COSEC ATOM RD100

ATOM RD100KM, ATOM RD100KI
ATOM RD100M, ATOM RD100I

Quick Installation Guide

MATRIX
SECURITY SOLUTIONS

Safety Instructions

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

⚠ Cautions

Do not install the device:

- On unstable surface.
- Where ferromagnetic field or noise is induced.
- Where static is created, such as desks made of plastics, carpets.
- Near volatile inflammable materials or inflammable goods such as drapes.
- Where volatile gas and/or inflammable gas is created.

⚠ WARNING

- Installing and servicing should be done only by qualified technician.
- There are no user-serviceable parts inside.
- Opening or removing the device cover may result in electric shock or exposure to other hazards.
- Use the device only for the purpose for which it was designed.

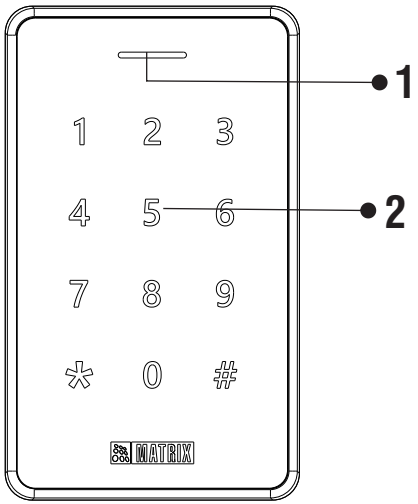
CONTENTS

Please read this guide first for correct installation and retain it for future reference. The information in this guide is prevailing at the time of publication. However, Matrix Comsec reserves the right to make changes in product design and specifications without prior notice.

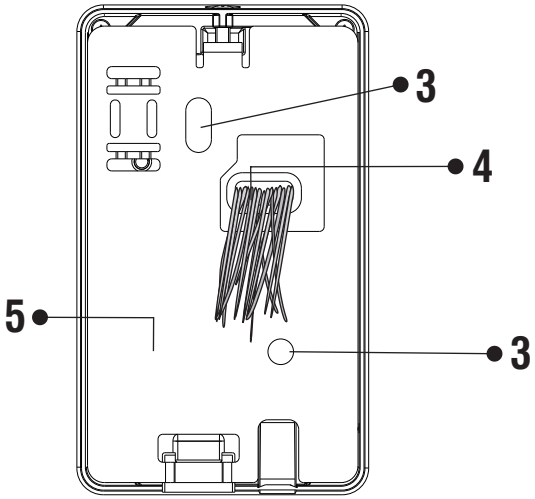
Warranty
Limited Warranty. Valid only if primary protection is provided, mains supply is within limit and protected, and environment conditions maintained within product specifications. Complete warranty statement is available on our website:
www.matrixaccesscontrol.com

Know your ATOM

- COSEC ATOM RD100 is a slave reader which can work with COSEC ARGO, COSEC VEGA, COSEC PATH V2 using RS-232 and with COSEC ARC DC200 using RS-485. It can also work with 3rd party Wiegand and OSDP interfaced Access Control Panel.
- It is an intelligent compact Access Control Device which supports Bluetooth and Card Credentials for Access Control and Time & Attendance.



COSEC ATOM RD100 - Front View
Figure 1



COSEC ATOM RD100 - Rear View
Figure 2

1. LED indicator
2. Numeric Keypad
3. Mounting Screw Holes
4. Cable Assembly
5. Mounting Plate

What your Package contains

- ATOM RD100 Unit (with cable assembly)
- Wall Mounting Screws (2 nos.)
- Plastic Screw Grips (2 nos.)

Things You will Need

- Power Drill
- Screw Driver Set
- A Wire Striper
- Insulation Tape
- Necessary Cabling
- Wiegand supported device
- Access to COSEC Server Application to configure COSEC ATOM RD100

Before You Start:
Make sure:

- The device in the package is in good condition and all the assembly parts are included.
- All the related equipments are powered-off before installation.

Installation

Step 1 Removing the Mounting Plate

- From the top of the COSEC ATOM, unscrew the Mounting screw with the help of screw driver as illustrated in Figure 4.
- Separate the Mounting plate from the ATOM by pulling it downwards. Refer, Figure 5 for the same.

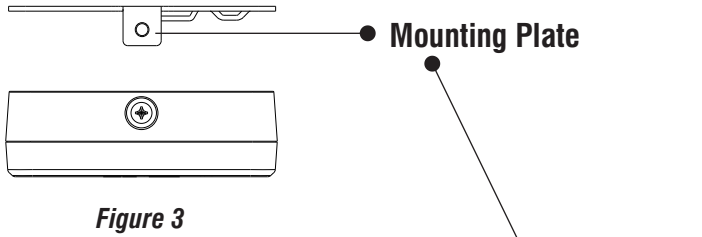


Figure 3

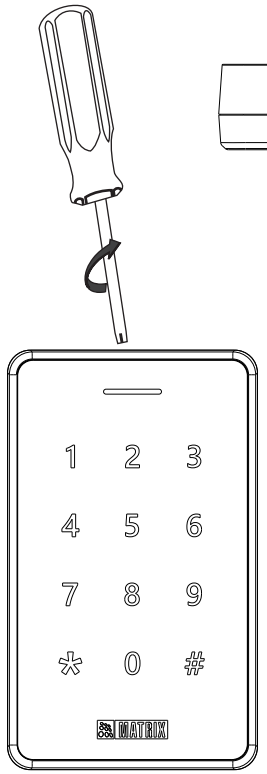


Figure 4

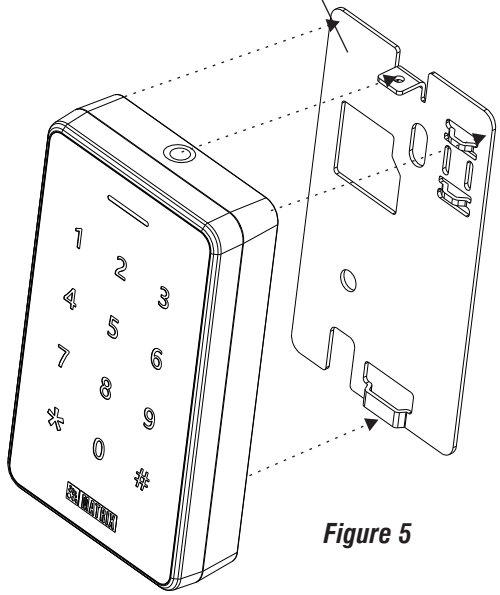


Figure 5

Step 2 Connecting the Cables

- You can mount COSEC ATOM in two ways : Concealed Wiring or Non-concealed Wiring as explained below.

A. Concealed Wiring

1. Take the Mounting Plate and trace screw holes A & B. Trace out the area C also. Drill along the marking as shown below.

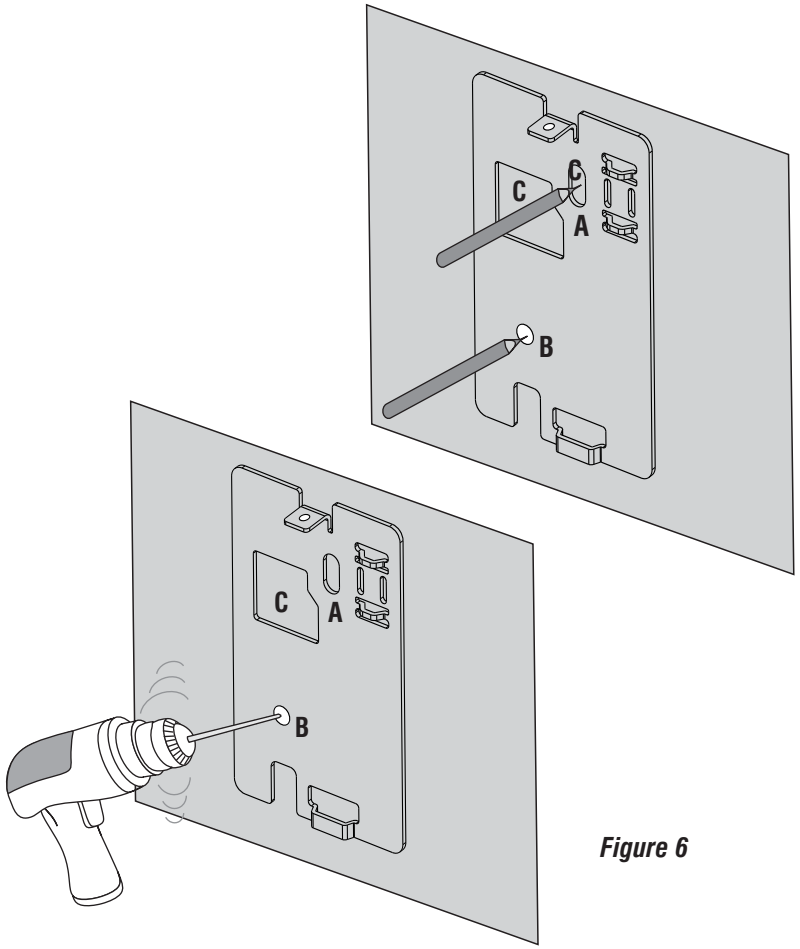
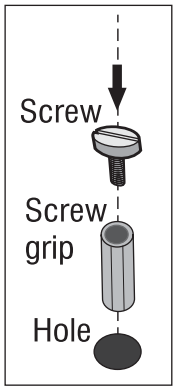


Figure 6

2. Affix the mounting plate with the help of the screws and screw grips through the holes A and B.



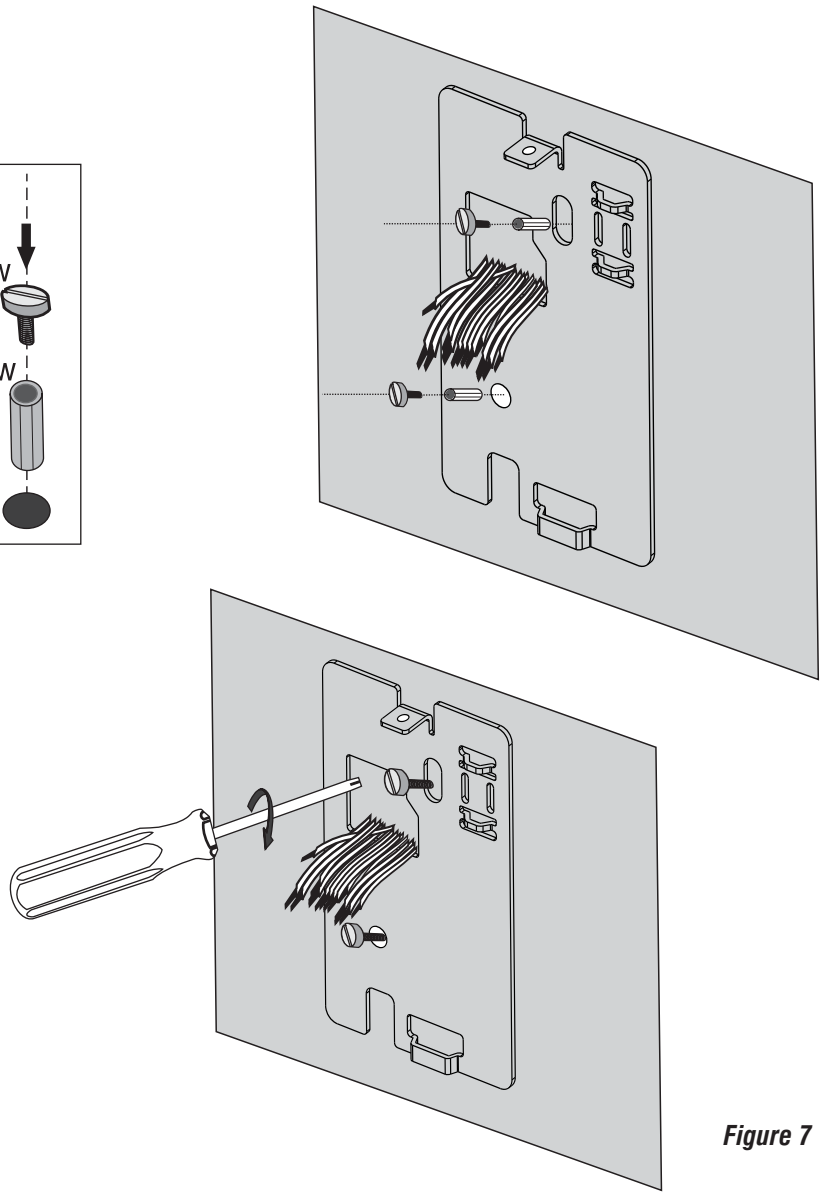


Figure 7

3. Lead the cables from the wall through the drilled area **C** of the Mounting Plate as illustrated in Figure 8. Connect the necessary cables with COSEC ATOM.

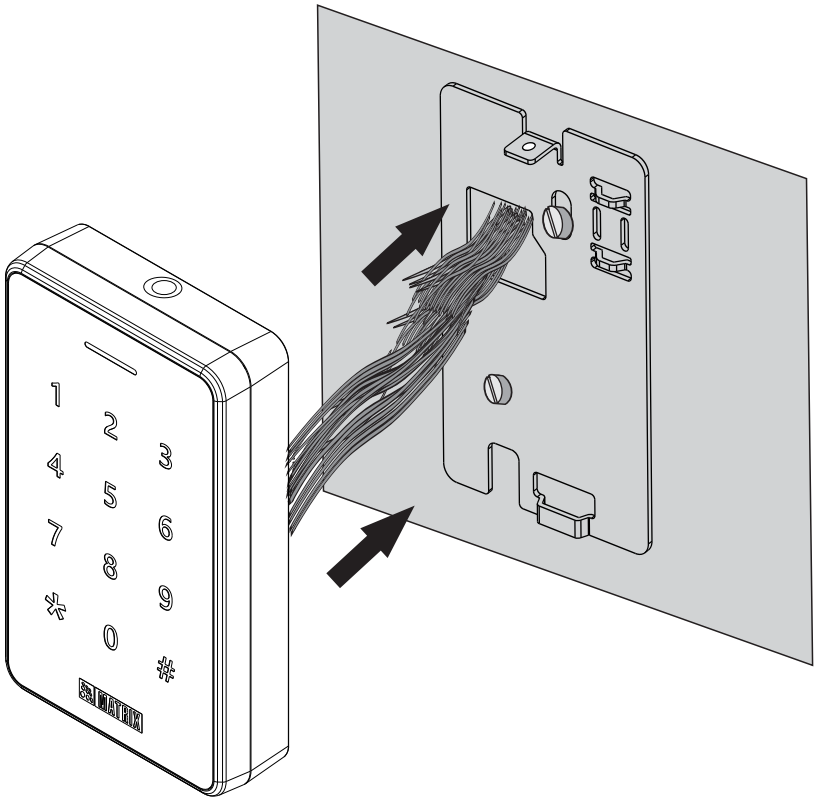


Figure 8

B. Non- Concealed Wiring

1. Follow the Step: 1 and Step: 2 as explained for the Concealed Wiring and fix the mounting plate on the wall.
*(For non-concealed wiring, you do not need to drill the area **C** for the cables to be led.)*

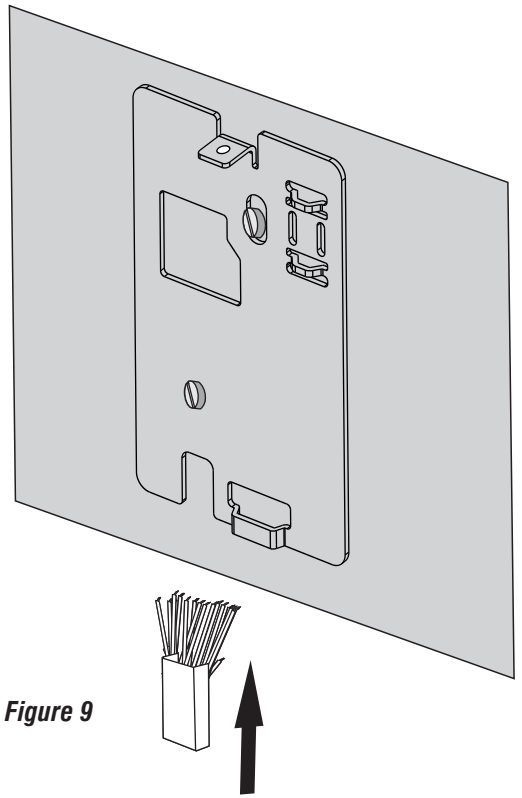


Figure 9

2. Unscrew the Back Plate screw with the help of screwdriver and remove the Back Plate.

3.Pull out the Cables from the Back Plate hole and lead the cables outside from the bottom opening of COSEC ATOM, as illustrated in Figure 10.

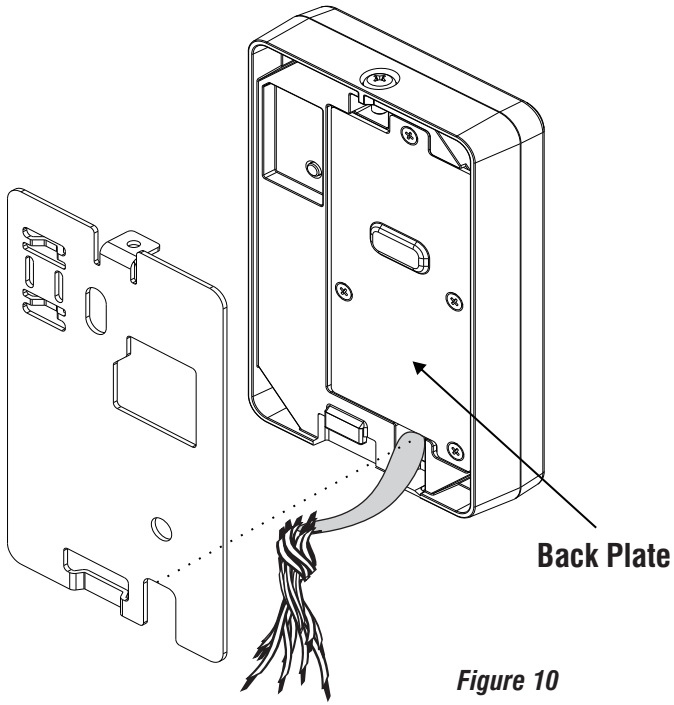


Figure 10

4. Connect the necessary cables and align the COSEC ATOM body with the Mounting Plate.

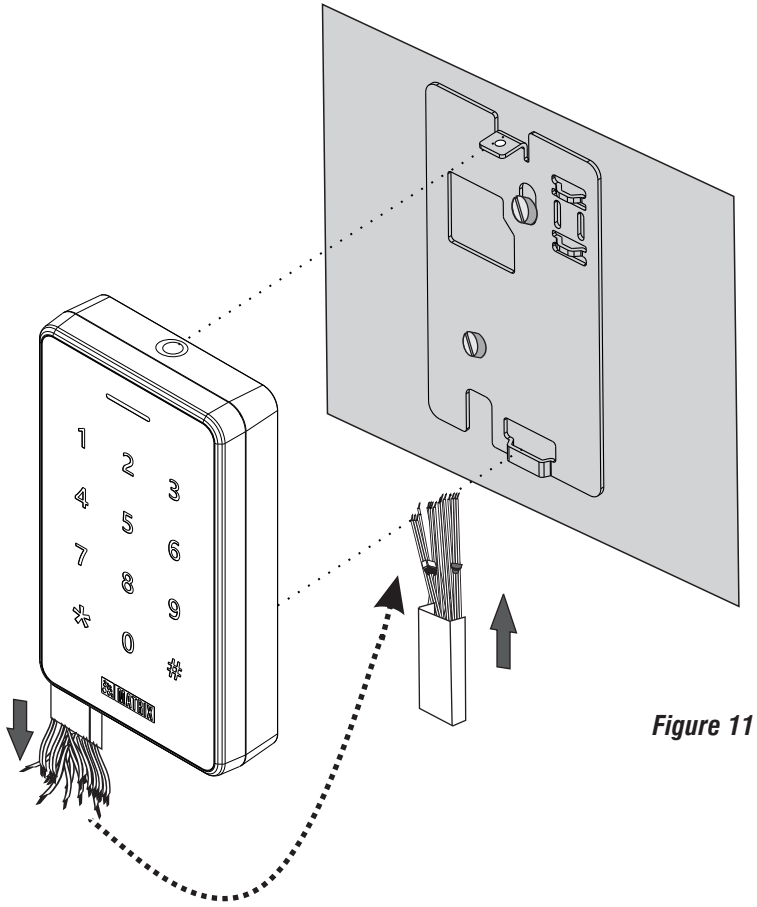


Figure 11

Step 3 Inserting Mounting Screw

1. Fix the Reader body with the mounting plate such as the mounting slots of the Reader and Mounting plate align with each other.

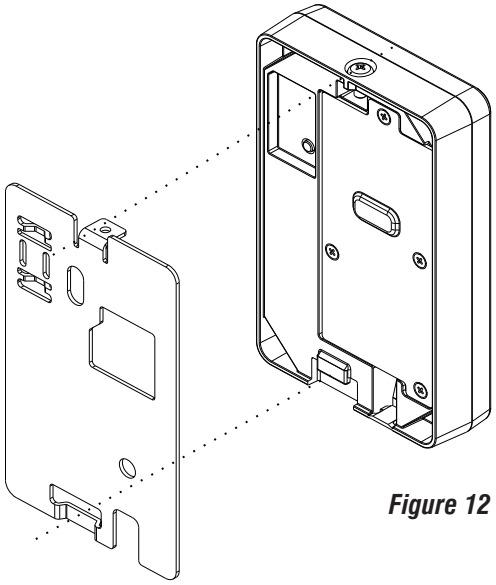


Figure 12

2. Slide the reader downwards to fix it with the groove of the mounting plate and insert the mounting screw back in place on top of the device.

3. Tighten the screw with 2 kgf-cm torque as shown in figure 13.

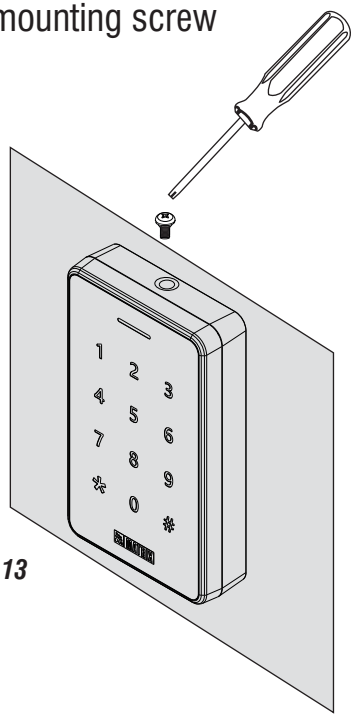


Figure 13

Technical Specifications

Specification Parameters	Remarks
Credential Support	Card and Mobile credential over BLE
User Capacity	Depends on Master Device
Card storage Capacity	Depends on Master Device
**Type of Card	HID I - class, **MIFARE®** / Desfire / Combo Cards / NFC
Card Read Range	**MIFARE®**-6 cm or more, Desfire Ev1-Atleast 4 cm
Reader Interface Type	RS-232, RS-485 and Wiegand
Interface Support Length	RS-232 (10ft), RS-485 (1200 meter), Wiegand (150 meter)
Input Power	9-14 VDC through main door controller or external power source
Buzzer	Yes
LED	Yes (Tri Colour)
Keypad	Yes *(in ATOM RD100KM & ATOM RD100KI)*
Built in Bluetooth	Yes BLE (4.0 and above)
Tamper Detection	Yes
Operating Temperature	0°C to +55°C
Humidity	5% to 95% RH Non-condensing

*** The type of Supported Card in COSEC ATOM is different as per their variants; (ATOM RD100KM, ATOM RD100KI, ATOM RD100M, ATOM RD100I). Refer COSEC Server User Guide for the type of supported card in each variant.*

LED and Buzzer Indications

ATOM RD100: Connected through RS-232/ RS-485

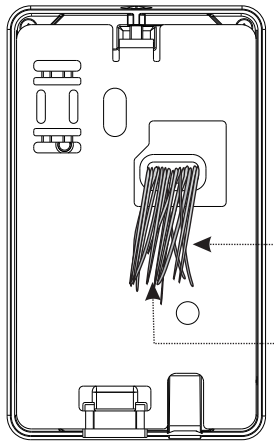
State	Single LED (tri Color)	Buzzer
Power On	Blue ON (10 s)	OFF
Idle Online	Blue (ON: 200ms OFF: 2200ms)	OFF
Idle Offline	Red (ON: 200ms OFF: 2200ms)	OFF
Degraded Mode	Orange (ON: 200ms OFF: 2200ms)	OFF
Processing	Green (ON: 200ms) Red (ON: 200ms)	OFF
Wait	Green (ON: 200ms OFF: 1000ms) Red (ON: 200ms OFF: 1000ms)	ON: 200ms OFF: 1000ms
Alarm Minor	Red (ON: 200ms OFF: 1000ms)	ON: 200ms OFF: 1000ms
Alarm Major	Red (ON: 400ms OFF: 800ms)	ON: 400ms OFF: 800ms
Alarm Critical	Red (ON till Reset)	(ON till Reset)
Alarm Clear	OFF	OFF
Access Allowed	Green (ON: 1200ms)	ON: 1200ms
Access Denied	Red (ON: 200ms OFF: 200ms) 3 Cycles	ON: 200ms OFF: 200ms 3 Cycles

Connecting the Reader

1. RS-232 connectivity for COSEC Doors - COSEC VEGA, COSEC PATH and COSEC ARGO.

2. RS-485 connectivity for COSEC ARC.

3. Wiegand connectivity for 3rd party Access Control Panel.



COSEC ATOM RD100

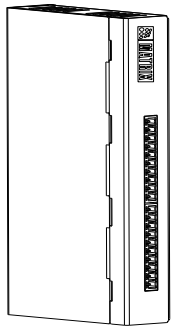
Figure 14

Pin no.	Pin name(P1)(Connector)	Cable colour
1	GND	Black
2	RS232_RX	Pink
3	TEMPER	Light Blue
4	RS232_TX	Grey
5	RS485_A	Blue
6	GRN_LED	Orange
7	RS485_B	Brown
8	RED_LED	Purple
9	BEEPER	Yellow
10	WDATA1	White
11	WDATA0	Green
12	+12VDC	Red
13	GND	Black
14	GND	Black

Pin Diagram

RS-485

RS-485 A	Blue
RS-485 B	Brown
GND	Black
+12V_RDR	White
GND	Black



TO COSEC ARC Controllers

Figure 15

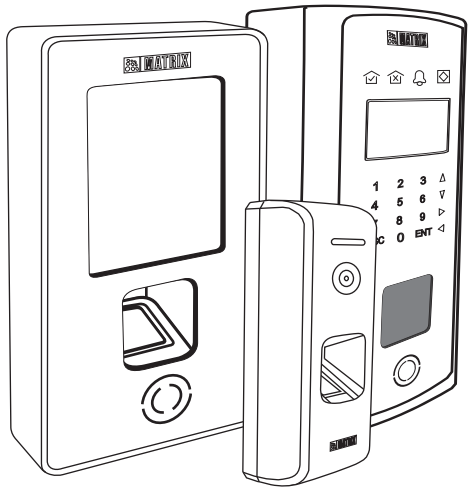
GND	Black
RS232 TX	Grey
RS232 RX	Pink
TEMPER	Light Blue
W DATA1	White
W DATA0	Green
BEEPER	Yellow
RED LED	Purple
GREEN LED	Orange
GND	Black
+12V_RDR	Red

RS-232

D1

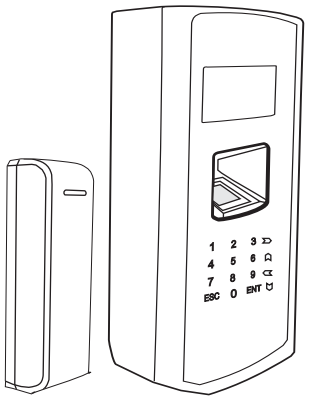
D0

Wiegand Interface



TO COSEC DOORs

Figure 16



TO 3RD PARTY ACCESS CONTROL DEVICES

Figure 17

Disposal of Product after End-Of-Life

WEEE Directive 2002/96/EC

The product refered is covered by the waste Electrical and Electronic Equipment (WEEE) directive and must be disposed of in a responsible manner.

At the end of product life cycle; batteries, soldered boards, metal components and plastic components must be disposed through recyclers.

If you are unable to dispose-off the products or unable to locate e-waste recyclers, you may return the products to Matrix Return Material Authorization (RMA) department.

MATRIX
SECURITY SOLUTIONS

MATRIX COMSEC

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V 1.0, January 2021

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: 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.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.