

Infrared Hydrocarbon Gas Detector Open Path Eclipse Model OPECL



DESCRIPTION

The Open Path Eclipse Model OPECL is an open path infrared gas detection system that provides continuous monitoring of combustible hydrocarbon gas concentrations in the range of 0 to 5 LFL-meters, over a distance of 5 to 120 meters. Standard system outputs include an electrically isolated/non-isolated 4-20 mA dc current output, with HART and RS-485 MODBUS communication. Alarm and fault relays are available as an option. A fully addressable LON based model (with no analog or relay outputs) is available for use with Eagle Quantum Premier® systems.

The OPECL IR Gas Detector delivers superior open path combustible gas detection for protection of oil/gas and other industrial facilities. The Open Path Eclipse system is especially useful for perimeter monitoring and applications where combustible gas/vapor leaks can happen over a widely dispersed area.

The Model OPECL system offers industry leading features including dual xenon flashlamps, stainless steel construction, ease of installation and alignment, field replaceable transmitter and receiver modules, and a standard 2 year warranty.

The system is optimized for low maintenance, no false alarms, and low cost. The OPECL system utilizes onboard heaters in both modules to melt snow and ice, enabling unattended and uninterrupted operation in inclement weather.

Det-Tronics Model OPECL is approved for use in Class I, Div. 1; IECEx Ex d, Ex de; and Zone 1, Zone 2 hazardous areas.

FEATURES AND BENEFITS

- ▲ Detects methane and most hydrocarbon gases including ethane, propane, butane, and propylene
- ▲ 5-120 meter separation distance
- ▲ Certified explosion-proof for use in Class I, Div. 1 and Div. 2, and Zone 1 and Zone 2 hazardous areas
- ▲ Performance verified in accordance with FM 6325, ANSI/ISA 12.13.04 and EN 60079-29-4
- ▲ Ideal for use in harsh outdoor environments
- ▲ Heated optics
- ▲ Continuous self-check for immediate notification of internal failure
- ▲ Signals operator in case of blocked or impaired optical conditions
- ▲ Reliable performance in the presence of oil mist, glycol, salt water
- ▲ Stainless steel construction
- ▲ Certified SIL 2 Capable to IEC61508: 2010
- ▲ Integral terminal wiring compartment
- ▲ Optional relay output board
- ▲ Tri-color onboard LED indicates system status
- ▲ Internal magnetic reed switch for non-intrusive calibration
- ▲ IS HART port supports HART and AMS communication menus
- ▲ Can be combined with UD10 for readout of device status / data logs
- ▲ EQP compatible version available



SPECIFICATIONS

Input Voltage (Both Modules)	24 Vdc nominal. Operating range is 18 to 30 Vdc. Ripple cannot exceed 0.5 volts P-P.	Optics Protection	Stainless steel brow protects against windblown dirt and rain. Heated optics minimize ice and dew formation.
Power Consumption	<p>Transmitter 5.0 watts nominal @ 24 Vdc, 6.9 watts @ 30 Vdc. 5.8 watts peak @ 24 Vdc, 7.5 watts peak @ 30 Vdc.</p> <p>Receiver Without Relays 6.0 watts nominal @ 24 Vdc, 7.6 watts nominal @ 30 Vdc.</p> <p>Receiver With Relays 6.4 watts nominal @ 24 Vdc, 8.0 watts nominal @ 30 Vdc.</p>	Wiring	Field wiring screw terminals are UL/CSA rated for up to 14 AWG wire, and are DIN/VDE rated for 2.5 mm ² wire. Receiver can be wired using 3 or 4 wires. Transmitter requires two wires (power only).
Transmitter Lamps	Two xenon flashlamps, field-replaceable module.	Shipping Weight	Transmitter and receiver with mounting hardware: 75 pounds (34 kg)
Warm-up Time	1 minute for transmitter. 30 seconds for receiver from power-up when correctly aligned.	Dimensions	<p>Modules- Length: 11.5 in (29 cm) [w/o brow] 14.3 in (36.3 cm) [w brow] Dia: 3.5 in (9 cm) nom. 4.5 in (11 cm) max.</p> <p>Mounting Plate- Height: 14.5 in (37 cm) Width: 6.5 in (16 cm)</p> <p>Designed to attach to 4 inch (10 cm) nominal diameter pipe.</p>
Current Output	Linear 4-20 mA (isolated/non-isolated) rated at 600 ohms maximum loop resistance @ 24 Vdc operating voltage. A LON based model (with no analog or relay outputs) is available for use with EQP systems.	Warranty	2 year limited warranty from date of manufacture.
Visual Status Indicator	Multi-color LED: Red = Alarm or calibration (receiver only) Green = Power on / OK Yellow = Fault / warm-up	Certification	<p>FM: Class I, Div. 1, Groups B, C & D (T5) with intrinsically safe output for HART communication. Class I, Div. 2, Groups A, B, C & D (T4). T_{amb} -55°C to +60°C. NEMA/Type 4X. Conduit seal not required. Performance verified in accordance with FM 6325, ANSI/ISA 12.13.04.</p> <p>CSA: Class I, Div. 1, Groups B, C & D (T5) with intrinsically safe output for HART communication. Class I, Div. 2, Groups A, B, C & D (T4). T_{amb} -40°C to +60°C. Type 4X. Conduit seal not required.</p> <p>ATEX: Receiver CE 0539 II 2 G DEMKO 06 ATEX 141002X Ex d e [ib] IIC T5 Gb T5 (T_{amb} -50°C to +60°C) IP66/IP67. (Receiver without relays) --OR-- Ex d [ib] IIC T5 Gb T5 (T_{amb} -55°C to +60°C) EN 60079-29-4 IP66/IP67. (Receiver with relays) Performance verified in accordance with EN 60079-29-4.</p>
Relay Setpoint Range	Low Alarm: 0.25 to 3 LFL-meters (default = 1 LFL-meter) High Alarm: 1 to 3 LFL-meters (default = 2 LFL-meters)	ATEX: Transmitter CE 0539 II 2 G DEMKO 06 ATEX 141002X Ex d e IIC T5 Gb T5 (T _{amb} -50°C to +60°C) IP66/IP67. --OR-- Ex d IIC T5 Gb T5 (T _{amb} -55°C to +60°C) IP66/IP67.	CE: Conforms to: Low Voltage Directive: 2006/95/EC, EMC Directive: 2004/108/EC, ATEX Directive: 94/9/EC, WEEE 2002/96/EC.
Detection Range	5 to 120 meters	IECEX: Receiver IECEX ULD 05.0001X Ex d [ib] IIC T5 Gb T5 (T _{amb} -55°C to +60°C) --OR-- Ex d e [ib] IIC T5 Gb. T5 (T _{amb} -50°C to +60°C) IP66/IP67.	IECEX: Transmitter IECEX ULD 05.0001X Ex d IIC T5 Gb T5 (T _{amb} -55°C to +60°C) --OR-- Ex d e IIC T5 Gb. T5 (T _{amb} -50°C to +60°C) IP66/IP67.
Calibration	Calibrated for methane at the factory.	SIL: IEC 61508 Certified SIL 2 Capable. (Applies to specific models.)	
Response Time (4-20 mA Model)	T90: <2.5 seconds with 2.5 LFL-meters applied <5 seconds with 5 LFL-meters applied.		
Accuracy (FM Verified)	±0.25 LFL-meters or ±10% of applied gas concentration, whichever is greater.		
Temperature Range	Operating: -55°C to +60°C (-67°F to +140°F) Storage: -55°C to +85°C (-67°F to +185°F)		
Humidity	5 to 99% RH; designed for outdoor applications.		
Measurement Range	0-5 LFL-meters		
Self-Diagnostic Test	Fail-Safe operation ensured by performing all critical tests once per second.		
Module Housing Material	316 stainless steel (CF8M)		
Conduit Entries	Two entries, 3/4 inch NPT or 25 mm		
HART Port	IS port on receiver to connect HART devices.		

Specifications subject to change without notice.

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Corporate Office
6901 West 110th Street | Minneapolis, MN 55438 USA
Operator: 952.941.5665 or 800.468.3244
Customer Service: 952.946.6491 or 800.765.3473
www.det-tronics.com | Email: det-tronics@det-tronics.com