

## Infrared Carbon Dioxide Gas Detector PointWatch Eclipse® Model PIRECL



### DESCRIPTION



The PointWatch Eclipse® Model PIRECL Carbon Dioxide (CO<sub>2</sub>) Detector is a diffusion-based, point-type infrared gas detector that provides continuous monitoring of CO<sub>2</sub> gas concentrations in the range of 0-2%/volume (0-20000 ppm).

All units are powered from 24 Vdc, and are furnished with an onboard “status indication” LED, an internal magnetic calibration switch and an external calibration line for use with the optional PIRTB remote calibration termination box.

The Eclipse CO<sub>2</sub> detector is ideal for use in harsh outdoor environments and is certified for use in Class I, Division 1 (CSA), and Zone 1 (ATEX/IECEX) hazardous areas. It can be used as a stand-alone detector, or as part of a larger facility protection system.

Two basic configurations are available:

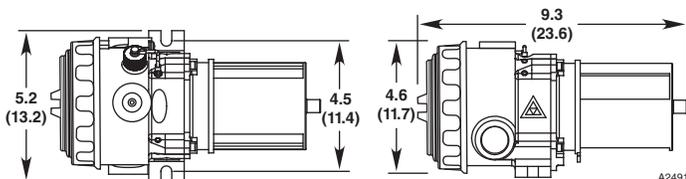
- 4-20 mA output with HART communication protocol and RS-485 MODBUS communications.
- 4-20 mA output with HART communication protocol and RS-485 MODBUS communications, with two alarm relays and one fault relay.

### FEATURES AND BENEFITS

- Superior optics protection system.
- No undisclosed failure modes.
- Routine calibration not required.
- Explosion-proof, stainless steel housing with tethered weather protection baffle.
- Integral wiring compartment eliminates need for external junction boxes.
- On-board tri-color LED eliminates need for alarm and fault indication.
- Built-in optional relay package eliminates need for external relay output module.
- Non-interfering HART communication capability.
- Optional hand-held HART communicator enables field configuration and calibration.
- Heated sapphire optics deliver long-lasting, high performance detection capability.
- Immune to damage from exposure to constant background gases or to high gas concentrations.

## SPECIFICATIONS

<b>Input Voltage</b>	24 Vdc nominal. Operating range is 18 to 32 Vdc. Ripple cannot exceed 0.5 volts Peak-to-Peak.
<b>Power Consumption</b> (Detector with relays)	4.0 (5.5) watts nominal @ 24 Vdc 7.5 (8.0) watts peak @ 24 Vdc 10.0 (10.0) watts peak @ 32 Vdc.
<b>Warm-up Time</b>	Two minutes from cold power-up to normal mode; 1 hour minimum recommended.
<b>Current Output</b>	Linear 4-20 mA (current source/sink, isolated/ non-isolated) rated at 600 ohms maximum loop resistance @ 24 Vdc operating voltage.
<b>Detection Range</b>	0-2%/vol or 0-20000 ppm.
<b>Detectable Gas</b>	Carbon Dioxide (CO <sub>2</sub> ).
<b>Calibration</b>	All units are calibrated at the factory.
<b>Device Configuration</b>	Configuration parameters include tag number, measurement range, alarm levels, and other selectable parameters.
<b>Response Time</b>	T50 = 6 sec (Det-Tronics verified).
<b>Accuracy</b>	0-20000 ppm or 0-2%/vol: ±10% Full Scale @ 25°C. (Det-Tronics verified).
<b>Temperature Range</b>	Operating: See CSA, ATEX, and IECEx Certifications. Storage: -55°C to +85°C (-67°F to +185°F).
<b>Humidity</b> (Non-Condensing)	0 to 99% R.H. (Det-Tronics verified).
<b>Self-Diagnostic Test</b>	All critical tests performed once per second.
<b>Ingress Protection</b>	IP66/IP67 (DEMKO Verified).
<b>Detector Housing Material</b>	316 stainless steel (CF8M).
<b>Surface Preparation</b>	Electropolish.
<b>Conduit Entry Options</b>	Two entries, 3/4 inch NPT or M25.
<b>HART Communicator Port</b> (Optional)	Intrinsically safe output.
<b>Optics Protection</b>	Weather guard with hydrophobic filter, static dissipating plastic.
<b>Wiring Terminals</b>	Field wiring screw terminals are UL/CSA rated for up to 14 AWG wire, and DIN/VDE rated for 2.5 mm <sup>2</sup> wire.
<b>Shipping Weight</b>	11.5 lbs. (5.2 kg).
<b>Dimensions</b>	Inches (cm).



### Certifications

#### CSA:



Class I, Div. 1, Groups B, C & D (T4) with optional intrinsically safe output for HART communication in accordance with control drawing 011975-001.  
Class I, Div. 2, Groups A, B, C & D (T3C)  
Tamb = -40°C to +75°C  
Acidic atmospheres excluded  
Conduit seal not required.

#### ATEX/CE:



CE 0539 Ex II 2 G  
Ex db eb IIC T5...T4  
-- OR --  
Ex db eb [ib] IIC T5...T4  
(with HART communication port)  
DEMKO 01 ATEX 129485X.  
T5 (Tamb -50°C to +40°C)  
T4 (Tamb -50°C to +75°C)  
IP66/IP67.  
-- OR --  
CE 0539 Ex II 2 G  
Ex db IIC T5...T4  
-- OR --  
Ex db [ib] IIC T5...T4  
(with HART communication port)  
DEMKO 01 ATEX 129485X.  
T5 (Tamb -55°C to +40°C)  
T4 (Tamb -55°C to +75°C)  
IP66/IP67.

#### IECEx:



IECEx ULD 04.0002X  
Ex db eb IIC T5...T4  
- OR -  
Ex db eb [ib] IIC T5...T4  
(with HART communication port)  
T5 (Tamb -50°C to +40°C)  
T4 (Tamb -50°C to +75°C)  
IP66/IP67.  
- OR -  
IECEx ULD 04.0002X  
Ex db IIC T5...T4  
- OR -  
Ex db [ib] IIC T5...T4  
(with HART communication port)  
T5 (Tamb -55°C to +40°C)  
T4 (Tamb -55°C to +75°C)  
IP66/IP67.

#### INMETRO:



UL-BR 15.0242X  
Ex d [ib] IIC T4-T5 Gb IP66/67  
T5 (Tamb -55°C to +40°C)  
T4 (Tamb -55°C to +75°C)  
- OR -  
Ex d e [ib] IIC T4-T5 Gb IP66/67  
T5 (Tamb -50°C to +40°C)  
T4 (Tamb -50°C to +75°C).

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