives data from all IWT transmitters
- Includes 2G/3G/4G IoT Cellular Modem
- Other inputs include 4-20mA and digital inputs, I<sup>2</sup>C & SPI sensors
- Battery or 12/24Vdc powered
- Complete end-to-end IIoT systems
- Displays data on smartphones and PCs, and generates email and SMS alarms

A number of standard IIoT solutions have been completed using this end-to end system but our range of IoT components can also be used in conjunction with customers' own software and hardware.

