

DESCRIPTION

Digital RS-485 communicating, addressable toxic and combustible gas sensor for direct connection to the DGC6-Series Digital Gas Controller.

Compliant with Safety Integrity Level 2 (SIL 2) and rigorous international standard EN 50545-1 for parking garages and tunnels, DT6-Series sensors utilize advanced self-diagnostics and flexible ventilation control functions to ensure maximum human safety without compromising energy efficiency.

Each DT6 may be configured with one or two integrated SC2 sensor modules with X-Change sensor technology. An additional DR6 remote sensor module may “piggyback” onto the DT6 providing the capability to monitor up to three gases at one location.

Advanced, microprocessor-based X-Change sensor modules meet or exceed the EN 50545-1 and EN 378 self-diagnostic standards, including notifying the controller when calibration is due. MPS sensors are also available, offering a 15-year, maintenance-free lifespan.

APPLICATION

DT6 transmitters, in combination with DGC6 Digital Gas Controllers, provide scalable solutions for monitoring and controlling toxic and/or combustible gas and refrigerant levels. The DT6 allows monitoring of up to two separate gases or refrigerants. The transmitters are economical electrochemical sensors.

FEATURES

- *Sensor node for 1, 2, or 3 gas sensor modules (3rd sensor with DR6 remote module)*
- *X-Change toxic and combustible gas sensor modules for reliable operation and easy maintenance*
- *RS-485 serial communications to DGC6-Series Digital Gas Controllers*
- *Digital measurement processing with temperature compensation*
- *Internal diagnostics including integrated hardware watchdog*
- *High-impact NEMA 4X (IP65) enclosure*
- *Hardware & software conforms to SIL 2 standard*

PolyGard®2 DT6



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

SPECIFICATIONS

Electrical

Power supply	16-29 VDC, polarity protected
Power consumption	24 VDC
- base	6 mA
- sensors	See SC2 datasheet
- horn & status LED	5 mA, max.
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

- 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 UL 50
- conforms to	Light gray
- color	NEMA 4X (IP65)
- protection	Wall (surface) mounted, or single gang electrical box; mounted vertically for single gas sensor and horizontally for dual gas sensor
- installation	

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
-------------------	---------------------------

Cable lengths local bus for Remote Sensor Board	16.4 ft (5 m), max.
--	---------------------

Weight	0.7 lb (0.3 kg)
--------	-----------------

Certified to

UL 2075 Listed,
NRTL performance tested
for models DT6-E1110-E-02,
DT6-E1110-E-E1130-B-02,
DT6-E1110-E-E1130-B-32

Conforms to

EMC Directive 2014/30/EU
CE
EN 50271, EN 61010-1:2010
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1
City of Los Angeles
Two years material and
workmanship,
12 months normal exposure for
sensor element

Warranty

OPTIONS & ACCESSORIES

Horn & Status LED

Configurable to local thresholds set at this unit	
- acoustic pressure	> 85 dB (A) (dist. 0.1 m / 0.3 ft)
- frequency	2300 Hz
- protection class	NEMA 4X (IP65)

Status LED

- color / mode	Red = Alarm
- protection class	NEMA 4X (IP65)

Duct Mounting Kit

- flow rate	PG2-DUCTKIT 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

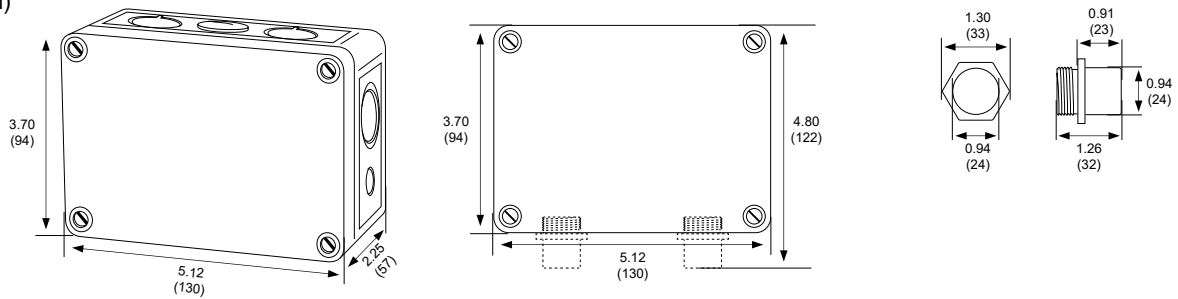
- carbon monoxide & nitrogen dioxide	
---	--

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

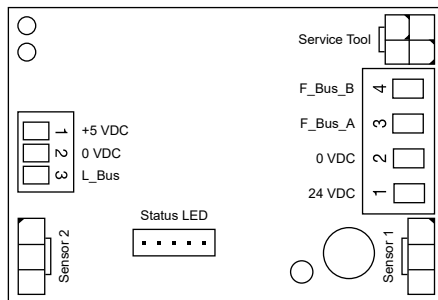
inches (mm)



Mounting Recommendation		Vertical for single gas sensor
		Horizontal for dual gas sensor
		Horizontal for dual gas sensor with <i>optional</i> Horn & Status LED

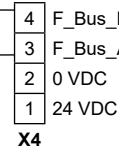
WIRING CONFIGURATION

DT6 Sensor Board

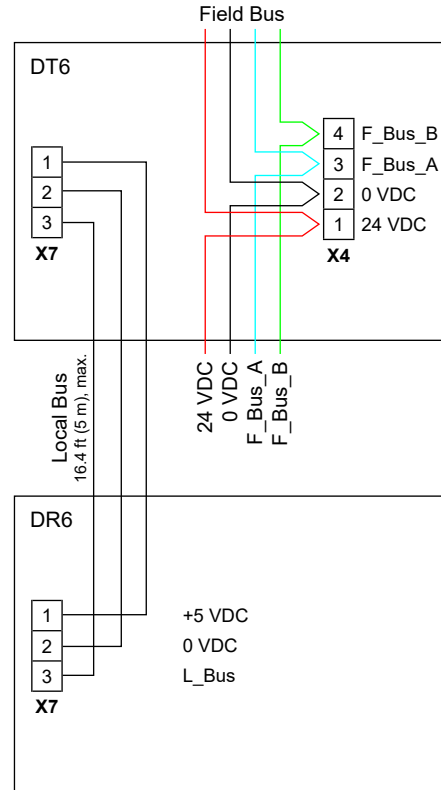


DT6 Last Device on Trunk Segment

If this DT6 is the last device on a PG2 trunk segment, use a 560 Ω resistor at terminal X4 pins 3 and 4.



DT6 with piggybacked DR6 remote transmitter



ORDERING INFORMATION

PART NUMBER	DESCRIPTION
BUNDLED SENSORS AND CONTROLS	
DT6-E1110-E-02	DT6, DGC6 Protocol, (1) 0-250 ppm CO sensor
DT6-E1110-E-E1130-B-02	DT6, DGC6 Protocol, (1) 0-250 ppm CO sensor, (1) 0-20 ppm NO ₂ sensor
DT6-E1110-E-E1130-B-32	DT6, DGC6 Protocol, (1) 0-250 ppm CO sensor, (1) 0-20 ppm NO ₂ sensor, Horn & status LED
SENSOR PLATFORM	
DT6-02	DT6, DGC6 Protocol, up to (3) sensor inputs capable; includes "A" enclosure; sensor cartridges ordered separately
□□□-3□	<u>OPTION:</u> Horn & status LED

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

The DT6 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.

A 3-sensor configuration is possible with a remote DR6. The DR6's chosen sensor module cannot be an identical part number to ones that already exists on the connected DT6 transmitter.

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-A	Ammonia	NH ₃	0-100 ppm	Ceiling
E1125-B	Ammonia	NH ₃	0-300 ppm	Ceiling
E1125-C	Ammonia	NH ₃	0-500 ppm	Ceiling
E1125-D	Ammonia	NH ₃	0-1000 ppm	Ceiling
E1193-C	Chlorine	Cl ₂	0-10 ppm	Floor
E1189-C	Ethylene	C ₂ H ₄	0-200 ppm	5-6
E1185-B	Formaldehyde	CH ₂ O	0-10 ppm	Floor
E1183-C	Hydrogen Cyanide	HCN	0-100 ppm	Ceiling
E1197-A	Hydrogen Sulfide	H ₂ S	0-50 ppm	Floor
E1195-A	Oxygen	O ₂	0-25 Vol%	5-6
E1190-A	Ozone	O ₃	0-5 ppm	Floor
E1196-B	Sulfur Dioxide	SO ₂	0-20 ppm	Floor
#	INFRARED SENSORS <i>(Incompatible with DR6 module)</i>			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
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
P3496-A	Gasoline Vapors	-	0-100% LEL	-
P3491-A	Heptane	C ₇ H ₁₆	0-100% LEL	Floor
P3435-A	Hexane	C ₆ H ₁₄	0-100% LEL	Floor
P3440-A	Hydrogen	H ₂	0-100% LEL	Ceiling
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

Continues on next page...

Continued from previous page...

Gas Sensor & Range			
#	REFRIGERANTS		Mounting Height (ft)
S2064-01-A	R123	- 0-2000 ppm	Floor
S2063-08-A	R1233zd	- 0-2000 ppm	Floor
S2063-01-A	R1234yf	- 0-2000 ppm	Floor
S2063-07-A2	R1234ze	- 0-2000 ppm	Floor
S2080-01-A	R125	- 0-2000 ppm	Floor
S2077-01-A	R134a	- 0-2000 ppm	Floor
S2080-10-A	R143a	- 0-2000 ppm	Floor
S2070-01-A	R22	- 0-2000 ppm	Floor
S2061-01-A	R23	- 0-2000 ppm	Floor
S2080-02-A	R32	- 0-2000 ppm	Floor
S2070-02-A	R401a	- 0-2000 ppm	Floor
S2070-03-A	R401b	- 0-2000 ppm	Floor
S2070-04-A	R402a	- 0-2000 ppm	Floor
S2070-05-A	R402b	- 0-2000 ppm	Floor
S2070-06-A	R403a	- 0-2000 ppm	Floor
S2080-03-A	R404a	- 0-2000 ppm	Floor
S2077-02-A	R407a	- 0-2000 ppm	Floor
S2080-04-A	R407c	- 0-2000 ppm	Floor
S2077-11-A	R407f	- 0-2000 ppm	Floor
S2070-07-A	R408a	- 0-2000 ppm	Floor
S2070-08-A	R409a	- 0-2000 ppm	Floor
S2080-05-A	R410a	- 0-2000 ppm	Floor
S2070-09-A	R411a	- 0-2000 ppm	Floor
S2077-03-A	R416a	- 0-2000 ppm	Floor
S2077-04-A	R417a	- 0-2000 ppm	Floor
S2077-05-A	R422a	- 0-2000 ppm	Floor
S2077-06-A	R422d	- 0-2000 ppm	Floor
S2077-07-A	R427a	- 0-2000 ppm	Floor
S2080-06-A	R434a	- 0-2000 ppm	Floor
S2077-08-A	R437a	- 0-2000 ppm	Floor
S2077-09-A	R438a	- 0-2000 ppm	Floor
S2080-08-A	R448a	- 0-2000 ppm	Floor
S2077-10-A	R449a	- 0-2000 ppm	Floor
S2077-12-A	R450a	- 0-2000 ppm	Floor
S2063-02-A	R452a	- 0-2000 ppm	Floor
S2080-09-A	R452b	- 0-2000 ppm	Floor
S2063-06-A	R454b	- 0-2000 ppm	Floor
S2063-04-A	R454c	- 0-2000 ppm	Floor
S2063-05-A	R455a	- 0-2000 ppm	Floor
S2080-07-A	R507a	- 0-2000 ppm	Floor
S2061-02-A	R508b	- 0-2000 ppm	Floor
S2063-03-A	R513a	- 0-2000 ppm	Floor
S2020-04-A	R1234yf	- 0-50 % LEL (LFL)	Floor
S2020-05-A2	R1234ze	- 0-50 % LEL (LFL)	Floor
S2020-01-A	R32	- 0-50 % LEL (LFL)	Floor
S2020-03-A	R454b	- 0-50 % LEL (LFL)	Floor
S2020-02-A	R455a	- 0-50 % LEL (LFL)	Floor

ACCESSORIES	
PG2-DUCTKIT	(1) Duct mounting kit for SC2 / AT6 sensor
CALKIT-PG2-CO	Carbon monoxide calibration kit for SC2 / AT6 sensors
CALKIT-PG2-COMB	Combustible calibration kit for SC2 / AT6 sensors
CALKIT-PG2-NO2	Nitrogen dioxide calibration kit for SC2 / AT6 sensors
CALKIT-PG2-CO-NO2	CO & NO2 calibration kit for SC2 / AT6 sensors

MPST™ Sensors

For PolyGuard®2 and PolyXeta®2

- 15+ years service life
- Low power consumption
- High accuracy, linearity, repeatability and stability
- Integrated environmental compensation (pressure, humidity and temperature)
- Integrated self-testing and fault management
- Highly resistant to poisoning

Available Gases:

R-32 | R-1234ze | Methane | Propane | Acetylene

Ask your account executive to learn more!