

AY-Z12A

Long-Range Multi-Reader Installation Manual



ROSSLARE
SECURITY PRODUCTS

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Notice and Disclaimer

This manual's sole purpose is to assist installers and/or users in the safe and efficient installation and usage of the system and/or product, and/or software described herein.

BEFORE ATTEMPTING TO INSTALL AND/OR USE THE SYSTEM, THE INSTALLER AND THE USER MUST READ THIS MANUAL AND BECOME FAMILIAR WITH ALL SAFETY REQUIREMENTS AND OPERATING PROCEDURES.

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- The use of the software associated with the system and/or product, if applicable, is subject to the terms of the license provided as part of the purchase documents.
- ROSSLARE exclusive warranty and liability is limited to the warranty and liability statement provided in an appendix at the end of this document.
- This manual describes the maximum configuration of the system with the maximum number of functions, including future options. Therefore, not all functions described in this manual may be available in the specific system and/or product configuration you purchased.
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1. Introduction

The AY-Z12A Long-Range Reader is an RFID proximity card reader, which is utilized with access control systems. The reader can function in one of two scenarios:

- Single reader installation (default)
- Multiple reader installation

This manual contains the following information:

- Installation Instructions
- Wiring Instructions
- Configuration Instructions
- Operation Instructions

2. Technical Specifications

Electrical Characteristics

Power Supply Type	Linear type – recommended
Operating Voltage Range	10 to 16 VDC
Absolute Maximum (non-operating)	18 VDC
Input Current	Standby: 280 mA Read: 330 mA
Tamper Output	Open collector, active low, max. sink current 30 mA
Maximum Cable Distance to Controller	150 m (500 ft)
Card Output Format	Wiegand 26-Bit
Maximum Proximity Card Read Range*	60 cm (23.6 in.)

Environmental Characteristics

Operating Temp. Range	-30°C to 63°C (-22°F to 145°F)
Operating Humidity	0 to 95% (non-condensing) Suitable for outdoor use (IP54)

Physical Characteristics

Dimensions (H x W x D)	300 x 300 x 25.4 mm (11.8 x 11.8 x 1.0 in.)
Weight	1066 g (2.35 lb)

- * For maximum range set the reader as a single reader, use Rosslare's AT-R14 clamshell proximity card, as well as a 16 V power supply and ensure that the installation is as far as possible from any additional electrical devices and not in the proximity to any metal.

3. Installation Instructions

3.1 Installation Kit

The installation kit comprises of the following items that are to be used during the installation procedure:

- One installation template
- Four pan head screws and wall plugs
- One L-shaped security screw tool
- Three security screws

3.2 Installing the AY-Z12A

When installing the reader, you must remove the snap-off cover to access the screw holes (Figure 1).

Figure 1: Removing the Top Cover

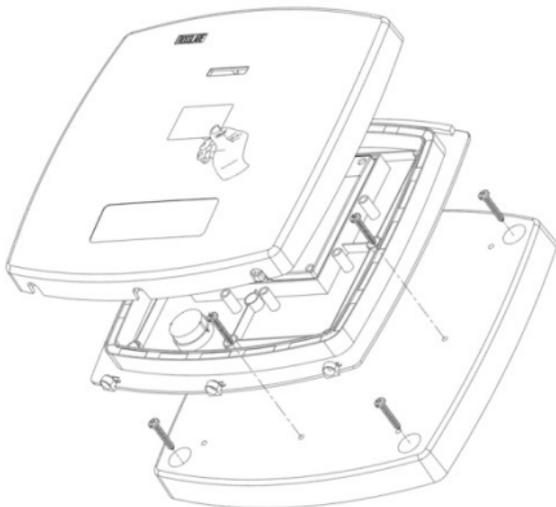


The reader must be mounted with the appropriate screws (not supplied), as described in the template provided.

Installation Instructions

Installing the unit on metal surfaces reduces the read range considerably. To decrease the effect of the metal surface, use Rosslare's MP-Z02 Spacer (sold separately) as shown in Figure 2 for a max range of 43 cm (17").

Figure 2: Installing the Unit with the MP-Z02 Spacer



3.2.1 Single Reader Installation

The AY-Z12A is designed to function with the best performance when installed isolated from other AY-Z12A readers in a range of at least 2 to 4 meters. The reader is therefore preconfigured as a single installation reader.

See Section 5.1 for detailed configuration instructions.

3.2.2 Multiple Reader Installation

Although designed to work in an isolated environment, it is possible to install multiple readers within a range of 2 to 4 meters; however the read range is reduced by 20 to 30 percent.

When installing multiple readers, configure each of the readers in the close environment for multiple reader installation.

We do not recommend installing multiple readers less than 2 meters apart due to reduced range caused by interference between readers. See Section 5.2 for detailed configuration instructions.

To install the reader:

1. Determine an approximate location for the installation of the reader.
2. Peel off the back of the self-adhesive installation label template and locate it at the required location.
3. Using the template as a guide, drill holes (the size of which are indicated in the template) to install the reader and/or spacer onto the surface.
4. Drill a 10-mm ($\frac{7}{16}$ ") hole for the cable. In the event that you are installing the reader on metal, place a grommet or electrical tape around the edge of the hole and use the MP-Z02 spacer.
5. Route the interface cable from the reader to the controller. A linear type power supply is recommended.

4. Wiring Instructions

The AY-Z12A is supplied with a 45-cm (18") pigtail, comprising a 6-conductor cable.

To connect the reader to the controller:

1. Prepare the reader cable by cutting its jacket back 4.5 cm (1¼") and strip the insulation from the wires 1.3 cm (½").
2. Prepare the controller cable by cutting its jacket back 3.2 cm (1¼") and stripping a 1.3 cm (½") of the insulation from the wires.
3. Splice the reader's pigtail wires to the corresponding controller wires and cover each joint with insulating tape.

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

Table 1: Wiring Colors

Reader	Color	Function
10~16 VDC	Red	DC Input
Shield/Ground	Black	Ground
Data 1	White	Data 1
Data 0	Green	Data 0
LEDCTL	Brown	LED Control
Tamper	Purple	Tamper

4. Trim and cover all unused conductors.



- The individual wires from the reader are color-coded according to 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 preferably be 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. Configuration Instructions

5.1 Single Reader Configuration

For single reader installation, this process is not required with new readers as it comes preconfigured from the factory to function as a single door reader.

To configure as a single reader:

1. Turn the reader power off.
2. Connect the Data 1 wire (white cable) to Ground.
3. Leave the LED Control wire (brown cable) floating.
4. Turn the reader power on. The reader LED turns orange.
5. Connect the LED Control wire (brown cable) to Ground.
6. Release the LED Control wire from the Ground. The reader's LED starts flashing continuously and the buzzer sounds.
7. Turn the reader power off.
8. Disconnect the Data 1 wire (white cable) from the Ground.

The reader configuration for single reader installation is complete.

5.2 Multiple Reader Configuration

To configure as a multiple reader:

1. Turn the reader power off.
2. Connect the Data 1 wire (white cable) to Ground.
3. Connect the LED Control wire (brown cable) to Ground.
4. Turn the reader power on. The reader LED turns orange.
5. Release the LED Control wire from the Ground.
6. Reconnect the LED Control wire (brown cable) to Ground. The reader's LED starts flashing continuously and the buzzer sounds.
7. Turn the reader power off.
8. Disconnect the Data 1 wire (white cable) from the Ground.

Configuration Instructions

The reader configuration for multiple reader installation is complete. You can now connect two or three readers within a range of 2–4 meters from one another.

6. Operation Instructions

The reader should be tested after wiring it to a power supply and the controller.

To test the reader:

1. Power up the reader. The LED flashes on power up and the beeper sounds twice, at which point it begins an auto-calibration procedure, which can take up to two seconds. When the calibration is complete, a third beep sounds to indicate 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 to indicate that the card was read properly by the reader.

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

The range is measured using a Rosslare Proximity Card (P/N AT-11/12) or equivalent. The range also depends on the electrical environment and/or proximity to metal.

A. 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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