

AY-x6255 Family

CSN SELECT Smart Card Readers

Installation and User Manual

Models:

AY-K6255

AY-L6255

AY-H6255

AY-M6255



AY-K6255



AY-L6255



AY-H6255



AY-M6255

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.

- The system must not be used for purposes other than those for which it was designed.
- 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.
- Incorrect operation or installation, or failure of the user to effectively maintain the system, relieves the manufacturer (and seller) from all or any responsibility for consequent noncompliance, damage, or injury.
- The text, images and graphics contained in the manual are for the purpose of illustration and reference only.
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- All graphics in this manual are for reference only, some deviation between the image(s) and the actual product may occur.
- All wiring diagrams are intended for reference only, the photograph or graphic of the PCB(s) are intended for clearer illustration and understanding of the product and may differ from the actual PCB(s).

1. Introduction

The AY-x6255 is a family of multi-format contactless smart card readers for use in access control system solutions.

CSN SELECT readers support reading from the secure memory of the following credential technologies:

- MIFARE Ultralight / Ultralight C
- MIFARE Classic
- MIFARE Plus S / Plus X
- MIFARE DESFire EV1
- ISO 14443A
- ISO 14443B
- ISO 15693
- iClass
- ISO 18092 (NFCIP-1)
- FeliCa

1.1 Box Content

Before beginning, verify that all of the following is in the box. If anything is missing, please report the discrepancy to your nearest Rosslare office.

- One AY-x6255 unit
- Installation kit – Includes two wall plugs, two mounting screws, security Torx screw, and security Torx screw tool
- Installation and operating instructions

2. Technical Specifications

Electrical Characteristics

Power Supply Type	Linear (recommended)
Operating Voltage Range	8 to 16 VDC
Current @ 12 V	Standby: 100 mA Maximum: 120 mA
Read Range	MIFARE Classic EV1: 40 to 45 mm (1.5 to 1.8 in.) MIFARE Plus: 30 mm (1.2 in.) MIFARE DESFire EV1: 30 mm (1.2 in.)
LED Control Input 1**	Green LED control, TTL
LED Control Input 2**	Red LED control, TTL
Auxiliary Input**	Buzzer control, TTL
Auxiliary Output**	Tamper output (open collector, active low, max. sink current 30 mA)
Maximum Cable Distance to Controller	Wiegand: 150 m (500 ft) with 18-AWG cable OSDP (RS-485): 1200 m (4,000 ft) with 2x2 18-AWG twisted shielded cable

Environmental Characteristics

Operating Temp. Range	-25°C to 65°C (-13°F to 149°F)
Operating Humidity Range	0 to 95% (non-condensing)
Outdoor Usage	Weather-resistant, meets IP65, epoxy-potted, suitable for indoor and outdoor use (not in direct sunlight)

* Measured using a Rosslare MIFARE card cards. Range also depends on electrical environment and proximity to metal.

** Standard configuration. Custom configurations are available.

Physical Characteristics

Dimensions (H x W x D)

AY-K6255: 80.5 x 40.5 x 14.7 mm
(3.2 x 1.6 x 0.6 in.)

AY-L6255: 144.9 x 42.9 x 22.1 mm
(5.7 x 1.7 x 0.9 in.)

AY-H6255: 110.7 x 75.0 x 17.1 mm
(4.4 x 3.0 x 0.7 in.)

AY-M6255: 89.5 x 88.9 x 16.8 mm
(3.5 x 3.5 x 0.7 in.)

Weight

AY-K6255: 77 g (2.7 oz)

AY-L6255: 126 g (4.4 oz)

AY-H6255: 163 g (5.7 oz)

AY-M6255: 145 g (5.1 oz.)

3. Mounting

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

To mount the units:

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 back plate onto the surface.
3. Insert a suitable wall plug into each screw 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 Chapter 4. A linear power supply type is recommended.
6. Remove the reader's snap-off front cover to reveal the two screw holes (see Figure 1).

Figure 1: Removing the Top Cover



The location of the screws varies depending on the model number of the reader.

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.



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 Instructions

The units are supplied with a 10-conductor 18" (46-cm) pigtail or with 10 terminal blocks.

To connect a pigtail reader to the controller:

1. Prepare the reader cable by cutting its jacket back 3.2 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 strip the insulation from the wires 1.3 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.

Table 1: AY-x6255 Wiring

Wire Color	Output
Red	Power
Black	Ground
Green	Data 0 / Data / C2
White	Data 1 / Clock / C1
Purple	Tamper Output
Orange	Green LED control
Brown	Red LED control
Yellow	Buzzer control / Auxiliary input
Blue	OSDP-RS-485-A
Gray	OSDP-RS-485-B

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. Currently, the auxiliary input is used as buzzer control and LED Control 1 is used as the green LED control.

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. Reader Operation

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.

To indicate that the reader is working properly, the reader flashes red, then green, and then orange, each for 1 second and a beep is heard for each color. 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.

6. OSDP Operation

CSN SELECT readers that support OSDP operation are compatible with most OSDP commands. The reader address is set using DIP switches on the back of the reader.

Release the screw on the back of the reader to remove the door to access the DIP switches (Figure 2).

Figure 2: DIP Switch Compartment

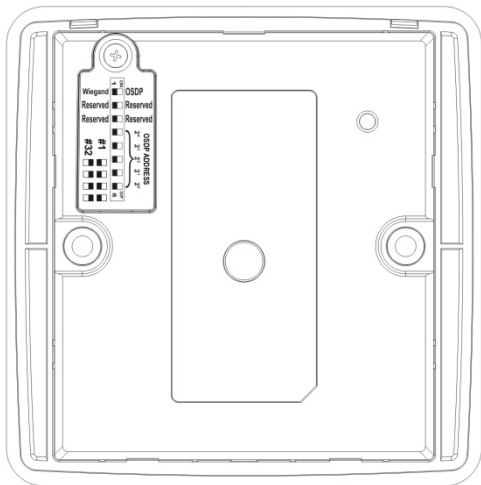
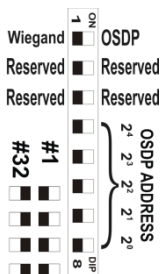


Figure 3 shows the DIP switch settings, which are also described below.

Figure 3: DIP Switch Settings



DIP Switch 1

This switch is used to select the reader output (Wiegand or OSDP):

- Off = Wiegand
- On = OSDP

DIP Switch 2

This switch is reserved for future use.

DIP Switch 3

This switch is reserved for future use.

DIP Switches 4 to 8

These switches set the address of the reader for OSDP protocol.

DIP Switch 4 is MSB and DIP Switch 8 is LSB. The address is the DIP switch state +1.

Examples:

- All the DIP switches in Off position, state is = 0 => address = 1
- All the DIP switches in On position, state is = 0x1F => address = 0x20 = 32
- DIP switches 4, 6, 8 in On position and 5, 7 in Off position, state is = 0x15 => address = 0x16 = 22

A. Declaration of Conformity

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.

B. 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.



AY-x6255

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

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

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

ROSSLARE
SECURITY PRODUCTS
www.rosslaresecurity.com



0706-0960599+00