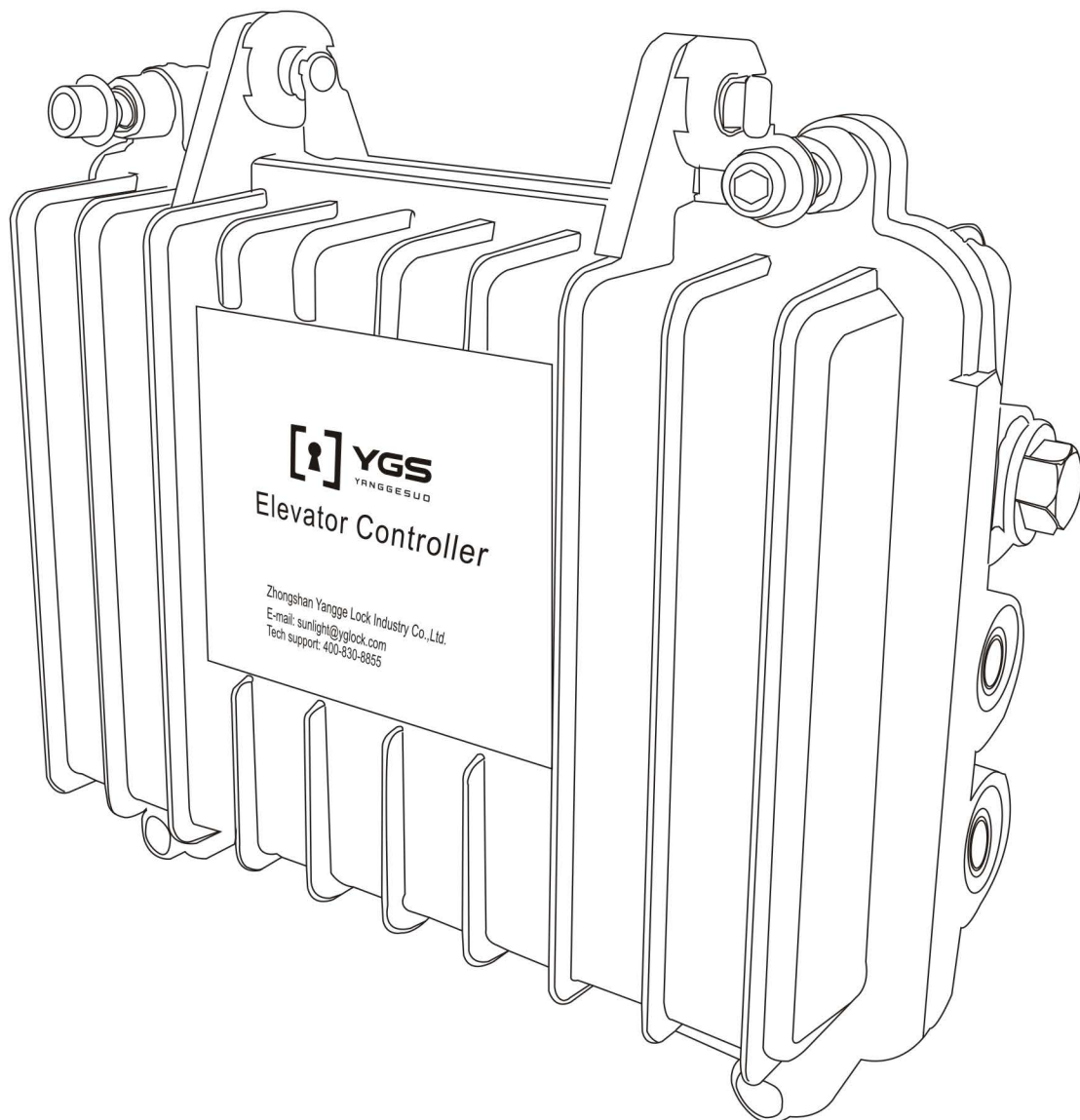


ELEVATOR CONTROLLER

Operation Instruction



Elevator Control Unit

IMPORTANT

Prior to the installation of the YGS Elevator Control Unit, please take note of the following



- YGS does not install ECU's
- Please contact your elevator company to schedule the install
- Install documentation can be found at the following locations
- Website www.cnyglock.com
- Contact your project coordinator
- Questions can be sent to the following email address: sunlight@yglock.com
- or call YGS tech support at 400-830-8855

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1.0 Introduction and Disclaimers

Please read and follow all directions carefully. These instructions are designed for use by qualified installers or individuals with knowledge of common safety practices and the competence to perform the steps described herein. YGS is not responsible for damage or malfunction due to incorrect installation.

⚠ CAUTION

Carefully inspect windows, doorframes, doors, etc. to ensure that the installation procedures will not cause any damage. YGS's standard warranty does not cover damages caused by installation. The MFC should always be installed in a secured room or facility with controlled access.

⚠ WARNING

Installation of card readers or other peripherals within elevators must only be done with prior consultation of the elevator manufacturer. A technician from the elevator manufacturer should be present at all times for installation. If installing the MFC in an elevator cage environment, or in proximity to any other equipment that may generate high levels of electromagnetic interference, follow the installation requirements described herein to prevent any operational instability.

Safety Procedures

Installation is to be done following standard safety procedures, and using adequate equipment and protection as prescribed. Power is to be off during the installation process as well as for any maintenance procedures.

⚠ CAUTION

Wear safety glasses when using any tools.
Technical Support
For technical assistance, call:
(400) 830-8855
or send email to: sunlight@yglock.com

NOTE: This equipment has been tested and found to comply with 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:

Statement according to FCC part 15.21

Modifications not expressly approved by YGS could void the user's authority to operate the equipment.

Statement according to FCC part 15.19

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.

2.0 Product Description

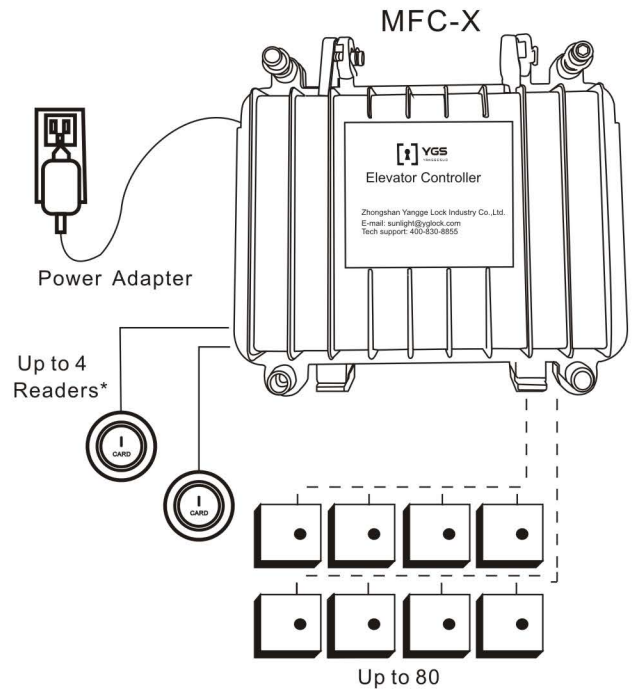
2.1 Features

The MFC is designed to operate either on-line or standalone elevator control units (ECU).

It provides access control and secure stops for multiple floors and functions with RFID contactless lock models.

NOTE: For installation of online TCP/IP control installation, please contact YGS Technical Support. The Contactless Card Reader can be mounted directly on the inside of the elevator car, typically on the elevator call button panel. For surface mount, the surface area required for the contactless reader is 9.5mm diameter wiring hole required)

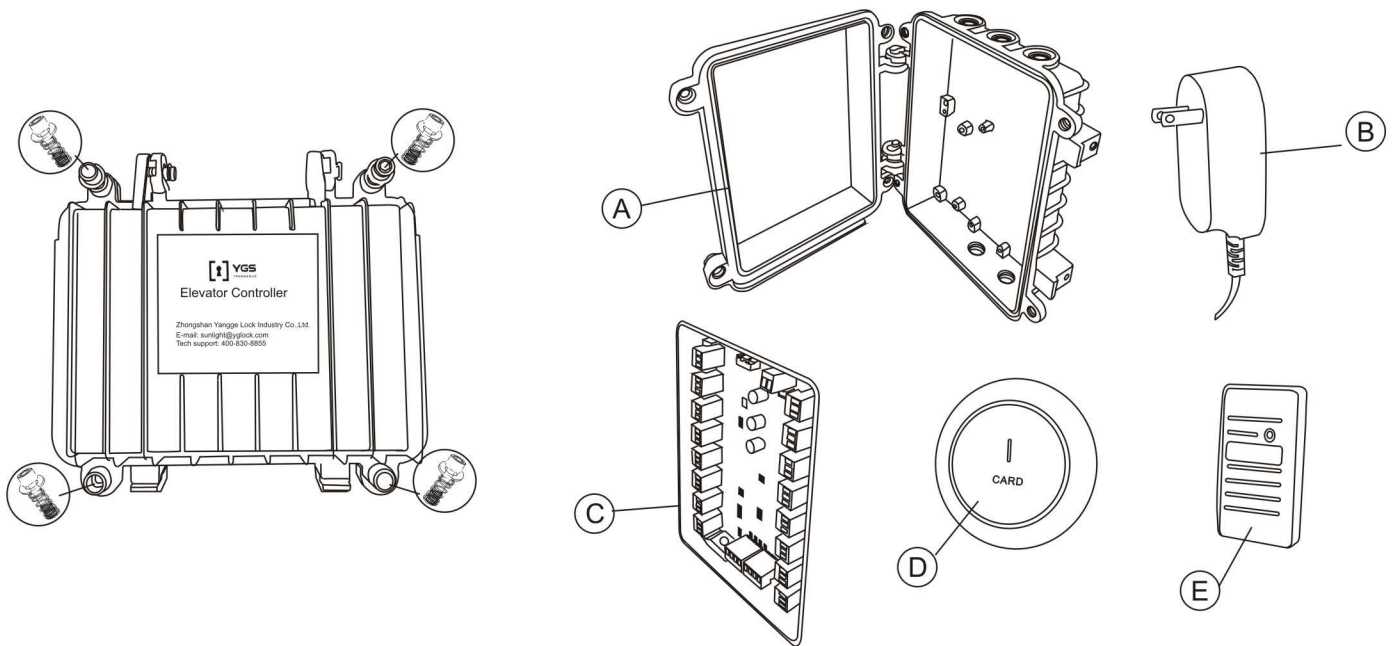
The MFC is an access control solution that can operate 4 individual card readers, provides multiple relays, and much more as per the feature list below. See figure 1 for a typical configuration.



Feature	MFC
Mini External reader	Standard
3 control modes: uncontrolled mode, floor control, floor & time control	Standard
Relay bypassing (passage function)	Standard
Control up to four card readers	Standard
Access controller extendable	Standard
Over 2000 entries record	Standard
Backup battery	Standard
Power Status LEDs feedback	Standard
Uncontrolled mode and access control mode convertible	Standard

2.0 Product Description

2.2 Components



(A) MFC enclosure & Access Door: holds the controller board (PCB), power supply, relay expansion board. Knockouts are available on 3 sides for routing of peripheral cables.

(B) Power Supply: provides the DC power required for operation of the controller PCB and all peripherals.

(C) Controller Board: controls all the features of the MFC system.

(D) Card Reader: antenna inside to detect RFID card and provides visual indication of the operational status of the MFC system.

(E) Signal processor: identifies card information to verify user permissions to use the elevator.

Optional components:

Not shown:

(F) Expansion Board: Interface board providing relay outputs that can be used to control elevator with more than 16 floors.

Each Expansion Board has another 16 relays inside and can allow access control to 80 floors at most.

(G) Cables: cables required for connections of the LEDs, power supply and controller PCB.

If equipped, will also include cable for connection of relay expansion board.

3.0 Checklist and Exploded Views

3.0 Parts and Tools List

NOTE:

- Some items are dependant on the options or configuration purchased. Please ensure all parts ordered & required for installation are available before beginning.
- Parts are subject to change without notice.
- For letter designations refer to Figure 4.

MFC Enclosure:

NOTE: All items below come factory installed.

- (A) MFC enclosure with access door
- (B) Power supply: 220 VAC input, 12 VDC output
- (C) Controller PCB
- (D) Card Reader
- (E) Signal processor
- (F) Relay Expansion Board:
- (G) Relay expansion PCB board including 4x M6-22 SS screw with washer & controller PCB connection cable (not shown)

Cables (not shown):

NOTE: All items come factory installed.

- (H) System cables:
 - Power supply to card reader
 - Power supply to signal processor
 - Power supply to controller PCB
 - Controller PCB jumpers

Power Adapter includes:

NOTE: standard adapter is Asia plug.

- (M) 1x International 12VDC output Adapter with integrated 6 foot (1.8 m) power cable. Input power requirements of 100-240 VAC, 50-60 Hz, 1.0A.

Installation Hardware Bag:

- (S) 4x Steel flat washer, #12
- (T) 4x Hexagon screw spring, #6–15
- (U) 4x Hexagon screw, #6–22
- (V) 5x Strain relief connector with locking nut
- (W) 2x Hexagon screw, #6–14
- (X) 2x enclosure fixing plate

Tools required (not supplied):

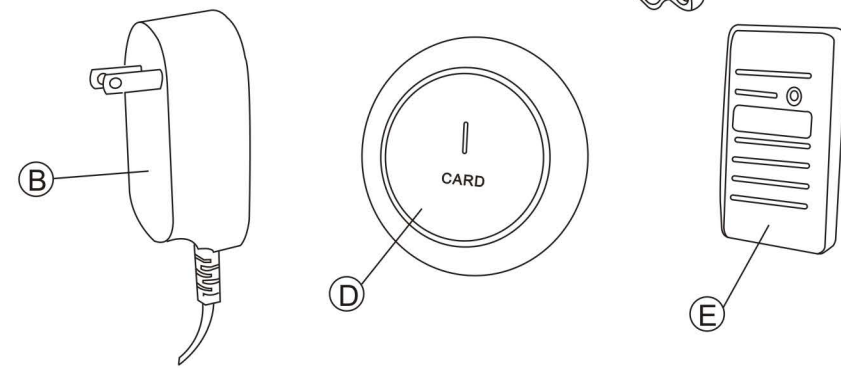
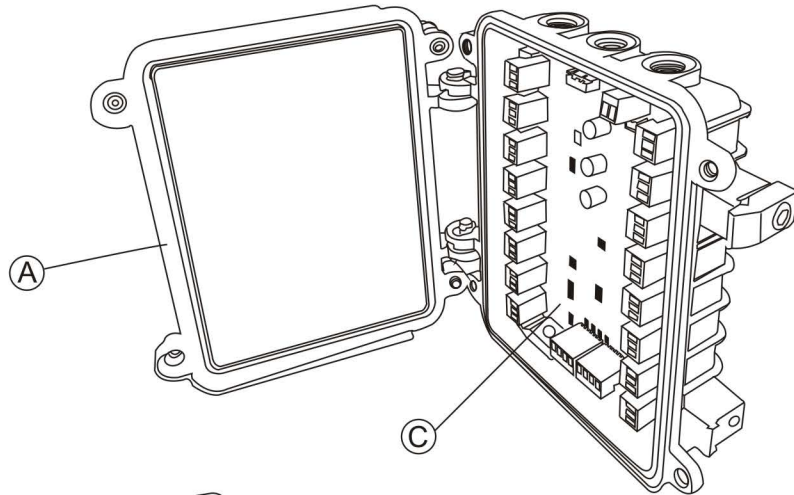
Additional tools may be required dependent on the peripherals being installed. The list below covers the installation of the MFC enclosure only.

- Safety glasses
- Ink marker
- Electric drill
- 3/8" (9.5 mm) drill bit
- Power line- 2 cores
- Network cable- 8 cores
- Philips screwdriver – #2
- Slotted screwdriver – 3/32" tip width
- Adjustable wrenches
- Crimp tool – 18-22 AWG
- Pliers
- Wire cutter / stripper
- Hammer or rubber mallet
- Awl or center punch
- Glue

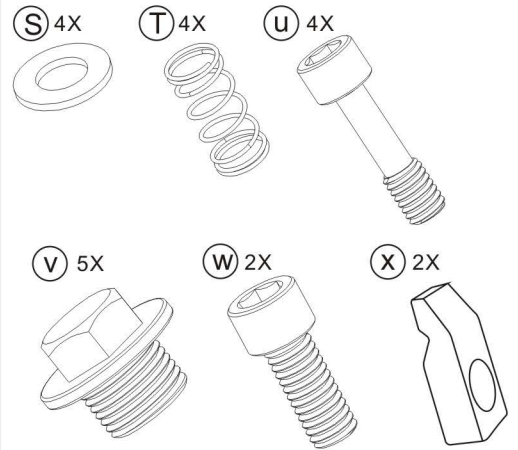
3.0 Checklist and Exploded Views

3.2 Exploded View

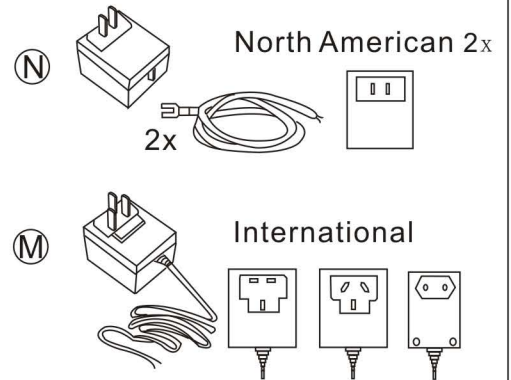
Figure 4
Controller Box



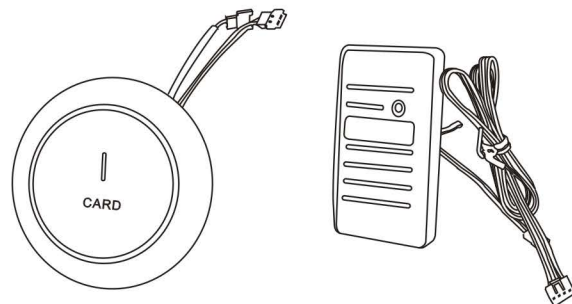
Hardware Bag



Power Adapter



RFID Readers



4.0 System Installation Overview

Before starting installation:

- Ensure all components ordered and materials / tools required are available.
- Ensure all cabling is available for the peripherals / components being installed.

IMPORTANT

All installations & wiring of MFC enclosure and peripherals must comply with all applicable local building codes and regulations.

⚠ CAUTION

Do not connect power to the enclosure until the end of the installation.

4.0 Pre-Installation Procedures

Step 1: Identify a secure location for the MFC enclosure.

IMPORTANT

- Access to the MFC enclosure must be restricted to authorized personnel.
 - AC power must be available within 6 feet (1.8m) of the MFC enclosure.
 - The location temperature must be from 32°F to 120°F (0°C to 49°C) and sheltered against weather hazards and dripping water.
 - The enclosure must be installed using the hardware supplied.
- Identify the location for the MFC enclosure based on the following:
- Enclosure should be mounted at a workable height with clearance to completely open the access door.
 - The enclosure can be placed either on the elevator car the ceiling or vertically on a concrete, wood, or plaster wall.

Step 2: Identify location(s) for contactless readers

Readers should be installed in an obvious location at an ergonomic height near the access door or elevator being controlled.

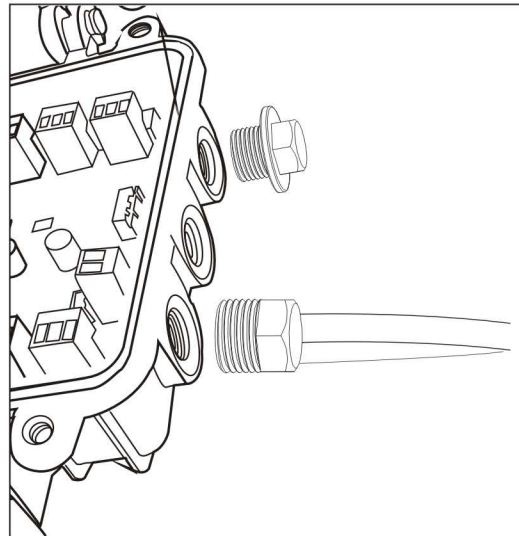
Contactless card reader:

The space to use the contactless reader must be large enough to allow for adequate clearance for the card being presented to the reader.

Step 3: Install strain relief

Strain reliefs are provided in the hardware bag to secure the wires leading into the enclosure and to help prevent the possibility of wire tampering.

1. Determine the routing needed for all wiring of the MFC-X card readers and peripherals and select the enclosure knock-out(s) to be removed for installation of the strain relief(s).
2. Remove the selected knock-out(s) using a hammer & screwdriver / awl, and from the inner side of the enclosure tap out the small metal disk.
3. Based on the amount of wires to be routed, attach the appropriate strain relief to the enclosure as shown. Do not attempt to route an excessive amount of wires. If extra strain reliefs are required please contact YGS.



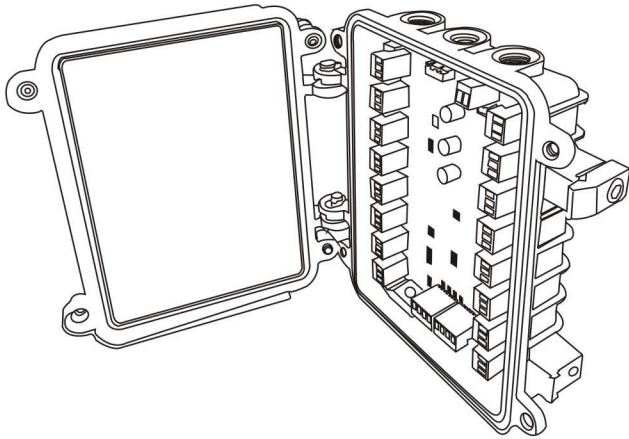
4.0 Installation & Wiring Procedures

Step 4: Mounting the MFC enclosure

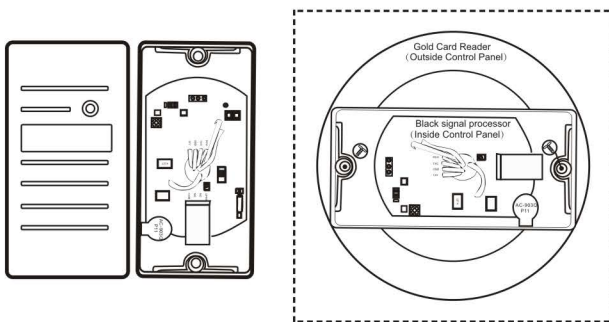
Install the enclosure in the desired location using the appropriate items from the hardware bag.

NOTE: For easier access it is recommended to remove the access door before installation.

4.0 System Installation Overview



Step 5: Mounting the Card reader



1. Remove the front cover of the black processor and use it to mark the holes for the screws.
2. Drill a 9.5mm diameter wiring hole and screw hole in the card reading area. Connect the reader cables through the hole and fix it with the 2 screws provided, with gold reader outside and black signal processor inside.

Step 6: Connect peripheral wiring

⚠ CAUTION

Do not exceed the maximum cable length indicated by the manufacturer of the products being connected. In addition, the wire used to connect the peripherals to controller PCB must be of the proper gauge and type as specified by the manufacturer.

IMPORTANT

Every wire must pass through a strain relief as connected in step 3.

YGS does not provide technical or field support for 3rd party locking devices. Please consult the device manufacturer for support.

NOTE: The Maximum Recommended Wire Length is the approximate wire length that causes a 5% voltage loss in the wire, using a 12-volt locking device at the rated current included.

Step 7: Relay Expansion Board outputs wiring Refer to Annex A, for sample wiring diagram.

The relay expansion board provides 16 relay contacts for wiring & control of relay-enabled elevator. The board only provides normally open or normally closed dry contacts, so no power is provided by the board.

As wiring of relay-controlled equipment may vary between products please refer to the product manufacturer's instruction booklet for proper instructions.

NOTE: Refer to Annex A for specific relay expansion board bypass switches.

- If the Expansion Board is connected, all blue LED associated with the relays is turned ON.
- If the Expansion Board is not connected, all blue LED associated with the relays is turned OFF.

Floors without access control is no needed to make connection with ECU.

Step 8: Power Supply Connection

Dependent on country's electrical power requirements, choose the suitable plug when placing order and connect it to 220V AC power supply.

Step 9: Completing the installation

Close the enclosure with the 4 screws as listed above and could fix it above the elevator car in Annex B.

5.0 Software Program-access mode setting

1. Uncontrolled Mode

Mode features:

All floor buttons are valid. Elevator is not controlled by the controller.

Mode setting:

Read "Authorization Card" 3 times, >>> Controller gives a long "Di".

2. Floor Control

Mode features:

By reading Guest Card on the controller, floor button of the Guest Card will be activated. Customers press the button to get access to their own floor.

Mode setting:

Read "Authorization Card">>>"Room Creation Card">>>Controller sounds "Di Di"

Remark: if any Room Creation Card of the 10th Floor is read, the 1st relay of the controller will be set as Floor 10th, later relays will be set as Floor 11th, 12th etc consecutively (increased from Floor 10th).

3. Floor & Time Control

Mode features:

By identifying floor and time information of each card, specific floor can be reached when floor information is correct and card is within validity period.

Mode setting:

Read "Authorization Card">>>"Room Creation Card">>>Controller sounds "Di Di"

Read "Authorization Card">>>"Time Card"

Remark:

Cancel floor and time control: read Authorization Card 3 times;

4. Temporary Control Floor Setting

Mode features:

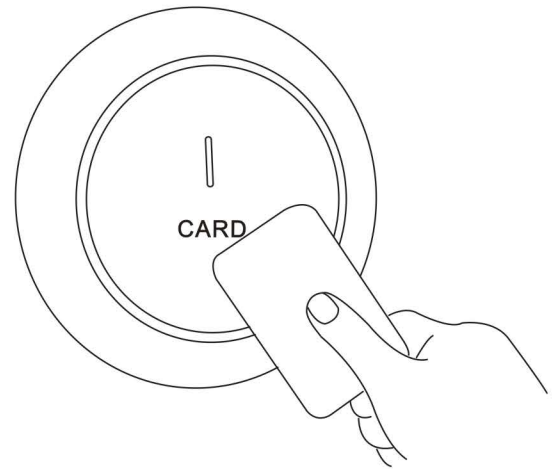
Floors can be set as uncontrolled at certain periods, same time as the valid periods of Floor Card. For example, Floor 3rd and 8th are set with this mode. Customer of Room 202, can access to 2nd, 3rd and 8th floor by reading his Guest Card. After valid periods, the floors are under control as specified above.

Mode setting:

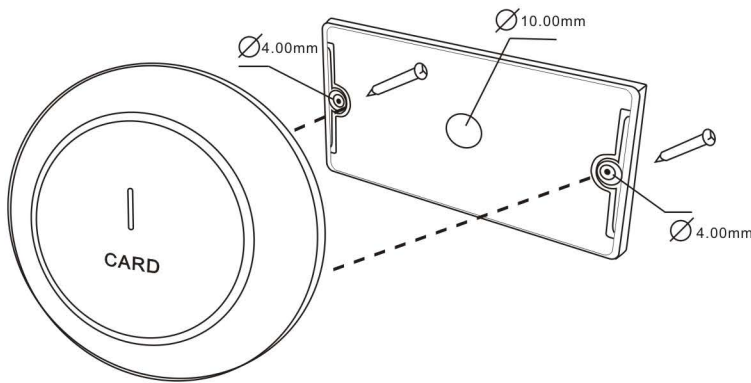
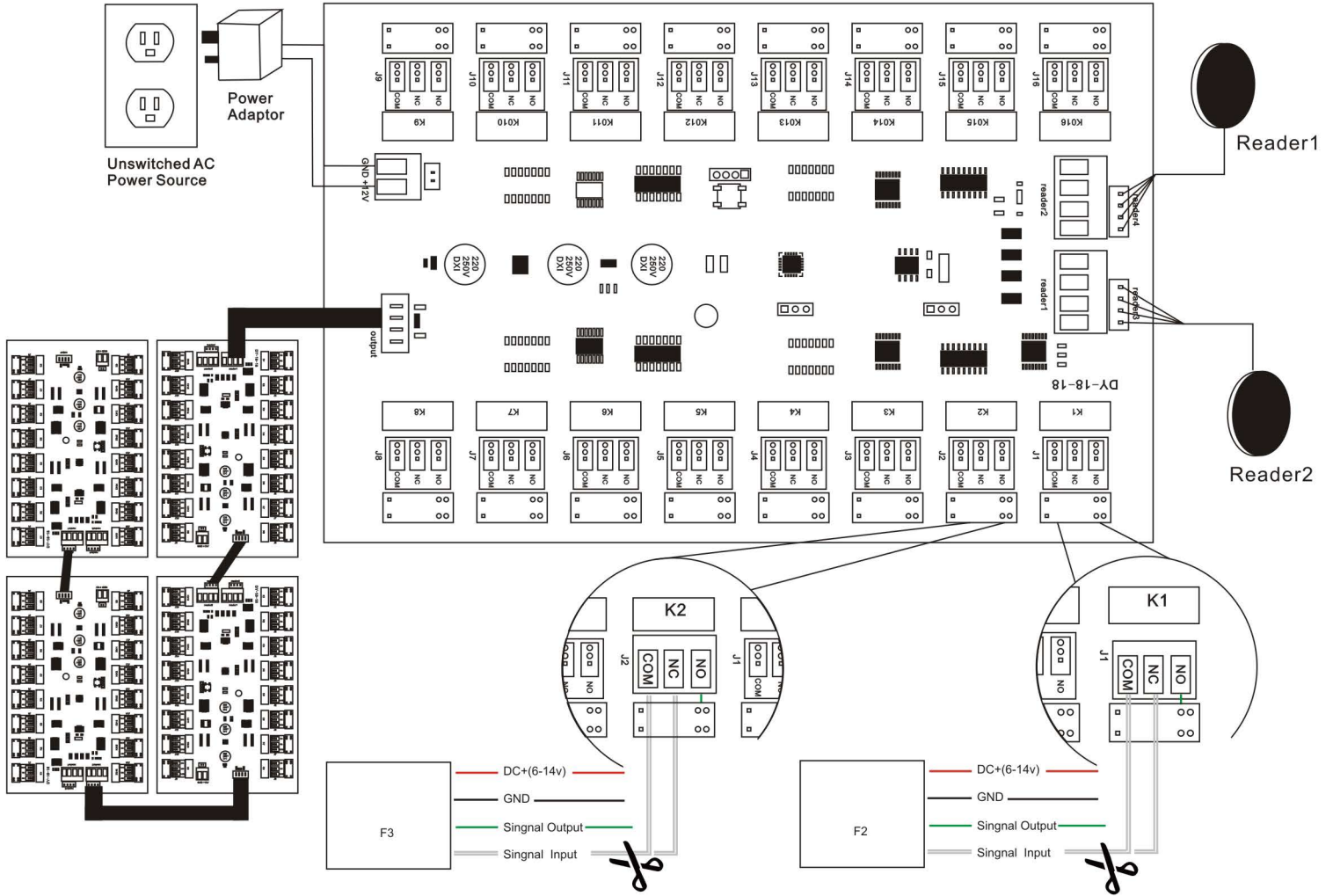
Read "Authorization Card">>>"Floor Card" After setting, floors of the Floor Card will be set as common floors (5 floors at most). Access limitation is canceled for these floors. Valid periods of the Floor Card will be set as the open periods of the common floors.

5. Entries Record

Entries record of the controller can be collected by S70 data card or handheld device. Collecting from controller are in the same way as collecting from door lock.



6.0 Annex A Multi Floor Controller - MFC



Control Mode	Card Reader	ECU Relays
Floor Control	Red	All Blue
No Control (Anyone can use)	Green	LED off

6.0 MFC and Accessories Placement Location

