

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 low power wireless sensing nodes utilizing 2.4GHz **ZigBee** mesh or 900MHz **Digimesh** network technologies as their core communication channel. **ZigSense** systems contain a self healing network of wireless sensors designed for reliable monitoring and control functionality.

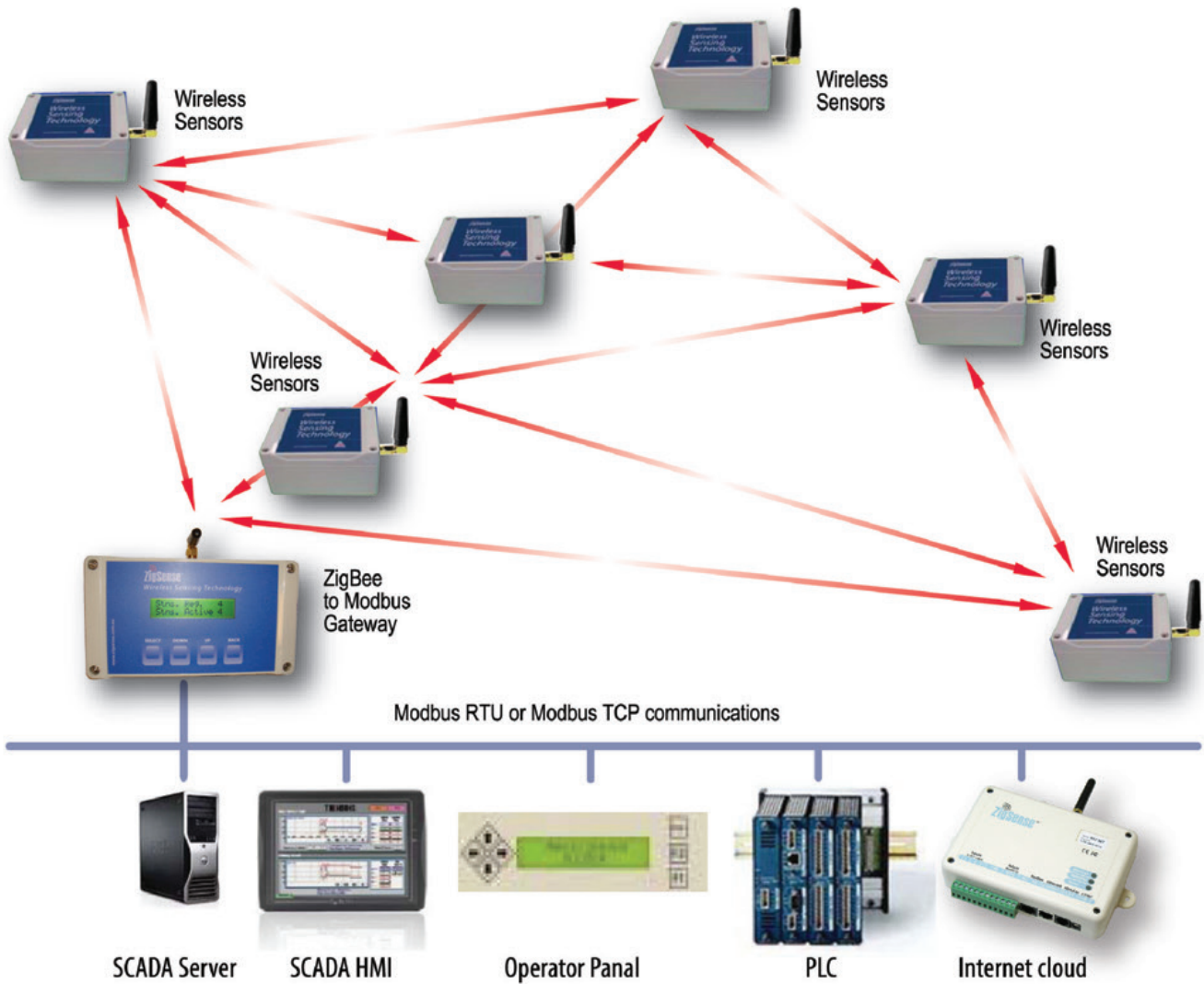
Designed for low current consumption **ZigSense** wireless sensing nodes offer exceptional flexibility and ease of operation, minimizing costs associated with installing hard wired monitoring systems.

A **ZigSense** gateway coordinates communications of the wireless network. Data from wireless sensors is integrated ad-hoc to existing or newly established SCADA, PLC, HMI or data logging systems using Modbus 'slave' communications or published directly to web based cloud service via the built-in serial or TCP ports or utilizing 3rd party external Wi-Fi or GPRS interfaces.

Advanced mesh network wireless communications combined with low power sensing nodes qualify **ZigSense** wireless nodes as a suitable solution for a broad range of Energy, Building Automation and Industrial data monitoring applications.

- *Horticulture*
- *Aquaculture*
- *Hydroponics*
- *Aquaponics*
- *Weather*
- *Poultry house climate*
- *Glasshouse climate*
- *Toxic gas*
- *Tank & Silo*
- *Water quality*





ZigSense™ Wireless Node Specifications

Wireless Network Building Blocks

Gateway: Wireless Network Coordinator

Router: Wireless network extender

End Node: Wireless end point

Network Communications

Network topology: ZigBee / Digimesh

Network ID: Automatic 64 bits

Station ID: Manual 16 bits

RF Communications

2.4GHz: 256Kbps

900MHz: 10Kbps / 200Kbps

Radio technology: DSSS, FSHH, ISM

RF Channels: 16 max

RF Antenna: Internal / External

Radio TX Power

2.4GHz: +18dBm (63mW) max

900MHz: +24dBm (250mW) max

Radio RX Sensitivity:

2.4GHz: -102dBm

900MHz: -101 to -110dBm

Communication Range

2.4GHz: 100m Urban, 2km Outdoors

900MHz: 600m Urban, 14km Outdoors

Test antenna: 2.1dBi, 6.0dBi

Power Supply (Remote node)

External: 12 - 24VDC

Internal backup battery: 3.6VDC

Battery type: Lithium type: AA, D

Battery life: 1-5 years*

Sleep mode: Configurable 5Sec - 30Min

Sleep current: <30µA

General

Enclosure: UV stable IP65 Polycarbonate

Material: Polycarbonate

Wiring Terminals: Internal

External cables: Through sealed glands

Dimensions:

REU: 120L X 90W X 60H (mm)

Gateway: 160L X 90W X 60H (mm)

Weight: 300 gram w/ 'AA' battery (REU)

Wireless Sensing Nodes

Standard pre calibrated IO

Series A: 4Ain+4Din+4Dout+2Aout

Series B: 2Ain+2Din+2Dout

Smart Energy Pulse Logger: 4Din

Modbus node: RS232 / 485 + 4Dout

Input / output specifications

Ain(V): 0-1 / 0-5 / 0-10VDC, 12 bits

Ain(I): 0 / 4-20mA, 12bits

Din: Dry contact to GND 10mA max

Pulse frequency: 8Hz / 100Hz max

Aout: 0-10VDC, PWM 12bits

Dout: 0-30VDC, NPN, 250mA max

Wireless Router

Network extender

Router with IOs (Optional)

Gateway

Power supply

ZigSense: 12 - 24VDC

Cloud Controller: 12 - 32VDC

Backup Battery

ZigSense: Internal 7.2VDC Lithium

Cloud Controller: External

Communications Ports

ZigSense: Modbus RTU / Modbus TCP

Cloud Controller: Ethernet, 3G, GPS

Cloud Services

Cloud Controller: TP 10/100 DHCP

Configured for cloud server

* Combined sleep cycle & battery A / h



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