AX-GS-CD-T51-E
Carbon Dioxide and Temperature Sensor c/w LED

AXIO

Product overview

The AX-GS-CD-T51- range is a cost effective wall mounted CO_2 and temperature sensor. The unit has the option of a multicoloured LED indicator CO_2 thresholds to display air quality in enclosed spaces (i.e. school classrooms, offices, gymnasiums, theatres etc). The unit comes completed with "Automatic Background Calibration" software to reduce drift to better than ±20ppm/year. Comes with a mounting plate with 2 piece terminal blocks to provide quick easy wiring.

Features

- Wall mounting
- Monitors CO_2 over range 0-2,000ppm
- 24Vac/dc power supply
- Digital UIP interface (RS-232 TTL Level)

- 0-10Vdc or 4-20mA output for CO_2
- Thermistor or Analogue output for temperature
- Mounting plate with 2 piece terminal blocks
- 15 year calibration interval
- 5 coloured LED on T51-EL version

Product specifications

Sensor Type:		Non-dispersive Infra-red, gold plated optics
Range:		0-2,000ppm standard (0-5,000 option with UIP)
Calibration Interval:		15 years
Accuracy:		±50ppm (400-1250ppm)
Stability:		Self calibrating <2% FS over life of sensor (typical 10yrs)
Temperature Dependence:		0.2% FS per ˚C
Output:	-V	1 x 0-10Vdc output (0-5V link selectable) 1 x Thermistor temperature output
	-I	1 x 4-20mA output 1 x Thermistor temperature output
	-L	2 x Analogue (link selectable 0-5/10V or 4-20mA)
	-LT	Thermistor output of temperature (specify thermistor)
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
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-T51-E1	Space Mounted CO_2 Sensor 1 x 4-20mA o/p
AX-GS-CD-T51-EIT	Space Mounted CO_2 & Temperature Sensor 1 x 4-30mA & thermistor temp o/p
AX-GS-CD-T51-EV	Space Mounted CO_2 Sensor 1 x 0-10Vdc o/p
AX-GS-CD-T51-EVT	Space Mounted CO_2 & Temperature Sensor 1 x 0-10Vdc & thermistor temp o/p
AX-GS-CD-T51-EL	Space Mounted CO_2 & Temperature Sensor 2 x Analogue outputs c/w LED
AX-GS-CD-T51-ELT	Space Mounted CO_2 & Temperature Sensor 2 x Analogue outputs & thermistor c/w LED
AX-GS-CD-T51MOD	Space Mounted CO_2 Sensor, 0-2000ppm, MODBUS

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.

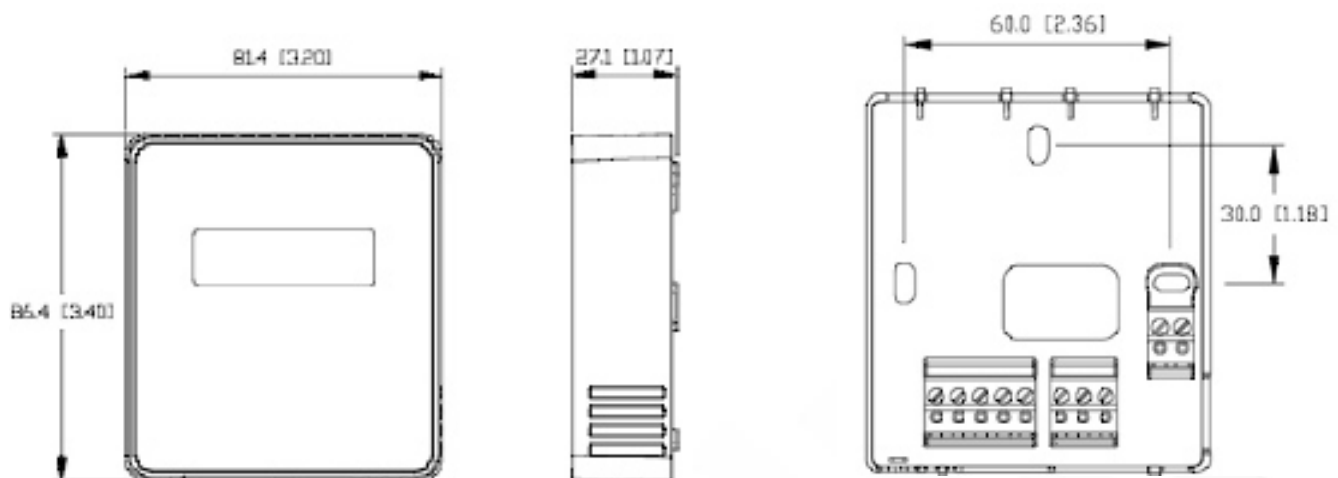### ABC Software and Lifetime Guarantee

ABC Software

ABC (Automatic Background Calibration) program utilises the computing power in the sensors onboard microprocessor to remember the lowest CO_2 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.

Lifetime Calibration Guarantee

Based on the results of years of testing of ABC software, we now offer a lifetime calibration guarantee on all the AX-GS-CD-T81 series. If the sensor is found to be out of calibration more than 150ppm as compared to a calibration Gas or recently calibrated reference. 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. 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. With ABC deactivated, calibration may be required every 2 years.
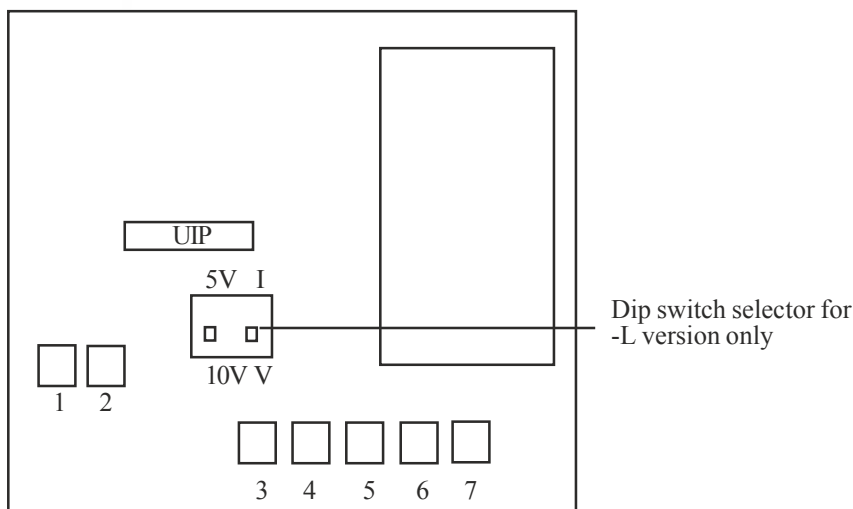
Dimensions

Operation

Terminals	
1	Voltage In
2	Ground
3	Thermistor (if fitted)
4	Thermistor (if fitted)
5	Temperature Output (only on -L versions)
6	Common output
7	Carbon Dioxide Output

Pin assignments for 4 pin UIP interface connector

1	VCC 2.5V to 5V from PCB to interface cable
2	Serial data, PC to device
3	Serial data, Device to PC
4	Ground

Dip switch selector for -L version only

LED Indicator (Model T51-EL only)

Blue - CO_2 levels are less than 800ppm, indicates over ventilation

Green - CO_2 levels are from 800 to 1000ppm indicating CO_2 levels are within acceptable limits.

Yellow - CO_2 levels are from 1000 to 1500ppm indicating CO_2 levels high, indicates under-ventilated

Red - CO_2 levels are from 1500 to 2000ppm indicating CO_2 levels are very high, indicates ventilation required

2 x Red - CO_2 levels are above 2000ppm indicating CO_2 levels are very high, indicates severely under ventilated