



COBALT Lock SL30DBL

Operating Manual

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EN

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1 Information about this document

1.1 Contents and purpose

This manual describes installation, connection, operation and maintenance of the lock SL30DBL. Read the manual carefully and observe the instructions it contains. They contain important information for reliable installation and trouble-free operation.

1.2 Target group

Target group: of these instructions are:

- Installer
- Service technician

Installers and service technicians are skilled personnel who have the specialist knowledge required for installation, commissioning and maintenance.

1.3 Retain document

This document and the applicable documents must be handed over to the operator after commissioning. The operator must keep the documents for the entire duration of operation and make them accessible to the persons responsible for inspection and maintenance.

2 Security

2.1 Intended use

- Motor-operated low-voltage electric lock for commercial or private swing or pass-through doors
- Installation in mortise opening or surface mounting (with accessories)
- Suitable for wooden, aluminum or steel doors/frames
- Installation indoors or in protected outdoor areas

2.2 Non-intended use

This lock is not suitable for:

- the use in escape and rescue routes,
- use with accessories other than those specified
- installation in areas with humid or aggressive atmosphere (e.g. saunas, swimming pools)
- installation positions other than specified.

2.3 Responsibility of the operator

The operator is responsible for the proper condition of the installed components and their maintenance by qualified personnel.

It is the operator's responsibility to:

- To ensure that the lock is installed, connected and commissioned in accordance with these instructions;
- to determine the suitability of this lock for the intended application,
- to inspect, clean and maintain this lock on a regular basis,
- replace this lock at the end of its useful life,
- not to modify this lock,
- not to use this lock other than as intended by the manufacturer.

3 Product description

3.1 View

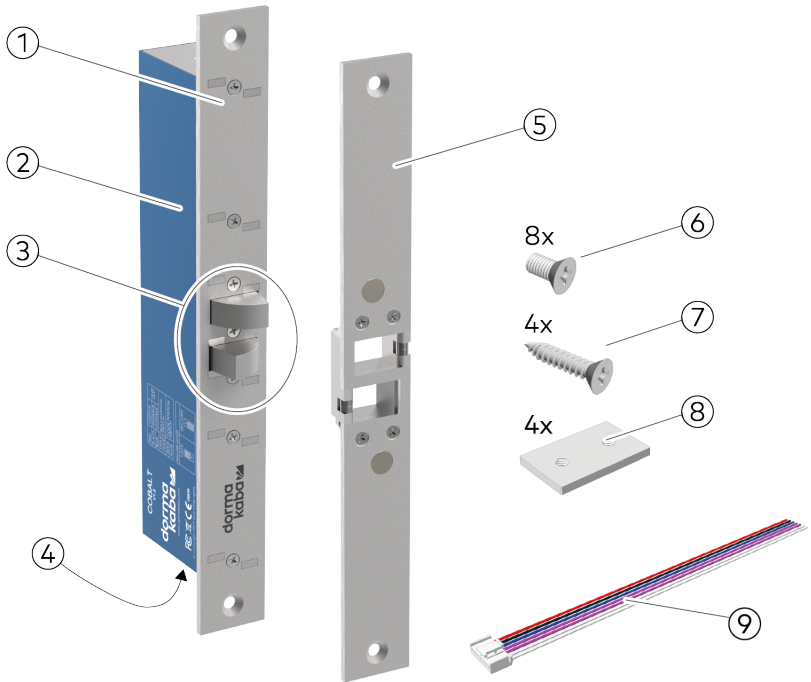


Fig. 1: View

- 1 Faceplate
- 2 Housing
- 3 Double-acting combination latch
- 4 Connection
- 5 Strike plate
- 6 Mounting screws, self-tapping, 10G x 1" csk
- 7 Screws M5 x 10
- 8 Mounting brackets
- 9 Connection cable


3.2 Accessories (to be ordered separately)

- Cover plate SLA206J 2400001230
- Housing SLA204J 2400001229
- Long striking plate SLA203H 2400001228

3.3 Technical data

Materials		
Bolt	Stainless steel SS17-4PH Thickness 10 mm Extension, 13 m (2x)	
Lock, strike plate	Stainless steel SS304 Thickness 3 mm	
Mechanical		
Gap dimension	max. 6 mm	
Door displacement	±8 mm	
Power supply		
Supply voltage	DC 12-24 V ±15 % SELV	(UL/IEC/EN 62368)
Protection class	III	(HD 60384-4-41)
Current consumption standby	50 mA (12 V)	30 mA (24 V)
Current consumption during operation	1000 mA (12 V)	500 mA (24 V)
Electrical connection		
Connection terminals	Connector	
Conductor cross-section	0,20 ... 2.0 mm ² /AWG24 ... AWG14	
Signal contacts		
Latch position	max. 30 V DC	max. 100 mA
Door position	max. 100 V DC	max. 500 mA

3.4 Classification

		dormakaba Deutschland GmbH DORMA Platz 1 58256 Ennepetal Deutschland									
		0905 – DoPYD30		19							
EN 14846:2008	3	S	9	F	0	0	0	0	1	1/3*)	

*: Fail-safe lock: 1; Fail-secure lock: 3

Explanation:

3 = service category

S = 200.000 test cycles, load on latch 50 N

9 = door mass > 200 kg

F = for fire/smoke doors, >120 min

0 = no safety requirements

0 = no defined resistants to corrosion, temperature, humidity

0 = locks without protection effect

0 = no requirement for protection effect electrical function

1/3 = protection effect electrical tampering

3.5 Dimensions

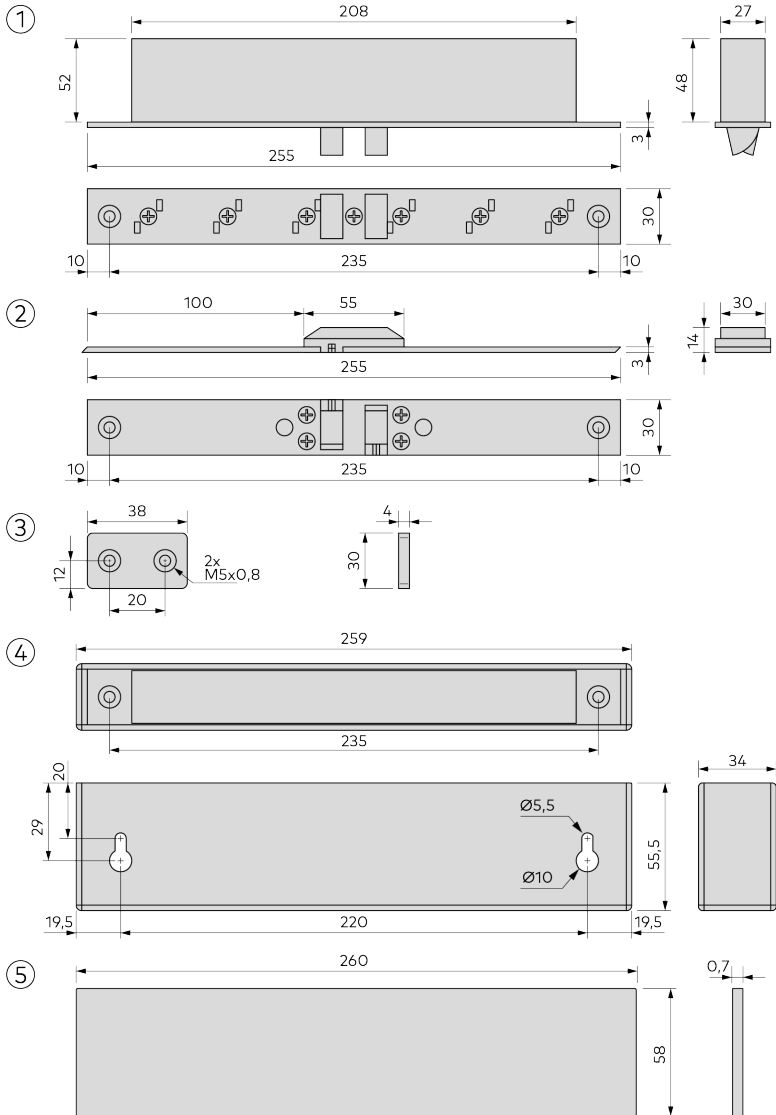


Fig. 2: Lock - dimensions

- | | | | |
|---|---------------------------|---|--------------------------------------|
| 1 | Dimensions lock | 4 | Dimensions housing (accessories) |
| 2 | Dimensions strike plate | 5 | Dimensions cover plate (accessories) |
| 3 | Dimensions of fixing lugs | | |

4 Operating modes and functions

4.1 Overview of functions

The SL30DBL is a motorized mortise lock for swing doors.

Two locking bolts

The most striking feature of the SL30DBL is the two counter-rotating locking bolts, which are operated independently of each other. This allows the lock to secure the door even when the door leaf is not in the centered position.

The lock senses from which direction the door is closing and first activates a striker to engage and center the door. Once the door is in the correct position, the lock activates the second locking bolt.

Reliable unlocking under preload

The SL30DBL unlocks immediately after it has received the signal to unlock - even if the door is laterally loaded at this time (preload). In fail-safe operation, this is guaranteed even in the event of a power failure.

Further features

- Multi-voltage input (DC 12 V/24 V)
- Optimized energy consumption (standby)
- Monitoring of door position and bolt position
- High mechanical strength
- Flush or surface mounting

4.2 Operating modes

The lock can be used in both fail-safe and fail-secure mode. All that is required is to switch over a jumper during commissioning.

Fail-safe operation (currentless opening)

If the power supply fails, the lock opens in fail-safe mode. This prevents people who are inside the secured area from becoming trapped in the event of an emergency.

In fail-safe mode, the lock locks as soon as voltage is applied to the control input and the door is closed. When the voltage at the control input is switched off, the lock unlocks.

Fail-safe operation (closing without power supply)

If the power supply fails, the lock locks as soon as the door is closed. The secured area thus remains secured even in the event of a power failure. This prevents unauthorized persons from gaining access by manipulating the power supply.

In fail-safe mode, the lock operates according to the closed-circuit principle. The lock remains unlocked as long as voltage is present at the control input. The lock locks as soon as the voltage at the control input is switched off and the door is closed.

5 Mounting

5.1 Requirements for mounting

The following aspects must be clarified before installation and connection:

- Operating mode
- Type of installation
- Installation position
- Cable routing and wire cross-section

Which operating mode?

The operating mode is selected to suit the intended use:

- For areas where people are regularly present and where no other escape and rescue route is available, the lock is set to **Fail-safe (de-energized opening)**.
- For areas that are to be locked in the event of a power failure, the lock is set to **Fail-secure (closing without power)**.

Type of installation

Optionally, the lock can be mounted on the door frame or on the door; the strike plate is installed in the door or the door frame accordingly. Installing the lock in the door frame is easier, as the cables only have to be routed through the frame. It requires more effort to lead the cables inside the door leaf to the lock.

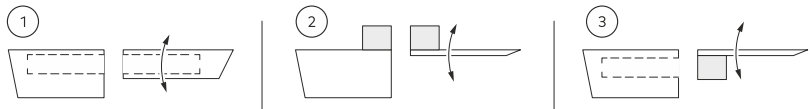


Fig. 3: Mounting variants - examples

- 1 Insertion opening in frame and door
- 2 Surface mounting on frame and door
- 3 Mortise opening in frame and surface mounting on door

A mortise opening in the door and door frame offers a discreet solution in which the lock and strike plate remain invisible. If this is not possible, e.g. with glass doors, both can be mounted on the surface using a housing (accessory). To install the striking plate in the housing, the long striking plate (accessory) is also required.

In principle, any combination of mortise opening and surface mounting can be realized, provided that the lock and strike plate are aligned with each other after mounting. When the door is closed, the gap between the lock and striking plate must not exceed 6 mm. If the gap is greater, the lock can no longer correctly detect the position of the striking plate and will no longer function reliably.

Installation position

The lock can be mounted horizontally or vertically.



When installed in the floor, penetrating moisture or similar can contaminate the mechanics of the lock and render the lock unusable in the long term.

Cable routing and conductor cross-section

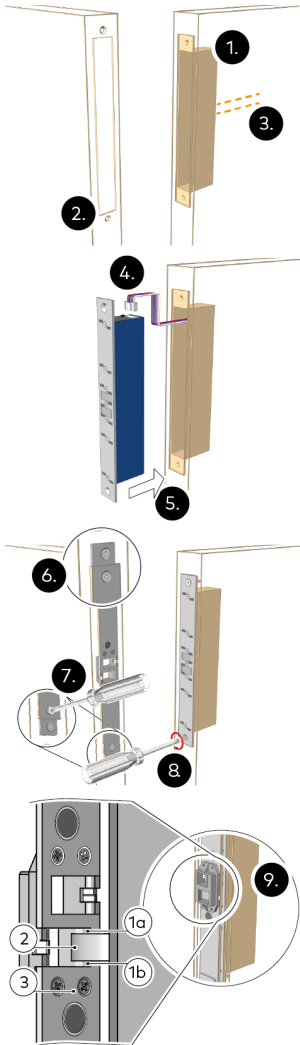
The routing and thus the length of the connecting cable must be determined. Three connecting wires are required for the lock to function.

When selecting the connection line for the supply voltage, the voltage drop on the line must be taken into account! Depending on the length of the connection line, the conductor cross-section must be selected accordingly.

Conductor cross-section		Maximum cable length	
(mm²)	AWG	at DC 12 V	at DC 24 V
0,20	24	10 m	30 m
0,33	22	16 m	48 m
0,52	20	26 m	77 m
0,82	18	41 m	122 m
1,31	16	65 m	195 m
2,08	14	103 m	310 m

Table 1: Conductor cross-section as a function of the cable length

5.2 Example 1: Installing lock and strike plate in mortise openings

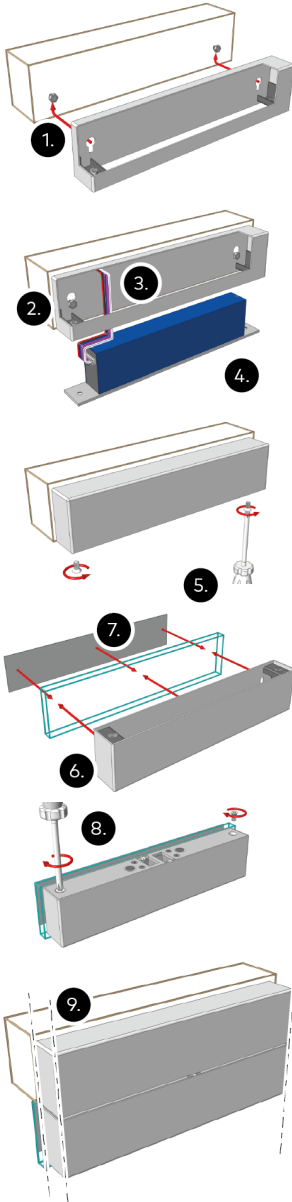


The installation example describes the installation

- of the lock into an insertion opening in the frame,
- of the strike plate into an insertion opening in the door.

1. Cut an insertion opening for the lock in the door frame.
2. Cut an insertion opening for the strike plate in the door leaf.
3. Drill a hole in the back of the insertion opening for the lock and lead the connecting cable into it.
4. Insert the plug of the wiring harness into the lock.
Note: Use the jumper to set the lock to fail-safe or fail-secure; see the Configure Lock chapter.
5. Push the lock into the door frame. Do not squeeze the connecting cable.
6. Install the strike plate into the door panel and secure with two 10G×1" screws.
7. For hollow chamber doors, insert the supplied mounting tabs behind the cutout and place the strike plate on the mounting tabs.
8. Fasten the lock with two 10G×1" screws.
9. Check the alignment of the lock and strike plate to each other:
 - The striker pins (2) touch the front and rear edges of the strike plate (3) to retract the door.
 - An appropriate pull-off dimension (1a/b) must be maintained at the top and bottom edges to prevent the strikers from driving against the strike plate.

5.3 Example 2: Install lock on frame and strike plate on glass door.



The installation example describes the installation

- of the lock on a wooden frame,
- the strike plate on a glass door.

Two housings, a cover plate and a long strike plate are required for mounting (accessories). The housings are available with double-sided adhesive tape and have mounting points for screw holes on wood and metal doors.

1. Attach the housing to the door frame. To do this, install two 10G×1" self-tapping hex head screws in the appropriate locations (included with the enclosure). Attach the housing to the screw heads with the two keyhole cutouts and tighten the screws.
2. Drill a Ø8 mm hole in the housing wall at the position for the cable entry. To prevent the connecting cable from chafing against the drilled edge, push the supplied grommet into the drilled hole. Then guide the connecting cable into the housing.
3. Insert the plug of the wiring harness into the lock. Note: Use the jumper to set the lock to fail-safe or fail-secure; see the Configure Lock chapter.
4. Push the lock into the housing. Do not crush the connecting cable.
5. Fasten the lock with two M5×10 screws.
6. Attach the housing for the strike plate to the glass door. To do this, remove the protective strip from the adhesive tape on the side of the housing and carefully attach the housing to the glass. **Note:** To correct the position, press the housing only lightly at first.
7. For a neat finish on the opposite side of the glass door, attach the cover plate (accessory) in the same manner.
8. Insert the long striking plate into the housing on the door leaf in such a way that the bolt of the lock can enter the opening of the striking plate. Fasten the strike plate with two M5×10 screws.
9. Check the alignment of the lock and strike plate to each other:
 - The striker pins (2) touch the front and rear edges of the strike plate (3) to retract the door.
 - An appropriate pull-off dimension (1a/b) must be maintained at the top and bottom edges to prevent the strikers from driving against the strike plate.
10. When the housing is in the correct position, press the housing firmly into place.

6 Electrical connection

6.1 Select power supply

The lock is designed for low power consumption. Only when the deadbolt is moved does a larger current flow.

1. Select the power supply according to the maximum current consumption.

Note: If several locks are connected to one power supply at the same time, the maximum current consumptions of the individual locks are added together.



WARNING

In the case of power supplies with high output power, there is a risk of fire due to high currents in the event of a short circuit!

High currents can cause severe damage due to overheating and even fire.

- In the case of power supplies with high output power, protect the connection lines to the individual locks with current limiters.

6.2 Connection

The lock is connected with a 7-pin wiring harness that plugs directly into the lock. The wiring is color coded.

Color	Meaning	Remarks
Red (BK)	Power supply	DC power supply connector, "+"
Blue (BU)		DC power supply connector, "-"
Black (BK)	Control input	Fail-safe operation: 1-active Fail-secure operation: 0-active
White (WH)	Switch contact door position <i>(optional)</i>	Normally open contact (NO, "normally open")
Purple (VT)	Switch contact bolt position <i>(optional)</i>	Normally open contact (NO, "normally open")
*: NO = "normally open", normally open contact. NC = "normally closed", break contact.		

For operation, the lock is connected to the power supply and with the control input (red, blue and black).

The white and purple terminals are signaling contacts that can be evaluated by an access control or alarm system.

6.3 Connection for fail-safe operation

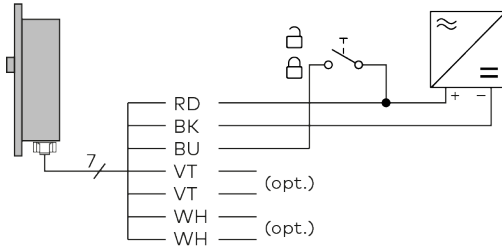


Fig. 4: Connection for fail-safe operation

Control signal	Lock
"On"	Locked
"Off"	Unlocked
Locking signal	Active high ("active-high")

Table 2: Function in fail-safe mode

6.4 Connection for fail-secure operation

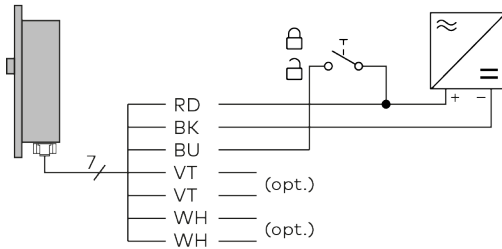


Fig. 5: Connection for fail-secure operation

Control signal	Lock
"On"	Unlocked
"Off"	Locked
Locking signal	Active off ("active-low")

Table 3: Function in fail-secure mode

6.5 Configure lock

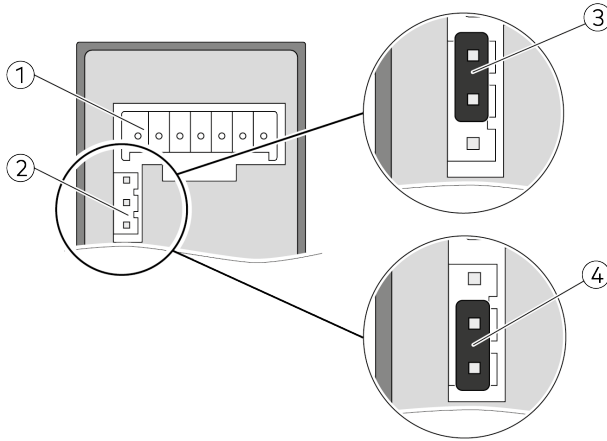


Fig. 6: Jumper position

- 1 Terminal strip
- 2 Pin header for configuration
- 3 Jumper for fail-safe operation (delivery state)
- 4 Jumper for fail-safe operation

Next to the connection strip (1) there is a three-pole pin strip which sets the error mode of the lock. Before mounting the lock, the fail-safe mode can be set by changing the position of the jumper.

1. For fail-safe operation, set the jumper to position (3).
2. For fail-safe operation, set the jumper to position (4).

7 Maintenance

7.1 Maintenance and Cleaning

The lock has been factory lubricated for life and is maintenance free. The use of other lubricants is not permitted and will void the warranty.

This lock contains electromechanical and electronic components that are subject to wear and tear depending on use and on-site installation conditions. The manufacturer has no influence on these factors. As a result of this wear, the lock may fail at the end of its normal service life.

Maintenance and cleaning

Interval	Activity
As needed:	Using a dry cloth, polish the faceplate and strike plate. Note: Look for traces of dirt and wear (dust, escaping lubricant).
Periodically, depending on frequency of use (to be determined by the operator):	Check for: <ul style="list-style-type: none"> • Tight fit • Smooth running • Noise during operation • Play of the latch • Contamination • Escaping lubricant • Moisture If there are unusual noises, noticeable play, escaping lubricant or similar, replace the lock.

Table 4: Maintaining and cleaning the lock

7.2 End of service life

To ensure the fail-safe/fail-secure function even in the event of a power failure, the lock contains powerful capacitors to store energy.

The lock checks the function of the capacitors daily. If it detects that the capacity is no longer sufficient, it assumes the position defined for the power failure. The lock then stops operating and must be replaced.

8 Disposal

8.1 Disposal of the device



The device is marked with the symbol shown here, indicating that disposal with domestic waste is prohibited.

Old devices contain valuable recyclable materials that must be recycled. Old devices may contain substances that are harmful to humans and the environment. Correct disposal protects humans and the environment.

Owners of electrical/electronic devices are legally obliged to return them at the end of their service life to the manufacturer, the point of sale or to public collection points set up for this purpose.

- **Germany**
dormakaba Deutschland GmbH will properly dispose of goods delivered at the end of their useful life, in accordance with the legal regulations (ElektroG or the Electrical and Electronic Equipment Act in Germany). Any transport costs incurred are to be borne by the owner of the electronic device.
- **Switzerland**
The device must be taken to an electronic device collection point in accordance with VREG.
- **EU**
In the EU electronic devices must be disposed of in accordance with national disposal and environmental regulations.



www.dormakaba.com

dormakaba Deutschland
GmbH
DORMA Platz 1
58256 Ennepetal
Germany
Headquarters: +49 2333 793-0
Service DE: 0800 524 0246

www.dormakaba.com