

TG5000 Gas Monitoring System



Application

Industrial facilities face a wide range of gas detection requirements. From boiler rooms and battery storage areas to engineering labs, research facilities, and transportation maintenance bays—each environment presents unique monitoring considerations. Protecting personnel in these spaces typically involves detecting toxic gases, oxygen enrichment or deficiency, and combustible hazards. Given these varied needs, a flexible, versatile gas monitoring solution can be an important part of a facility's safety strategy.

Solution

The TG5000 Gas Monitoring System is an effective and economical solution to detecting combustible and toxic gases, as well as oxygen deficiency/enrichment. This self-contained monitor with audible and visible signaling is well-suited to help alert personnel to potential emergency conditions, supporting timely and orderly evacuation procedures. Its dual-sensing design offers the ability to monitor two gases in a compact footprint, while remote sensing capability allows flexible sensor placement to support a facility's safety approach.

**SAFEGUARDING PEOPLE,
PLACES & THE PLANET.**

TG5000 Gas Monitoring System



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" with two sensors and strobes, without mounting bracket
WARRANTY	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
APPROVALS	UL/IEC/EN 61010-1, CE mark, UKCA, RoHS

Available Options

- Internal power supply
- Red or Red+Amber Strobes
- Sunshield (for units with no strobes)
- Mounting Bracket
- Power Cord

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

Additional Features

- Operates in diffusion mode, with factory-calibrated sensors ready to perform immediately after installation
- Available for remote sensing applications, where installation requires the sensor to be separated from the electronics
- Can operate on a completely stand-alone basis with its large OLED display, quick-check bright LEDs and two 'main' (both alarm) plus three 'transmitter PCB' relay outputs (two alarm and one fault), or can be connected with a 4-20 mA or Modbus RTU output to a control system (PLC, DCS, etc.)
- SafeSwap® enables safe and quick replacement of XCell Gas Sensors without turning off the instrument or using any tools

Stay Connected. Work Smarter.

- Bluetooth® wireless technology with X/S Connect App
 - Check status and get alerts up to 23 m (75 ft.) away
 - Modify settings, setpoints and alarms
 - Initiate calibration and view progress
- Remote monitoring with FGFDF FieldServer IoT Gateways

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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