TPZ-NET SENSORS

Temperature, Humidity and CO2

TPZNET

The Titan Products Wireless Room Sensors are designed to wirelessly monitor the temperature, humidity & CO2 levels of a space and transmit the data over a Zigbee wireless network back to the Titan Products Co-ordinator.

There is the option to add LED indication for CO2 monitoring. When CO2 levels are below 800ppm the green LED will flash every 10 seconds. When levels rise above 800ppm the yellow or red LEDs will flash every second dependant on the CO2 levels in the space to draw attention to the occupant that the levels are rising.

Using a frequency of 2.4GHz the transmission between the room sensors and Co-ordinator is carried out after a timing schedule or a specific change in measurement which is set during commissioning (see below table).

The sensors use a 3.6V, 2600mAh lithium thionyl chloride battery. This eradicates the need for wiring to the unit making it extremely easy and cost effective to install.

Self-healing, mesh networking can be achieved through adding TPZ-Net Repeaters to the network.

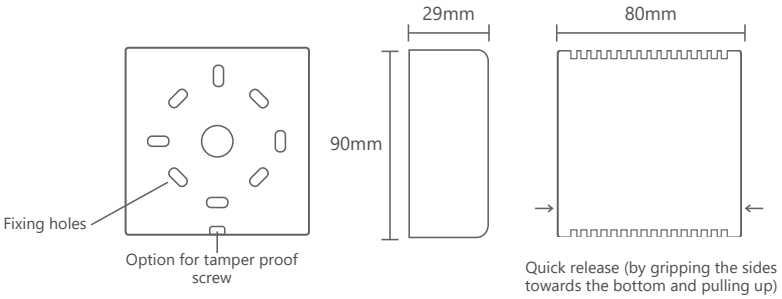
SPECIFICATION

Power	3.6V, 2600mAh lithium thionyl chloride battery
Battery Life	Up to 3 years (depending on transmission intervals)
Network Technology	Zigbee
Frequency	2.4GHz
Transmission Power	8dBm
Transmission Range	30-60m indoor (depending on building type) 200m outdoor (line of sight)
Measurement Accuracy	+/- 0.5˚C @ 25˚C (temp) +/- 3% (humidity) +/- 50ppm + 2% of reading (CO2)
Operating Range	0 - 50˚C 0 to 95% non-condensing 0 to 2000ppm
CO2 LED Indication Levels	Green<800ppm Yellow 800 - 1000ppm Red >1000ppm
CO2 Sensor	NDIR technology
Material	IP20 flame retardant polycarbonate
Country of Origin	UK
Product Codes	TPZRHT (Temperature & Humidity Sensor) TPZRCO2HT (Temperature, Humidity & CO2) TPZRCO2HT/L (Temperature, Humidity & CO2 with LED)

Note: It is strongly recommended a site survey is carried out prior to installing a TPZ-Net system.

UK CA CE

DIMENSIONS



TPZ-NET RANGE

- Room Sensors: Temperature, Humidity & CO2
- Co-ordinator
- Repeater
- PC Commissioning Tool
- Site Survey Kit

For install and setup information please contact technical@titanproducts.com

THE SYSTEM

Sleepy End Devices (SEDs)

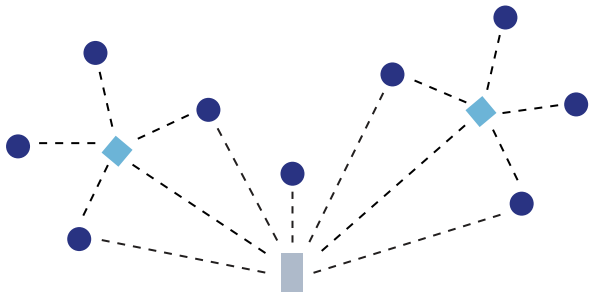
Transmit their sensor data points periodically.
SEDs can not route messages from other SEDs.

Repeaters

Required for mesh networking.
Permanently powered, they forward messages from SEDs.

Co-ordinator

Collect information from SEDs and Repeaters, transferring data to a BMS via BACnet MS/TP or Modbus communications.



SELECTABLE VALUES

The sensors will transmit at the selected tranmission interval (eg every 15 minutes) or if the change of value occurs (eg temperature rose by 1 ˚C) before the next scheduled transmission.

Transmission Interval (minutes)	2, 5, 10, **15**, 30, 60
Change of value (temp ˚C)	**0.5**, 1.0, 2.0, 3.0, 4.0 5.0
Change of value (humidity)	3%, **5%**, 10%, 15%, 20%, 25%
Change of value (CO2)	25ppm, **50ppm**, 75ppm, 100ppm, 150ppm, 200ppm, 250ppm

Default settings are shown in bold.
Any changes from the defaults will impact battery life - in particular a more regular transmission interval and a smaller value of change for CO2 will reduce battery life

CO2 OPERATION

Requires 24 hours on a commissioned network for self calibration to take place.

Automatic calibration will take place 24 hours after power up and every 24 hours thereafter. The sensor will calibrate to lowest measured point during these 24 hours with this value becoming the sensors base rate. It is required that the sensor is exposed to an unoccupied CO2 level within the measured space during each 24 hour cycle.

INSTALLATION AND MAINTENANCE

Solvents in the air derived from sources such as paints, cleaning products and adhesives can have a detrimental impact on the sensor cell. All sensors should therefore be installed after the space has been decorated and any flooring fitted. The sensors should also be kept away from adhesives and should the housing require cleaning a dry non-solvent based product must be used. Do not spray any liquid or cleaning products directly onto the ventilated housing. Exposing the sensor to such solvents or moisture will invalidate the product warranty.

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