

Multi-Smart™ Readers

DESFire EV1/EV2/EV3,
Proximity, Smart Card &
Mobile Credentials

Datasheet



AY-K35
AY-K35-S

1. Introduction

Rosslare's innovative Multi-Smart™ (AY-x35) and Multi-Smart Secure (AY-x35-S) readers offer versatile access control solutions supporting multiple technologies, including BLE (Bluetooth Low Energy), NFC, 125 kHz, and 13.56 MHz RFID.

Both families are designed for general-purpose access control installations, combining flexibility with mobile access capabilities.

The Multi-Smart Secure series adds enhanced protection through DESFire® EV3 encryption and supports Rosslare's KeyCard Studio for secure credential programming, making it the ideal choice for higher-security applications requiring customized credential management.

2. General Description

Multi-Smart Readers support DESFire EV3 technology¹, offering advanced encryption, secure data storage, and cloning protection—ideal for secure access control. DESFire EV3 provides industry-leading cryptographic features, making it perfect for those upgrading to more secure systems.

Along with DESFire EV3, the readers support MIFARE Classic EV1 Sector read, enhancing security compared to basic CSN by securing credentials within encrypted data, preventing unauthorized access.

The readers support DESFire EV3, MIFARE Classic EV1, ASK, FSK for 125 kHz and 13.56 MHz smartcards, the readers integrate seamlessly with legacy systems. This allows reading RFID transponder UUIDs and outputting IDs without updating existing credentials.

Multi-Smart Readers enable customized secure credentials. These credentials can be programmed at the customer site using the CP-R27 desktop programmer and KeyCard Studio tool – see the *KeyCard Studio User Guide*.

The readers also support Rosslare BLE-ID™ and NFC-ID™ credentials via the BLE-ID mobile application or mobile

¹ Available for Multi-Smart Secure models.

SDK, enabling users to use smartphones as secure access credentials for an easy Bluetooth solution.

With SIA OSDP V2 verified, including SCP mode (Secured Channel Protocol), the readers ensure secure communication with compatible controllers, enhancing system security and interoperability.

Multi-Smart Readers have a capacitive touch button on the surface. The touch button output is in Wiegand or OSDP format and can be assigned to tasks such as Door-Bell (press for doorbell), Exit (press to exit), Help (press for assistance), and Turn On Lights or other functionalities. This output can be connected to a controller input and can be assigned a function or linked to any required output.

With simple installation, Multi-Smart Readers let you easily manage add-on installations and technology migrations. They fit all architectural designs and are suitable for outdoor use.

3. Main Features

- Supports 125 kHz and 13.56 MHz frequencies and contactless operation with BLE and NFC² technologies using Rosslare BLE-ID mobile app or SDK.
- Supports DESFire EV3 encryption³, providing advanced security, faster authentication, and enhanced data protection.
- Supports OSDP V2 including secure channel using AES 128 bit encryption for improved security with an extended range, up to 32 addresses.
- Fully programmable using Rosslare BLE-Admin app.
- Touch button for different functions.
- IP68 water and dust resistant, IK09 vandal resistant.
- Antimicrobial technology reduces level of microbes on reader by up to 99.8%.
- Easy installation in all environments with the included mounting template and installation kit.
- Sleek and modern design, superior mechanics.

4. Specifications

ELECTRICITY SPECIFICATIONS	AY-K35	AY-K35-S
Power Supply Type	Regulated	
Operating Voltage Range	8 – 16 VDC	
Current at 12 VDC	Maximum: 300 mA @ 12 VDC	
Maximum Cable Distance to Controller	Wiegand: 150 m (500 ft) with 18-AWG cable OSDP (RS-485): 1,200 m (4,000 ft) with 2x2 18 AWG twisted shielded cable	

² NFC-ID can be generated from the Rosslare BLE-ID app or Mobile Credentials SDK for NFC supported Android smartphone.

³ Available for Multi-Smart Secure models.

ELECTRICITY SPECIFICATIONS	AY-K35	AY-K35-S
BLE Read Range ⁴	12 m (39.3 ft) (line of sight)	
RFID and NFC Read Range ⁵	Contactless: 13.56 MHz: 5 cm (2 in.), 125 kHz: 8 cm (3 in.)	
LED/Buzzer Input	Tri-color LED on the lights bars, white-color LED on the touch button, Buzzer, Hold @ Active Low	
Tamper / Touch Button Output	Optical tamper, open collector, active low, max. sink current 20 mA @12 VDC, 10 mA@5 VDC. Current limit: 500 Ω series resistance	
RFID – 125 KHz	ASK FSK - supports Wiegand 26, 32, 34, 35, 37, 40, 48 bit	
RFID - Secure	---	MIFARE® DESFire® EV1/2/3 ⁶
	Sector Classic® EV1	
RFID - 13.56MHz (CSN)	ISO14443A, MIFARE® Ultralight®, Nano /Ultralight EV1/ Ultralight C, MIFARE Classic® / Classic EV1, MIFARE Plus® S / SE / X / EV1, MIFARE DESFire® EV1/EV2/EV3, LEGIC, ISO14443B (UID), ISO15693 HID®, iClass®, PicoPass, iCode, LEGIC, ISO18092 (UID): SONY® FeliCa®	
Mobile Credentials	Rosslare BLE-ID: BLE via iOS and Android	
Communication and Controller Connection	Wiegand 26-64 bit ⁷ , Clock & Data, and OSDP Secure Channel V2 via 11-wire Pigtail (58 cm / 22.8 in.)	
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%	

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⁴ The read range is different for different smartphones and also is affected by a variety of factors.

⁵ The read range listed is statistical mean rounded to nearest centimeter, measured in open air using Rosslare MIFARE Classic EV1 and EM (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.

⁶ Available for Multi-Smart Secure models.

⁷ The default output format for the readers is 26-bit. Other formats such as Clock & Data and Wiegand 32-, 32R-, 34-, 40-, 56-, and 64-bit can be selected using the BLE-Admin mobile application. Custom formats are available upon request.

HARDWARE SPECIFICATIONS	AY-K35	AY-K35-S
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)	

5. System Components

Multi-Smart Readers are compatible with a variety of Rosslare controllers, as well as with many third-party access control systems supporting Wiegand or OSDP interfaces.

6. Warranty

5-year limited product warranty.



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