ROSSLARE AY-K35 Multi Smart Reader User Guide

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Introduction

The innovative Multi-Smart™ Readers from Rosslare support multiple technologies: BLE (Bluetooth Low Energy), NFC, 125 kHz and 13.56 MHz RFID. Multi-technology Multi-Smart™ Readers are especially suited for sites that need more than one RFID credential or use more than one CSN Select credential. The readers supports ASK and FSK for 125 kHz and 13.56 MHz smartcards to read the RFID transponder UID and output the ID to the control panel. The reading capability includes sector read at 13.56 MHz. This feature supports all RFID types in one reader without updating legacy credentials in the system.

The Multi-Smart™ Readers read Rosslare BLE-ID™ and NFC-ID™ credentials generated by the BLE-ID™ mobile app or the mobile credentials SDK that run on a user's iOS or Android smartphone. The

BLE-Admin™ app can configure which technologies are used by each reader.

The readers support SIA Open Supervised Device Protocol (OSDP V2) including SCP mode (Secured Channel Protocol), allowing readers to connect to any controller that supports OSDP.

The readers also have a capacitive touch button on the surface which can be assigned functions such as Door Bell,

Exit, Help, Lights or other required outputs.

With simple installation, the readers allow you to easily manage add-ons installations and technology migrations. They come in a modern small model that fit any architecture design, and are suitable for outdoor use. In addition, they are CE and FCC certified.

Installation Kit

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

Description	Quantity
Self-adhesive mounting label template	1
Flat screw M3.5 x 25 mm	2
Plastic anchor M6 x 30 mm	2
Torx tamper proof screwdriver	1
Torx screw M3 x 5 mm	1
Bell sticker	4

Technical Specifications

Electrical Characteristics	
Power Supply Type	Regulated
Operating Voltage Range	8 to 16 VDC
Current @ 12 V	Maximum: 300 mA @ 12 VDC
Bluetooth BLE Read Range*	12 m (39.3 ft) (line of sight)
RFID and NFC Read Range**	Contactless: 13.56 MHz: 5 cm (1.97 in.), 125 kHz: 8 cm (3.15 in.)
LED/Buzzer Controls	Dry Contact, N.O.
Tamper Output / Touch Button Output	Open collector, active low, max. sink current 20 mA @12 VDC, 10 mA@5 VDC. Current limit: 500 Ω series resistance
Maximum Cable Distance to Controller	Wiegand: 150 m (500 ft) with 18-AWG cableOSDP (RS-485): 1,200 m (4,000 ft) with 2×2 18 AWG twisted shielded cable
Environmental Characteristics	
Operating Environment	IP68, UV-resistant, epoxy-potted, suitable for indoor and outdoor use
Operating Temp. Range	-35°C to 66°C (-31°F to 150°F)
Operating Humidity Range	0% to 95% (non-condensing)
Vandal Resistance	IK09
Antimicrobial efficacy	Inhibits bacteria proliferation by up to 99.8%
Physical Characteristics	
Material Type	Tough polycarbonate plastic
Dimensions (H x W x D)	88 x 48 x 24 mm (3.46 x 1.89 x 0.94 in.)
Weight	121 g (4.27 oz)

* Read range is different for different smartphones and also is affected by a variety of factors.

** Read range listed is statistical mean rounded to nearest centimeter, measured in open air using Rosslare MIFARE Classic EV1 (ISO card). Form factor, technology and environmental conditions, including metallic mounting surface, can degrade read range performance; plastic spacers are recommended to improve

performance on metallic mounting surfaces

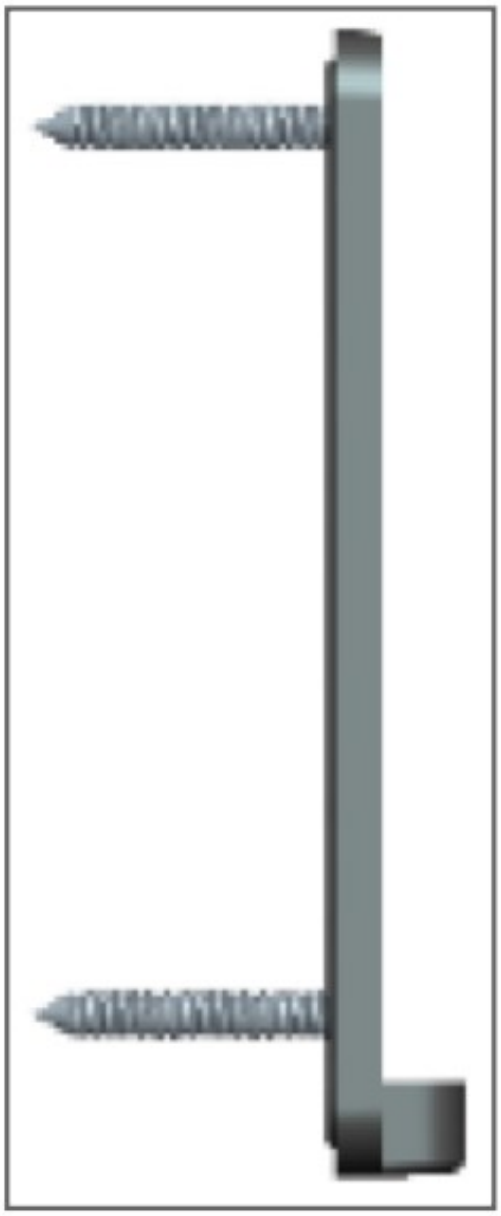
Installation

Mounting the Multi-Smart™ Readers

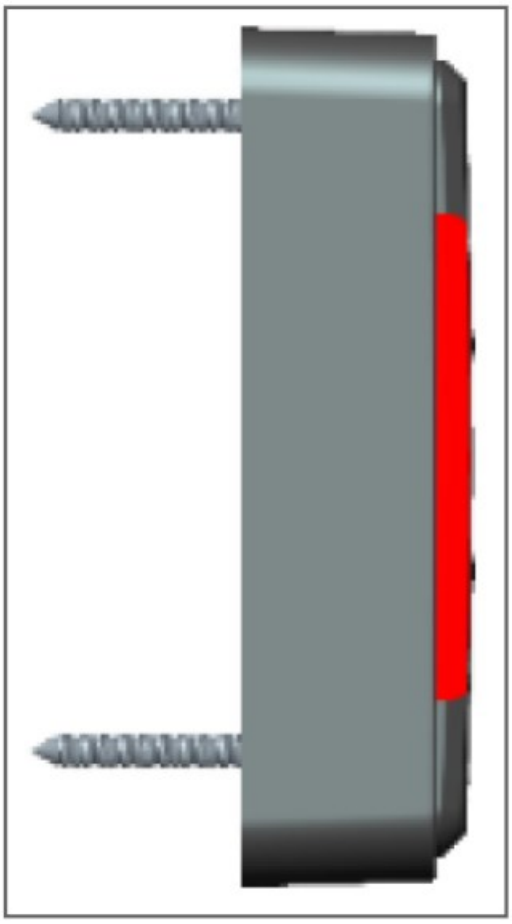
When selecting an area for mounting, ensure the location is flat.

To mount Multi-Smart™ Readers:

1. Drill 2 holes in the wall, using the mounting template provided in the installation



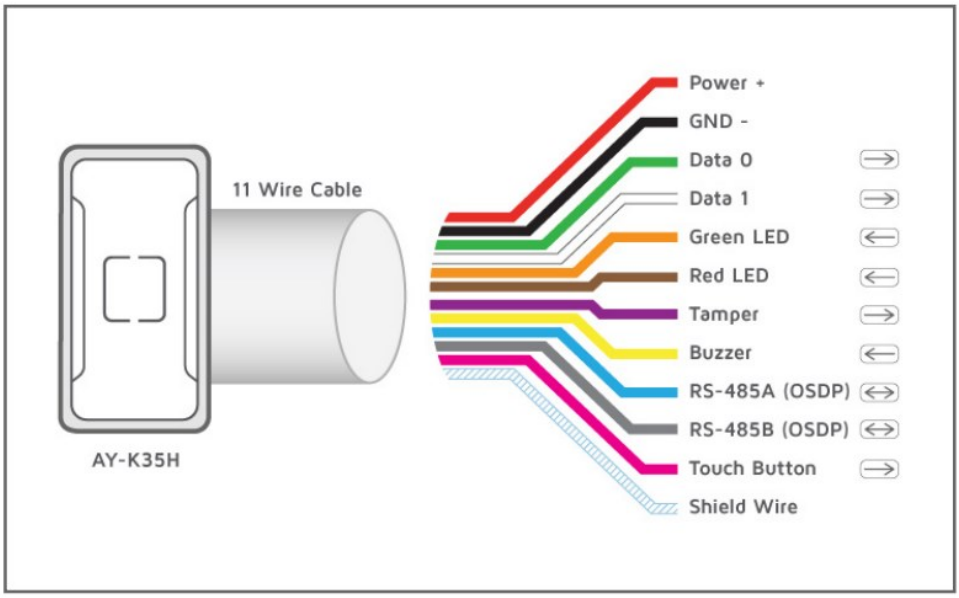
2. Insert 2 anchors provided into the drilled holes.
3. Mount the bracket on the wall using the 2 screws provided.
4. Mount the reader on the bracket and fasten at bottom with Torx screw and Torx screwdriver provided.



Wiring the Multi-Smart™ Readers

To wire Multi-Smart™ Readers:

Units are supplied with a 11 conductor 58 cm (22.8 in.) pigtail with exposed wires coated with solder



To connect the reader to the controller:

1. Select the appropriate connections according to the table below.
2. Prepare the controller cable by cutting its jacket back about 3 cm (1¼ in.) and strip the insulation from the wires about 1.3 cm (½ in.).

3. Splice the reader’s pigtail wires to the corresponding controller wires and cover each joint with insulating tape.
4. If the tamper output is being utilized, connect the purple wire to the correct input on the controller.
5. Trim and insulate the ends of all unused conductors individually. Do not short any unused wires together.

Wire Color	Function
Red	Power
Black	Ground
Green	Data 0 / Data
White	Data 1 / Clock
Orange	Green LED Control
Brown	Red LED Control
Purple	Tamper Output
Yellow	Buzzer Control
Blue	RS-485 – A / OSDP
Gray	RS-485 – B / OSDP
Pink	Touch Button
Black (shrink)	Shield

-  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 be preferably attached to an earth ground, or a signal ground connection at the panel, or power supply end of the cable.
- Red LED Control, Green LED Control, and Buzzer Control wires do not operate when the reader is in OSDP mode.

Configuration

1. Download the Rosslare BLE-Admin application from Google Play or Apple App Store using the following QR code

2. Open the application, select the required reader from the list displayed.

3. Enter the password.
   - Use the default password (12345678) when you log in to the BLE-Admin application for the first time.
   - It is highly recommended that you change the password (see step 5).
4. In Settings on the main screen, you can see the following reader parameters:

Option	Remarks
Address	Shows the address for the reader.
Type	Shows the reader model.
Serial Number	Shows the reader serial number.

5. In Settings on the main screen, configure the following reader parameters:

Option	Remarks
Reader Name	Assign name to selected door reader
Password	Change password

6. Tap Set Configuration and configure the following:

Parameter	Options	Remarks
Protocol	Wiegand	Wiegand: 26 (default), 32, 34, 40, 56, 64-bitReverse: On/Off (default)
	OSDP	Host controlled: On (default)/Off •  On – the LED and buzzer operate as specified in the OSDP commands received from the controller. • Off – the LED and buzzer operate as specified by the built-in specifications. Format • 26 (default), 32, 34, 40, 56, 64-bit • Reverse: On/Off (default) Reverse: On/Off (default)OSDP addresses: 0-31, 13 (default)OSDP Secure Channel: Option to switch to installation mode
	Clock and Data	
Credentials reading standards	125 KHz EM (ASK)125 KHz (FSK) ISO 14443A ISO 14443B ISO 15693BLE Credential	You can select multiple credentials. All standards are selected by default. 125KHz (FSK) supports Wiegand 26, 32, 34, 35, 37, 40, 48 bit.

Sector	Off, Key A. xxxx xx	Off (default)Key A: Must type 12 character key in Hex format Location: • 1K card • Sector [0-15] • Block- • Sector 0, Blocks 1,2- • Sector 1-15, Blocks 0-2 • Byte [0-15] in each available block • 4K card • Sector [0-39] • Block-Sector 0, Blocks 1,2- Sector 1-31, Blocks 0-2- • Sector 32-39, Blocks 0-14 • Byte [0-15] in each available block  When a sector is activated, the ISO 14443B, ISO 15693, andISO 18092 credential reading standards are automatically set to OFF. If necessary, select a standard again.
General purpose button	Activation	On/Off If set to Off, the following are hidden: • Set key as bell • Sensitivity
	Set key as bell	• 6-Bit Wiegand Rosslare format (default) • 6-Bit Wiegand with Nibble + Parity Bits • 8-Bit Wiegand Nibble Complemented • Single Key, 4-Bit Wiegand
	Sensitivity	Very high, High (default), Medium, Low
Light bar	Activation	On (default)/Off
	Brightness level	High (default), Medium , Low
Buzzer	Activation	On (default)/Off
	Level	High (default), Medium, Low.

Configuration Options

Tap the menu icon located at the top-right of the screen to do the following functions.

Option	Remarks
Reset	Reset the reader to the default settings.
email	Email the reader configuration.
Export	Export the reader configuration.
Import	Import a reader configuration.

NFC and BLE Operation using Rosslare BLE-ID™ mobile app

Rosslare credential NFC-ID (Android)

Rosslare's NFC-ID read function for Multi-Smart™ Readers can read both active and passive NFC credentials. NFC-ID can be generated from the Rosslare BLE-ID app or Mobile Credentials SDK for each NFC supported Android smartphone.

The reader scans for NFC-ID and transmits the ID number to the host controller via OSDP or Wiegand protocols.

Rosslare BLE-ID credentials (Android and iOS)

The reader can read credentials from Rosslare BLE-ID app or Mobile Credentials SDK via Bluetooth. The reader scans for BLE-ID and transmits the ID number to the host controller via OSDP or Wiegand protocols. BLE-ID credentials have a line-of-sight range of up to 12 m (39 ft) from the reader depending on the type and brand of smartphone or BLE device.

The BLE-ID application allows a mobile device to be used as a credential. Download the application from Google Play or App Store using the following QR code.

LED Operation

Normal Power Up

When power applied from OFF position, LED test will run for 1.5 sec. (cycle all LED colors of the RGB for 500 ms each color in the following order: Red, Green, Blue), followed by 3 beeps.

Restore to Factory Defaults

The following procedure restores the reader to the default settings.

1. Turn off the power to the reader.
2. Remove the reader from its mounted location to expose the tamper to light.
3. Connect the brown wire (red LED control) and yellow wire (Buzzer Control) to GND.
4. Turn on the power to the reader and keep the brown wire and yellow wire to GND for four or more seconds.

   When the restore to factory defaults procedure is complete, the LED will blink in the sequence green, yellow, green, yellow for two seconds while the buzzer will operate.
5. Turn off the power to the reader.
6. Disconnect the brown wire (red LED control) and yellow wire (Buzzer Control) from GND.

Standby Mode

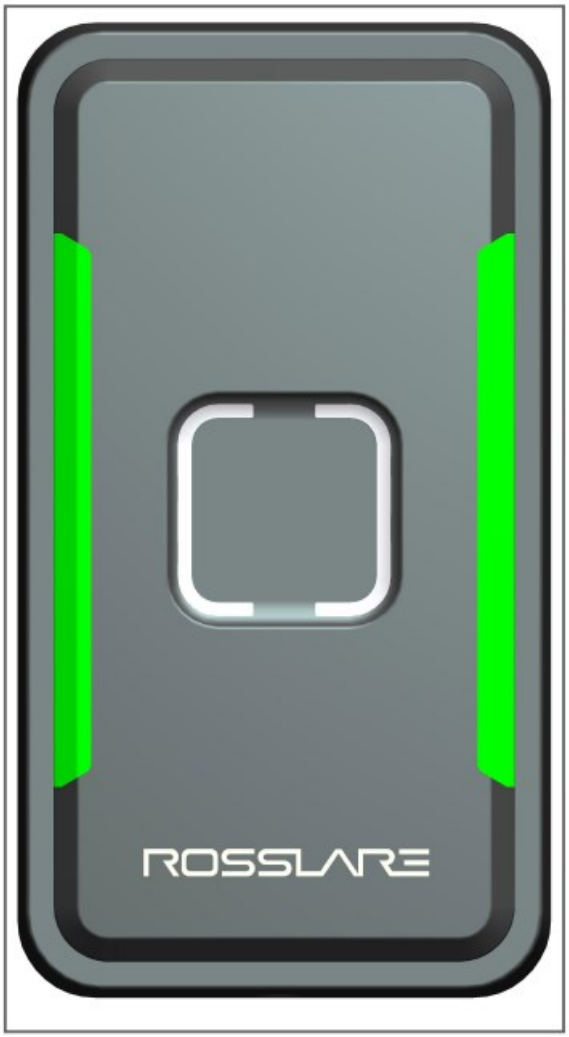
In standby mode, two LED bars will be in continuous RED condition.

EM 125 kHz and CSN 13.56 MHz Credential Read

When a 125 kHz credential or a 13.56 MHz credential is detected by the reader, both LED bars will flash GREEN for 250 ms, and the reader will sound short beep for 300 ms. This indicates a successful card read and transfer on

the

Wiegand port. Then, the reader will return to standby mode and the right light bar stays solid RED.

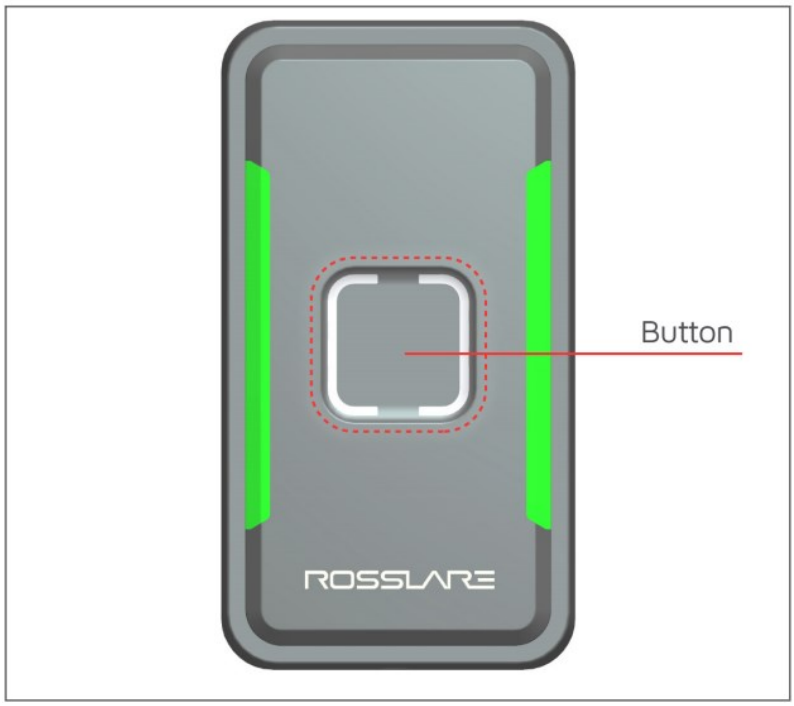


OSDP is Offline

When the OSDP connection is offline the light bars blink in a red then yellow sequence continuously until the connection is online again.

Touch Button Operation

The General Purpose Button is located in the center of the reader.



Connect the pink wire to an available input of the controller.

The general purpose button is used to operate a bell or do other functions.

The general purpose has a LED. The LED comes on when the general purpose button is pushed. The LED stays on until the button is released.

Declaration of Conformity

FCC ID: GCD-AYK35

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.

Radio Equipment Directive (RED)

Rosslare hereby declares that the Multi-Smart™ Readers are in compliance with essential requirements and other relevant provisions of Directive 2014/53/EU.

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.

International Standards

Description	Latest Standard	Latest ER Directive
CE-EMC	EN 61000-6-3:2007/A1:2011/AC:2012 EN 50130-4:2011+A1:2014EN IEC 61000-3-2:2019EN 61000-3-3:2013 + A1:2019 AOC	EMC 2014/30/EU
CE-LVD	EN62368-1: 2014+A11:2017	RED 2014/53/EU
CE-RED	ETSI EN 300 328 V2.2.2 :2019ETSI EN 300 330 V2.1.1: 2017ETSI EN 301 489-1 V2.2.3 :2019ETSI EN 301 489-3 V2.1.1:2019ETSI EN 301 489-17 V3.2.4:2020EN 50663:2017EN 62479: 2010EN 50364:2018 NB1	RED 2014/53/EU
FCC	FCC Part 15B FCC Part 15C FCC ID	

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Documents / Resources

	**ROSSLARE AY-K35 Multi Smart Reader** [pdf] User Guide AY-K35 Multi Smart Reader, AY-K35, Multi Smart Reader, Smart Reader, Reader

References

- Rosslare
- support.rosslaresecurity.com/portal/en/home