

FM Approvals  
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# CERTIFICATE OF COMPLIANCE

## HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

**The ULTIMA OPIR-5;** part numbers, 329000-a, 329001-a are fixed open path gas detectors, comprising of a Source and Receiver module operating over a distance of 5-150 meters. The ULTIMA OPIR-5 is Explosionproof for Class I, Division 1, Groups B, C, and D, T4 Ta = -55°C to +65°C; Dust-ignitionproof for Class II/III, Division 1, applicable Groups E, F and G, T4 Ta = -55°C to +65°C; Suitable for use in Class I/II/III, Division 2, applicable Groups B, C, D, E, F, G, T4 Ta = -55°C to +65°C; Hazardous Locations, indoor/outdoor locations Type 4X and IP66/67. The operating temperature range is -55°C to +65°C and the power consumption is: for the Source = 12W and for the Receiver = 10W. The enclosures are manufactured from 316L stainless steel. Field accessories comprise Attenuation plate P/N 329113-1, Pan-Tilt Base assembly P/N 329071-1, Pan-Tilt Arm assembly P/N 329073-1, Long Range Alignment Kit P/N 329082 and gas filter kits P/N 329083 & 329084. Depending on the model selected, the system communications are Dual Modbus or Single Modbus with HART. Each variation comes complete with (2) 4-20mA outputs for detection of Propane with measurement ranges of 0-1 LEL•m or 0-2000ppm•m and Methane with measurement ranges of 0-5 LEL•m or 0-5000ppm•m, with minimum alarm set point of 10% FSD and repeatability of ±6% FSD.

**ULTIMA OPIR-5 Receiver:**

329000-a

a: Output & Terminals -17 through -24

**ULTIMA OPIR-5 Source:**

329001-a

a: Terminals -3 or -4

Specifications - The manufacturer's specifications are as follow:

|                        |                                                                                                                                 |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature: | -55°C to +65°C                                                                                                                  |
| Relative Humidity:     | 0 to 95% (Non- condensing)                                                                                                      |
| Supply Parameters:     | +24 V nominal, 20-36 VDC                                                                                                        |
| Measurement Signal:    | 4-20mA                                                                                                                          |
| Calibration:           | Units are supplied factory calibrated for the specified target gas or gases. Units should not require recalibration in service. |

XP / I / 1 / BCD / T4 Ta = -55°C to +65°C  
DIP / II,III / 1 / EFG / T4 Ta = -55°C to +65°C  
NE / I/II/III / 2 / BCDEFG / T4 Ta = -55°C to +65°C  
Type 4X, IP66/67

**Specific Conditions of Safe Use:**

1. For Source supply wires, use wires suitable for 32°C above surrounding ambient.
2. For Receiver supply wires, use wires suitable for 16°C above surrounding ambient.
3. At temperatures below -35°C propane cannot be detected due to the boiling point of propane being at -44°C.

FM Approved for:

Mine Safety Appliances  
1000 Cranberry Woods Drive  
Cranberry Township, PA. 16066  
USA

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

|                        |      |
|------------------------|------|
| CSA-C22.2 No. 0.4      | 1999 |
| CSA-C22.2 No. 0.5      | 2003 |
| CSA-C22.2 No.142-M1987 | 2004 |
| CSA-C22.2 No. 25       | 2004 |
| CSA-C22.2 No. 94-M91   | 2001 |
| CSA-C22.2 No. 30       | 2003 |
| CSA-C22.2 No. 213      | 2008 |
| CSA-C22.2 No. 60529    | 2005 |

Original Project ID: 3042476C

Approval Granted: April 22, 2011

Subsequent Revision Reports / Date Approval Amended

| Report Number | Date | Report Number | Date |
|---------------|------|---------------|------|
|---------------|------|---------------|------|

FM Approvals LLC



Patrick J. Byrne  
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22 April 2011  
Date