



4-20 mA SENSOR / TRANSMITTER

MODEL TR-5200/TR5500

Operations & Maintenance Manual



TR5500

TR5200

COMBUSTIBLE GAS SENSOR/TRANSMITTER

INSTALLATION:

1. Locate a flat surface to mount the enclosure so that the sensor can downward. There is a power entry at the top.
2. Remove the cover of the enclosure by removing the 4 screws in the corner of the TR5200, or unscrewing the lid of the TR5500.
3. Connect the electrical fittings to the enclosure and bring in the electrical wires. NOTE: BE SURE WIRING IS DONE ACCORDING TO LOCAL ELECTRICAL CODE REQUIREMENTS.

Connect the wires to the terminal block as shown on the wiring diagram (See Fig.1) Use 18 gauge minimum wire. It is recommended that shielded wire be used if it is not being run in metal conduit.

4.

CALIBRATION:

The sensor/transmitter must be connected to the controller.

Allow the sensor three to five minutes to warm-up before calibrating.

1. Connect negative lead of voltmeter to test point C (YELLOW). Connect positive lead of voltmeter to test point D (WHITE). Apply "zero" gas to the sensor. (ambient air may be used if it is certain there are no contaminants in the area). Adjust VR2 (ZERO) to 0.0Volts \pm 0.020V.
2. Connect negative lead of voltmeter to test point A (BLACK). Connect positive lead of voltmeter to test point E (RED). Adjust VR4 (CURRENT) to 0.400 Volts. If an ammeter is available it is preferable to connect it in line A1 and adjust VR4 to read 4.00 mA.
3. Refer to graph below, apply calibration gas to the sensor at a rate .5 LPM. Adjust VR3 (SPAN) to a voltage corresponding to the % LEL calibration gas used. The formula below can also be used to determine the voltage value.

In the example below, if 50 % LEL calibration gas is used, the span voltage is 1.2 volts.

CALIBRATION (Con't)

NOTE: The system voltage, measured between point A (BLACK) (negative) & point F (RED) (positive), is factory set. Do not change this voltage value.
The sensor voltage, measured between point A (BLACK) (negative) & point B (YELLOW) (positive), is factory set and the value is sensor type dependent. Do not change this voltage value. Damage to the sensor will result if the voltage is set too high. For the TR-5200 this is 4.25 volts. For the TR5500 it is 3.50 volts.

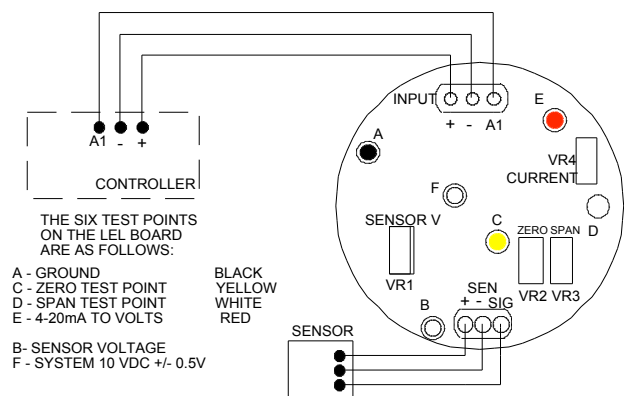
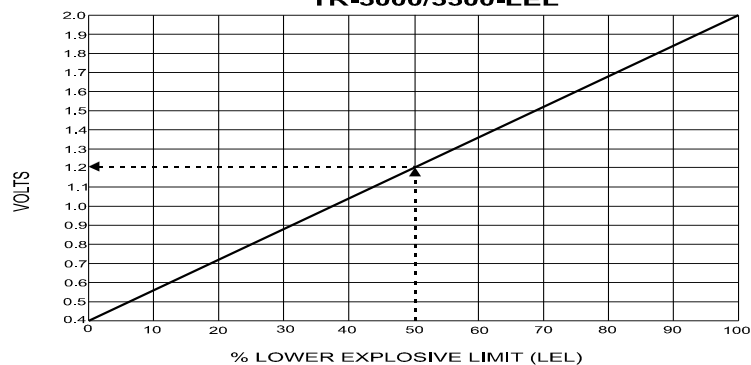
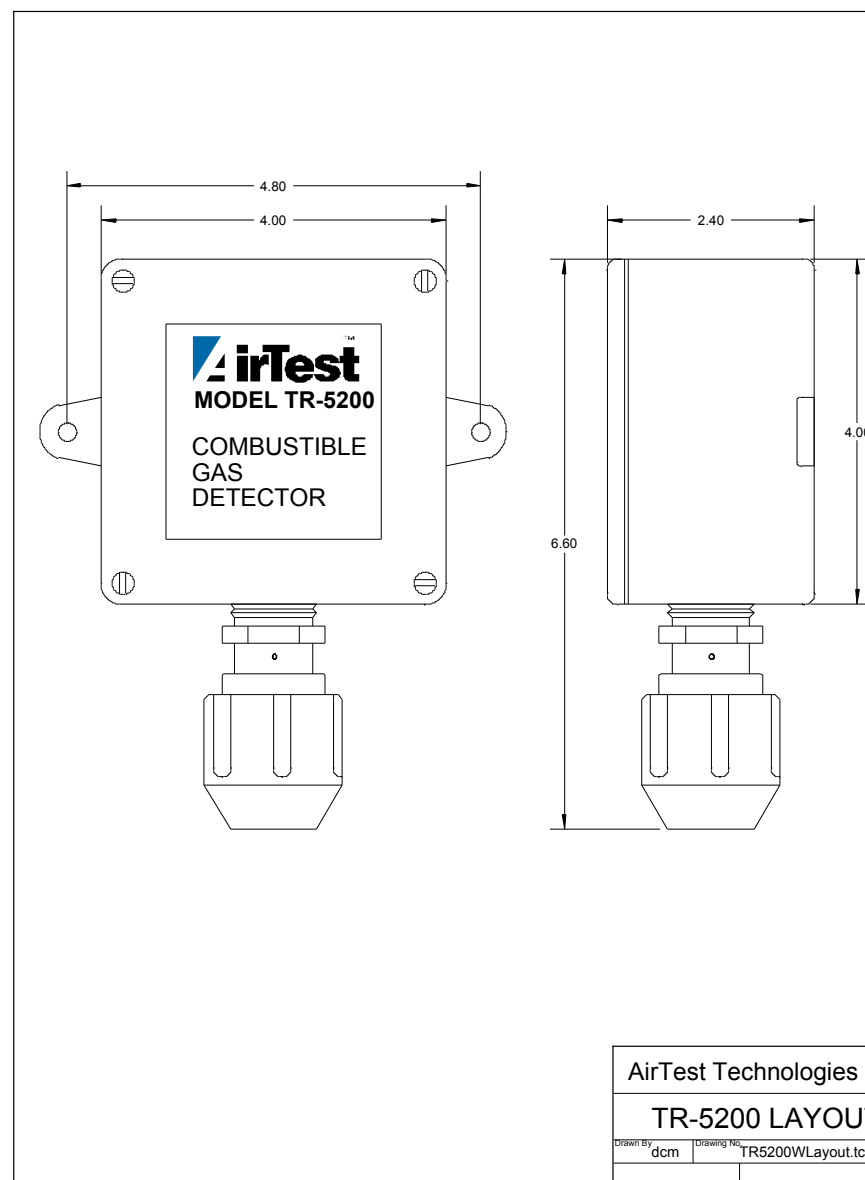


Fig. 1
TR-5000/5500-LEL

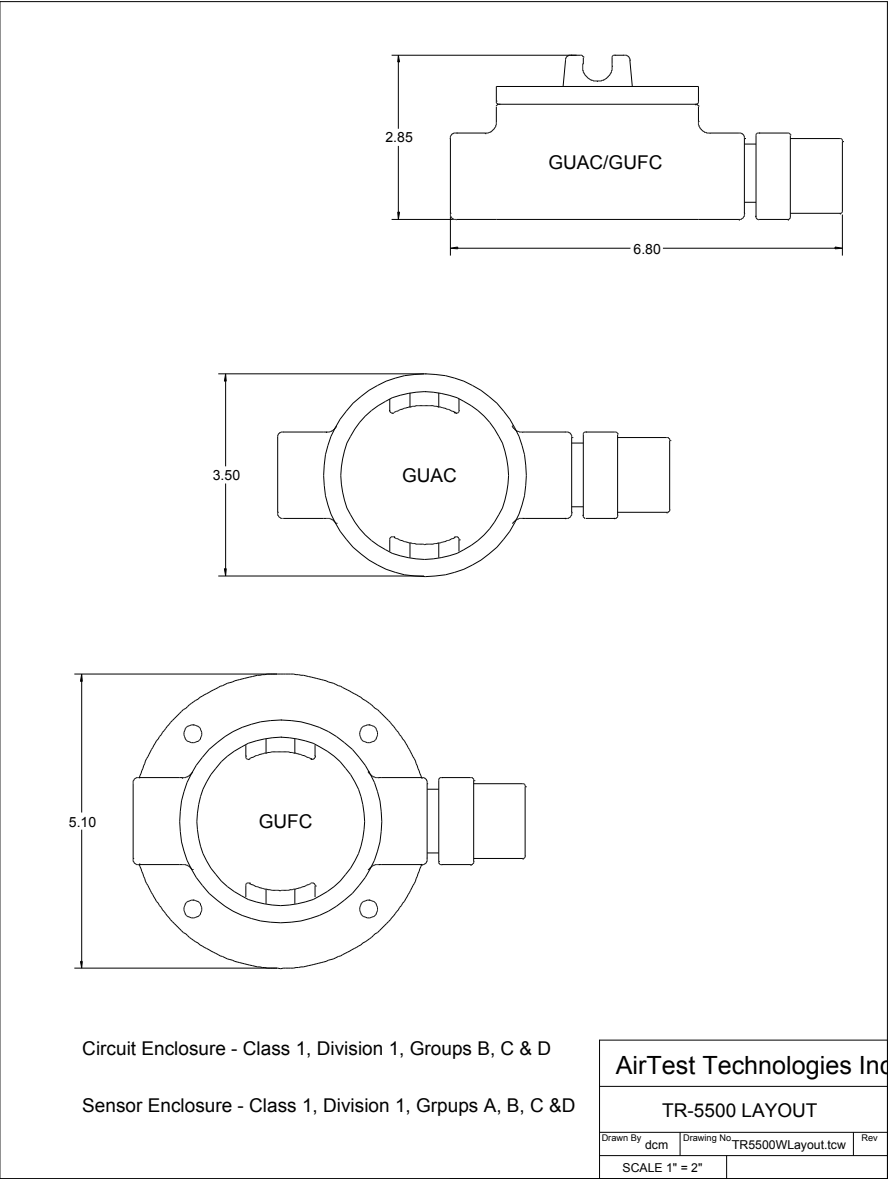


$$V = \left[\frac{\% \text{ CONCENTRATION OF CALIBRATION GAS}}{100 \% \text{ (MAXIMUM RANGE)}} \right] \times 1.6 + 0.4$$

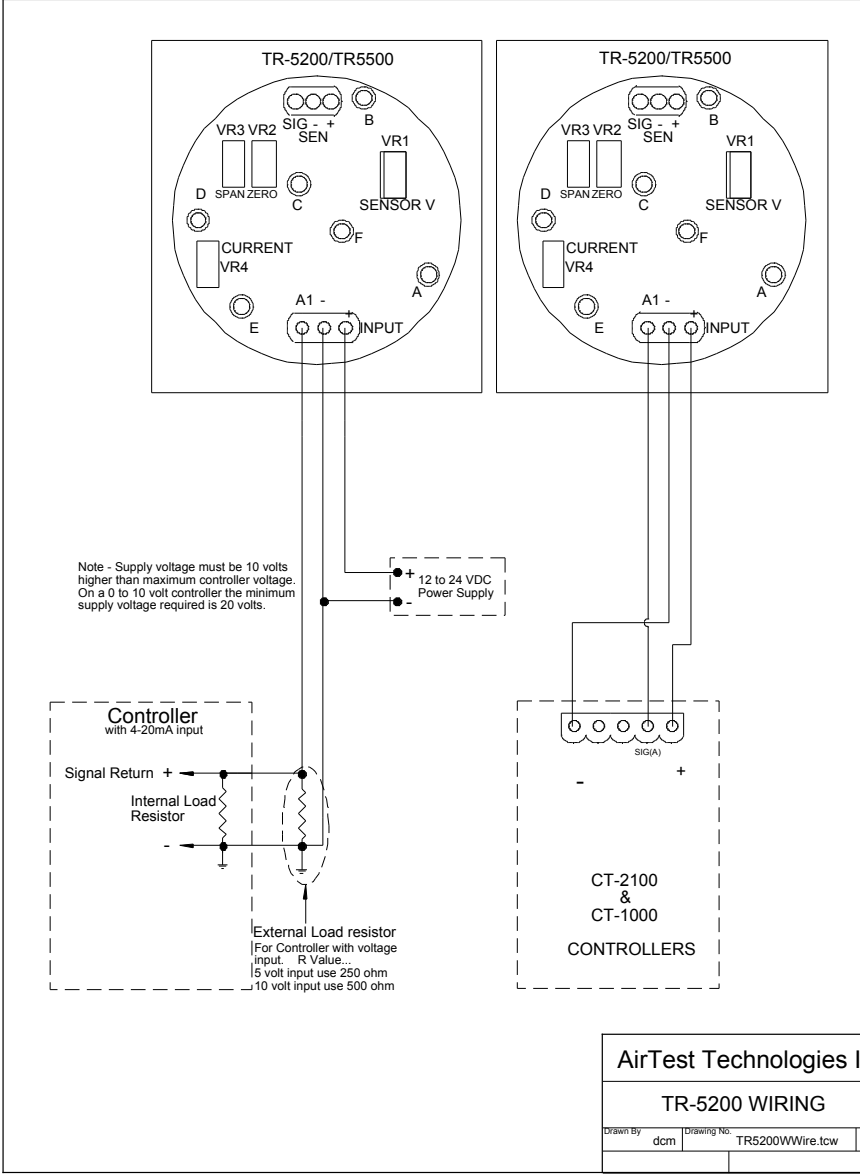
LAYOUT – TR5200



LAYOUT – TR5500



WIRING



WARRANTY:

ATI AirTest Technologies, Inc (the company) warrants all instruments manufactured by them to be free from defects in materials and workmanship under normal use and service for a period of one year. Electrochemical and Catalytic Bead sensors purchased from sensor manufacturers will be warranted to the extent offered by the manufacturer. The company's obligation of this warranty shall be limited to the repair or replacement of any part found to be defective. The company shall not be obligated to repair or replace units that are found to be in need of repair because of damage, (other than normal wear and tear), tampering or modification. The detector must be returned to AirTest suitably packaged and with freight prepaid. Liability is limited to the replacement cost of a new unit. In no case shall the company be liable for any consequential or incidental damages however caused. No agent, dealer or employee of the company has the authority to increase or alter the obligations or limitations of this warranty.

SPECIFICATIONS:

Sensing Element	Catalytic Bead	
Standard Range	0 to 100 % LEL Combustible gas	
Gas Sampling Method	Diffusion	
Linearity	Linear	
Operating Temperature	-20°C to +50°C -4°F to +122°F	
Dimensions(LxWxD) in. cm.	TR5200-6.2 x 4 x 2.4 15.6 x 10 x 6	TR5500-6.8 x 3.5 x 4 17.3 x 9 x 7.6
Humidity (non-cond.)	0 to 90%	
Sensor Life Expected	3+ years	
Calibration Interval	6 months	
Warm-up Time	< 3 minutes	
Response Time	< 1 minute	
Power Requirement	12 to 30 VDC	
Power Consumption	< 2 watts	
Output	4-20 mA	
Enclosure Material	TR5200-PVC, TR5500 Cast Aluminum	
Weight	TR5200-16 ounces, TR5500-4 lbs.	
Approvals	TR5200-CSA/NRTL TR5500-CSA/UL Cl.1, Div.1	

ATI AirTest Technologies, Inc
#9, 1520 Cliveden Avenue
Delta, BC, V3M 6J8
Ph. 604-517-3888
Fx. 604-517-3900
e-mail sales@airtest.com
website www.airtest.com