Installation Instructions — All in One

Part Codes: AC-3100
AC-3101
AC-3102

Introduction

The AC-3100, AC-3101 and AC-3102 from Controlsoft® are standalone "All-in-One" controllers with integral reader, supporting up to 30 users. The 3 versions operate exactly the same way, the only difference being how they are housed.
The 3 colour LED indicates the door status making the All-in-One very easy to use.

AC-3100
Mullion

AC-3101
Vandal Resistant

AC-3102
Panel Mount

Important notes before you continue

- The All-in-One operates on 12V DC only.
- If the latch option is selected and the reader is connected to an electric strike lock, the coil of the strike lock is likely to burn out.
- Before adding cards/tags to the All-in-One it must be in the chosen relay operating mode. (Latch or Pulse)

Step 1 — Mounting the All-in-One

- AC-3100: Use the Mounting Template provided to mark the 3 required holes.
- AC-3101: Remove the 4 security screws and separate the cover from the base. Use the base as a template to mark the required holes.

Drill and plug the wall.

Push the cable from the All-in-One through the centre hole and secure the All-in-One to the wall.

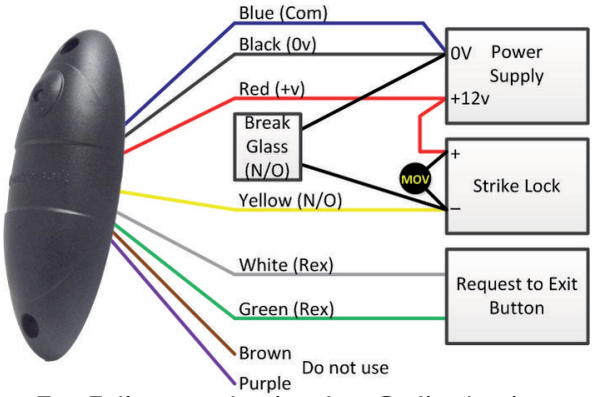
2 Wiring the All-in-One

Step 2 — Identifying cable colours and their designation

The All-in-One is supplied with a pigtail cable.
There are eight (8) wires, and their colour / designation is listed below

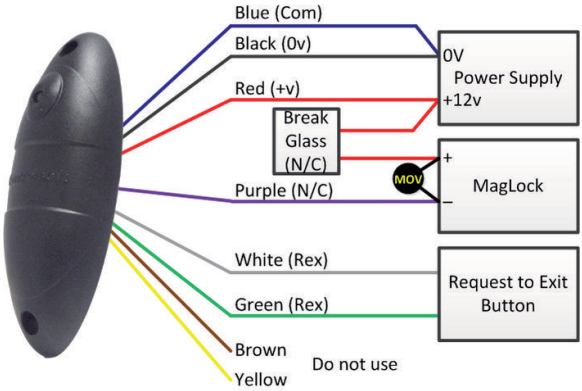
Black	-	Ground (GND)	- Power
Red	-	12V DC	- Power
White	-	RTE	- Request to Exit Button
Green	-	RTE	- Request to Exit Button
Yellow	-	Normally open relay contact	- Door Strike Lock
Blue	-	Common relay contact	- 0V / GND
Purple	-	Normally closed relay contact	- Door Lock
Brown	-	Not used	

The Request to Exit button must be normally open, going closed.
For Strike Locks, use normally open breakglass contacts (B & C on Controlsoft breakglass)
For Mag Locks, use normally closed breakglass contacts (A & C on Controlsoft breakglass)



For Failsecure Locks: i.e. Strike Locks

To prevent back-EMF damaging the All-in-One, **always** fit a MOV across the terminals of the lock



For Failsafe Locks: i.e. Magnetic Locks

Step 3 — Powering up the All-in-One for the first time

When powering up the All-in-One for the first time, the relay function must be defined first. The All-in-One LED will FLASH RED to signify Relay PULSE mode. Press the REX (or short the Green and White wires) again, the LED will change to FLASHING GREEN AND ORANGE to signify Relay LATCH mode.

When the required Relay mode is displayed, present the 'MASTER' card to the All-in-One which will respond with a double beep to indicate that the 'MASTER' card has been accepted.

Step 4 — Testing the All-in-One operation

Present the 'MASTER' card to the All-in-One and the buzzer will emit a short beep and the door will unlock for 3 seconds (PULSE mode) or indefinitely (LATCHED mode).
NOTE: To lock the door in LATCHED mode, simply present the 'MASTER' card again

Step 5 — Adding and Removing Cards / Tags

NOTE: The first card/tag after the 'MASTER' card has been added, will also be a 'MASTER' card.
Present and hold the 'MASTER' card to the All-in-One until it beeps twice and the LED changes to ORANGE, indicating the device is in programming mode.
Remove the 'MASTER' card and present cards/tags one at a time, the All-in-One will beep once for each card. If the card is new, it will be added and the LED will show green. If the card has been previously added, it will be removed and the LED will show red.
Once completed, present and hold the 'MASTER' card to the All-in-One to exit programming mode or wait 30 seconds and normal operation will automatically be selected.
NOTE: Presenting a card/tag twice to the reader while in programming mode will add, then remove the card/tag from the database

Resetting the All-in-One

To reset the All-in-One press and hold the REX button (or short the Green and White wires).
Disconnect the All-in-One from the Power Supply to power it off. Next power the All-in-One on, then off, then on again (approximately 1/2 second each). When powering up for the second time the All-in-One will respond with a multiple beep, indicating that the configuration is at factory defaults.
Release the REX (or remove the short from the Green and White wires) and proceed to Step 3.

NOTE: When disconnecting power from the All-in-One, remove the connection from the power supply as this generates a faster edge than switching the power supply on and off.

4 Specifications

LED Indications

Start-up Mode:

Flashing Red	-	Pulse Relay, waiting for first 'Master' Card
Flashing Orange and Green	-	Latch Relay, waiting for first 'Master' Card

Programming Mode:

Solid Orange	-	Programming mode, waiting to add/remove users
Green	-	User added
Red	-	User removed

Standard Operating Mode (3 Second Pulse)

Red	-	Normal operation, waiting for card/tag
Green + buzzer	-	Valid card/tag presented
Red + buzzer	-	Invalid user

Standard Operating Mode (Latch)

Valid user	-	LED alternates between Green and Red and buzzer will sound
Invalid user	-	LED remains Green or Red and buzzer sounds

Technical Specifications

Input Power Supply	12V DC
Average Current Consumption	30mA
Relay Rating	5A @ 250V AC
Operating Frequency	125 KHz

Indications

Visual	-	Tri-Colour LED
Audible	-	Buzzer

Read Range

ISO Card	-	70mm
Tags	-	50mm

Mechanical

Packaging Formats:	ABS blend, UV resistant Stainless Steel / Vandal resistant Industry Standard Panel Mount (40mm x 40mm)
Operating Temperature	-10°C to +60°C
Protection Category	IP67 (Submersible)

Note: The Relay has a rating of 5A @250V AC maximum.
If switching a load with a higher current rating, use an external relay with the necessary current rating. **ALWAYS fit a MOV across the coil of this interface relay**.

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