



AQ sentinel

Features – Functions - Benefits

- Toxics - Oxygen – Combustibles - VOCs
- Scalable 1-6 Smart Gas Sensor Modules
- Serial Output - Modbus RTU 9600 bps
- User Interface via Portable Cal Kit
 - Option: Local Display and Magnetic Wand
- Installation and Connectivity Options
 - Wired RS-485 MODBUS RTU
 - Wireless 915 MHz Radio
 - LoRa WAN Wireless Transceiver
- Power Input Options
 - 10 to 30 VDC
 - 90/240 VAC
 - Internal Rechargeable Battery
 - Solar Charger Controller

Description

Model SA-XDS gas detection systems are designed to detect a wide range of gases in ambient air. The systems are scalable and can be configured to monitor volatile organic compounds, toxic gases, oxygen, and combustible gases in ambient air. Select from one of four system configurations: Model SA-2DS 1-2 sensors, Model SA-4DS 1-4 sensors, Model SA-6DS 1-6 sensors. Specific gas type is determined by installing Safeguard Analytics Model SA1 smart sensor modules. Each smart sensor module stores gas type, range of sensitivity, and the last zero and span calibration data points facilitating plug and play versatility for a wide range of gas detection applications. Sampling is via diffusion at the point of installation.

All system components are mounted in a NEMA 4X weatherproof enclosure suitable for installation in areas classified as non-hazardous locations. Model SA-XDS gas monitors feature non-intrusive calibration using a small magnet. A MODBUS slave port serves as a gateway to cloud-based data acquisition and data analysis portals.

Model SA1 Smart Sensor



- Catalytic Pellistors (CPS) Combustible Gases
- Electrochemical (E-Chem) Toxic Gases
- Electrochemical (E-Chem) Oxygen Depletion
- Photo Ionization (PID) Volatile Organic Compounds
- Non-dispersed Infrared (NDIR) Combustible Hydrocarbons and Carbon Dioxide
- Molecular Property Spectrometer (MPS™) Combustible Gases and Refrigerants
- Metal Oxide Semiconductor (MOS) Refrigerants

Model SA-XDS Specifications*

System Specifications

Detector Type	Electrochemical Toxic and Oxygen Photo Ionization Volatile Organic Compounds NDIR Hydrocarbons and Carbon Dioxide MP S™ Spectrometry™™™ Combustible Gases Metal Oxide Semi-conductor Refrigerants
Detection Method	Diffusion Absorption
Indicators-Local Display	Color Graphic Digital Display Green – Normal Operation No Alarm Amber – Warning Level Alarm Red – Danger Level Alarm Blue- Fault Condition Detected
OpCheck Performance	Zero Stability
Diagnostics	Response Time Span Drift Signal Stability Sensor Life
User Interface	Magnetic Wand OpCheck Bluetooth App
Warranty	2 Years

Electrical Specifications

Input Voltage	10-30 VDC, Nominal 24VDC Optional 110/220 VAC Module
Power Consumption	Smart Sensor Dependent ~1 watt to 1.5 watts
Serial Output	Modbus RTU 9600 bps
Optional Alarm Relays	Alarm Level 1, 2 + Fault Form "C" Contacts 2A

Mechanical Specifications

Enclosure Material	Polycarbonate
Dimensions	10" W, 10" H, 6" D 254 mm W, 254 mm H, 153 mm D

Environmental Specifications

Temperature Range	Typical -40°F to +140°F, -40°C to +60°C
Humidity Range	Typical 15-95% non-condensing

*Specifications subject to change without notice. Contact the factory for additional information

**MPS™ is a registered trademark of Nevada Nano

Model SA1 Smart Sensor Modules

Gas Type	Model No	Range
Combustible Gas	SA1-CPS	0-100% LEL
Combustible Gas	SA1-MPS	0-100% LEL
Combustible HC	SA1-CH4-LEL	0-100% LEL
Combustible HC	SA1-CH4-PPM	0-5000 PPM
Oxygen Depletion	SA1-O2-EC	0-25.0%
VOCs - PID	SA1-PID-2	0-2.00 PPM
VOCs - PID	SA1-PID-20	0-20.00 PPM
VOCs - PID	SA1-PID-50	0-50.0
Carbon Dioxide	SA1-CO2-1K	0-1000 PPM
Carbon Dioxide	SA1-CO2-3K	0-3.00%
Carbon Dioxide	SA1-CO2-5K	0-5.00%
Acetylene	SA1-C2H2-100	0-100 PPM
Alcohol	SA1-C2H6O-100	0-100 PPM
Ammonia	SA1-NH3-100	0-100 PPM
Arsine	SA1-AsH3-1	0-1.00 PPM
Bromine	SA1-Br2-20	0-20.0 PPM
Carbon Disulfide	SA1-CS2-100	0-100 PPM
Carbon Monoxide	SA1-CO-200	0-200 PPM
Chlorine	SA1-Cl2-10	0-10.0 PPM
Chlorine Dioxide	SA1-ClO2-100	0-100 PPM
Diobrane	SA1-B2H6-1	0-1.00 PPM
Ethanol	SA1-C2H6O-100	0-100 ppm

Gas Type	Model No	Range
Ethylene	SA1-C2H4-100	0-100 ppm
Ethylene Oxide	SA1-C2H4O-20	0-20.0 PPM
Fluorine	SA1-F2-1	0-1.00 PPM
Formaldehyde	SA1-CH2O-100	0-100 PPM
Formic Acid	SA1-H2CO2-10	0-10.0 PPM
Hydrogen	SA1-H2-100	0-100 ppm
Hydrogen Chloride	SA1-HCL-30	0-30.0 PPM
Hydrogen Cyanide	SA1-HCN-30	0-30.0 PPM
Hydrogen Fluoride	SA1-HF-10	0-10.0 PPM
Hydrogen Peroxide	SA1-H2O2-100	0-100 ppm
Hydrogen Sulfide	SA1-H2S-100	0-100 PPM
Methyl Alcohol	SA1-CH3OH-100	0-100 ppm
Methyl Mercaptan	SA1-CH3SH-100	0-100 ppm
Nitric Oxide	SA1-NO-100	0-100 ppm
Nitrogen Dioxide	SA1-NO2-30	0-30.0 PPM
Ozone Gas	SA1-O3-1	0-1.00 PPM
Phosgene	SA1-COCL2-1	0-1.00 PPM
Phosphine	SA1-PH3-5	0-5.00 PPM
Silane	SA1-SiH4-50	0-50.0 PPM
Sulfur Dioxide	SA1-SO2-20	0-20.0 PPM
A2L Refrigerants	SA1-A2L-2.5K	0-2500 PPM
A3 Refrigerants	SA1-A3-2.5K	0-2500 PPM



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