

AX-GS-CD-T51S

CO₂ Switch and Indicator, wall mounted

AXIO



Product Overview

The AX-GS-CD-T51S is a wall mounted CO₂ switch and indicator for ventilation control in enclosed spaces. A multi-coloured LED array indicates CO₂ thresholds. Red LEDs indicate under ventilation/low air quality. A blue LED indicates possible over ventilation if forced cooling is being used. "Automatic Background Calibration" software reduces measurement drift to better than ± 20 ppm/year. A touch switch allows the unit to be manually turned on and off. A separate mounting plate with 2-piece terminal blocks provides for easy wiring. Universal mains and 24Vac powered versions are available.

Features

- Monitors CO₂ over range 0-2,000 ppm
- Multi-coloured LED array indication of CO₂ concentration
- Selectable switch point of 1000 or 1500 ppm
- Mounting plate with 2-piece terminal blocks
- 15 year calibration interval
- Wall mounting

Product Specifications

Power Supply	AX-GS-CD-T51S	90 ~ 260Vac 50 ~ 400Hz at <1.5W average
	AX-GS-CD-T51S24	22 ~ 26Vac
Output		SPDT Relay rated at 230Vac 8A resistive. Contacts isolated to LVD2006/95/EC can be used to switch control voltages (e.g. <50Vac/dc) or mains
Output switch level		1000 ppm or 1500 ppm with hysteresis of 300 ppm
Sensor Type		Non-dispersive Infra-red, gold plated optics
Calibration Interval		Calibration not required (see ABC software)
Stability		Self calibrating <2% Full Scale over life of sensor (typical 15yrs)
Temperature Dependence		0.2% Full Scale per °C
Signal Update		Every 4 seconds
Warm Up Time		10 minutes for maximum accuracy
Anti-recycle Time		Minimum on/off period of 10 minutes in Auto mode
Display	Blue LED on	<800 ppm (indicates over ventilation)
	Green LED on	800-1199 ppm (CO ₂ levels within acceptable limits)
	Yellow LED on	1200-1499 ppm (CO ₂ levels are high - indicates under-ventilation)
	Red LED on	>1500 ppm (CO ₂ levels are very high - indicates ventilation required)
	Two red LEDs on	>2000 ppm (CO ₂ levels are extremely high - indicates ventilation required)
Housing		Flame retardant ABS
Operating Conditions		0 to +50°C, 0-95% RH non-condensing
Dimensions, Weight & Ingress		87 x 82 x 27mm, 75g, IP20
Country of Origin		Made in the UK

Order Codes

AX-GS-CD-T51S	CO ₂ Switch and Indicator, wall mounted 85-250Vac
AX-GS-CD-T51S24	CO ₂ Switch and Indicator, wall mounted 24Vac

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Installation

The unit should be installed by a suitably qualified technician in conjunction with any guidelines for the equipment it is to be connected to and any local regulations. This will entail connection to a switched, fused spur as a minimum requirement. Field wiring should be installed to satisfy the requirements set out by the manufacturer of the equipment that the module is being connected to. Isolate elsewhere before removing the front plate.

Mounting Instructions

The Room switch has mounting provisions to install directly on a standard electrical box and should be mounted at a height about 1.5 metres from the floor of the area to be controlled. For best operation, do not mount the switch near doors, opening windows, supply air diffusers or other known air disturbances.

1. Separate the front of the case by lifting the bottom up and using the top lugs as a hinge.
2. Fix the rear of the case to the wall or junction box using the supplied screws, and make the required connections.
3. Change jumper selection from 1000 ppm to 1500 ppm switch point if required. (ASHRAE regulation 62 states maximum recommended CO₂ concentration level of 1000 ppm).
4. Re-attach the front of the case to the rear by aligning the top clips and then securing the bottom clips, finally securing with the supplied set screw in the bottom hole.

ABC Software

ABC (Automatic Background Calibration) program utilises the computing power in the sensors onboard microprocessor to remember the lowest CO₂ 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.

For this reason, the AX-GS-CD-T51S should NOT be used in a space that does not experience a periodic drop to outside levels (i.e. where occupancy is 24 Hrs/7 days/week).

Led Indication

Individual LEDs illuminated - refer to the Product Specifications for CO₂ concentration

All LEDs on continuously - indicates unit in Manual On mode

All LEDs off, but occasional Green LED flash - indicates unit in manual Off mode

Blue and Red LEDs on continually - indicates a unit fault

Touch Switch Operation

The unit mode at power on is Auto.

Operate the switch by touching the circle area. Modes repeat through Auto, Manual On, Manual Off at each touch.

Auto - Output relay switches on at CO₂ concentration above 1000 or 1500 ppm, according to jumper selection.

On - Output relay is switched on (NO contact is connected to Common). All LEDs illuminate.

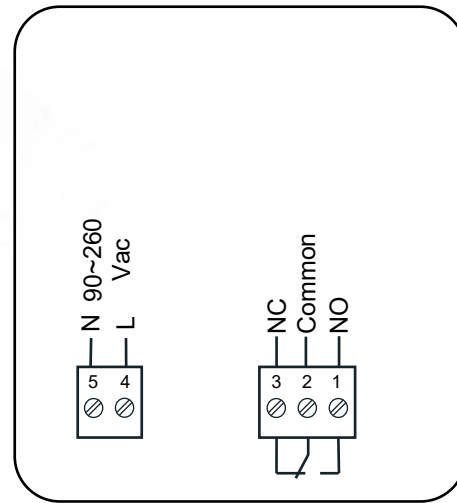
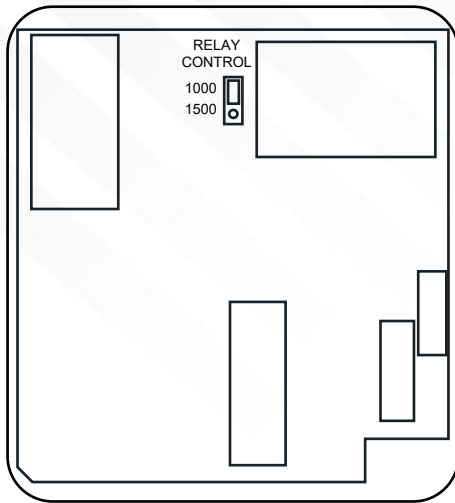
Off - Output relay is switched off (NO contact is disconnected from Common). Green LED only flashes occasionally.

AX-GS-CD-T51S

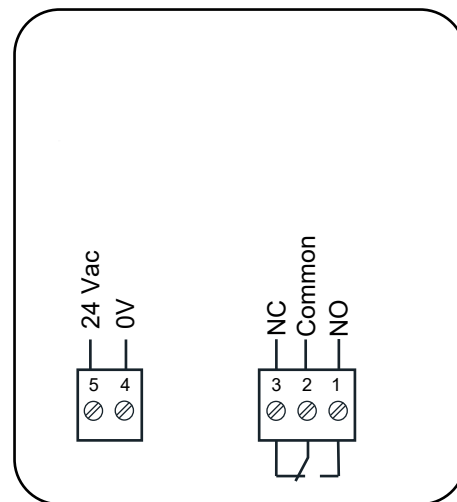
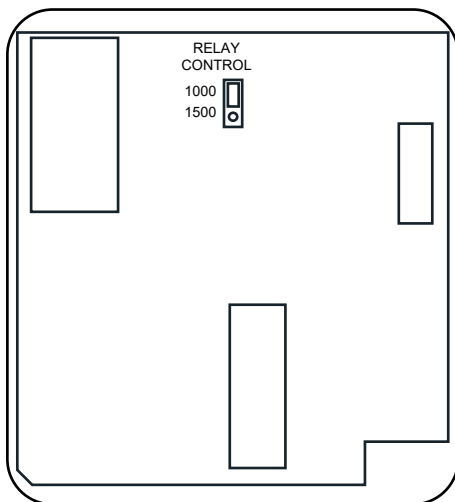
CO₂ Switch and Indicator, wall mounted



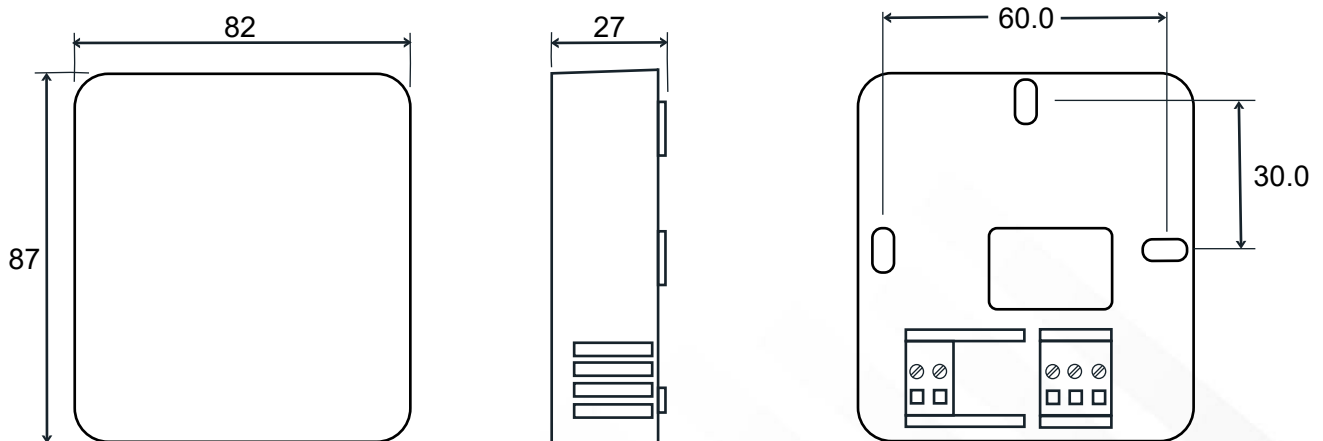
Connections - mains powered version



Connections - 24Vac powered version (do not connect to >27Vac)



Dimensions



Every effort has been taken in the production of this data sheet to ensure accuracy. Axio do not accept responsibility for any damage, expense, injury, loss or consequential loss resulting from any errors or omissions. Axio has a policy of continuous improvement and reserves the right to change this specification without notice.