



TG5000 Gas Monitoring System

Compact, Integrated Solution for Advanced Gas Detection & Workplace Safety



SAFEGUARDING PEOPLE, PLACES & THE PLANET.

TG5000 Gas Monitoring System



Integrated Solution

The TG5000 Gas Monitoring System is a general-purpose, self-contained solution for detecting combustible and toxic gases, as well as oxygen deficiency or enrichment. It requires minimal effort to install, making it ideal for users seeking quick and reliable deployment. With both integrated and remote sensor options, the TG5000 offers flexible placement. Its dual-sensing design provides twice the detection power in the same footprint as a single-sensor device, enhancing safety through efficient coverage.



Functionality

The TG5000 features a bright OLED display visible from up to 50 ft. (15 m), offering crisp readouts in multiple languages. A surrounding gauge visualizes gas levels as a percentage of full scale and also functions as a countdown progress bar. Tool-free operation is enabled via EZ touch buttons that work through the enclosure label, allowing easy access to settings, alarms, and maintenance. The unit includes three relay outputs (two alarm, one fault) for triggering external systems, and offers a 4–20 mA output for integration with PLCs, DCS, or other control systems.



Advanced Features

The TG5000 comes standard with Bluetooth® communication. Using the X/S Connect app on a compatible smartphone or tablet, users can access the device through a larger, more user-friendly interface. Bluetooth connectivity enables status checks, alerts, and full interaction, including setting adjustments, alarm configuration, and calibration, from up to 75 ft. (23 m) away, significantly reducing setup time.

For remote monitoring and notifications, FGFD FieldServer IoT gateways provide connectivity even when off-site or managing unmanned facilities.



Warning & Alarm

An integrated 95 dB audible alarm and an optional high-visibility strobe provide clear, fast alerts to prompt rapid and safe evacuation during emergencies. The TG5000 also features green, yellow, and red LEDs on the side of the display and at the lower center of its face, indicating normal operation, fault conditions, and alarm states, respectively.



Power Supply

The unit can be equipped with an internal 100–256 VAC power supply for easy installation. Additionally, accessory power cables with common country-specific plugs can be ordered to suit site location. For facilities with an existing 24 VDC power source, a variant without the internal power supply is also available.

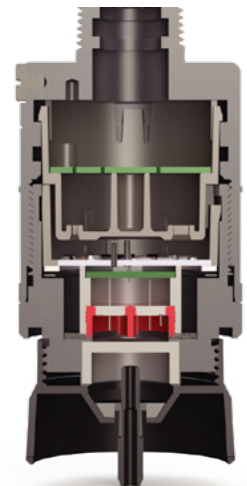


Applications

- Laboratories
- Pharmaceuticals
- Battery Rooms
- Research Facilities
- Boiler Rooms
- Wastewater Plants

XCell® Gas Sensor Technology

- **Advanced Designs:** Optimized for toxic gases, combustible gases, and oxygen, these sensors offer enhanced accuracy and longevity, along with fast response times.
- **Application-Specific Integrated Circuit (ASIC) Technology:** Enhances signal processing and reduces susceptibility to environmental factors.
- **Proprietary Filters and Materials:** Extends sensor life by improving resistance to environmental poisons and helping to achieve consistent performance across a wide range of operating conditions.
- **SafeSwap®:** Enables safe and quick sensor replacement without shutting down the instrument or using additional tools.



Longer Sensor Life



Longer Warranties



Higher Temperature



■ MSA ■ Industry Average

** Data may vary for different gases and configurations*



TruCal® Gas Sensor Technology

Patented **XCell H₂S and CO Sensors with TruCal technology** extend calibration intervals for up to two years, enabling worry-free operation with automatic self-checks performed four times per day.

- **Adaptive Environmental Compensation (AEC):** Actively monitors sensor integrity and compensates for environmental factors and sensor drift.
- **Diffusion Supervision (DS):** Sends an acoustic signal to verify that the sensor inlet is unobstructed, helping ensure that gas can reach the sensor.

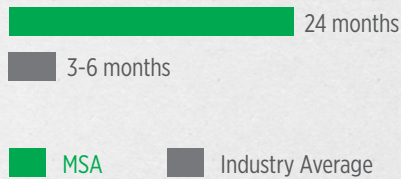
Adaptive Environmental Compensation (AEC)

Longer Sensor Life

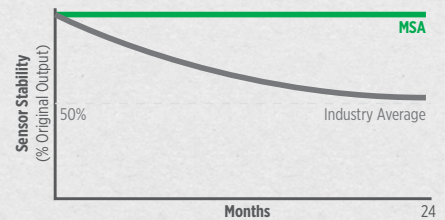


Automatically self-checks 4x/day

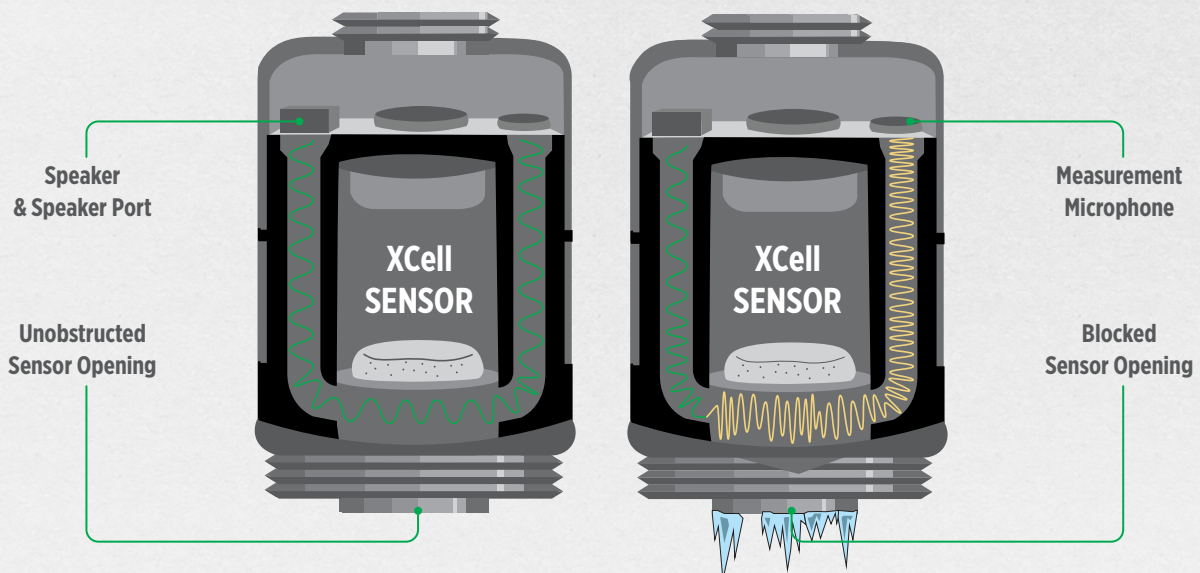
Longer Calibration Cycles



Better Stability (Lower Drift)



Diffusion Supervision (DS)



Specifications

TG5000 Specifications									
GAS TYPE	Toxics, Oxygen & Combustibles								
GAS SAMPLING	Diffusion								
OUTPUT TYPE	Dual 4-20 mA current source, HART, Modbus RTU (not to be used for safety-related functions)								
SENSOR LOCATION	One or both sensors can be remotely installed at distances of up to 100 m (328 ft)								
POWER INPUT	Internal 100 – 256 VAC / 24VDC 50W power supply (optional)								
RELAYS	Main: 2 DPDT relays (2 alarm) 6A @ 250 VAC or 1.5A @ 30 VDC Transmitter PCB: 3 SPDT relays (2 alarm, 1 fault) 5A @ 250 VAC or 30 VDC (not to be used for safety-related functions)								
DISPLAY	Organic LED (multiple languages) with contrast ratio 2000:1 and view angle of 160°								
INDICATION	2 large status LEDs (green, yellow, red), 3 instrument status color indicators								
SETTINGS	Settings menu, operated with touch buttons Available languages: English, French, Spanish, Portuguese, Italian, Dutch, Russian, Chinese, German								
TEMPERATURE RANGE	-20°C to +40°C (-4°F to 104°F)								
HUMIDITY RANGE	10-95% RH, Non-condensing								
HOUSING MATERIAL	General-purpose polycarbonate plastic enclosure								
IP RATING	IP 65								
AUDIBLE ALARM TYPE	Piezo horn (95 dB) with horn silence button								
VISUAL ALARM	Optional Red Strobe or Red+Amber Strobes								
WEIGHT (MAXIMUM)	5 kg / 11 lb								
DIMENSIONS H x L x W	430 x 294 x 130 mm / 16.94" x 11.58" x 5.12"								
WARRANTY	<table border="0"> <tr> <td>TG5000</td> <td>2 years</td> </tr> <tr> <td>XIR PLUS sensor</td> <td>10 years on IR source bulb, 5 years on IR sensor electronics</td> </tr> <tr> <td>XCell sensors</td> <td>3 years</td> </tr> <tr> <td>E-Chem sensors</td> <td>varies by gas</td> </tr> </table>	TG5000	2 years	XIR PLUS sensor	10 years on IR source bulb, 5 years on IR sensor electronics	XCell sensors	3 years	E-Chem sensors	varies by gas
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XCell sensors	3 years								
E-Chem sensors	varies by gas								
APPROVALS	UL/IEC/EN 61010-1, CE mark, UKCA, RoHS								

Sensor Specifications			
SENSOR TEMPERATURE RANGE			
INTEGRAL	-20°C to +40°C (-4°F to 104°F)		
REMOTE	-40°C to +60°C (-40°F to 140°F) (May differ by gas, see manual)		
SENSOR PERFORMANCE*			
SENSOR TYPE & GAS	Measuring ranges	T90 (typical)	Repeatability
XIR PLUS COMB.	0-100% LEL	< 2 sec	± 1% LEL
XIR PLUS CO ₂	0-2,5 Vol%	<6 sec	± 1%
XCELL COMB.	0-100% LEL	<22 sec	± 1% LEL
XCELL CO	0-100,500,1000 ppm	< 9 sec	< ± 2%
XCELL CL ₂	0-5,10,20 ppm	< 12 sec	± 1%
XCELL H ₂ S	0-10,20,50,100 ppm	< 23 sec	< ± 1%
E-CHEM H ₂ S	0-500 ppm	< 60 sec	< ± 10%
XCELL NH ₃	0-100 ppm	< 60 sec	< ± 1%
E-CHEM NH ₃	0-1000 ppm	<300 sec	< ± 15%
E-CHEM NO ₂	0-10 ppm	< 60 sec	< ± 10%
XCELL O ₂	0-25 Vol%	< 11 sec	< ± 1% Vol
E-CHEM O ₂ LOW	0-25 Vol%	< 30 sec	< ± 10%
XCELL SO ₂	0-25 ppm	< 6 sec	± 1%
E-CHEM SO ₂	0-100 ppm	< 30 sec	< ± 15%
E-CHEM H ₂	0-1000 ppm	< 185 sec	< ± 10%

* Typical response at standard temperature and pressure test conditions

TG5000 States & Alarm Indication

(flashing strobes are optional)



Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit <https://us.msasafety.com/Trademarks>.

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