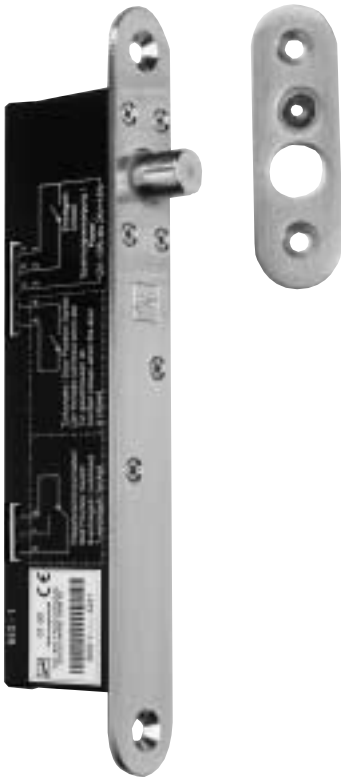


# Operating and Installation Instructions

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Fail Unlocked	=	Fail Safe	=	Power to Lock
Fail Locked	=	Fail Secure	=	Power to Open

## Description

The effeff electric bolt 843-1 is a solenoid operated door bolt for revolving, hinged or sliding doors. The electric bolt is suitable for mortice mounting in wooden or metal doors and/or frameless or framed glass doors. The housing 843-4 allows surface mounting and direct sticking to frameless glass doors.

The electric bolt is microprocessor-controlled and comprises the following performance features. Momentary unlocking; door position switch; bolt position switch; auto voltage sensing; current reduction circuitry. The door can be unlocked by pulsing the control terminal to positive by either a dedicated switch or access control system.

### *Power supply*

The 843-1 bolt requires a power supply of 12V DC -10% to 24V DC +15%, e.g. effeff model 1001-121 (12V) or 1001-241 (24V).

## Function

### *Use:*

**The electric bolt 843-1 is intended as an additional locking device for the door. This means that the door must be closed by the main lock and/or by a door closer so that it remains closed. This is necessary so that the bolt can engage without hindrance in the strike plate in the door or in the housing and thus bolt the door.**

The electric bolt can be used either in the fail-unlocked or the fail-locked operating modes.

**The standard electric bolt 843-1 is supplied in fail-unlocked mode. For mounting to glass doors use the special glue 843-8. Additional lubrication, use in wet areas and unauthorised repairs void the guarantee.**

### *Fail-unlocked/fail-locked:*

When powered the electric bolt is locked if the door is closed irrespective of the fail-unlocked or fail-locked operating mode. The supply voltage must be continuously connected to the electric bolt in both operating modes. The bolt is unlocked by triggering the control input. The difference between the fail-unlocked and fail-locked operating mode is, that should the supply voltage fail, the fail-unlocked version retracts the bolt whereas with the fail-locked version the bolt remains locked. In fail-unlocked mode to ensure that the door locks successfully a further 8 locking attempts occur at approximately 2 second intervals regardless of the bolt state. This will ensure that slowly closing and/or double action doors are locked.

### *Release trigger:*

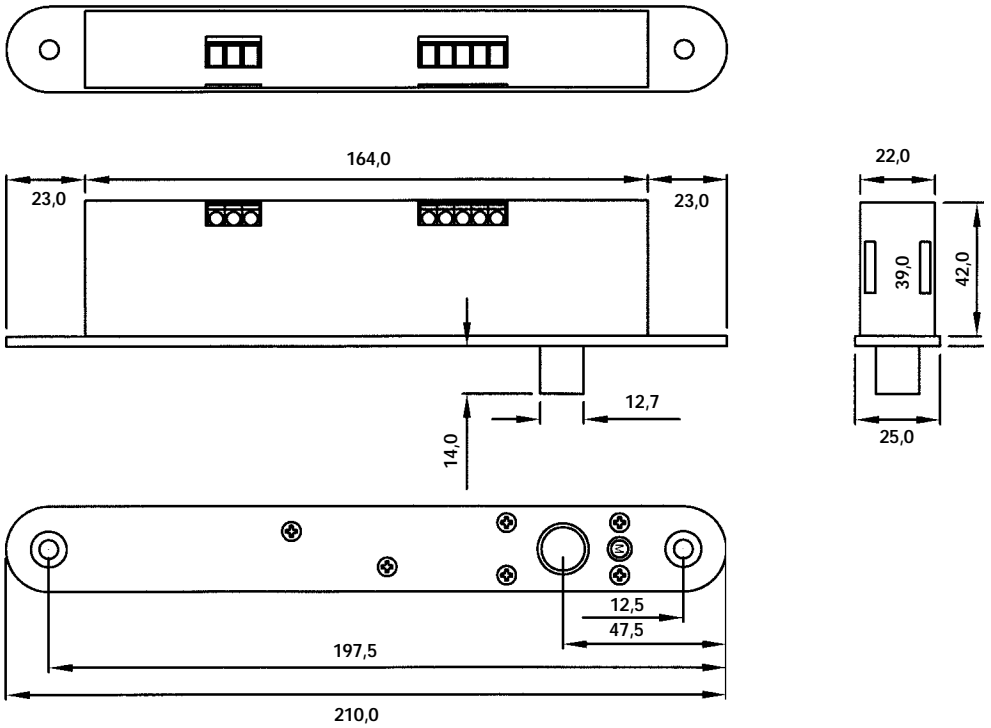
To unlock the bolt, trigger the control terminal to positive. If the door remains open the bolt remains retracted until the door has closed (see wiring diagram page 10). The bolt can be temporarily retracted by a momentary contact or permanently retracted by a maintained contact. This contact could be a mechanical switch or a contact of an access control system.

### *Temporary unlocking:*

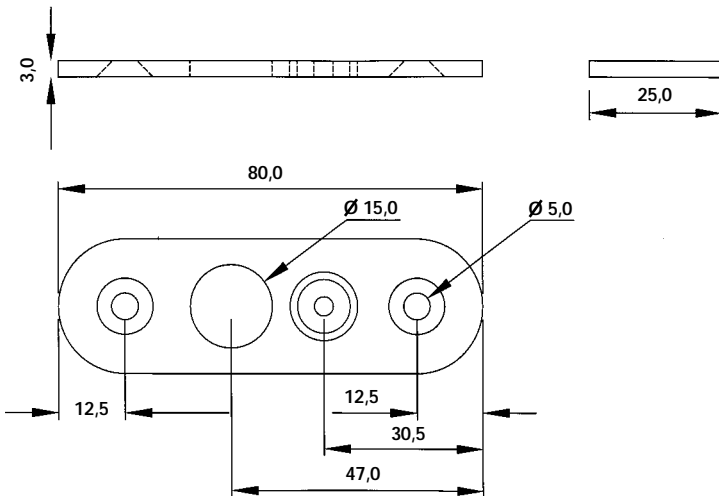
If the request to exit switch is activated, the electric bolt is retracted for 8 seconds. If the door is opened and closed during this unlocked period the door is relocked when it closes. If the door was not opened during the unlocked period, the electric bolt automatically relocks approximately 8 seconds later. If the door was not closed on termination of the unlocked period, the electric bolt remains unlocked until the door is closed.

### *Permanent unlocking:*

If the control terminal is maintained to positive, the bolt will remain retracted. During this period the door can be opened and closed as required. If the control terminal is no longer maintained to positive, the closed door is bolted immediately.

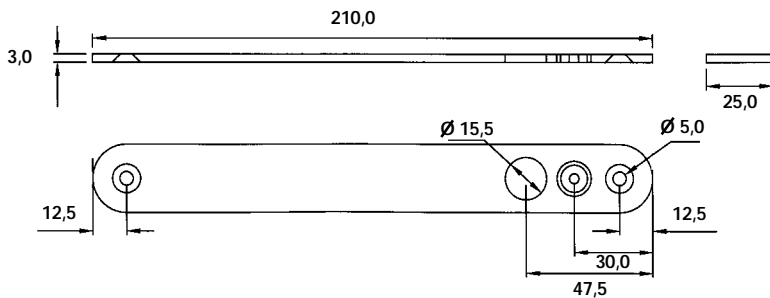


Short strike plate 843-2 in stainless steel



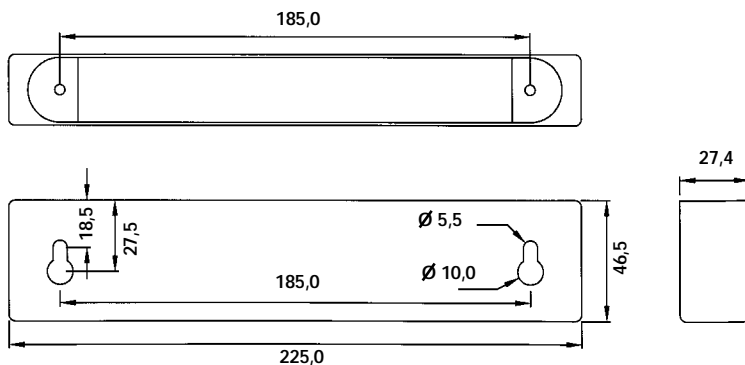
Long strike plate 843-3 in stainless steel

Fig 3



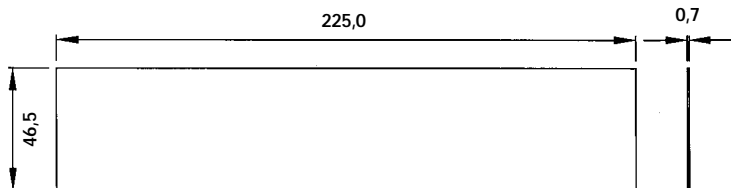
Housing 843-4 in stainless steel

Fig 4



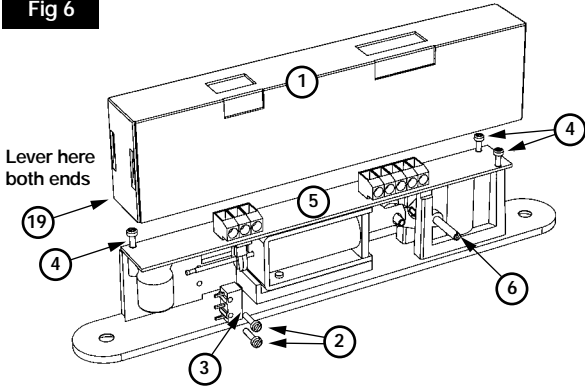
Dress plate 843-7 in stainless steel

Fig 5



## Conversion from fail-unlocked to fail-locked operating mode

Fig 6



- Remove the cover (1) by gently levering cover ends (19) outwards and lifting.
- Remove the micro switch securing screws (2).
- Remove the micro switch (Bolt Position Switch) (3).
- Loosen and remove the three PCB screws (4) and remove the PCB (5) taking care not to damage the reed switches.
- Loosen and remove the pivot pin (6).

- Loosen and remove the four toggle block screws (7).
- Remove the toggle block (8) and bolt (9) leaving the bolt in the toggle block.

Fig 7

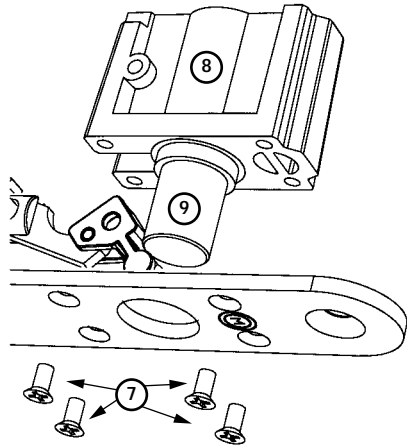
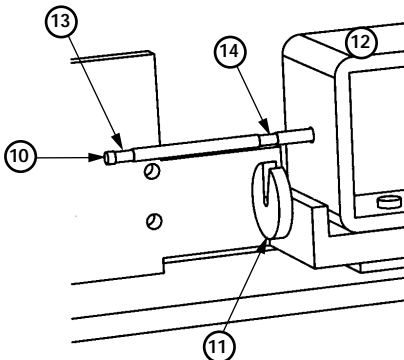


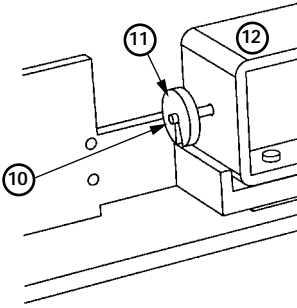
Fig 8



- Shift the solenoid plunger pin (10) inward so that the "c" clip (11) rests as far as possible against the solenoid (12). This is to avoid bending the solenoid plunger pin (10) in the next step.
- Using the solenoid (12) as a support for the solenoid plunger pin (10), (**be very careful not to bend the solenoid plunger pin**) remove the "c" clip (11) from the inner wasted section (14) on the solenoid plunger pin (10).

## Conversion Procedure - contd.

Fig 9



- Shift the solenoid plunger pin (10) so that the outer wasted section (13) of the solenoid plunger pin (10) just protrudes from the solenoid (12).

- Whilst supporting the solenoid plunger pin (10) as above (be very careful not to bend the solenoid plunger pin), fit the "c" clip to the outer wasted section (13) of the solenoid plunger (10) pin. Refer to Fig. 8 for part numbers.

- Rotate the solenoid plunger (15) horizontally (along its longitudinal axis) 180°, into the orientation shown in Fig 10.

Fig 10

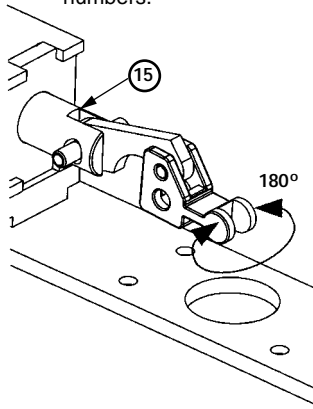
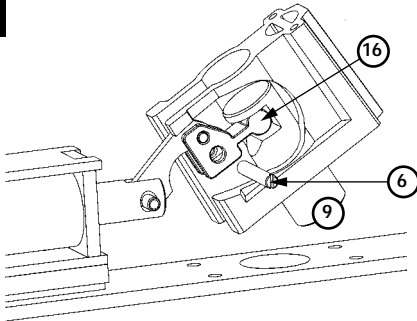


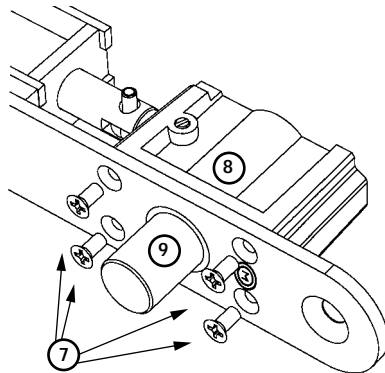
Fig 11



- Insert the toggle (16) into the groove in the bolt (9).
- Insert the pivot pin (6) and tighten.

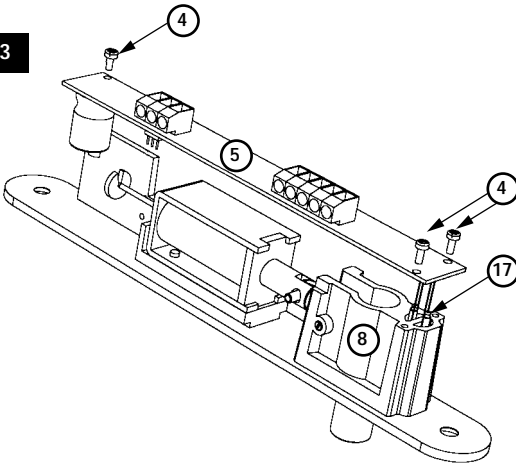
- Secure the toggle block (8) and the bolt (9) with the four toggle block screws (7).

Fig 12



## Conversion Procedure - contd.

Fig 13



- Replace the PCB (5) taking care to insert the reed switches (17) on the PCB (5) into the appropriate holes in the toggle block (8).
- Replace the three screws (4).

- Reposition the function selection jumper (18) to position B for fail-locked (refer to wiring diagram page 10).
- Place the micro switch securing screws (2) into the micro switch (3).
- Replace the micro switch in the reversed position with the switch arm facing away from the solenoid (12) and with the pivot of the micro switch remaining at the bottom.
- Tighten the micro switch securing screws (2) to secure the micro switch.

Fig 14

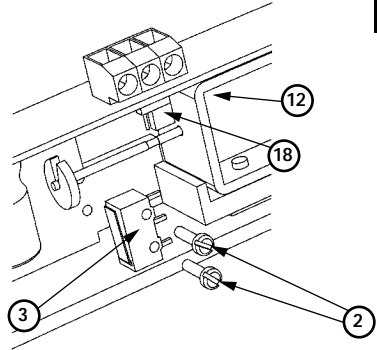
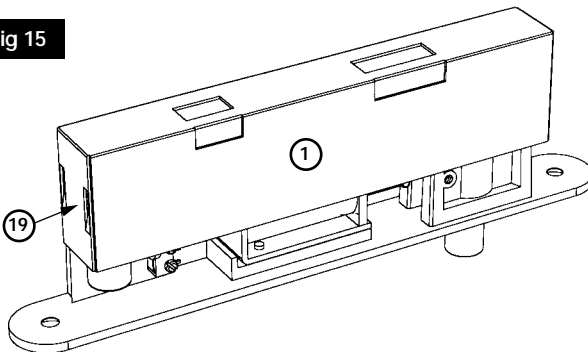


Fig 15



- Replace the cover (1) by pushing it into position until the cover ends (19) clip into place.

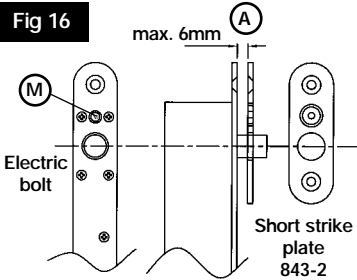
## Installation

The following instructions contain important information for mounting the electric bolt 843-1 and accessories. These instructions must be observed at all times to ensure that the electric bolt and its components function correctly.

### Installation position

The electric bolt 843-1 can be mounted with or without housing 843-4 in the side or top of the door frame.

**Fig 16**

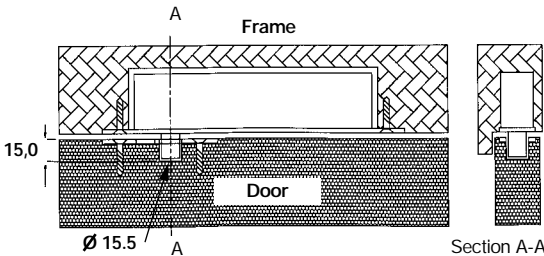


### Aligning electric bolt and strike plate

The strike plate 843-2 or 843-3 must be aligned with the electric bolt as illustrated so that the magnet can switch the reed contact (M) in the electric bolt when the door is closed.

The distance (A) between the electric bolt and the strike plate when installed (rebate clearance) should not be more than 6mm when the door is closed.

**Fig 17**



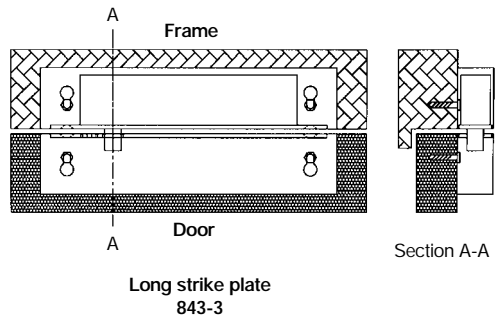
### Mounting the electric bolt 843-1 in the door frame

The illustration shows the mortise mounted electric bolt 843-1 and the short strike plate 843-2 when the door is closed. The bolt is thrown into the strike plate and the door is locked. In order for the bolt to lock the door securely it must throw into the strike plate without hindrance. For this purpose the door must be kept in position by the main lock and/or a door closer. When bolted there should be no pre load of the strike plate on the bolt as this may prevent it from being retracted. Cut a mortise in the door frame to mount the bolt, allowing adequate space for the connecting wires. The bolt requires a hole of at least 15mm depth in the door, so that accumulated debris in the hole will not prevent the bolt from reaching the fully extended deadbolt position. It is therefore good practice to allow additional hole depth. Periodically clean any debris from the strike hole.

### Surface mounting the electric bolt and long strike plate in stainless steel housing

When surface mounting, the electric bolt 843-1 and the long strike plate 843-3 are each mounted in a housing 843-4. The housing with the electric bolt is attached to the face of the frame and the housing with the strike plate to the door. Should the door not close flush with the frame, the housing must be aligned using an appropriate packer. Secure the housing with the hexagon head cap screws supplied.

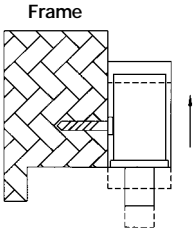
**Fig 18**





## Installation - contd.

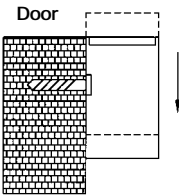
Fig 19



### Securing the housing with the electric bolt

When surface mounting first of all determine the final position of the housing. When mounted the final position of the housing should fit flush with the door rabbet. Determine where the wiring will exit the door frame and mark the corresponding place on the housing. An 8mm hole must be drilled in the electric bolt housing 843-4 for the wires. The hole must be drilled within 25mm of one end of the housing. Place the supplied grommet in the hole and pull the wires through the grommet. Place the housing in the required mounting position and mark the position of the mounting holes on the frame. Screw the fastening screws into the frame leaving sufficient space to insert the housing. Position the housing so that the screws enter through the two large mounting holes and push the housing upward into the final position. Tighten the fastening screws. After securing the housing, connect the electric bolt and secure it in the housing with the two M5 screws.

Fig 20

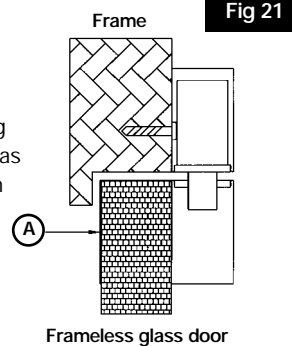


### Securing the housing with the long strike plate

Mount the housing on the door in the same manner as on the frame. The hole for the leads is however, not required. After mounting check that the bolt can engage in the strike plate without hindrance when the door is closed. If necessary, adjust the position of the housing

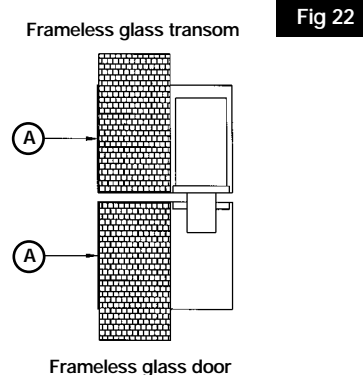
### Mounting to frameless glass doors with frame

When surface mounting the electric bolt to frameless glass doors the housing for the bolt is secured on the door frame with the hexagon head cap screws as already described in the normal mounting procedure. The housing 843-4 with the long strike plate 843-3 is however, glued directly to the door using the special glue 843-8. Observe the gluing instructions. The self-adhesive dress plate 843-7 is fixed to the door on the opposite side marked (A)



### Mounting to frameless glass doors with frameless glass transom

When surface mounting to frameless glass doors with a frameless glass transom both housings are glued directly to the glass surface using the special glue 843-8. Observe the gluing instructions. Self-adhesive dress plates 843-7 are fixed to the glass on the opposite sides marked (A)

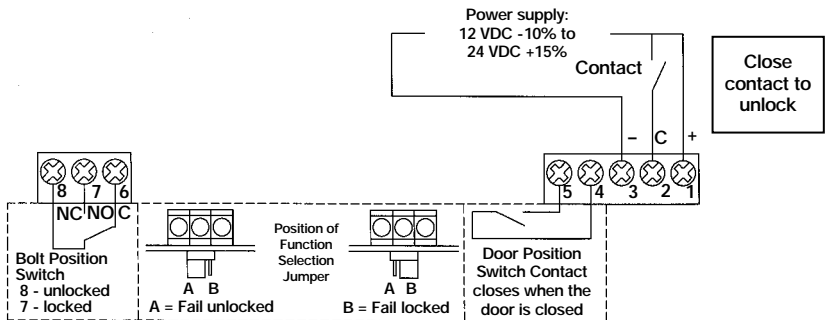


## Technical data

Overall length:	210mm	
Overall width:	25mm	
Overall depth:	42mm	
Face plate:	3mm stainless steel	
Strike plate:	3mm stainless steel	
Length of the bolt cover:	164mm	
Width of the bolt cover:	22mm	
Depth of the bolt cover:	39mm	
Bolt diameter:	12,7mm stainless steel	
Bolt throw:	14mm	
Shear strength:	10000 N (1000 kp)	
Distance between electric bolt and strike plate:	max. 6mm	
Power supply:	12V DC - 10% to 24V DC + 15%, e.g. effeff model 1001-121 (12V) or 1001-241 (24V).	
Current consumption:		
Volt	Activating Current	Holding Current (after max 300ms)
12VDC	1050mA	210mA
24VDC	900mA	80mA
Contact rating of the switches:		
Door Position Switch:		max. 25 V AC/DC 200mA
Bolt Position Switch:		max. 25 V AC 1 A or 25 V DC 500mA

## Wiring diagram

Fig 23



05



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