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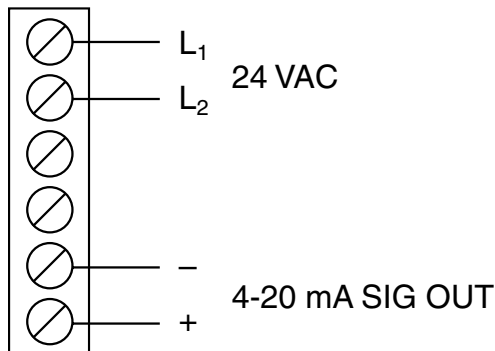
OPERATION

The **KCO-A** is a microprocessor-controlled CO sensor with a 4-20 mA analog output based on a 0-100/200/400 ppm sensing range. The microprocessor controls the reading of the CO level. The microprocessor system includes self-diagnostic, self-restarting, and remote failure reporting. The output signal will drop below 4 mA if a fault is discovered. If power problems cause the unit to malfunction, the unit will self-check and restart.

KCO-A-H

SPECIFICATIONS

Power	24VAC ± 20%,
	5VA (LT option 30VA)
Output signal	4-20 mA into 500 ohms
Scale	0-100/200/400
	jumper selectable
Operating temp	-13° to 122°F (-25° to 50°C)
Low temp (LT) minimum	-20°F (-29.4°C)
Humidity	5% to 95% noncondensing
Enclosure dimensions	
Hinged	6.125"L x 6.25"H x 3"D
	(15.6 x 15.9 x 7.6cm)

OPERATION

The **KCO-A-H** is a microprocessor controlled CO sensor with a 4-20 mA analog output signal based on 0-100/200/400 ppm CO sensing ranges.

The **KCO-A-H** has two LEDs to indicate device status, they are labeled STATUS and FAULT on the pcb.

When power is first applied, the device requires a one minute warm-up period for the sensor to stabilize. During the warm-up period the STATUS (green) and FAULT (red) LEDs will alternate. The output signal is fixed at 4 mA during the warm-up period.

After the one minute warm-up period the device will enter the normal operating mode and the STATUS LED will blink to indicate normal operation. The FAULT LED will be off.

If a sensor fault is detected, or the sensor reaches an end-of-life condition, the FAULT LED will blink red to indicate a fault condition. The STATUS LED will be off. The device will continue to operate normally even though the FAULT LED indicates a fault

INSTALLATION

1. The KCO Series senses levels of CO for up to 5000 ft^2 (465 m^2) of coverage if there is normal air circulation within the area. Mount on a wall or column approximately 5' (1.52m) above the floor. The units should not be mounted in corners where airflow could be restricted.

2. Mount the enclosure with conduit entry that will not block the opening of the door on the hinged unit.

L$_1$
L$_2$ 24 VAC

−
+   4-20 mA SIG OUT

KCO-A

CALIBRATION

The device may be calibrated or verified with CO gas if required. This requires a field calibration kit consisting of a bottle of gas (250 ppm CO in air), a tank pressure regulator with flow restrictor and the necessary tubing with a calibration cap to cover to the sensor. Calibration can be done at 68-80.6 °F and the pcb PPM RANGE jumper must be in the 400 ppm position.

The gas calibration cap attaches to the sensor fixture inside the enclosure. The sensor must be continuously powered for at least 1/2 hour prior to calibration. Calibrate the sensor first in clean air with no CO gas present. Simply adjust the ZERO pot on the sensor board until a 4.0 mA output is obtained.

Then attach the gas supply. Turn the regulator on /off knob fully off and attach it to the 250 ppm gas bottle and firmly tighten it by hand. Moisten the sponge and squeeze out any excess water. Place the sponge in the cap so that it will not touch the sensor but does not plug the hole in the side of the cap. Attach the cap to the fixture over the sensor. Slowly turn the valve knob on the regulator to let the gas begin flowing.

The regulator will restrict the flow rate to the specified 200 ml/min and the sponge will ensure the gas is in the right humidity range. Wait for 5 minutes and then adjust the SPAN pot on the sensor board until the output reads 14.0 mA (ensure PPM RANGE jumper is set to 400). Close the valve on the tank and take the cap off from the sensor. Calibration is complete.

If the gas cap is too loose on the fixtures, simply place a wrap of electrical tape around the cap to tighten it up.