



AT-MSC

Multi-Sensor Controller for Refrigerant Gas Sensing

The AT-MSC Multi Sensor Controller is based on state-of-the-art micro technology for continuous monitoring of the ambient air to detect toxic and combustible gases, refrigerants or oxygen in commercial and industrial applications. The AT-MSC can be used as a standalone controller or configured with other products to suit the users' requirements.

Description

The AT-MSC multi sensor controller allows connection of up to 3 sensors from the AT-MC series. The AT-MSC can be equipped with 3 AT-MC sensors with 4-20 mA signal (only a maximum of 3 sensors allowed). The controller monitors as a stand-alone centralised system measuring values and activates alarm relays if the set alarm thresholds for pre alarm and main alert are exceeded. In addition, you can directly connect to the BMS via an RS-485 interface and as a 4-20mA output.

Features & Benefits

- ◆ LCD Display, 3-colour status LEDs and buzzer.
- ◆ For use with up to 3x AT-MC sensors max (4-20mA).
- ◆ x1 analog output & RS-485 (allows direct connection to BMS) with DG protocol (Modbus Inc).
- ◆ x3 alarm relay (x2 Alarm, x1 Fault).
- ◆ Audible and visual alarms.
- ◆ Plug and play sensors make installation and commissioning efficient.
- ◆ Versatile product configuration.

Applications

The AT-MSC multi sensor controller is designed for detection and warning of toxic and combustible gases and refrigerant monitoring in areas where a smaller system is required. The AT-MSC is a standalone monitoring system for up to 3 AT-MC sensors only, with additional onboard buzzer and display notifications.

The AT-MSC is housed in a NEMA 4x (polycarbonate) IP65 enclosure and can be placed in environments of -250 C to +600 C ambient temperatures.

Installation can be in a small gas detection network that could be in mechanical rooms, warehouses, cold storage. Typical installations would be either inside or outside the door of an enclosed space to have local audible and visual alarms as required by safety standards.

The AT-MSC is not designed to be installed in classified areas

Technical Information

Power	100-240 Vac @ 50/60 Hz, 24 Vdc 15VA
Operating Temperature	-25°C - +60°C
Operating Humidity	15-95% RH non-condensing
Size (W×H×D) Approx mm	Housing Type E 130 x 130 x 99mm
Cable Entry	Standard 6x M20mm/25mm
Weight	0.6kg
Housing	RAL 7035 (Light Grey) Polycarbonate IP65
Configurable Relays	x 1 Fault Signal Relay 250 V AC, 5 A; 30 V DC, 2 A, potential-free, contacts (SPDT)
Alarm Relay	x 2 250 V AC, 5 A; 30 V DC, 2 A, potential-free, contacts (SPDT)
Analogue Input	x 3 4-20 mA, overload and short-circuit proof, input resistance 130 Ohms
Analogue Output Signal	Proportional, overload and short-circuit proof, load ≤ 500 Ohms 4-20 mA = measuring range 3.3-<4 mA = tolerable under range 2.4-<4 mA = tolerable under range (Pellistor) > 20-21.2 mA = tolerable overrange ≥ 21,2 mA= error overrange ≤ 2,0 mA = fault ≤ 1,0 mA = processor power failure
Local Bus Output	5 V DC, 250 mA max., overload, short-circuit & reverse-pol. protect.
Max Sensors	x 3 Sensors max
Sensor Type	AT-MC Sensors
Max DIstance	900 Meters from AT-MSC
Flammability Classification	UL 94 V2
Analogue Output	Screw-type terminals 0.25-1.3mm ²
Power Supply, relay, fieldbus	Screw-type terminals 0.25-2.5mm ²
LC-Display Operation	2 Lines, 16 characters each, background highlighted, 2 colours
LC Display Operation	Menu driven via 6 pushbuttons
Display Power consumption	5 V, 60mA, 0.3VA
Display Temperature Range	-20°C - +60°C
Status LED Buzzer	Red/Yellow/Green (Alarm-fault-operation-service)
Acoustic Pressure/ Frequency	>85 dB (distance 0.1m) 2300 Hz 400Hz

Note: If there are any changes to the housing it must be re-evaluated.

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.



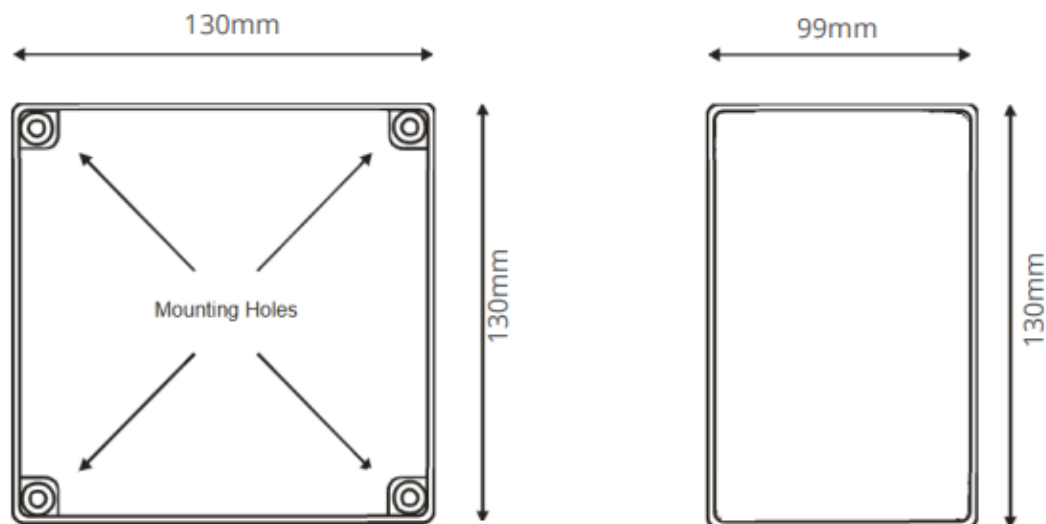
Diamond Controls®

Leak Detection & Trace Heating Systems

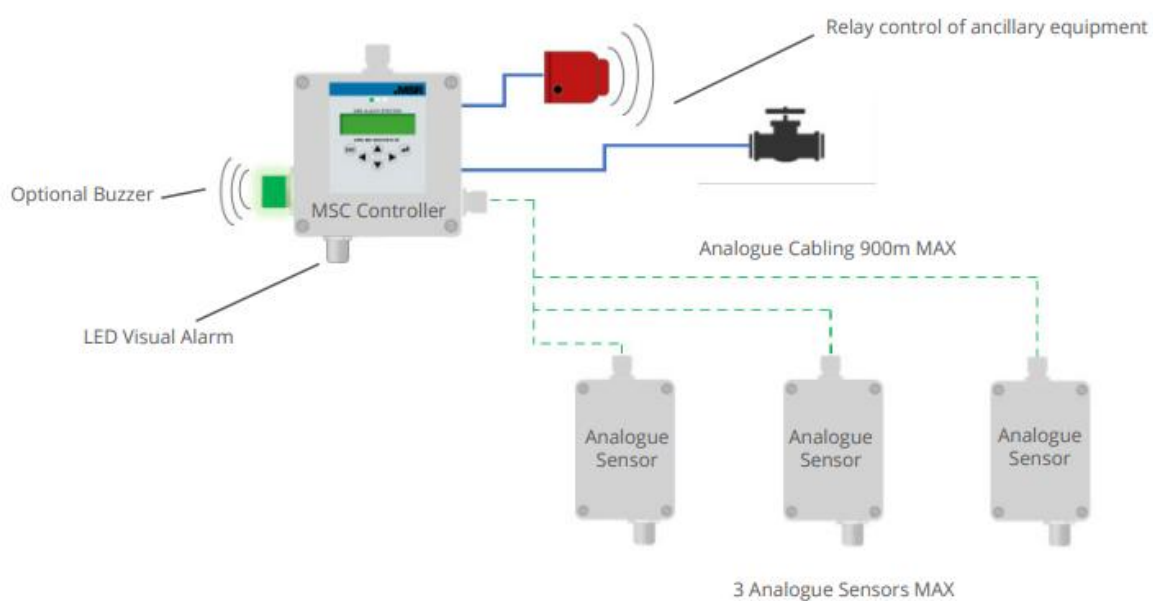
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Dimensions



Configuration Examples





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Approvals

EMC Directives 2014/30/EU	Regulation of electromagnetic compatibility of equipment.
Low Voltage Directive 2014/35/EU	Equipment within certain voltage limits provides a high level of protection for European citizens.
IEC/EN 61010-1:2010	General safety requirements for the following types of electrical equipment and accessories.
EN 50271	Functional safety and software reliability in gas detection systems.
EN 50290 Type I	Standardisation of symmetrical, coaxial and optical cables used for infrastructure networks.
IEC/EN 61508-1-3	Functional safety of electrical, electronic and programmable electronic (E/E/PE) safety systems.
EN 50402	Systems for detection and measurement of combustible or toxic gases, vapors or oxygen.
IEC/EN 62990-1: Type SM	Performance requirements of detectors for toxic gases.
EN 50104	Minimum requirements for electrical apparatus and measurement of combustible gases.
EN 14624	Performance of portable location leak detectors and of fixed gas detectors for all refrigerants.
BS EN 378	Requirements in the design, manufacture, construction, installation, operation, maintenance, repair and disposal of refrigerating systems and appliances regarding local and global environments.

Ordering Information

8000	AT-MSC-230V- Multi-Sensor Controller 230Vac, inc. Housing & Audio/Visual Alarm Module.
8001	AT-MSC-24V - Multi-Sensor Controller 24V, inc. Housing & Audio/Visual Alarm Module.

Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application.