



INSTALLATION AND OPERATING INSTRUCTION
Magnetically Latching Deadbolt DB25L

CONTENTS

• DESCRIPTION	2
• PRODUCT UNBOXED	2
• DIMENSIONS	2
○ Lock	2
○ Strike Plate	3
○ Housing	3
○ Dress Plate	3
• PRE - INSTALLATION ASSESMENT	3
○ Mechanical	3
○ Electrical	4
• INSTALLATION	4
○ Mortise Installation	4
○ Surface installation	6
• WIRING	7
○ Three wire connection	7
○ Two wire connection	7
○ Dip Switch positions	8
• OPERATION	8
○ Three wire mode	8
○ Two wire mode	9
○ Comparison chart	9
○ Monitors	9
• SPECIFICATIONS	10
• MAINTENANCE	10
• WARRANTY	10
• UPGRADE	10
• NOTES	11

1. DESCRIPTION

The DB25L is a magnetically latching solenoid operated deadbolting lock suited for commercial or residential doors. Its dual action reduces alignment problems as the integrated magnetic latch captures the door before the deadbolt secures it making the DB25L ideally suited for swing through doors. It is supplied with a matching strike plate and can be surface mounted with the aid of accessories or installed into a mortise for a concealed solution.

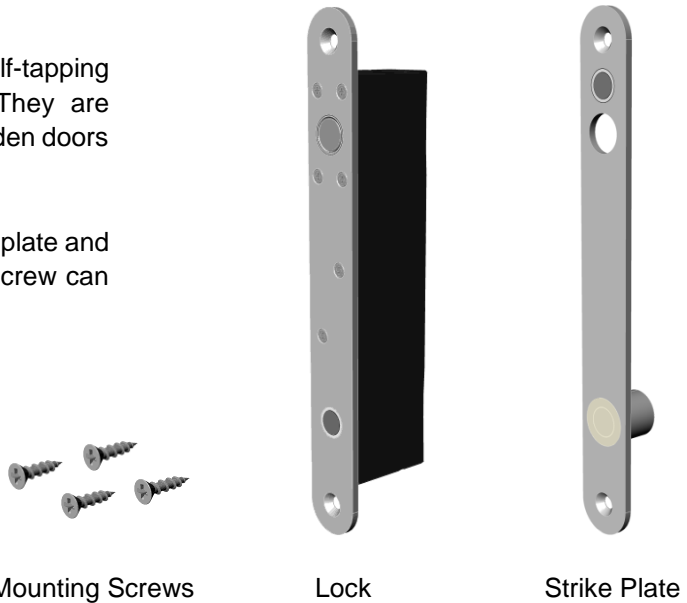
Integrated electronics provide complete control over the lock and offer an array of features;

- Multi-voltage input (12-24VDC)
- Multiple locking / unlocking attempts
- Adjustable timed re-lock
- Current reduction circuitry
- Door position and bolt position monitors
- High physical strength – 10,000N

2. PRODUCT UNBOXED

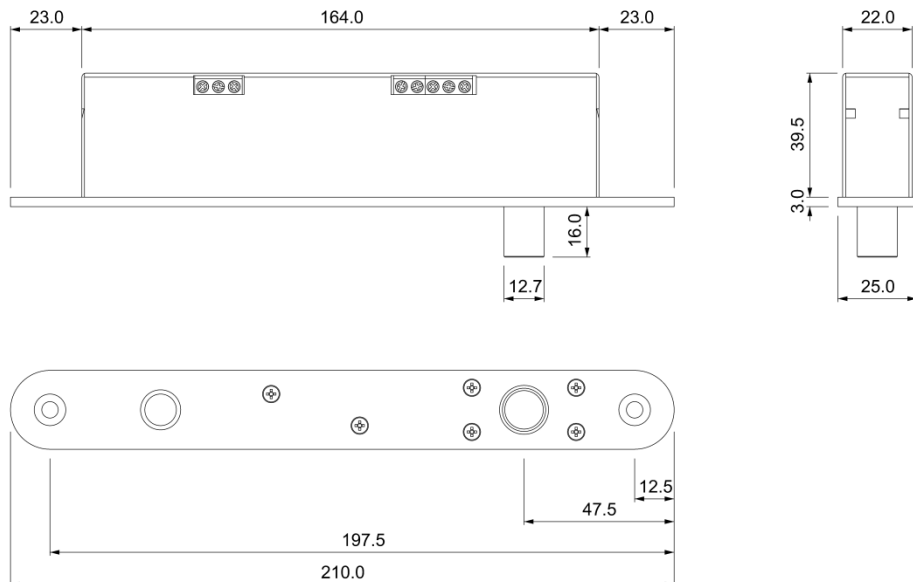
The DB25L is supplied with four 10G x 1" csk. self-tapping screws for fitting the lock and strike plate. They are suitable for mounting in both aluminium and wooden doors and frames.

Alternatively the mounting holes in the locks face plate and strike plate are \varnothing 5.2mm so any 10G or 5mm screw can be used.

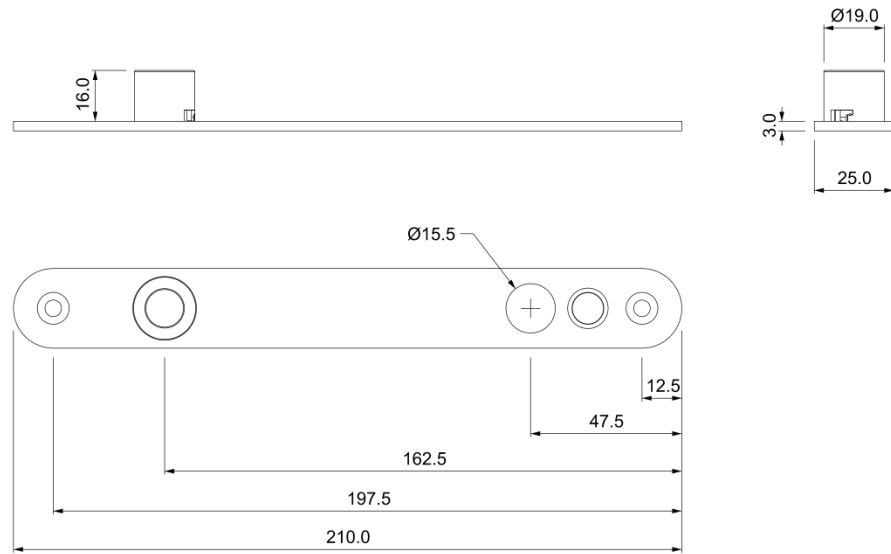


3. DIMENSIONS

3.1 Lock

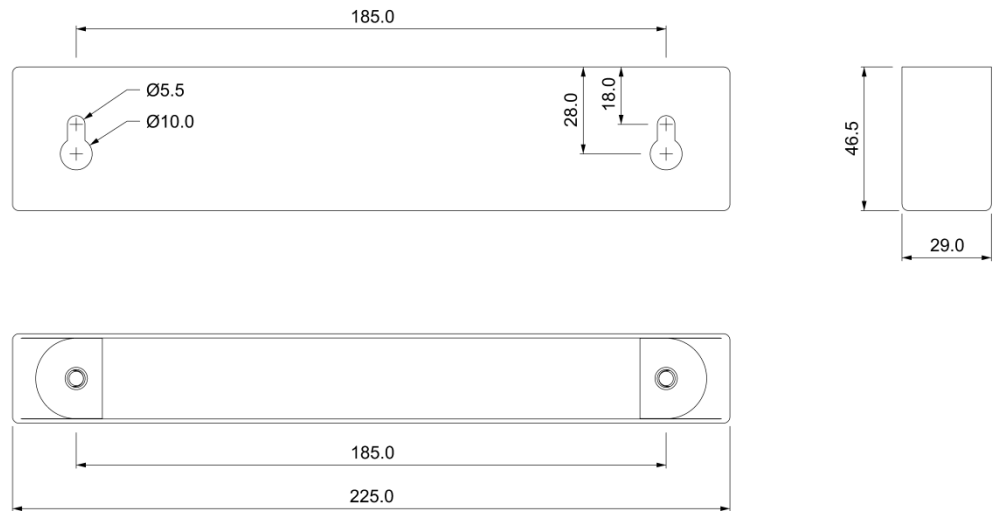


3.2 Strike Plate



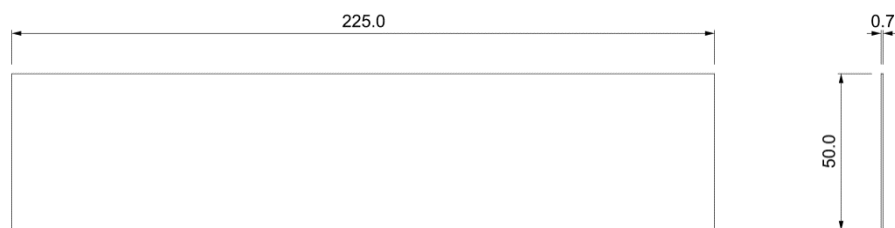
3.3 Housing

Available separately



3.4 Dress Plate

Available separately



4. PRE - INSTALLATION ASSESMENT

4.1 Mechanical

The first decision regarding installation is whether the DB25L will be mortised or surface mounted to the door / door frame. Mortise installation ensures a discrete solution as the lock and strike plate can be embedded into the door

and frame, however in some instances this is not possible. Glass doors for example require surface mounting the lock which is done with the aid of the DB25L housing.

Whichever method is chosen it is important that the lock and strike plate are aligned correctly. This is achieved when the top of the lock face plate aligns with the top of the strike plate. It is also important that when the door is closed the gap between the lock and strike plate does not exceed **6mm** otherwise the lock will not sense the strikes position resulting in incorrect operation.

The DB25L can be installed vertically or horizontally but is not designed to be mounted in a floor cavity firing upwards or in a wet environment.

4.2 Electrical

The first consideration is to establish where to run the wires and decide on what feedback is required from the lock. There are a total of eight available connections and for a fully featured lock it is compulsory to connect three with the other five providing feedback. Alternatively the lock does operate with reduced features on two compulsory connections and five optional.

The three essential connections are; Positive (+), Negative (-) and Control (CL). The five optional connections provide feedback about the lock status; Door Position and Bolt Position. If desired, wires can be run from these connections to integrate into access control or alarm systems to provide full monitoring.

Finally the correct gauge of wire needs to be chosen as when connecting the power wires (+ and -) to the lock, voltage drop across these wires can limit the lock operation. For all the remaining connections, a lower gauge wire can be used as these are only signal wires.

The following chart shows the appropriate wire gauge for a range of distances between the lock and power supply assuming the voltage measured at the lock is within the range of 12-24VDC $\pm 10\%$.

Distance (m)	AWG Size		Metric Size (mm ²)		Wire Diameter (mm)	
	12VDC	24VDC	12VDC	24VDC	12VDC	24VDC
1	24	24	0.21	0.21	0.51	0.51
5	22	24	0.33	0.21	0.65	0.51
10	22	22	0.33	0.33	0.65	0.65
20	20	22	0.52	.033	0.82	0.65
30	20	22	0.52	.033	0.82	0.65
40	18	20	0.83	0.52	1.02	0.82
50	18	20	0.83	0.52	1.02	0.82

5. INSTALLATION

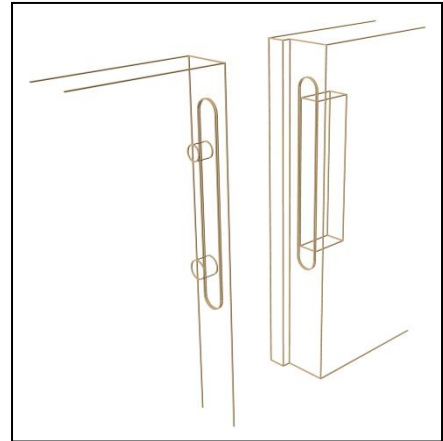
Two installation examples are detailed on the following pages however any combination of mortise and surface mounting can be achieved. Whichever installation method is chosen it is vital to ensure that the lock face plate and the strike plate align correctly and the gap between the locks face plate and the strike plate does not exceed **6mm** when the door is closed.

5.1 Mortise installation

A typical mortise installation is described with the lock fitted into the door frame while the strike plate is secured to the door. It is possible to install the lock into the door and the strike plate to the frame however running the wiring to the lock can be difficult.

5.1.1 Cutting the mortises

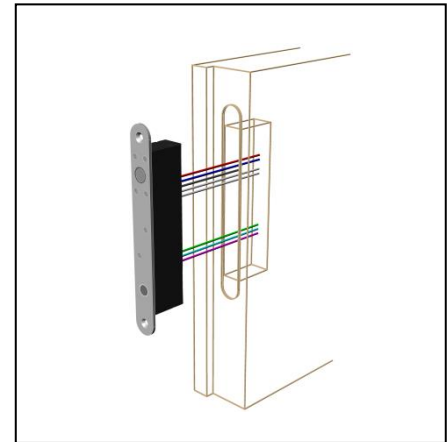
Using the supplied lock dimensions a mortise is cut in the door frame that is suitable to house the lock. An appropriate sized mortise is then cut for the strike plate and holes to house the magnetic catch and accept the lock pin are drilled. The lock pin hole behind the strike plate needs to be free from debris and deep enough to allow the lock pin to fully extend when locked.



5.1.2 Wiring the lock

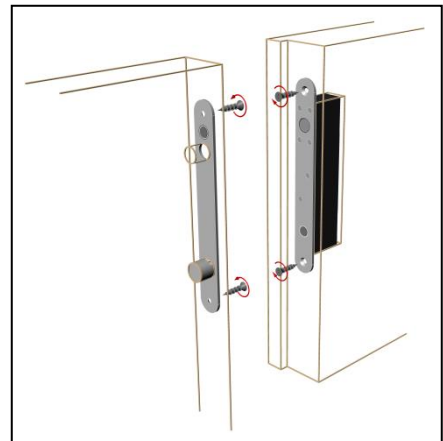
Wires are run out from the back of the mortise and following the connection guide on the locks cover, connected to the lock.

Detailed wiring information can be found in section 6 - Wiring



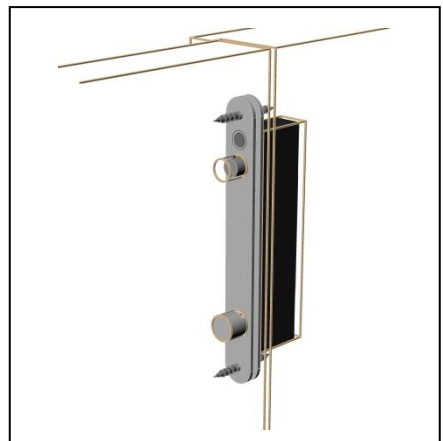
5.1.3 Fitting the lock and strike plate

The lock is slid back into the mortise, making sure that the wiring integrity is maintained, and secure with the supplied mounting screws. Likewise the strike plate is fitted into its mortise and secured in place



5.1.4 Checking the operation

With the lock and strike installed and the wiring complete the door is closed to check alignment and operation. The magnetic latch should 'capture' the door and align it correctly so the lock pin can extend through the hole in the strike plate and door, to achieve locking.

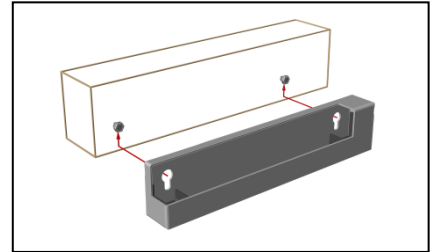


5.2 Surface installation

By using a DB25L housing the lock and or strike plate can be secured to the door or door frame eliminating the need for cutting mortises. Housings are available with adhesive tape supplied for easy application to glass doors in addition to having screw hole mounting points for wood and metal doors.

5.2.1 Securing the housing to wood

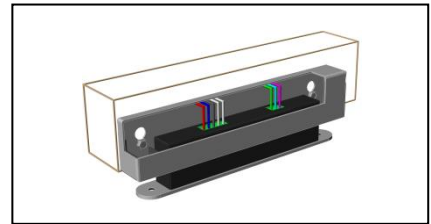
Two 10G x 1" hex head self-tapping screws are supplied with the housing and can be screwed into the wood door frame. The housing has two keyhole cut outs that fit over the screw heads and once the housing is in place the screws can be tightened with a spanner.



5.2.2 Wiring the lock

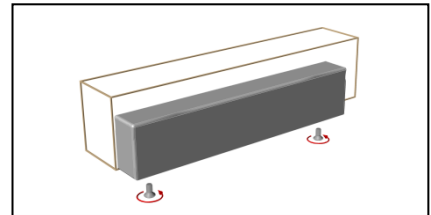
Two grommets are supplied as wires will need to be run into the housing to connect to the lock. The position of the hole(s) is determined at installation time.

Detailed wiring information can be found in section 6 - Wiring



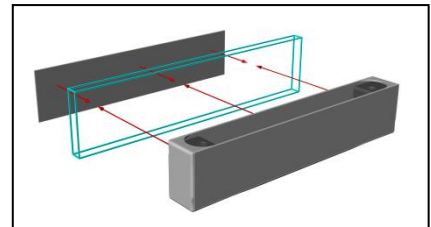
5.2.3 Fitting the lock

Once wired, the lock is slid into the housing and secured in place with the M5 X 10 csk. screws supplied.



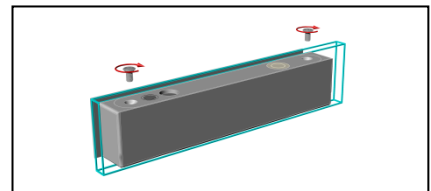
5.2.4 Securing the housing to glass

For simple application to glass the DB25L housings are supplied with self-adhesive tape. With the backing removed the housing can be applied directly to the glass. A flat stainless steel dress plate is fitted on the opposite of the glass to give a clean finish.



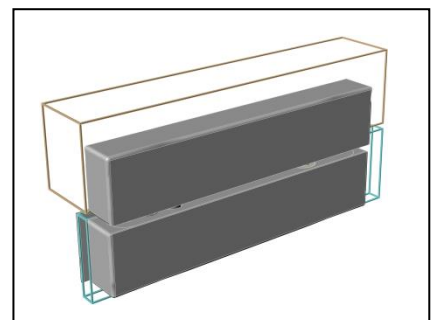
5.2.5 Fitting the strike plate

The strike plate is placed into the housing and secured in place with the supplied M5 x 10 csk screws.



5.2.6 Checking the operation

With the lock and strike installed and the wiring complete the door is closed to check alignment and operation. The magnetic latch should 'capture' the door and align it correctly so the lock pin can extend through the hole in the strike plate and door, to achieve locking.



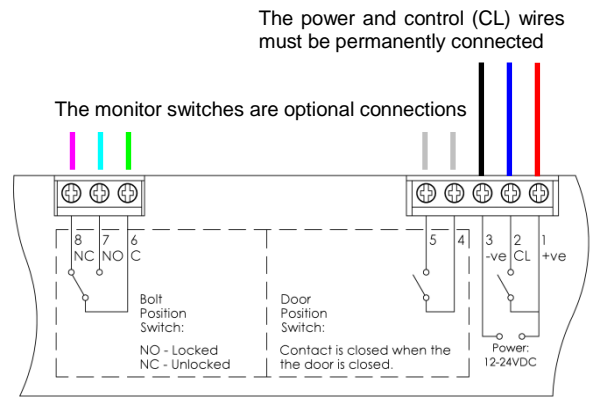
6. WIRING

The DB25L is fitted with eight connectors; five are optional and provide monitoring of the lock pin and door positions. Control of the lock is achieved by using the remaining three wires however a reduced function two wire mode is available if desired. Connect the DB25L as per the following chart.

+	1		Positive connection to DC power supply (12 – 24V)
CL	2	Power	Switched positive control input
-	3		Negative connection to DC power supply (12 – 24V)
C	4	Door Position Switch	Common contact of the door position monitor
NO	5		Normally open contact of the door position monitor
C	6	Bolt Position Switch	Common contact of the bolt position monitor
NO	7		Normally open contact of the bolt position monitor
NC	8		Normally closed contact of the bolt position monitor

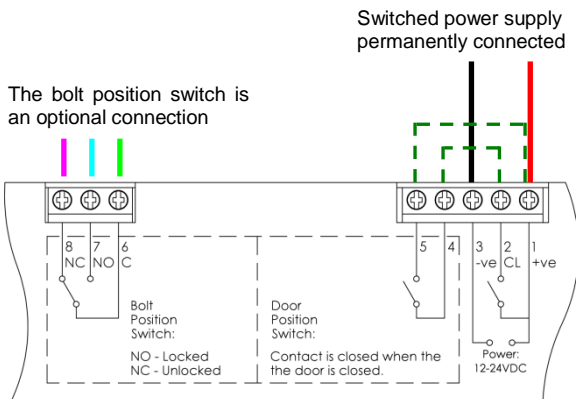
6.1 Three wire connection

The three wire mode requires a continuous connection of power to terminals 1 (+ve) and 3 (-ve). Wiring the lock for fail safe or fail secure configurations is identical.

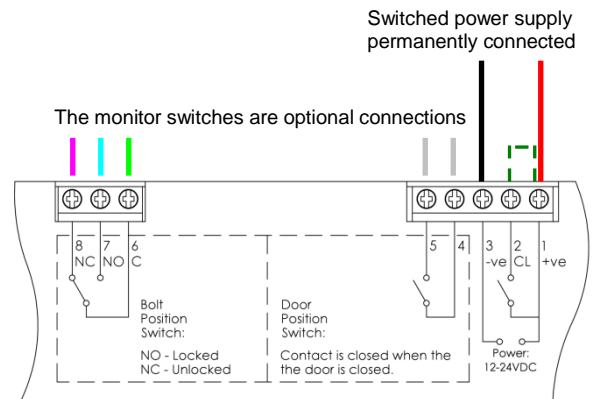


6.2 Two wire connection

The two wire mode differs between fail safe and fail secure configurations but both require a switched power supply connected to terminals '1' and '3'. In addition, for fail safe configuration the dip switch needs to be repositioned as shown in section 6.3 – Dip switch positions.



Fail Safe



Fail Secure

6.3 Dip switch positions

In addition to running the necessary wires for the desired mode, positioning the three dip switches located on the lock printed circuit board determines the operation. These are accessed by removing the cover.

Switches S1 and **S2** are used to set the timed re-lock. If an unlock signal is given to the lock but the door is not opened the DB25L can automatically lock itself again after a selected time. This ensures that a door cannot be left unsecured if it has been unlocked but not opened. The timer is factory set to 9 seconds but 0, 3 and 6 second options are offered and selected by positioning the dip switches accordingly.

TIMER	SWITCH POSITIONS
0 second timed re-lock	S1 On & S2 On
3 second timed re-lock	S1 Off & S2 On
6 second timed re-lock	S1 On & S2 Off
9 second timed re-lock - standard	S1 Off & S2 Off

Switch M is used to select fail safe or fail secure mode. This is factory set as ordered and the only time it will need to be moved is when operating a fail safe lock in the two wire mode.

MODE	3 WIRE MODE	2 WIRE MODE
Fail Safe	M Off	M On
Fail Secure	M On	M On

Markings S1, S2 and M are found on the printed circuit board.

7. OPERATION

Operating the lock using three wires is the suggested method as some of the features available on the lock are not accessible when used in two wire mode.

The DB25L is available in either Fail Safe or Fail Secure configuration which ensures the correct action can be achieved in the event of a total power failure.

The DB25L features multiple locking / unlocking to allow for misaligned doors or unforeseen problems. If the lock pin meets an obstruction as it is trying to secure the door, it stops and withdraws before attempting to lock again. It has a total of 9 attempts to lock when configured in fail safe mode and 5 attempts to unlock in fail secure configuration.

7.1 Three wire mode

In either fail safe or fail secure configuration, maintained connection of '1' to '2' will keep the DB25L unlocked regardless of the door position. The following scenarios assume that the control signal is open at the start of the operation sequence as a maintained connection will cause the lock to stay unlocked indefinitely.

7.1.1 Fail safe operation

Assume the door is closed and locked. Momentarily connecting '1' and '2' unlocks the door for a period of 9 seconds*. After the 9 seconds has elapsed if the door has not been opened the DB25L automatically locks again. If the door has opened within the 9 second window (which is the case in normal operation) the timed re-lock is overridden and automatic relocking occurs as soon as the door is closed. On closing, full power is applied to the DB25L 9 times in 15 seconds before the current is reduced and the lock goes into a holding mode to minimize heating and power consumption. The DB25L will remain unlocked as long as the door is open.

7.1.2 Fail secure operation

Assume the door is closed and locked. Momentarily connecting '1' and '2' unlocks the door and over a 9 second period full power is applied to the lock 5 times. If the door remains closed, after 9 seconds* has elapsed the DB25L automatically locks again. If the door has opened within the 9 second window (which is the case in normal operation) the DB25L will remain unlocked and in a holding mode until the door is closed again and automatic re-locking occurs.

**Adjustable timed re-lock see section 6.3*

7.2 Two wire mode

In installations where running three wires to the lock is not possible or desired the DB25L can operate effectively on two wires. Although the functions are reduced, controlling the lock this way still offers a high security locking solution.

7.2.1 Fail safe operation

Wire links (**not supplied**) are connected between terminals '2' and '4' and '1' and '5'. The lock will remain unlocked with power switched off. With power applied, and with the strike plate correctly aligned, the DB25L locks. On closing, full power is applied to the DB25L 5 times before the current is reduced and the lock goes into a holding mode to minimize heating and power consumption. The DB25L will remain unlocked as long as the door is open.

7.2.2 Fail secure operation

A wire link (**not supplied**) is connected between terminals '1' and '2'. The DB25L will be locked when no power is applied and will unlock when power is applied. The operation remains the same regardless of door or strike plate positions.

7.3 Comparison chart

FEATURES	3 WIRE MODE	2 WIRE MODE
Multiple re-lock (fail safe)	Yes 9x	Yes 5x
Multiple unlock (fail secure)	Yes 5x	Yes 5x
Auto re-lock	Yes	Fail safe only
Anti-Tamper	Yes	Yes
Adjustable timed re-lock	Yes	No

7.4 Monitors

The five monitor connectors found on the DB25L are available to provide door and bolt position feedback. If desired wires can be run from these connections to integrate with access control or alarm systems to provide full monitoring. When a two wire fail safe operation is chosen the door position monitor is not available.

8. SPECIFICATIONS

Bolt Pin	Stainless Steel, Ø12.7mm, 16mm stroke			
Lock Face Plate	Stainless Steel, 3mm			
Strike Plate	Stainless Steel, 3mm			
Holding Force	10,000N (1000kg)			
Voltage at Lock	12 – 24VDC ±10%			
Current Usage	Operating Current	12V – 1250mA	Holding Current	12V – 160mA
		24V – 1000mA		24V – 95mA
Monitor Switches	Bolt position – 25VDC, 0.5A			
	Door position – 100VDC, 0.5A			

9. MAINTENANCE

The DB25L has been lubricated at assembly and applying any other type of lubricant may void the warranty. With the cover removed it is important to take care when repositioning the jumper or adjusting the timed re-lock switches.

10. WARRANTY

The DB25L is covered with a manufacturer's 12month warranty against faulty or malfunctioning parts, components or product. At the manufacturer's discretion, either a replacement lock or affected part will be supplied to remedy the fault. Mistreatment or ill-use of the lock may void the warranty. dormakaba will not be liable for any direct, indirect, incidental or consequential loss or damage in any way related to this product.

11. UPGRADE

dormakaba reserves the right to upgrade or change this product without prior notice.

For more information visit
www.dormakaba.com.au
www.dormakaba.co.nz

NOTES