



# QTS - 1710

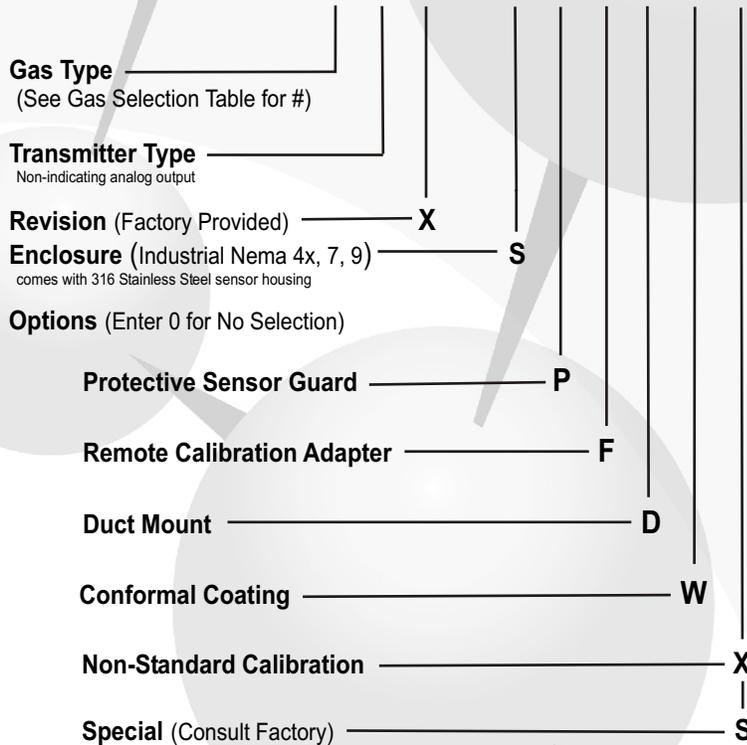
## QTS - 1710 COMBUSTIBLE TRANSMITTER / SENSORS

The QTS-1710 Series utilizes catalytic pellistor bead technology for the measurement of combustible gases. The standard sensor is resistant to poisoning substances such as silicones, sulfur compounds, and chlorinated compounds. It is mounted in an explosion-proof housing rated Class 1, Division 1, Groups A, B, C, and D. The transmitter provides a 4-20 mA DC output linear to the LEL (Lower Explosive Limit) of the calibrated combustible gas. The analog transmitter operates on a power supply of 12-30 VDC in a three wire configuration and is mounted in an explosion-proof housing rated Class 1, Division 1, Groups B, C and D. Test jacks are provided to monitor the transmitter signal without interrupting the output.



## MODEL NUMBER ORDERING CODE

Q T S - 1 7 1 | 1 X - S | | | | 0



## GAS SELECTION TABLE

### COMBUSTIBLE GASES

GAS TYPE	#	100% LEL IN % VOLUME	DETECTION CONSTANT
Methane	0	5.0 %	112
Acetylene	1	2.5 %	63
Ethane	2	3.0 %	76
Propane	3	2.1 %	62
n-Butane	4	1.6 %	66
n-Pentane	5	1.5 %	51
n-Octane	6	1.0 %	42
Hydrogen	7	4.0 %	86
Gasoline	8	1.3 %	44
Other	9	Advise	Advise

#### NOTES:

All transmitters are calibrated using a correlation method with Methane calibration gas and detection constants as shown. Calibration with actual target gas is available upon special request. Code **S** for special in options group.

## PRINCIPLE OF OPERATION

Sensor assemblies consist of two matched pellistor beads, each encasing a coiled platinum wire. One of the beads is coated with platinum as a catalyst. Both elements are exposed to the same environmental conditions and heated with the platinum wire. The elements are connected to two nodes of a Wheatstone Bridge on the transmitter electronics, measuring the resistance of each element. When combustible gas is introduced to the elements, the catalyst coating on one bead will cause oxidation. This will raise the temperature of the element, increasing the resistance. This oxidation does not occur on the bead without the coating. The resultant difference in resistance is proportional to the concentration of combustible gas. The electronics provides a null adjustment to balance the resistance of the two elements in clean air conditions. The resistance differential is linearized and converted into a 4-20 mA DC signal proportional to a 0-100% LEL concentration of the target combustible gas. Zero and span adjustments are provided to calibrate the transmitter for a specific combustible gas.

# SPECIFICATIONS

**Input Power:** 12 to 30 VDC, 125 mA maximum

**Output Signal:** 4 to 20 mA DC into 700 ohms at 24 VDC, Three-wire configuration

**Enclosure Rating:** S - NEMA Type 4X Weatherproof, Type 7 and 9 Explosion Proof; Class 1, Div. 1, Groups B,C,D 316 Stainless Steel Sensor Housing is also Group A rated

**Encl. Materials:** S - Cast Aluminum, Epoxy Coated

**Sensor Technology:** Dual element poison resistant catalytic pellistor bead

**Sensor Gas Types:** Hydrocarbon combustible gases

**Response Time:** Less than 10 seconds to register 50% of a full scale step change  
Less than 30 seconds to register 90% of a full scale step change

**Sensor Life:** Typical 3 to 5 years

**Temperature:** -40° to +122° F (-40° to +50° C)

**Humidity:** 0 to 99% RH, non-condensing

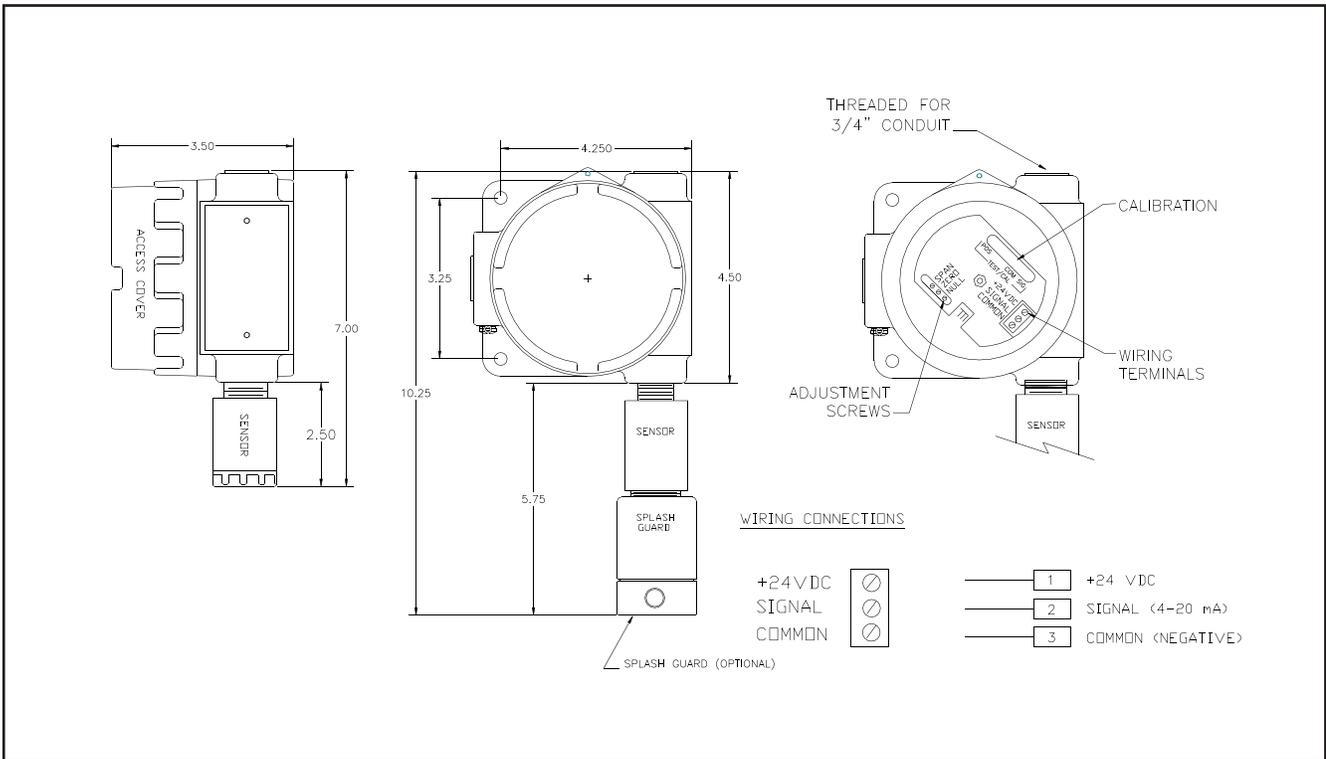
**Pressure:** Atmospheric ± 10%

**Accuracy:** ± 1% LEL Methane

**Repeatability:** ± 1% LEL Methane

**Zero Drift:** <2% of range/month at 68° F (20° C)

**Shipping Weight:** 5 lb. (2.3 Kg)



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*Read and understand fully all instructions before using these products.*

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