CO2, Temp & Humidity Combined Sensors
Automatic Calibration Technology

The Titan Products CO2 sensor range provides Carbon Dioxide measurement using NDIR technology and can be supplied with temperature and humidity output options.

The sensors are designed for ventilation on demand systems, providing 0-10V signals for CO2, temperature and humidity conditions in the measured space along with a resistive 10K3A1 temperature output.

The Automatic Background Calibration starts after the first 24 hours of operation and continuously monitors and automatically adjusts the sensor calibration over the lifetime of the product removing the need for manual calibration.

An optional traffic light LED provides visual indication of CO2 levels within the space.

The CO2 sensor is ideal for applications where internal occupancy levels can vary throughout the working period such as schools, offices, leisure facilities and theatres. Automatically controlling the ventilation on demand can save energy whilst maintaining a healthy comfort level.

Specification

Material:		Flame retardant polycarbonate
Sensor:		NDIR technology
Outputs:	CO2:	0-10V for 0-2000ppm
	Temp:	0-10V for 0-50°C
		10K3A1 thermistor fitted as standard (other types available)
	Humidity:	0-10V for 0-100%
Accuracy @ 25°C and 50% RH:		
	CO2:	+/- 40ppm +2% of reading
	Temp (voltage):	+/- 0.5°C
	Temp (resistive):	+/- 0.5°C
	Humidity :	+/- 3% RH
Power Supply:		24V AC/DC (+/- 15%)
Power Consumption:		100mA
Operating Conditions:		5-50°C
		10-80% RH non-condensing
Warm up time:		2 mins (operational)
		10 mins (peak accuracy)
3x LED Indication:		Green - on below 800ppm
		Yellow - on at 800 to 1000ppm
		Red - on above 1000ppm
Terminals:		Max cable size 1.0mm
Dimensions:		80mm x 90mm x 29mm
Country of Origin:		UK
Product codes:		See table

Wiring

24V 0V 0V CO2 T RH   2 wire
       0-10V 0-10V 0-10V   10K3A1*
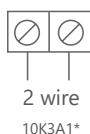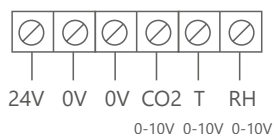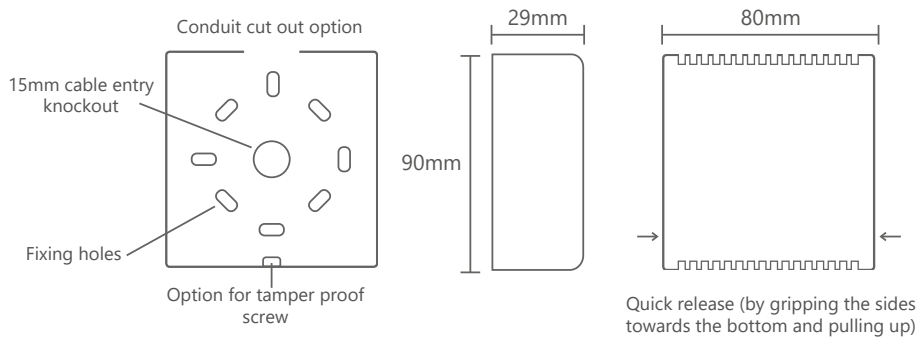
*Other thermistor types available on request

Automatic Background Calibration (ABC)

The self-calibration technology requires the sensors to be installed for 24 hours before a true, fully calibrated reading can be obtained. The ABC process requires the background CO2 level to drop to local ambient levels, which is normally in the region of 400ppm (e.g. an unoccupied room / fresh air), at least once during the first 24 hours from power up and thereafter at least once every 7 days. The continuous Automatic Calibrated level becomes the base rate for the sensor operation offsetting variations in local ambient CO2 levels and long term sensor drift.

Product Codes

Product Code	Sensor Type
Non LED Indication	
TPVRCO2	Room CO2 only 0-10V output
TPVRCO2T-RT/10K3	Room CO2 and Temp 0-10V outputs *10K3 thermistor also fitted*
TPVRCO2HT-RT/10K3	Room CO2 with Humidity 0-10V and Temperature 0-10V *10K3 thermistor also fitted*
c/w LED Indication	
TPVRCO2/L	Room CO2 only 0-10V output plus LEDs for CO2 concentration indication
TPVRCO2T-RT/10K3/L	Room CO2 and Temp 0-10V outputs *10K3 thermistor also fitted* plus LEDs for CO2 concentration indication
TPVRCO2HT-RT/10K3/L	Room CO2 with Humidity 0-10V and Temperature 0-10V *10K3 thermistor also fitted* plus LEDs for CO2 concentration indication

t: +44 (0)161 406 6480 ● sales@titanproducts.com ● www.titanproducts.com
UK DESIGNED, DEVELOPED AND MANUFACTURED
Ref: SKU 27 / 241

Titan Products Ltd.

Dimensions

Conduit cut out option

15mm cable entry knockout

Fixing holes

Option for tamper proof screw

29mm

90mm

80mm

Quick release (by gripping the sides towards the bottom and pulling up)

Installation and Maintenance

- The sensors should be installed by a qualified engineer. The room sensor should be mounted in the space at approximately 1.5m from floor level. Mount away from the effects of direct sunlight, radiators and supply air ducts. The duct mounted sensor should be installed to measure the space extract air with the probe vent sample holes in-line with the air flow.
- All sensor signal cables should be screened with the screening earthed at the controller end only.
- Sensor cables should be segregated from any mains carrying conductors and electrical noise emitting equipment such as fluorescent lighting.
- The sensor should not be exposed to polluted air derived from sources such as paints, cleaning products, solvents and adhesives. Exposure to these elements will have a detrimental effect on the sensor performance and can cause permanent damage.
- Sensors should be installed after the space has been plastered, decorated and any flooring fitted.
- 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.
- **Do not** blow directly on to the CO2 cell within the sensor, this can damage the cell membrane and could cause incorrect readings.

Titan Products Ltd.