

# ZigSense™

- *Building automation*
- *HVAC*
- *Smart Energy metering*
- *Smart Water metering*
- *Health care alarms*
- *Data centre climate*
- *Cold storage climate*
- *Refrigeration units*
- *Pollution*
- *Chemical processing*

ZigSense™ is a line of wireless sensors utilizing ZigBee™ mesh network technology as its core communications channel. Australian designed and made, ZigSense™ wireless nodes establish a self-healing network of spatially distributed sensors that cooperatively monitor physical and environmental conditions.

Data can be transferred to standard SCADA, PLC and HMI stations via a specially developed ZigSense™ gateway.

ZigSense™ wireless nodes are built into a small robust polycarbonate IP65 enclosure.

Designed for low power consumption, the nodes utilise sleep mode to operate under battery power for a prolonged period of time.

Each ZigSense™ node can be interfaced to multiple sensors including general IO devices and serial links.

A communications gateway links between the wireless network of ZigSense™ sensors and standard monitoring and control systems.

A ZigSense™ gateway uses Modbus/RTU or Modbus/TCP protocols as its default communications link. Advanced wireless technology combined with intelligent functionality and low power, qualifies ZigSense™ wireless sensors as a suitable solution for a large number of applications.

*Horticulture* •

*Aquaculture* •

*Hydroponics* •

*Aquaponics* •

*Weather* •

*Poultry house climate* •

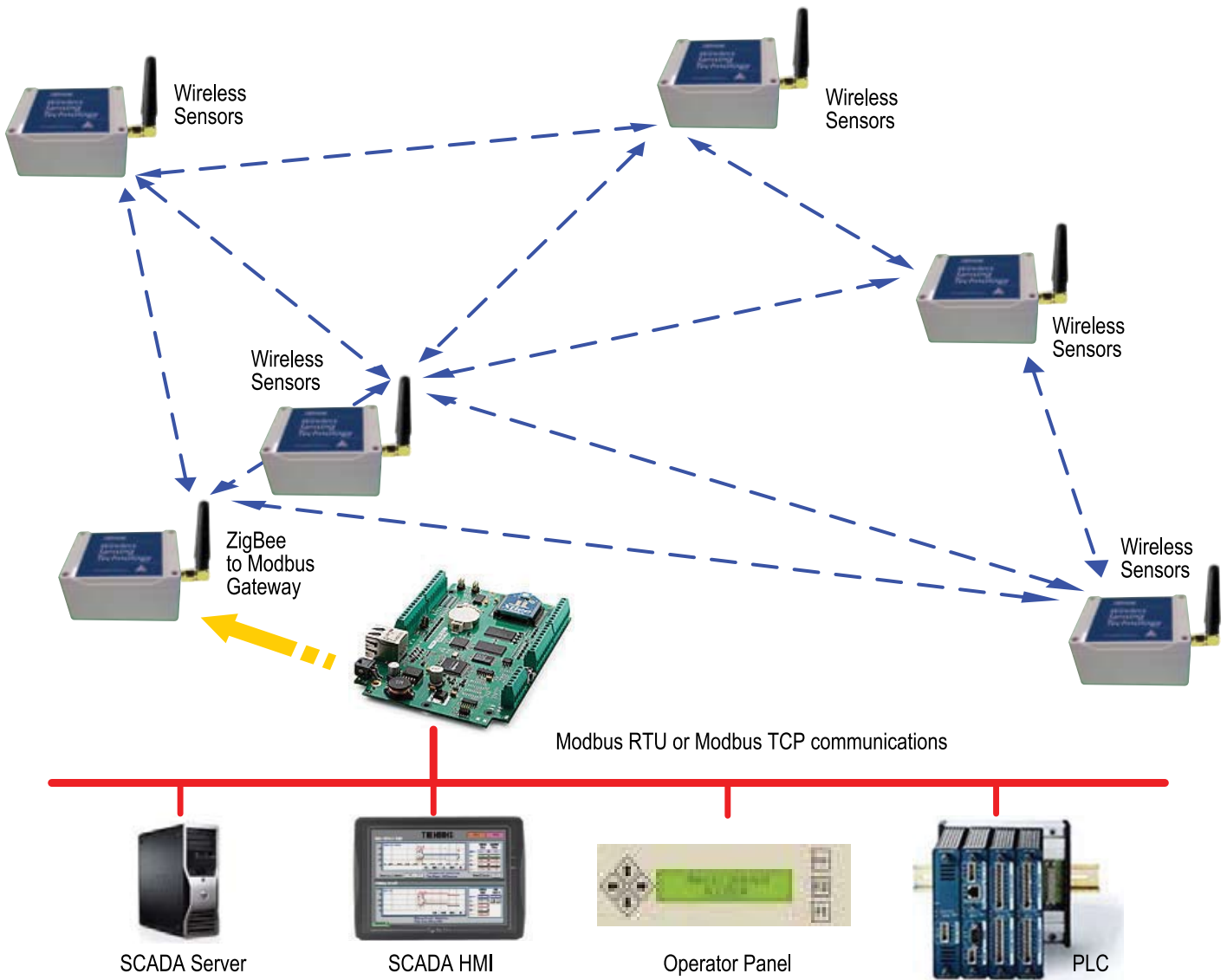
*Glasshouse climate* •

*Toxic gas* •

*Tank & Silo* •

*Water quality* •





## ZigSense™ Wireless Node Specifications

### Main board

Ultra low power CPU  
Flash memory  
Static memory – battery backed

### RF & Network Communications

Network topology: mesh  
Network ID: Automatic 64 bits  
Station ID: Manual 16 bits  
Radio technology: DSSS, ISM  
Radio frequency: 2.4GHz / 900MHz  
RF data rate: 250Kbps  
RF channels: 16 MAX  
TX power: Low 2mW / High 50mW

### Low Power Radio

Tx Power: +3dBm MAX  
Rx Sensitivity: – 96 dBm

### High Power Radio

Tx Power: +17dBm MAX  
Rx Sensitivity: – 102 dBm

### RF Antenna

Internal or External

### Radio Certification



### Power Requirement

Battery: 3.6Vdc. Internal  
Battery type: AA/C/D Lithium  
Sleep mode: Built-in  
Battery life: 1-3 years. Sleep mode (\*)  
Power down current: <10µA

### External Power

External Power: 12Vdc power pack  
Solar Power: 12-18Vdc max

### General

Temperature: –40°C + 85 °C  
Humidity: 75%RH non-condensing  
Enclosure: UV stable IP65  
Polycarbonate  
Wiring: Internal terminal block  
Cables: Via sealed glands  
Dimensions in mm:  
120L X 90W X 60H (STD)  
160L X 90W X 60H (Incl. LCD)  
Weight: 300gram Incl. Battery

### Sensors (\*\*)

Thermistor  
RTD  
Thermocouple  
Relative Humidity (%RH)  
Soil Moisture  
Light level (LUX)  
Barometric pressure  
Wind speed + direction  
Rain  
pH, Redox  
EC, Salinity  
Dissolved Oxygen  
Turbidity  
CO, CO<sub>2</sub>, NH<sub>3</sub>, O<sub>2</sub>  
Pulse counter  
Pressure  
Vibration

### General Inputs & Outputs (\*\*)

4 x Ain + 4 x Din + 4 x Dout + 2 x Aout

### Inputs

Ain: 0-10Vdc / 4-20mA - 12bits  
Din: 24Vdc 10mA MAX  
Din: Pulse/PWM

### Outputs

Aout: 0 – 10Vdc 12 bits (\*\*\*)  
Dout: 0 – 30Vdc 100mA Transistor  
Dout: Dry contact relay 0.5A@125Vac

### General communications

RS485 wireless link  
RS232 wireless link  
SDI-12 wireless link  
Mesh network Router / Repeater

### Local Display

LCD 2 X 16 (optional)

\* Combined sleep cycle & battery A/hr

\*\* Pre calibrated IO board

\*\*\* Requires external 12Vdc PS



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