

MSA Bacharach® X50 Refrigerant Monitor

Safety Compliance in Refrigeration Applications



Description

The MSA Bacharach® X50 Refrigerant Monitor delivers enhanced performance and intelligent features to meet the most demanding refrigeration safety standards and applications. Designed for efficiency, the X50 reduces installation time and cost while offering powerful app-based control for commissioning and maintenance—no specialized tools or training needed.

Its pre-calibrated sensor modules are quick to replace and require no calibration gas, streamlining service and minimizing downtime. Advanced dual-sensor capability for multi-gas detection or built-in redundancy. With advanced connectivity options including daisy-chained power and Modbus communication, the X50 integrates effortlessly into BMS/BAS platforms or pairs with the MSA Bacharach® X10 Remote Gas Sensor for isolated monitoring.

REFRIGERANT MONITOR FOR HALOGENATED AND NATURAL REFRIGERANTS

Features

Benefits

Mobile App Interface

Streamlines setup, configuration, and maintenance with an intuitive interface—no specialized tools or training required to define alarm parameters or thresholds.

Pre-calibrated Sensors

Delivers measurable savings in time and operational costs by simplifying maintenance workflows.

Semi-automated Calibration

Eliminates the need for manual calibration—no potentiometers or voltmeters required.

Temperature-compensated Measurement or Gas Specificity

Enhances reliability by reducing false alarms and enhances detection accuracy in refrigeration environments. Benefit from out of the box gas versatility or gas-specific calibration.

Digital Communications

Effortlessly connects to Building Management and Automation Systems via Modbus for seamless integration.

Audible and Visual Alarms

Supports ASHRAE 15 and EN378 indication requirements, including a perimeter strobe—no extra hardware or accessories needed

Multiple Cable Entries and Terminals

Accelerates installation with plug-and-play wiring and daisy-chained power and communication lines. Customizable entry options to accommodate your wiring, conduit, and cable gland needs.

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Product Attributes	Description	Definition
GAS AND RANGES	Refrigerants (Semiconductor) — includes R-290	1,000 ppm
	CO ₂	5,000 / 10,000 / 20,000 ppm
STATUS INDICATOR	Single tri-color LED (green, red, orange) per Channel, Perimeter Strobe	
BUZZER	>90 dB @ 4" (10 cm)	
OUTPUT	Analog or Digital	4x Relay (fault, low alarm, high alarm, configurable), 2x Analog Output (4 to 20 mA, 1 to 5 V, 2 to 10 V), Modbus RTU digital output
POWER SUPPLY	24 VDC ± 20% 24 VAC ± 20%, 50/60 Hz	
RELAY	4x DPDT, 24 VAC/DC, 2A Max	
ENCLOSURE	IP66	
SIZE (WXHXD) APPROX	6.4" x 6.3" x 3.3" (164x160x84 mm)	
WEIGHT APPROX	16.6 oz (471 g)	
APPROVALS	CE, UL/CSA/IEC/EN 61010-1 *additional information below	
AMBIENT CONDITIONS	Temperature	Semiconductor -40° to 122°F / -40° to +50°C Infrared -40° to 122°F / -40° to +50°C
	Humidity	5 to 90 % RH, non condensing
	Pressure	23.6 to 32.5 inch Hg / 800 to 1,100 mbar

* Note for Approvals Information:

MD 2006/42/EC:

- EN 378-1:2016+A1:2020
- EN 378-3:2016+A1:2020

The following standards were utilized as a guide to satisfy the requirements of the Machinery Equipment Directive:

- ANSI/ASHRAE Standard 15-2022
- ANSI/IIAR CO₂ (2012)
- EN 14624:2020 (Indicating Device)
- EN IEC 62990-1:2022 (Response Time)
- UL THC 1498
- FM TD 221:2018

* Note for Response Time:

TEST METHOD PER EN 14624:2020 (THRESHOLD SETTING TO LOW ALARM DEFAULT)

R1234YF, R1234ZE, R290, R32, R448A, R449A, R454A, R454B, R455A, R404A, R407C, R410A, R454C, R507A, R515B	average response time per EN 14624:2020 (≤ 30s)
R1233ZD, R134A, R407A, R513A	average response time per EN IEC 62990-1:2022 (≤ 95s)

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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