

AY-x5B Series

MIFARE Classic® EV1 CSN Readers

Installation Manual

1. Introduction

The AY-x5B is a series of RFID proximity card readers to be installed for use with access control systems.

The AY-x5B series reads the card serial number (CSN) from MIFARE Classic® EV1 credentials (4 UID and 7 UID) and transmits its data to the access control system using Wiegand 26-Bit output.

Other Wiegand formats and the Clock & Data format are available as factory configurable options.

Figure 1: AY-x5B Series



2. Technical Specifications

2.1 Electrical Characteristics

Specifications	AY-M5B	AY-H5B	AY-L5B	AY-K5B
Power Supply Type	Linear (recommended)			
Operating Voltage Range	5–16 VDC			
Absolute Maximum (non-operating)	18 VDC			
Current @ 12V	Standby: 45 mA Maximum: 100 mA			
Max. Read Range*	6.5 cm (2.6 in.)	7.0 cm (2.8 in.)		6.0 cm (2.4 in.)
LED Control Input	Dry Contact, N.O.			
Maximum Cable Distance to Controller	18-AWG: 150 m (500 ft) 20-AWG: 90 m (300 ft)			
Frequency	13.56 MHz			
Bit Rate	106 KHz			

* Measured using a Rosslare MIFARE Classic EV1 card or equivalent. Range also depends on installation environment, reader voltage, and proximity to metal.

2.2 Environmental Characteristics

Specifications	AY-M5B	AY-H5B	AY-L5B	AY-K5B
Operating Temp. Range	-31°C to 63°C (-25°F to 145°F)			
Operating Humidity Range	0 to 95% (non-condensing)			

2.3 Physical Characteristics

Model	Dimensions (H x W x D)	Weight
AY-M5B	89 x 89 x 15 mm (3.5 x 3.5 x 0.6 in.)	120.3 g (4.2 oz.)
AY-H5B	110 x 75 x 15 mm (4.3 x 3.0 x 0.6 in.)	119.9 g (4.2 oz.)
AY-L5B	145 x 43 x 20 mm (5.7 x 1.7 x 0.8 in.)	115.2 g (4.1 oz.)
AY-K5B	80 x 40 x 12.8 mm (3.2 x 1.6 x 0.5 in.)	75.5 g (2.7 oz.)

3. Installation



Installation of an RFID reader adjacent to metallic surfaces might alter the reader's specifications. To diminish this interference, use a plastic spacer when mounting the reader.

3.1 Installation Kit

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

- Two pan head mounting screws and screw anchors

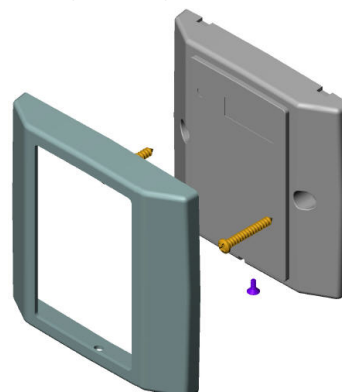
3.2 Mounting

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

To mount the reader:

- Drill two holes for mounting the reader on the wall.
- Insert a screw anchor into each hole.
- 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.
- Remove the screw from the bottom of the unit.
- Remove the reader's snap-off front cover.
- Insert the unit's cable wire into the cable hole and wire the unit as described in Section 3.3. A linear type power supply is recommended.
- Align the two holes of the reader with those drilled in the wall and firmly attach the reader to the wall with two screws (Figure 2).

Figure 2: Inserting Mounting Screws (similar for all models)



- Relocate the front cover onto the reader.
- Secure the front cover with the screw at the bottom of the unit.

3.3 Wiring

The AY-x2B is supplied with 5 color-coded wires 25 cm (10 in.) in length.

To connect the reader to the controller:

1. Select the appropriate connections according to Table 1.

Table 1: Wiring

Wire Color	Function
Red	VIN 5–16 VDC
Black	Ground
Green	Data 0
White	Data 1
Brown	Green LED CTL

2. Connect the wires to the corresponding controller wires and cover each joint with insulating tape.
3. Trim and cover all unused conductors.



When using a separate power supply for the reader, this supply and that of the controller must have a common ground

3.4 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.
Upon power up, the reader flashes and beeps once during Self-Test. The LED then turns red indicating the readers has entered Standby mode.
2. Apply a MIFARE Classic EV1 credential to the reader.
The reader flashes and beeps once indicating the card has been read successfully.

Declaration of Conformity

FCC ID:GCD-AYX25B

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - This device may not cause harmful interference.
 - This device must accept any interference received, including interference that may cause undesired operation.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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.

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