

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.

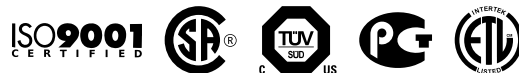
APPLICATION

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 analog output
- 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



- EMC Directives 2014/30/EU
- LVD 2014/35/EU
- CE
- EN 61010-1:2010
- EN 50271
- ANSI/UL 61010-1
- CAN/CSA-C22.2 No. 61010-1

SPECIFICATIONS

Electrical

Power supply	24 VDC \pm 20%, reverse polarity protected
Power consumption	250 mA (5 VA), max.
- toxic gases & oxygen	1 mA (0.1 VA), max. per sensor
- infrared (CO ₂)	15 mA (0.4 VA), max. per sensor
- combustible gases	55 mA (1.4 VA), max. per sensor
Alarm relays	Two (2), 30 VAC/VDC, 0.5 A, potential-free, contacts (SPDT); 1 alarm & 1 fault/alarm
Analog output signal	One (1), proportional, overload and short-circuit proof, load \leq 500 Ω 4-20 mA = measuring range; 3.0 < 4 mA = under range; > 20-21.2 mA = over range; 2.0 mA = fault
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
Sensor Performance	<i>See SC2 datasheet for specific gases</i>
Sensor coverage	<i>See SC2 datasheet for specific gases</i>
Storage time	6 months (for sensor elements)
Environmental	
Permissible ambient	<i>See SC2 datasheet for specific gases</i>
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. 3-pin removable connector
- local bus (SC2)	0.7 lb (0.3 kg)
Weight	EMC Directive 2014/30/EU LVD 2014/35/EU CE EN 50271 EN 61010-1:2010
Conforms to	ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
Certified to	Two years material and workmanship, 12 months normal exposure for sensor element
Warranty	

ACCESSORIES

Duct Mounting Kit

- flow rate
- air duct diameter
- length of sampling tube
- hose length

Calibration Kits

- carbon monoxide

PG2-DUCTKIT

- Min. 3.1 mph (5000 m/h),
max. 12.4 mph (20,000 m/h)
- Min. 3.94 in. (0.1 m),
max. 39.37 in. (1.0 m)
- 9.84 in. (250 mm), adaptable
2 x 39.37 in. (1000 mm)

CALKIT-PG2-CO

Calibration Kit includes:
Sensor calibration adapter
w/ tube and cup, 150 mL/min
regulator, 17 L 200 ppm carbon
monoxide gas bottle,
17 L 99.99% nitrogen gas bottle,
carrying case

CALKIT-PG2-NO2

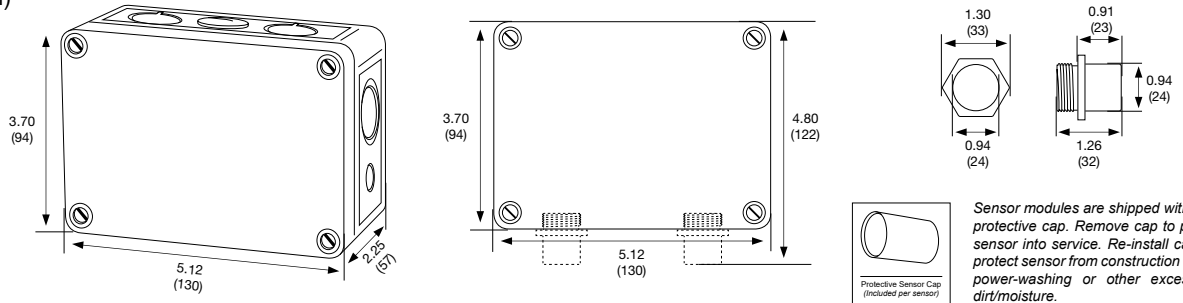
Calibration Kit includes:
Sensor calibration adapter
w/ tube and cup, 500 mL/min
regulator, 58 L 5 ppm nitrogen
dioxide gas bottle, 58 L 99.99%
nitrogen gas bottle, carrying case

CALKIT-PG2-COMB

Calibration Kit includes:
Sensor calibration adapter
w/ tube and cup, 150 mL/min
regulator, 17 L 2.5% methane gas
bottle, 17 L 99.99% nitrogen gas
bottle, carrying case

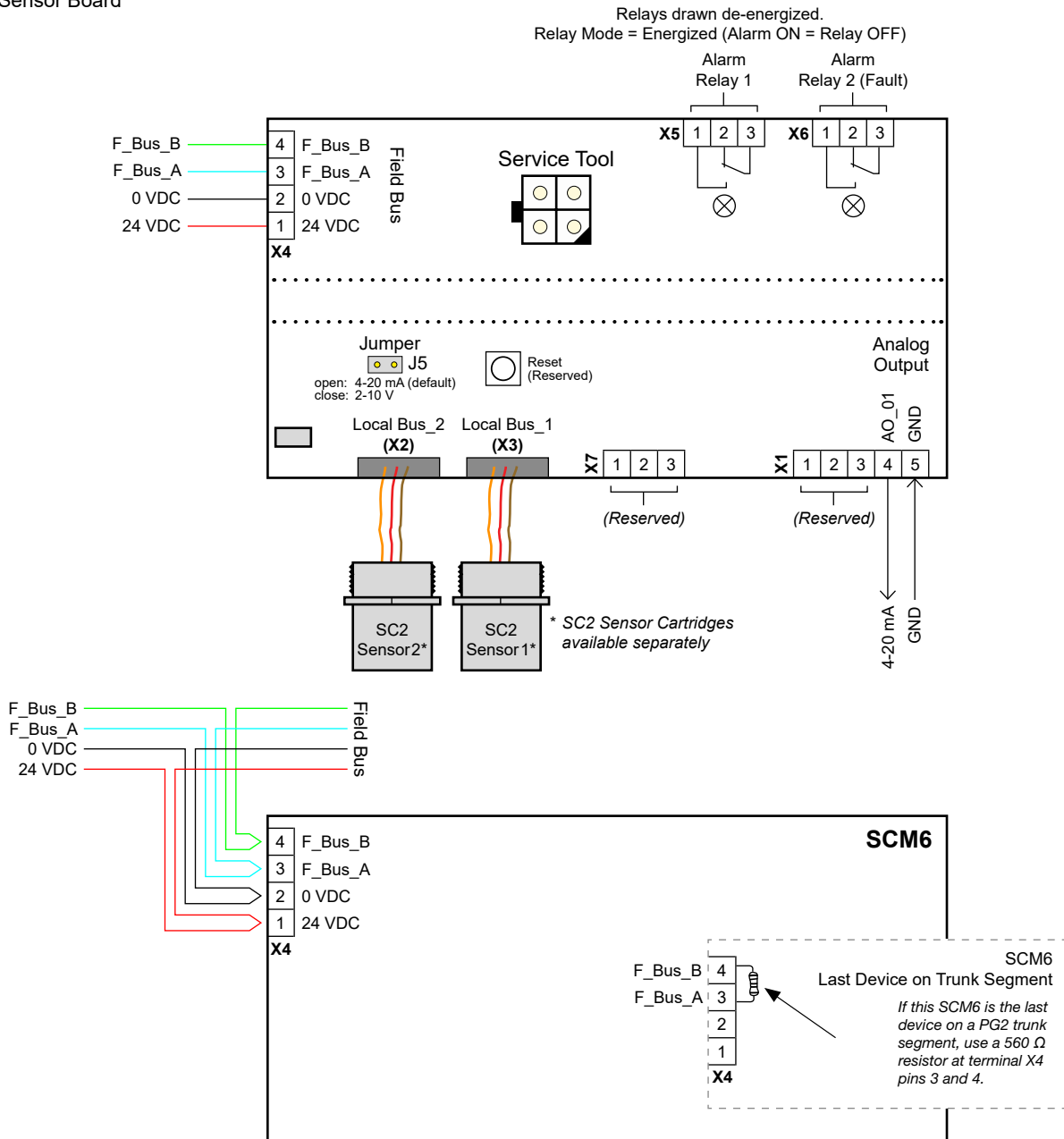
DIMENSIONS

inches (mm)



WIRING CONFIGURATION

SCM6 Sensor Board



ORDERING INFORMATION

PART NUMBER	DESCRIPTION
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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 NO2 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
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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	NO2	0-10 ppm	5-6
E1130-B	Nitrogen Dioxide	NO2	0-20 ppm	5-6
E1130-C	Nitrogen Dioxide	NO2	0-30 ppm	5-6
E1130-D	Nitrogen Dioxide	NO2	0-500 ppm	5-6
E1129-C	Nitric Oxide	NO	0-100 ppm	5-6
E1129-D	Nitric Oxide	NO	0-1000 ppm	5-6
E1125-C	Ammonia	NH3	0-300 ppm	Ceiling
E1125-D	Ammonia	NH3	0-1000 ppm	Ceiling
E1193-C	Chlorine	Cl2	0-10 ppm	Floor
E1183-C	Hydrogen Cyanide	HCN	0-100 ppm	Ceiling
E1189-C	Ethylene	C2H4	0-200 ppm	5-6
E1185-B	Formaldehyde	CH2O	0-10 ppm	Floor
E1190-A	Ozone	O3	0-5 ppm	Floor
E1196-B	Sulfur Dioxide	SO2	0-20 ppm	Floor
E1197-A	Hydrogen Sulfide	H2S	0-50 ppm	Floor
E1195-A	Oxygen	O2	0-25 Vol%	5-6
#	INFRARED SENSORS			Mounting Height (ft)
I1164-B	Carbon Dioxide	CO2	0-5 Vol%	5-6
I1164-C	Carbon Dioxide	CO2	0-2 Vol%	5-6
#	COMBUSTIBLE GASES			Mounting Height (ft)
P3485-A	Acetone	C3H6O	0-100% LEL	Floor
P3408-A	Ammonia	NH3	0-100% LEL	Ceiling
P3496-A	Gasoline Vapors	-	0-100% LEL	-
P3460-A	Butane	C4H10	0-100% LEL	Floor
P3472-A	Cyclopentane	C5H10	0-100% LEL	Floor
P3427-A	Ethyl Acetate	C4H8O2	0-100% LEL	Floor
P3425-A	Ethyl Alcohol	C2H5OH	0-100% LEL	Floor
P3410-A	Ethylene	C2H4	0-100% LEL	Ceiling
P3491-A	Heptane	C7H16	0-100% LEL	Floor
P3435-A	Hexane	C6H14	0-100% LEL	Floor
P3476-A	Isopentane	C5H12	0-100% LEL	Floor
P3482-A	Isopropyl Alcohol	C3H8O	0-100% LEL	Floor
P3498-A	JP8	-	0-100% LEL	-
P3402-A	LPG	-	0-100% LEL	-
P3400-A	Methane	CH4	0-100% LEL	Ceiling
P3450-A	Methanol	CH3OH	0-100% LEL	Floor
P3458-A	Methyl Ethyl Ketone	C4H8O	0-100% LEL	Floor
P3475-A	Pentane	C5H12	0-100% LEL	Floor
P3480-A	Propane	C3H8	0-100% LEL	Floor
P3484-A	Propyl Alcohol	C3H8O	0-100% LEL	Floor
P3490-A	Toluene	C7H8	0-100% LEL	Floor
P3440-A	Hydrogen	H2	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