

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 and PID TVOCs with straightforward 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 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

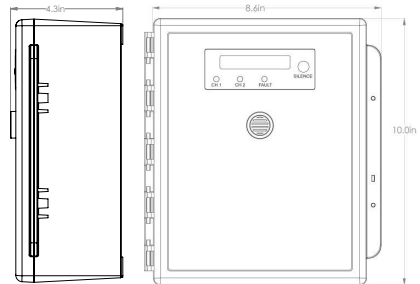
- » Single or dual channel operation
- » Flexible internal and/or remote sensor configurations
- » 2x16 character LCD display with LED indicators
- » Two 5A SPDT dry contact relays
- » Two 4 - 20 mA outputs, can be used for VFD control
- » One configurable 4 - 20 mA input
- » Optional loud or water tight, 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 ₂), Nitric Oxide (NO), Oxygen (O ₂), Hydrogen Sulphide (H ₂ S), Ethylene (C ₂ H ₄), Sulphur Dioxide, (SO ₂)
Combustible (catalytic)(remote)	Hydrogen (H ₂), Methane (CH ₄), Propane (C ₃ H ₈)
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
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 B: 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 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-RT** + part number listed in [GROUP 1] + transmitter part number.

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-R** + part number listed in [GROUP 1] + [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** + part number listed in [GROUP 1].

PRODUCT CODES CONTINUED

PART NUMBER

[GROUP 1]	Internal Electrochemical Sensor Choices	Lifespan
TCO	Carbon Monoxide (CO) sensor (0 - 200 ppm)	6 yrs
C2H4	Ethylene (C ₂ H ₄) sensor (0 - 200 ppm)	2 yrs
H2S	Hydrogen Sulphide (H ₂ S) sensor (0 - 50 ppm)	2+ yrs
NO	Nitric Oxide (NO) sensor (0 - 100 ppm)	2 yrs
NO2B	Nitrogen Dioxide (NO ₂) sensor (0 - 10 ppm)	6 yrs
O2	Oxygen (O ₂) sensor (0 - 25% volume)	3 yrs
SO2	Sulphur Dioxide (SO ₂) 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 CO2 Transmitter AST-IS Industrial or Standard CO2 Transmitter ART Infrared Refrigerant Transmitter CXT Explosion Proof Transmitter LPT Lower Power Transmitter LPT-A Analog Transmitter
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[GROUP 3] ESH-A Remote Catalytic Sensors

[GROUP 3]	ESHA Remote Catalytic Sensors	Lifespan
ESH-A-CH2-100	Hydrogen (H ₂) sensor (0 - 100% LEL)	5 yrs
ESH-A-CCH4-100	Methane (CH ₄) sensor (0 - 100% LEL)	5 yrs
ESH-A-CC3H8-100	Propane (C ₃ H ₈) sensor (0 - 100% LEL)	5 yrs

[GROUP 3] ESH-A Remote PID Sensors

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

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

A	Door mounted, loud buzzer rated 90 dB @ 30 cm (1 ft)
WA	Door mounted, water tight buzzer rated 85 dB @ 60.96 cm
H	Internal heater for cold environment applications down to -40°C / 40°F (option for remote LPT-A transmitter only)
L	Top mounted strobe, red lens, IP65 rated 6.1 cm dia x 13 cm H / 2.4 in dia x 5.2 in H)
S	Splash guard for non sticky gases (may be added to the DCC, remote transmitter and/or the ESH-A Remote Sensor, as required)
T	Built in timer with 7 timer ranges (off durations), with a manual shut off switch, 24VDC/VAC

ACCESSORIES

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