45-MR-1125

Outdoor Contactless Smart Card Readers

Installation Manual

1. Introduction

The 45-MR-1125 is a MIFARE ID read-only proximity reader that is intended primarily for use in access control system applications. The 45-MR-1125 reads the MIFARE Card Identification Number and transmits it to the access control system, using common multi-format Wiegand outputs.

1.1 Key Features

- Contactless smart card reader
- Reads MIFARE serial number only
- Meets ISO14443 Type A Standard
- Output format and configurations upgrade via PC software (set by factory):
  - Wiegand 26-Bit (default)
  - Wiegand 26-Bit with Facility code output format
  - Wiegand 32-Bit
  - Wiegand 32-Bit Reverse Output
  - Wiegand 34-Bit
  - Wiegand 40-Bit
  - Clock & Data
- Optical back tamper sensor and open collector tamper output
- LED buzzer control input (set by factory)
- Bi-colored LED

1.2 Supported Transponders

- MIFARE Ultralight 512-bit EEPROM
- MIFARE Classic 1K bytes memory
- MIFARE Classic 4K bytes memory

Figure 1: 45-MR-1125



2. Technical Specifications

2.1 Electrical Characteristics

Specifications	45-MR-1125
Power Supply Type	Linear type (recommended)
Operating Voltage Range	5–16 VDC
Absolute Maximum (non-operating)	18 VDC
Current @ 12V	Standby: 35 mA Maximum: 55 mA
Read Range*	60 mm (2.36 in.)
LED Control Input	Dry Contact, N.O.
Tamper Output	Open collector, active low, max. sink current 30 mA
Maximum Cable Distance to Controller	150 m (500 ft)
Frequency	13.56 MHz
Bit Rate	106 KHz

* Range depends on the electrical environment and proximity to metal measured with Yale MIFARE Classic 1K bytes cards.

2.2 Environmental Characteristics

Specifications	45-MR-1125
Operating Temp. Range	-31°C to 63°C (25°F to 145°F)
Operating Humidity	0 to 95% (non-condensing)

2.3 Physical Characteristics

Model	Dimensions (H x W x D)	Weight
45-MR-1125	79.91 x 39.91 x 12.8 mm (3.15 x 1.57 x 0.50 in.)	75.49 g (2.66 oz)

3. Installation

3.1 Installation Kit

The installation kit consists of the following items to be used during the installation procedure:

- One mounting template
- Two pan head screws and wall plugs
- One L-shaped security screw tool
- One security screw

3.2 Mounting the Reader

Before mounting, you should determine the best location for the reader.

To mount the reader:

1. Peel off the back of the self-adhesive mounting label template and place it at the required mounting location.
2. Using the template as a guide, drill two holes (sizes indicated on the template) used for mounting the reader onto the surface,
3. Insert a suitable wall plug into each hole.
4. Drill a 10-mm (7/16") hole for the cable. If mounting on metal, place a grommet or electrical tape around the edge of the hole.
5. Wire the reader as described in Section 4. A linear type power supply is recommended.
6. Remove the reader's snap-off front cover to reveal the two screw holes (see Figure 2).

Figure 2: Removing the Top Cover



7. Align the two holes of the reader with those drilled in the wall and firmly attach the reader to the wall with two screws, whose size is indicated on the template.
8. Relocate the front cover onto the reader.

> ***Note:*** *The reader can also be mounted using strong epoxy glue. After application, the reader should be firmly held in place until the glue dries.*

4. Wiring

The reader is supplied with a 6-conductor 18" pigtail.

To connect the reader to the controller:

1. Prepare the reader cable by cutting its jacket back about 3 cm (1¼") and strip the insulation from the wires about 1.2 cm (½").
2. Prepare the controller cable by cutting its jacket back 3 cm (1¼") and strip the insulation from the wires about 1.2 cm (½").
3. Splice the reader's pigtail wires to the corresponding controller wires (as indicated in Table 1) and cover each joint with insulating tape.

Color	Output
Red	5–16 V DC
Black	Ground
White	Data 1/Clock
Green	Data 0/Data
Brown	LED/buzzer control
Purple	Tamper

4. If the tamper output is being utilized, connect the purple wire to the correct input on the controller.

   The LED control may be configured by the factory to function either as a LED control or as buzzer control. When connecting the wire to "Ground" it will activate the function continuously, either continuous LED or continuous buzzer.
5. Trim and cover all unused conductors.

> ***Note:***
> - *The individual wires from the reader are color-coded according the Wiegand standard.*
> - *When using a separate power supply for the reader, this supply and that of the controller must have a common ground.*
> - *The reader's cable shield wire should be preferably attached to an earth ground, or a signal ground connection at the panel, or power supply end of the cable. This configuration is best for shielding the reader cable from external interference.*

5. Operation Instructions

Once the reader is wired to a power supply and to the controller, you should test the reader.

To test the reader:

1. Power up the reader.

   The LED flashes green and the beeper sounds three times indicating that the reader is working properly. The LED returns to its idle state (red).
2. Present the appropriate type of proximity card to the reader.

   The LED momentarily flashes green and a short beep is emitted indicating that the card was read properly by the reader.

   The reader transmits the card's data to the controller. The controller checks the data. If it is valid, the LED changes momentarily to green and then returns to its idle state (red).

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