

Engineering Specifications

Searchpoint Optima Plus

GENERAL: This specification details the operating characteristics of the Searchpoint Optima Plus.

1.0 ELECTRICAL:

- 1.1 Operating Voltage: The detector shall operate between 18 and 32 VDC (24VDC nominal)
- 1.2 The operating current draw shall not exceed 4.5 watts
- 1.3 The device wiring shall be either:
 - 1.3.1 3-wire current source or
 - 1.3.2 3-wire current sink

2.0 MECHANICAL:

- 2.1 The detector shall be constructed of 316 Stainless Steel
- 2.2 The detector shall be suitable for use in a hazardous areas
- 2.3 The detector shall be IP 66/67
- 2.4 The detector shall be certified to operate from -40°C to +65°C
- 2.5 The detector shall include either M25 or ¾" NPT mounting thread
- 2.6 No special tools shall be required for installation
- 2.7 The detector shall contain no moving parts.
- 2.8 Accessories:
 - 2.8.1 The detector shall be supplied standard with a weather protection suitable for indoor, outdoor and duct mount applications
 - 2.8.2 The detector shall be supplied with a Sunshade/Deluge protector for protection against direct sunlight, heavy rainfall and washdowns.
 - 2.8.3 The detector shall include an option for a Storm Baffle in cases of torrential rain and driven sea spray
 - 2.8.4 The detector shall include a Dust Barrier to protect the optical windows from oil mist and dust,
 - 2.8.5 The detector shall include an option for a Calibration Cap for use in carrying out an accurate calibration.
 - 2.8.6 The detector shall include an option for a Gassing Cover for the purpose of carrying out a response check on the detector.

2.8.7 The detector shall include the option of a Flow Housing for use in sampling system applications.

2.8.8 The detector shall include the option for a Remote Gassing Cell to enable high concentration gas to be applied remotely for function gas testing.

2.8.9 The detector shall include an option for a Duct Mounting Kit for mounting the detector in a ventilation duct.

3.0 SENSOR TECHNOLOGY:

3.1 General

3.1.1 The detector shall utilize a dual compensating optics to detect hydrocarbon gasses in various concentration ranges through the means of an infrared absorption principle.

3.1.2 The optics shall contain a means of preventing the build-up of condensation on the windows.

3.1.3 The detector shall be designed for use in potentially hazardous environments.

3.1.4 The detector shall operate in the presence of catalytic poisons without impact to the operation of the sensor

3.1.5 The detector shall not require the presence of oxygen.

3.1.6 The detector shall operate from a range of 0 – 100% LEL Methane as standard with the capability of calibration to other hydrocarbon gasses

3.2 Accuracy

3.2.1 The certified accuracy shall be $< \pm 1\%$ LEL

3.3 Repeatability

3.3.1 The certified repeatability shall be $< \pm 2\%$ LEL

3.4 Response time

3.4.1 The response time with the weather protection fitted shall be:

3.4.1.1 T50 < 4.5 seconds

3.4.1.2 T90 < 6.5 seconds

3.4.2 The response time of the device without any accessories shall be:

3.4.2.1 T50 < 3 seconds

3.4.2.2 T90 < 5 seconds

3.5 Operating Humidity

3.5.1 The detector shall operate in a range of 0 – 99% rH (non-condensing)

4.0 COMMUNICATION:

4.1 The detector shall provide a linear 4-20mA signal configured to either:

4.1.1 Current Source

4.1.2 Current Sink

4.2 The detector shall indicate equipment warnings and faults with a signal of less than 4mA.

4.3 The detector shall provide a built-in RS485 digital communications link for use with a handheld interrogation device.

5.0 CERTIFICATIONS / APPROVALS:

5.1 The detector shall have Class I, Div 1, Groups B, C & D approval

5.2 SIL 2 certifications

5.2.1 The detector shall be certified to SIL requirements as per IEC 61508 such that in a 1001 system the device is suitable for use in a SIL2 system.

6.0 MANUFACTURER CAPABILITY REQUIREMENTS:

6.1 As a minimum, the Gas Monitoring Equipment manufacturer must meet the following requirements.

6.1.1 Manufacturer shall be capable of supplying all equipment necessary to check or calibrate the sensor/transmitter.

6.1.2 The manufacturer must be capable of providing on site service with factory trained personnel.

7.0 DETECTOR:

7.1 The detector shall be Searchpoint Optima Plus or equivalent

Find out more

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