GREYSTONE
ENERGY SYSTEMS INC

Duct CO2 Sensor

CD2DT Series

The CD2DT CO2 device uses a highly accurate and reliable non-dispersive infrared (NDIR) sensor to monitor CO2 levels. The sensor uses dual wavelength optics and LTA (long term adjustment) signal processing technology to deliver industry leading long-term accuracy and reliability. These technology features ensure optimum measurement stability for both periodic and constant occupancy applications, so the device is equally suitable for the classroom or the hospital room.

PRODUCT HIGHLIGHTS

- Microprocessor based menu setup with LCD
- Field selectable 4-20 mA, 0-5 or 0-10 Vdc outputs
- Reversible analog output signal direction
- Field selectable CO2 measurement span (1000 - 5000 ppm)
- 24 Vac/dc power supply
- Dual wavelength optics
- LTA (long term adjustment) signal processing technology for long term accuracy
- CO2 accuracy of ± 50 ppm + 3% of reading
- Transparent cover for LCD viewing
- Configurable LCD backlight and display information
- Test modes for analog output and relay
- Optional integral resistive output temperature sensor (thermistor or RTD)
- Optional temperature display with selectable °C/°F units
- Optional control relay assignable as high or low alarm for either CO2 or temperature
- Programable relay setpoint, hysteresis and time delay
- Operating temperature range of -10 - 50 °C (14 – 122 °F)
- 5-year calibration guarantee
- Field Calibration kit available.

ENGINEERING SPEC'S

- Shall be IP65 (NEMA 4X) with a UL94-V0 rated enclosure
- External mounting tabs must be slotted & tapered away from enclosure to ease field installation
- Enclosure shall be complete with neoprene gasket for duct to enclosure seal
- Enclosure shall be complete with threaded (1/2 NPT and/or M16) conduit connection
- Cover must be hinged and securely attached in the open position
- Operating range must be -10 - 50°C (14 - 122°F)
- Cover must contain security screw as extra protection from opening
- Product shall be CE approved

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SPECIFICATIONS

Description	CD2DT
Gas Type Detected	Carbon dioxide (CO2)
Sensor Type	Dual wavelength non-dispersive infrared (NDIR)
Sensor Accuracy	± (50 ppm + 3% of reading)
Measurement Range	0-5000 ppm
Pressure Dependency	< 1% of reading / kPa
Response Time	90 seconds (T90)
Warm-up Time	1 minute
Sensor Coverage Area	n/a
Sensor Life Span	> 10 years
Transmitter Accuracy	± 0.25% of span (including linearity, hysteresis and repeatability)
Power Supply	24 Vdc ± 20% or 24 Vac ± 10% (non-isolated half-wave rectified)
Protection Circuitry	Reverse voltage and transient protected
Input Voltage Effect	Negligible over specified operating range
Output Signal Type	4-20 mA (3-wire), 0-5 or 0-10 Vdc (field selectable)
Current Consumption (4-20 mA output)	75 mA @ 24 Vdc max, 150 mA @ 24 Vac max
Current Consumption (voltage output)	50 mA @ 24 Vdc max, 100 mA @ 24 Vac max
Output Drive @ 24 Vdc	550Ω max (4-20 mA output), 10 KΩ min (voltage output)
Operating Temperature	-10 - 50°C (14 - 122°F)
Storage Temperature	-30 - 70°C (-22 - 158°F)
Operating Humidity	5 to 90 %RH non-condensing
Storage Humidity	5 to 90 %RH non-condensing
LCD Display Units	ppm (CO2), °C/°F (optional temperature)
Display Range	0 - 5000 ppm, 0 - 50 °C / 32 - 122 °F
Display Size	1.4 x 0.6” (35 x 15 mm)
Digit Height	2 line x 8 character
Temperature Sensor (Optional)	See below
Temperature Sensor Accuracy	See below
Temperature Sensor Range	0 - 50 °C / 32 - 122 °F
Temperature Sensor Output	2-wire resistive
Relay (Optional 2-wire output)	Form A (N.O.), 2 Amps @ 140 Vac / 30 Vdc
Enclosure Material	Polycarbonate (UL94-V0)
Enclosure Dimension	116 x 100 x 54 mm (4.6 x 3.9 x 2.1”)
Enclosure Protection	IP65
Probe Material	Polycarbonate (UL94-V0)
Probe Dimension	152 x 22.5 mm (6 x 0.85”)
Process Connection	1/2” NPT
Wiring	Screw terminal block (14 - 22 AWG)
Description	CD2DT
Gas Type Detected	Carbon dioxide (CO2)
Sensor Type	Dual wavelength non-dispersive infrared (NDIR)

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Sensor Code	Temperature Sensor Description	Accuracy
02	100Ω Platinum, IEC 751, 385 alpha, 2/3-wire, Class B	± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F)
05	1,801 Ω NTC thermistor	± 0.5 °C (± 0.9 °F) @ -20 - 50 °C (-4 - 122 °F)
06	3,000 Ω NTC thermistor	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
07	10,000 Ω (type 3) NTC thermistor	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
08	2.252 KΩ NTC thermistor	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
12	1000Ω Platinum, IEC 751, 385 alpha, 2-wire, Class B	± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F)
13	1000Ω Nickel, DIN 43760, 2-wire, Class B	± 0.4 °C (± 0.72 °F) @ 0 °C (32 °F)
14	10,000 Ω (Type 3) NTC thermistor c/w 11 KΩ shunt	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
20	20,000 Ω NTC thermistor	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
24	10,000 Ω (Type 2) NTC thermistor	± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F)
59	10,000 Ω NTC thermistor	± 1% @ 25°C (77°F), $\beta_{25/85}$ = 3435 ± 1%