

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, combustible and solid state refrigerant 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 catalytic or remote solid state sensor or a remote 4-20 mA transmitter. Field configurable settings are done through an easy to navigate, comprehensive menu structure.

Other features include two 4 - 20 mA outputs with VFD control, a 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.

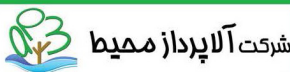
Automated calibration and other maintenance procedures are simple and easily performed in the field. For parking garage applications, our proprietary Calibration Extending Firmware (CEF) takes into account the aging of the toxic gas sensors so that less frequent calibrations are required.

KEY FEATURES

- » Single or dual channel operation
- » Flexible internal and/or remote sensor configurations
- » 2x16 character LCD display with LED indicators
- » Two 5-amp SPDT dry contact relays
- » Two 4 - 20 mA outputs with VFD control
- » One configurable 4 - 20 mA input
- » Optional loud or water tight, door mounted buzzer
- » Thermal resetting fuses
- » Standard water / dust tight, corrosion resistant enclosure (drip proof); IP54 rated with optional splash guard installed

APPLICATIONS

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



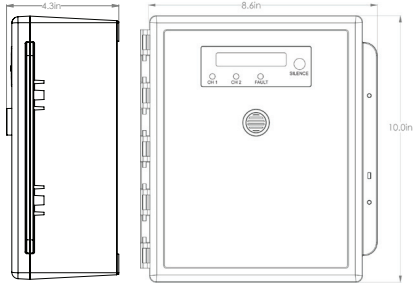
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TECHNICAL DRAWING



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)
Refrigerants (remote)	R22, R134A, R402A, R404A, R407C, R410A, R422D, RS07A
Combustible (catalytic)(remote)	Hydrogen (H ₂), Methane (CH ₄), Propane (C ₃ H ₈)
TVOCs (solid state) (remote)	

MECHANICAL

Enclosure	ABS / Polycarbonate, rated UL94-5VA; IP54 rated with splash guard installed. Copper coated interior to reduce RF interference.
Weight	600 g (1.4 lb)
Size	10.0" x 8.6" x 4.3" (254 mm x 218 mm x 109 mm)

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	4-20 mA analog
Output	Two 4-20 mA analog with VFD control
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 - Optional water tight, door mounted buzzer, rated 85 dB @ 2 ft

ELECTRICAL

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

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TECHNICAL SPECIFICATIONS CONT

Current Draw	
Low Voltage Line Voltage (110 VAC)	400 mA @ 24 VDC (400 mA RMS @ 24 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.
Fuses	
	Automatic resetting thermal

ENVIRONMENTAL (sensor dependant)

Operating Temperature	-40°C to 50°C (-40°F to 122°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 - Solid State) No internal sensor. Choose 1 remote ESH-A sensor from [GROUP 3]. Part number is **DCC-B-R** + part number listed in [GROUP 3].

Type B3: Single Channel (ESH-A Remote Sensor - Catalytic) No internal sensor. Choose 1 remote ESH-A sensor from [GROUP 4]. Part number is **DCC-B-R** + part number listed in [GROUP 4].

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 - Solid State) 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 D3: Dual Channel (Internal Electrochemical Sensor + ESH-A Remote Sensor - Catalytic) Choose 1 internal sensor from [GROUP 1] and 1 ESH-A remote sensor from [GROUP 4]. Part number is **DCC-D-R** + part number listed in [GROUP 1] + [GROUP 4].

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 CONT

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

AST-I Industrial Infrared CO2 Transmitter
(specify part number at time of order - refer to appropriate transmitter datasheet)
AST-IS Industrial or Standard CO2 Transmitter
ART Infrared Refrigerant Transmitter
CXT Explosion Proof Transmitter
LPT Lower Power Transmitter
LPT-A Analog Transmitter

[GROUP 3] ESH-A Remote Solid State Sensors

		Lifespan
ESH-A-SR22	Refrigerants (R22) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR134A	Refrigerants (R134A) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR402A	Refrigerants (R402A) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR404A	Refrigerants (R404A) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR407C	Refrigerants (R407C) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR410A	Refrigerants (R410A) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR422D	Refrigerants (R422D) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-SR507	Refrigerants (R507) sensor (0 - 2,000 ppm)	5 yrs
ESH-A-STVOC	TVOCs sensor (0 - 2,000 ppm)	5 yrs

[GROUP 4] ESH-A Remote Catalytic Sensors

		Lifespan
ESH-A-CH2	Hydrogen (H ₂) sensor (0 - 50% LEL)	5 yrs
ESH-A-CCH4	Methane (CH ₄) sensor (0 - 50% LEL)	5 yrs
ESH-A-C3H8	Propane (C ₃ H ₈) sensor (0 - 50% LEL)	5 yrs

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

A	Door mounted, loud buzzer, rated 90 dB @ 30 cm
WA	Door mounted, water tight buzzer, rated 85 dB @ 2 ft
H	LCD display heater (option for remote LPT-A transmitter only)
IH	Internal heater for cold environment applications (option for DCC enclosure only)
L	Top mounted strobe 24V (2.75" dia x 5" H)
S	Splash guard (not available with O ₂ or CO ₂ sensors). May be added to the DCC, remote transmitter and/or the ESH-A Remote Sensor, as required.

ACCESSORIES

CE7-715A-CK1	Calibration Kit for 17, 34, 58, 74, 103 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder
SCS-8000-SPG	Metal protective guard, large, 16 gauge, galvanized metal guards for controllers.