Engineering Specifications

TG Series - Toxic Gas Sensor

1. The sensor shall provide toxic gas detection for various types of gases.
2. The sensor shall have the capability to
3. The sensor shall be UL 61010-1 listed to meet the latest applicable safety standards
4. The sensor shall meet CE and RoHS requirements.
5. The sensor shall operate in ambient environments between -20 and +50°C
6. The sensor shall operate in a humidity range from 0-95% non-condensing
7. The sensor shall operate with the supply voltage of 15-30VDC or 24 VAC and consume less than 4W in any operating condition.
8. The sensor shall be able to output both 0-5V/0-10V and 3 wire 4-20mA that are +/-1% accurate to what is displayed on the device.
9. The device shall communicate using BACnet MS/TP or Modbus RTU at speeds or 9600 to 115200 using a 3 wire RS-485 with isolated ground connection.
10. The sensor shall have an LCD screen for the user to set parameters and view the sensor readings.
11. The sensor shall have touch buttons for the user to access the device parameters.
12. The sensor shall have a LED indication to show the status of the device, Green for normal, Yellow for warning status and Red for alarm status.
13. The sensor shall detect the following gases with the given specifications:
    a. CO (Carbon Monoxide)
        i. Type: Electrochemical
        ii. Accuracy: ±5% of default range (0-100ppm) ±5%of reading above 200 ppm
        iii. Resolution: 1 ppm
        iv. Certifications: UL2034 Listed Component
        v. Life expectancy: >7 years
        vi. Coverage Area: 5000-7500 square feet
    b. NO2 (Nitrogen Dioxide)
        i. Type: Electrochemical
        ii. Accuracy: ±5% of default range (0-10ppm) ±5%of reading above 20 ppm
        iii. Resolution: 0.1 ppm
        iv. Life expectancy: >7 years
        v. Coverage Area: 5000-7500 square feet
    c. Methane/Propane/ Hydrogen
        i. Type: Catalytic
        ii. Detection Range: 0-50% LEL (Lower Explosive Limit)
        iii. Accuracy: 5% of range
        iv. Resolution: 1%LEL
        v. Life expectancy: >5 years

vi. Coverage Area: Methane/Hydrogen 5000-7500 sq ft; Propane 5000 sq ft

d. Oxygen
    i. Type: Electrochemical
    ii. Detection Range: 0-25% Volume
    iii. Accuracy: ±5% of range
    iv. Resolution: 0.1 %
    v. Life expectancy: 5 years
    vi. Coverage Area: 5000-7500 square feet

e. H2S (Hydrogen Sulfide)
    i. Type: Electrochemical
    ii. Detection Range: 0-100 ppm
    iii. Accuracy: ±5% of range
    iv. Resolution: 1 ppm
    v. Life expectancy: 5 years
    vi. Coverage Area: 5000-7500 square feet

f. CO2
    i. Type: Non-dispersive Infrared (NDIR)
    ii. Accuracy: ±(30ppm + 3% of reading) (400-2000ppm), -10-50ºC, 0-85%RH
        ±(50ppm+ 5% of reading) (2000-5000ppm), -10-50ºC, 0-85%RH
        >5000ppm consult factory>5000ppm consult factory
    iii. Resolution: 1 ppm
    iv. Life expectancy: 15 years
    v. Coverage Area: 5000-7500 square feet

14. The sensor shall have a programable warning and alarm setpoint.
15. The sensor shall have two relays capable of handling 30VDC at 1amp, which trips at the warning and alarm setpoint.
16. The sensor shall have an audible alarm capable of delivering at least 85 dbA at a minimum of 10 centimeters.
17. The sensor shall have field replaceable sensing elements.
18. The sensor electronics shall have a 7-year warranty.
19. The sensor shall have a 2-year warranty on all replaceable elements.
20. The sensor shall be manufactured in the USA.
21. The sensor shall be manufactured by Senva.