QTS-1800

QTS-1800 SOLID STATE SENSOR/TRANSMITTERS

The QTS-1800 Series are microprocessor based transmitters using a broad spectrum solid state sensor for the detection of hazardous gases such as Carbon Monoxide, Propane, Ammonia, and Freons. Typical applications include enclosed parking facilities, maintenance garages, loading bays, and chiller rooms. Temperature compensation is included as standard to maintain accuracy for all gas types. Humidity compensation is standard on Ammonia and Freon sensors, and is optional on CO and LEL sensors. The transmitter has an analog output of 4 to 20mA DC, linear to the measured gas range, for transmission to the BAS, or controller supplied by QEL or others. Test jacks are provided at the transmitter for true one-man calibration. The transmitter will accept input voltages of 24 VDC (three-wire) and 24 VAC (four-wire) with wide tolerances. The standard enclosure is ABS plastic NEMA 1, with NEMA 4x weatherproof as an option.

MODEL NUMBER ORDERING CODE

Q	T	S	-	1	8			1	X	-					0		0

Gas Type (see Gas Selection Table for #)

Revision (Factory Provided) — X

Enclosure

Commercial — C

NEMA 4x — N

Options (Enter 0 for NO Selection)

Humidity Compensation — H

Sensor Guard — G

Conformal Coating — W

Non-Standard Calibration — X

Special — S

GAS SELECTION TABLE

GAS TYPE	#	STANDARD RANGE
Carbon Monoxide	16	0 TO 125 ppm in VE[1]
Combustibles	17	0 TO 50% LEL[2]
Ammonia	22	0 to 500 ppm
Freon R11	26	0 to 1000 ppm
Freon R12	27	0 to 1000 ppm
Freon R22	28	0 to 1000 ppm
Freon R123	29	0 to 100 ppm
Freon R134a	30	0 to 1000 ppm
Freon R407c	30	0 to 1000 ppm

1 - Measured in Vehicle Exhaust
2 - Calibrated for Propane

Specify Gas When Ordering
Other Gas Available, Consult Factory

PRINCIPLE OF OPERATION

The solid state sensor utilizes a sintered tin dioxide element. When the sensor is heated to a high temperature, free electrons flow easily when no oxygen is present. In clean air (20.9% oxygen) the oxygen is absorbed onto the element surface causing a restriction to the electron flow thus increasing the electrical resistance of the element. As the sensor is exposed to the target gas, the tin dioxide element adsorbs molecules of the target gas and displaces oxygen molecules in a process known as oxidation. In the presence of CO, the sensor's conductivity increases depending on the gas concentration in the air. The microprocessor based electronics measures this change in conductivity and converts it to a 4-20 mA DC or 2-10 VDC output. The microprocessor performs an algorithm to linearize the final signal.