



JUPITER, GAS DETECTION SYSTEM - MODEL HVS4000



Features

- Integral Galvanic Isolation
- One Person Adjustment-Free Calibration
- Two Discrete LED Indicators
- Sensor can be remote mounted up to 9,000 ft. (2,740m)
- Remaining Sensor Life Indication
- 4-20 mA Analog Output
- Dual Redundant MODBUS RS-485 User Interface

Benefits

- Intrinsically safe design permit hot swapping of electrochemical sensors, simple installation with lost cost of ownership.
- Uses a magnetically activated, non intrusive, calibration method.
- Indicates alarm and warning conditions
- Increased installation flexibility
- Reduces downtime by providing “heads-up” on sensor life
- Transmits fault, calibration, and gas concentration levels to a remote display, computer, or other device such as an alarm, dispensing device or master controller.
- Provides remote operation of HVS-4000, using 2 redundant channels, to change alarm and warning relay settings, clear selected faults, issue calibration requests and other functions.

Description

The Halogen Valve Systems’ Jupiter gas detection system (Model HVS4000) has a 24 VDC-powered base control unit and an interface module and electrochemical cell located in the sensor housing.

The Jupiter monitors a variety of hazardous and toxic gases in parts per million (ppm), including: ammonia, carbon monoxide, chlorine, chlorine dioxide, oxygen deficiency, ozone, and sulfur dioxide. The Jupiter system operates as a universal gas detector by simply replacing the sensors.

The microprocessor-based electronics of the interface module process information at the sensor site and communicate detected gas values to the base unit for data control and display.

The Jupiter system is certified as explosion-proof with intrinsically safe inputs for use in hazardous locations. It can also be used for general-purpose, non-hazardous applications.

Applications

- Water Treatment Facilities
- Wastewater Treatment Facilities
- Hazardous Gas Use Facilities

Requiring Gas Detection for:

- Toxic gas storage rooms
- Toxic gas use rooms
- Laboratory facilities
- Toxic gas perimeter areas
- Confined hazardous gas areas

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System Specifications

Sensor Type:	Electrochemical cell
Typical Life:	2 to 3 years under typical conditions (Electrochemical Cell)
Malfunctions Monitored:	Calibration Errors, Data Memory Errors
Measuring Ranges:	Ammonia (NH ₃): 0-50ppm, 0-100ppm Carbon Monoxide (CO): 0-100 ppm, 0-500 ppm Chlorine (Cl ₂): 0-10 ppm, 0-20 ppm Chlorine Dioxide (ClO ₂): 0-3 ppm Oxygen (O ₂): 0-25% by volume Ozone (O ₃): 0-1 ppm Sulfur Dioxide (SO ₂): 0-20 ppm
Response Time (100% FS Gas Applied):	Cl ₂ and ClO ₂ : T90 < 60 sec CO: T90 < 30 sec NH ₃ and O ₃ : T90 < 90 sec SO ₂ : T90 < 10 sec O ₂ : T90 < 15 sec
Repeatability:	± 5% FS or ± 2 ppm, whichever is greater
Zero Drift:	< 5% per year
Warranty:	Two years for the base unit and interface module; One year for the electrochemical cell
Approvals:	CSA

Environmental Specifications

Operating Temperature Range:	-4°F to +122°F (-20°C to +50°C)
Ammonia	-40°F to +104°F (-40°C to +40°C)
Storage Temperature Range (Base Unit and Interface Module):	-40°F to +185°F (-40°C to +85°C)
Storage Temperature Range (cells)*:	32°F to +68°F (0°C to +20°C)
Humidity Range*:	15% to 90% relative humidity, non-condensing
Pressure Range:	Atmospheric ± 10%

* Requirements are driven by electrochemical cell specifications.

Mechanical Specifications

Base Unit	
Length	6.4 inches (161 mm)
Height	3.4 inches (86 mm)
Width	4.1 inches (104 mm)
Weight	5.5 pounds (2.5 kg)
Mounting Holes	5.9 inches (127 mm) center to center

Interface Module	
Length	7.0 inches (178 mm)
Diameter	1.75 inches (44 mm)
Weight	1.0 pounds (0.45 kg)
Mounting	0.75 inch NPT
Housing	Anodized Aluminum

Electrical Specifications

General Purpose Installations: Maximum distance between the HVS 4000 and the power source @ 24VDC nominal (600 Ω load resistor maximum) is 3,000 feet (910 meters)

Input Power: 20 to 36VDC range; +24VDC nominal 0.05amps

Output Current: (600 Ω maximum @ 24VDC)
Signal Range: 4-22mA
Fault: < 1.0mA
Start-up: 4mA
Calibration: 1.5mA
Detection Range: 4-20mA
Over-range: 22mA

Electrical Classification: Class I, Division 1, Groups B, C and D, Ex d ia IIB + H2 T5, Type 4X with Remote Interface Module

RFI / EMI Protection: Complies with EN50081-2, EN50082-2

Status Indicator: LED Display with Normal, Gas Present, Fault and Calibration Cues

RS-485 Output: Dual redundant MODBUS RTU, suitable for linking up to 128 units or up to 247 units with repeaters

Baud Rate: 2400, 4800, 9600, or 19200 BPS

Cable Requirements: 3 wire shielded cable. Max. distance between HVS-4000 and power source on the remote sensor @ 24 VDC nominal (20 ohm loop):
14 AWG - 2000 ft. (610m)

Max. distance for analog output (600 ohms max):
14 AWG - 9000 ft. (2740m)

Standard Configuration: HVS4000-xx-0-xx (xx=sensor type)

Specifications subject to change without notice.

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