

AQ-ALERT+

Air Quality Monitor



Sensor Options

- Carbon dioxide
- Oxygen
- Temperature
- Relative humidity
- Atmospheric pressure

Applications

- Schools
- Offices
- Homes
- Public buildings

Output Options

- Up to 3 analogue – voltage and/or current
- RS232 or RS485 (Modbus RTU)
- Up to 3 relays
- LEDs
- Buzzer

Certified Standards

- EN50270:2006,
- RoHS compliant

The AQ-Alert+ is designed to monitor and control indoor air quality in the home, workplace and public areas, resulting in benefits such as improved comfort and health.

While most customers chose a monitor from our range of standard products, the configuration of the AQ-Alert+ may be defined by the user, making it ideally suited for use in a wide range of applications with varying requirements.

The AQ-Alert+ can be fitted with up to five different sensors and a variety of audio, visual, analogue, communications and relay outputs.

With the appropriate configuration, the AQ-Alert+ can operate in the following modes:

Stand Alone

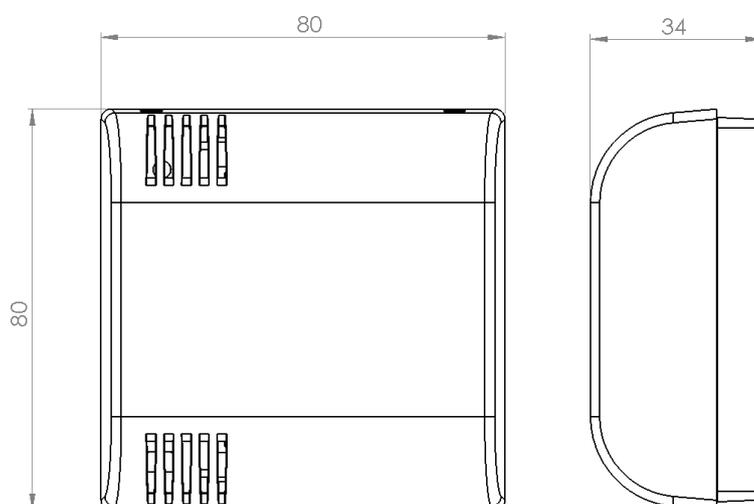
The AQ-Alert+ monitors the air quality and alerts the occupant when a change in room conditions occurs.

Direct Control

The AQ-Alert+ monitors the air quality and directly controls ventilation, heating or air conditioning in order to maintain a pre-set range of room conditions. This can be via relays or analogue outputs.

Integration into a Building Management System

The AQ-Alert+ sends air quality information to another system that controls ventilation, heating or air-conditioning. Multiple units can be individually configured and used throughout an entire system.



Dimensions in mm





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Table 1 Maximum ratings

Parameter	Maximum ratings	Description
Supply voltage	24Vdc \pm 20%	Optional mains adaptor available
Current consumption	250mA max	All possible sensor and output options fitted

Table 2 Sensor options and parameters

Sensor	Symbol	Range	Units	Description
Carbon dioxide	CO ₂	0 – 5000 0 – 10 000	ppm	Accuracy: \pm 70ppm, \pm 5% of reading (whichever is greater) ¹ Resolution: 1ppm
Oxygen	O ₂	0 – 25	%	Accuracy: \pm 1% vol.O ₂ (after calibration in fresh air) Resolution: 0.01% vol.O ₂
Temperature	T	0 – 50	$^{\circ}$ C	Accuracy: \pm 2 $^{\circ}$ C Resolution: 0.1 $^{\circ}$ C
Relative humidity	Rh	0 – 95	%Rh	Non-condensing Accuracy: \pm 3% Resolution: 0.1%
Atmospheric pressure	P	750 – 1150	mbar	Accuracy: \pm 5mbar Resolution: 1mbar

Table 3 Output options and parameters

Output	Number	Options	Description
Analogue (current or voltage)	3	4 – 20mA 0 – 5Vdc 0 – 10Vdc 1 – 5Vdc	For current output, maximum load = 500 Ω . For voltage output, minimum load = 10k Ω . Output range is directly proportional to the relevant sensor's measuring range
Digital communications	1	RS232 RS485	Modbus RTU protocol For RS485, up to 32 devices on the same bus
Relay	3	37.5VA, 250Vac max	All three relays switch a common input Individual configurable switch points Standard hysteresis = 1% of the set switch point Normally open (NO) operation, user defines the sensor range/s when the relays are closed
LEDs	1	Traffic light warning sequence	Red, amber and green LEDs Configurable sensor activation thresholds Standard hysteresis = 1% of the set threshold Continuous and/or intermittent operation
Buzzer	1	70dB @ 4kHz	Configurable sensor alarm thresholds Standard hysteresis = 1% of the set threshold Continuous and/or intermittent operation

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PART NUMBERING SYSTEM

Generate your specific part number using the system in Figure 1. Use only those letters and numbers that correspond to the sensor and output options that you need – omit those that you do not. Include 'AQM-' at the beginning of the part number. The configuration reference number defines how your customised AQ-Alert+ will behave and is allocated by SST.

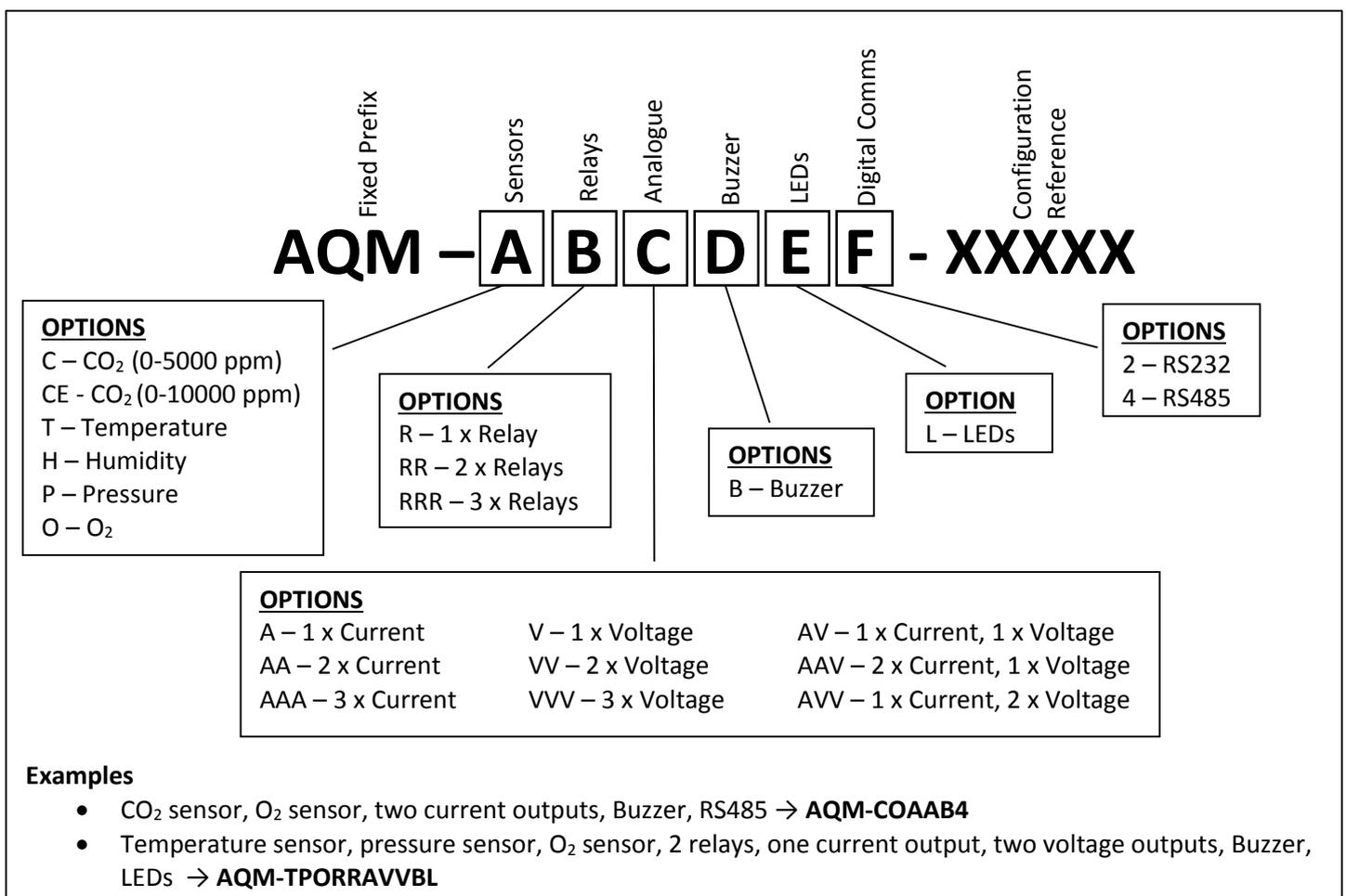


Figure 1 AQ-Alert+ part numbering system





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Examples of standard products

Table 4 AQM-CBL-00001 (often used in schools)

CO ₂ Concentration	LEDs			BUZZER
	Green	Amber	Red	
CO ₂ < 1500ppm	ON	off	off	Off
1500 < CO ₂ < 2500ppm	off	ON	off	Sounds every 5 minutes
2500 < CO ₂ < 3000ppm	off	off	ON	Sounds every 1 minute
CO ₂ > 3000ppm	off	off	FLASHING	Sounds every 2 seconds

Table 5 AQM-CL-00016 (often used in schools where the distraction of a buzzer is not wanted)

CO ₂ Concentration	LEDs		
	Green	Amber	Red
CO ₂ < 1500ppm	ON	off	off
1500 < CO ₂ < 2500ppm	off	ON	off
2500 < CO ₂ < 3000ppm	off	off	ON
CO ₂ > 3000ppm	off	off	FLASHING

Table 6 AQM-CRRRL-00004

CO ₂ Concentration	RELAYS			LEDs		
	R1	R2	R3	Green	Amber	Red
CO ₂ < 1500ppm	open	open	open	ON	off	off
1500 < CO ₂ < 2500ppm	CLOSED	open	open	off	ON	off
2500 < CO ₂ < 3000ppm	open	CLOSED	open	off	off	ON
CO ₂ > 3000ppm	open	open	CLOSED	off	off	FLASHING

**The configuration of the AQ-Alert+ must be specified at time of ordering.
Please contact SST to discuss your requirements.**



WARNING

All SST Sensing Ltd products are tested under nominal operating conditions during the production process.

Applications for our products are varied and, as these are outside our control, specification information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the product is suitable for their intended application.

CAUTION

Do not exceed maximum ratings.

Carefully follow all wiring instructions as incorrect wiring can cause permanent damage to the device.

Do not use chemical cleaning agents.

Failure to comply with these instructions may result in product damage.

