

# 10002 / 10004 / 10005 / 10020-254 / 10040-254 / 10060-254 Series

## Electromagnetic Lock Installation Instruction (Indoor Series)

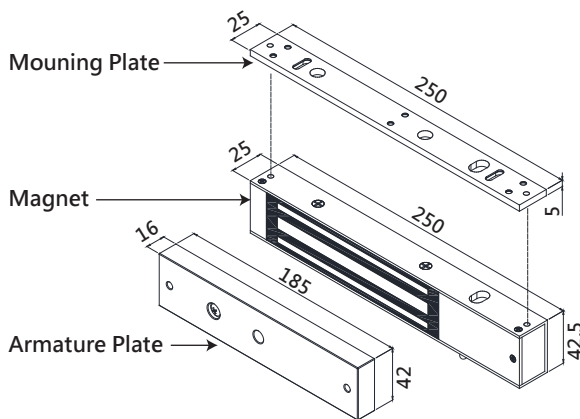
### A Technical Specification

Specification		Type	Model		UL294 Performance Level
Operating Voltage	12/24VDC		600lbs	1200lbs	
Current Draw	500mA/12VDC 270mA/24VDC	M	10002	10020-254	Destructive Attack: Level I Line Security: Level I Standby Power: Level I Endurance: Level IV
		M,DS	10002DS	10020DS-254	
		M,TD	10002TD	10020TD-254	
		M,TD,DS	10002DS-TD	10020DS-TD-254	
Operating Temperature	32° to +120.2°F (0° to +49°C)	DBL	10004	10060-254	
		DBL,M	10005	10040-254	
		DBL,M,DS	10005DS	10040DS-254	
		DBL,M,TD	10005TD	10040TD-254	
Holding Force	600lbs	1200lbs	UL Requirements		
	10002 Series 10004 Series 10005 Series	10020-254 Series 10040-254 Series 10060-254 Series			
Lock Surface Temperature	Current temperature ± 20°C	<ul style="list-style-type: none"> <li>• UL294 indoor use</li> <li>• The power for the 10002/10004/10005/10020-254/10040-254/10060-254 Series is to be provided by a Listed (UL 294 or UL603) Class 2 Power Supply.</li> <li>• The 10002/10004/10005/10020-254/10040-254/10060-254 Series is intended to be used as access control system accessory which are installed in accordance with the manufacturer's Installation and operation instructions, ANSI/NFPA 70 and the local authority having jurisdiction. Holding Force has not been verified by UL.</li> </ul>			
Humidity	0 to 85% Non-condensing				
Finish	Magnet Surface : Galvanized Housing : Brushed stainless steel(US32D)				
"The products shall not impair the intended operation of an emergency exit or panic hardware mounted on the door."					

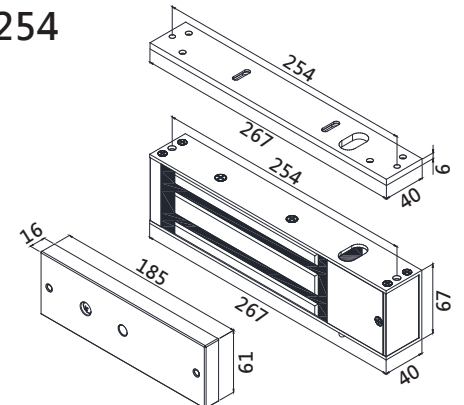
### B Dimension & Accessories

Unit:mm

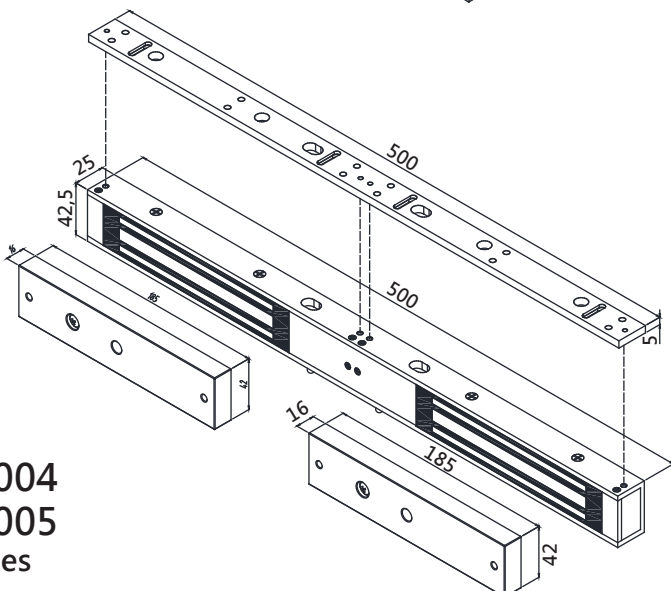
#### 10002 Series



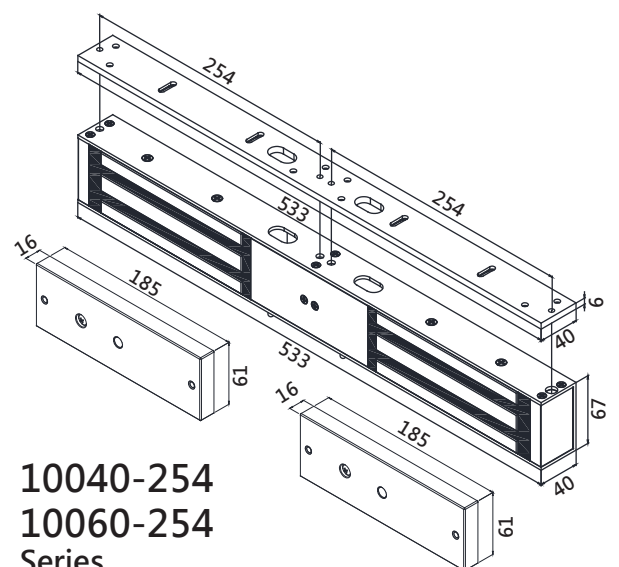
#### 10020-254 Series



#### 10004 10005 Series

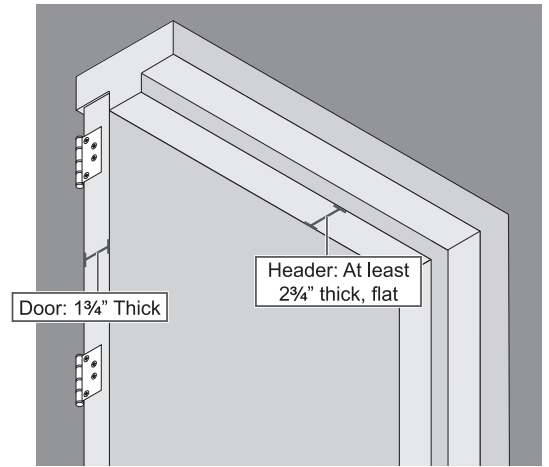


#### 10040-254 10060-254 Series

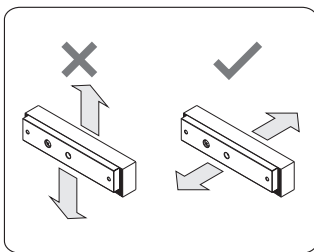


## C Pre-Installation Considerations

- Use **ONLY** the hardware provided for mounting this product (NOTE: Non-standard Door thickness may require different sex nut hardware – see specific instructions for required hardware).
- Follow the installation procedure as described in this manual.
- Check door thickness. If the door is not 1 3/4" thick, a different sex nut will be required.
- Check door header. A minimum 2 3/4" thick, flat surface is needed to securely mount all screws for the magnet. If you do not have the required surface, you will need filler plates and/or angle brackets to properly mount the magnet.

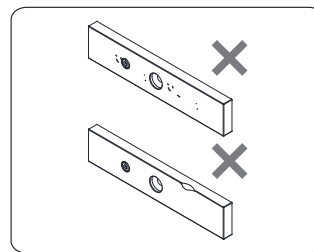


## D Important Notes

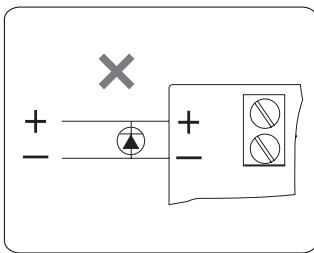


**CAUTION**

The electromagnetic lock requires a face-to-face fitting as shown in Figure otherwise, the holding force will be greatly decreased (direction of hydraulic press pull must be collinear).

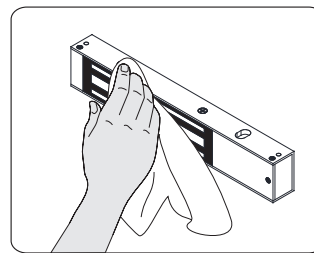


Make sure the contact area of the electromagnetic lock and the armature plate are clean.



**CAUTION**

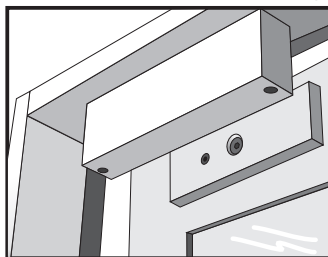
Remove any diode installed across the magnetic lock for spike suppression. The magnet is fitted with a metal oxide varistor to prevent back EMF.



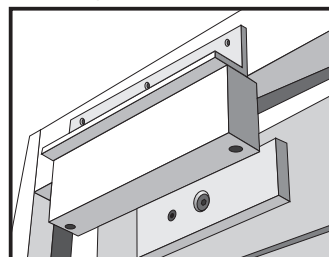
Wipe the surface of magnetic lock with anti-rust oil regularly.

## E Optional Bracket

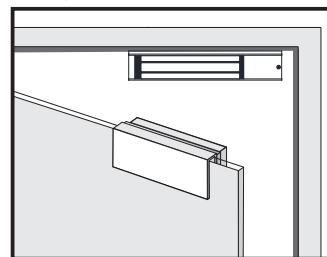
Brackets installation are according to door swing direction and door frame type, e.g. narrow frame door, frameless glass door, inswing door, etc.



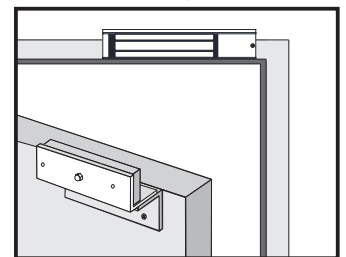
Regular Installation  
(outswing door)



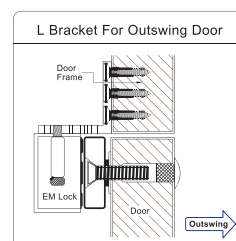
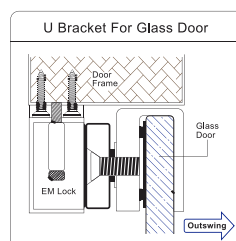
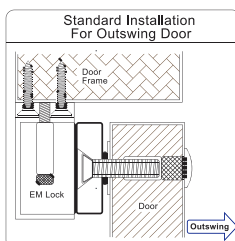
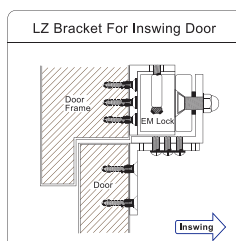
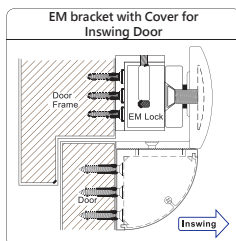
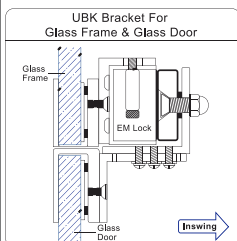
L-bracket for narrow frames



U-bracket for frameless glass doors  
(outswing door only)



LZ-bracket for inswing doors



### WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

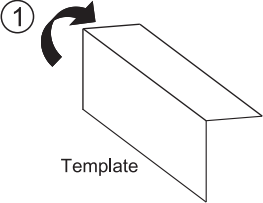
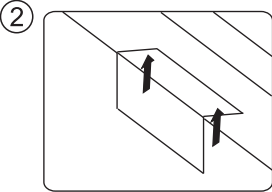
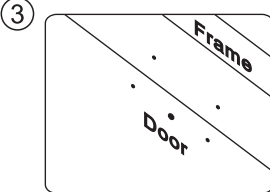
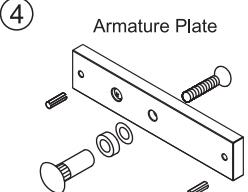
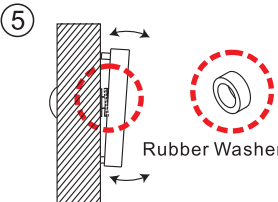
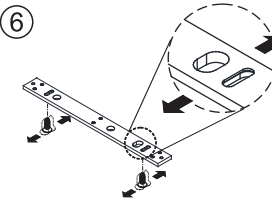
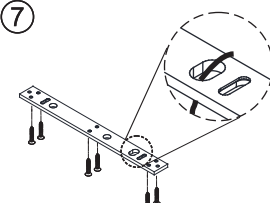
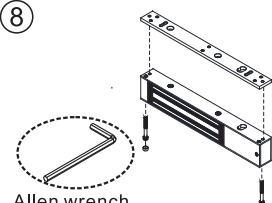
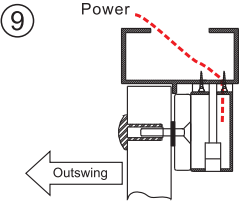
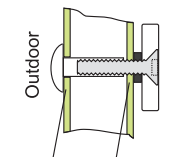
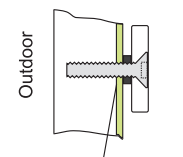
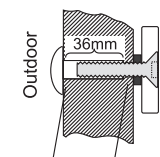
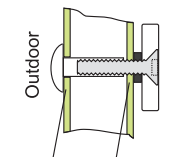
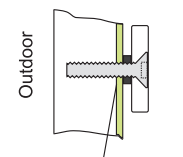
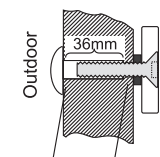
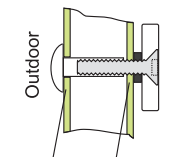
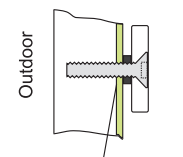
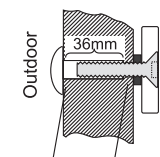
### CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

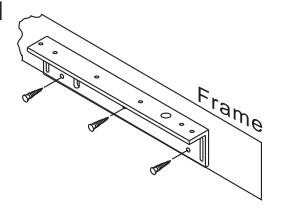
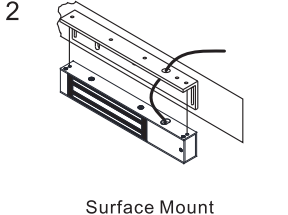
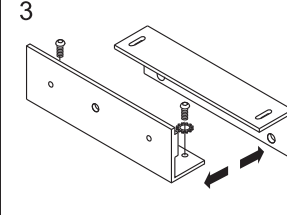
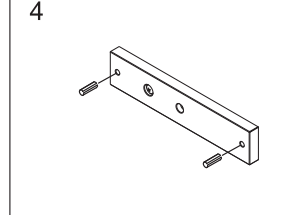
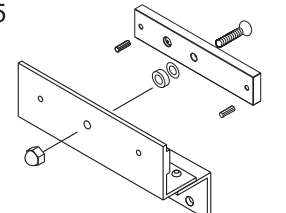
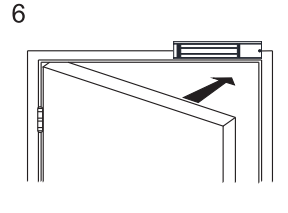
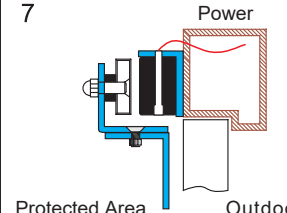
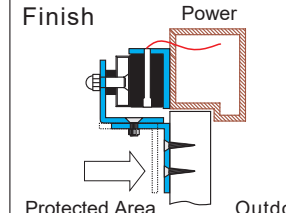
### NOTICE

Notices indicate a condition that may cause equipment or property damage only.

## F Regular Installation

<p>①  Fold the mounting template 90°</p> <p>Template</p>	<p>②  Place the template to the proper position of the door and frame. Mark the hole positions of the template on the door and frame.</p>			
<p>③  Drill the holes according to the marks.</p>	<p>④  Armature Plate</p> <p>Please install the armature plate as illustrated here. (Dimensions of the holes depend on the door types illustrated below.)</p>			
<p>⑤  Rubber Washer</p> <p>The rubber washer makes the surface of the armature plate adjustable in order to completely fit the surface of magnetic lock.</p>	<p>⑥  Fasten the mounting plate with the mounting screws. The position of the mounting plate should be adjustable.</p>			
<p>⑦  Fix the mounting plate on the door with mounting screws</p>	<p>⑧  Use the Allen wrench and fixing bolts to tighten the electromagnetic lock to mounting plate</p> <p>Allen wrench</p>			
<p>⑨  Power</p> <p>Outswing</p> <p>Connect the power and test the unit.</p>	<table border="1"> <tr> <td data-bbox="805 1086 1029 1288"> <p>Hollow Metal Door</p>  <p>12.7mm 8mm</p> </td> <td data-bbox="1037 1086 1252 1288"> <p>Reinforced Door</p>  <p>6.8mm for M8-1.25 thread</p> </td> <td data-bbox="1260 1086 1452 1288"> <p>Solid Door</p>  <p>36mm</p> <p>12.7mm 8mm</p> </td> </tr> </table>	<p>Hollow Metal Door</p>  <p>12.7mm 8mm</p>	<p>Reinforced Door</p>  <p>6.8mm for M8-1.25 thread</p>	<p>Solid Door</p>  <p>36mm</p> <p>12.7mm 8mm</p>
<p>Hollow Metal Door</p>  <p>12.7mm 8mm</p>	<p>Reinforced Door</p>  <p>6.8mm for M8-1.25 thread</p>	<p>Solid Door</p>  <p>36mm</p> <p>12.7mm 8mm</p>		
<p>Recommendation: For Mini EM-locks (Model 10001), maximum thickness of door is 50 mm. For Maxi EM-locks (Model 10010-254), maximum thickness of door is 46 mm.</p>	<p>Drill a Ø8mm hole through door, on closing side. Enlarge to Ø12.7mm by a sexnut bolt on the opening side.</p> <p>Drill a Ø6.8mm hole and tap on closing side a M8x1.25 thread.</p> <p>Drill a Ø8mm hole through door on closing side. Enlarge to Ø12.7mm by a sexnut bolt on the opening side. The depth is 36mm.</p>			

## G LZ or Z bracket for inswing doors

<p>1  Frame</p>	<p>2  Surface Mount</p>	<p>3 </p>	<p>4 </p>
<p>Find a mounting position on the door frame for the L bracket. Make sure that the door can still be closed.</p>	<p>Use the fixing bolts to tighten the magnet on L bracket.</p>	<p>Assemble the Z bracket and make sure that the Z bracket is adjustable.</p>	<p>Insert the guide pins into the armature plate.</p>
<p>5 </p>	<p>6 </p>	<p>7  Power</p> <p>Protected Area Outdoor</p>	<p>Finish  Power</p> <p>Protected Area Outdoor</p>
<p>Attach the armature plate and washers to the Z bracket assembly.</p>	<p>Close the door and connect the power.</p>	<p>After the magnet attracts the armature plate, adjust the Z bracket to fit the door.</p>	<p>Fasten the Z bracket to the door.</p>

# H Connecting Diagram

## Wiring Diagram - Sample wiring and applications

### POWER SUPPLY

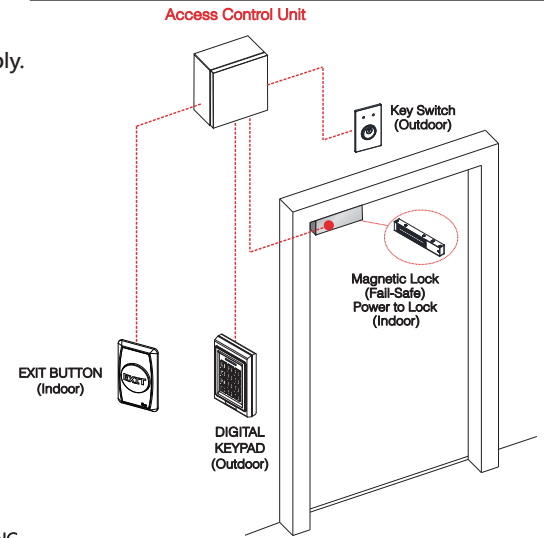
The product must be powered from a UL-listed, regulated, power-limited, power supply. If power switch is not wired between DC source voltage(+) and magnet, it will take a longer time to de-energize the magnet simulating residual magnetism.  
**The minimum permissible wire size to be used shall not be less than 22 AWG.**

### 12VDC INPUT

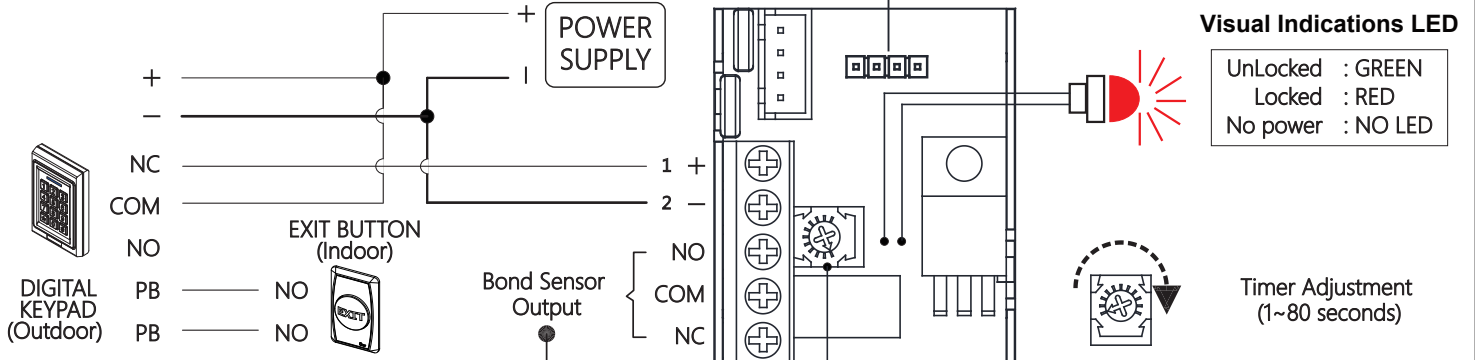
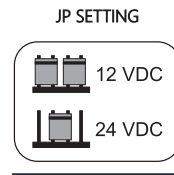
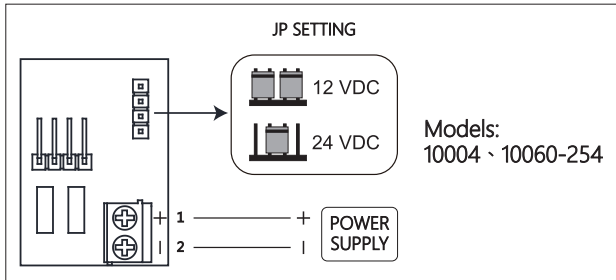
- Required power: 500mA
- Connect positive (+) lead from a 12 VDC power source to Terminal 1.
- Connect negative (-) lead from a 12 VDC power source to Terminal 2.
- Check jumper for 12 VDC operation.

### 24VDC INPUT

- Required power: 250mA
- Connect positive (+) lead from a 24 VDC power source to Terminal 1.
- Connect negative (-) lead from a 24 VDC power source to Terminal 2.
- Check jumper for 24 VDC operation.

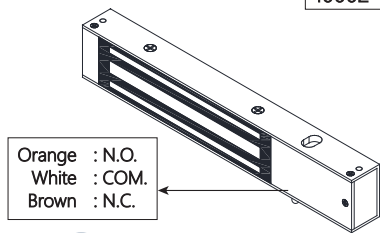


All the field wiring shall in protected area  
 \* For example, if the building is in a fire, the fail-safe lock will automatically unlock, allowing personnel to escape quickly.



**Bond Sensor Output**  
 Indicates the Bond and functioning status.  
 N.C. contact output: Open / Not bonding status.  
 N.O. contact output: Locked / Bonded status.  
 Models:  
 10002 · 10005 · 10020-254 · 10040-254

**Relock time delay (Optional)**  
 Ensures the automatic lock mode works after the door is closed properly and it can be adjusted from 1 to 80 seconds.  
 Models:  
 10002TD · 10002DS-TD · 10005TD · 10005DS-TD  
 10020TD-254 · 10020DS-TD-254 · 10040TD-254  
 10040DS-TD-254



**Door Status Sensor**  
 Indicates the door is in and open or closed status. Reed switch rated 0.2A/12VDC  
 Models:  
 10002DS · 10002DS-TD · 10005DS · 10005DS-TD  
 10020DS-254 · 10020DS-TD-254 · 10040DS-254  
 10040DS-TD-254

Door Status Sensor	Single Magnet Models	Double Magnet Models
	10002DS	10005DS
	10020DS-254	10040DS-254

## I Trouble Shooting

Problem	Possible Cause	Solution
Door does not lock	No power	Make sure the wires are connected properly Check that the power supply is connected and working properly Make sure the lock switch is wired correctly
Low holding force	Poor contact between electromagnet and armature plate	Check if the armature plate is deformed? Make sure if the rubber washer was used between magnetic lock and armature plate. Make sure the contact surfaces of the electromagnet and armature plate are clean and free from dust and foreign material.
	Low voltage or incorrect voltage setting	Ensure the electromagnetic lock is set for the correct voltage. Check for proper voltage at the electromagnet lock input. If low determine if the correct wire gauge is being used to prevent excessive voltage drop.



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