



## PRODUCT SPECIFICATION

### MSA Ultima XI Infrared Combustible Gas Monitor Specification

1.0 This specification details the attributes and operating characteristics of the MSA Ultima XI Infrared Combustible Gas Monitor. The following table can be used to identify and document gas sensing requirements:

Gas Type	Range/ Full Scale	No. of Points	316SS (XP)	Single Condulet	Junction Box (XP)	Flow Cap	Calibration Cap (IS)
Combustible Gas – IR Methane	0-100% LEL						
Combustible Gas – IR Non-Methane	0-100% LEL						

#### 2.0 General Requirements

- 2.1 The gas monitor shall be a stand-alone unit utilizing infrared (IR) gas sensing technology.
- 2.2 The IR combustible sensor must be capable of calibration without gas. The gas monitor must be capable of performing a full calibration by zero adjustment only.
- 2.3 The IR gas monitor shall detect for an above 100%LEL condition (over-range).
- 2.4 The IR gas monitor shall not contain a flashback arrestor / frit
- 2.5 The IR gas monitor must allow for a gas check without alternate calibration / gas check fittings or cap.
- 2.6 The IR gas monitor shall be able to operate in diffusion mode or pumped mode. For pumped mode, an optional 316 stainless steel flow cap shall be available.
- 2.7 The gas monitor shall operate between 8-30 VDC.
- 2.8 Power and signal wiring shall be accomplished with 3-wire cable.
- 2.9 The gas monitor shall be factory calibrated, ready for use out of the box. A gas check is all that is required to ensure proper operation.
- 2.10 The gas monitor shall contain no pots, jumpers or switches.
- 2.11 Gas monitor output signal shall be 4 to 20mA. The combustible gas monitor will be a sourcing type of signal capable of operating into a 600-ohm load.

#### 3.0 Sensing Element Warranty

- 3.1 The IR source in the gas monitor will have a minimum useful life of ten (10) years. The supplier will provide replacement sensors at no charge for any IR source that does not meet the minimum requirement.
- 3.2 The gas monitor will have a minimum useful life of two years. The supplier will provide replacement sensors at no charge for any sensor that does not meet the minimum requirement.

- 4.0 Sensor Enclosure Parameters / Approvals
  - 4.1 The gas monitor will be in a 316 stainless steel enclosure suitable for location in Class I, Division 1, Groups B, C & D; Class II, Division 1, Groups E, F and G; and Class III classified areas.
  - 4.2 The gas monitor shall carry the CE mark.
- 5.0 Installation and mounting hardware
  - 5.1 An optional junction box shall be available for wiring power and signal, along with mounting the Ultima XI. This junction box shall be suitable for installation in Class I, Division 1, Groups B, C & D classified areas.
  - 5.2 A mounting strap shall be used which mounts the gas monitor to a fixed structure.
  - 5.3 The mounting strap shall attach to the gas monitor via two tapped and threaded holes on the rear of the gas monitor. There shall be no brackets or clamps to secure this strap to the gas monitor.
- 6.0 Non-intrusive Calibration Capability
  - 6.1 All gas monitors can be calibrated without opening any enclosures.
  - 6.2 Calibrations shall require one man for complete calibration requirements.
  - 6.3 By means of a non-intrusive, intrinsically-safe calibration cap, the gas monitor will enter the calibration mode. The calibration cap display will indicate to the user calibration status of both zero calibration and span calibration, as well as pass/fail results of both calibration modes. If calibration is unsuccessful for any reason, the gas monitor shall revert to its previous calibration settings.
- 7.0 Manufacturer Capability Requirements - As a minimum, the Gas Monitoring Equipment manufacturer must meet the following requirements.
  - 7.1 The manufacturer must be capable of supplying all equipment used to check or calibrate the gas monitor units.
  - 7.2 The manufacturer must be capable of providing on site service with factory trained personnel.
  - 7.3 The manufacturer must be capable of providing on site training for the customer.
- 8.0 The gas monitor shall be a MSA Ultima XI Infrared Combustible Gas Monitor or equal.