

## 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
- 24V AC/DC 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 VAC/VDC $\pm$ 20%, polarity protected
Power consumption	250 mA (5 VA), max.
- toxic gases & oxygen	1 mA (0.1 VA), max. per sensor
- infrared (CO <sub>2</sub> )	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 $\Omega$ 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
<b>Sensor Performance</b>	<i>See SC2 datasheet for specific gases</i>
Sensor coverage	<i>See SC2 datasheet for specific gases</i>
<b>Environmental</b>	
Permissible ambient	<i>See SC2 datasheet for specific gases</i>
<b>Serial interface</b>	
- local bus	plug connector / 19200 Baud
- field bus	RS-485 / 19200 Baud
- tool bus	2-wire / 19200 Baud
<b>Physical</b>	
Enclosure "A", standard	
- material	Polycarbonate, UL 94-HB, fire retardant UL 50
- 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

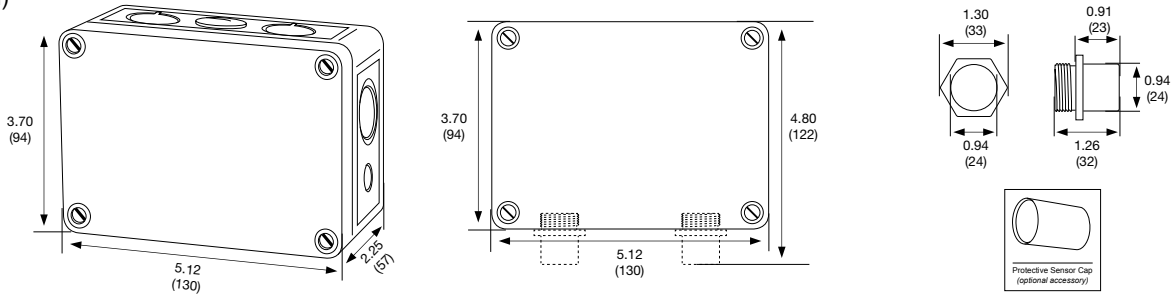
- field bus	Screw-type removable terminal; 24 AWG (0.25 mm <sup>2</sup> ), min. 14 AWG (2.5 mm <sup>2</sup> ), max.
- local bus (SC2)	3-pin removable connector
Weight	0.7 lb (0.3 kg)
<b>Conforms to</b>	EMC Directive 2014/30/EU LVD 2014/35/EU CE EN 50271 EN 61010-1:2010
<b>Certified to</b>	ANSI/UL 61010-1 CAN/CSA-C22.2 No. 61010-1
<b>Warranty</b>	One year material and workmanship

## ACCESSORIES

<b>Protective Sensor Cap</b>	<b>XC-CAP</b>
- protection	NEMA 4X (IP65)
- color	Red
<b>Duct Mounting Kit</b>	<b>PG2-DUCTKIT</b>
- 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)

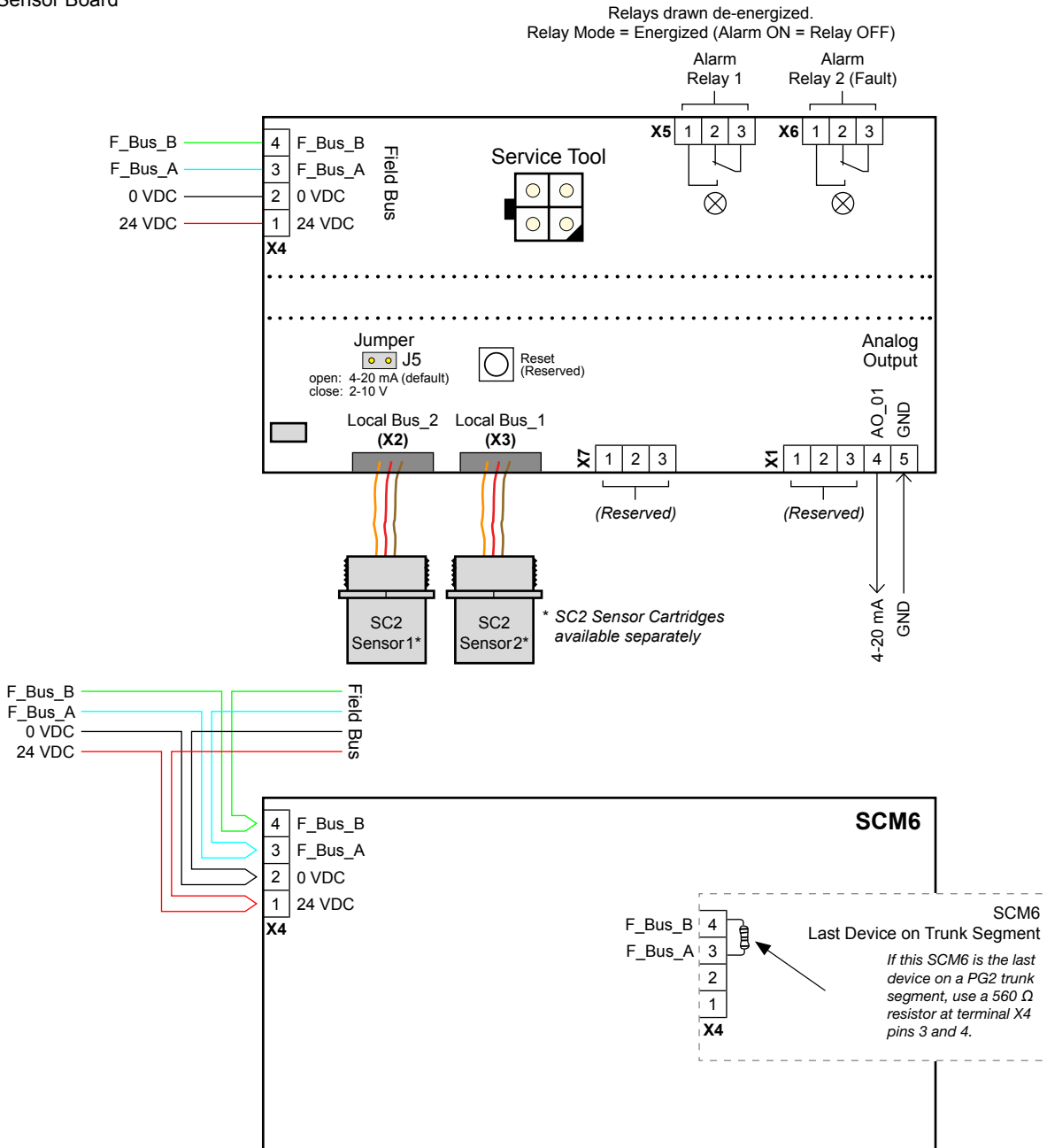
**DIMENSIONS**

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 NO <sub>2</sub> 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	NO <sub>2</sub>	0-10 ppm	5-6
E1130-B	Nitrogen Dioxide	NO <sub>2</sub>	0-20 ppm	5-6
E1130-C	Nitrogen Dioxide	NO <sub>2</sub>	0-30 ppm	5-6
E1130-D	Nitrogen Dioxide	NO <sub>2</sub>	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	NH <sub>3</sub>	0-300 ppm	Ceiling
E1125-D	Ammonia	NH <sub>3</sub>	0-1000 ppm	Ceiling
E1193-C	Chlorine	Cl <sub>2</sub>	0-10 ppm	Floor
E1183-C	Hydrogen Cyanide	HCN	0-100 ppm	Ceiling
E1189-C	Ethylene	C <sub>2</sub> H <sub>4</sub>	0-200 ppm	5-6
E1185-B	Formaldehyde	CH <sub>2</sub> O	0-10 ppm	Floor
E1190-A	Ozone	O <sub>3</sub>	0-5 ppm	Floor
E1196-B	Sulfur Dioxide	SO <sub>2</sub>	0-20 ppm	Floor
E1197-A	Hydrogen Sulfide	H <sub>2</sub> S	0-50 ppm	Floor
E1195-A	Oxygen	O <sub>2</sub>	0-25 Vol%	5-6
#	INFRARED SENSORS			Mounting Height (ft)
I1164-A	Carbon Dioxide	CO <sub>2</sub>	0-2000 ppm	5-6
I1164-B	Carbon Dioxide	CO <sub>2</sub>	0-5 Vol%	5-6
I1164-C	Carbon Dioxide	CO <sub>2</sub>	0-2 Vol%	5-6
#	COMBUSTIBLE GASES			Mounting Height (ft)
P3485-A	Acetone	C <sub>3</sub> H <sub>6</sub> O	0-100% LEL	Floor
P3408-A	Ammonia	NH <sub>3</sub>	0-100% LEL	Ceiling
P3496-A	Gasoline Vapors	-	0-100% LEL	-
P3460-A	Butane	C <sub>4</sub> H <sub>10</sub>	0-100% LEL	Floor
P3472-A	Cyclopentane	C <sub>5</sub> H <sub>10</sub>	0-100% LEL	Floor
P3427-A	Ethyl Acetate	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	0-100% LEL	Floor
P3425-A	Ethyl Alcohol	C <sub>2</sub> H <sub>5</sub> OH	0-100% LEL	Floor
P3410-A	Ethylene	C <sub>2</sub> H <sub>4</sub>	0-100% LEL	Ceiling
P3491-A	Heptane	C <sub>7</sub> H <sub>16</sub>	0-100% LEL	Floor
P3435-A	Hexane	C <sub>6</sub> H <sub>14</sub>	0-100% LEL	Floor
P3476-A	Isopentane	C <sub>5</sub> H <sub>12</sub>	0-100% LEL	Floor
P3482-A	Isopropyl Alcohol	C <sub>3</sub> H <sub>8</sub> O	0-100% LEL	Floor
P3498-A	JP8	-	0-100% LEL	-
P3402-A	LPG	-	0-100% LEL	-
P3400-A	Methane	CH <sub>4</sub>	0-100% LEL	Ceiling
P3450-A	Methanol	CH <sub>3</sub> OH	0-100% LEL	Floor
P3458-A	Methyl Ethyl Ketone	C <sub>4</sub> H <sub>8</sub> O	0-100% LEL	Floor
P3475-A	Pentane	C <sub>5</sub> H <sub>12</sub>	0-100% LEL	Floor
P3480-A	Propane	C <sub>3</sub> H <sub>8</sub>	0-100% LEL	Floor
P3484-A	Propyl Alcohol	C <sub>3</sub> H <sub>8</sub> O	0-100% LEL	Floor
P3490-A	Toluene	C <sub>7</sub> H <sub>8</sub>	0-100% LEL	Floor
P3440-A	Hydrogen	H <sub>2</sub>	0-100% LEL	Ceiling
#	ACCESSORIES			
XC-CAP	(1) Replacement protective sensor cap			
PG2-DUCTKIT	(1) Duct mounting kit for SC2 / AT6 sensor			