MD-D04

4-Reader Expansion Board

Installation Manual

1. Introduction

The MD-D04 is an optional expansion board for use with Rosslare Security's family of state-of-the-art AC-425 networked access controllers.

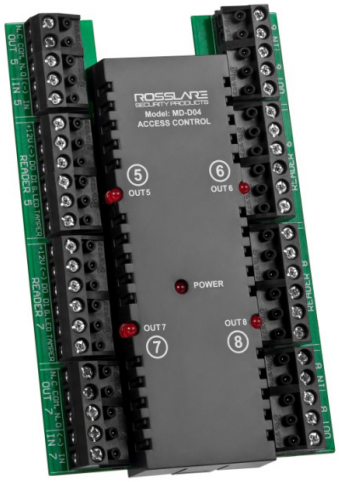
The expansion board adds an additional four reader or keypad inputs; four relay outputs and four supervised inputs to the access control panel.

As a result, an access control panel with an MD-D04 expansion can support a total of eight readers and eight door panels. In addition, it is possible to add any keypad or biometric reader that supports the Wiegand or Clock & Data transmission formats.

The host access controller has complete control over the additional readers, inputs and outputs of the MD-D04 expansion board. The inputs and outputs can be configured using an access control software system such as Rosslare Security's AxTraxNG™. The software system also configures the MD-D04's reader card transmission format and input connection topology.

This guide explains how to install and begin working with your new MD-D04 access control panel expansion board.

Figure 1: MD-D04 Access Controller Expansion Board



2. Technical Specifications

2.1 Electrical Characteristics

MD-D04 Input Voltage	12 VDC
MD-D04 Input Current (not including attached devices))	Standby: 30 mA Maximum: 190 mA
Number of Reader Ports	4
Number of Inputs	4
Number of Outputs	4
Output Relays	5 A with N.O., N.C., and COM contacts Form-C Relays
Inputs Voltage	5 VDC maximum voltage

2.2 Input Characteristics

Input Type:	Selectable as: • Normally Open • Normally Closed • Supervised with one resistor (three states, normally open or normally closed) • Supervised with two resistors (four states, Normally Open or Normally Closed))

2.3 Physical Characteristics

Dimensions (L x W x D)	116 x 76 x 22 mm (4.57 x 2.99 x 0.87 in.)
Weight:	75 g (2.65 oz)

2.4 Reader Characteristics

Reader Output Voltage:	12 VDC
Max. Reader Current:	245 mA
LED Control Output:	Open collector, Active low
Tamper Input:	5 VDC maximum voltage, optical anti-tamper sensor
Supported Formats:	Various (refer to the AxTraxNG™ software manual)

2.5 LED Indicators

Power LED:	Active when connected to a power source
Output LEDs:	Four LEDs Each output LED is active when an output relay is energized and N.O. to COM contacts are shorted.

3. Installation

Figure 2 shows how host access control panel looks before the MD-D04 is attached.

3.1 Attaching the MD-D04

1. Disconnect power to the access control panel before attaching the MD-D04.
2. Remove the MD-D04 cover by lightly pulling one of the cover knobs away from the circuit board. The entire cover comes away from the board.
3. Peel off the label on the cover of the panel marked "Remove to install I/O board". The label is located on the same side of the panel as the DIP switch.
4. Insert the 10-pin male connector of the MD-D04 into the gap in the panel cover labeled "IO EXPANSION SLOT" (Figure 2). The text on the MD-D04 must face the same way as the text on the panel cover.
5. Tighten the screws securing the cover to the access control panel, and the four Philips screws on the MD-D04 circuit board.
6. Replace the cover on the expansion board, using it as a guide to ease the MD-D04 into the panel's 10-pin female connector.

Figure 2: Host Access Control Panel without MD-D04 Expansion

4. Wiring Instructions

4.1 Input Wiring Options

There are six input wiring options:

- Normally Open
- Normally Closed
- Normally Open Supervised with one or two resistors
- Normally Closed Supervised with one or two resistors
- Normally Open Switch
- Normally Closed Switch

Figure 3 shows the normally open input connection.

Figure 3: Normally Open Input

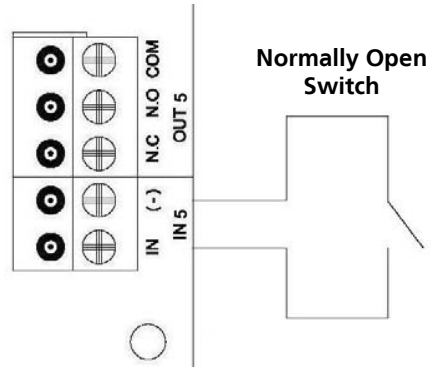


Figure 4 shows the normally closed input connection.

Figure 4: Normally Closed Inputs

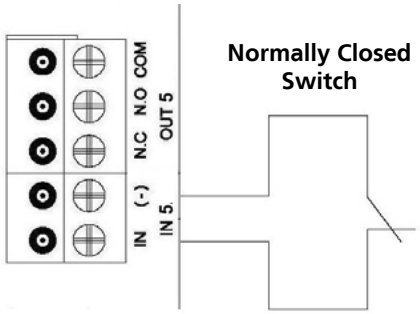
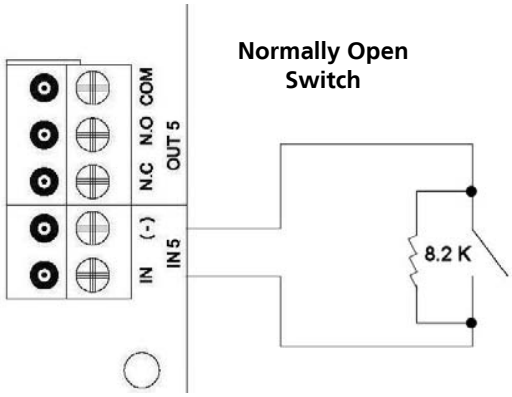


Figure 5 shows the normally open supervised input connection with single resistor.

Figure 5: Normally Open Supervised Inputs with Single Resistor

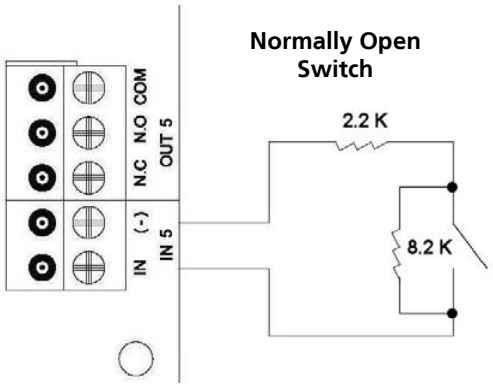


Normally Open Supervised inputs with one resistor must be connected with an 8.2K resistor in parallel to the input switch contacts.

> Note: Always wire resistors on the input switch and not on the terminal block.

Figure 6 shows the normally open supervised input connection with double resistor.

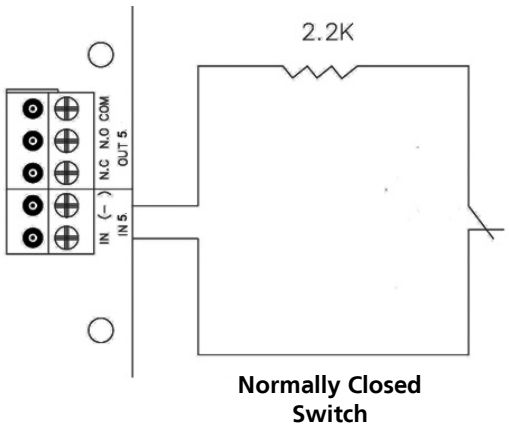
Figure 6: Normally Open Supervised Inputs with Double Resistor



Normally Open Supervised inputs with two resistors must be connected with an 8.2K resistor in parallel and a 2.2K resistor in series to the input switch contacts.

Figure 7 shows the normally closed supervised input connection with single resistor.

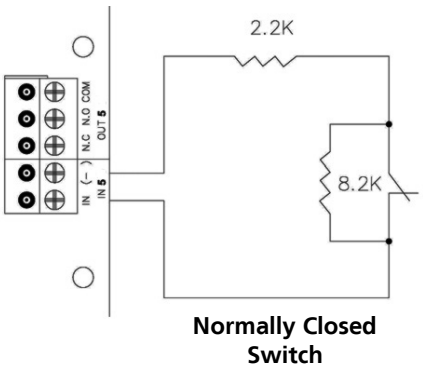
Figure 7: Normally Closed Supervised Input with Single Resistor



Normally Closed Supervised inputs with a single resistor must be connected with a 2.2K resistor in series to the input switch contacts.

Figure 8 shows the normally closed supervised input connection with double resistor.

Figure 8: Normally Closed Supervised Input with Double Resistors



Normally Closed Supervised inputs with two resistors must be connected with an 8.2 K resistor in parallel and a 2.2 K resistor in series to the input switch contacts.

4.2 Outputs

Electrical devices can be switched using the voltage free relay contacts.

Rosslare recommends using suppression diodes for all outputs that are connected to inductive loads and activated by DC current, such as Magnetic Lock ("Maglock") or door strike devices.

Each suppression diode must be connected near its inductive load. Always attach the diode's cathode to the +V terminal of the load. Attach the diode's anode to the –V terminal.

For more information, refer to your access controller's Installation and User Guide.

4.3 Readers

The reader terminal supports the reader's two data lines. For Wiegand readers, these are data lines D0 and D1. For Clock & Data readers, D0 is the DATA line and D1 is the CLOCK line.

There is also support for a tamper signal input from the reader and for one LED control output to the reader.

Proximity and keypad readers are supplied with a limited cable. The color of the cable cover represents the cable's function.

In general, the cable length should be no more than 150 m with an 18 AWG cable. Refer to each reader's installation guide for specific details.

Readers connected through an MD-D04 are recognized as "Reader 5","Reader 6","Reader 7", and "Reader 8" in the software system.

Figure 9 through Figure 12 show the wiring for Readers 5 through 8, respectively.

Figure 9: Wiring for Reader 5

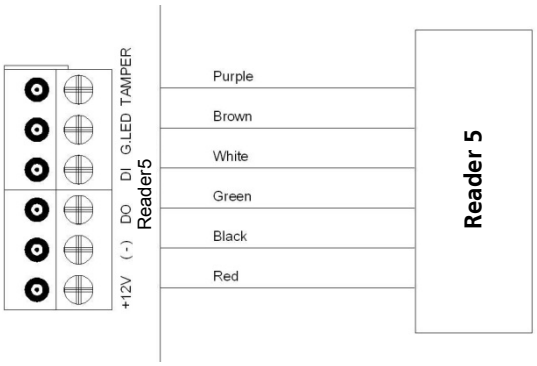


Figure 10: Wiring for Reader 6

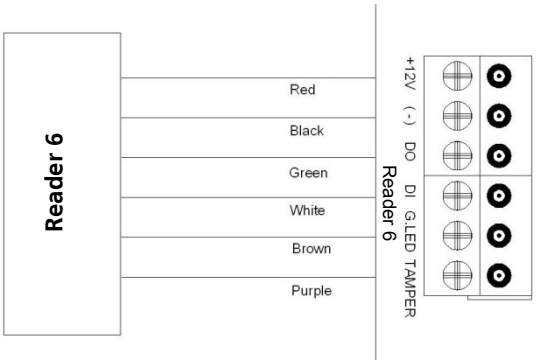


Figure 11: Wiring for Reader 7

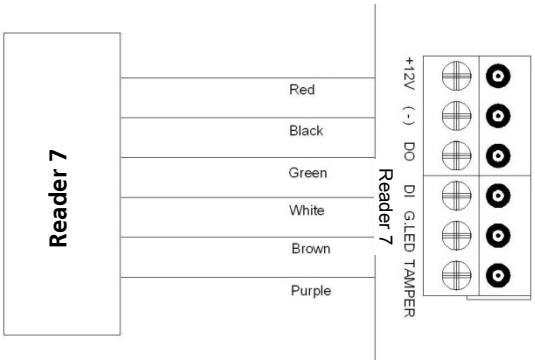
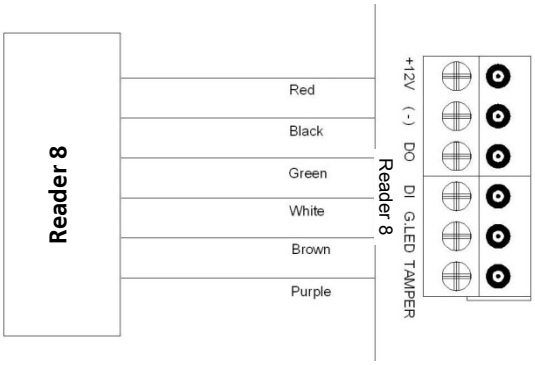


Figure 12: Wiring for Reader 8



5. Using the MD-D04

5.1 Operating the MD-D04

The access control panel detects the MD-D04 expansion board when it powers up. When defining the panel in the access control panel's PC application (such as AxTraxNG™), select the option designating the panel name with a designation of "MD-D04".

Readers, inputs, and outputs must be defined using the access system software. Readers connected through an MD-D04 are recognized as "Reader 5","Reader 6","Reader 7", and "Reader 8" in the software system.

Define each input's type and make sure the connection is compatible with the input wiring.

When selecting inputs and outputs from the software, note that input and output type and function in the access control software normally reflect the host access control panel's general purpose inputs and outputs.

When using AxTrax, define input types from the "Inputs" tree menu. Input and output functions are defined using the "Links" element within each "Panel" tree menu item.

For more information, refer to the *AxTraxNG Software Manual*.

Limited Warranty

The full ROSSLARE Limited Warranty Statement is available in the Quick Links section on the ROSSLARE website at www.rosslaresecurity.com.

Rosslare considers any use of this product as agreement to the Warranty Terms even if you do not review them.

Contact Information

Asia Pacific, Middle East, Africa
Rosslare Enterprises Ltd.
Kowloon Bay, Hong Kong
Tel: +852 2795-5630
Fax: +852 2795-1508
support.apac@rosslaresecurity.com

United States and Canada
Rosslare Security Products, Inc.
Southlake, TX, USA 76092
Toll Free: +1-866-632-1101
Local: +1-817-305-0006
Fax: +1-817-305-0069
support.na@rosslaresecurity.com

Europe
Rosslare Israel Ltd.
Rosh HaAyin, Israel 48091
Tel: +972 3 938-6838
Fax: +972 3 938-6830
support.eu@rosslaresecurity.com

Latin America
Rosslare Latin America
Buenos Aires, Argentina
Tel: +54-11-4001-3104
support.la@rosslaresecurity.com

China
Rosslare Electronics (Shenzhen) Ltd.
Shenzhen, China
Tel: +86 755 8610 6842
Fax: +86 755 8610 6101
support.cn@rosslaresecurity.com

India
Rosslare Electronics India Pvt Ltd.
Tel/Fax: 91 20 40147830
Mobile: 91 9975768824
sales.in@rosslaresecurity.com

0706-0960475+00