

DESCRIPTION

Distributed on/off, multi-speed and variable speed control module with optional sensor inputs for use with DGC6-series digital gas controllers.

Conformed to Safety Integrity Level 2 (SIL 2) and rigorous international standard EN 50545-1 for parking garages and tunnels, PolyGard®2 monitoring and control systems utilize advanced self-diagnostics and flexible ventilation control functions to ensure maximum human safety without compromising energy efficiency.

Each SCM6 includes two relays and one analog output and may be configured with one or two integrated SC2 sensor modules with X-Change sensor technology.

Advanced, microprocessor-based X-Change sensor modules meet or exceed the EN 50545-1 self-diagnostic standards including notifying the controller when calibration is due. Although field calibration is possible, X-Change technology allows fast and cost-effective sensor module swaps minimizing field service time, eliminating system downtime and ensuring peak system performance for many years.

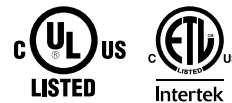
APPLICATION

SCM6 Sensor and Control Modules, in combination with DGC6 Digital Gas Controllers provide scalable solutions for monitoring and controlling toxic and/or combustible gas levels. Flexible zoning with on/off, multi-speed and variable speed fan control strategies can be easily implemented in conjunction with DT6, DC6, and DR6 sensor modules.

FEATURES

- Two (2) SPDT alarm relays, 30 VAC/VDC, 0.5 A
- One (1) 4-20 mA or 2-10 VDC analog output, jumper selectable
- Sensor node for 1 or 2 gas sensor modules
- X-Change toxic and combustible gas sensor modules for reliable operation and easy maintenance
- RS-485 serial communications to DGC6-Series Digital Gas Controllers
- 24 VDC powered
- Digital measurement processing with temperature compensation
- Internal diagnostics including integrated hardware watchdog
- High-impact polycarbonate enclosure, NEMA 4X (IP65)
- Software conforms to SIL 2 standard

PolyGard®2 SCM6



- UL 2075 Listed
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- CE
- EN 50271 ■ EN 61508
- EN 60079-29-1
- EN 61010-1:2010
- ANSI/UL 61010-1
- CAN/CSA-C22.2 No. 61010-1
- City of Los Angeles Approved

SPECIFICATIONS

Electrical	
Power supply	24 VDC ±20%, reverse polarity protected
Power consumption	24 VDC
- base	20 mA
- sensors	See SC2 datasheet
Alarm relays	Two (2), 30 VAC/VDC, 0.5 A, potential-free, contacts (SPDT); 1 alarm & 1 fault/alarm
Analog output signal	One (1), selectable, proportional, overload and short-circuit proof, load ≤ 500 Ω
- measuring range	4-20 mA / 2-10 VDC
- tolerable under range	2.4-4 mA / 1.2-2.0 VDC
- tolerable over range	> 20-21.2 mA / > 10.0-10.6 VDC
- error over range	≥ 21.2 mA / ≥ 10.6 VDC
- fault	≤ 2.0 mA / ≤ 1.0 VDC
Output for local bus	5 VDC, 250 mA max. Overload, short-circuit and polarity protected
Output signal for serial communication	Digital, RS-485, proprietary DGC6 protocol, 19200 baud
Sensors	SC2 Series
- performance	See SC2 datasheet for specific gases
- coverage	See SC2 datasheet for specific gases
- storage time	6 months (for sensor elements)
Environmental	
Permissible ambient	See SC2 datasheet for specific gases
Serial interface	
- local bus	plug connector / 19200 Baud
- field bus	RS-485 / 19200 Baud
- tool bus	2-wire / 19200 Baud
Physical	
Enclosure "A", standard	
- material	Polycarbonate, UL 94-HB, fire retardant
- conforms to	UL 50
- color	Light gray
- protection	NEMA 4X (IP65)
- installation	Wall (surface) mounted, or single gang electrical box; mounted vertically for single gas sensor and horizontally for dual gas sensor
Dimensions (H x W x D)	
- base unit	5.12 x 3.70 x 2.25 in. (130 x 94 x 57 mm)
Cable entry, knock out	1 hole (long side) for 1/2 in. conduit, closed w/screwed "plug"
Wire connection	
- field bus	Screw-type removable terminal; 24 AWG (0.25 mm ²), min. 14 AWG (2.5 mm ²), max.
- local bus (SC2)	3-pin removable connector

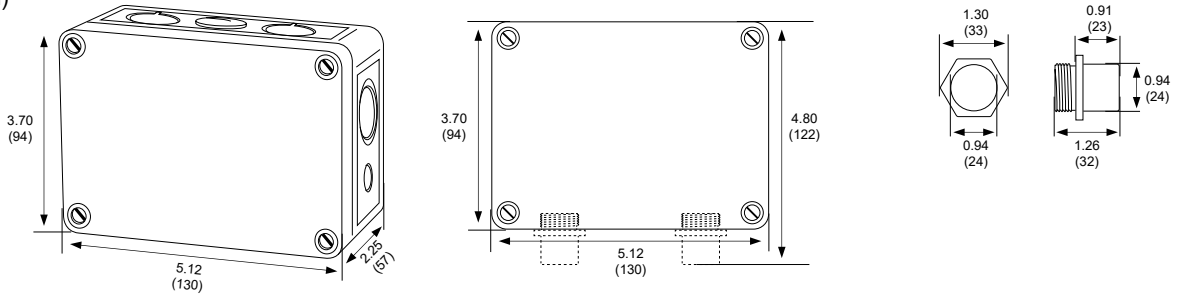
Weight	0.7 lb (0.3 kg)
Certified to	UL 2075 Listed, NRTL performance tested for models SCM6-01-E1110-E, SCM6-01-E1110-E-E1130-B
Conforms to	EMC Directive 2014/30/EU LVD 2014/35/EU CE EN 50271 EN 61010-1:2010 ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Warranty	Two years material and workmanship, 12 months normal exposure for sensor element

ACCESSORIES

Duct Mounting Kit	PG2-DUCTKIT
- flow rate	Min. 3.1 mph (5000 m/h), max. 12.4 mph (20,000 m/h)
- air duct diameter	Min. 3.94 in. (0.1 m), max. 39.37 in. (1.0 m)
- length of sampling tube	9.84 in. (250 mm), adaptable
- hose length	2 x 39.37 in. (1000 mm)
Calibration Kits	
- carbon monoxide	CALKIT-PG2-CO Sensor calibration adapter w/ tube and cup, 500 mL/min. regulator, 17L 200 ppm carbon monoxide, 17L 99.99% nitrogen, carrying case
- combustible gases	CALKIT-PG2-COMB Sensor calibration adapter w/ tube and cup, 150 mL/min. regulator, 17L 2.5% methane, 17L 99.99% nitrogen, carrying case
- nitrogen dioxide	CALKIT-PG2-NO2 Sensor calibration adapter w/ tube and cup, 500 mL/min. regulator (stainless steel), 70L 10 ppm nitrogen dioxide, 70L 99.99% nitrogen, carrying case
- carbon monoxide & nitrogen dioxide	CALKIT-PG2-CO-NO2 Sensor calibration adapter w/ tube and cup, 500 mL/min. regulator (for CO), 500 mL/ min. regulator (stainless steel, for NO2), 17L 200 ppm carbon monoxide, 70L 99.99% nitrogen, 70L 10 ppm nitrogen dioxide, and (2) carrying cases

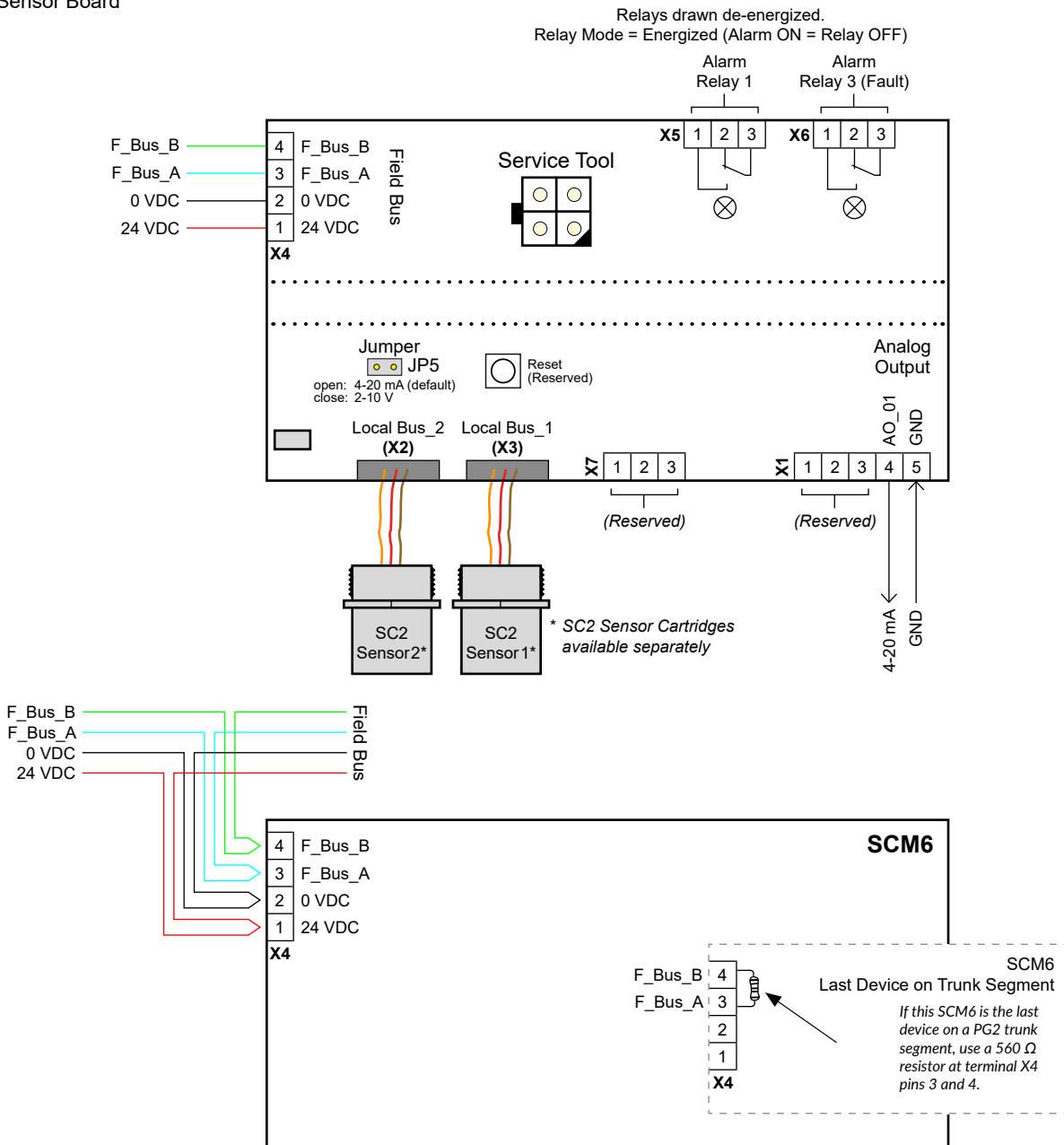
DIMENSIONS

inches (mm)



WIRING CONFIGURATION

SCM6 Sensor Board



ORDERING INFORMATION	
PART NUMBER	DESCRIPTION
BUNDLED SENSORS AND CONTROLS	
SCM6-E1110-E-02	SCM6, DGC6 Protocol, (1) 0-250 ppm CO sensor
SCM6-E1110-E-E1130-B-02	SCM6, DGC6 Protocol, (1) 0-250 ppm CO sensor, (1) 0-20 ppm NO ₂ sensor
SENSOR PLATFORM	
SCM6-01	Remote relay and AO module, DGC6 Protocol; up to (2) sensor inputs capable; (2) SPDT relays; (1) 4-20 mA analog output; includes "A" enclosure; sensor cartridges ordered separately

SC2 Sensor Cartridges available separately.
See SC2 datasheet for specifications.

The SCM6 accepts up to (2) SC2 Sensor Cartridges simultaneously.
In a 2-sensor configuration, both sensor modules (a) must have the same mounting height requirements and (b) sensor-1 and sensor-2 module cannot be identical part numbers.

Gas Sensor & Range				
#	TOXIC GASES AND OXYGEN			Mounting Height (ft)
E1110-E	Carbon Monoxide	CO	0-250 ppm	5-6
E1110-F	Carbon Monoxide	CO	0-300 ppm	5-6
E1130-A	Nitrogen Dioxide	NO ₂	0-10 ppm	5-6
E1130-B	Nitrogen Dioxide	NO ₂	0-20 ppm	5-6
E1130-C	Nitrogen Dioxide	NO ₂	0-30 ppm	5-6
E1130-D	Nitrogen Dioxide	NO ₂	0-500 ppm	5-6
E1125-C	Ammonia	NH ₃	0-300 ppm	Ceiling
E1125-D	Ammonia	NH ₃	0-1000 ppm	Ceiling
E1193-C	Chlorine	Cl ₂	0-10 ppm	Floor
E1183-C	Hydrogen Cyanide	HCN	0-100 ppm	Ceiling
E1189-C	Ethylene	C ₂ H ₄	0-200 ppm	5-6
E1185-B	Formaldehyde	CH ₂ O	0-10 ppm	Floor
E1190-A	Ozone	O ₃	0-5 ppm	Floor
E1195-A	Oxygen	O ₂	0-25 Vol%	5-6
E1196-B	Sulfur Dioxide	SO ₂	0-20 ppm	Floor
E1197-A	Hydrogen Sulfide	H ₂ S	0-50 ppm	Floor
#	INFRARED SENSORS			Mounting Height (ft)
I1164-B	Carbon Dioxide	CO ₂	0-5 Vol%	5-6
I1164-C	Carbon Dioxide	CO ₂	0-2 Vol%	5-6
#	COMBUSTIBLE GASES			Mounting Height (ft)
P3485-A	Acetone	C ₃ H ₆ O	0-100% LEL	Floor
P3408-A	Ammonia	NH ₃	0-100% LEL	Ceiling
P3496-A	Gasoline Vapors	-	0-100% LEL	-
P3460-A	Butane	C ₄ H ₁₀	0-100% LEL	Floor
P3472-A	Cyclopentane	C ₅ H ₁₀	0-100% LEL	Floor
P3427-A	Ethyl Acetate	C ₄ H ₈ O ₂	0-100% LEL	Floor
P3425-A	Ethyl Alcohol	C ₂ H ₅ OH	0-100% LEL	Floor
P3410-A	Ethylene	C ₂ H ₄	0-100% LEL	Ceiling
P3491-A	Heptane	C ₇ H ₁₆	0-100% LEL	Floor
P3435-A	Hexane	C ₆ H ₁₄	0-100% LEL	Floor
P3476-A	Isopentane	C ₅ H ₁₂	0-100% LEL	Floor
P3482-A	Isopropyl Alcohol	C ₃ H ₈ O	0-100% LEL	Floor
P3402-A	LPG	-	0-100% LEL	-
P3400-A	Methane	CH ₄	0-100% LEL	Ceiling
P3450-A	Methanol	CH ₃ OH	0-100% LEL	Floor
P3458-A	Methyl Ethyl Ketone	C ₄ H ₈ O	0-100% LEL	Floor
P3475-A	Pentane	C ₅ H ₁₂	0-100% LEL	Floor
P3480-A	Propane	C ₃ H ₈	0-100% LEL	Floor
P3480-C	Propane	C ₃ H ₈	0-5000 ppm	Floor
P3484-A	Propyl Alcohol	C ₃ H ₈ O	0-100% LEL	Floor
P3490-A	Toluene	C ₇ H ₈	0-100% LEL	Floor
P3440-A	Hydrogen	H ₂	0-100% LEL	Ceiling
ACCESSORIES				
PG2-DUCTKIT	(1) Duct mounting kit for SC2 / AT6 sensor			
CALKIT-PG2-CO	Carbon monoxide calibration kit for SC2 / AT6 sensors			
CALKIT-PG2-NO2	Nitrogen dioxide calibration kit for SC2 / AT6 sensors			
CALKIT-PG2-COMB	Combustible calibration kit for SC2 / AT6 sensors			