



Member of the FM Global Group

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
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FM Approvals LLC



Patrick J. Byrne

Technical Team Manager, Electrical

22 April 2011
Date