# AIR ZOE ™

# AZ-GDT

## CARBON MONOXIDE/NITROGEN DIOXIDE DETECTOR

## DESCRIPTION

The AZ-GDT Series of gas monitoring sensors monitor levels of carbon monoxide (CO) and/ or nitrogen dioxide (NO2 ) to provide an early warning of elevated concentrations. The AZ-GDT is available as a standalone CO or NO2 , as well as a CO/NO2 dual sensor device. The dual sensor device is available in 2 configurations: CO/ NO2 housed one enclosure or as CO with remote NO2 sensor for mounting at a higher location. The AZ-GDT gas sensors are encapsulated in field replaceable sensors pods that are located on the bottom of the enclosure. The pod design provides a greater area of gas sampling then that of devices that utilize a single vent hole. Replacement pods come pre-calibrated and ready for installation. The GDT is available with either Analog, BACnet or Modbus outputs for communication with a building automation system. Standard features include LCD display for configuration and local display as well as status LED's. Optional features include: 1 or 2 adjustable control/alarm relays, adjustable audible (buzzer) & visual (strobe) alarms as well as various temperature sensor. The AZ-GDT is housed in an IP65 polycarbonate enclosure with a hinged and gasketed cover that provides ease of installation and access for set up and configuration.
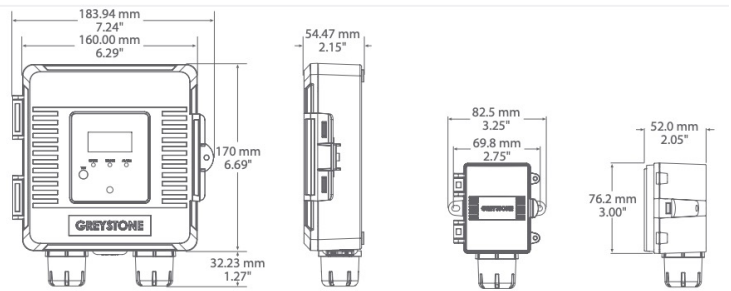


## WIRING INFORMATION

| TERMINAL | FUNCTION | |
|----------|----------|---|
| PWR | +24 VDC/AC | |
| COM | COMMON | |
| TEST | DIGITAL INPUT | |
| B+ | BACnet or Modbus | Only on models with BACnet®/ Modbus Output |
| A- | BACnet or Modbus | |
| SHIELD | BACnet or Modbus | |
| CO | ANALOG OUTPUT | Only on models with Analog Output or if feature ordered |
| TEMP | ANALOG OUTPUT | |
| NO2 | ANALOG OUTPUT | |
| RP | REMOTE NO2 SENSOR | Only on models with Remote NO2 Sensor |
| RC | REMOTE NO2 SENSOR | |
| CSLP | REMOTE NO2 SENSOR | |
| SCLM | REMOTE NO2 SENSOR | |
| SDAP | REMOTE NO2 SENSOR | |
| SDAM | REMOTE NO2 SENSOR | |
| RT+ | RESISTIVE OUTPUT | Only on models with Resistive Temperature Sensor option |
| RT- | RESISTIVE OUTPUT | |
| NC1 | RELAY OUTPUT | Only on models with 1 or 2 Adjustable Relays option |
| COM1 | RELAY OUTPUT | |
| NO1 | RELAY OUTPUT | |
| NC2 | RELAY OUTPUT | Only on models with 2 Adjustable Relays option |
| COM1 | RELAY OUTPUT | |
| NO2 | RELAY OUTPUT | |
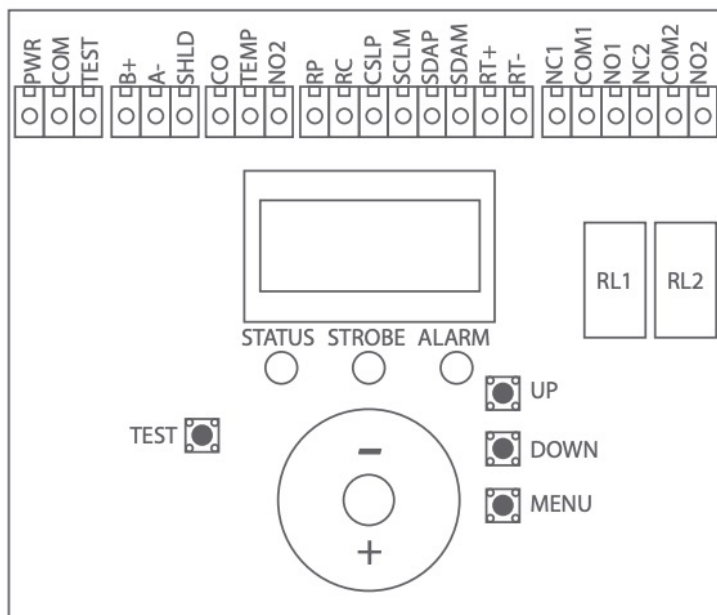
D-VAC Sales Inc.
HVAC Manufacturer's Representative

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## CARBON MONOXIDE/NITROGEN DIOXIDE DETECTOR

## SPECIFICATIONS

| | |
|---|---|
| GAS TYPE DETECTED | Carbon Monoxide (CO) and/or Nitrogen Dioxide (NO2 ) |
| SENSOR TYPE | Electrochemical, diffusion sampling |
| SENSOR APPROVALS | CO Sensor is a UL approved component for UL 2075/with UL 2034, File No. E240671 |
| SENSOR ACCURACY | Carbon Monoxide: ±5 ppm or ±5% of reading<br>Nitrogen Dioxide: ±0.2 ppm or ±5% of reading |
| MEASUREMENT RANGE | Carbon Monoxide: 0-500 ppm, adjustable 100-500 ppm<br>Nitrogen Dioxide: 0-10 ppm |
| RESPONSE TIME | < 30 seconds typical |
| WARM-UP TIME | 1 minute |
| SENSOR COVERAGE AREA | 700m2 (7500ft2 ) or 15m (50ft) radius |
| SENSOR LIFE SPAN | Carbon Monoxide: 5-7 years in air<br>Nitrogen Dioxide: 2 years |
| SENSOR REPRODUCIBILITY (SAME DAY) | ±2% |
| LONG TERM DRIFT | Carbon Monoxide: <5% per year<br>Nitrogen Dioxide: Zero - <±2 ppm/year<br>Span - <2& signal/month |
| POWER SUPPLY | 24 Vdc ±20% or 24 Vac ±10% (non-isolated half-wave rectified) |
| PROTECTION CIRCUITRY | Reverse voltage and transient protected |
| OUTPUT SIGNAL TYPE | 4-20 mA (3-wire), 0-5 Vdc/0-10 Vdc, BACnet® or Modbus |
| NETWORK INTERFACE | Hardware: 2 wire RS-485<br>Software: Native BACnet® MS/TP or Modbus RTU<br>Baud Rate: Locally set 9600, 19200, 38400, 57600, 76800, or 115200<br>MAC Address Range: 0-255 (Factory default is 1) (128 devices max on one daisy chain) |
| CURRENT CONSUMPTION | 425 mA @ 24 Vac max, 220 mA @ 24 Vdc max (test mode) |
| OUTPUT DRIVE @ 24 VDC | Current: 550Ω maximum<br>Voltage: 10,000Ω minimum |
| AMBIENT OPERATING RANGE | -20 to 50°C (-4 to 122°F), 15 to 90 %RH non-condensing |
| STORAGE TEMPERATURE | -30 to 60°C (-22 to 140°F) |
| LCD | Viewable or concealed (with cover closed)<br>**Units:** ppm for CO/NO2 , °C/°F for optional temperature<br>**Size:** 35mm W x 15mm H (1.4" x 0.6"), alpha-numeric 2-line x 8 characters<br>**Backlight:** Enable or disable via menu |
| USER INTERFACE | Silence/Test button, Bi-color status LED, Red LED alarm indicator, White high intensity LED strobe (optional) |
| OPTIONAL TEMPERATURE SIGNAL | **Type:** Thermistor or RTD<br>**Accuracy:** Thermistors - ±0.2°C (±0.36°F) @ 25°C (77°F)<br>Platinum RTD's - ±0.3°C (±0.54°F) @ 0°C (32°F)<br>Nickel RTD's - ±0.4°C (±0.72°F) @ 0°C (32°F)<br>**Output:** 2-wire resistive<br>**Type:** Analog, BACnet® or Modbus<br>**Sensor Accuracy:** ±0.2°C (±0.36°F)<br>**Range:** -20 to 50°C (-4 to 122°F) or 0 to 50°C (32 to 122°F) (field selectable)<br>**Output:** Analog - 0-5/0-10 Vdc or 4-20mA (As per output selected)<br>BACnet®/Modbus - Network Variable |
| OPTIONAL RELAY OUTPUTS | **Contact Ratings:** Form C (NO + NC), 5 Amps @ 140 Vac, 5A @ 30 Vdc<br>**Relay Setpoint + Hysteresis:** Programmable via menu<br>**Relay Time Delay**: Programmable via menu |
| OPTIONAL ALARM | **Audible**: Buzzer, 93dB @ 30 cm<br>**Visual:** High intensity white LED strobe |
| MAIN ENCLOSURE | **Material/Rating**: Grey Polycarbonate, UL94 V0, IP65 (NEMA 4X) with Security Screw installed<br>**Dimensions Incl. Sensor Pod:** 202.3mm H x 184mm W x 54.3mm D (8" x 7.24" x 2.15")<br>**Weight Incl. Sensor Pod:** 515 grams (1.14 lbs) |
| REMOTE NO2 ENCLOSURE | **Material/Rating**: Grey Polycarbonate, UL94 V0, IP65 (NEMA 4X)<br>**Dimensions Incl. Sensor Pod:** 109.5mm H x 83.3mm W x 52mm D (4.31" x 3.28" x 2.05")<br>**Weight Incl. Sensor Pod:** 109 grams (0.24 lbs) |
| WIRING CONNECTIONS | Screw terminal block (14 to 22 AWG), Top or bottom conduit entry 22.73mm (0.875") hole |
| APPROVALS | CE |
| COUNTRY OF ORIGIN | Canada |

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| ORDERING | | | |
|---|---|---|---|
| PRODUCT | GDT | Carbon Monoxide/Nitrogen Dioxide Gas Detector | |
| SENSORS | COX | Carbon Monoxide | |
| | NO2 | Nitrogen Dioxide | |
| | CNC | Carbon Monoxide/Nitrogen Dioxide - Combination | |
| | CNR | Carbon Monoxide/Nitrogen Dioxide - Remote | |
| MOUNTING | SM | Surface Mount - IP65 | |
| DISPLAY | C | Concealed LCD | |
| | V | Viewable LCD | |
| OUTPUT | I | 4-20 mA | |
| | V | 0-5 Vdc/0-10Vdc | |
| | B | BACnet® | |
| | M | Modbus | |
| RELAY | XX | None | |
| | R1 | 1 Adjustable Relay Output | |
| | R2 | 2 Adjustable Relay Outputs | |
| ALARM | X | None | |
| | A | Audible (Buzzer) & Visual Alarm (Strobe) | |
| TEMPERATURE SENSOR | XX | None | |
| | TX | Analog, BACnet® or Modbus | |
| | 02 | 100 Ω Platinum | |
| | 05 | 1801 Ω NTC Thermistor | |
| | 06 | 3000 Ω NTC Thermistor | |
| | 07 | 10,000 Ω Type 3, NTC Thermistor | |
| | 08 | 2.252K Ω NTC Thermistor | |
| | 12 | 1000 Ω Platinum | |
| | 13 | 1000 Ω Nickel | |
| | 14 | 10,000 Ω Type 3 Thermistor with 11,000 shunt resistor | |
| | 20 | 20,000 Ω NTC Thermistor | |
| | 24 | 10,000 Ω Type 2, NTC Thermistor | |
| | 59 | 10,000 Ω, 25°C, ±1%, B = 3435 ±1% (25/85) | |

## SENSOR PODS
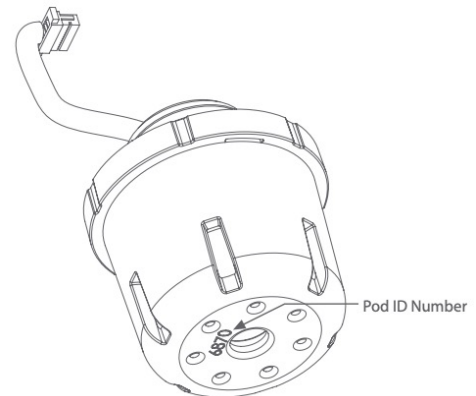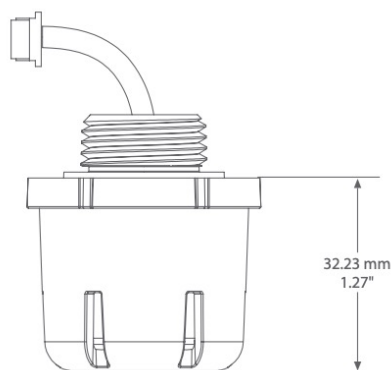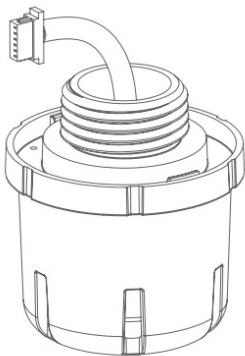


32.23 mm
1.27"

Pod ID Number

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## ORDERING - SENSOR POD REPLACMENET

| SENSOR POD ID NUMBER | DESCRIPTION | ORDERING PART NUMBER |
|---|---|---|
| 6869 | Gas Detector Replacement Pod, Carbon Monoxide | GDPCOXXX |
| 6870 | Gas Detector Replacement Pod, Nitrogen Dioxide | GDPNO2XX |
| 2228 | Gas Detector Replacement Pod, Carbon Monoxide, 100 Ω Platinum | GDPCOX02 |
| 2229 | Gas Detector Replacement Pod, Carbon Monoxide, 1801 Ω NTC Thermistor | GDPCOX05 |
| 2230 | Gas Detector Replacement Pod, Carbon Monoxide, 3000 Ω NTC Thermistor | GDPCOX06 |
| 2231 | Gas Detector Replacement Pod, Carbon Monoxide, 10,000 Ω Type 3, NTC Thermistor | GDPCOX07 |
| 2232 | Gas Detector Replacement Pod, Carbon Monoxide, 2.252K Ω NTC Thermistor | GDPCOX08 |
| 2233 | Gas Detector Replacement Pod, Carbon Monoxide, 1000 Ω Platinum | GDPCOX12 |
| 2234 | Gas Detector Replacement Pod, Carbon Monoxide, 1000 Ω Nickel | GDPCOX13 |
| 2235 | Gas Detector Replacement Pod, Carbon Monoxide, 10,000 Ω Type 3 Thermistor with 11,000 shunt resistor | GDPCOX14 |
| 2236 | Gas Detector Replacement Pod, Carbon Monoxide, 20,000 Ω NTC Thermistor | GDPCOX20 |
| 2237 | Gas Detector Replacement Pod, Carbon Monoxide, 10,000 Ω Type 2, NTC Thermistor | GDPCOX24 |
| 2238 | Gas Detector Replacement Pod, Carbon Monoxide, 10,000 Ω, 25°C, ±1%, B = 3435 ±1% (25/85) | GDPCOX59 |
| 2239 | Gas Detector Replacement Pod, Carbon Monoxide, Analog, BACnet/Modbus Temperature Option | GDPCOXTX |
| 6871 | Gas Detector Replacement Pod, Nitrogen Dioxide, 100 Ω Platinum | GDPNO202 |
| 6872 | Gas Detector Replacement Pod, Nitrogen Dioxide, 1801 Ω NTC Thermistor | GDPNO205 |
| 6875 | Gas Detector Replacement Pod, Nitrogen Dioxide, 3000 Ω NTC Thermistor | GDPNO206 |
| 6876 | Gas Detector Replacement Pod, Nitrogen Dioxide, 10,000 Ω Type 3, NTC Thermistor | GDPNO207 |
| 6884 | Gas Detector Replacement Pod, Nitrogen Dioxide, 2.252K Ω NTC Thermistor | GDPNO208 |
| 6891 | Gas Detector Replacement Pod, Nitrogen Dioxide, 1000 Ω Platinum | GDPNO212 |
| 6895 | Gas Detector Replacement Pod, Nitrogen Dioxide, 1000 Ω NickeL | GDPNO213 |
| 6896 | Gas Detector Replacement Pod, Nitrogen Dioxide, 10,000 Ω Type 3 Thermistor with 11,000 shunt resistor | GDPNO214 |
| 6897 | Gas Detector Replacement Pod, Nitrogen Dioxide, 20,000 Ω NTC Thermistor | GDPNO220 |
| 6898 | Gas Detector Replacement Pod, Nitrogen Dioxide, 10,000 Ω Type 2, NTC Thermistor | GDPNO224 |
| 6899 | Gas Detector Replacement Pod, Nitrogen Dioxide, 10,000 Ω, 25°C, ±1%, B = 3435 ±1% (25/85) | GDPNO259 |
| 6900 | Gas Detector Replacement Pod, Nitrogen Dioxide, Analog, BACnet/Modbus Temperature Option | GDPNO2TX |

## CALIBRATION KIT



## DESCRIPTION

The AZ-GDT-CALKIT-CNC is a kit to correctly calibrate the Greystone Model GDT CO/NO2 detectors. The GDT-CALKIT-CNC includes:

- Tubing
- Regulator
- Calibration Cap
- Carrying Case
- Sponge (For CO only)

Note: Calibration Gas is not included. To be purchased locally.

**Calibration Gas Requirements (103 liter tanks):** 250ppm CO in air, 10ppm NO2 in air

PRE-CALIBRATED SENSOR REPLACEMENT:

The AZ-GDT sensor features a gas sensor POD that is pre-calibrated. This means that the POD can simply be replaced with a new calibrated POD if desired without having to remove the enclosure and the main processor board. This sensor swap can be completed in seconds. Simply unplug the POD cable connection from the main board in enclosure, remove the POD by unscrewing counter clockwise, install the POD by screwing it in clockwise and reconnect the POD cable to connector on main PCB. There is no need to make any adjustments or apply gas to the transmitter using the sensor swap method.

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