

Dual Relay Module

Manning DRM Instruction and Installation Manual

07/09

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Release A July 2009

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Honeywell Analytics
405 Barclay Blvd.
Lincolnshire, IL 60069
USA

1-800-538-03

About This Document

World Wide Web

The following Honeywell web sites may be of interest.

Honeywell Organization	WWW Address (URL)
Corporate	www.honeywell.com
Honeywell Analytics	www.honeywellanalytics.com
Manning Gas Detection	www.manningsystems.com

Telephone

Contact us by telephone at the numbers listed below.





Organization		Phone Number
United States	Honeywell Analytics Inc.	1-800-538-0363 1-913-712-5576 1-913-712-5580 Fax
Canada	Honeywell Analytics Inc.	1-888-749-8878
Europe	Honeywell PACE	+44 (0)1202 676161
Asia Pacific	Honeywell Asia Pacific Inc.	+82 (0)2 2025 0307
Middle East	Honeywell Analytics Inc.	+971 4 3458 338

Sales Information

Contact us at detectgas@honeywell.com

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advise or hints for the user, often in terms of performing a task.
	REFERENCE-EXTERNAL: Identifies an additional source of information outside of this bookset.
	REFERENCE-INTERNAL: Identifies an additional source of information within this bookset.

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Introduction

This manual has been prepared to help in the use and installation of the Manning DRM Dual Relay Module. This manual will convey the operating details of the alarm system, ensure proper installation, and demonstrate start-up and routine maintenance procedures.



ATTENTION: This manual must be carefully followed by all individuals who have or will have the responsibility for using or servicing the module. Warranties made by Honeywell Analytics with respect to this equipment will be voided if the equipment is not used and serviced in accordance with the instructions in this manual. If in doubt about a procedure, please contact Honeywell Analytics before proceeding.

1 System Description

The Dual Relay Module (DRM) is a single channel 4/20 mA analog input feed-thru device designed to provide a dual stage alarm with isolated relay outputs. An additional configuration on applications for termination at the DRM (non-feed through) is illustrated later in this manual. The two relay outputs can be used to activate local annunciators, warning strobes, PLC inputs, and other output-driven applications. The DRM is powered by control panels or PLC's that provide a +24 VDC source. The DRM is wired in series with the gas sensor, feeding the 4/20 mA signal back to the control panel or PLC that supplies a required load. Up to three modules can be wired in series for added relay outputs and alarm trip level flexibility. The DRM is equipped with dual alarm trip levels that are selectable between 33/100% and 50/100% (full-scale 20 mA) via a two position selector switch. The DRM has three internal status LED's to indicate Power On, First Alarm activation, and Second Alarm activation.

System Specifications

Power Supply Requirements: +18 to +26 VDC

Power Supply Current: 120 mA Max

Operating temperature: -10° F to +120° F

Humidity Conditions: 0% to 95% RH non-condensing

Relay Contacts: Isolated 5A @ 125 VAC / 100 VDC

Set point Adjustment: 33%/100% full-scale (20 mA) and 50%/100% full-scale (20 mA)

Built-in hysteresis: 2-second time delay for both On/Off transitions

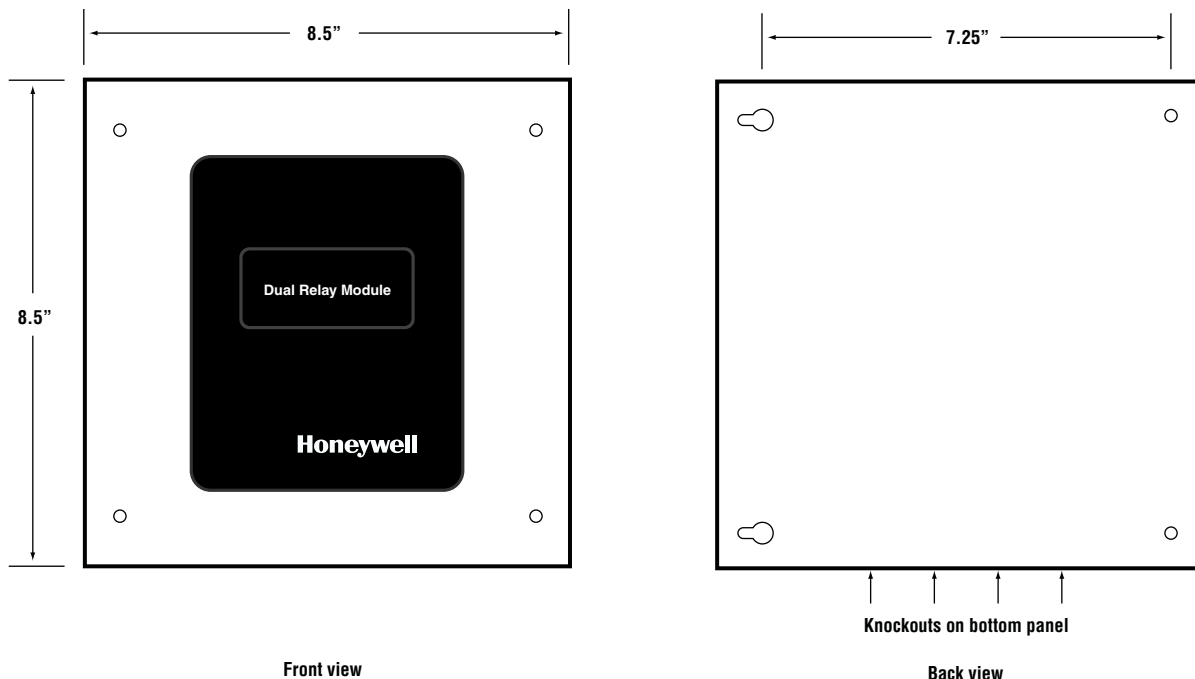
Dimensions: 8.5" high x 8.5" wide x 2.5" deep

LED Status Indicators (Internal): Power (green), Low Alarm (yellow), High Alarm (red)

Connectors: Screw terminal type 22-gauge to 18-gauge stranded copper

Maximum distance from controller: 1000 feet

Figure 1: Mounting dimensions for the DRM



2 Installation

Wiring Diagram and Procedure for Feed-through Applications

In this configuration the control panel connector is provided +24 VDC, power ground, the shield, and a means for the 4/20 mA signal load that resides within the panel or PLC. This load should be purely resistive between 50 Ohms and 400 Ohms. Power to the sensor is fed from this connector. Signal from the sensor is fed to the Control Panel connector. The grounds and shield are a feed through and bridged between the Sensor and Control Panel connectors. Each relay output is isolated with a common “C”, normally open “NO” and normally closed “NC” connector for wiring to external equipment.


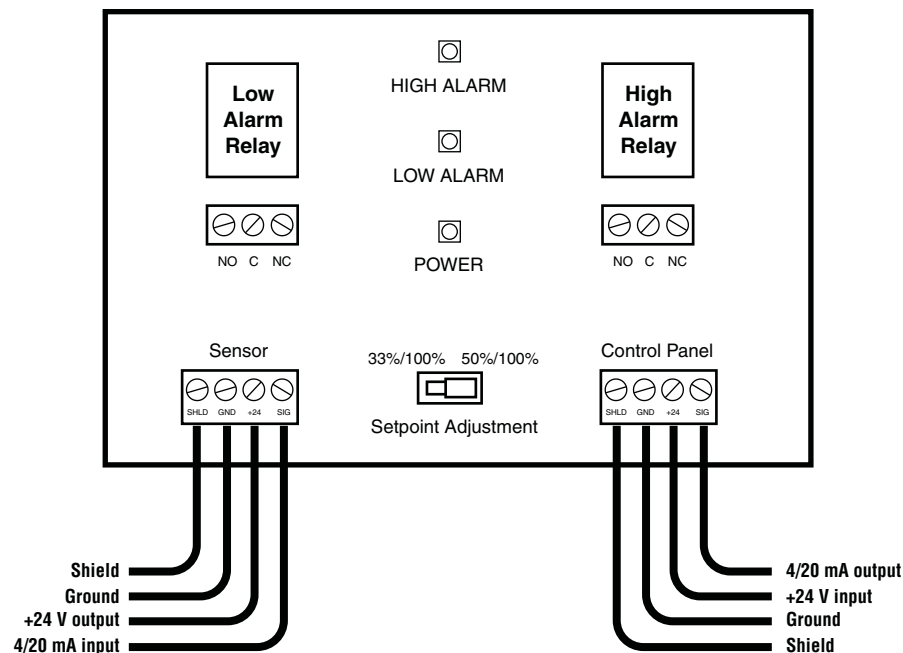
 **Note:** Be sure to follow the recommendations relating to the contact ratings before hooking up external devices to the relay contacts.

Figure 2: Feed-through connections



2 Installation continued

Wiring Diagram and Procedure for Terminated or Non-feed through Applications:

In this configuration the Control Panel connector is provided +24 VDC, power ground, and a resistor (see Figure 3, Note 1) connected to the sig. terminal and GND terminal. This resistor should be between 50 Ohms and 400 Ohms. This resistor provides the mA load that would normally exist in the control panel or PLC feed through applications. The shield terminal is not connected. Power to the sensor is fed from the Control Panel connector. Signal from the sensor is fed from the Sensor side to the Control Panel connector and through the resistor to ground. The ground is a feed through and bridged between the Sensor and Control Panel connectors. Each relay output is isolated with a common "C", normally open "NO" and normally closed "NC" connector for wiring to external equipment.


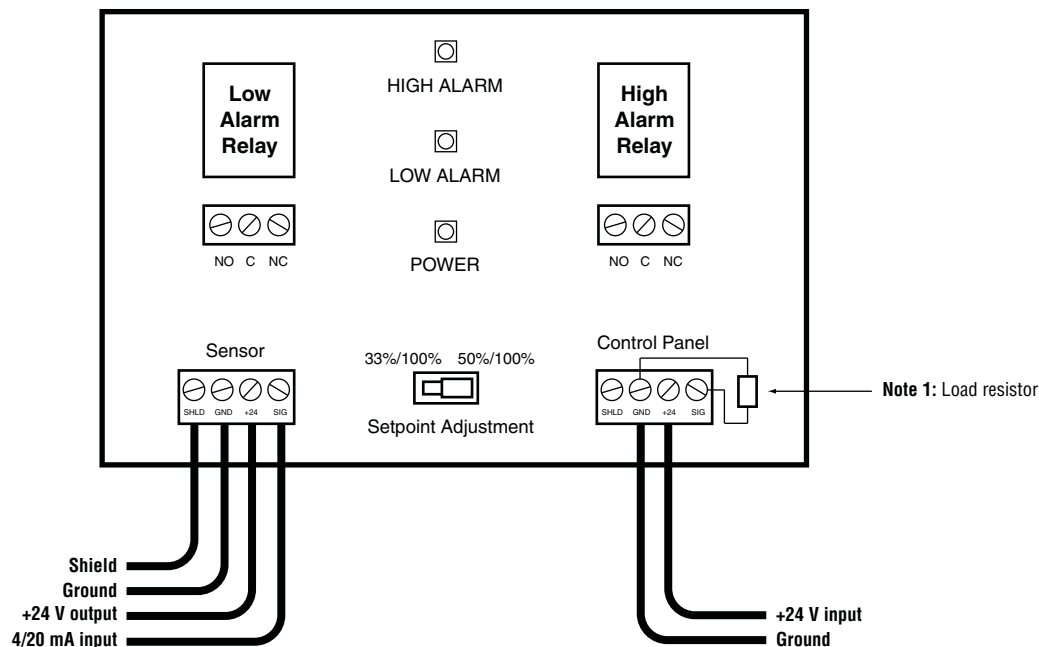
 **Note: Be sure to follow the recommendations relating to the contact ratings before hooking up external devices to the relay contacts.**

Figure 3: Non-Feed-through connections



3 Operation

When connected properly, the module will respond to a low mA threshold and a high mA threshold. The low mA threshold activating the low alarm relay and the a high mA threshold activating the high alarm relay. The low alarm threshold has two set points configured by the Set point Adjustment selector switch. The low alarm relay trip point can be set by this switch to trip at 33% of 20 mA (9.28 mA) or 50% of 20 mA (12 mA) on the signal input mA loop. One must add the offset of 4 mA to the active operating range of 16 mA to determine the actual current output for each respective trip level. The high alarm relay trip point is fixed at 20 mA.

When the trip threshold current is reached, the module has a built in hysteresis for the on trip and off trip. This hysteresis time is 2 seconds. Therefore, a delay of 2 seconds will exist for all relay actuations to ensure stable operation in noisy environments.

When the unit is properly powered, a green LED will indicate power. When the low alarm threshold is reached, a Yellow LED labeled "LOW ALARM" will indicate low alarm activation. When the high alarm threshold is reached, a Red LED labeled "HIGH ALARM" will indicate High alarm activation.

4 Limited Warranty

1. Limited Warranty

Honeywell Analytics, Inc. warrants to the original purchaser and/or ultimate customer ("Purchaser") of Manning products ("Product") that if any part thereof proves to be defective in material or workmanship within eighteen (18) months of the date of shipment by Honeywell Analytics or twelve (12) months from the date of first use by the purchaser, whichever comes first, such defective part will be repaired or replaced, free of charge, at Honeywell Analytics' discretion if shipped prepaid to Honeywell Analytics at 405 Barclay Blvd., Lincolnshire, IL 60069, in a package equal to or in the original container. The Product will be returned freight prepaid and repaired or replaced if it is determined by Honeywell Analytics that the part failed due to defective materials or workmanship. The repair or replacement of any such defective part shall be Honeywell Analytics' sole and exclusive responsibility and liability under this limited warranty.

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