

# MGD-100

## GAS DETECTOR and CONTROLLER QUICK INSTALLATION GUIDE

P/N: 6109-9002  
Revision 0  
January 13, 2016



1-2 Sensor  
Controller Housing



Standard  
IP41 Sensor  
Housing



**CAUTION:** DO NOT MOUNT the MGD-100 in an area that may contain flammable liquids or vapors. Operation of electrical equipment in such an area constitutes a safety hazard.



**WARNING:** Strictly follow the instructions in the User Manual (part number 6109-9000) available at [www.MyBacharach.com](http://www.MyBacharach.com).

### 1: OPERATING AREA AND CONDITIONS

The Bacharach MGD-100 is an instrument for the continuous monitoring of refrigerant, combustible, and toxic gases. The system is available with one or two levels of alarm, and consists of 1 to 6 remote gas sensors connected to and powered by a controller.

The controller is powered by 12 VDC or 100-230 VAC 50-60 Hz (specified at time of order).

### 2: SAFETY INSTRUCTIONS

**USER MANUAL:** Before using this equipment, carefully read and strictly follow the User Manual (part number 6109-9000). The user must fully understand and strictly observe the instructions. Use the equipment only for the purposes listed and under the conditions specified in that document.

**CODE COMPLIANCE:** Comply with all local and national laws, rules and regulations associated with this equipment.

**GENUINE PARTS:** Use only genuine Bacharach spare parts and accessories, otherwise proper functioning of the equipment may be impaired.

**TECHNICIAN USE ONLY:** This unit must be installed by a suitably qualified technician who will install this unit in accordance with these instructions and the standards in their particular industry/country. Operators of the unit should be aware of the regulations and standards in their industry/country for the operation of this unit. These notes are only intended as a guide and the manufacturer bears no responsibility for the installation or operation of this unit.

Failure to install and operate the unit in accordance with these instructions and with industry guidelines may cause serious injury including death and the manufacturer will not be held responsible in this regard.

**SAFE MOUNTING:** This monitor must be connected by a marked, suitably located and easily reached switch or circuit-breaker as means of disconnection.

### 3: WEIGHTS AND DIMENSIONS

Type/Enclosure	Dimensions	Weights
IP41	3.35" x 5.59" x 2.09" 86 x 142 x 53 mm	6.3 oz 180 g
IP66	6.89" x 6.5" x 3.29" 175 x 165 x 82 mm	1 lb 6 oz 629 g
IP66 w/ Splash Guard	6.89" x 8.9" x 3.29" 175 x 225 x 82 mm	1 lb 9 oz 700 g
IP66 w/ Remote Sensor	6.89" x 6.1" x 3.29" 175 x 155 x 82 mm	1 lb 11 oz 790 g
IP66 w/ Ex d Remote Head	6.89" x 6.1" x 3.29" 175 x 155 x 82 mm	2 lb 10 oz 1185 g
IP66 w/ PRV Sensor Head	6.89" x 6.1" x 3.29" 175 x 155 x 82 mm	2 lb 0.3 oz 916 g
IP66 Airflow/Duct (See Table)	6.89" x 4.9" x 3.29" 175 x 125 x 82 mm	1 lb 4 oz 578 g
Ex d (Enclosure)	5.12" x 6.3" x 3.54" 130 x 160 x 90 mm	9 lb 4 oz 4200 g

#### Supported CFM & Duct Sizes for Duct Mount Housing

Units	Duct Size				
Inches	12 x 12	12 x 24	18 x 18	24 x 24	24 round
Feet	1 x 1	1 x 2	1.5 x 1.5	2 x 2	Pi x 1 x 1
Area (ft <sup>2</sup> )	1	2	2.25	4	3.14

### 4: MOUNTING

**ENVIRONMENTAL CONSIDERATIONS:** Carefully consider the full range of environmental conditions to which the instruments will be exposed.

**TARGET GAS CONSIDERATIONS:** The physical data of the gas or vapor to be detected must be observed.

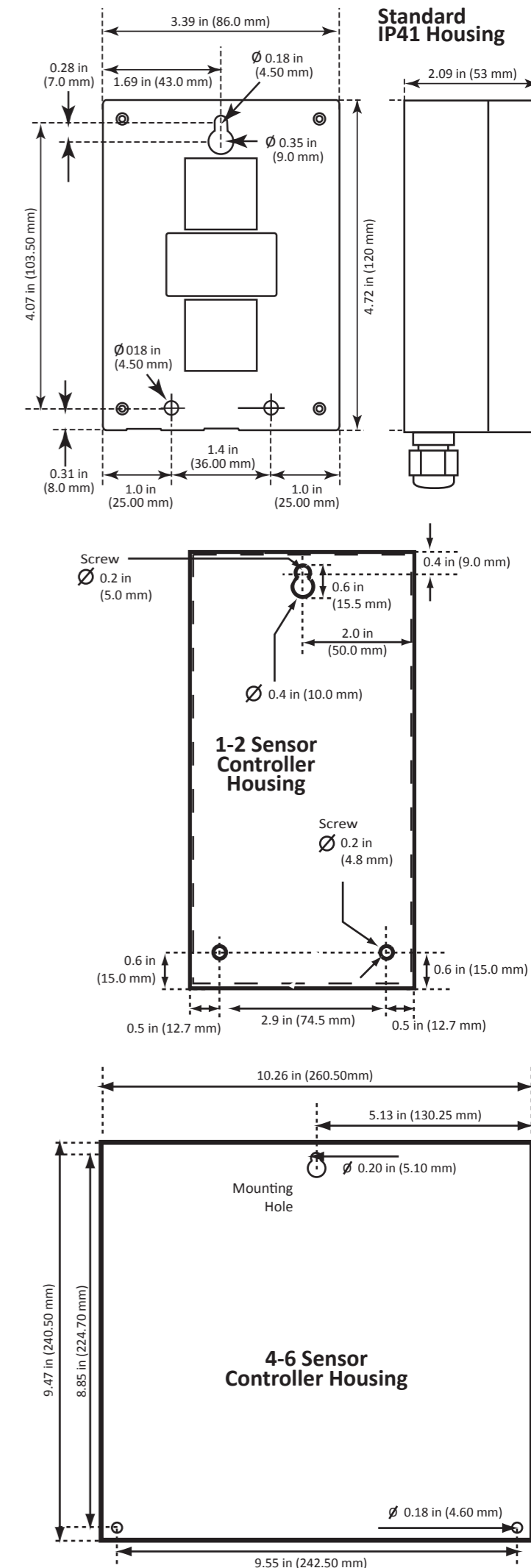
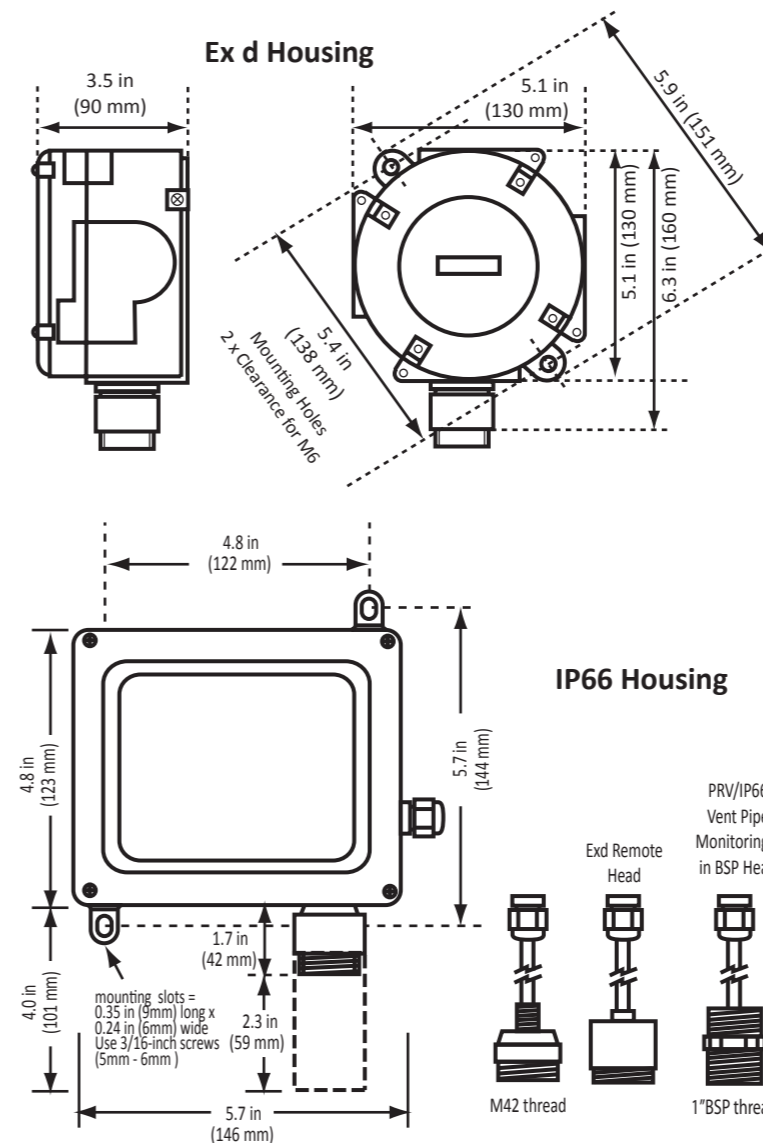
**APPLICATION CONSIDERATIONS:** The specifics of the application (for example, possible leaks, air movement/draft, etc.) must be observed.

**ACCESSIBILITY CONSIDERATIONS:** The degree of accessibility required for maintenance purposes must be granted.

**ACCESSORY CONSIDERATIONS:** The types of optional and accessory equipment that will be used with the system must be kept in mind.

**ELECTRONIC CONSIDERATIONS:** The system contains sensitive electronic components that can be easily damaged. Do not touch nor disturb any of these components.

Mount the MGD-100 and Controller according to the above considerations, product dimensions (see Section 3), maximum wiring lengths (see Section 5), and the corresponding mounting dimensions shown in the illustrations that follow.



## 5: WIRING

**CABLE OPENINGS:** The metal IP51 controller housing provides a number of PG7 openings for cable glands or plugs. Each MGD-100 IP41 transmitter will have a single opening for an M20 cable gland, as well as an optional knockout opening. Each MGD-100 IP66 transmitter has 3 openings. These openings can be used for field wiring, direct attachment of a sensor or wiring of a remote sensor. Unused openings must be closed with a suitable plug and gasket, maintaining the IP or Ex d rating.



**NOTE:** To make wiring connections, you must first open the MGD-100 housing. The enclosure lid of the IP66 housing has four captive screws.

Refer to the User Manual (part number 6109-9000) at [www.MyBacharach.com](http://www.MyBacharach.com) for detailed instructions on accessing the internal components for wiring.



**WARNING:** The mains power supply cable should be of an approved type based on local regulations. Connection to the mains power supply must be made via an approved, readily-accessible, switched and fused plug and socket (or as per local wiring regulations) which should be within 10 feet (3 meters) of the control unit.



**SHIELD WIRE WARNING:** Connect the shield of the power wires to the earth ground of the central control system (e.g., chassis, ground bus bar, etc.).

- 1: Strip 0.2 to 0.25 inches (5 to 7 mm) of wiring insulation.
- 2: Connect the wires as indicated.

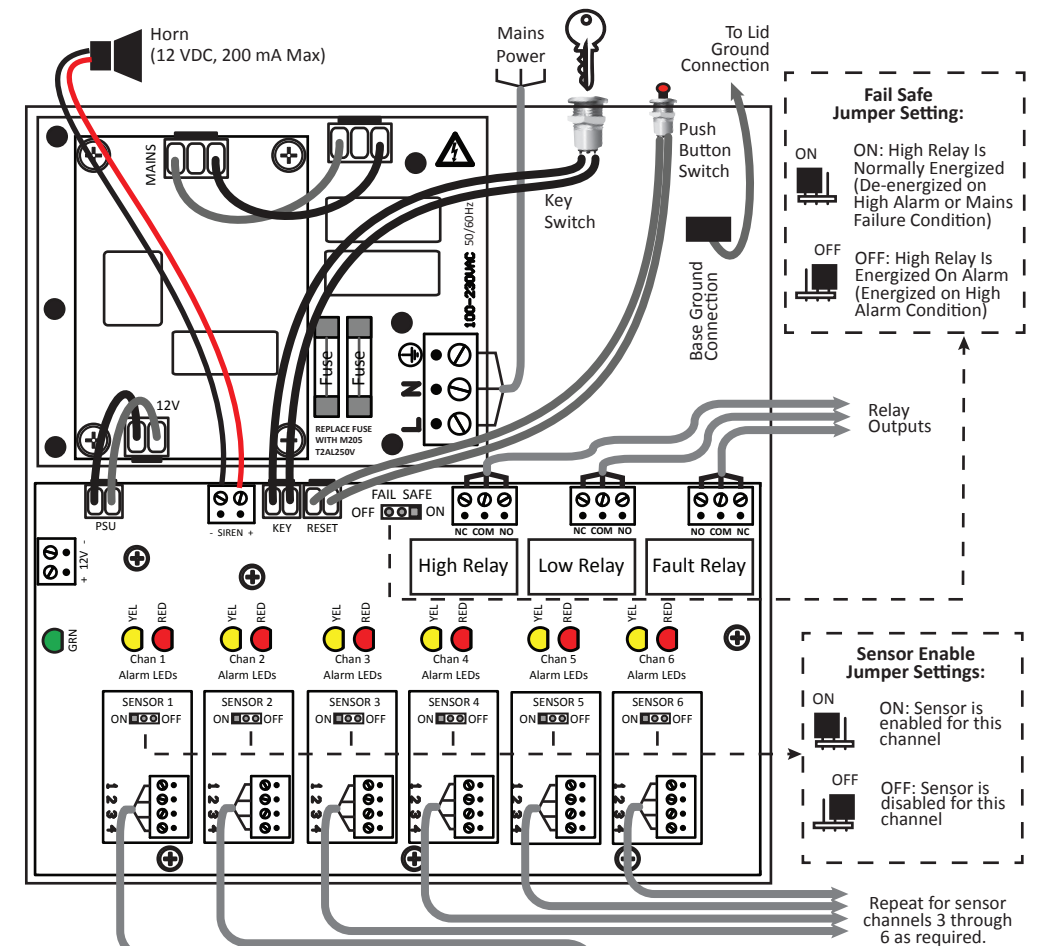
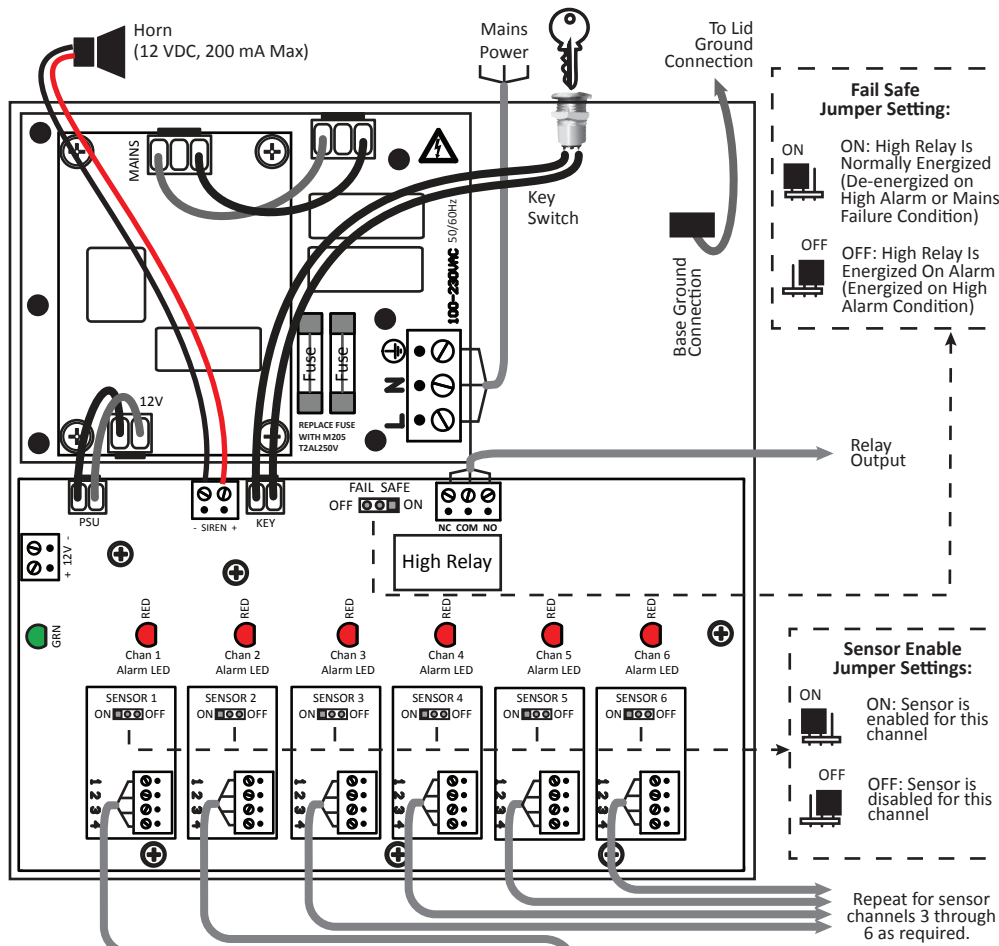
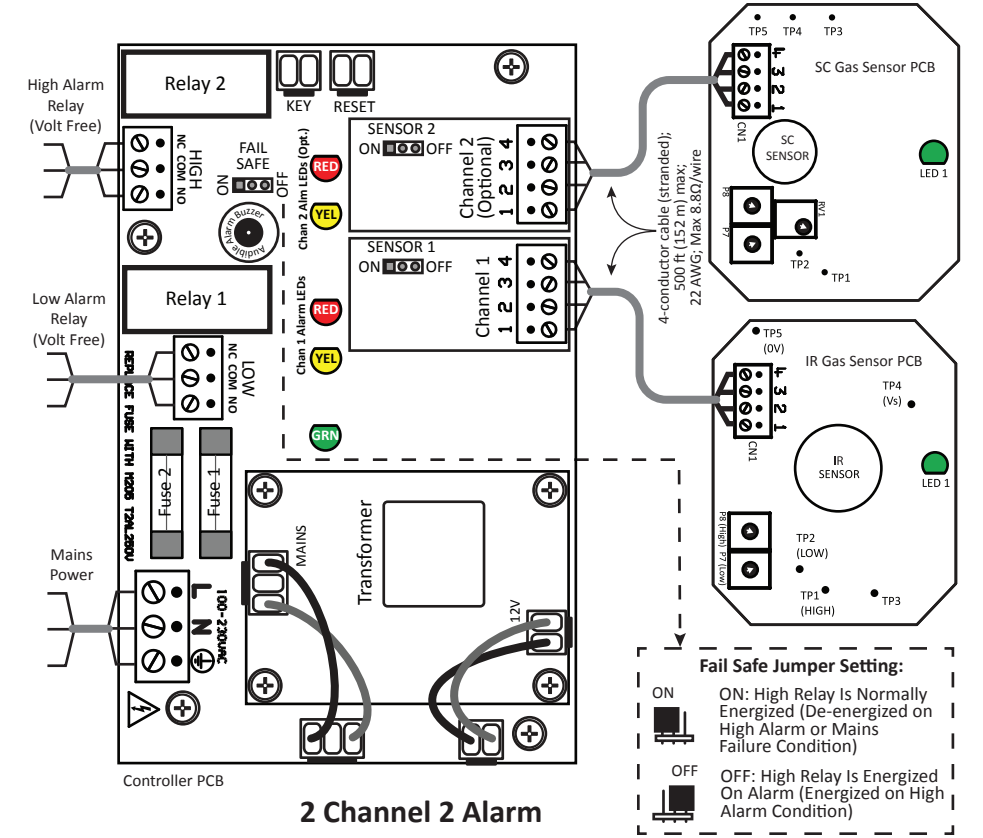
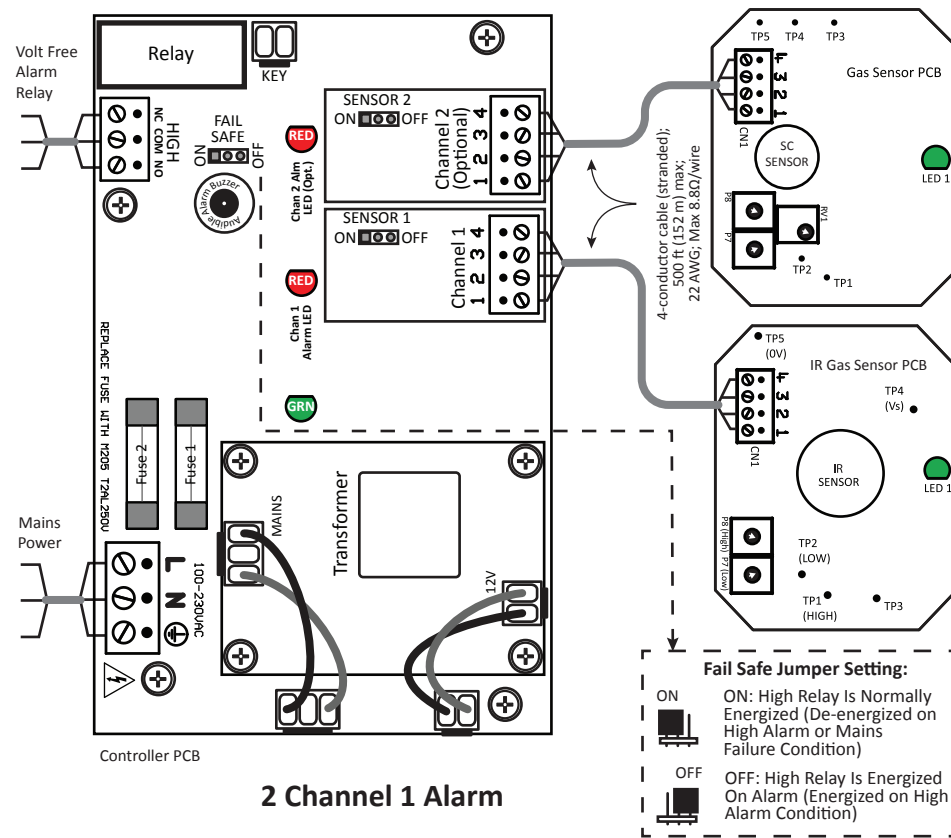


**NOTE:** After wiring is completed, carefully re-assemble the enclosure and its components, noting the keyed ribbon cable and sensor connectors. After installation is complete, be sure to refer to the User Manual (part number 6109-9000) for detailed instructions on registering the sensors and configuring the MGD-100 for proper operation.



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4-conductor cable (stranded) (6 places max); 500 ft (152 m) max; 22 AWG; Max 8.8Ω/wire

Ensure that connections 1 to 4 on each sensor connect to their corresponding numbers on the terminal block in the main alarm unit, otherwise the system will not function correctly and could be damaged.

**6 Channel 1 Alarm**

4-conductor cable (stranded) (6 places max); 500 ft (152 m) max; 22 AWG; Max 8.8Ω/wire

Ensure that connections 1 to 4 on each sensor connect to their corresponding numbers on the terminal block in the main alarm unit, otherwise the system will not function correctly and could be damaged.

**6 Channel 2 Alarm**