

DESCRIPTION

The CGC6 Compact Gas Controller provides human interface and ventilation control functions for gas monitoring systems with up to 10 self-addressing sensors on a 4-wire, RS-485 serial communication bus. Each DT6A field device monitors one toxic or combustible target gas. Gas types may be mixed on one CG6 Controller. DT6A-series sensors are uniquely designed for field addressing via on-board push-button.

This easy to commission system provides SIL 2 compliant reliability through continuous self-diagnostics of hardware, software, and communications.

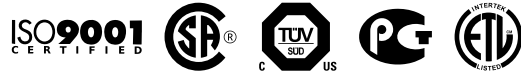
APPLICATION

CGC6 is a low-cost solution for monitoring up to ten toxic and/or combustible gas sensors of the same or mixed gas types in a single ventilation zone.

FEATURES

- Monitors up to ten DT6A-Series, single-gas sensors
- Mix and match gas types
- 2-Line LCD display for setup and real-time gas value readings
- (2) Alarm relays - 250 VAC, 5 A (SPDT)
- (1) Fault relay - 250 VAC, 5 A (SPDT)
- (2) Digital input
- (1) Analog output
- Warning horn and tri-color LED for alarm, fault and service notification
- 4-Wire, RS-485 field bus connection; 2,900 feet (max.)
- 24 VDC input power; 15 VA output
- 5" x 5" x 3" wall mount enclosure, NEMA 4X
- ANSI/UL 61010-1; CAN/CSA-C22.2 No. 61010-1
- 2-year limited warranty

PolyGard®2 CGC6



- EMC Directives 2014/30/EU
- LVD 2014/35/EU
- CE
- EN 61010-1:2010
- EN 50271
- IEC/EN 61508-1-3
- EN 60079-29-1
- EN 50104
- EN 50545-1
- ANSI/UL 61010-1
- CAN/CSA-C22.2 No. 61010-1

SPECIFICATIONS (CGC6 CONTROLLER)

Electrical

Power supply	24 VDC \pm 20%, reverse polarity protected
Power consumption	
- base w/o sensor	60 mA (1.5 VA)
- sensor (DT6A-Series)	See <i>DT6A specifications</i>
- horn/warning light (WAO)	Max. 40 mA (1.0 VA)
Overvoltage	category I
Alarm relay (2)	250 VAC, 5 A, potential-free, change-over contact (SPDT)
Fault relay (1)	250 VAC, 5 A, potential-free, change-over contact (SPDT)
Transistor output (2)	24 VDC / 0.1 A (switching to plus)
Digital input (2)	24 VDC, 10 mA (potential-free contact against GND)
Analog output (1)	Proportional, overload and short-circuit proof, load \leq 500 Ω 4-20 mA = range 2.4-4 mA = underrange > 20-21.2 mA = overrange < 2.0 mA = fault
Outgoing line for field bus	24 VDC for max. 10 DT6A Units., overload and short-circuit proof, reverse-polarity protected
Field bus for DT6A Unit	RS-485 / 19200 Baud (max. cable length 2,900 ft)

Environmental

Temperature range	-4°F to +140°F (-20°C to +60°C)
Humidity range	15-95% RH non-condensing
Pollution degree	2 (indoor installation only), not suitable for wet environments
Temperature - storage	-4°F to 149°F (-20°C to +65°C)

Physical

Housing type C	Polycarbonate
Burning behavior	UL 94 V2
Housing color	RAL 7032 (light gray)
Dimensions housing (W x H x D)	
- Type C	130 x 130 x 75 mm (5.11 x 5.11 x 2.95 in.)
Weight	Max. 1.32 lb (0.6 kg)
Protection class	IP65
Installation	Wall mounting
Cable entry	Standard 6x M20/25
Connection type	
- Field bus (DT6A Unit)	Pluggable screw-type terminals, 0.25-1.3 mm ²
- DI/AO	Pluggable screw-type terminals, 0.25-1.3 mm ²
- Power supply, relays	Pluggable screw-type terminals, 0.25-2.5 mm ²
Display	
- LCD	2 lines, 16 characters each, background highlighted in 2 colors
Operation	Menu driven via 6 pushbuttons

Visual / Audible Indicator (WAO)

Color / mode	Red = Alarm; Yellow = Fault; Green = Power (Normal); Green (flashing) = Service
Acoustic pressure	> 85 dB (A) (distance 0.1 m)
Frequency	2300 Hz \pm 300 Hz
Conforms to	EMC Directives 2014/30/EU, LVD 2014/35/EU, CE, EN 61010-1:2010, EN 50271, IEC/EN 61508-1-3, EN 60079-29-1, EN 50104, EN 50545-1 Certified to 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

Installation Cable

W202P-2288INTEC

Cable, 20 AWG, 2 pairs, stranded, red/black, blue/green (shielded), Plenum rated; 1000 foot box

Calibration Kits

- carbon monoxide	
- combustible gases	
- nitrogen dioxide	
- carbon monoxide & nitrogen dioxide	

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

CALKIT-PG2-COMB

Sensor calibration adapter w/ tube and cup, 150 mL/min. regulator, 17L 2.5% methane, 17L 99.99% nitrogen, carrying case

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

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

SPECIFICATIONS (DT6A SENSOR)

Electrical

Power supply	24 VDC \pm 20%, reverse-polarity protected
Power consumption	
- base unit	10 mA max.
- w/ CO sensor	12 mA max.
- w/ NO ₂ sensor	12 mA max.
- w/ CH ₄ sensor	60 mA max.
Overvoltage Category I	
Output for local bus	5 VDC, 250 mA max. Overload, short-circuit and reverse-polarity protected

Sensors

- performance	See SC2 datasheet for specific gases
- coverage	See SC2 datasheet for specific gases
- storage time	6 months (for sensor elements)

Serial Interface

Local bus	1-wire / 19200 baud
Field bus	RS-485 / 19200 baud; max. cable length 2,900 ft
Tool bus	2-wire / 19200 baud

Ambient Conditions

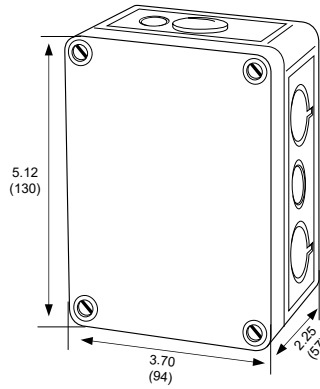
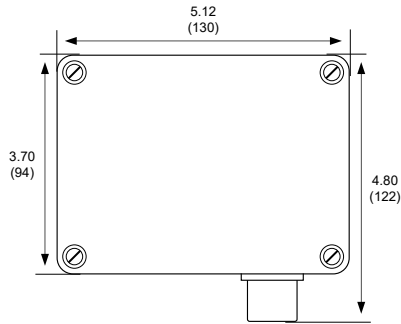
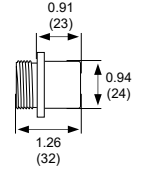
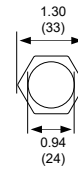
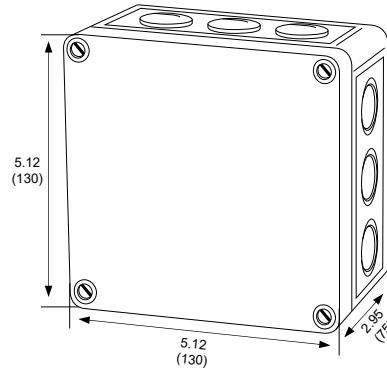
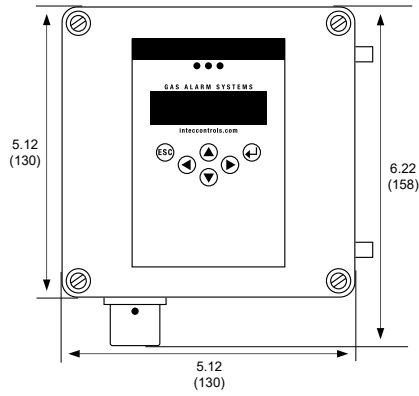
Temperature range	-31°F to 140°F (-35°C to +60°C) Pay attention to the temperature range of the SC2 used
Humidity range	15-90% RH non-condensing
Pollution degree	2 (installation only indoors), not suitable for wet environment
Permissible height	5000 ft (1500 m) above sea level
Storage temperature	-4°F to 149°F (-20°C to +65°C) Pay attention to the temperature range of the SC2 used

Physical

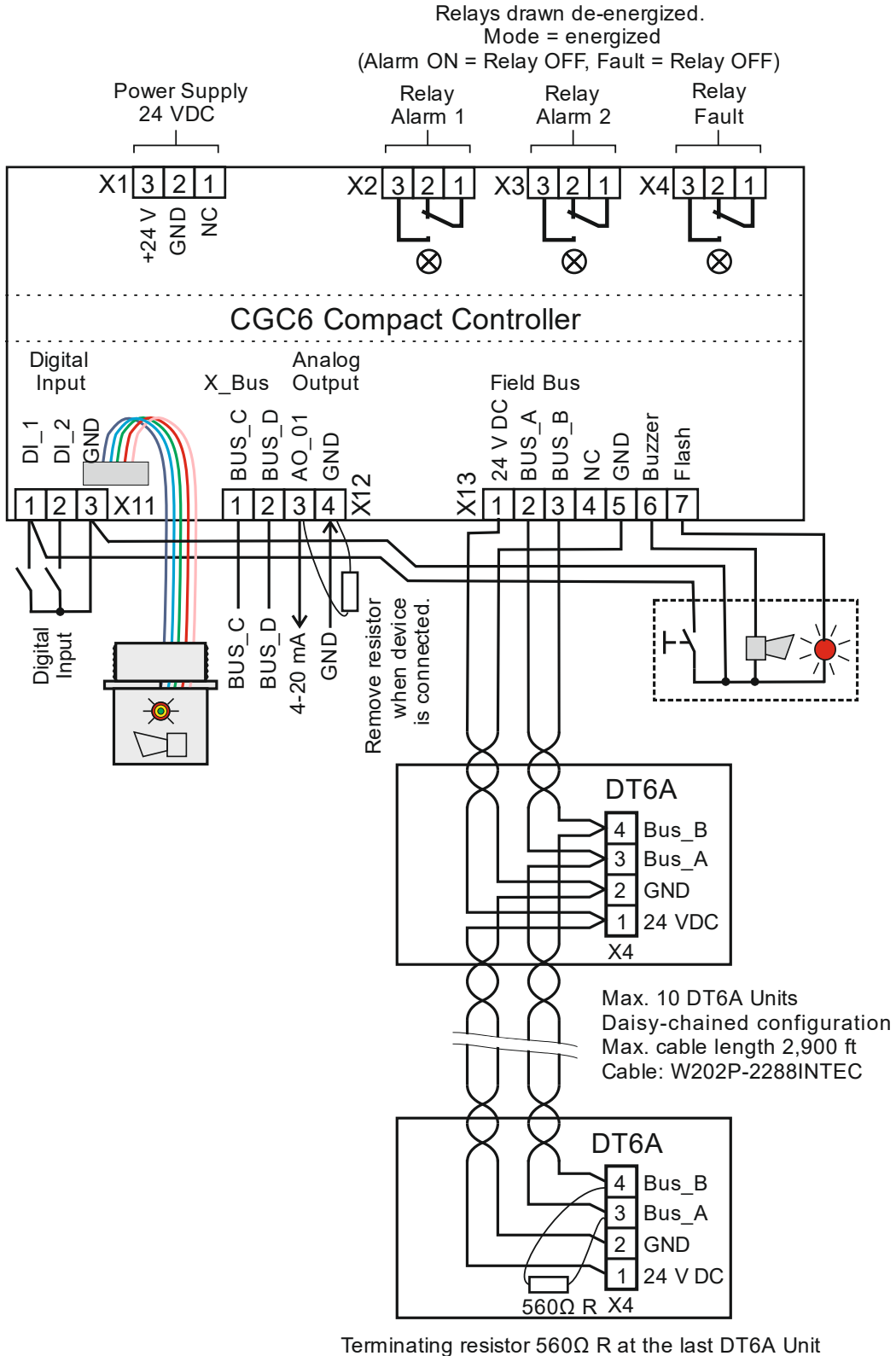
Housing type A	Polycarbonate
Burning behavior	UL 94 V2
Housing color	RAL 7032 (light gray)
Dimensions (W x H x D)	3.7 x 5.1 x 2.2 in. (94 x 130 x 57 mm)
Weight	0.7 lb (0.3 kg)
Protection class	IP65
Installation	Wall mounting
Wire connection	
- Field bus	Pluggable screw-type terminal 0.25-2.5 mm ² (24 to 10 AWG)
- Local bus for SC2	3-pin connector
Knockout for integration of sensor	3x M25 for M25 housing

DIMENSIONS

CGC6 Controller (Top), DT6A Sensor (Bottom)
inches (mm)



ELECTRICAL CONNECTIONS



ORDERING INFORMATION

PART NUMBER	DESCRIPTION
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PLATFORM

CGC6-C-1100US	Compact gas controller, PolyGard®2, up to 10 DT6A sensors, (3) relays, (1) AO, (2) DI, LCD and keypad, with horn/light, 24 VDC, UL, sensor cartridges ordered separately
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SENSORS

DT6A-02	Sensor platform for CGC6 system; see SC2 datasheet for compatible sensor
DT6A-E1110-E	Digital sensor for CGC6 only, 0-250 ppm CO, auto-addressing, NEMA 4X
DT6A-E1130-B	Digital sensor for CGC6 only, 0-20 ppm NO ₂ , auto-addressing, NEMA 4X
DT6A-P3400-A	Digital sensor for CGC6 only, 0-100% LEL CH ₄ , auto-addressing, NEMA 4X

ACCESSORIES

PS5R-L8-ASE6X6	60 W / 24 VDC power supply, 6" x 6" enclosure
PS5R-L8-ASE8X8	90 W / 24 VDC power supply, 8" x 8" enclosure
W202P-2288INTEC	Cable, 20 AWG, 2 pairs, stranded, red/black, blue/green (shielded), Plenum rated; 1000 foot box
CALKIT-PG2-CO	Carbon monoxide calibration kit for SC2 / AT6 / DT6A sensors
CALKIT-PG2-COMB	Combustible calibration kit for SC2 / AT6 / DT6A sensors
CALKIT-PG2-NO2	Nitrogen dioxide calibration kit for SC2 / AT6 / DT6A sensors
CALKIT-PG2-CO-NO2	CO & NO ₂ calibration kit for SC2 / AT6 / DT6A sensors

SC2 Sensor Cartridges for DT6A-02 (Available separately; see SC2 datasheet)				
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