Duct Air Quality Transmitter

Features

- Low cost air quality measurement
- Detects particulates such as cigarette smoke

Specification

Element type	Tin Dioxide film
Cal. accuracy	±5% of reading
Re-calibration	2 years
Material:	
Housing	Flame retardant ABS
Probe	PVC
Dimensions:	
Housing	55mm x 90mm dia.
Probe	193mm x 25mm dia.
Protection	IP65
Ambient:	
Temperature	0 to 50°C,
RH	0 to 100% RH (non-condensing)
Power supply	24Vac/dc (±10%) @ 45mA
Output	0-10Vdc (0v = lo contamination) (10Vdc = hi contamination)
Country of origin	UK

Product Codes

GS-AQ521
Duct air quality transmitter

Accessory

DPA
Duct probe adjustment flange

Technical Overview

The GS-AQ521 is duct-mounting air quality transmitter designed for use for the control of fresh air for ventilation purposes. The GS-AQ521 measures the level of contaminant gases in an air sample, and is sensitive to most heavy odours, smoke, solvent gases etc., providing an output proportional to the mixed gas concentration. This signal can be used to control fresh air fans and dampers according to the ventilation load. Where the primary contaminant load is human respiration, it is recommended that a Carbon Dioxide transmitter is used.

Installation

1. Select a location in the duct where dust & contaminants are at a minimum (i.e. after filters etc.) and which will give a representative sample of the prevailing air condition.

2. If the sensor is to be mounted outside, it is recommended that the unit be mounted with the cable entry at the bottom. If the cable is fed from above then into the cable gland at the bottom, it is recommended that a rain loop be placed in the cable before entry into the sensor.

3. Drill two holes at 85mm centres, fix the IP65 housing to the duct with appropriate screws. Making sure to align the holes in the probe so they point into the air flow. The housing is designed to make it easy for an electric screwdriver to be used if desired.

4. Remove the front cover by twisting the lid and separating from the main body.

5. Feed the cable through the waterproof gland and terminate the cores at the terminal block. Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure water tightness.

6. Replace the lid after the electrical connections have been made.

7. Power the unit with 24Vac/dc and after a stabilising period of 2-3 minutes functionality checks can be made.

8. Pre-commissioning checks are made after approximately 30 minutes. Final commissioning should only be carried out after the unit has been running for a minimum of seven days.

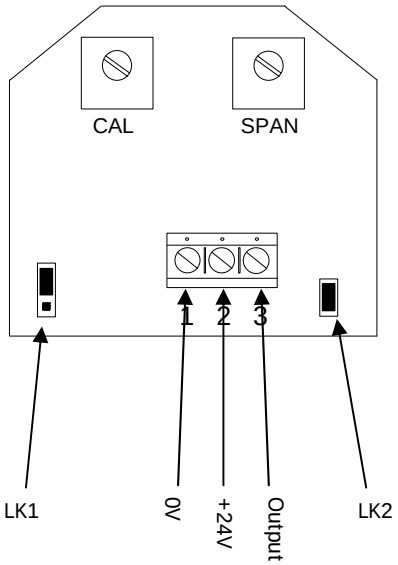
Operation

The GS-AQ521 duct air quality transmitter is most suited to areas such as common rooms, canteens, office spaces and other areas where pollutants given off by occupants are of concern.

The typical pollutants of which the GS-AQ521 would monitor are body odours, methane, solvent gases, cigarette smoke, carbon monoxide, alcohol, perfume and most other heavy odours related to high occupancy.

The normal operation of the GS-AQ521 is to set the dampers to minimum fresh air at below 2Vdc. As the signal increases, dampers should be modulated to fully open at 8-10Vdc.

Connections



NB Jumpers LK1 & LK2 should not be changed.

⚠ Do not adjust the CAL & SPAN potentiometers.

Trend Scaling

Typically, the output could be scaled for 0 to 100% contamination.

Brange	-100
Trange	100
Upper	100
Lower	0
Exponent	3