PDC Multi-Channel Controller

PDC multi-channel controller is a programmable analog or digital controllers designed to handle a large number of remote transmitters and perform a wide range of control functions. The micro-controller based circuit provides the user with an almost unlimited range of configuration possibilities including simple or complex zoning, changing alarm set points, time delays and relay addressing. The PDC controller can accept inputs from up to 8 analog transmitters or can handle up to 128 digital transmitters on a RS485 communication bus.

Functions that can be set include relay assignment, time delays on make or break, complex zoning, sensor types and ranges, alarm set points and much more. The controller has a two line backlit LCD display that actively scrolls through all programmed channels and displays the gas name, concentration and alarm status. The PDC features LED alarm indicators, audible alarm with silence button, and RoHS compliant circuit boards.

Use with any CETCI analog transmitters, AST or LPT series, or digital transmitters, DST series. Each PDC is pre-programmed at the factory, and is completely field adjustable using a boardmounted push button keypad.

KEY FEATURES
- Up to 8 analog transmitters or up to 128 digital transmitters
- RS485 communication with digital transmitters
- RoHS compliant circuit boards
- Relay output modules
- Scrolling, two line LCD display
- LED alarm indicators
- Completely field programmable
- Low, mid and high alarm setpoints
- Audible alarm with silence button
- Four wire daisychain wiring
- Eight onboard SPDT relays
- Optional BACnet® output module
- CSA & UL certified

APPLICATIONS
- Parking Garages
- Repair Shops
- Arenas
- Pools
- Food Processing Plants
- ... and many more

TECHNICAL DRAWING

SAMPLE ENGINEERING SPECIFICATIONS

Digital Multichannel Gas Detection System for Freight Handling Areas

Provide a wall mount, self-contained, field programmable control panel with digital display, LED alarm indication, and a boardmounted 90 dB audible alarm with silence button switch. There shall be a scrolling LED display of gas, concentration, and alarm status. System controller shall be capable of supporting up to 128 digital transmitters on a RS485 communication bus. System shall support analog output modules (eight 4 - 20 mA outputs per module) and relay output modules (eight 5 A SPDT relays per module). The controller shall have it on board relays. System wiring shall be 4 wire digital network (2 low voltage power wires and a twisted pair for the communication bus). System power requirement is 90 - 240 VAC, 47 to 63 Hz. The system shall be CSA / UL tested for electrical safety.

Provide remote mount sensor / transmitters for CO with an electrochemical sensor with a detection range of 0 - 200 ppm. The sensor / transmitter for CO shall be housed in a wall mount, rugged, break resistant, PVC junction box with a secured, hinged door. An optional watertight Polycarbonate enclosure shall be available. The remote mount CO sensor / transmitter shall operate on power supplied by the control panel, and shall provide a digital output signal to the control panel. Install the CO sensor at approximately 4 - 6 ft from the floor. Model DST-ECO. Supply one sensor / transmitter for every 5,000 - 7,000 ft² of exposure area. The electrochemical CO sensor shall be capable of meeting government Occupational Health and Safety measurement standards for workplace exposure to toxic gases & vapours.

Provide remote mount sensor / transmitters for NO, with an electrochemical sensor with a range of 0 - 10 ppm. The sensor / transmitter for NO shall be housed in a wall mount, rugged, break resistant, PVC junction box with a secured, hinged door. An optional watertight Polycarbonate enclosure shall be available. The remote mount NO sensor / transmitter shall operate on power supplied by the control panel, and shall provide a digital output signal to the control panel. Install the NO sensor at approximately 4 - 6 ft from the floor. Model DST-ENO. Supply one sensor / transmitter for every 5,000 - 7,000 ft² of exposure area. The NO gas sensor shall be capable of meeting government Occupational Health and Safety measurement standards for workplace exposure to toxic gases & vapours.

System operation shall be as follows: Upon detection of 25 ppm CO in air or 0.7 ppm NO in air, the system shall illuminate the Low alarm LED, the Low alarm relays (exhaust fans) will be activated immediately. The system shall keep the fans running for a minimum of 10 minutes to avoid cycling. Upon detection of 50 ppm CO in air or 1.0 ppm NO, the system shall illuminate the Mid alarm LED and the Mid alarm relays will be activated, (Mid alarm only available with LCD display). The system shall keep the Mid relays active for a minimum of 10 minutes. Upon detection of 100 ppm CO in air or 1.5 ppm NO, the system shall illuminate the High alarm LED, the High alarm relays and audible alarm will be activated. The system shall keep the High relays active for a minimum of 10 minutes. Audible alarm can be silenced from the front panel push button.

The contractor shall provide all wiring, conduit and interconnection required for a successful installation.

More specification samples are available at www.critical-environment.com.
## Controllers - GAS DETECTION DATASHEET

### PDC Multi-Channel Controller

#### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>MECHANICAL</th>
<th>Enclosure</th>
<th>Lockable, powder painted 18 gauge steel</th>
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<tbody>
<tr>
<td>Weight</td>
<td>4.3 kg (9.4 lbs)</td>
<td></td>
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<tr>
<td>Size</td>
<td>12.3” × 12.3” × 4.2” (311 mm × 311 mm × 106 mm)</td>
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<table>
<thead>
<tr>
<th>ELECTRICAL</th>
<th>Power Requirement</th>
<th>90 - 240 VAC, 47 - 63 Hz</th>
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<tbody>
<tr>
<td>Current Draw</td>
<td>500 mA (controller only)</td>
<td></td>
</tr>
<tr>
<td>Outputs</td>
<td>4 - 20 mA signals</td>
<td></td>
</tr>
<tr>
<td>Relay</td>
<td>8 dry SPDT contact, 5 amps @ 240 V each</td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td>Analog 3 wire shielded, digital daisy chain only, shielded, 2 wire 14 gauge stranded power, 2 wire 18 gauge twisted pair network</td>
<td></td>
</tr>
<tr>
<td>Fuse</td>
<td>Automatic resetting thermal</td>
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</table>

<table>
<thead>
<tr>
<th>ENVIRONMENTAL (sensor dependent)</th>
<th>Operating Temperature</th>
<th>0°C to 40°C (32°F to 100°F)</th>
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<tbody>
<tr>
<td>Humidity</td>
<td>10 - 95% RH non-condensing</td>
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<table>
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<tr>
<th>CERTIFICATION</th>
<th>CSA</th>
<th>Certified</th>
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<tbody>
<tr>
<td></td>
<td>UL</td>
<td>Certified</td>
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</tbody>
</table>

### WIRING

- **Analog 3 wire shielded**
- **Digital daisy chain only, shielded**
- **2 wire 14 gauge stranded power**
- **2 wire 18 gauge twisted pair network**

### PRODUCT CODES

- **Package:** PDC - 
  - Analog (A)
  - Digital (D)

- **Channel Input:**
  - Analog
    - 08 Up to 8 inputs
  - Digital
    - 08 Up to 8 inputs
    - 16 Up to 16 inputs
    - 24 Up to 24 inputs
    - 32 Up to 32 inputs
    - 64 Up to 64 inputs
    - 96 Up to 96 inputs
    - 128 Up to 128 inputs

### ACCESSORIES

- **BACnet** output module
  - PDC-BACNET
- **Industrial horn, 103 dB, remote**
  - PDC-OPTION-H
- **Strobe light, 4” diameter, remote**
  - PDC-OPTION-L
- **Relay module, 8 relays each, remote**
  - RRM-8
- **Power supply, 24 V, remote**
  - RPS-24V
- **CAN network bridge**
  - CNB-2
- **Strobe & horn combo, remote**
  - RSH-24
- **Power backup system, 120 VAC input / output**
  - UPS-MGE-81600
- **Analog output module, 8 x 4 - 20 mA output each**
  - RAO-8

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