Model : DCO-S1

CO/Temp Sensor & ventilation controller

Product Description

The model DCO-S1 is a digital ventilation controller specifically designed to monitor carbon monoxide and temperature in the enclosed or semi-enclosed car parks and to regulate the environment according to these two parameters. DCO-S1 is designed for easy installation and minimum maintenance during operation. It maybe operated in stand-alone mode, as well as connected to larger building management systems.

Features

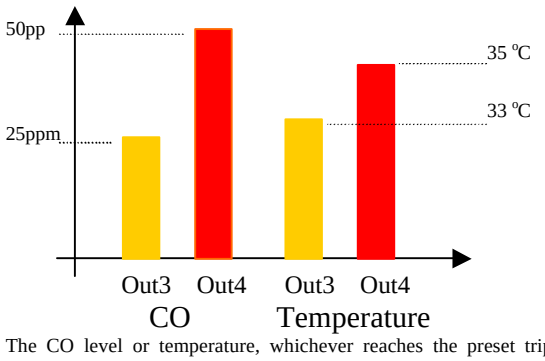
- Dual functional sensing & controlling of CO & temperature in ambient air with programmable control settings.
- State-of-art hybrid thick film sensor (MMOS) with built-in carbon filter to measure carbon monoxide gas in parts-per-million (ppm)
- Precision NTC temperature sensor
- Saves energy costs with flexible demand controlled ventilation (DCV) features.
- Two sensor analogue outputs (0~10V or 4~20mA) for connection to remote central computer and/or alarm panel.
- Two sensor relay outputs (normally open contacts) for complex local ON/OFF and/or Stage controls
- Longer maintenance interval with internal microprocessor control and built-in self-correction algorithm (SCA). Typical maintenance interval > 2 years
- Built-in temperature compensation on CO measurement
- Removable terminal block for easy installation

Application

DCO-S1 is specially designed for enclosed and/or semi-enclosed car park ventilation applications. It can be used either as a control of the ventilation system or be a part of an alarm system.

It is well known that all automobile engines generate CO and that we shall be protected against this toxic gas. By measuring the CO level in the car park and regulate the ventilation so as to keep the CO level below the recommended limit, the most cost effective ventilation system maybe derived.

In tropical areas where temperature comfort can be a concern, temperature measurement can be the second controlling parameter. When the temperature in the car park has risen to a preset limit, the ventilation can be to create the *wind effect* so as to improve the comfort level.



The CO level or temperature, whichever reaches the preset trip point activates the relay contacts. 25ppm CO or 33 ºC in temperature will trigger relay contact at Out3; while 50ppm CO or 35 ºC temperature will trigger second relay contact at Out4.

Made in Singapore

DCO-S1, Oct-2000
Printed in Singapore

SPECIFICATIONS Telasia Model DCO-S1 - Dual CO / Temp sensors & controllers for fixed installations

CO Measurement:

Operating principle ……...	Gas sensitive thick film material (MMOS) with active carbon filter
Gas sample mode ……...	Diffusion
Response time (1/e) ……...	Less 2 min. diffusion time
Measurement range ……...	0 ~ 100 ppm
Accuracy ……...	Better than +/- 10 ppm
Extended measurement range ……...	101 ~ 255 ppm
Annual zero drift ……...	< ± 5%
Digital resolution ……	1 ppm

Temperature Measurement:

Operating principle ……...	NTC thermistor
Measuring range ……...	0 to 50 ^{o}C
Accuracy ……...	± 0.5 ^{o}C
Digital resolution ……..	0.1 ^{o}C

General Performance:

Compliance with ……...	EMC Directive 89/336/EEC
Operating temperature range ……	0 to 45 ^{o}C
Operating humidity range …….	0 to 100% RH (non-condensing)
Maintenance interval ……	2 years with Self Calibration Algorithm (SCA) enabled

Electrical:

Power input ……...	Min. 18VDC / 22 VAC, max. 40VDC / 29 VAC
Power consumption ……..	< 2 watts average
Wiring connections ……...	Terminal block (see figure) , 2mm^2 maximum
Digital interface …….options: …….	RS232 cable with sensor slide connector/com driver (A232 cable)
Accessories ……...	2001Ks duct mount aspiration box for duct measurement

Outputs:

Linear analog controller outputs ……...	0 to 10V x 2, R_{out} < 100 ohm, R_{Load} > 5 kohm on Out 1 & Out2.
……...	4 to 20mA x 2, R_{Load} < 500 ohm on AN1 & 2 (V/I jumper select)
D/A resolution ……..	8 bits, 39mV / 0.062mA per step
D/A conversion accuracy ……..	Within ± 2% of reading
Relay …….	Out3 & 4, isolated N.O. 1mA/5V up to 1A/50VAC/24VDC
Display ……..	4 digit LCD display with ppm / ^{o}C indicator
Pushbutton ……	For on-board zero calibration

Terminal Connections:

G+	:	24VAC/DC
G0	:	System Ground
M	:	Signal ground
AN1	:	CO output signal
AN2	:	Temp output signal
1CM	:	Relay 1 common
1NO	:	Relay 1 n.o. contact
2CM	:	Relay 2 common
2NO	:	Relay 2 n.o. contact