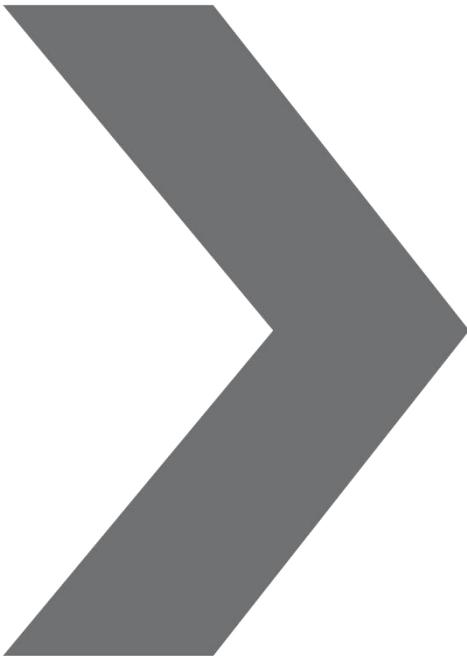
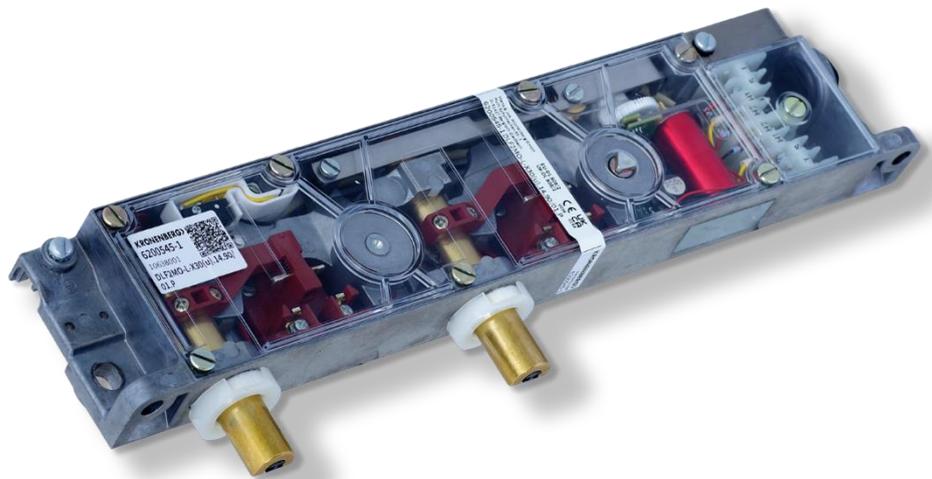




Door Interlock DL(F)2MO

Operating Instructions



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1 General

The conditions, notices and drawings contained in the EU-type approval certificates EU-DL 807-2 and EU-DL 808-2 are part of the operating instructions. Therein are specified amongst others:

- description of functions
- installation conditions
- dimensions and variants

The operating instructions must always be kept in a legible condition and be accessible.

Target group

All operations described in these operating instructions may only be carried out by trained personnel who are authorized by the operator of the installation. Only install and put the device into operation if you have read and understood the operating instructions and if you are familiar with the applicable regulations of occupational safety and accident prevention.

Intended use

The door interlock described here was developed to take over safety-relevant functions as part of a complete installation or machine. It is within the responsibility of the manufacturer of an installation or machine to ensure the correct overall function. The door interlock may only be used in accordance with these operating instructions and in the version described in the corresponding certificates.

General safety instructions

The safety notes of the operating instructions as well as country-specific installation, safety and accident prevention instructions must be observed.

For further technical information please refer to our catalogues resp. our homepage kronenberg-gmbh.de.

Warning of misuse

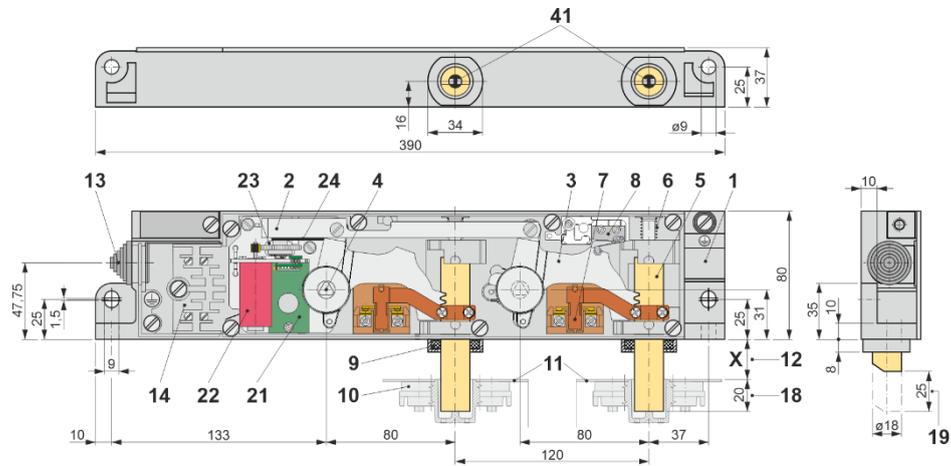
In case of improper, unintended use or manipulation dangers to persons or damages at parts of the machines or installations can not be excluded.

Disclaimer

We will not be liable for damages and malfunctions caused by assembly faults or by non-observance of these operating instructions. Any further liability of the manufacturer is excluded for defects resulting from the use of spare parts or accessories which are not approved by the manufacturer.

Any unauthorized repairs, modifications and alterations are not permitted for safety reasons, exclude any liability of the manufacturer for any resulting damages and lead to the loss of the approval.

2 Device dimensions



- | | | | |
|----|--|----|---|
| 1 | housing | 21 | motor electronics |
| 2 | pull rod | 22 | electrical motor |
| 3 | tooth lever | 23 | gear |
| 4 | tooth lever axis with triangle | 24 | pull rope |
| 5 | latch bolt (locking mechanism) | 41 | faulty closure device (does not apply at DL2MO) |
| 6 | return spring | | |
| 7 | switch for locking mechanism | | |
| 8 | auxiliary switch (as option) | | |
| 9 | oiled felt ring with holder (from $X \geq 10$ mm) | | |
| 10 | latch plate (does not apply at DL2MO) | | |
| 11 | door leaf | | |
| 12 | X-dimension according to customer specification | | |
| 13 | cable entry | | |
| 14 | connecting terminals | | |
| 18 | immersion depth of the latch bolt into the latch plate (nominal dimension) | | |
| 19 | bolt stroke | | |

3 Function and initial operation

3.1 Mode of operation

By applying a regulated DC voltage of 24 V for the terminals [22] of the motor electronics the latch bolts [5] are attracted and held in their end position (green LED lights up).

The switches for locking mechanism [7] (positively driven normally closed contacts) are thus opened and the safety circuit is interrupted.

The door is thus unlocked and can be opened.

The bolts can remain tightened as long as requested (100 % duty cycle).

The DC voltage is monitored by the motor electronics [21]. If a drop of the input voltage is detected, the motor current is switched off and a motor brake activated for a short time (red LED flickers).

The latch bolts [5] drop down damped into the latch plates [10], the switches for locking mechanism [7] are closed and the lift car can drive on.

3.2 Initial operation

The following points must be observed during the initial operation of the door inlock DL(F)2MO:

- intended use, permissible installation position and environmental conditions
- correct X-dimension [12]
- suitable bevel of the latch bolt for the closing ability
- sufficiently dimensioned fixation
- emergency release triangle [4] accessible (opening with diameter 14 mm necessary)
- suitable latch plates [10] for the DLF2MO with faulty closure device e.g. type BE or BS-V
- sufficiently large opening for the latch bolts [5]
- latch bolts [5] and emergency release [4] + [23] smooth

3.3 Settings

Latch bolt [5] and latch plate [10]:

The distance between the attracted bolt [5] and the latch plates [10] should be 5 mm.

3.4 Control

It must be ensured that the motor electronics is only supplied with voltage when the car is in the corresponding unlocking zone.

The motor can be supplied with voltage as long as requested (100 % duty cycle). The voltage of the motor electronics may be switched off after opening the door in normal operation only when the door has been closed completely again and the latch bolt can freely plunge into the latch plate or borehole. Only then it will be ensured that the engine brake that operates only a few seconds after the voltage has been switched off, makes the bolt drop in a damped way.

3.5 Closing ability

If the latch bolts [5] drop down e.g. due to a power failure at open door, it must still be possible to close the door. Where appropriate please provide a slight bevel at the door edge [11].

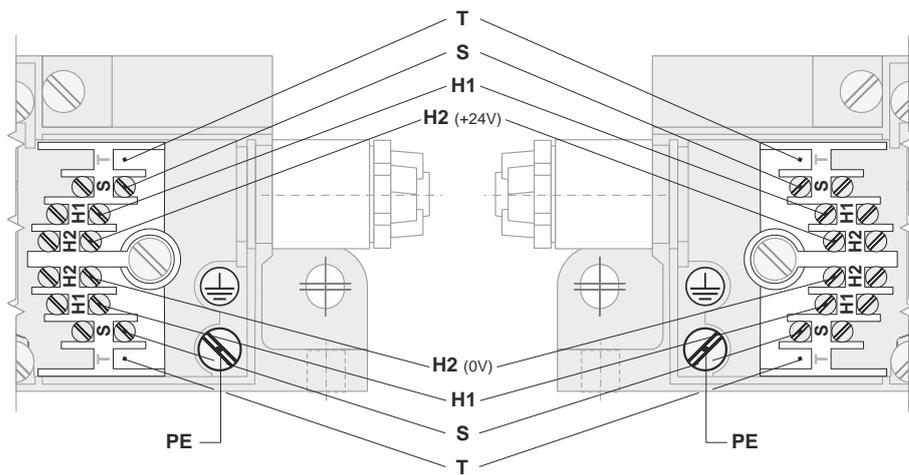
4 Maintenance

If the locks are installed correctly, maintenance is generally not required. We recommend an annual inspection at harsh operating conditions:

- tighten fastening screws
- check smooth running of the bolts [5] and the emergency release [4] + [23]
- check the adjustment of the bolts [5] to the latch plates [10] (centering, 5 mm distance when attracted)
- remove rough contamination

5 Electrical connection

5.1 Connection plan

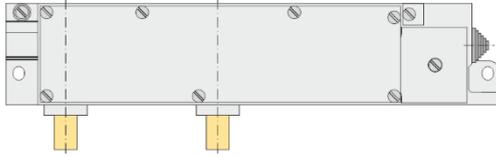


H1	connection for auxiliary switch
H2 (+24V)	connection for motor drive
H2 (0V)	connection for motor drive
PE	earthing connection
S	connection switch for locking mechanism
T	not used

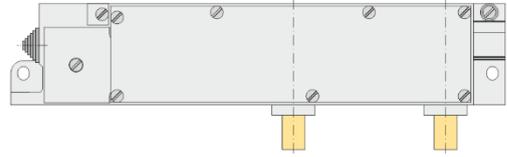
6 Technical information

6.1 Operating directions

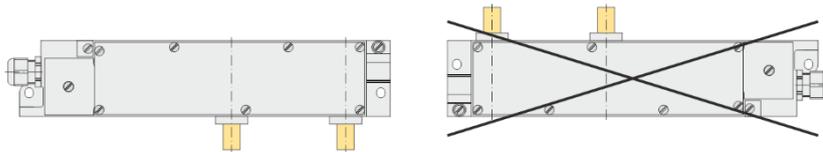
-L (latch bolt left)



-R (latch bolt right)



6.2 Customary positions



6.3 Technical data

norms	EN 81-20, EN 81-50, EN 81-21, EN 60947-5-1
certificates	type approval certificate: EU-DL 808-2 (DLF2MO) and EU-DL 807-2 (DL2MO) UK-DL 808-2 (DLF2MO) and UK-DL 807-2 (DL2MO)
switching capacity:	<p>$U_i = 250 \text{ V}$ $I_{th} = 10 \text{ A}$ $U_{imp} = 4 \text{ kV}$</p> <p>switch for locking mechanism AC-15: $U_e = 230 \text{ V}$ $I_e = 2 \text{ A}$ DC-13: $U_e = 200 \text{ V}$ $I_e = 2 \text{ A}$</p> <p>auxiliary switch .90/01 AC: $U_e = 250 \text{ V}$ $I_e = 6 \text{ A}$ EN 61058 DC: $U_e = 200 \text{ V}$ $I_e = 0.25 (0.1) \text{ A}$ DC: $U_e = 60 \text{ V}$ $I_e = 1.0 (0.5) \text{ A}$ DC: $U_e = 24 \text{ V}$ $I_e = 3.0 (2.0) \text{ A}$</p>
short-circuit capacity	T 10 A F 16 A
contact material	fine silver
motor drive of the latch bolts	
operating voltage	24 V DC (-15 % / +25 %) regulated
pull in current / time (typical)	0.8 A / < 0.5 s
holding current	0.15 A
connection	by screw terminals max. 2.5 mm ² cable entry $\varnothing = 23 \text{ mm}$ with rubber grommet, cable entry M25 with reducing ring and cable gland M20x1.5 at version DL(F)2MO -W
level of protection	IP40, IP54 at version DL(F)2MO-W
ambient air temperature	-10 °C up to 45°C (special version up to -30 °C)

7 Fault correction

7.1 Diagnosis at disruption in operation

Disruption	Status LED		Possible cause	Measure
	red	green		
bolt does not attract	off	off	no voltage or reverse polarity	check input voltage and polarity
	on	off	voltage too low	check input voltage, regulated 24 V DC +/-10 % necessary
	on	on	inappropriate voltage / too low	
attracted bolts sometimes drop down and then retract			short voltage drop	Determine the cause for voltage drops and stop it. Check switches, contacts, power supply unit, control, wiring and other consumer-loads.
door interlock makes one or several bashing sounds when reaching the end position			Bolts were not dropped down completely, e.g. in faulty closure position. The fixed sequence does not comply, the bolt reaches the end position too soon, the motor continues to rotate and exceeds its breakdown torque.	Normal sequence if the bolts are attracted from the faulty closure position. If possible ensure that only completely dropped down bolts are attracted.
door interlock makes bashing sounds for approx. 30 seconds when attracting, does not reach the end position	flashes with long interval	ein	Bolts or mechanism block, motor exceeds its breakdown torque.	Check adjustment and smooth running, remove blockade.



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