MS41 SFM SHEARLOCK
FLUSH FIXING INSTALLATION DETAILS

Installation arrangement for wooden frame and door

1) Check GAP between DOOR & FRAME - between 3mm and 8mm and the door must not be warped.

2) Check that the door closing device either :-
   a) Closes solidly to the stop position on a SINGLE ACTING door.
   b) Closes repeatedly to the centre on a SWING THROUGH door.

3) Check that POSITION FOR MAGNET (frame) and ARMATURE (door) will not interfere with any furniture and there is a safe route for the cables back to the PCB.

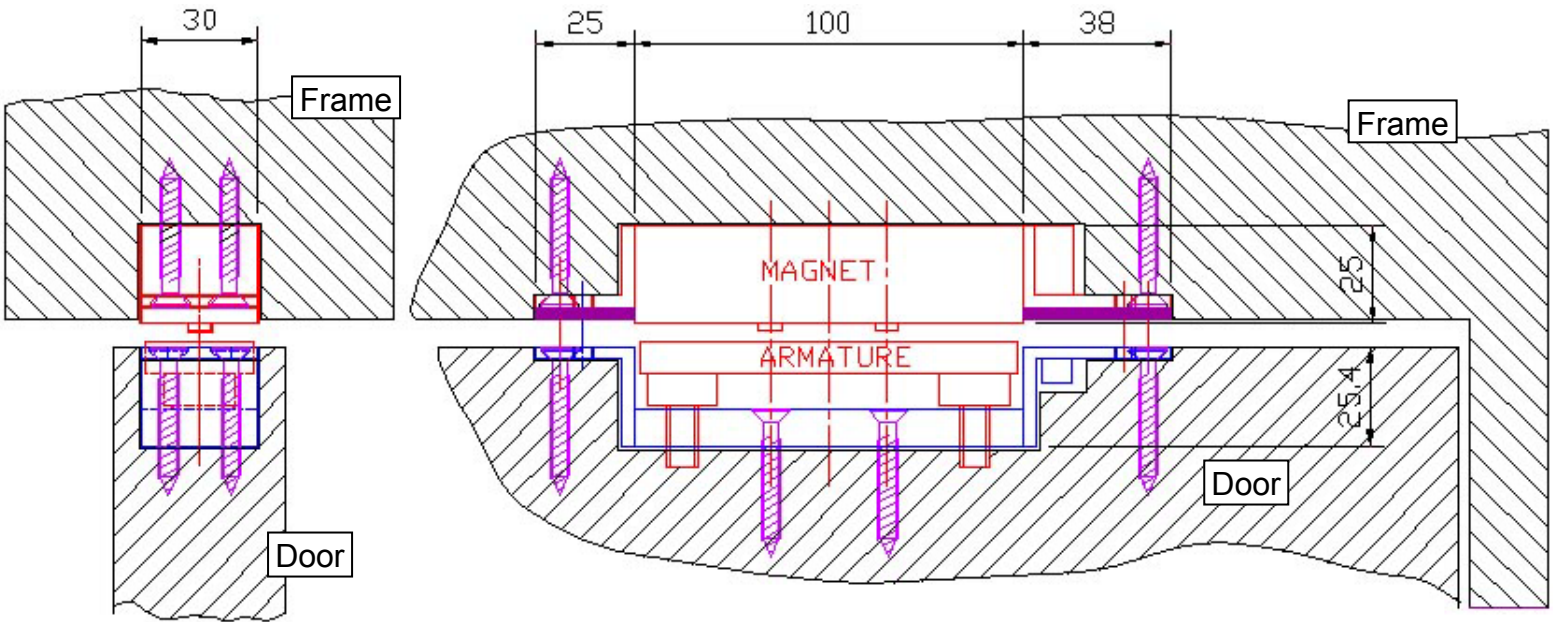
4) Mark the centre-line position in BOTH PLANES for MS41 Magnet & Armature and make sure they line up exactly when the door is in closed position.
   When fitting to the top of a door, fit near the leading edge at approx. 200mm to the centre of magnet.
   When fitting vertically, either fit one centrally or if fitting two, fit at 1/3 and 2/3 of door height from bottom.

5) Rout out both apertures such that Magnet is well supported and Armature is not restricted. The gap between frame and door will determine depth of fit but generally the **Magnet** should be **flush** or over flush with the underside of the frame. The **Armature** cradle should be well supported on base.

6) Using a temporary wood screw in each bracket (centre hole) fit both magnet and armature to **check clearances** and that there is no restriction to door movement. Adjust the Armature height such that it is approximately 1mm clear of pins.

7) The door contact with operating magnet is integral with brackets and will normally operate at up to 10mm gap between brackets.

8) Install the PCB in a convenient place i.e. false ceiling or preferably at the power supply.
   Wire up as instructions and when satisfied apply power via a 12v DC battery to test for correct operation prior to final access system wiring.



9) If function is correct and both items are inline when door is closed they can be fully screwed into place using the No. 10 wood screws provided, and removing the set up screws. Before replacing the Armature apply **threadlock** to the adjusting screws and reposition correctly with the Hex Key provided.

10) Ensure that the MS41 Magnet & Armature faces are clean and without burrs for full face contact (this is important for satisfactory monitoring and should be part of any regular maintenance)

11) The MS41SFM SHEARLOCK is now ready for use.

MS41 SFM SHEARLOCK
FLUSH FIXING INSTALLATION DETAILS

Installation arrangement for aluminium / UPVC – For vertical and horizontal fixing

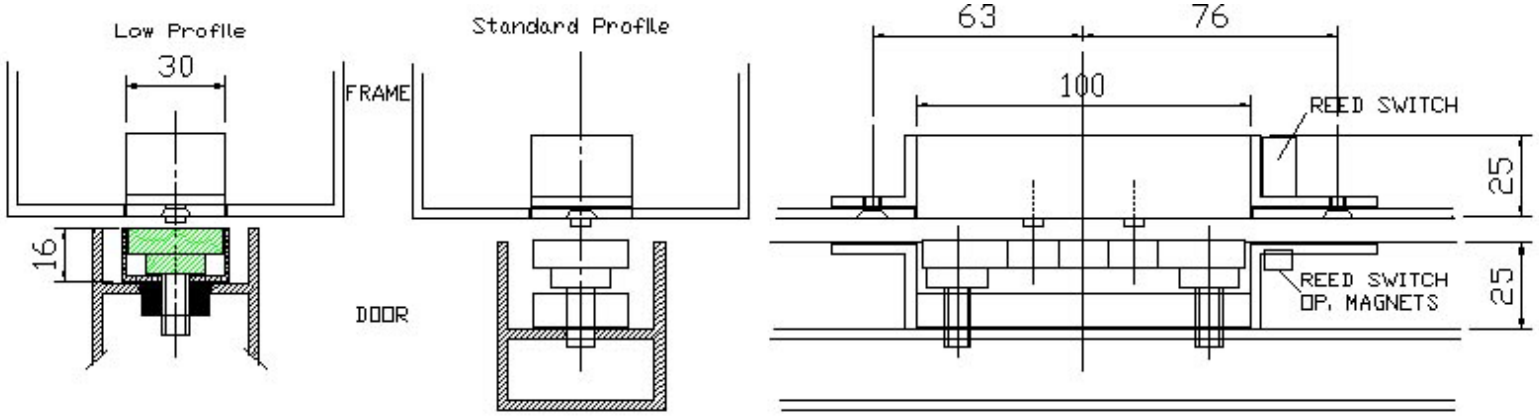
1) Check GAP between DOOR & FRAME - between 3mm and 6mm and the door must not be twisted.

2) Check that the door closing device either :-
   a) Closes solidly to the stop position on a SINGLE ACTING door.
   b) Closes repeatably to the centre on a SWING THROUGH door.

3) Mark the centre-line position in BOTH PLANES for MS41 Magnet & Armature and make sure they line up exactly when the door is in closed position.
   When fitting to the top of a door, fit near the leading edge at approx. 200mm to the centre of magnet.
   When fitting vertically, either fit one centrally or if fitting two, fit at 1/3 and 2/3 of door height from bottom.

4) Rout out both apertures 100mm x 30mm equally about the centre lines allowing a small fitting tolerance for the MS41 Magnet and Armature. Remove any burrs on the inside which could prevent the magnet from protruding through
   NOTE: This assumes a **hollow frame** AND **hollow top or leading edge** door section.

5) Fixing holes can now be drilled by offering up the magnet to both apertures and marking the fixing hole positions ready for drilling 5.5mm dia. with 10mm dia. countersink to accept the M5 countersunk machine screws.



6) FIT the MS41 magnet into the frame by first feeding the cable through to where the PCB is installed (i.e. in a false ceiling or the power supply) then feeding the magnet into the section and allowing it to enter and protrude through the aperture. Use the M5 screws provided to hold in place.

7) REMOVE the MS41 Armature from its Cradle and fit the Cradle to the door using the M5 screws. Maximum support will be achieved by using the base fixings of the cradle or using an aluminium block of the correct depth for the section. For shallow sections a mounting plate with thread inserts is available. Refit the MS41 Armature and adjust such that it is approximately **1mm clear of shear pins**.

8) Connect the PCB as instructions and when satisfied apply power to test. Assuming this is successful remove Armature and apply Threadlock to the adjusting screws before resetting at the correct height.

9) Ensure that the MS41 Magnet & Armature faces are clean and without burrs for full face contact. This is important for satisfactory monitoring and should be a part of any regular system maintenance.

10) The MS41SFM Shearlock is now ready for use.

NOTE : If installing in **ferrous metal** doors or frames the door monitoring reed switch function may be compromised. In this case a separate reed switch / magnet combination may be necessary.

MS41 SSM SHEARLOCK

SURFACE MOUNTING INSTALLATION DETAILS – WOOD, ALUMINIUM & GLASS

Installation arrangement for wood / metal doors and frames :-

1) Check GAP between DOOR & FRAME – should be min. 3mm & max. 8mm. Sufficient material strength at point of fixing is essential. The housing should be approx. 200mm to centre of magnet from leading edge of door.

2) Check that the FACES of DOOR and FRAME are **FLUSH** with EACH OTHER. If they are not, some means must be taken such as packing out or removing material to achieve it.

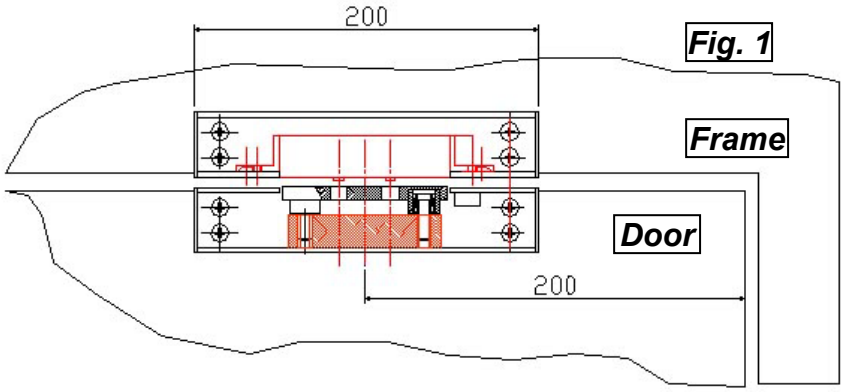


Fig. 1

3) Position the **MAGNET** housing on the frame such that the magnet face is **flush** or protruding below door frame but ensure pins do not interfere with door movement. The **ARMATURE** housing can then be fitted to the door, **parallel** and as close as possible to the Magnet housing (Fig. 2). Adjust Armature height with the hex key such that it is approximately **1mm clear** of shearpins.

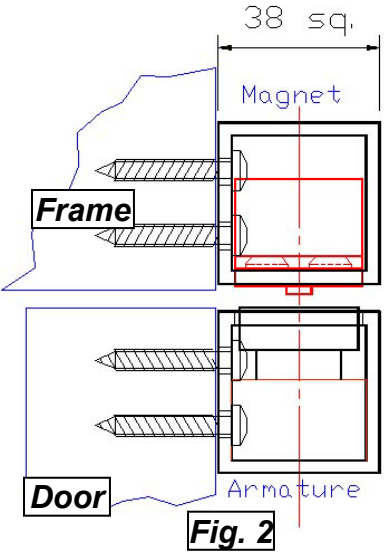


Fig. 2

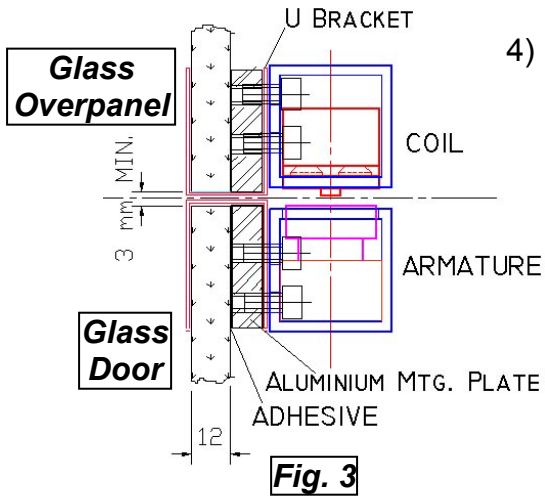


Fig. 3

4) Cable route can be achieved by carefully drilling through the rear of the Magnet housing to line up with any cable runs along the frame. Wire up to PCB and test. Secure at all fixing points, remove armature adjustment screws and apply **threadlock**, then reassemble. The cable may also exit through the plastic end cap, however the exit hole in the plastic end cap must be provided by the installer.

Glass Installation using MS41 GFKIT, see fig. 3 :-

5) Check gap between door and overpanel is greater than 3mm if two glass fix kits are to be used.

6) Offer the complete assembly to the door to check any physical issues when installed

7) Mark position for glass fix mounting plates and fix using MS Penloc two pack adhesive or similar. The glass should be cleaned using paper tissue and isopropyl methylated spirits or similar. The mounting plate should be cleaned using the abrasive pad to remove any oxidation.

8) Fit each housing with U bracket and packing plate if needed making sure that the slotted holes are next to mounting plate.

9) Set up and test with a **12v fully charged battery <u>before</u> connecting to access control system.**

Please note: The supplier accepts no responsibility or liability for damage or injury caused as a result of a badly fitted glass fixing bracket when either a) the brackets have been incorrectly installed or b) a non approved adhesive has been used. We recommend MSPENLOC 2 part adhesive or Loctite type 317 & 734.

Also available is double version of surface housing MS41DSM and both single and double versions can be fitted with door centering magnets, CMAGS, which assist floor spring action on swing through doors.

MS41 SHEARLOCK PCB OPERATION & FAULT FINDING

TEST LOCK FUNCTION BEFORE INSTALLATION

a) Wire up Magnet/PCB on test bench using charged 12v DC battery and10mm spacers between brackets or housings to simulate door / frame position. This tests the function prior to installing access control system and its own power supply.

b) Ensure you have a 12v 2A minimum, smoothed, regulated power supply

c) Use correct cable size for carrying 1.5A over the distance between power supply and PCB without significant losses.

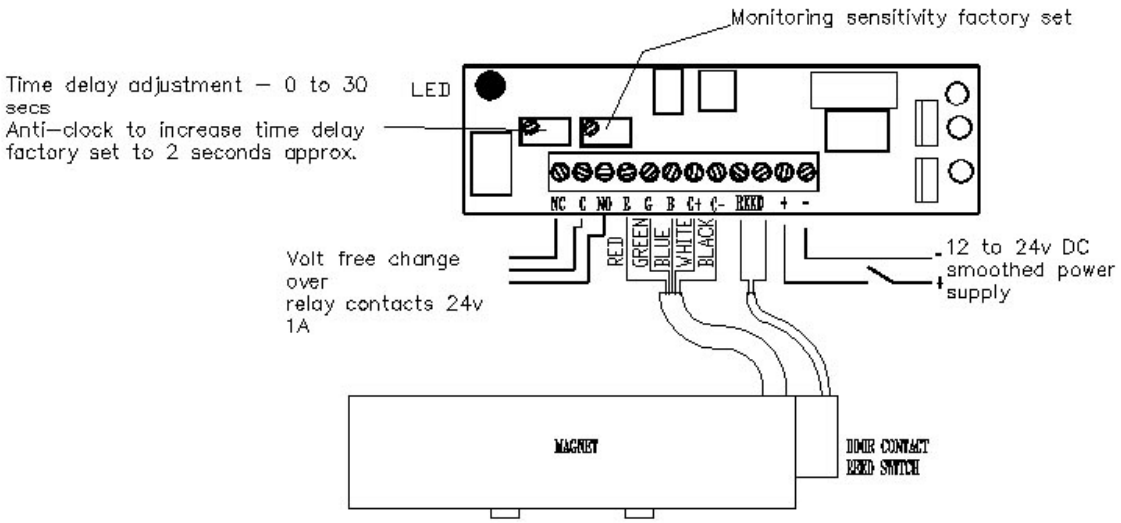
1) Wire up the MS41 Shearlock as shown in diagram below.
   The supply voltage can be anywhere between 12v & 24v smoothed DC.
   NOTE: Connect Supply Voltage to + and – only

2) Upon door closing the door contacts will 'make' to start the PCB which :-
   a) Applies the supply voltage and full current to the coil after an adjustable delay 0 – 30 seconds.
   b) The current immediately lowers to a holding level which reduces heat and power consumption.
   c) If the magnetic circuit is closed i.e. the lock is secure then the on board LED changes from Red to Green. This also changes the state of the volt free change-over contacts of the on board relay, rated at 24v 1A, allowing for remote monitoring of the lock status.

3) If the MS41 Shearlock tries to lock but fails, then the circuitry will re-try 100 times before stopping. In this case the system will need to be re-started by removing and re-applying power to the PCB.

4)

Supply Voltage	Pull – in current	Hold – in current	Distance (between Magnet & Armature)
12v DC	1.5 A (for 2 sec)	0.5 A (cont.)	3 to 4 mm
24v DC	1.5 A (for 2 sec)	0.5 A (cont.)	3 to 5 mm



If the MS41 Shearlock fails to lock :-

a) Check power supply is sufficient and connected correctly. It **MUST NOT** be connected across coil terminals.

b) Is magnet polarity correct i.e. coil +ve to white and coil –ve to black.

c) Check door contacts are making when the door closes. Test by putting a 'jumper across REED terminals. **Never** bypass the reed switch on a permanent basis as this will cause conflict with timing within the access system.

d) Is the gap between Magnet and Armature too large.

If the MS41 Shearlock tries to lock the 100 times but fails :-

a) Check that the coil connections are correct polarity

b) Check that the Magnet and Armature are aligned to make full face contact

c) Check that there is no contamination between Magnet and Armature.