# PDC Multi-Channel Controller

Critical
Environment
Technologies™

**FIXED SYSTEM DATASHEET**



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 sensor types, simple or complex zoning, changing alarm set points, time delays on make or break and relay addressing. The PDC controller can accept inputs from up to 8 analog transmitters or can handle up to 120 digital transmitters on a RS485 communication bus.

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 or digital transmitters. 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 120 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
» Ice Arenas
» Commercial Swimming Pools
» Food Processing Plants
» ... and many more

## TECHNICAL DRAWING



12.25"

KEY LOCK

ACKNOWLEDGE

12.25"

4.19"
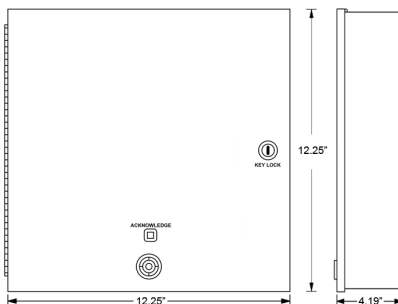
## SAMPLE ENGINEERING SPECIFICATIONS

*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 door mounted 90 dB audible alarm with silence / acknowledge switch. There shall be a scrolling LCD display of gas, concentration, and alarm status. System controller shall be capable of supporting up to 120 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 8 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 HVAC electrochemical sensor for CO 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 ft$^2$ 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$_2$ with an electrochemical sensor with a range of 0 - 10 ppm. The sensor / transmitter for NO$_2$ 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$_2$ 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$_2$ sensor at approximately 4 - 6 ft from the floor. Model DST-END. Supply one sensor / transmitter for every 5,000 - 7,000 ft$^2$ of exposure area. The NO$_2$ gas sensor shall be capable of meeting government Occupational Health and Safety measurement standards for workplace exposure to toxic gases and vapours.

System operation shall be as follows: Upon detection of 25 ppm CO in air or 0.7 ppm NO$_2$, 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$_2$, 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$_2$, 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**.

# PDC Multi-Channel Controller

## TECHNICAL SPECIFICATIONS

### CONTROLLER PACKAGES

Analog Inputs
*Up to 8 analog inputs*

Digital Inputs
*Up to 8 digital inputs*
*Up to 16 digital inputs*
*Up to 24 digital inputs*
*Up to 32 digital inputs*
*Up to 64 digital inputs*
*Up to 96 digital inputs*
*Up to 120 digital inputs*

### MECHANICAL

| | |
|---|---|
| Enclosure | Lockable, powder painted 18 gauge steel |
| Weight | 4.3 kg (9.4 lbs) |
| Size | 12.3" x 12.3" x 4.2" (311 mm x 311 mm x 106 mm) |

### ELECTRICAL

| | |
|---|---|
| Power Requirement | 90 - 240 VAC, 47 - 63 Hz |
| Current Draw | 500 mA (controller only) |
| Outputs | 4 - 20 mA signals |
| Relay | 8 dry SPDT contact, 5 amps @ 240 V each |
| Wiring | Analog 3 wire shielded Digital daisychain only, shielded 2 wire 14 gauge stranded power 2 wire 18 gauge twisted pair network |
| Fuse | Automatic resetting thermal |

### ENVIRONMENTAL *(sensor dependant)*

| | |
|---|---|
| Operating Temperature | 0°C to 40°C (32°F to 104°F) |
| Humidity | 10 - 95% RH non-condensing |

### CERTIFICATION

| | |
|---|---|
| CSA | Certified |
| UL | Certified |

## WIRING



## PRODUCT CODES

PDC - ☐ - ☐☐☐
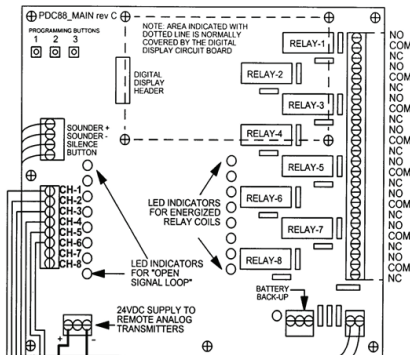
Package:

| | |
|---|---|
| **A** | Analog |
| **D** | Digital |

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 |
| **120** | Up to 120 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 |