

# AY-x6255 Family



## CSN SELECT Smart Card Readers (Rev. A)

### Installation and User Manual

## 1. Introduction

The CSN SELECT AY-x6255 is a family of multi-credential technology contactless smart card readers for use in access control system solutions. CSN SELECT readers have the capability to read the Card Serial Number (CSN) from many smart card RFID Standards implementations. The following list shows the credential technologies for which we have confirmed compatibility:

- ISO14443A – MIFARE® Ultralight® Nano / EV1/ C, MIFARE Classic® / Classic EV1, MIFARE Plus® S / SE / X / EV1, MIFARE DESFire® EV1 / EV2, NFC N-TAG / Card Emulation
- ISO14443B – China National ID
- ISO15693 – HID® iClass®, PicoPass, iCode, LEGIC
- ISO18092 – SONY® FeliCa® (Hong Kong Octopus)

Note This list is continuously updated. For the latest compatibility list, contact your sales representative.

The standard readers output the Wiegand CSN data in 26-bit format. Other Wiegand formats are available upon request.

### 1.1 Installation Kit

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

- One self-adhesive mounting label template
- Two pan head mounting screws and screw anchors
- One pin Torx key tool
- One pin Torx security screw



## 2. Technical Specifications

### 2.1 Electrical Characteristics

|   |   |
|---|---|
| <b>Power Supply Type</b>                    | Regulated   |
| <b>Operating Voltage Range</b>              | 8 to 16 VDC   |
| <b>Current @ 12 V</b>                       | AY-K/L6255: Standby: 55 mA, max: 80 mA<br>AY-H/M6255: Standby: 75 mA, max: 110 mA                                     |
| <b>Read Range*</b>                          | AY-K6255: 5 cm (2.0 in.)<br>AY-L6255: 7 cm (2.9 in.)<br>AY-H/M6255: 9 cm (3.5 in.)                                    |
| <b>Green LED Control**</b>                  | Dry Contact, N.O.   |
| <b>Red LED Control**</b>                    | Dry Contact, N.O.   |
| <b>Buzzer Control**</b>                     | Dry Contact, N.O.   |
| <b>Tamper Output**</b>                      | Open collector, active low, max. sink current 16 mA   |
| <b>Maximum Cable Distance to Controller</b> | Wiegand: 150 m (500 ft) with 18-AWG cable<br>OSDP (RS-485): 1,200 m (4,000 ft) with 2x2 18-AWG twisted shielded cable |

\* Measured using a Rosslare MIFARE Classic EV1 (ISO Card). Read range with other credential technologies may vary. Range also depends on electrical environment and proximity to metal.

\*\* Control Lines are factory programmable and can be custom configured upon request.

### 2.2 Environmental Characteristics

|                                 |  |
|---------------------------------|--|
| <b>Operating Temp. Range</b>    | -35°C to 66°C (-31°F to 150°F)   |
| <b>Operating Humidity Range</b> | 0 to 95% (non-condensing)  |
| <b>Outdoor Usage</b>            | Weather-resistant, UV-resistant, meets IP65, epoxy-potted, suitable for indoor and outdoor use |

### 2.3 Physical Characteristics

|                               |  |
|-------------------------------|--|
| <b>Dimensions (H x W x D)</b> | AY-K6255: 80.5 x 40.5 x 14.7 mm (3.2 x 1.6 x 0.6 in.)  |
|                               | AY-L6255: 145.0 x 43.0 x 22.3 mm (5.7 x 1.7 x 0.9 in.) |
|                               | AY-H6255: 110.7 x 75.0 x 17.0 mm (4.4 x 3.0 x 0.7 in.) |
|                               | AY-M6255: 89.5 x 88.5 x 16.9 mm (3.5 x 3.5 x 0.7 in.)  |
| <b>Weight</b>                 | AY-K6255: 73 g (2.6 oz)                                |
|                               | AY-L6255: 130 g (4.6 oz)                               |
|                               | AY-H6255: 177 g (6.2 oz)                               |
|                               | AY-M6255: 167 g (5.9 oz)                               |

## 3. Wiring Instructions

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

**To connect the reader to the controller:**

1. Prepare the reader cable by cutting its jacket back about 3 cm (1¼") and strip the insulation from the wires about 1.3 cm (½").
2. Prepare the controller cable by cutting its jacket back about 3 cm (1¼") and strip the insulation from the wires about 1.3 cm (½").
3. Splice the reader's pigtail wires to the corresponding controller wires (see Table 1) 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 cover all unused conductors.

Note

- 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.

**Table 1: Wiring**

| 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* |

\* RS-485 is used for firmware update. OSDP function available only for the AY-H6255 and AY-M6255 models.

## 4. OSDP Operation

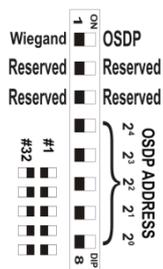
**Note**

- The AY-K6255 and AY-L6255 models do not currently support OSDP function.
- In OSDP mode, all control lines (Inputs/Outputs) are disabled.
- In OSDP mode, if a connection is not established or lost with the controller, the LED flashes orange continuously.

CSN SELECT readers that support OSDP operation are compatible with all reader-related 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 1 shows the DIP switch settings, which are described below.

**Figure 1: 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, address = 1
  - All the DIP switches in On position, address = 32

## Declaration of Conformity

AY-M/H6255: FCC ID = GCD-AYCX6X55

AY-K/L6255: FCC ID = GCD-AYX6255

- 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](http://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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