

**Gas monitor**

Belimo refrigerant gas monitors are factory calibrated and monitor one user selectable refrigerant. They feature an audible and visual alarm and CAN bus communication, allowing for standalone operation and networking of up to 32 devices. Belimo refrigerant gas monitors are used in conjunction with a communication module (C-22G-5A/B/C) and/or a relay unit (C-22G-50) to control external equipment directly. All refrigerant gas monitors are wired via a daisy chain and are backed by a five-year warranty.



5-year warranty


**Type Overview**

Type	Measured values	Number of relays	Number of analogue outputs	Communication
22G21-5C	Refrigerant selectable	0	0	CAN bus

**Technical data**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 20...25 V / DC 22...34 V
	Power consumption AC	5 VA
	Power consumption DC	3.7 W
	Cable entry	2 top, 2 bottom, 1 rear – 1/2" EMT
	Cable specification	Power cable: 18...20 AWG [2.5...0.5 mm <sup>2</sup> ] single pair stranded copper cable Communication cable: 22...24 AWG [0.34...0.25 mm <sup>2</sup> ] 1.5 twisted pair, shielded jacketed, low capacitance stranded cable
Fuse	Thermal PTC, auto-reset	
<b>Data bus communication</b>	Communication	CAN bus
	Number of nodes	Max. 32 (without repeater)
<b>Functional data</b>	Medium	Air
	Mounting	0.3...0.6 m [1...2 ft] above the floor
	Max. altitude	2000 m [6562 ft] above sea level
	Max. altitude note	Calibration verification is recommended above 610 m [2000 ft]
	Coverage area	Radius: 10 m [30 ft] Area: 250 m <sup>2</sup> [2500 ft <sup>2</sup> ] There can be no obstructions such as walls, elevators, stairs, shelving with solid fill, tool chests, etc. Otherwise the time weighted average (TWA) for the gas to reach the monitor will increase.
	Display	LCD with backlight showing gas type, gas concentration, alarm level status
	Display type	LCD
Alarm	Alarm level 1: Visual alarm (red LED) Alarm level 2: Visual alarm (red LED) Alarm level 3: Visual and audible alarm (flashing white strobe LED and horn) Horn: 80 dB @ 1 m [3.3ft]	

**Technical data**

<b>Functional data</b>	Warm-up time	1 hour
	<b>Measuring data</b>	Measured values
<b>Specification Gas</b>	Sensing element technology	Non-dispersive infrared (NDIR) dual channel
	Measuring range	0...2000 ppm
	Calibration	Non-interactive zero and span Sensor modules are required to be calibrated annually.
	Typical response time	<60 s (T90)
<b>Specification temperature active</b>	Measuring range	-20...40°C [-4...104°F]
<b>Specification temperature passive</b>	Accuracy temperature	±7°C @ 23.5°C [13°F @ 74°F] Please see remarks section under application notice for more information about temperature accuracy
<b>Safety data</b>	Degree of protection IEC/EN	IP20
	Agency Listing	ETL acc. to UL 61010-1/-2-201, CSA C22.2#61010-1-12/-2-201
	Pollution degree	2
	Ambient humidity	15...90% RH continuous, 0...99% RH intermittent, non-condensing
	Ambient temperature	-20...50°C [-4...122°F]
	Overvoltage category	III

**Safety notes**


This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

**Remarks**

<b>Power cable size and polarity</b>	Terminal blocks can accommodate one 14...20 AWG (2.5...0.5 mm <sup>2</sup> ) or two 18...20 AWG (0.75...0.5 mm <sup>2</sup> ) copper cables in the same terminal. Please take cable and transformer size into account to provide adequate voltage. Maintain the same polarity between devices at full power (AC/DC 24 V).
<b>Communication cable size and polarity</b>	CAN bus and BACnet MS/TP communication cables should be 22...24 AWG (0.34...0.25 mm <sup>2</sup> ), twisted-pair, shield-jacketed, low-capacitance stranded cable. Please consider the CAN bus baud rate (programmable setting No. 68) and BACnet the MS/TP baud rate (programmable setting No. 48) to provide working communications. For all communication wiring, maintain the same polarity and baud rate between all devices on the network.

Remarks

**Application notice for temperature sensor** All Belimo gas monitors and communication modules come with an internal temperature sensor. The purpose of this temperature sensor is to protect an enclosed parking garage from overheating, by activating relay 1. When using this feature, it is recommended to calibrate the temperature sensor to the ambient temperature (programmable setting No. 50) after the gas monitor has been powered for 24 hours. For freeze protection, it is recommended to set the temperature set point (programmable settings No. 55) no lower than 4°C [40 °F].

Please note that this temperature sensor is located on the gas monitor printed circuit board (PCB). Therefore, it needs to be calibrated after 24 hours of normal operation to offset the heat generated by the PCB. It is not intended to be used as a room temperature sensor because of the limited accuracy and slow response time caused by its location on the PCB. This temperature sensor accuracy of ± 7°C @ 23.5°C [13°F @ 74°F] has not been certified by UL.

**Application notice about gas sensors** Intended applications include residential, light commercial, and light industrial. Non-intended applications include heavy commercial, heavy industrial, or hazardous locations.

Refrigerant Gas Leak Detection (Broadband Infrared):

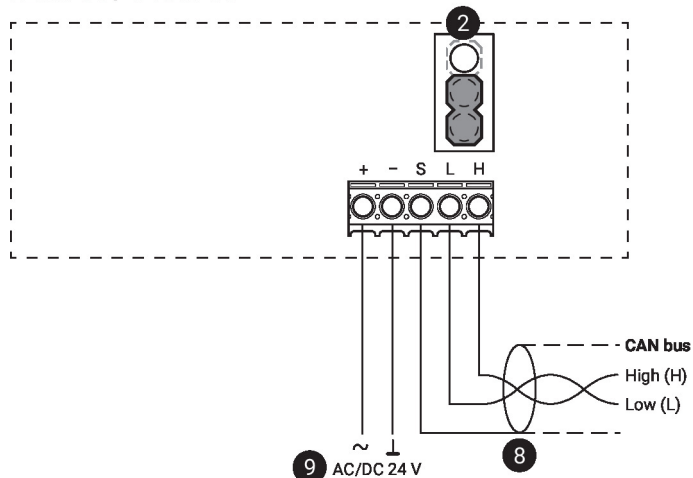
Mechanical rooms, compressor rooms, locations where refrigerant is stored

Accessories

Electrical accessories	Description	Type
	Communication module, CAN bus, BACnet MS/TP, 1 relay, 2 analogue outputs	C-22G-5A
	Communication module, CAN bus, BACnet MS/TP, 2 relays	C-22G-5B
	Communication module, CAN bus	C-22G-5C
	Relay unit, CAN bus, 4 relays	C-22G-50
	External visual alarm,	A-22G-A15
	External audible alarm	A-22G-A16
	Transformer, 50 VA	A-22G-A50
	Transformer, 100 VA	A-22G-A100
Mechanical accessories	Description	Type
	Calibration kit for refrigeration	A-22G-A08
	Calibration cap and tube for refrigeration	A-22G-A09
	Splash proof housing	A-22G-A12
	Duct mount housing	A-22G-A13

Wiring diagram

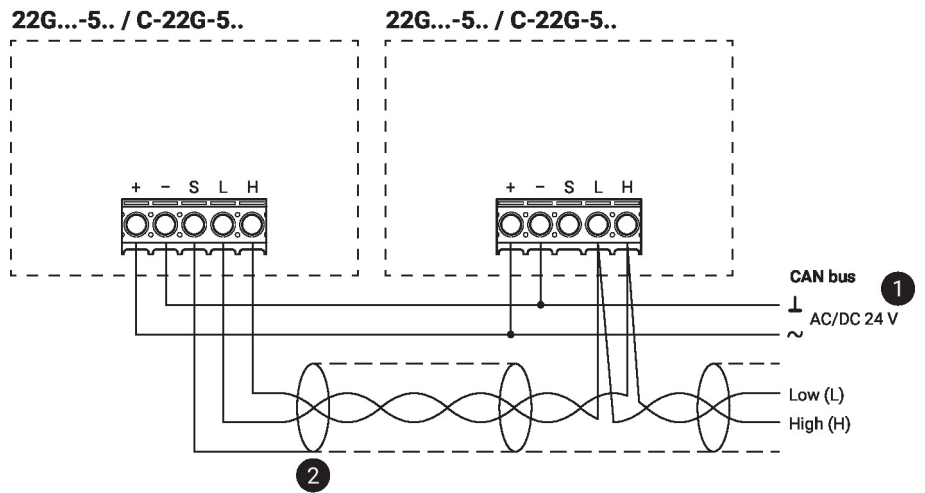
22G..-5C / C-22G-5C



Wiring diagram

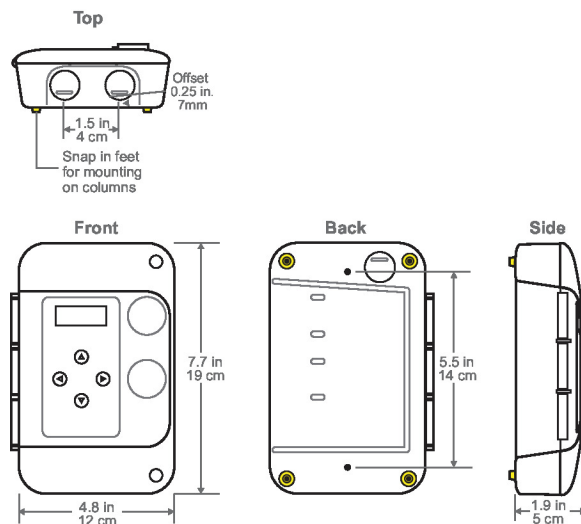
- 2 End of line (EOL) jumper: CAN bus  
Down position: Termination OFF (factory setting)  
Up position: Termination ON (first and last unit only should have this jumper in the up position)
- 8 Shield connected at the first unit only, at others only looped through
- 9 No connection to the ground

Wiring CAN bus



- 1 No connection to the ground
- 2 Shield connected at the first unit only, at others only looped through

Dimensions



Type  
22G21-5C

Weight  
0.43 kg

Further documentation

- Installation instructions
- Operating instructions