T/AEMSF300/058

AEMSF-300 Fire Rated Shear Lock Installation Instruction

This unit has been Fire Tested in accordance with BS EN1634-1 with the use of Intumescent Seals. In order for this unit to maintain its fire rating status and be suitable to be installed on a fire rated door Intumescent Seals **must** be used. A 2mm self-adhesive **mono-ammonium phosphate (Interdens)** intumescent seal is recommended.

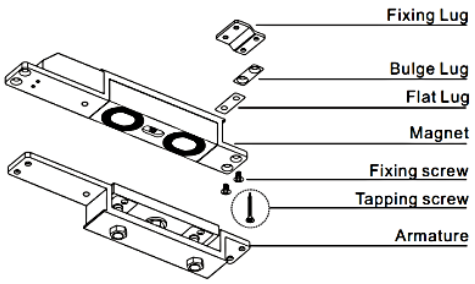
Important

Install the magnet assembly into the door frame before installing the armature plate into the door assembly. The magnet assembly requires space to run wires as well as the recessed portion of the unit. However, make sure that the position selected for the magnet assembly leaves enough room on the door to install the armature assembly.

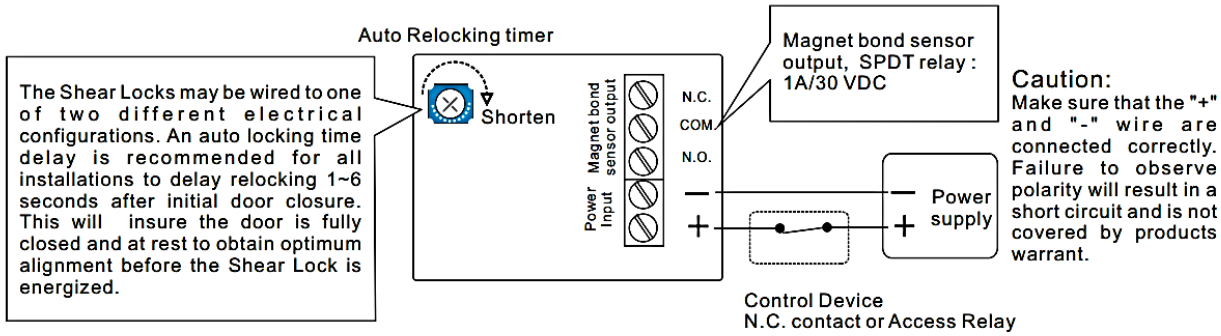
Unbalanced air conditioning (stack pressure) can effect door alignment and must be corrected to help insure positive locking. It is important to note that the Shear Locks need a regulated 12 or 24v DC at the lock and use the highest quality door closer. Centralising door closers is essential for double action doors to attain dead centre alignment; any latching problems must also be corrected prior to installation.

Specification

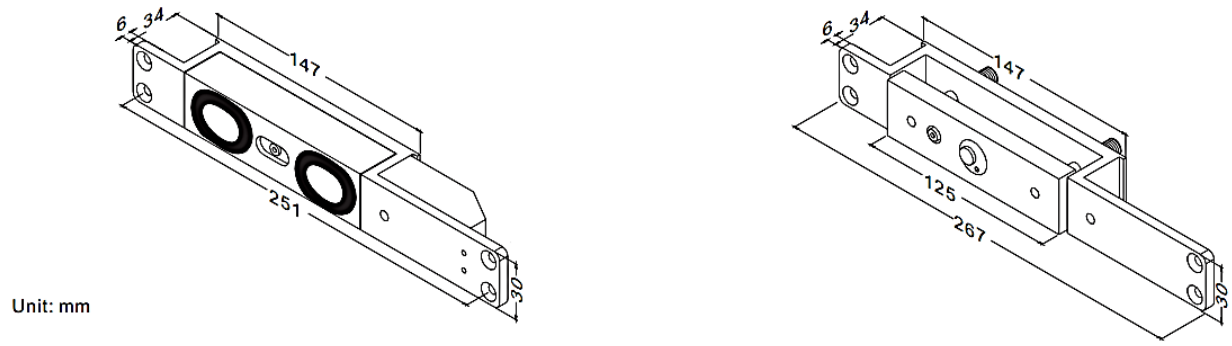
Shear Holding Force	2,000lbs
Power Input	12-24v DC (self-regulating)
Current Draw	Pull in: 1.8A, Holding: 0.45A (12v DC) Pull in: 1.1A, Holding: 0.25A (24v DC)
Finish	Magnet and Armature Plate: Zinc Plated Housing: Black Powder Coated
Monitoring Output	Magnet bond sensor output, SPDT rating
Door Gap	3mm (1/8") maximum
Operating Temperature	-30^{0}C to +50^{0}C
Auto Relocking Timer	1-6 seconds adjustable (Default: 3 Sec)



Connecting Diagram



Dimensions



Unit: mm

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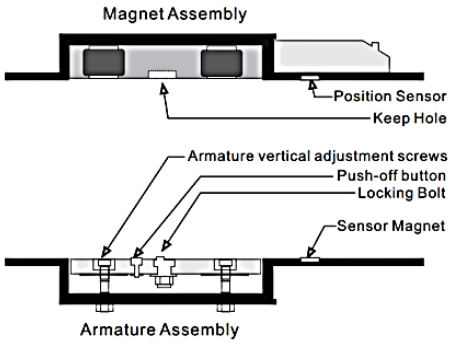
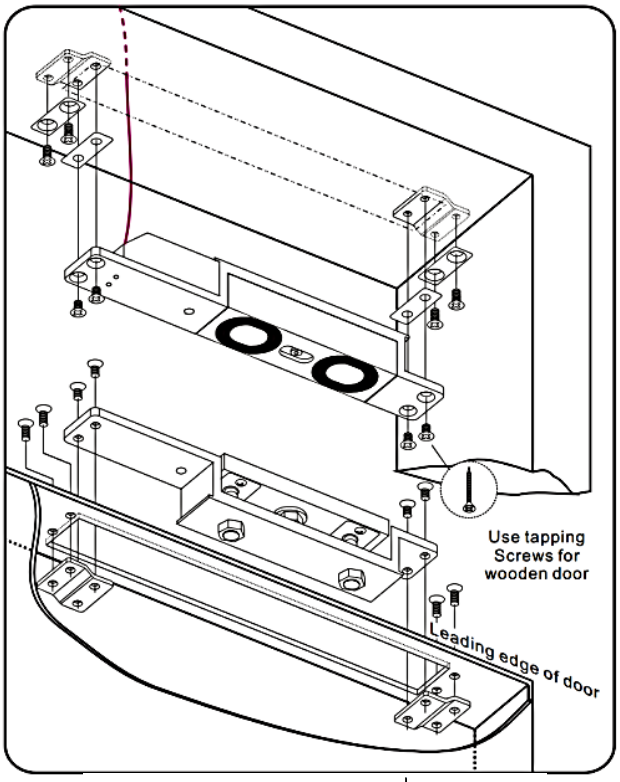
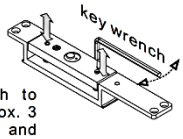
Applying the Intumescent Seals

IMPORTANT: In order for this unit to maintain its fire rating status and be suitable to be installed on a fire rated door Intumescent Seals **must** be used. A 2mm self-adhesive **mono-ammonium phosphate (Interdens)** intumescent seal is recommended. Fit in accordance to the instruction below and the fitting diagram **(T/061/AEMSF300)**

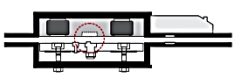
- Using the intumescent seal affix one uniform layer of 2mm intumescent to each face of the magnet assembly that will be concealed when the assembly is positioned in the frame.
- Repeat the above process for the armature assembly before it is positioned in the door.

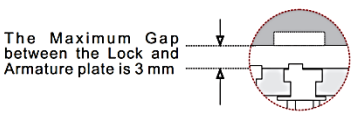






Using supplied key wrench to adjust armature plate to approx. 3 mm of gap between magnet and armature.





Bulge Lugs is used when fixing screws cannot fix Fixing Lugs on the door frame due to the shallow door frame. When the situation happens, use the Bulge Lugs to increase the thickness of the frame.

Flat Lugs is used when the door frame is deep, and to prevent the Electromagnetic Lock or the Armature Plate caved in, add flat lugs to raise the plane (level) of the Electromagnetic Lock face or the Armature Plate face to the door frame surface.

1. Make sure the gap between the top of the door and frame header is within 3mm. Adjust the gap as required.

2. Adjust single action door and door closer to insure the door settles immediately and is fully closed. (Adjust double action doors and centralised door closers to insure the doors settle immediately and are fully closed and resting dead centre of frame).

3. Locate the positioning of the magnet and armature as close as possible to the leading door edge.

4. Determine the centreline across the thickness of the door. The armature centreline, of the template, will be the same. Position 'Armature Cut-Out' Template correctly aligning centrelines and mark.

5. Before determining the frame header centreline the single action door must be fully closed. Double action doors must also be fully closed and resting dead centre of the frame. Mark the frame header per template. Prepare door and frame as per template.

6. When installing the Shear lock mark the timer adjustment as required and test the locking time delay prior to mounting in the frame. The locking time delay is field adjustable for 1-6 seconds and is factory set to approximately 3 seconds.

7. Install the Shear lock and armature with the auto relock switch assembly facing towards the leading edge of the door. For proper operation the armature must be adjusted upward as close as possible and parallel to the Shear lock without interfering with the opening and closing of the door. Proper orientation cannot be expected with more than a 3mm gap between armature and the magnet. Use the 'Key wrench' supplied to adjust the vertical alignment of the armature via the 'armature vertical adjustment screw'.

8. With the door closed turn on power to the lock, check the lateral alignment. The armature locking bolt should be centred to the magnet keep hole. Adjust the locking time delay to avoid early activation and help insure positive locking on door closure. Adjust the inward to delay Shear lock activation. Do not adjust higher than armature rest position.

9. Repeat steps 7 and 8 as necessary following Shear lock replacement. Cycle the door and Shear lock several times after completion of installation.

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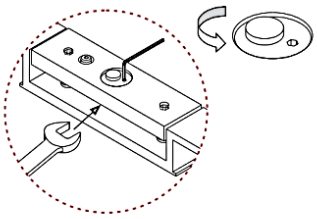
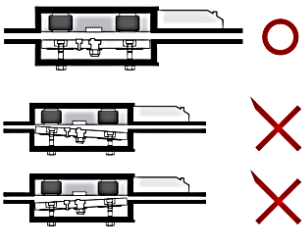
Trouble Shooting

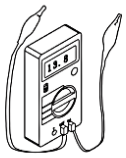
Door does not lock	The gap between Armature Plate and Shear Lock is exceeding 3mm	Adjust the Armature Plate and arrange the gap between the Armature Plate and Shear Lock within 3mm
	No power	Electrically checked with an Ammeter; it must be powered with the correct input voltage and checked to see if it the draws the specific current
	The door leaf does not return back to correct position	Centralising door closers are required as it is essential that double doors are always aligned dead centre
The Armature Plate keeps repeating the magnetic attracting motion	The gap between the Armature Plate and the Shear Lock is exceeding 3mm	Adjust the Armature Plate and arrange the gap between the Armature Plate and Shear Lock within 3mm
	Voltage and/ or current is too low	Electrically checked with an Ammeter; it must be powered with the correct input voltage and checked to see if it the draws the specific current
	The gap between Armature Plate and Shear Lock in unequal	Adjust the Armature Plate and arrange the gap between the Armature Plate and Shear Lock till it is equal
	The lock bolt does not correctly sit inside the keep hole of Shear Lock	Adjust the locking bolt of Armature Plate and ensure it correctly sits inside the keep hole of Shear Lock
The Armature Plate is not at the right positioning and the locking bolt cannot sit correctly into the keep hole of Shear Lock	The position of locking bolt is not correct	Adjust the locking bolt of Armature Plate and ensure it correctly sits inside the keep hole of Shear Lock
	The gap between Armature Plate and Shear Lock in unequal	Adjust the Armature Plate and arrange the gap between the Armature Plate and Shear Lock till it is equal
	The setting of 'Auto Relocking time delay' is too short	Adjust the setting of 'Locking time delay' till it is appropriate



Use spanner and allen wrench to release the Locking Bolt on the Armature Plate. Rotate the position of the Locking Bolt in order to correctly seat inside the keep hole of the Shear Lock.



Make sure the gap between the Shear Lock and the Armature Plate are the same while adjusting the gap.



Since the current draw, which operates the Shear Lock, is large (1.8A/12VDC; 1A/24VDC), it is necessary to make sure the condition of the wire is capable for long distance usage. It is also necessary to make sure the output current of the Shear Lock is sufficient for the power that the manufacturer listed.

Distance in feet from power source to furthest locking device

	AMPS	25f	50f	75f	100f	150f	200f	250f	300f	400f	500f	1000f
Minimum Wire Gauge for 12 VDC	0.25	18	18	18	18	18	16	16	14	14	12	
	0.50	18	18	18	16	16	14	12				
	0.75	18	18	16	14	12	12					
	1.00	18	16	14	14	12						
	1.50	18	14	12	12							
	2.00	16	14	12								

	AMPS	25f	50f	75f	100f	150f	200f	250f	300f	400f	500f	1000f
Minimum Wire Gauge for 24 VDC	0.25	18	18	18	18	18	18	18	18	16	16	16
	0.50	18	18	18	18	18	16	16	14	14	12	
	0.75	18	18	18	18	16	14	14	12	12		
	1.00	18	18	16	16	14	14	12	12			
	1.50	18	18	16	14	14	12					
	2.00	16	16	14	14	12						