The Safety Company

MSA Bacharach® X30 and X50 Point Gas Monitors

SAFEGUARDING PEOPLE,

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The X30 and X50 are point gas monitors designed to make compliance with stringent refrigeration safety regulations, such as ASHRAE 15 and EN 378, simple and reliable for commercial and industrial applications. These fixed, single-sensor units provide continuous monitoring for a wide variety of halogenated refrigerants and CO2 and feature integrated audible and visual alarms to support safety requirements without additional hardware.

Key Features & Benefits

1. Safety and Compliance

- ***Personnel Safety & Regulatory Compliance:*** Provides the required refrigerant leak monitoring in spaces where a potential refrigerant leak could exceed the practical limit.
- ***Integrated Alerts:*** Built-in audio and visual indicators, simplifying installation by eliminating the need for separate external devices.
- ***Seamless BMS Integration and Control:*** The X30 & X50 are designed to connect with Building Management Systems (BMS) easily. Integration is supported via the Modbus RTU digital protocol. Every unit also comes standard with a 4-20 mA analog output per channel and at least one 2A relay. This connectivity allows flexible integration with your BMS. Should a leak be detected, these outputs can be used to signal and activate ventilation or automatically shut down the system.

2. Simple Install & Maintenance

- ***Bluetooth Connectivity & Mobile App:*** The X30/X50 can pair with a mobile app via Bluetooth for a full initial setup (gas type, alarms, test functions, and calibration). When connected to the X30/X50, the mobile app will also show when the next calibration is due.
- ***Quick Sensor Replacement:*** Pre-calibrated sensor modules use a simple, hand-twist mechanism for fast, hassle-free replacement.
- ***Optimized for Installation Efficiency:*** The X30 and X50 models feature an innovative, installer-focused design. A single circuit board is mounted directly to the lid and is easily removable, providing easy access for wiring in the connections. This is coupled with a deep enclosure, which provides more space for the essential cabling.

3. Application Flexibilities

- ***Broad Gas Monitoring Capability:*** The X30 and X50 now feature broadband SC sensors for halogenated refrigerants. This means that one sensor can now detect up to eight different refrigerant gases. This simplifies the range, without compromising the detection accuracy.
- ***Three Sensor Configurations (X50 only):*** The X50 provides unparalleled flexibility through three distinct sensor configurations, adaptable to any installation requirement:

Configuration	Sensor Components	Key Benefits
STANDALONE	Local Sensor Only	Standard, self-contained gas detection.
REMOTE-ONLY	X10 Remote Sensor Only	Perfect for installations with limited access or challenging environmental conditions.
DUAL SENSOR	Local + One X10 Remote	Offers simultaneous monitoring of two gases or redundancy for a single gas.

All configurations are available to order and can be field-updated later.

- Built for Harsh Conditions: Operates from -40°c to 50°c and features an IP66-rated enclosure for protection against dust and water ingress, making it suitable for freezers and areas with frequent washdowns.
- Seamless Integration: The X30 and X50 models are designed for full backwards compatibility with all existing Bacharach controllers.

Target Applications

The X30 and X50 monitors are versatile and ideal for a variety of critical environments, including:

- Food Retail (Walk-in Chillers/Freezers)
- Mechanical Rooms & Industrial Refrigeration
- Commercial Office Buildings
- Institutional Facilities (Pharma, Scientific, Educational)

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X30 and X50 Quick Comparison

Product Selection Guide	X30	X50
ENCLOSURE RATING	IP66	IP66
DIGITAL COMMUNICATIONS (MODBUS COMMUNICATIONS TO BMS / BAS)	ü	ü
ANALOG COMMUNICATIONS	ü	ü
RELAYS	1	4
COMPATIBLE WITH REMOTE SENSOR (X10)	—	ü
PERIMETER STROBE	—	ü

Part Code Guide

	Target Gases	Range	Type	X10 Remote Sensor	X30	X50	Replacement Sensor Module
BROADBAND R-GAS GROUP 1	R448A, R290, R32, R410A, R449A, R455A	1,000 ppm	SC	10254042	10254040	10254037	10254046
BROADBAND R-GAS GROUP 2	R407A, R1234yf, R1234ze(E), R404A, R407C, R507A, R513A, R515B	1,000 ppm	SC	10254156	10254151	10254034	10254161
BROADBAND R-GAS GROUP 3	R454B, R454A, R454C, R1233zd(E)	1,000 ppm	SC	10254157	10254152	10254035	10254162
BROADBAND R-GAS GROUP 4	R134a	1,000 ppm	SC	10254158	10254153	10254036	10254163
CO_2	CO_2	5,000 ppm	IR	10254043	10254041	10254038	10254049
CO_2	CO_2	10,000 ppm	IR	10254159	10254154	10254149	10254164
CO_2	CO_2	20,000 ppm	IR	10254160	10254155	10254150	10254165

Planned X30/X50 Range Extension

The X30/X50 series will receive a range extension as part of our ongoing product roadmap.

The range extension will provide detection options for a wide array of toxic and combustible gases, as well as IR sensor options for halogenated refrigerants.

IR sensor technology provides significantly higher sensitivity and eliminates false positives compared to traditional SC sensors.

Specifications

	X30	X50	X10 Remote Sensor (used with X50 only)
ENCLOSURE	IP66	IP66	IP66
RELAYS	1	4	No Relays
DIGITAL COMMUNICATION	Modbus	Modbus	Modbus
SIGNAL OUTPUT	Analog	Analog	-
SENSOR	Integrated	Integrated, Remote, or Dual	Integrated
OUTPUT SIGNAL SPECIFICATIONS	Modbus RTU over RS-485	Baud rate:	9,600 or 19,200 (selectable)
		Start bits:	1
		Data bits:	8
		Parity:	None, odd, even (selectable)
		Stop bits:	1 or 2 (selectable)
		Retry time	500 ms, min time between retries
		End of message:	Silent 3.5 characters

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Catefory	Specifications	
POWER SUPPLY AND RELAYS	**Operating Voltage**	24 VDC +/- 20% 24 VAC +/- 20%, 50/60 Hz
	Inrush current	1.5A
	Operating current, max.	X30 - 8 W, (333 mA @ 24 VDC) X50 - 14 W, (583 mA@ 24 VDC)
	Relay rating	X30: 1x DPDT, 24V AC/DC, 2A max X50: 4x DPDT, 24V AC/DC, 2A max
	Audible alarm	Internal Buzzer >90 dB at 4" (10 cm)
	Alarm delay	0 to 15 minutes (selectable)
WIRING	**Power and analog signal**	2-Wire shielded cable, 16 to 20 AWG (0.5 to 1.5 mm^2)
	Modbus network	3-Wire, twisted pair + ground, shielded cable with 120 Ω characteristic impedance, 16 to 24 AWG (0.5 to 1.5 mm^2)
	Cable Fittings	M16 or M20 metric size cable glands 1/2" and 3/4" NPT plastic and metal conduit Not intended for use with threaded metal conduit / hubs
	Temperature	Installation requires the use of field wiring cable with temperature limit >60C
PHYSICAL SPECIFICATIONS	**Enclosure and sensor housing**	Enclosure Housing: Polycarbonate Sensor Housing: ABS
	Enclosure Ingress Protection	IP66 Type 4
	Weight (Approx.)	X30: 13.7 oz (388 g) X50: 16.6 oz (471 g)
	Enclosure Size (WxHxD)	X30: 164 x 132 x 76 mm
	(Approx.)	X50: 164 x 160 x 84 mm
ENVIRONMENTAL	**Operating temperature**	-40° to 122°F (-40 to 50°C)
	Storage temperature	-4° to 104°F (-20 to 40°C)
	Humidity	5 to 90 %RH, non-condensing
	Pressure	23.6 to 32.5 inch Hg / 800 to 1,100 mbar
	Elevation	0 to 10,000 ft. (3050 m) altitude
	Sensors	See sensor data sheet
	Influences	For influences on the measurement performance and restrictions of a particular sensor, see sensor data sheet.
PRODUCT APPROVALS	UL/ CSA / EN 61010-1 , CE (EMC Directives)	
PRODUCT DESIGN STANDARDS	EN 14624 (Indicating Device), EN 50270. Testing performed to FM TD 221 .	
INDUSTRY CODES & REGULATIONS	Supports ASHRAE 15, CSA B52.2, EN 378, F-Gas Regulation, IAR C02	

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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