## 1. INTRODUCTION

AL2730F is a low cost proximity card access controller with dual output for external controlling. One output from the relay directly with NC and NO connection. The other is a power output for driving electric lock. It can accept a maximum of 2,730 proximity cards. A 9 to 12V DC supply is required to power the unit, which has a current consumption of less than 200mA. A 9VDC/300mA (2.1mm center positive) plug pack will do fine.

## 2. QUICK START

2.1 Configuring the jumper blocks according to your needs (see section 3).
2.2 Remove all authorized key card (see section 5.4).
2.3 Use the ACTION card to authorize the ID cards (see section 5.3).
2.5 Record the ID card number with the user name.

Present a card to the AL2730F. The green LED and relay will turn on as set by TMR0, TMR1 and TMR2 with a beep sound, indicating that the card is an authorized key card. On the other hand, if an unauthorized card is presented to the AL2730F, the green LED and the relay will have no action but with a long beep sound.
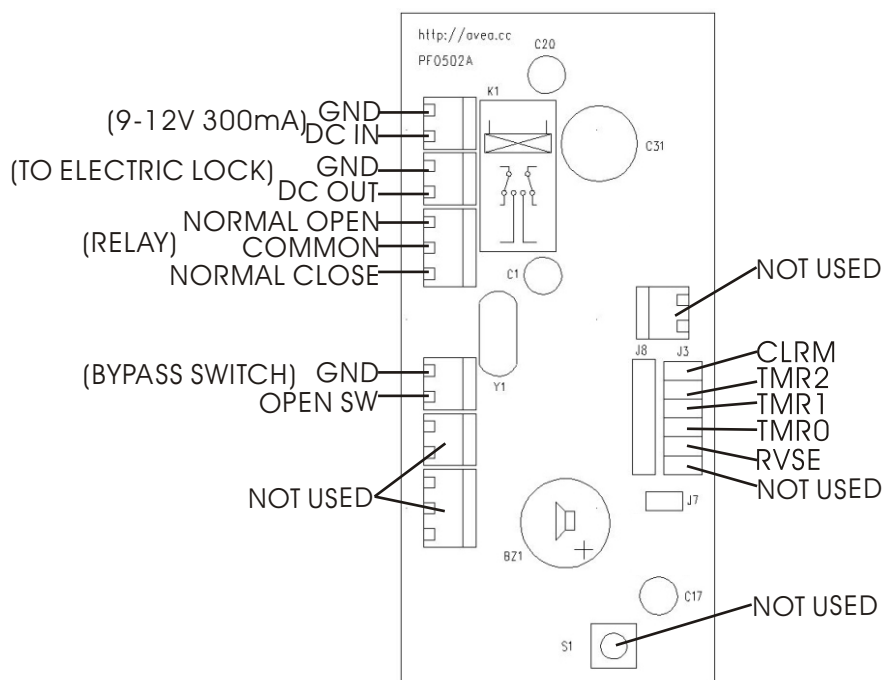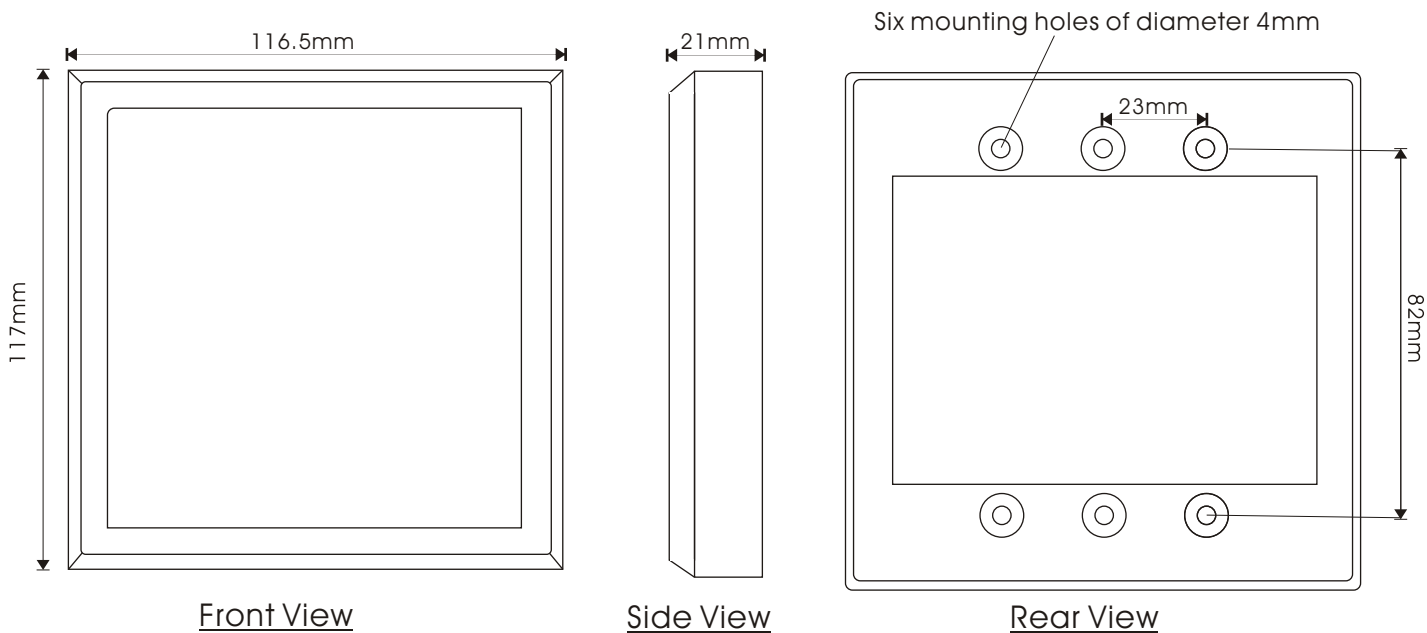
## 3. JUMPER SETTING

There is a 5-position jumper block for configuring the operation of the unit.

| POSITION | DESCRIPTION | FUNCTION |
|---|---|---|
| 1 | CLRM | ON: to clear the MASTER and ACTION card memory. |
| 2 | TMR2 | |
| 3 | TMR1 | To select the relay on time with authorization granted. |
| 4 | TMR0 | |
| 5 | RVSE | ON: to reverse the operation of the relay. |

| TMR2 | TMR1 | TMR0 | FUNCTION |
|---|---|---|---|
| OFF | OFF | OFF | Relay on for 1 second on authorization granted. |
| OFF | OFF | ON | Relay on for 2 seconds on authorization granted. |
| OFF | ON | OFF | Relay on for 5 seconds on authorization granted. |
| OFF | ON | ON | Relay on for 10 seconds on authorization granted. |
| ON | OFF | OFF | Relay on for 20 seconds on authorization granted. |
| ON | OFF | ON | Relay on for 50 seconds on authorization granted. |
| ON | ON | OFF | Relay on for 100 seconds on authorization granted. |
| ON | ON | ON | Relay state is toggled on each authorization granted. |

* ON : Jumper shorted, OFF : Jumper opened

## 4. DIMENSIONS AND TERMINAL LAYOUT

Six mounting holes of diameter 4mm

116.5mm

117mm

21mm

23mm

82mm

Front View

Side View

Rear View

http://avea.cc
PF0502A
C20

(9-12V 300mA) GND
DC IN
(TO ELECTRIC LOCK) GND
DC OUT
NORMAL OPEN
(RELAY) COMMON
NORMAL CLOSE

(BYPASS SWITCH) GND
OPEN SW

NOT USED

NOT USED

K1
C31
C1
Y1
BZ1
C17
S1
J8  J3
J7

CLRM
TMR2
TMR1
TMR0
RVSE
NOT USED

NOT USED

NOT USED

AL2730F Terminal Layout

# 5. PROGRAMMING

## 5.1 Set up a new MASTER and ACTION CARD by jumper setting

| | Red LED | Green LED | Buzzer |
|---|---|---|---|
| **Prepare two new cards, one for setting as "MASTER CARD", the other for setting as "ACTION CARD"** | | | |
| **Power off the unit** | | | |
| **Set CLRM to ON position** | | | |
| **Power on the unit** | | | |
| *(Reader wait for a card to set as MASTER CARD)* | | blink | repeat beep |
| **Present a NEW card to the reader to set as the "MASTER CARD"** | | | |
| *(Reader wait for another card to set as ACTION CARD)* | blink | | repeat beep |
| **Present another NEW card to the reader to set as the "ACTION CARD"** | | | |
| *(Reader wait for power Off)* | on | on | continous beep |
| **Power off** | | | |
| **Remove the jumper to set the CLRM to OFF position** | | | |
| **On the power** | | | |
| *(Reader Back to stand by mode, wait for instruction)* | blink | | |

NEW CARD

NEW CARD

*** *Reader will wait until two new cards was read.*

## 5.2 Change the MASTER and ACTION CARD

| | Red LED | Green LED | Buzzer |
|---|---|---|---|
| *(In stand by mode, wait for instruction)* | blink | | |
| **Present the MASTER CARD to the reader** | | | |
| *(Reader waiting for the MASTER CARD again - 2nd time)* | | on | |
| **Present the MASTER CARD again to the reader** | | | |
| *(Reader wait for the MASTER CARD again - 3rd time)* | | on | repeat beep |
| **Present the MASTER CARD the 3rd time to the reader** | | | |
| *(Reader wait for a NEW card to set as MASTER CARD)* | | blink | repeat beep |
| **Present a NEW card to the reader to set as the "MASTER CARD"** | | | |
| *(Reader wait for another NEW card to set as ACTION CARD)* | blink | | repeat beep |
| **Present another NEW card to the reader to set as the "ACTION CARD"** | | | |
| *(Back to stand by mode, wait for instruction)* | blink | | |

MASTER CARD

MASTER CARD

MASTER CARD

NEW CARD

NEW CARD

*** *Reader will wait until two new cards was read.*

## 5.3 Add or Delete a key card

| | Red LED | Green LED | Buzzer |
|---|---|---|---|
| *(In stand by mode, wait for instruction)* | blink | | |
| **Present an ACTION CARD to the reader** | | | |
| *(Reader wait for a card to be added or deleted)* | on | | |
| **To add: Present a new card to the reader, To delete: Present an authorized card to the reader** | | | |
| *(Card Added)* | | on | beep |
| *or     Card Deleted* | | on | beep beep |
| *(Loop again to wait for another card to be added or deleted)* | | | |

ACTION CARD

NEW OR AUTHORIZED CARD

NEW OR AUTHORIZED CARD

*** *Reader will back to standby mode if unattend for 10 second*

## 5.4 Remove all authorized key cards

| | Red LED | Green LED | Buzzer |
|---|---|---|---|
| *(In stand by mode, wait for instruction)* | blink | | |
| **Present the ACTION CARD to the reader** | | | |
| *(Reader wait for the ACTION CARD on the reader (2nd time))* | on | | |
| **Present the ACTION CARD the 2nd time to the reader** | | | |
| *(Reader wait for the MASTER CARD for confirmation. All authorized key cards will be removed and then back to stand by mode.)* | on | | repeat beep |
| **Present the MASTER CARD to the reader** | | | |
| *(Delete all cards)* | | on | beep beep |
| *(Back to stand by mode)* | blink | | |

ACTION CARD

ACTION CARD

MASTER CARD

*** *Reader will back to standby mode if unattend for 10 second*

## 5.5 Delete an authorized key card number

| | Red LED | Green LED | Buzzer |
|---|---|---|---|
| Check the card number (the first 10 digits on the left of the card), do not need to enter "AVEA" and the zero digits in the beginning of the number (e.g. card number AVEA 0000310121 005,40197, you only need to enter 310121). | | | |
| *In stand by mode* | *blink* | | |
| **To start deleting:** | | | |
| **Present the ACTION CARD to the reader** | | | |
| *Reader wait for the MASTER CARD* | on | | |
| **Present the MASTER CARD to the reader** | | | |
| *Reader wait for the ACTION CARD for digit entry* | blink | on | |
| **Start entering the digits. Enter the first digit by presenting the ACTION CARD to the reader. Present 1 time for 1, 2 times for 2, .....9 times for 9 or 10 times for zero. The buzzer will beep once while presenting the ACTION CARD to the reader once.** | off | off | |
| **Present the MASTER CARD to the reader to end the entering of each digit (including the last digit). Repeat above procedure to enter all digits.** | blink | on | |
| **Present the MASTER CARD to the reader again to inform the reader that you have finished entering all the digits. The reader will "beep" out the number you just entered. Start with a long beep and with a slient between each digit.** | on | on | |
| *Reader wait for confirmation* | blink | on | |
| **Present the ACTION CARD to the reader to confirm the deletion.** | | | two beeps = ID card no. delete, one long beep = error |
| *Back to stand by mode* | *blink* | | |

Left-margin card sequence: ACTION CARD → MASTER CARD → **DIGIT ENTER** ACTION CARD → MASTER CARD → MASTER CARD → ACTION CARD

*** *Reader will back to standby mode if unattend for 10 second*



Diagram flow:
Enter the first 10 digits
Excluding those zeros in the beginning

ACTION CARD — MASTER CARD — The 5th digit - 3 [ACTION CARD, ACTION CARD, ACTION CARD, MASTER CARD] — The 6th digit - 1 [ACTION CARD, MASTER CARD]

The 7th digit - 0 (present the ACTION card 10 times) [ACTION CARD ×10, MASTER CARD]

The 8th digit - 1 [ACTION CARD, MASTER CARD] — The 9th digit - 2 [ACTION CARD, ACTION CARD, MASTER CARD] — The 10th digit - 1 [ACTION CARD, MASTER CARD]

MASTER CARD — Buzzer beep out the number — Confirm deletion ACTION CARD — END
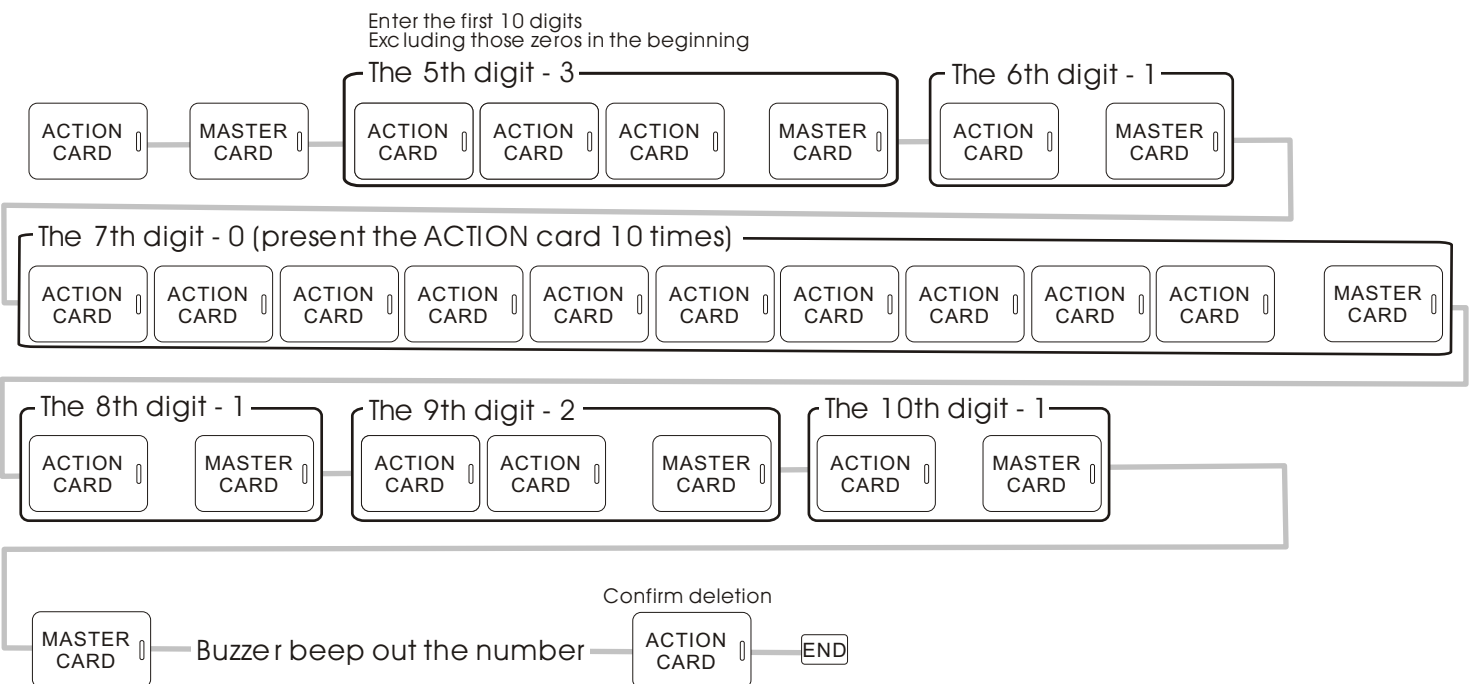
**Diagram 1, Example for Deleting key card number - AVEA 0000310121 005,40197**