

# DCC Dual Channel System



DCC shown with Option L

The DCC Dual Channel Controller is a comprehensive and dependable, self-contained system that offers one or two channel configurations for monitoring toxic and combustible gases with straight-forward control functionality for non-hazardous, non-explosion rated, commercial and light industrial applications.

Sensor configurations include, two internal electrochemical sensors (one must be CO), or one internal electrochemical and one remote sensor (catalytic or PID) or a remote 4-20 mA analog transmitter. Field configurable settings are done through an easy to navigate, comprehensive menu structure. Other features include two 4 - 20 mA outputs or jumper configurable 0-10v / 2-10 v outputs that can be used for VFD control, one configurable 4 - 20 mA input, two alarm level line voltage, two SPDT dry contact relays with field configurable time delays and trigger levels, a field selectable integral audible alarm and an LCD digital display with LED indicators for channel alarm status and fault conditions.

Automated calibration and other maintenance procedures are simple and easily performed in the field. For parking garage applications, our proprietary Calibration Extending Firmware (CEF) takes into account the aging of the toxic gas sensors so that less frequent calibrations are required.

## KEY FEATURES

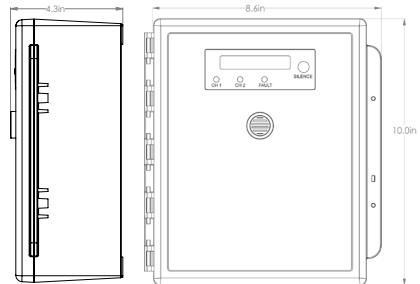
- » Single or dual channel operation
- » Flexible internal and/or remote sensor configurations
- » 2x16 character LCD display with LED indicators
- » Two 5A SPDT dry contact relays
- » Jumper configurable 0-10v or 2-10v output
- » One configurable 4 - 20 mA input
- » Optional loud or water tight, door mounted buzzer (Option -WA)
- » Standard water / dust tight, corrosion resistant enclosure (drip proof); IP54 rated with optional splash guard installed
- » RoHS compliant circuit boards

## APPLICATIONS

- » Parking Garages requiring VFD control
- » Indoor Commercial Swimming Pools
- » Firehalls
- » Ice Arenas
- » Wineries
- » ... and many more



## TECHNICAL DRAWING



## TECHNICAL SPECIFICATIONS

### GAS TYPE

Electrochemical (internal)	Carbon Monoxide (CO), Nitrogen Dioxide (NO <sub>2</sub> ), Nitric Oxide (NO), Oxygen (O <sub>2</sub> ), Hydrogen Sulphide (H <sub>2</sub> S), Ethylene (C <sub>2</sub> H <sub>4</sub> ), Sulphur Dioxide, (SO <sub>2</sub> )
Combustible (catalytic)(remote)	Hydrogen (H <sub>2</sub> ), Methane (CH <sub>4</sub> ), Propane (C <sub>3</sub> H <sub>8</sub> )
TVOCs PID (remote)	

### MECHANICAL

Enclosure	ABS / Polycarbonate, IP54 rated with splash guard installed. Copper coated interior to reduce RF interference.
Weight	600 g (1.4 lb)
Size	254 x 218 x 109 mm (10.0 x 8.6 x 4.3 inches)

### USER INTERFACE

Display	2x16 character LCD digital display with LED Panel indicating "CH1" state, "CH2" state, and FAULT"
"SILENCE" Push Button	Temporarily clears buzzer / latched relays

### INPUT / OUTPUT

Input	One 4-20 mA analog
Output	Two 4-20 mA analog (default) Jumper configurable 0-10v or 2-10v output
Relays	Two SPDT dry contact relays, rated 5 amps @ 240 VAC
Audible Alarm	- Standard internal buzzer - Optional loud, door mounted buzzer, rated 90 dB @ 30 cm (1 ft) - Optional water tight, door mounted buzzer, rated 85 dB @ 60.96 cm (2 ft)

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## TECHNICAL SPECIFICATIONS CONT'

### ELECTRICAL

#### Power Requirement

Low Voltage	16 - 30 VDC or 12 - 28 VAC, 10 W, Class 2
Line Voltage	90 - 240 VAC, 50 - 60 Hz

#### Current Draw

Low Voltage	400 mA @ 24 VDC (400 mA RMS @ 24 VAC)
Line Voltage (110 VAC)	Approximately 90 mA
Line Voltage (220 VAC)	Approximately 45 mA

#### Wiring

Low Voltage:	24 VDC or 24 VAC two-conductor shielded;
Line Voltage:	VAC three-conductor shielded

#### Distance

Maximum 200 ft between DCC controller and ESH-A Remote Sensor using minimum 18 gauge wire stranded within conduit. Reference the manual for maximum distances to maintain for remote 4-20 mA transmitters.

#### Fuse(s)

Thermal, resetting

### ENVIRONMENTAL (sensor dependent)

Operating Temperature -20°C to 40°C (-4°F to 104°F)

Humidity 15 - 90% RH non-condensing

### CERTIFICATION

Conforms to: CSA-C22.2 No. 205-M1983 (R2009) UL508 (Edition 17):2007

Conforms to: EMC Directive 2004/108/EC EN 50270:2006, Type 1, EN61010

Conforms to: FCC. This device complies with Part 15 of the FCC Rules.



## PRODUCT CODES

Find the *Type* and follow the instructions to add the sensor from the appropriate [GROUP] to build the DCC package you require:

**Type A: Single Channel (Internal Electrochemical Sensor)** Choose 1 internal sensor from [GROUP 1]. Part number is **DCC-A** + part number listed in [GROUP 1].

**Type B1: Single Channel (Remote 4 - 20 mA Transmitter)** No internal sensor. Choose 1 remote transmitter from [GROUP 2]. Part number is **DCC-B-RT** + transmitter part number.

**Type B2: Single Channel (ESH-A Remote Sensor)** No internal sensor. Choose 1 remote transmitter from [GROUP 2]. Part number is **DCC-B-R** + ESH-A remote sensor from [GROUP 3].

**Type D1: Dual Channel (Internal Electrochemical Sensor + Remote 4-20 mA Transmitter)** Choose 1 internal sensor from [GROUP 1] and 1 remote transmitter from [GROUP 2]. Part number is **DCC-D-XXX-RT** (where XXX is a part number listed in [GROUP 1]) + transmitter part number.

## PRODUCT CODES CONTINUED

**Type D2: Dual Channel (Internal Electrochemical Sensor + ESH-A Remote Sensor)** Choose 1 internal sensor from [GROUP 1] and 1 ESH-A remote sensor from [GROUP 3]. Part number is **DCC-D-XXX-R** (where XXX is a part number listed in [GROUP 1]) + part number from [GROUP 3].

**Type E: Dual Channel (Internal Electrochemical Sensors)** Comes with 1 internal CO sensor. Choose second internal sensor from [GROUP 1]. Part number is **DCC-E-TCO-XXX** (where XXX is a part number listed in [GROUP 1])

### PART NUMBER

[GROUP 1]	Internal Electrochemical Sensor Choices	Lifespan
<b>TCO</b>	Carbon Monoxide (CO) sensor (0 - 200 ppm)	6 yrs
<b>C2H4</b>	Ethylene (C <sub>2</sub> H <sub>4</sub> ) sensor (0 - 200 ppm)	2 yrs
<b>H2S</b>	Hydrogen Sulphide (H <sub>2</sub> S) sensor (0 - 50 ppm)	2+ yrs
<b>NO</b>	Nitric Oxide (NO) sensor (0 - 100 ppm)	2 yrs
<b>NO2B</b>	Nitrogen Dioxide (NO <sub>2</sub> ) sensor (0 - 10 ppm)	6 yrs
<b>O2</b>	Oxygen (O <sub>2</sub> ) sensor (0 - 25% volume)	3 yrs
<b>SO2</b>	Sulphur Dioxide (SO <sub>2</sub> ) sensor (0 - 20 ppm)	2+ yrs

### [GROUP 2] Remote 4 - 20 mA Transmitters

(specify part number at time of order - refer to appropriate transmitter datasheet)

- AST-I Industrial Infrared Transmitter
- ART Infrared Refrigerant Transmitter
- CGAS-A Analog Detector
- CXT Explosion Proof Transmitter
- LPT Lower Power Transmitter
- LPT-A Analog Transmitter

[GROUP 3]	ESH-A Remote Catalytic Sensors	Lifespan
<b>ESH-A-CH2-100</b>	Hydrogen (H <sub>2</sub> ) sensor (0 - 100% LEL)	5 yrs
<b>ESH-A-CCH4-100</b>	Methane (CH <sub>4</sub> ) sensor (0 - 100% LEL)	5 yrs

**ESH-A-CC3H8-100** Propane (C<sub>3</sub>H<sub>8</sub>) sensor (0 - 100% LEL) 5 yrs

[GROUP 3]	ESH-A Remote PID Sensors	Lifespan
<b>ESH-A-SPL</b>	TVOC PID sensor (0 - 30 ppm)	**
<b>ESH-A-SPH</b>	TVOC PID sensor (0 - 300 ppm)	**

### OPTIONS (Factory installed) Add at the end of the "Part Number" above.

<b>A</b>	Door mounted, loud buzzer rated 90 dB @ 30 cm (1 ft)
<b>WA</b>	Door mounted, water tight buzzer rated 85 dB @ 60.96 cm
<b>L</b>	Top mounted strobe, red lens, IP65 rated 6.1 cm dia x 13 cm H / 2.4 in dia x 5.2 in H)
<b>S</b>	Splash guard for non sticky gases (may be added to the DCC, remote transmitter and/or the ESH-A Remote Sensor, as required)

### ACCESSORIES

<b>CET-715A-CK1</b>	Calibration Kit for 17, 34, 58, 74, 100 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder
<b>CET-SGC</b>	Calibration clip for splash guard
<b>SCS-8000-SPG</b>	Metal protective guard, large, 16 gauge, galvanized metal guards for controllers