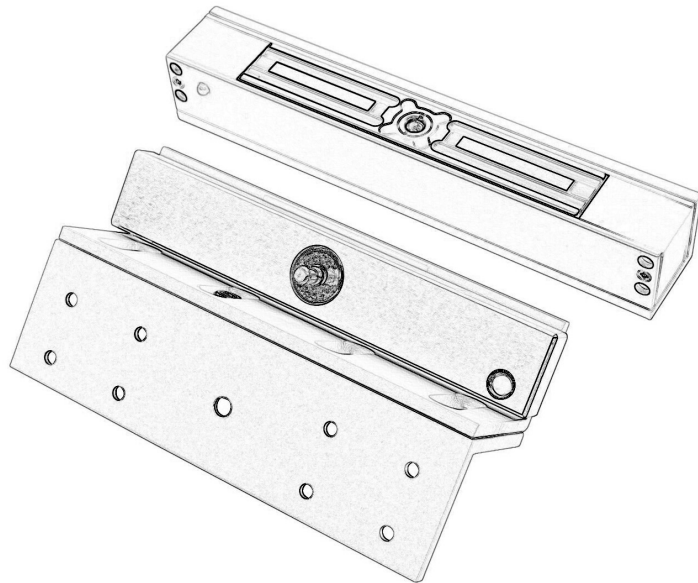




MML2400LZ Mechanical Magnetic Lock for Inward Opening Doors Installation Manual



Introduction

The patented MML2400LZ Mechanical Magnet locking device is designed for securing all types of inward opening hinged doors. The MML Lock has a holding force up to 1000Kg and is equipped with a LED for Secure (green) / Non Secure (red) local monitoring indication on the device. The MML2400LZ has been Fire Tested for up to 4 hours to both AS & BS Standards. The MML2400LZ locking device is capable of releasing under door back pressure (pre-load) of up to 70KG. The unit comes with a L & Z bracket as standard.

Monitoring

The MML2400LZ lock is provided with a number of unique monitoring features for either local or remote indication (status of contacts stated when door closed and lock powered):

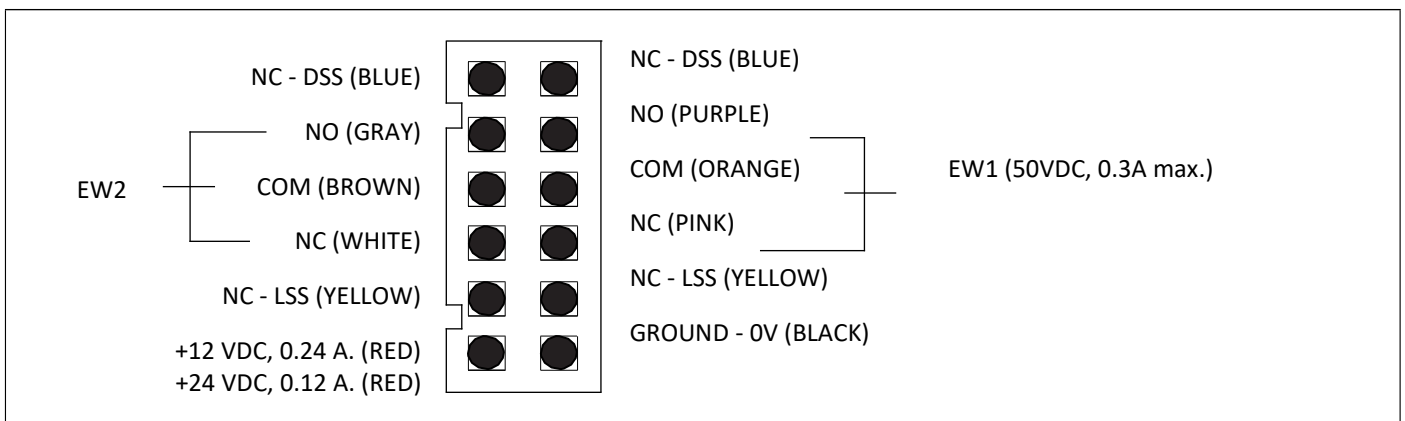
- Door Status Signal (DSS) 1 set of normally closed contacts.
- Lock Status Signal (LSS) 1 set of normally closed contacts.
- Early Warning (EW) x 2. - 2 sets of single throw double pole switches.

Functions

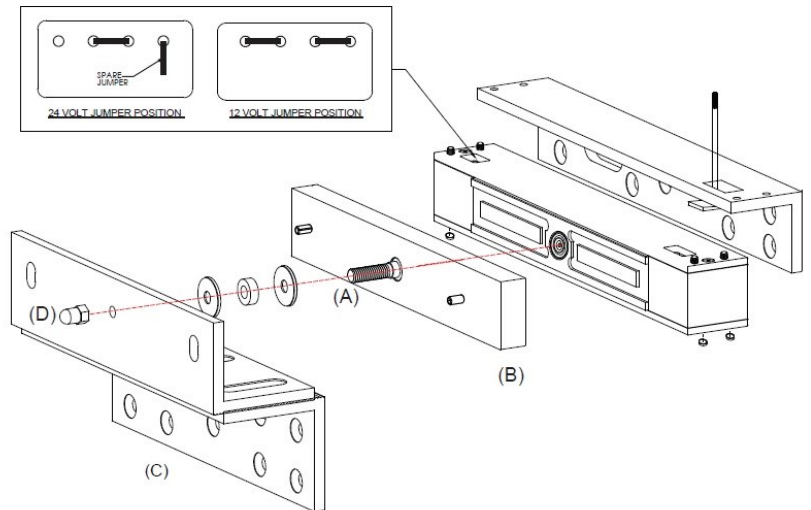
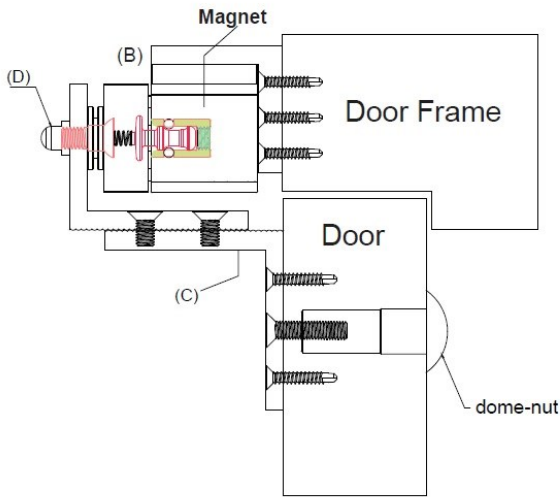
The MML2400LZ Mechanical Magnetic Lock operates on either 12 or 24 VDC. It is set ex-factory on 24VDC and can be changed over to 12V DC by voltage jumper selection (see installation diagram). When power is applied to the lock and the door is in the closed position the armature plate is magnetically attracted to the MML device and both the DSS & LSS switches change status to NC.

When pressure is applied to the door in an attempt to open it unauthorized, the MML lock provides the patented local or remote "Early Warning" (EW) security alarm indication.

Wiring and Power Input



Installation diagram

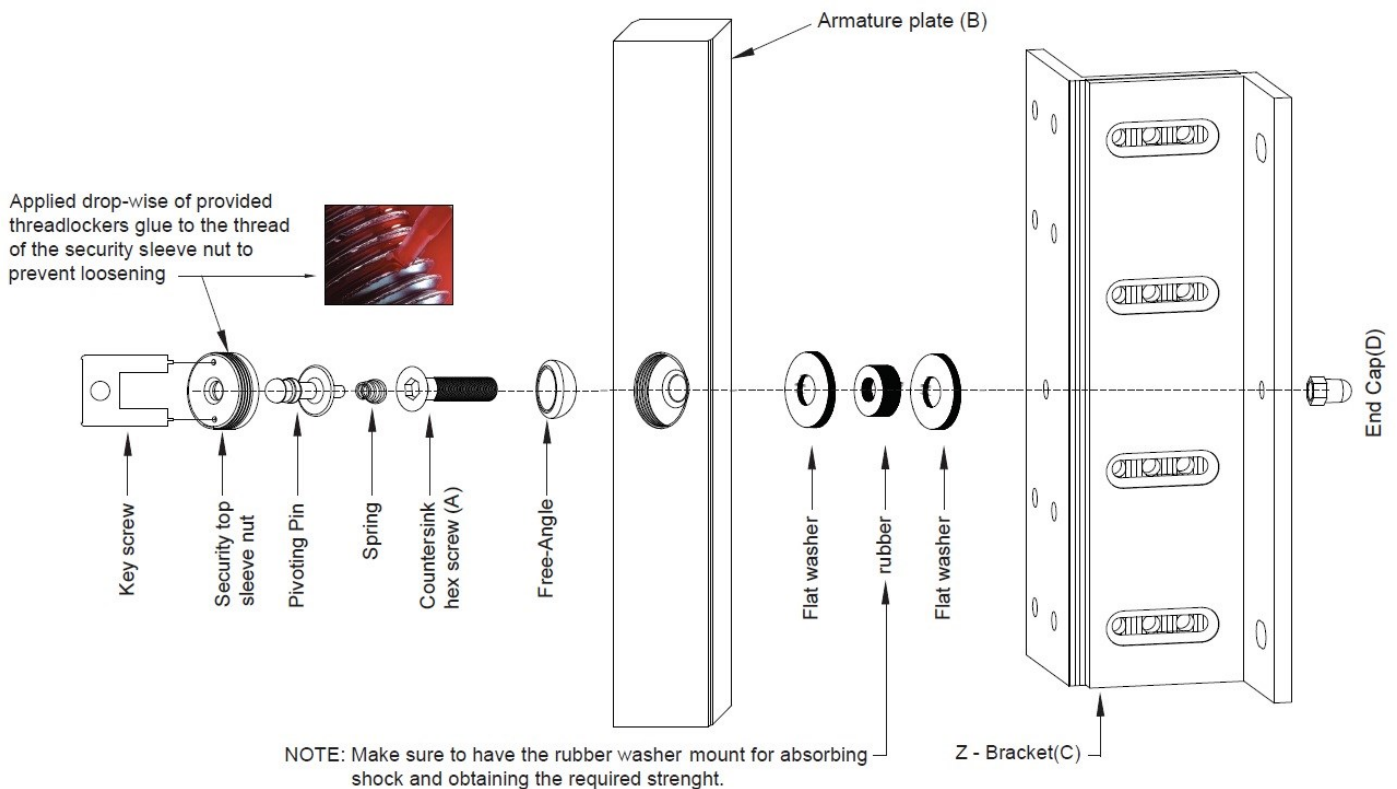


Armature Plate Installation Instructions

The armature plate (B) is screw fixed onto and through the Z-Bracket (C), with the countersunk hex screw (A).

The armature plate must remain flexible to allow surface alignment with the MML magnet face. The MML Lock will lose holding force without this floating alignment.

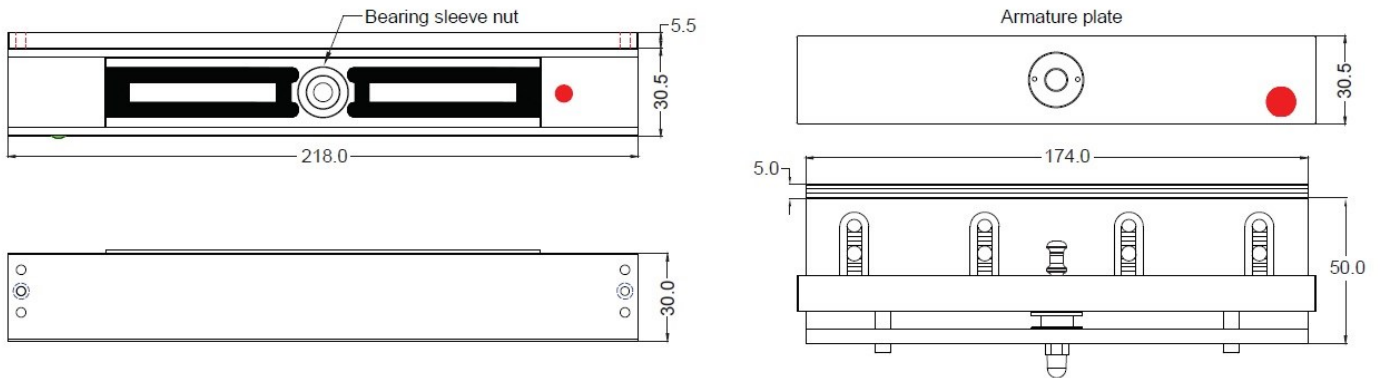
1. Screw the Z-Bracket (B) directly to the face of the door with the self-tapping screws provided
2. Drill a 12mm diameter clearance hole (timber door) or 12.5mm diameter clearance hole (metal door) through the door at the Z-bracket centre hole fixing location position and attached dome nut and countersunk screw to Z-Bracket (B) to provide additional strength.
3. Install armature plate (B) with countersunk Allen screw (A) into and through the Z-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 Z-Bracket (C).
4. Install the End Cap (D) onto the Countersunk Allen screw (A).



MML2400LZ Output and LED Indication Table

Serial number	Condition	DSS	EW1	EW2	LSS	Indication on Lock (LP)
1	Power OFF Door Open					Power Off No LP Indication
2	Power OFF Door Closed					Power Off No LP Indication
3	Power On Door Open					Red LP ON
4	Power On Door Closed					Green LP ON
5	Power On Door Closed & Tampered					Green LP ON

Installation dimension



MML2400LZ Operation

The magnetic armatures are designed to keep the door closed with a small magnetic force. When an attempt to open the door is made, the armature plate attached to the door pulls the armature out of the lock body by approximately 3mm. The armature is held in place by 2 strong springs. The armature movement in turn engages 6 ball bearings onto the locking pin which provides a mechanical locking action. This action is very much like a hose snap fitting in operation. The magnetic force only enables the mechanical function to operate, and the capacity of the armature to slide out of the body is vitally important.

MML2400LZ Double Door Fitment

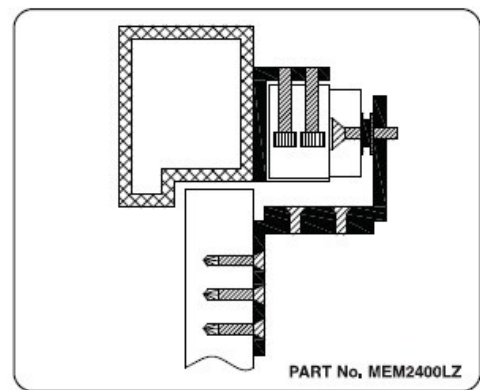
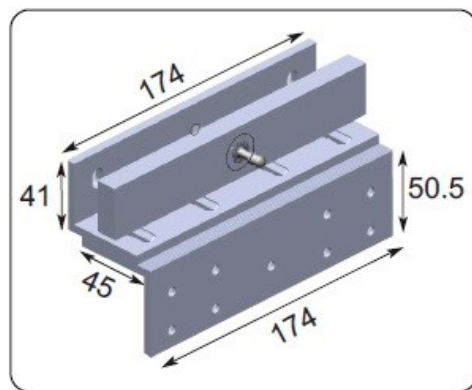
Aluminium double door headers often exhibit poor torsional strength which causes the MML lock to rotate in respect to the door. This torsional twisting of the frame can cause poor holding force, and has been resolved by strengthening the door header by reinforcing with additional aluminium or steel "L" extrusions.

Early Warning Output

A useful feature of this lock is the Early Warning or EW output. When the door is moved by the 3mm mentioned above and the resultant movement of the armature occurs, a microswitch changes state. This switch has been used for example to trigger a CCTV to record the door area, or cause a local alarm to activate etc. A useful output.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Door has weak holding force	1. Incorrect voltage	Check voltage jumper setting (default 24VDC). Measure voltage at the connected lock
Door has weak holding force	2. Security top sleeve (two small holes on large disc) higher than armature plate surface.	Screw the security top sleeve down to below surface of armature so plate does not "sea saw". Use provided thread lock.
Door has weak holding force	3. Door has dropped causing locking pin not to align with the locking aperture. When the door drops the locking pin is forced up into the locking hole, rather than entering straight on. When the door is subsequently pushed open, the armature cannot move the required 3mm to engage the locking ball bearings. This results in poor holding force provided only by the magnet.	Pack MML2400 armature down so the pin enters the locking hole straight. Recheck alignment of the mating pin and locking aperture.
Replaced lock still does not lock correctly	Older versions of the MML2400 series had a shorter locking pin and do not operate correctly with newer models.	When replacing an old MML lock ensure all components on both the door frame and door are replaced.

MML2400LZ Adjustable L&Z bracket is part of the MML2400 kit.



Maintenance

Contacting surfaces of the Mechanical 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 MML Lock or Armature Plate surface with any lacquer chemicals. This will cause serious problems with the release of the Armature plate from the Mechanical Magnetic Lock leading to possible serious safety problems. Periodically check that all screws have not loosened, and check of the alignment of the locking pin and its aperture. A dropped door will cause misalignment and will adversely effect the maximum holding force.