



**FSH**

**MEM2400EXT-SC**

**DELAYED EGRESS LOCKING DEVICE**

**With built-in CCTV Camera**

**INSTALLATION MANUAL**

## **A. INTRODUCTION**

The MEM2400EXT-SC Mechanical Electro Magnet locking device is a unique patented high security hinged door lock designed to secure remotely located exit doors where high security is of paramount importance.

## **B. FEATURES**

The device has a holding force of up to 1000kg, Door Status Sensor (DSS) & Lock Status Sensor (LSS) monitoring, accepts 12VDC to 24VDC along with exclusive “delayed egress functions” and a built-in Mini CCTV High Resolution Colour Camera. The MEM2400EXT-SC is also provided with up to 70KG of “pre-load” release.

## **C. DELAY EGRESS FUNCTIONS**

The MEM2400EXT-SC is provided with 2 stage, time adjustable “Delayed Egress” functions. In the normal operational condition, the lock is energized in a fail-safe (power to lock) state.

### **STAGE 1**

is designated “Nuisance Delay Period”, adjustable from 0 to 3 seconds. This feature is activated on initial pressure being applied to the locked door, at this time a local (fast) pulsating buzzer sounds, the local alarm relay is activated and the long distance backlight flashes rapidly “red”. If pressure is removed from the door within the nuisance delay period the local alarm conditions will automatically reset. The alarm can be local, remote or local & remote.

However should continual pressure be applied to the door

### **STAGE 2**

is initiated, the door remains secure and the “Release Delay Period”, adjustable to 15 or 30 seconds commences. At this time the local alarm buzzer is locked into slow pulsing sound, the remote alarm relay is activated and the long distance backlight flashes slowly red.

After the release delay period has expired the device will automatically unlock, allowing the door to be freely opened. At this time the Door Status Sensor (DSS) & Lock Status Sensor (LSS) signal monitoring will also be activated, the long distance back light flashes red & green.

## **D. SYSTEM RESET**

Once the door has been opened in an “alarm” condition, the system remains unlocked and must be manually reset, either locally or at the access control/security alarm panel.

## **E. MOTION DETECTOR**

The MEM2400EXT-SC Delayed Egress System is a security system and requires the installation of a Motion Detector (PIR) on the secure side (inside) of the door. The Motion Detector has to be connected in series with the Stage 2 Alarm (see wiring information in this document). A person has to push the door and has to be detected at the same time before the door will open. This is to stop the door from being opened from outside by just pulling on the door until Stage 2 Alarm is activated.

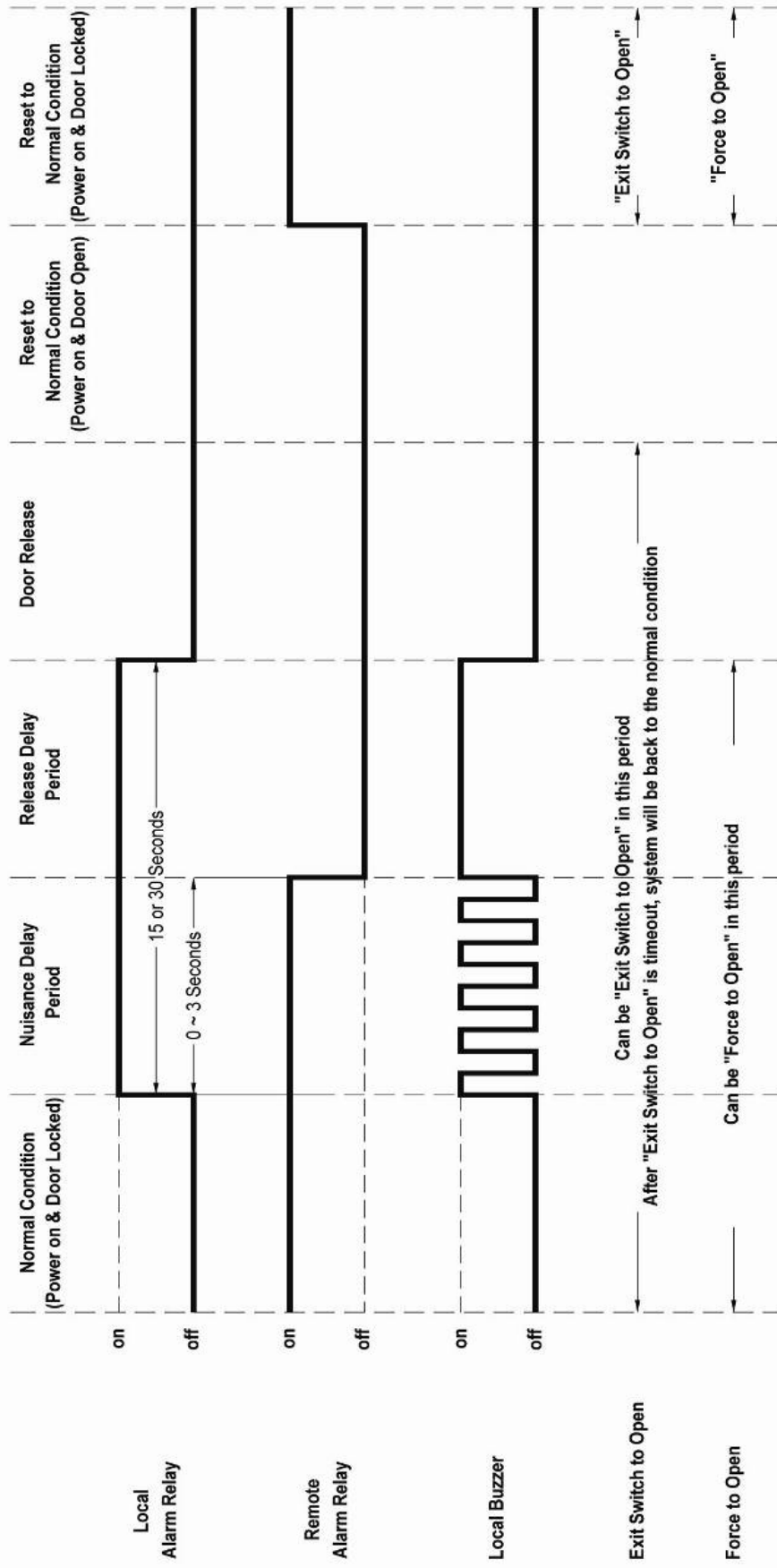
## **F. FIRE ALARM CONDITION**

The MEM2400EXT-SC must be connected, via a set of normally open contacts, to the building complexes fire alarm system and in the event of a “fire alarm condition” the device will immediately release. The device has to be reset manually once the fire alarm has been cleared.

## G. DELAYED EGRESS SYSTEM STATUS

<b>System Status</b>	<b>Light Panel</b>	<b>Local Buzzer</b>	<b>Local Alarm Relay</b>	<b>Remote Alarm Relay</b>
Door Open	Red on	OFF	OFF	OFF
Lock Locked	Green blinks every 5 seconds	OFF	OFF	ON
Nuisance Delay Period	Red blinking (rapid)	Sound pulsing (fast)	ON	ON
Release Delay Period	Red blinking (slowly)	Sound pulsing (slowly)	ON	OFF
Lock Release	Red/Green blinking alternately	OFF	OFF	OFF
Force to Open	Red blinking (fast)	Sound pulsing	ON	OFF
Exit Switch to Open	Red on	OFF	OFF	OFF

# Delay Egress Functions



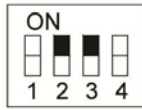
DIP SWITCH SETTING FOR DELAY EGRESS FUNCTIONS

**Factory setting:** Nuisance Delay Period set at 3 sec. (Dip switch 2 OFF and Dip switch 3 OFF).

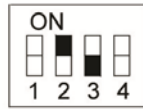
**Factory setting:** Release Delay Period at 15 sec. (Dip switch 1 ON).

**Factory setting:** (Dip switch 4 OFF).

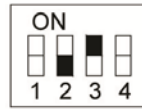
**Nuisance Delay  
Dip Switch 2 & 3**



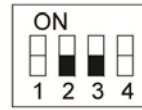
0 Sec



1 Sec

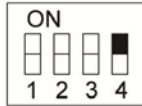


2 Sec

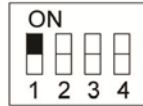


3 Sec

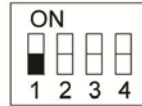
**Release Delay  
Dip Switch 1 & 4**



0 Sec



15 Sec



30 Sec

Stage 1 Nuisance Delay Period DIP Switch 2 & 3

Stage 2 Release Delay Period DIP Switch 1 & 4

Note: Dip Switch 4 should remain in OFF position to utilise Stage 2 delayed egress function. If Dip Switch 4 is set to ON position, lock will release right after Nuisance Delay Period expires (Stage 1).

**Relocking Sequence**

- Unauthorized Egress or Alarm Condition

After the Release Delay time expires or in a fire-alarm condition, the door unlocks and when opened, the Door Status Sensor (DSS) changes its state and remains activated. **The Device will not relock until it has been manually reset.** The reset has to be carried out manually through the Reset Switch Input (purple wire). The reset switch input, if changed from open to close, will reset the system back to the normal locked condition.

- Authorized Egress

In case of an authorized egress via remote unlocking or key-switch, the system will automatically reset itself back to normal locked condition.

## H. POWER REQUIREMENTS

<b>Power Input</b>	Accept power 12 VDC to 24VDC
<b>Power Consumption</b>	12 VDC–max. 0.42 A (with all relays on, no buzzer) 24 VDC–max. 0.22 A (with all relays on, no buzzer)
<b>Output Relays</b>	Local Alarm Output – Form C: 1A, 24 VDC. Remote Alarm Output – Form C: 1 A, 24 VDC.
<b>Wires Requirement</b>	12 VDC to 24VDC Power Input – 2 wires. Local Alarm Relay Output – 1 wire. Remote Alarm Relay Output –1 wire Timer –1 wire. (Optional) Reset Input – 1 wire. Motion Detector Output – 1 wire. Fire Alarm – 1 wire. Lss Output – 1 wire. Request to Exit Input –1 wire. Dss Output – 1 wire. Video –1 wire.
<b>Operating Temperature</b>	-10 to +60 degree Celsius.

## I. OTHER FUNCTIONS

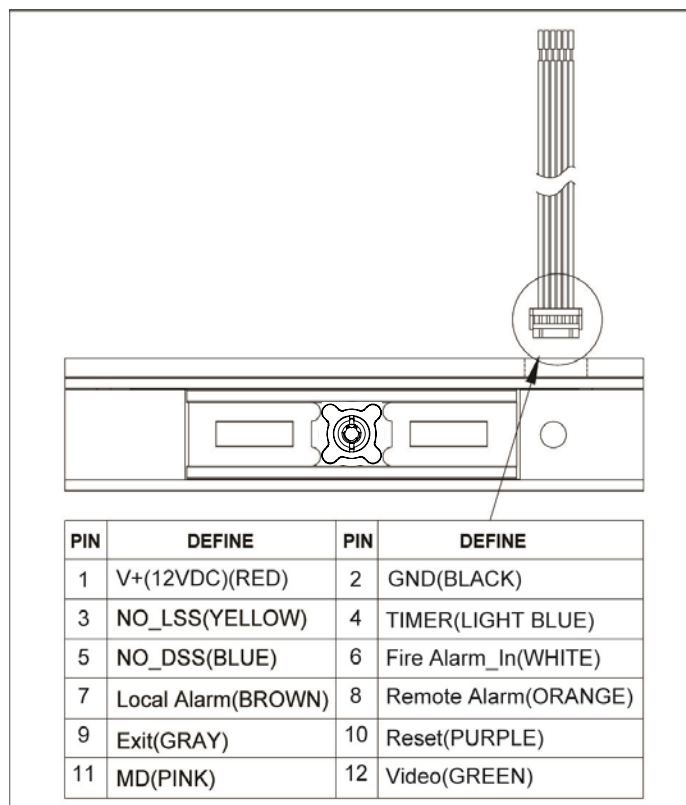
<b>P.I.R. Motion Detector Input (MD)</b>	Normally Closed. These two WIRES inputs are used for Delayed Egress Function. The system will start the delay sequences only when these two inputs are open.
<b>Request to Exit Input (EXIT)</b>	Normally Open. The lock will release for 5 seconds when these two terminal block inputs are momentarily shorted, and will release permanently as long as these two terminal block inputs are shorted.
<b>Reset Switch Input (RST)</b>	Reset Switch Input from OPEN to CLOSE will reset the system back to the normal condition.
<b>Remote Alarm Relay “off”</b>	Remote Alarm Relay is off only “when lock is released” or “when lock is going to be released” or “when lock might be forced to be released”.

## J. CCTV Camera Functions & Specification

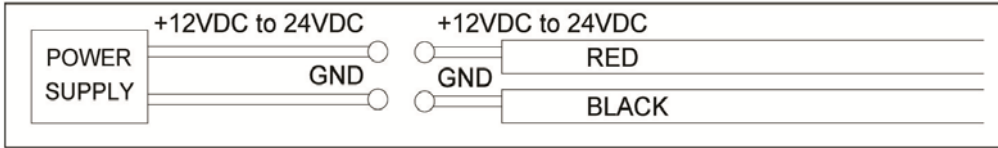
The MEM2400EXT-SC has a built in Mini CCTV camera as listed below.

	PK-575A
Image Sensor	1/4" Interline CCD
PAL / NTSC	PAL
Number of Pixels	752(H)×582(V)
Lens Mount	Fixed
Synchronization	Internal Only
Scanning System	2:1 Interlace
Video Output Level	VBS 1Vp-p 75Ω
Horizontal Resolution	More than 520TV Lines Luminance Signal / Lens Center Only
Min. Illumination	Less than 0.2lx (Tentative) (Video Output 50%、AGC ON、F1.4)
S/N Ratio	More than 48dB AGC OFF、WEIGHT ON)
Electrical IRIS	1/50~1/120,000(sec)
Horizontal Frequency	15.6250(kHz)
Vertical Frequency	50Hz
White Balance	AUTO
Fixed Shutter	NON
Y Correction	0.45
AGC	ON (+18dB Max.)
BLC	Full Area
Storage Temperature humidity	-20°C~+65°C Less than 90% (No Condensation)
Operating Temperature humidity	-10°C~+60°C Less than 80% (No Condensation)
Dimension	Approx. 22x26mm (Refer to the external drawing for the detail.)
Weight	Approx. 5g (without optical parts)

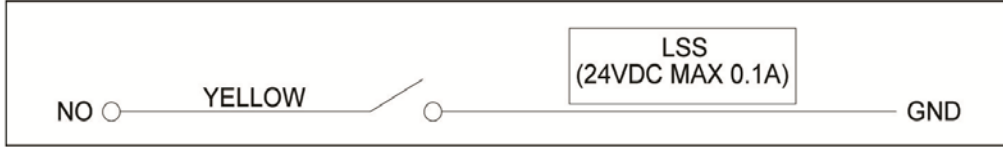
## K. Wiring diagram



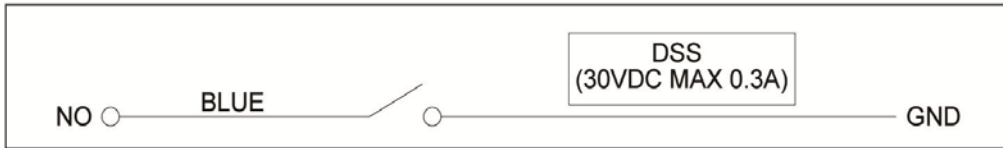
**NUMBER1 AND NUMBER2**



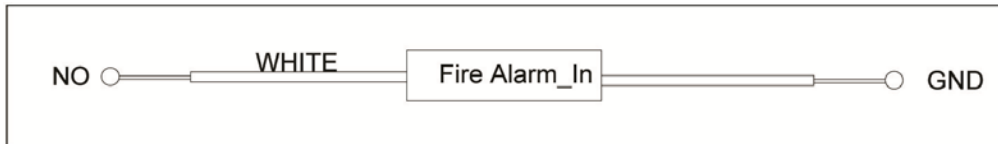
**NUMBER3**



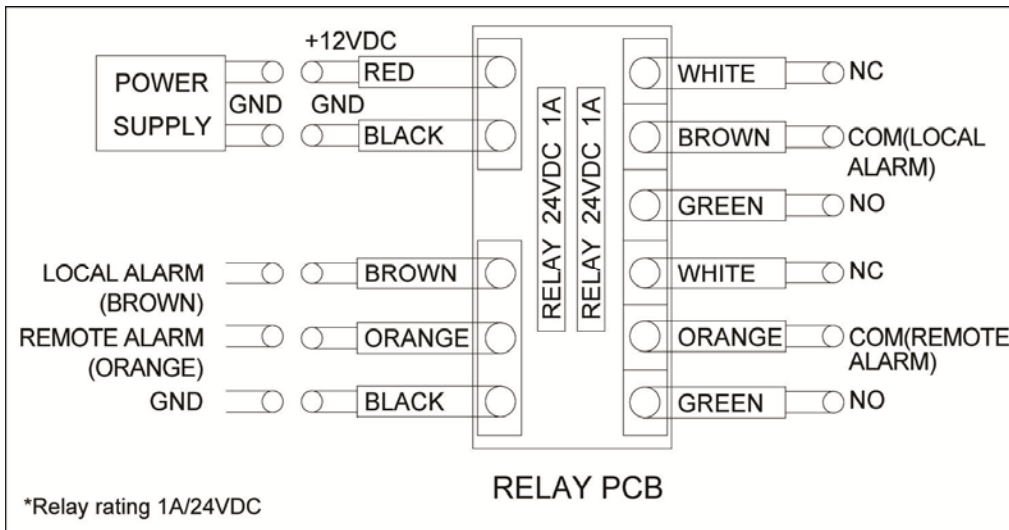
**NUMBER5**



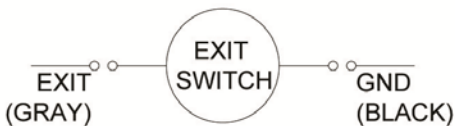
**NUMBER6**



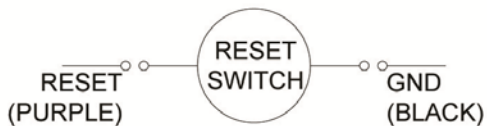
**NUMBER7 AND NUMBER8**



**NUMBER9**



**NUMBER10**



**NUMBER11**

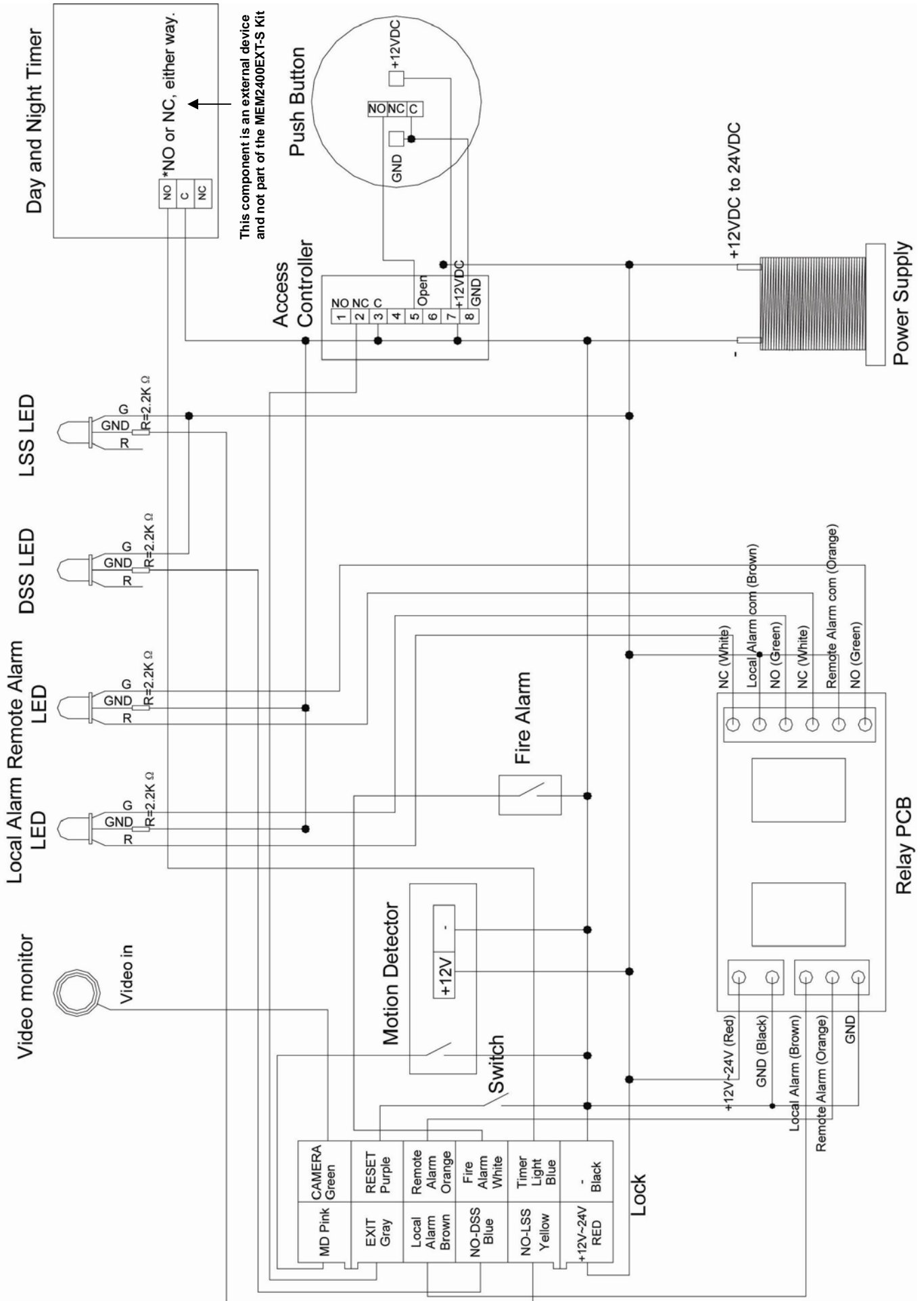


**NUMBER12**

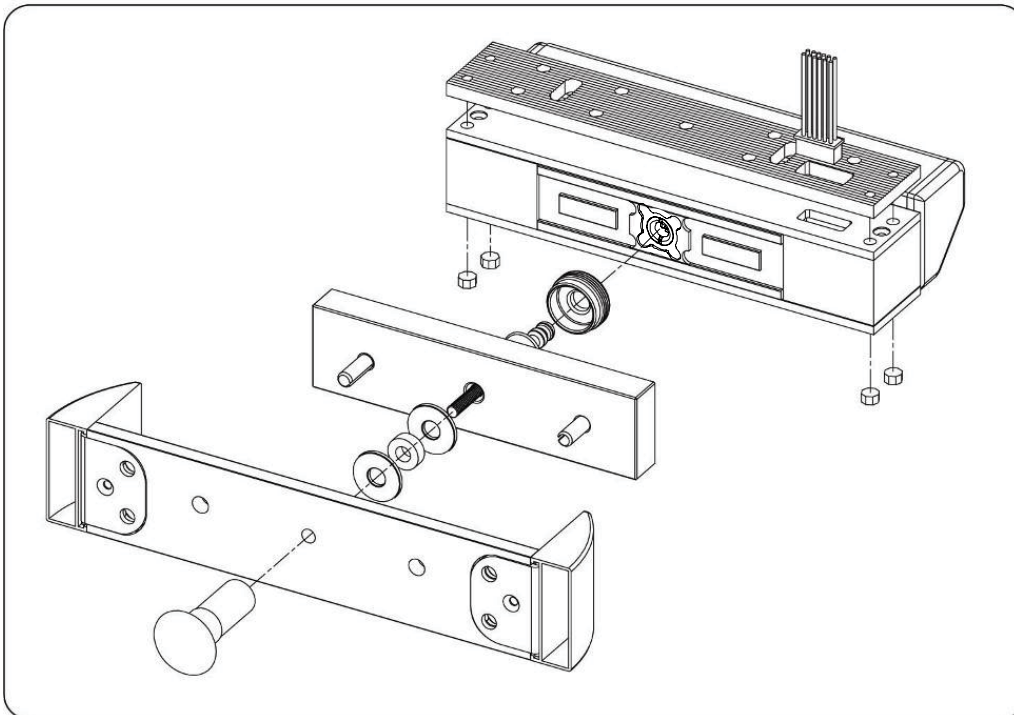
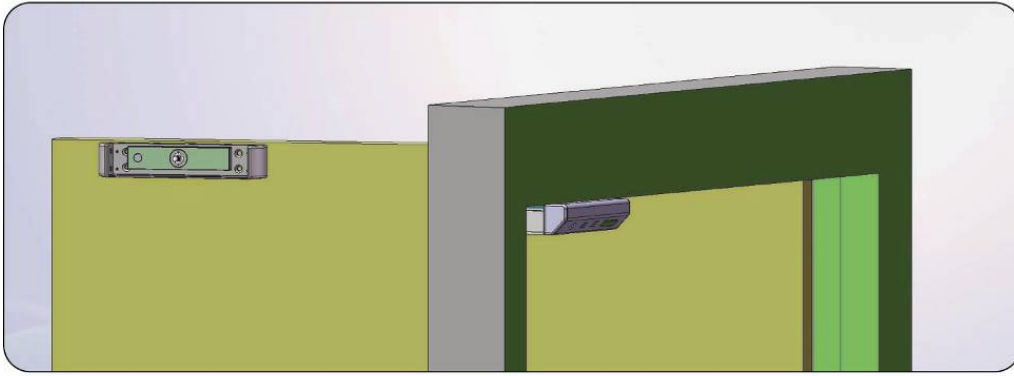




# Control Panel



## L. Installation Set-Up



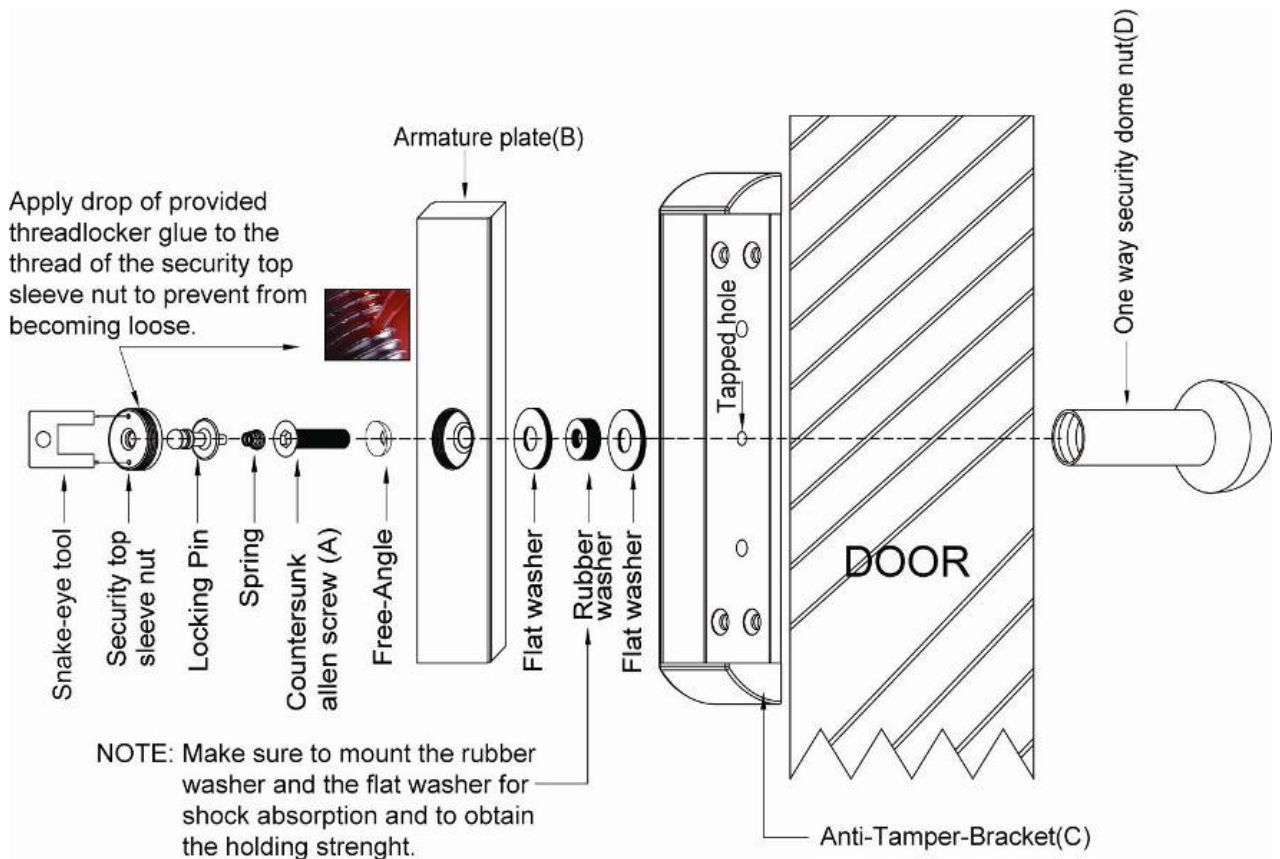
## M. Armature Plate Installation Instructions

The armature plate (B) is screw fixed onto and through the Anti-Tamper-Bracket (C), with the countersunk fixing Allen screw (A). The armature plate must remain flexible to allow surface alignment with the MEM magnet face. The MEM Lock will lose holding force without this floating alignment.

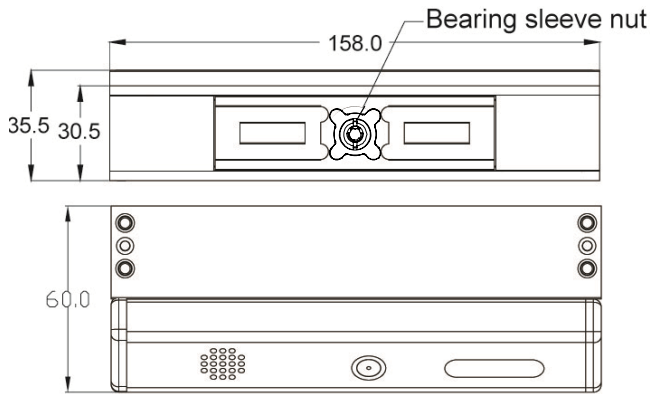
1. Drill a 12mm diameter clearance hole (timber door) or 12.5mm diameter clearance hole (metal door) through the door at the armature plate center fixing location position.
2. Screw fix the Anti-Tamper Bracket (C) directly to the face of the door with the self-tapping screws provided.
3. Install armature plate (B) with countersunk Allen screw (A) into and through the Anti-Tamper-Bracket (C). Ensure that the 2 flat washers and 1 rubber washer are in place and tighten the screw into the tapped hole of the Anti-Tamper-Bracket (C).

Note: The armature plate, when tightened, must remain flexible and be allowed to float as mentioned above.

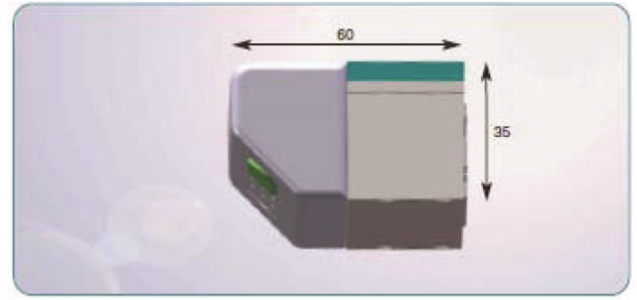
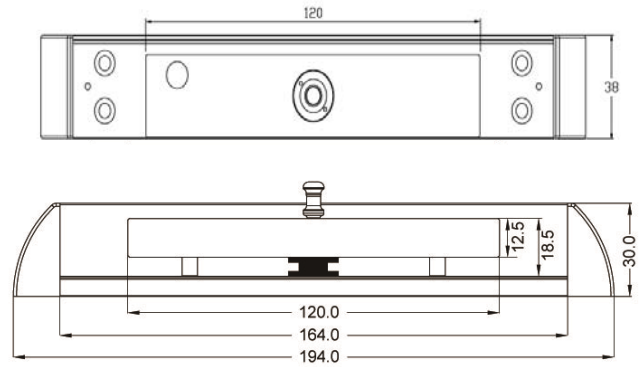
Install the one way security dome nut (D) through the clearance hole in the door and tighten onto the countersunk Allen screw (A).



## N. Installation Dimensions



## Armature Plate & Anti-Tamper



## O. Important Safety Precautions

- Use the template provided and secure the MEM2400EXT-SC MEM Lock firmly on the door frame with the provided screws and have it checked periodically for any possible screw loosening.
- Apply thread-locker glue to top sleeve nut to prevent it from becoming undone
- **The Armature Plate must remain flexible**

## P. Maintenance

Contacting surfaces of the Mechanical Electro Magnetic Lock and Armature Plate must be kept free of contaminating materials. Surfaces should be cleaned periodically with a non-abrasive cleaner. Do not spray the MEM Lock or Armature Plate surface with any lacquer chemicals. This will cause serious problems with the release of the Armature plate from the Mechanical Electro Magnetic Lock leading to possible serious safety problems. **Locks should be inspected at regular intervals to ascertain the safety and security functionality in conjunction with the door environment.**