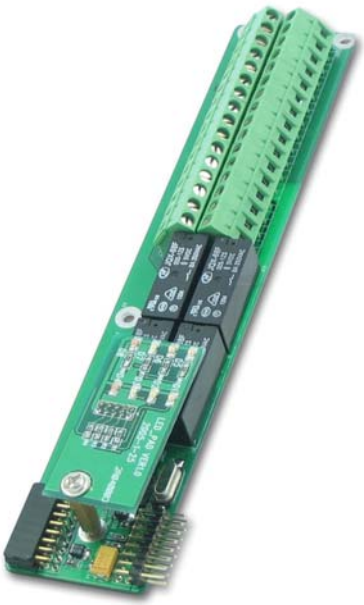
Volume

1

EverAccess

User Manual



Door Module for Flex Series Controller

EFM-DR-1A

EVERFOCUS ELECTRONICS CORPORATION

EFM-DR-1A

Instruction Guide

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Chapter

1

Product Overview

The EverAccess® Flex Series controller (part number: EFC-02-1A) incorporates state-of-the-art technology and modular design to provide reliable performance, user-friendly installation, expansion capabilities, and flexible but powerful configuration options. The door module (part number EFM-DR-1A) is the basic 2-door expansion piece for the Flex Series Controller. It expands the control capabilities of the controller by two readers.

The controller accommodates up to 4 door modules. The door modules are easily installed; each module connects to the module to its right. The features for the door module are listed in the next section.

Features

- Supports two readers
- Supports both standard Wiegand format and EverAccess RS232 format readers
- Provides 12VDC power supply to two readers
- Supports full controls on two doors, including door sensor, door lock relay, request-to-exit
- Provides two alarm outputs
- Wiegand 26 and EverAccess RS232 formats supported
- Built-in transient voltage suppressor (TVS) to protect controller from electric surge
- Large durable relay, max current draw up to 5A at 30VDC
- Built-in LEDs display the system status intuitively

Parts List

Please be careful when you unpack the box due to the electronics devices inside. Check and make sure that you have all the items below inside the original box:

- 3 mm*4 mm screws (to mount the module to the controller)

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify your Everfocus Electronics Corp. Sales Representative or Customer Service. The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

In addition, the following EverAccess products are required for use with the door module to achieve the correct functionality:

- EverAccess Flex Series Controller (part number EFC-02-1A)
- EverAccess proximity readers (part numbers ERR-871, ERK-871, ERM-871)

Specifications

Items	*Parameter*
Number of readers supported	2
Communication format	Wiegand26 or EverAccess RS-232 format
Number of doors supported	1 with both entry and exit readers 2 with entry reader for each door
Input	2 for door sensors 2 for *request*-to-exit signals
Relay output	2 relay outputs for door lock 2 relay outputs for alarm
LED	2x4
Power supply	Provided by the controller
Max current draw for relay outputs	5A

Chapter

2

Installing the Door Module into the Controller

In this chapter, we will introduce how to mount the door module into an EverAccess Flex Series controller. The definitions for the reader/door index is also explained.

The EverAccess Flex series controller can accommodates up to 4 door modules and 1 alarm module. The door modules are connected from right to left, with each new module connecting easily in a cascading fashion. The door modules and the alarm module can be placed in any sequence. The index will follow the same rules (refer to next subsection).

The steps to install a door module are described below:

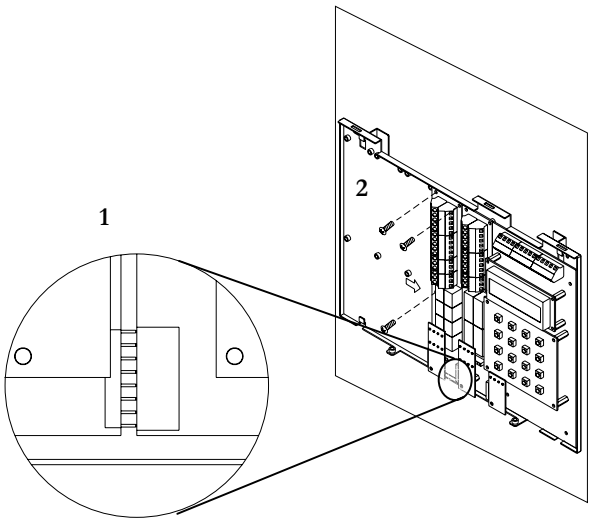

Figure 2.1 Install a door Module to Controller

1. Connect the pins on the lower right corner of the new module to the connector on the bottom left corner of the installed module. Make sure that the pins fit snugly into the receiving module.

2. Secure the module to the controller base board using the three screws (provided in the module package).

Reader/Door Index Conversion

One EverAccess Flex Series controller can accommodate up to 4 door modules, each of which controls 2 readers. The index conversion of readers and is displayed below. The readers/doors are counted 1 to 8 from right to left:

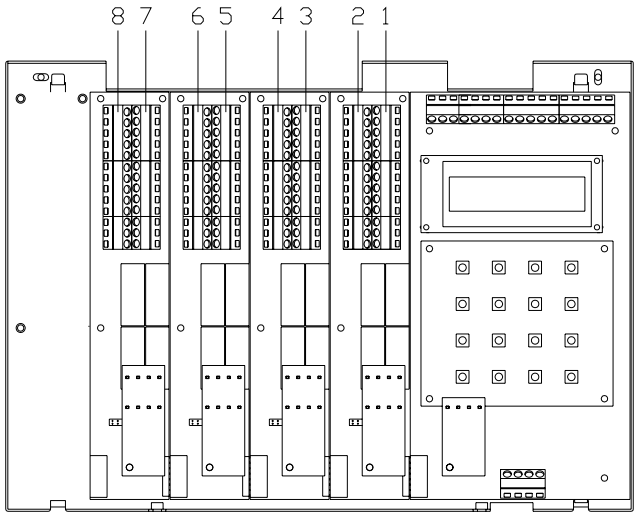

Figure 2.2 Reader/Door index conversions

Note: Each card reader can be associated with any door index. Please refer to section 5 for more details.

Chapter

3

Terminal/LED Definitions

The definitions of the module terminals are presented in this chapter.

Door Module Terminal Definition

The terminals on the door modules are classified into two groups, each of which controls two doors and the corresponding card readers. The right side terminals (indexed from #1~#16) control one reader, while the left side terminals (indexed from #17~#32) are responsible for the 2nd reader, as shown in the following figure. As described in the "reader/door index conversion" section of the manual, the reader's index depends on the door module to which it is connected. For example, consider one door module where terminals #1 ~#16 control Reader 1, and #17~#32 control Reader 2. Table 3.1 shows the definition and wiring details for the door module terminals.

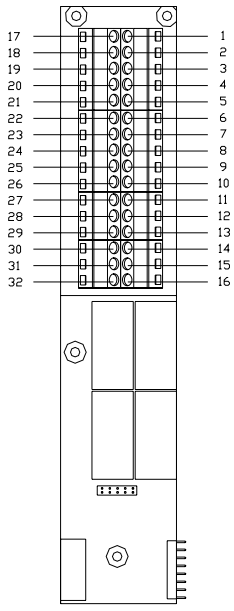

Fig. 3.1 Door Module Terminal Definition

The definitions of the door module terminals are defined in the following table:

Table 3.1 the definitions of the door module terminals

No	Terminal name	Function	No	Terminal name	Function
1	Reader1_Data0	Reader 1 Wiegand Data 0	17	Reader2_Data0	Reader 2 Wiegand Data 0
2	Reader1_Data1	Reader 1 Wiegand Data 1	18	Reader2_Data1	Reader 2 Wiegand Data 1
3	Reader1_DC	Power supply for reader 1. Output +12 V voltage.	19	Reader2_DC	Power supply for Reader 2. Output +12 V voltage.
4	Reader1_GND	GND for the Reader 1	20	Reader2_GND	GND for the Reader 2
5	Reader1_ctrl	Control line for reader 1	21	Reader2_ctrl	Control line for Reader 2
6	RX_1	Port to TX signal to reader 1	22	RX_2	Port to TX signal to Reader 2
7	TX_1	Port to RX signal from reader 1	23	TX_2	Port to RX signal from Rader 2
8	Door1_ Button	The request-to-exit button for Door 1	24	Door2_ Button	The request-to-exit button for Door 2
9	Door1_GND	GND for terminal 8 & 10	25	Door2_GND	GND for terminal 24 & 26
10	Door1_ Sensor	Door sensor input for Door 1	26	Door2_ Sensor	Door sensor input for Door 2
11	Door1_NO	Normally open pin for door control relay 1	27	Door2_NO	Normally open pin for door control relay 2
12	Door1_COM	Common pin for door control relay 1	28	Door2_COM	Common pin for door control relay 2
13	Door1_NC	Normally close pin for door control relay 1	29	Door2_NC	Normally close pin for door control relay 2
14	Alarm1_NO	Normally open pin for alarm output relay 1	30	Alarm2_NO	Normally open pin for alarm output relay 2
15	Alarm1_COM	Common pin for alarm output relay 1	31	Alarm2_COM	Common pin for alarm output relay 2
16	Alarm1_NC	Normally close pin for alarm output relay 1	32	Alarm2_NC	Normally close pin for alarm output relay 2

Door Module LED Definition

There are 8 LED indicators on each door module. The positions and indexes are shown in Fig. 3.2. The definitions of these LED indicators are presented in Table 3.4

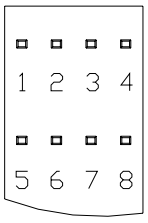

Fig. 3.2 Door Module LED Definition

The definitions of LEDs on the door module are defined in the following table:

Table 3.2 The definition of LEDs on the door module

LED	Meaning
1	On indicates the alarm relay #2 energized
2	On indicates reader #2 connected
3	On indicates the door sensor #2 is off (the door's open)
4	On indicates door control relay #2 energized
5	On indicates the alarm relay #1 energized
6	On indicates reader #1 connected
7	On indicates the door sensor #1 is off (the door's open)
8	On indicates door control relay #1 energized

Chapter

4

Wiring

This chapter will describe, in detail, how to wire the terminals in the door modules.

Connection to Readers

As mentioned before, each door module can control up to two card readers with the correct wiring. The supported reader formats are EverAccess RS232 and standard Wiegand26. For instructions on connecting each type, please refer to Fig. 4.1 (a) for the RS232 reader connection and Fig 4.1(b) for the Wiegand reader connection. (The terminals for the 2nd side of the door module are given in brackets)

RS232 Format

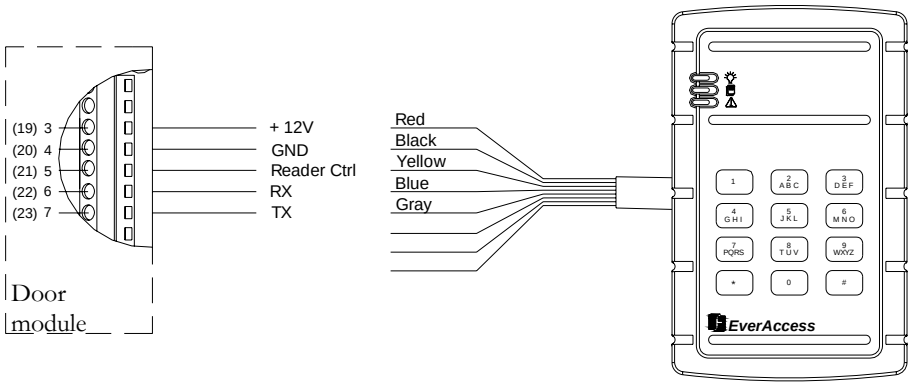

Fig. 4.1(a) Connection to the EverAccess reader using RS232 format

Wiegand 26 Format

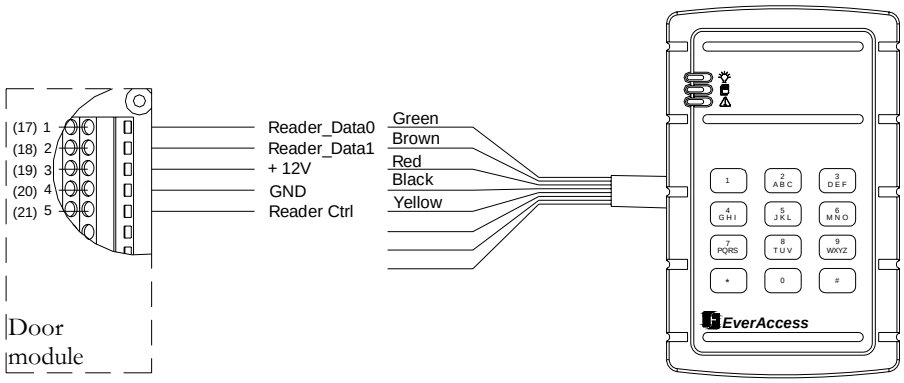

Figure 4.1 (b) Connection to the EverAccess reader using Wiegand format

Each door module can provide +12V voltage for two card readers.

Twisted cable is recommended to connect the controller and card readers. The maximum transmission distance between the reader and controller depends on the gauge of the cable and the specification of the card reader. Please read the reader user manual carefully before installing the cable for the readers.

Note: When installing a multi-reader system, it is strongly recommended that all the card readers follow the same format, i.e. all of them are EverAccess RS232 or Wiegand. Multiple formats could present compatibility problems: a card may not be accepted by all the card readers in the system.

Connection to Door Lock

Each door module provides an interface to two door control relays. Terminal 11 ~13 are for door 1 and terminal 27~29 are for door 2. Terminal 12 and 28 are named common terminal (COM). Terminal 13 and 29 are named normally closed terminal (N.C.). Terminal 11 and 27 are named normally open terminal.

The electrical door lock must have a separate power supply. The power supply for the electrical door lock depends on the specification of the lock. Carefully choose the cable connecting the door locks to fit the current draw. Two common types of electrical door locks in the market are electric strike locks and magnetic locks. The connection methods for these examples are shown in Fig. 4.2 and 4.3 respectively.

Connection to an Electric Strike

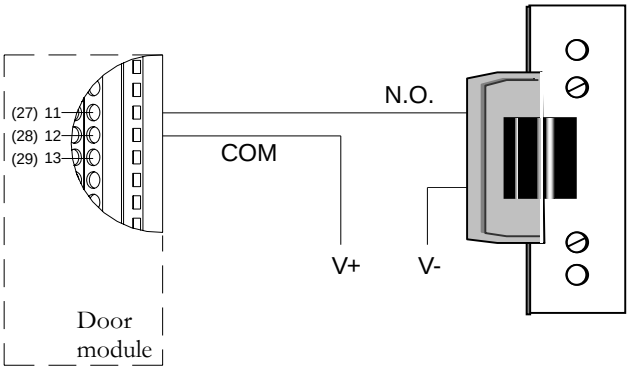

Fig.4.2 Example for connecting an electric strike

Connection to a Magnetic Lock

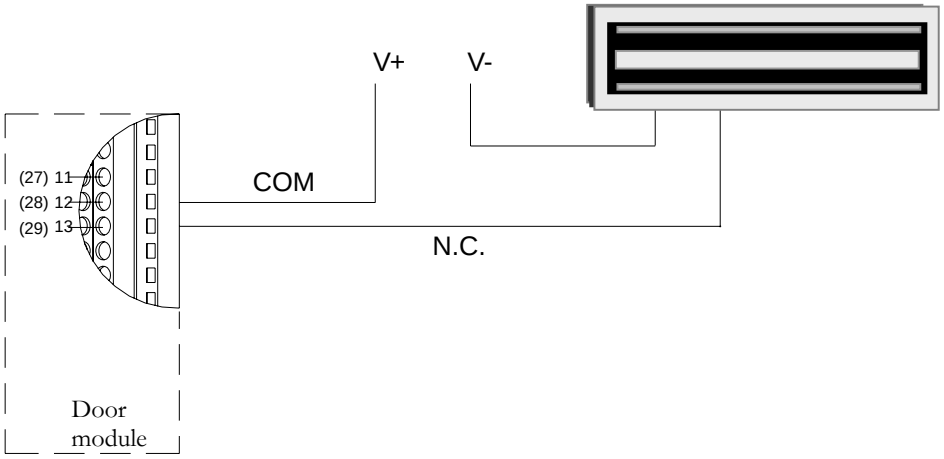

Fig. 4.3 Example for connecting a magnetic lock

NOTE:

1. **The maximum current outputted by the door lock relay on the door module is less than 5A. If the current for door lock exceeds the capacity, an external power relay is needed.**
2. **V+ in the figures represents one lead of power from an external power source. When using DC Voltage for the lock, put the positive lead here. When using AC the leads are interchangeable.**

Connection to Door Sensor

The interface to the door sensor is also provided by the door module: door sensor 1 and door sensor 2 correspond to terminal 9 ,10 and 25, 26 on the door module.

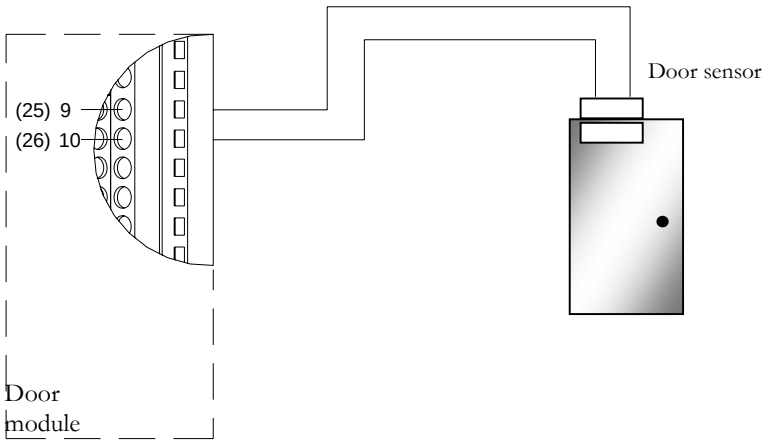

Fig. 4.4 Example for connecting door sensor to controller

NOTE: Among these four terminals, terminal 9 and 25 are GND, shared by the door sensor and request-to exit

Connection to Request-to-exit

The door module also provides an interface to the request-to-exit button or sensor. Door 1 and door 2 are connected to terminal 8, 9 and 24, 25 respectively.

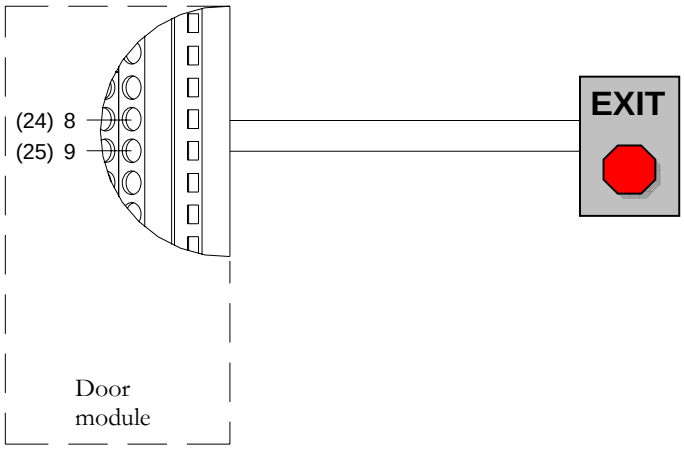

Fig. 4.5 Connecting REX to controller

NOTE: Among these four terminals, terminal 9 and 25 are GND, shared by the door sensor and request-to exit

Connection to Alarm Output

The alarm module provides 8 alarm inputs and 8 alarm outputs. The user can assign the corresponding relay status to the different events. There are three terminals: COM, N.O and N.C. The wiring depends on the alarm device. Please read the user manual of the external alarm devices before wiring. Using the 1st channel alarm signal input as an example, the wiring is shown in Fig. 4.6 and 4.7.

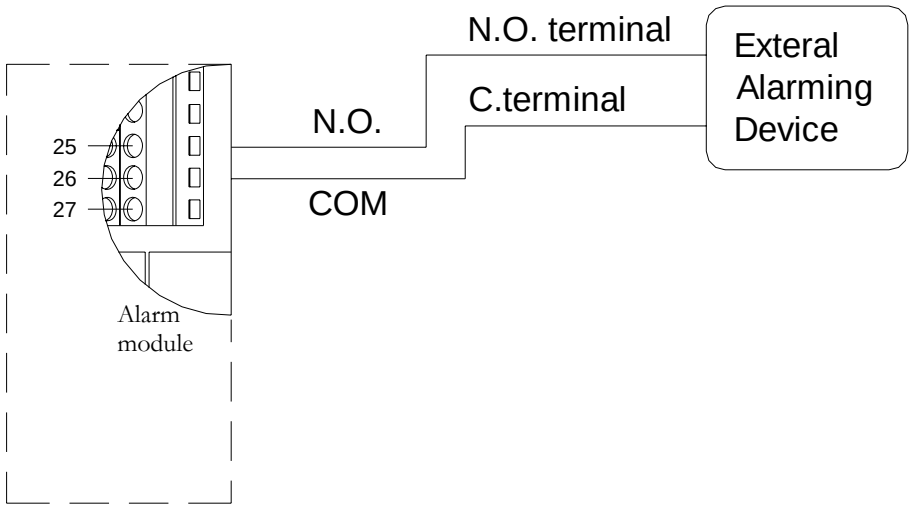

Fig. 4.6 Normally open connection for alarm output 1

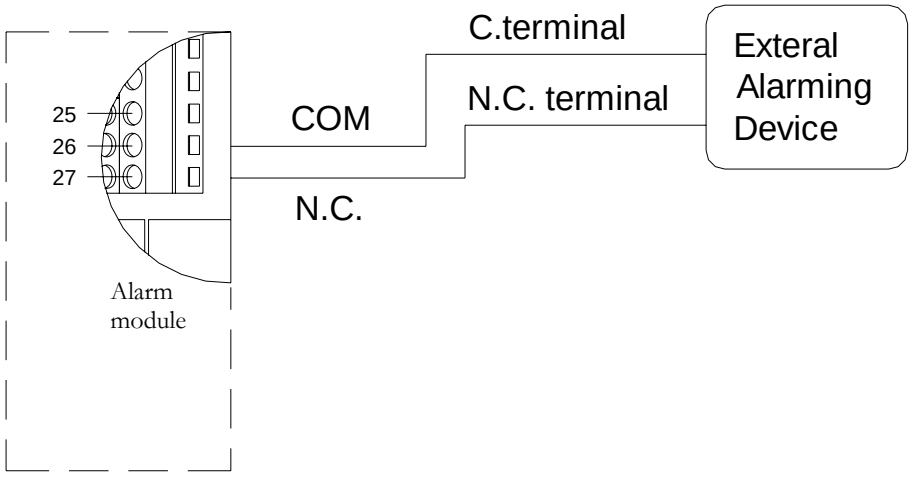

Fig. 4.7 Normally closed connection for alarm output 1

Notes

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