

Infrared Carbon Dioxide Gas Detector
 PointWatch Eclipse®
 Model PIRECL


DESCRIPTION


The PointWatch Eclipse® Model PIRECL Carbon Dioxide (CO₂) Detector is a diffusion-based, point-type infrared gas detector that provides continuous monitoring of CO₂ 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 CO₂ 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:

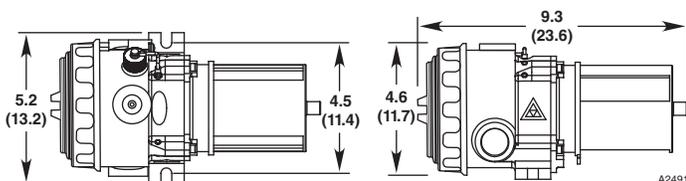
- 4-20 mA output with HART communication protocol and RS-485 MODBUS communications.
- 4-20 mA output with HART communication protocol and RS-485 MODBUS communications, with two alarm relays and one fault relay.

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

Input Voltage	24 Vdc nominal. Operating range is 18 to 32 Vdc. Ripple cannot exceed 0.5 volts Peak-to-Peak.
Power Consumption (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.
Warm-up Time	Two minutes from cold power-up to normal mode; 1 hour minimum recommended.
Current Output	Linear 4-20 mA (current source/sink, isolated/ non-isolated) rated at 600 ohms maximum loop resistance @ 24 Vdc operating voltage.
Detection Range	0-2%/vol or 0-20000 ppm.
Detectable Gas	Carbon Dioxide (CO ₂).
Calibration	All units are calibrated at the factory.
Device Configuration	Configuration parameters include tag number, measurement range, alarm levels, and other selectable parameters.
Response Time	T50 = 6 sec (Det-Tronics verified).
Accuracy	0-20000 ppm or 0-2%/vol: ±10% Full Scale @ 25°C. (Det-Tronics verified).
Temperature Range	Operating: See CSA, ATEX, and IECEx Certifications. Storage: -55°C to +85°C (-67°F to +185°F).
Humidity (Non-Condensing)	0 to 99% R.H. (Det-Tronics verified).
Self-Diagnostic Test	All critical tests performed once per second.
Ingress Protection	IP66/IP67 (DEMKO Verified).
Detector Housing Material	316 stainless steel (CF8M).
Surface Preparation	Electropolish.
Conduit Entry Options	Two entries, 3/4 inch NPT or M25.
HART Communicator Port (Optional)	Intrinsically safe output.
Optics Protection	Weather guard with hydrophobic filter, static dissipating plastic.
Wiring Terminals	Field wiring screw terminals are UL/CSA rated for up to 14 AWG wire, and DIN/VDE rated for 2.5 mm ² wire.
Shipping Weight	11.5 lbs. (5.2 kg).
Dimensions	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 de IIC T4-T5 Gb
-- OR --
Ex de [ib] IIC T4-T5 Gb
(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 d IIC T4-T5 Gb
-- OR --
Ex d [ib] IIC T4-T5 Gb
(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 de IIC T4-T5 Gb
- OR -
Ex de [ib] IIC T4-T5 Gb
(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 d IIC T4-T5 Gb
- OR -
Ex d [ib] IIC T4-T5 Gb
(with HART communication port)
T5 (Tamb -55°C to +40°C)
T4 (Tamb -55°C to +75°C)
IP66/IP67.

INMETRO:



CEPEL 02.0078X
Ex d e [ib] IIC T4-T5 Gb IP66/IP67
T5 (Tamb -50°C to +40°C)
T4 (Tamb -50°C to +75°C)
- OR -
Ex d [ib] IIC T4-T5 Gb IP66/IP67
T5 (Tamb -55°C to +40°C)
T4 (Tamb -55°C to +75°C).

Specifications subject to change without notice.

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Det-Tronics manufacturing system is certified to ISO 9001—
the world's most recognized quality management standard.



Corporate Office
6901 West 110th Street
Minneapolis, MN 55438 USA
www.det-tronics.com

Phone: +1 952.941.6665
Toll-free: +1 800.765.3473
Fax: 952.829.8750
det-tronics@carrier.com

