Precision carbon dioxide control/sensing

FEATURES:
• Space or Duct Models
• 2 Available Ranges
• CO2, Temperature Outputs
• Optional Slidepot and/or Override
• Optional On-board Relay
• Optional LCD Display
• Custom Logos Available
**CO₂, TEMPERATURE & HUMIDITY DETECTOR**

**SPECIFICATIONS:**

**General Specifications:**
- **Power Supply:** 20-28 Vac/dc (non-isolated half-wave rectified)
- **Output Signals:** Current 4-20mA (Model CDD5A or Voltage 0-5 Vdc or 0-10 Vdc (Model CDD5B)
- **Consumption:** Current: 145 mA max @ 24Vdc, 260 mA max @24 Vac (with all options)
  - Voltage: 85 mA max @ 24 Vdc, 150 mA max @ 24 Vdc (with all options)
- **Output Drive Capability:** Current: 550 ohms max Voltage: 10 K ohm min
- **Protection Circuitry:** Reverse voltage protected and output limited
- **Operation Conditions:** 0˚-50°C (32˚-122°F), 0-95% RH non-condensing.
- **Sensor Coverage Area:** 100 m² (1000 ft²) typical
- **Wiring Connections:** Screw terminal block (14 to 22 AWG)
- **Space:** 84mm W x 119mm H x 29mm D (3.3” x 4.7” x 1.15”)
  - Duct: 145mm W x 100mm H x 63mm D (5.7” x 3.95” x 2.5”)
  - Duct Probe: 177mm (7”) long x 25.4mm (1”) diameter
- **Display:**
  - **Description:** 1.4” w x 0.6” h (35 mm x 15 mm) alpha-numeric 2 line x 8 character
  - **Backlight:** Enable or disable via keypad

**CO₂ Measurement:**
- **Measurement Type:** Dual Channel Non-Dispersive Infrared (NDIR), diffusion sampling
- **Measurement Range:**
  - CDD5A & B: 0 - 20,000 ppm standard, programmable span from 2000 to 20,000 ppm
  - CDD5C & D: ±75 PPM or 10% of reading (whichever is greater)
- **Accuracy:** ± 0.5% FS over life of sensor (15 years typical)
- **Hysteresis:** Programmable 25-500 ppm via keypad
- **Response Time:** <2 minutes for 90% step change typical
- **Warm-up Time:** <2 minutes

**Temperature Dependence:**
- Programmable from 0-5000 ft via keypad

**RH Signal:**
- **Sensing Element:** Thermoset polymer based capacitive
- **Accuracy:** ± 2% RH
- **Range:** 0 - 100% RH, non-condensing
- **Hysteresis:** ± 3% RH
- **Response Time:** 15 seconds typical
- **Stability:** ± 1.2% RH typical @ 50% RH in 5 years

**Optional Relay Output:**
- **Contact Ratings:** Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc
- **Relay Trip Point:**
  - CDD5A & B: Programmable 500-5000 ppm via keypad
  - CDD5C & D: Programmable 500-15,000 ppm via keypad
- **Relay Hysteresis:**
  - CDD5A & B: Programmable 25-200 ppm via keypad
  - CDD5C & D: Programmable 25-500 ppm via keypad

**LCD Display:**
- **Resolution:** 1 ppm CO₂, 1% RH, 1˚C (1˚F)
- **Size:** 1.4” w x 0.6” h (35 mm x 15 mm) alpha-numeric 2 line x 8 character
- **Backlight:** Enable or disable via keypad

**Optional Override Switch:** Front panel push-button available as two-wire dry-contact output

**Optional Setpoint Control:** Front panel slidepot available as two-wire resistive output, 0-10 KΩ standard
**CO₂, TEMPERATURE & HUMIDITY DETECTOR**

**FEATURES:**
- Menu driven set-up
- 0-2000 or 0-20,000 ppm CO₂ ranges
- Patented self-calibration algorithm
- Guaranteed 5 year calibration interval
- Temperature & Humidity Outputs
- Easily field calibrated
- Accepts AC/DC power

**OPTIONS:**
- LCD
- Slidepot
- Override Switch
- Control relay
- Custom Logos

**PRODUCT ORDERING INFORMATION:**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDD5A</td>
<td>Carbon Dioxide Detector - 0-2000 ppm, Temperature &amp; Humidity sensor w/ 4-20 mA Output</td>
</tr>
<tr>
<td>CDD5B</td>
<td>Carbon Dioxide Detector - 0-2000 ppm, Temperature &amp; Humidity sensor w/ 0-10 Vdc or 0-5 Vdc Output</td>
</tr>
<tr>
<td>CDD5C</td>
<td>Carbon Dioxide Detector - 0-20,000 ppm, Temperature &amp; Humidity sensor w/ 4-20 mA Output</td>
</tr>
<tr>
<td>CDD5D</td>
<td>Carbon Dioxide Detector - 0-20,000 ppm, Temperature &amp; Humidity sensor w/ 0-10 Vdc or 0-5 Vdc Output</td>
</tr>
</tbody>
</table>

**CODE** | **Enclosure**
---------|----------------|
10       | Space
20       | Duct

**CODE** | **LCD Display**
---------|----------------|
0        | Concealed
1        | Viewable

**CODE** | **Setpoint Adjustment (Available on Space only)**
---------|------------------------------------------------|
        | - No Setpoint Adjustment
        | P Setpoint Adjustment

**CODE** | **Momentary Override (Available on Space only)**
---------|------------------------------------------------|
        | - No Override
        | S Override Switch

**CODE** | **Relay Output**
---------|----------------|
        | - No Relay
        | R Relay

**Example:** Space CO₂ - 0-2000 ppm/RH/Temp w/ LCD, Setpoint Adjustment, Override Switch w/ 4-20mA Output

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**ACLP SOFTWARE**

ACLP (Automatic Calibration Logic Program) software utilizes the computing power in the sensor’s on-board microprocessor to remember the lowest CO₂ concentration that takes place every 24 hours. The sensor assumes this low point is at outside levels. The sensor is also smart enough to discount periodic elevated readings that might occur if for example a space was used 24 hours per day over a few days. Once the sensor has collected 14 days worth of low concentration points, it performs a statistical analysis to see if there has been any small changes in the sensor reading over background levels that could be attributable to sensor drift. If the analysis concludes there is drift, a small correction factor is made to the sensor calibration to adjust for this change.

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Greystone Energy Systems Inc. reserves the right to make design modifications without prior notice.
5-YEAR CALIBRATION GUARANTEE

Based on the results of years of testing of ACLP software, Greystone now offers a 5-year calibration guarantee on all its CDD series wall and duct mount sensors used for CO₂ based ventilation control when operated in an environment that can utilize ACLP software. If the sensor is found to be out of calibration more than 150 PPM as compared to a calibration gas or recently calibrated reference, Greystone will provide a free factory calibration of the sensor if returned to Greystone. This guarantee only applies if the sensor is operated in an environment where inside levels periodically drop to outside concentrations (i.e. during evenings or weekends when there is no occupancy) as is required by ACLP software. If a space does not experience a periodic drop to outside levels (i.e. where occupancy is 24 hours, 7 days/week), ACLP software should be deactivated. With ACLP deactivated (via menu buttons), calibration may be required every 2 to 3 years.

DIMENSIONS:

Greystone Energy Systems Inc. is one of North America’s largest ISO registered manufacturers of HVAC sensors and transducers for Building Automation Management Systems.

We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.