



Features - Functions - Benefits

Toxics - Oxygen – Combustibles - VOCs

- NEMA 4X Weatherproof Enclosure
- High Visibility Color Graphic HMI
- User Interface via Magnet
or Bluetooth® & OpCheck™
- Intuitive Full Script Operator Interface
- Outputs
 - * Analog 4-20 mA DC
 - * Modbus RTU 9600 bps
 - * Local Alarm Relays (Optional)

Description

The SA-1N4 gas detection sensors have been engineered for the purpose of detecting and monitoring various gases such as toxic, oxygen, and combustible gases within the surrounding air. These sensors utilize diffusion based sampling methods. The design incorporates a comprehensive array of sensor technologies, including electrochemical sensors, photoionization detectors, non-dispersed infrared sensors, and a multi-spectrum combustible gas detection sensor. The specific gas to be detected is determined by installing a chosen Model SA1 smart sensor module. Each sensor module retains information about the gas type, sensitivity range, default alarm settings as well as the most recent zero and span calibration data points.

All electronic components are housed within a NEMA 4X weatherproof enclosure, making it suitable for installation in non-hazardous locations. The SA-1N4 gas detectors offer a user-friendly calibration process, which can be accomplished non-intrusively using a small magnet or an Android™ phone or tablet along with the Safeguard OpCheck application. The color graphic display simplifies the user interface, providing real-time readings and full script service instructions in a user-friendly manner. The device's status is easily discerned through screen colors, with green indicating normal operation (no alarm), yellow signifying an alarm at level 1, red indicating an alarm at level 2, and blue denoting a fault condition.

OpCheck

OpCheck combines continuous supervision of the gas sensor element and associated circuits then adds analysis of performance data during routine calibration to create a high level of safety and reliability in every Safeguard Analytics gas detection sensor. Using the Bluetooth connection and an Android phone or tablet, OpCheck service reports are readily available in single device or site wide formats. The reports can be uploaded via text or email.

Faults Monitored

Detector • Input Voltage • Zero Drift • Signal Loop • Processor Memory

Performance Diagnostics

Zero Stability • Span Drift • Response Time • Signal Stability • Sensor Life • Clearing

Model SA-1N4 System Specifications*

System Capacity	1 Model SA1 smart sensors	Input Voltage	10 to 30 VDC
Sensor Technology	Combustible Gas, Catalytic Pellisitors Combustible Hydrocarbons, NDIR Oxygen Deficiency, Electrochemical Toxic Gases, Electrochemical Carbon Dioxide, NDIR Volatile Organic Compounds, PID Refrigerants, MOS Refrigerants, NDIR	Power Consumption	1.5 to 2.5 Watts (Sensor Dependent)
Detection Method	Diffusion	Serial Output	MODBUS RTU 9600 bps
Indicators	Color Graphic Digital Display Green – Normal Operation, No Alarm Amber Alarm Level 1 Red Alarm Level 2 Blue Fault Condition	Analog Output	4-20 maDC
User Interface	Magnetic Wand or OpCheck App	Alarm Relays (Optional)	Level 1, Level 2, Fault, Auxiliary Form "C" 5A Contacts Latching or Non-latching Ascending or Descending
		Temperature Range	-4°F to +140°F -20°C to +60°C
		Humidity Range	5% to 99% Non-condensing
		Dimensions	8.0" W, 8.0" H, 4.0" D 203mm W, 203mm H, 101mm D
		Area Classification	Non-hazardous Locations NEMA 4X Weatherproof
		System Warranty	2 Years

* Specifications subject to change without notice

Model SA1 Smart Sensor Modules (Partial List) *

Gas Type	Model No	Range	Gas Type	Model No	Range
Combustible Gas	SA1-CPS	0-100% LEL	Ethylene	SA1-C2H4-100	0-100 ppm
Combustible Gas	SA1-MPS	0-100% LEL	Ethylene Oxide	SA1-C2H4O-20	0-20.0 ppm
Combustible HC	SA1-CH4-LEL	0-100% LEL	Fluorine	SA1-F2-1	0-1.00 ppm
Combustible HC	SA1-CH4-PPM	0-5000 ppm	Formaldehyde	SA1-CH2O-100	0-100 ppm
Oxygen Depletion	SA1-O2-EC	0-25.0%	Formic Acid	SA1-H2CO2-10	0-10.0 ppm
VOCs - PID	SA1-PID-2	0-2.00 ppm	Hydrogen	SA1-H2-100	0-100 ppm
VOCs - PID	SA1-PID-20	0-20.00 ppm	Hydrogen Chloride	SA1-HCL-30	0-30.0 ppm
VOCs - PID	SA1-PID-50	0-50.0 ppm	Hydrogen Cyanide	SA1-HCN-30	0-30.0 ppm
Carbon Dioxide	SA1-CO2-1K	0-1000 ppm	Hydrogen Fluoride	SA1-HF-10	0-10.0 ppm
Carbon Dioxide	SA1-CO2-30K	0-3.00%	Hydrogen Peroxide	SA1-H2O2-100	0-100 ppm
Carbon Dioxide	SA1-CO2-50K	0-5.00%	Hydrogen Sulfide	SA1-H2S-100	0-100 ppm
Acetylene	SA1-C2H2-100	0-100 ppm	Methyl Alcohol	SA1-CH3OH-100	0-100 ppm
Alcohol	SA1-C2H6O-100	0-100 ppm	Methyl Mercaptan	SA1-CH3SH-100	0-100 ppm
Ammonia	SA1-NH3-100	0-100 ppm	Nitric Oxide	SA1-NO-100	0-100 ppm
Arsine	SA1-Ash3-1	0-1.00 ppm	Nitrogen Dioxide	SA1-NO2-30	0-30.0 ppm
Bromine	SA1-Br2-20	0-20.0 ppm	Ozone Gas	SA1-O3-1	0-1.00 ppm
Carbon Disulfide	SA1-CS2-100	0-100 ppm	Phosgene	SA1-COCL2-1	0-1.00 ppm
Carbon Monoxide	SA1-CO-200	0-200 ppm	Phosphine	SA1-PH3-5	0-5.00 ppm
Chlorine	SA1-Cl2-10	0-10.0 ppm	Silane	SA1-SiH4-50	0-50.0 ppm
Chlorine Dioxide	SA1-CIO2-100	0-100 ppm	Sulfur Dioxide	SA1-SO2-20	0-20.0 ppm
Diobrane	SA1-B2H6-1	0-1.00 ppm	A2L Refrigerants	SA1-A2L-2.5K	0-2500 ppm
Ethanol	SA1-C2H6O-100	0-100 ppm	A3 Refrigerants	SA1-A3-2.5K	0-2500 ppm

*Contact the factory for additional gas types and ranges of sensitivity



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