

# AX-GS-CD-T51-E

Carbon Dioxide and Temperature Sensor c/w LED

# AXIO



## Product Overview

The AX-GS-CD-T51 is a range of cost effective wall mounted CO<sub>2</sub> and temperature sensors. The units have the option of a multi-coloured LED CO<sub>2</sub> indicator, displaying thresholds of air quality in enclosed spaces (i.e. school classrooms, offices, gymnasiums, theatres etc). The units incorporate “Automatic Background Calibration” software to reduce drift to better than  $\pm 20$ ppm/year. The supplied mounting plate with 2 piece terminal blocks provides quick and easy wiring.

## Features

- Wall mounting
- Monitors CO<sub>2</sub> over range 0-2,000ppm
- 24Vac/dc power supply
- 5 coloured LED on T51-EL version
- 0-10Vdc or 4-20mA output for CO<sub>2</sub> (& temperature option)
- Thermistor or Analogue output for temperature
- Mounting plate with 2 piece terminal blocks
- 15 year calibration interval

## Product Specifications

Sensor Type:	Non-dispersive Infra-red, gold plated optics
CO <sub>2</sub> Range:	0-2,000ppm standard (0-5,000 option) (0ppm=0V or 4mA)
Temperature Range:	-T51EL 0 to 50°C
Calibration Interval:	15 years
Accuracy:	$\pm 30$ ppm (400-1250ppm) or 3% of reading, whichever is higher
Stability:	Self calibrating <2% FS over life of sensor (typical 10yrs)
Temperature Dependence:	0.2% FS per °C
Output:	-T51EV 1 x 0-10Vdc (0-5V link selectable) -T51EI 1 x 4-20mA into 500 $\Omega$ maximum load -T51EL 2 x Analogue (switch selectable 0-5/10V or 4-20mA)
Power Supply:	18 to 30Vac 50/60Hz 18 to 42Vdc polarity protected
Consumption:	0.7W at 24Vac
LED Displays: (-L Version only)	<800 - Blue, 800-1200 - Green, 1200-1500 - Yellow, 1500-2000 - Red, >2000 Two red
Hysteresis:	100ppm
Housing:	Flame retardant ABS
Ambient Temp. Range:	0 to 50°C, 0-95% RH non condensing
Dimensions:	82 x 86 x 28mm approx
Housing:	Flame retardant UL94-5VA cool white ABS, IP20
Conformity:	CE marked, EMC, LVD
Warranty:	2 Years on mechanical defects
Country of Origin:	Mexico

## Order Codes

**(Note: If thermistor temp o/p - specify thermistor)**

AX-GS-CD-T51EI	Space Mounted CO <sub>2</sub> Sensor 1 x 4-20mA o/p
AX-GS-CD-T51EIT	Space Mounted CO <sub>2</sub> Sensor 1 x 4-20mA & thermistor temp o/p
AX-GS-CD-T51EV	Space Mounted CO <sub>2</sub> Sensor 1 x 0-10Vdc o/p
AX-GS-CD-T51EVT	Space Mounted CO <sub>2</sub> Sensor 1 x 0-10Vdc & thermistor temp o/p
AX-GS-CD-T51EL	Space Mounted CO <sub>2</sub> & Temperature Sensor 2 x Analogue outputs c/w LED
AX-GS-CD-T51ELT	Space Mounted CO <sub>2</sub> & Temperature Sensor 2 x Analogue outputs c/w LED & thermistor

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## Mounting instructions

The Room sensor has mounting provisions to install directly on a standard electrical box and should be mounted at a height about five feet from the floor of the area to be controlled. For best operation, do not mount the sensor near doors, opening windows, supply air diffusers or other known air disturbances.

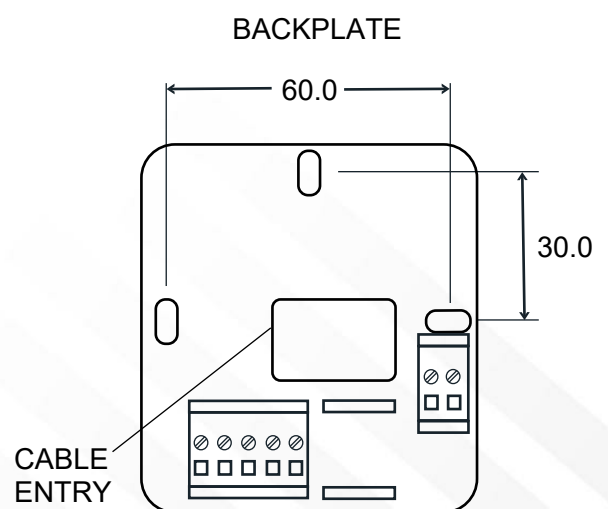
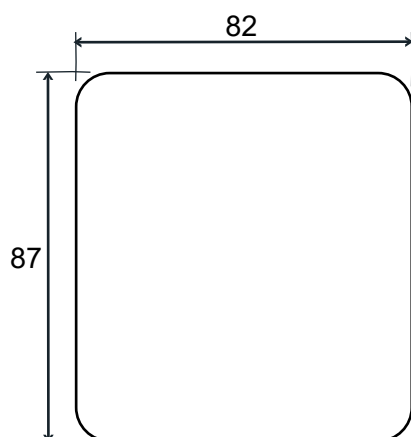
## ABC Software

ABC (Automatic Background Calibration) program utilises the computing power in the sensors onboard microprocessor to remember the lowest CO<sub>2</sub> concentration that takes place every 24 hours. The sensor assumes this low point is at outside levels. The sensor is also smart enough to discount periodic elevated readings that might occur if for example a space was used 24 hours a day over a few days. Once the sensor has collected 14 days worth of low concentration points, it performs a statistical analysis to see if there has been any small changes in the sensor reading over background levels that could be attributable to sensor drift. If the analysis concludes there is drift, a small correction factor is made to the sensor calibration to adjust this change. If a space does not experience a periodic drop to outside levels (i.e. where occupancy is 24 Hrs/7 days/week), ABC software should be deactivated (factory configuration). With ABC deactivated, calibration may be required every 2 years.

## Lifetime Calibration Guarantee

If the sensor is found to be out of calibration by more than 150ppm as compared to a calibration Gas or recently calibrated reference the unit will be replaced. This guarantee only applies if the sensor is operated in an environment where inside levels periodically drop outside concentrations (i.e. during evenings or weekends when there is no occupancy) as is required by the ABC software.

## Dimensions



## LED Indicator (Model T51-EL only)

**Blue** - CO<sub>2</sub> levels are less than 800ppm, indicates over ventilation

**Green** - CO<sub>2</sub> levels are from 800 to 1000ppm indicating CO<sub>2</sub> levels are within acceptable limits.

**Yellow** - CO<sub>2</sub> levels are from 1000 to 1500ppm indicating CO<sub>2</sub> levels high, indicates under-ventilated

**Red** - CO<sub>2</sub> levels are from 1500 to 2000ppm indicating CO<sub>2</sub> levels are very high, indicates ventilation required

**2 x Red** - CO<sub>2</sub> levels are above 2000ppm indicating CO<sub>2</sub> levels are very high, indicates severely under ventilated

## Connections

See drawings on page 3.

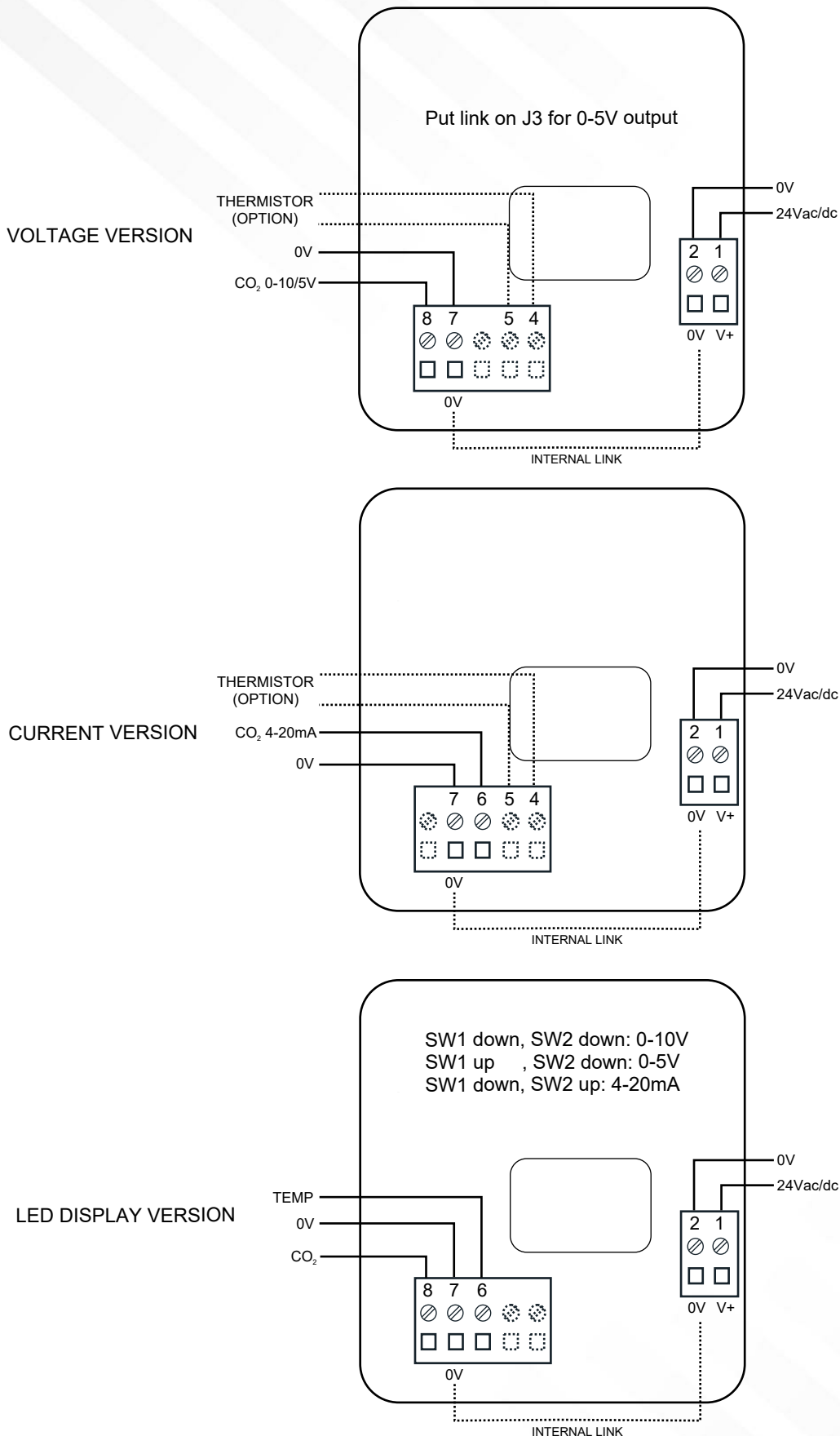
Note the common connection of 0V between terminals 2 and 7. Only make the 'hot' connection of the supply to terminal 1.

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## Connections (views of backplate)



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