ED100/ED250
Automatic Swing Door Operators
Installation in Surface Applied (Narrow) Header

Installation Instructions
DL4615-006 – 01-2020
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1 General information

1.1 Installation Instructions
This manual provides installation instructions for ED100/ED250 automatic swing door operators used in single door and double door surface applied header installations.

1.2 Manual storage
This document must be kept in a secure place, and accessible for reference as required. If the door system should be transferred to another facility, insure that this document is transferred as well.

1.3 dormakaba.com website
Manuals are available for review, download, and printing on the dormakaba.com website.

1.4 Symbols used in these instructions.

![WARNING](image)
This symbol warns of hazards which could result in personal injury or threat to health.

NOTICE
Draws attention to important information presented in this document.

CAUTION
This symbol warns of a potentially unsafe procedure or situation.

TIPS AND RECOMMENDATIONS
Clarifies instructions or other information presented in this document.

1.5 Dimensions
Unless otherwise specified, all dimensions are given in inches (”).

1.6 Building codes and standards.
ED100/ED250 installation: observe applicable national and local building codes.
2 Product description

2.1 Intended use.
The ED100 and ED250 are electromechanical operators used exclusively for opening and closing interior or exterior swing doors.

The ED250 or ED100 operator is installed in a surface mount header at customer site. The header must be installed on an interior building surface.

For double swing doors, both operators are installed in a single header.

2.2 Low energy operator and full energy operator.

2.2.1 ED100
- Supplied as a low energy operator (ANSI/BHMA A156.19).
- Configured as a full energy operator using parameter adjustment (ANSI/BHMA A156.10).

2.2.2 ED250
- Supplied as a low energy operator (ANSI/BHMA A156.19).
- Configured as a full energy operator using parameter adjustment (ANSI/BHMA A156.10).

⚠️ WARNING

For low energy applications, ED100/ED250 parameter settings must meet ANSI/BHMA A156.19 specifications.
Reference: Chapter 30, ANSI/BHMA standards

⚠️ WARNING

To reduce risk of injury to persons, use this ED100/ED250 operator only with automatic swing doors that the operator is designed for.
Reference Chapter 6, Technical data.

2.3 Arm configurations.

ED100 and ED250 are both suitable for installation using:
- ED push arm
- ED pull arm with track
- ED push arm with track [application specific]*
  *Does not qualify for use on a smoke or fire-rated door.

⚠️ TIPS AND RECOMMENDATIONS

Insure operator is qualified for use at the respective smoke or fire-rated door.

2.5 Maximum door weight and width.
Reference Para. 6.2, Operating specifications.

2.6 Hardware as shipped.

2.6.1 Single swing door.
1. Box containing surface mount header assembly for one ED100/ED250 operator. Included inside header:
   - Accessory installation kit, either full energy or low energy (Chapter 5).
   - Program switch panel (Chapter 4).
   - Box containing push arm or pull arm kit.
2. Box containing ED100 or ED250 operator with attached mounting base.

2.6.2 Double swing doors.
1. Box containing surface mount header assembly for two ED100/ED250 operators. Included inside header:
   - (2) accessory installation kits, either full energy or low energy (Chapter 5).
   - Program switch panel (Chapter 4).
   - (2) boxes, each containing a push arm or pull arm kit.
   - ED100/ED250 operator connection cables (Para. 5.5).
2. (2) boxes, each containing an ED100 or ED250 operator with attached mounting base.
3 Safety information

3.1 Safety instructions.
This document contains important instructions for installation of the ED100/ED250 swing door operators. Review these instructions thoroughly prior to installation, and follow them carefully during installation, commissioning, troubleshooting and maintenance.

3.2 Door signage requirements, reference Chapter 11.
Proper signs and labels shall be applied and maintained on the door controlled by the ED250/ED100 automatic swing door operator:
- Full power: ANSI/BHMA A156.10: Standard for power operated doors.
- Low Power: ANSI/BHMA A156.19: Standard for power assist and low energy power operated doors.

3.3 Safety warnings.

⚠️ WARNING
Damage to equipment or incorrect equipment operation may result from an incorrect installation.

⚠️ WARNING
Hazard to mechanical processes by use of control settings, elements, or procedures not documented in this manual!

⚠️ WARNING
Electric shock hazard! By use of control elements, settings, or procedures not documented in this manual!

⚠️ WARNING
Work on electrical equipment and 115 VAC wiring installation must be performed only by qualified personnel!

⚠️ WARNING
Metallic doors must be grounded per national and local codes!

3.4 Residual hazards.

⚠️ WARNING
After installation, hazards such as minor crushing, impact with limited force, and risk to unsupervised children may exist depending on structural design of door area, type of door, and any safeguards that have been implemented.

⚠️ WARNING
Hand pinch point and crushing hazards at push arm and arm and track!

Fig. 3.1 Door closing edges

Fig. 3.2 Hazards at push arm

Fig. 3.3 Hazards at arm and track
## 4 ED100/ED250 Product overview

### 4.1 ED100/ED250 single swing door

1. **ED100/ED250**
2. **Header assembly with cover**
3. **Header cover**
4. **Cover screws**
5. **Program switch panel mounting surface**
6. **Jamb brackets**
7. **4” x 6” header track**
8. **Splined spindle**
9. **ED100/ED250 operator**
10. **Hole for spring tension adjustment**

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<td>3 Cover screws</td>
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<td>4 Program switch panel mounting surface</td>
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<tr>
<td>5 Jamb brackets</td>
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<tr>
<td>6 4” x 6” header track</td>
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<td>3 Exit only switch, 2 position</td>
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Reference Para. 5.6 for Key Switch Panel options.

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<tr>
<td>6 Bag containing terminals and third guide pin*</td>
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* Included with operator

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Reference Para. 5.6 for Key Switch Panel options.

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* Included with operator
4.2 ED100/ED250 pair swing doors

Fig. 4.2.1 Double header

1 Double header
2 Header cover
3 Cover screws
4 Program switch panel
5 Hole for drive axle
6 Header track
7 Hole for spring tension adjustment

Fig. 4.2.2 Double header without operators

Fig. 4.2.3 Double header with operators

1 Double header
8 Push arm
9 Pull arm with track

Fig. 4.2.4 Double header with push arms

Fig. 4.2.5 Double header with pull arms

4.3 Arm configurations

4.3.1 Arm configurations
- Push arm
- Deep push arm
- Pull arm with track
- CPD pull arm with track
- CPD push arm with track

TIPS AND RECOMMENDATIONS
Reference Chapter 12 for arm configuration detail.

*Does not qualify for use on a smoke or fire-rated door.
4.3 ED100/ED250 operator component view

1. Power switch
2. 120 VAC terminals
3. Housing unit
4. Splined spindle
5. Operator (motor, gear, spring
6. Spring tension adjustment, closing force
7. Ground stud
8. 4 button user interface
9. Information display
10. Slot for internal program switches
11. Potentiometer, closing speed adjustment
12. Terminal jumper socket, push or pull mounting
13. Slot for upgrade cards
14. RJ45 socket, double door operator synchronization
15. COM 1 service connector
16. Accessories terminal board
17. Mounting plate
18. Customer ground terminal
19. Guide pin
20. Ribbon cable
21. Ribbon cable socket
22. Upgrade card socket
23. Motor
24. Encoder socket and cable
25. Motor socket and cable
26. Control board
27. Program switches

Fig. 4.3.1 ED100/ED250 component view 1
Fig. 4.3.2 ED100/ED250 component view 2
5 Accessory kits, axle extension kits

5.1 ED250 and ED100 configured for full energy accessory kit

Fig. 5.1.1 Decal, low energy

Fig. 5.1.2 Decals, full energy

Fig. 5.1.3 Header mounting screw pack

Fig. 5.1.4 Push arm screw kit

Fig. 5.1.5 Pull arm screw kit

Fig. 5.1.6 Hole plug kit

Fig. 5.1.7 Mounting base screw kit

Fig. 5.1.8 Program switch panel

Fig. 5.1.9 Communication cable

Reference Para. 5.6 for optional key switch panels.

1 DD0586-010
2 DD0758-010
3 DD0762-010
4 DD0762-020
5 Side 2, DD0739-010
6 Side 1, DD0739-010
7 Safety Information label, full energy
8 Safety Information label, low energy
9 Side 1, DD0756-010
9.1 Side 2, DD0756-010
8.1 #12 x 2.5 RHWSP
8.2 1/4-20 x 1.5 PHSLFP
9 Push arm screw kit DK2719-010
9.1 10-24 x 11/2" barrel nut
9.2 10-24 x 1" PPHMS
10 Pull arm screw kit DK2719-020
10.1 10-24 x 11/2" barrel nut
10.2 10-24 x 11/4" FHSC
11 1/4-20 x 1" FHSMSP
12 1 1/2" hole plug
13 3/8" [10 mm] hole plug
14 Communication cable DX4607 for program switch panel
15 Program switch panel DX4604
16 Manuals not shown
18 Owner’s manual
5.2 ED100 low energy accessory kit

1. Decal kit, low energy
2. Header mounting screw pack
3. Push arm screw kit
4. Pull arm screw kit
5. Header mounting screw pack
6. Mounting base screw kit
7. Communication cable
8. Program switch panel
9. Push arm screw kit
10. Pull arm screw kit
11. Hole plug kit
12. Hole plug
13. Hole plug
14. Communication cable
15. Program switch panel
16. Owner’s manual

Safety Information

1. Activate the door. Door should open at a slow smooth pace (4 or more seconds), and stop without impact.
2. Door must remain fully open for a minimum of 5 seconds before beginning to close.
3. Door should close at a slow, smooth pace (4 or more seconds), and stop without impact.
4. Inspect the floor area. It should be clean with no loose parts that might cause user to trip or fall. Keep traffic path clear.
5. Inspect door’s overall condition. The appropriate signage should be present and the hardware should be in good condition.
6. Have door inspected by an AAADM certified inspector at least annually.

AAADM American Association of Automatic Door Manufacturers

ANNUAL COMPLIANCE INSPECTION

INSPECT FOR AND COMPLIES WITH ANSI A156.19 ON:

DATE:______________
by AAADM Certified Inspector
Number:___________

DO NOT USE DOOR if it fails any of these safety checks or if it malfunctions in any way. Call a qualified automatic door service company to have door repaired or serviced.

See Owner’s manual or instructions for details on each of these and other safety items. If you need a copy of the manual, contact the manufacturer.

These minimum safety checks, in addition to those in the Owner’s Manual, should be made each day and after any loss of electrical power.

Reference Para. 5.6 for optional key switch panels.
5.3 Arm configurations

1. Drive arm
2.1 Adjustment shaft tube, 225 mm
2.2 Adjustment shaft, 225 mm
3. Shoe
4. Axle extension
5.1 Adjustment shaft tube, 450 mm
5.2 Adjustment shaft, 450 mm

1. Drive arm
2. CPD lever
3. Track

5.4 Axle extensions

Fig. 5.4.1 [20 mm] 3/4"
1. 20 mm axle extension sleeve 25447200140
2. 20 mm axle extension 25447601140
3. M8 -1.25 x 40 SHCS

Fig. 5.4.2 [30 mm] 1 1/8"
4. 30 mm axle extension sleeve 25447300140
5. 30 mm axle extension 25447701140
6. M8 -1.25 x 50 SHCS

Fig. 5.4.4 [60 mm] 2 3/8"
7. 60 mm axle extension sleeve 25447400140
8. 60 mm axle extension 25447801140
9. M8 -1.25 x 80 SHCS

Fig. 5.4.5 [90 mm] 3 9/16"
10. 90 mm axle extension sleeve 25447500140
11. 90 mm axle extension 25447901140
12. M8 -1.25 x 110 SHCS
5.5 Double door ED100/ED250 operator connection cables

1 Communication cable
   DX3485-010, 250 mm, 9 7/8”
   DX3485-020, 1030 mm, 40 1/2”
   DX3485-030, 2030 mm, 80”
2 RJ45 plug
3 115 VAC power cable
   DX3484-010, 69” long
   DX3484-020, 95” long
   DX3484-030, 134” long

5.6 Optional key switch panels

2 Key switch panel, RJ45, DX4604-21C
3 Key switch panel DX4604-11C

Wiring diagrams:
Reference Appendix C
6 Technical data

6.1 ED100/ED250 Technical data

6.1.1 Required operating conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>5 to 122 °F</td>
</tr>
<tr>
<td>Suitable for dry rooms only</td>
<td>Relative air humidity: 93% maximum, non-condensing</td>
</tr>
<tr>
<td>Power supply</td>
<td>115 Vac ±10%, 50/60 Hz 6.6 A maximum</td>
</tr>
<tr>
<td>Branch circuit protection (provided by others)</td>
<td>15 A maximum, dedicated branch circuit</td>
</tr>
<tr>
<td>Protection class</td>
<td>NEMA 1</td>
</tr>
<tr>
<td>Power wiring</td>
<td>12 AWG</td>
</tr>
<tr>
<td>Operating noise</td>
<td>Maximum 50 db(A)</td>
</tr>
</tbody>
</table>

6.1.2 General specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator dimensions (W x H x D)</td>
<td>26 3/4” x 2 3/4 x 5 3/4”</td>
</tr>
<tr>
<td>Operator weight</td>
<td>26.5 lb</td>
</tr>
<tr>
<td>Internal power supply available for external customers</td>
<td>24 Vdc ± 5%, 1.5 A</td>
</tr>
<tr>
<td>Maximum door opening angle</td>
<td>95 to 110° depending on installation type</td>
</tr>
</tbody>
</table>

6.1.3 Inputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum wire size</td>
<td>16 AWG</td>
</tr>
<tr>
<td>Connector plug screw size</td>
<td>1/16”</td>
</tr>
<tr>
<td>Activation inputs X4*</td>
<td>Interior, exterior N. O. contact</td>
</tr>
<tr>
<td>Safety sensors X5</td>
<td>Swing, approach sides</td>
</tr>
<tr>
<td>Night-bank (intercom system) X10</td>
<td>8-24 Vdc/Vac +5%</td>
</tr>
<tr>
<td>Night-bank (key switch) X1</td>
<td>d2 parameter Configure for N.O. or N.C. contact</td>
</tr>
<tr>
<td>Deactivation of drive function X6</td>
<td>d1 parameter Configure for N.O. or N.C. contact</td>
</tr>
</tbody>
</table>

6.1.4 Outputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum wire size</td>
<td>16 AWG</td>
</tr>
<tr>
<td>Connector plug screw size</td>
<td>1/16”</td>
</tr>
<tr>
<td>Door status X7</td>
<td>97,98,99</td>
</tr>
<tr>
<td>Sr parameter</td>
<td>Door closed, Door open, Door closed, locked</td>
</tr>
<tr>
<td>Electric strike delayed opening for locking mechanism Ud parameter</td>
<td>0 to 4 s</td>
</tr>
<tr>
<td>Locking device feedback X3</td>
<td>Motor lock</td>
</tr>
<tr>
<td>Wind load control, maximum Fo, Fc parameters</td>
<td>33.7 lb f 150 N</td>
</tr>
<tr>
<td>Voltage independent braking circuit</td>
<td>Chapter 20 Adjustable with potentiometer</td>
</tr>
<tr>
<td>LED status indicators Service manual</td>
<td>Green Red Yellow</td>
</tr>
<tr>
<td>Program and Exit Only switches Chapter 9</td>
<td>24 VDC power Error codes Service interval</td>
</tr>
<tr>
<td>User interface Chapter 9</td>
<td>4 button keypad, 2 digit display</td>
</tr>
<tr>
<td>Slot for dormakaba upgrade cards Chapter 31</td>
<td>Extension of range of functions</td>
</tr>
<tr>
<td>Interface update Appendix C Firmware update</td>
<td></td>
</tr>
<tr>
<td>TMP, temperature management program Service manual</td>
<td>Overload protection</td>
</tr>
<tr>
<td>IDC, initial drive control Driving phase optimization</td>
<td></td>
</tr>
<tr>
<td>Cycle counter CC parameter</td>
<td>0 to 1,000,000</td>
</tr>
<tr>
<td>Power assist function hA, hF, hS parameters</td>
<td>Drive support for manual opening of door</td>
</tr>
<tr>
<td>Push &amp; go function PG parameter</td>
<td>Auto opening of door at 4° open</td>
</tr>
</tbody>
</table>

TIPS AND RECOMMENDATIONS

- X4*: terminal board numbers, reference Chapter 10, System accessories.
- Parameters, reference Chapter 21.
6.2 Operating specifications

<table>
<thead>
<tr>
<th>6.2.1 ED100</th>
<th>6.2.2 ED250</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum power consumption</strong></td>
<td><strong>240 watt</strong></td>
</tr>
<tr>
<td><strong>Automatic closing torque, lbf-ft, Note 3</strong></td>
<td><strong>Minimum</strong> 14.8 <strong>F.E.</strong></td>
</tr>
<tr>
<td><strong>Manual closing torque, lbf-ft, Note 3</strong></td>
<td><strong>Minimum</strong> 9.6</td>
</tr>
<tr>
<td><strong>Maximum door weight</strong></td>
<td><strong>F.E.:</strong> 250 lb [113 kg], depending on specific door application.</td>
</tr>
<tr>
<td><strong>Door width</strong></td>
<td><strong>Minimum</strong> 28&quot;</td>
</tr>
<tr>
<td><strong>Maximum opening speed, %, Note 2</strong></td>
<td><strong>F.E.</strong> 50</td>
</tr>
<tr>
<td><strong>Maximum closing speed, %, Note 2</strong></td>
<td><strong>F.E.</strong> 50</td>
</tr>
<tr>
<td><strong>Axle extensions</strong></td>
<td><strong>[20 mm] 13/16&quot;</strong></td>
</tr>
<tr>
<td><strong>Reveal depth for pull arm with track</strong></td>
<td>1 3/16&quot;</td>
</tr>
<tr>
<td><strong>Maximum reveal depth for pull arm with CPD lever and track</strong></td>
<td>0 to 11 13/16&quot;</td>
</tr>
<tr>
<td><strong>Reveal depth for standard push arm</strong></td>
<td>8&quot; minimum to 19 11/16&quot;</td>
</tr>
<tr>
<td><strong>Reveal depth for deep push arm</strong></td>
<td><strong>F.E.:</strong> 320 lb [145 kg] depending on specific door application.</td>
</tr>
<tr>
<td><strong>Door width for fire protection</strong></td>
<td><strong>27 9/16&quot; to 55&quot;</strong></td>
</tr>
<tr>
<td><strong>Maximum opening speed, %</strong></td>
<td>60</td>
</tr>
<tr>
<td><strong>Maximum closing speed, %</strong></td>
<td>60</td>
</tr>
<tr>
<td><strong>Axle extensions</strong></td>
<td><strong>[20 mm] 13/16&quot;</strong></td>
</tr>
<tr>
<td><strong>Reveal depth for pull arm with track</strong></td>
<td>1 3/16&quot;</td>
</tr>
<tr>
<td><strong>Maximum reveal depth for pull arm with CPD lever and track</strong></td>
<td>0 to 11 13/16&quot;</td>
</tr>
<tr>
<td><strong>Reveal depth for standard push arm</strong></td>
<td>8&quot; minimum to 19 11/16&quot;</td>
</tr>
</tbody>
</table>

Note 1
Full energy / low energy
- F.E.: ED100 configured for full energy
- L.E.: ED100 configured for low energy

Note 2
Speeds automatically limited depending on door weight, set during learn cycle.

Note 3
In push version of slide channel with track installation type, forces are reduced by approximately 33%. 

---

Maximum power consumption 120 watt
Automatic closing torque, lbf-ft, Note 3
Minimum 14.8
Manual closing torque, lbf-ft, Note 3
Minimum 9.6
Maximum 27.3
Maximum door weight
FE: 250 lb [113 kg], depending on specific door application.
LE: 600 lb [272 kg], depending on specific door application.
Door width
Minimum 28"
Maximum 48"
7  Recommended tools and torque chart

7.1  Recommended tools

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T-handle hex key, 5 mm</td>
</tr>
<tr>
<td>2</td>
<td>Hex keys, 2.5 mm, 3 mm, 6 mm</td>
</tr>
<tr>
<td>3</td>
<td>Screwdriver, flat blade</td>
</tr>
<tr>
<td>4</td>
<td>Door pressure gauge, 0 to 35 ft-lbf</td>
</tr>
<tr>
<td>5</td>
<td>Screwdriver, Phillips, #2, #3</td>
</tr>
<tr>
<td>6</td>
<td>Torque wrench, 3 to 50 ft-lb min.</td>
</tr>
<tr>
<td>7</td>
<td>Open end wrench, 13 mm</td>
</tr>
<tr>
<td>8</td>
<td>Screwdriver, flat blade, M2 (1/16 to 3/32&quot;)</td>
</tr>
</tbody>
</table>

7.2  Standard tightening torque

<table>
<thead>
<tr>
<th>Fastener size</th>
<th>ft lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>3.7</td>
</tr>
<tr>
<td>M6</td>
<td>7</td>
</tr>
<tr>
<td>M8</td>
<td>17</td>
</tr>
<tr>
<td>M10</td>
<td>34</td>
</tr>
<tr>
<td>M12</td>
<td>58</td>
</tr>
</tbody>
</table>

7.3  Drill bits

<table>
<thead>
<tr>
<th>Fastener</th>
<th>Drill bit size</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10 wood screw</td>
<td>Hardwood 9/64&quot;</td>
</tr>
<tr>
<td></td>
<td>Softwood 1/8&quot;</td>
</tr>
<tr>
<td>#12 wood screw</td>
<td>Hardwood 5/32&quot;</td>
</tr>
<tr>
<td></td>
<td>Softwood 9/64&quot;</td>
</tr>
<tr>
<td>#14 wood screw</td>
<td>Hardwood 11/64&quot;</td>
</tr>
<tr>
<td></td>
<td>Softwood 5/32&quot;</td>
</tr>
<tr>
<td>1/4 -20 metal self tapping screw</td>
<td>7/32&quot;</td>
</tr>
<tr>
<td>10-24 barrel nut</td>
<td>5/32&quot;</td>
</tr>
</tbody>
</table>
8 Operational mode overview

8.1 ED100/ED250 door closer modes

8.1.1 Automatic mode.
Door closer mode parameter \( h_d = 0 \).
Designed for automatic access following pulse generation by a motion detector or pushbutton.

8.1.2 Manual mode.
Door closer mode parameter \( h_d = 1 \).
Designed for doors primarily accessed manually.

8.1.3 Power assist.
- Available only in door closer mode \( h_d = 1 \), manual opening. Drive support is automatically adjusted to operator size.
- Parameter \( h_A \) sets door activation angle for power assist function. Once angle reached, drive support provides easier manual opening of the door.
- Parameter \( h_F \), power assist function. Parameter values greater than 0 provides additional opening force.
- Parameter \( h_S \), power assist function support for door in closed position.

8.2 Low energy product

8.2.1 ANSI/BHMA 156.19.
ED100 operator is configured to meet requirements of a low energy application per ANSI/BHMA A156.19, U.S. Standard for Power Assist and Low Energy Power Operated Doors.
ED100 operator can be configured for full energy operation using a full energy upgrade card.

8.2.2 Low energy power operated door
A door with a power mechanism that opens the door upon receipt of a knowing act activating signal, does not generate more kinetic energy than specified in ANSI 156.19, and is closed by a power mechanism or by other means.
Required system safety, as a low energy application, is achieved utilizing the following design factors:
- Reduced dynamic door panel contact forces
- Reduced static door panel contact forces
- Low driving speeds
- Force limitation

TIPS AND RECOMMENDATIONS
Parameter descriptions can be found in Chapter 21; Parameters.
# User interface

## 9.1 Overview

### Operator user interfaces.
1. 4 button keypad and 2 digit display.
   - 4 button keypad; to select, input and adjust door parameter values.
   - 2 digit display; parameter values, error and information codes.

## 9.2 4 button keypad and display

### Right button
1. Access parameter menu, press button > 3 seconds.
2. Edit selected parameter.
3. Save changed value.

### Left button
1. < 3 s; Quit
2. < 3 s; Reset

### Both buttons together
1. Acknowledge errors, press both buttons < 3 s.
2. Reset, press both buttons > 3 s.

### Up button
1. Scroll through parameters and error messages.
2. Increase parameter value.

### Down button
1. Scroll through parameters and error messages.
2. Reduce parameter value.
3. Opening pulse, press button < 3 s.
4. Learning cycle, press button > 3 s.
5. Reset with factory setting, press button > 8 s (program switches off).
6. Identify operator orientation for display.
9.3 Program switch panel, optional key switch panels

**Fig. 9.3.1 Program switch panel**

1. Program switch panel
2. Program switch, 3 position
3. Exit Only switch, 2 position
4. Comm port for dormakaba handheld

**Fig. 9.3.2 Optional key switch panels**

2. Key switch panel, RJ45, DX4604-21C
3. Key switch panel DX4604-11C

**9.3.1 Program switch control modes.**
- **Auto**, door opens automatically when one of the activators is actuated or triggered and closes on expiration of adjustable hold open time with no activators or actuators triggered.
- **Close**, door closes automatically, or remains closed until program switch position changed.
- **Open**, door opens automatically and remains open until program switch position changed.

**9.3.2 Exit only switch modes.**
- **Off**, Interior and exterior activation sensors both active.
- **On**, exterior activation sensor disabled when door fully closed. Only interior activation sensor will enable door opening.

**9.4 Operator status LEDs**

**Fig. 9.4.1 Operator status LEDs**

1. Red LED
2. Yellow LED
3. Green LED
4. Power switch

**9.4.1 Operator status LEDs.**
Header cover must be opened to view LEDs.

1. **Red LED**
   - Blinking codes are used to indicate "ln_" information (system status or operating conditions) or certain error codes "E__".

2. **Yellow LED**
   - Maintenance interval indicator. When illuminated, an indication the operator system has to be serviced.

3. **Green LED**
   - On, internal 24 VDC power is On.
   - Off, internal 24 VDC power is Off.

**TIPS AND RECOMMENDATIONS**

Details on LED status codes and maintenance intervals can be found in Appendix B, Troubleshooting.
10 System accessories

10.1 System accessory electrical connections.

10.1.1 Electrical connections, single door

Fig. 10.1.1 Electrical connections, single door

1. External program switch, mechanical
2. External program switch, electronic
3. Key switch
4. Pushbutton, night / bank
5. Pushbutton, interior
6. Pushbutton, exterior
7. Door locking device
8. Manual release switch
9. ED100/ED250 header

10.2 System accessories

10.2.1 Overview
ED100 / ED250 operators are normally used with system accessories available from dormakaba or other manufacturers.

10.2.2 Accessory electrical installation.
Electrical interfaces from system accessories used with operator must be planned for. This includes routing of wiring from accessories to operator.

10.2.3 System accessories, other manufacturers.
dormakaba cannot guarantee compatibility for other manufacturer’s accessories. If any of these accessories are used despite this caution, the operator’s full range of functions may be unavailable, or the accessories may not function properly.

10.2.4 Power for accessories.
24 Vdc, 1.5 A (36 watts) is available from the operator for external consumers. This supply has overcurrent protection. If additional power is required, an external power supply must be used.

10.2.5 Miscellaneous accessories.
1. Door status display, red, green.

10.2.6 Activators
Typical activators:
1. Motion detectors
2. Infrared safety sensors
3. Pushbuttons, key switches
4. Radio systems
5. Smoke detectors
6. Access control systems
7. Telephone systems
8. Intercoms

TIPS AND RECOMMENDATIONS
Refer to Paragraph 6, Technical data for electrical interface requirements.

10.2.7 Locking devices.
Typical locking devices:
1. Electric strike plates
2. Electromagnetic locks
3. Electric locks
To insure that operator and locking device work safely when connected together, locking device must comply with following:
1. Operating voltage, power supply from operator, 24 VDC, ±5 %.
2. Operating voltage, external power supply, 48 V DC/AC maximum.
3. Locking device relay contact, maximum load, 1 A.
4. Electric strike plate duty factor, 30% minimum.
5. Motor lock duty factor, 100%.
10.3 ED100/ED250 terminal board interfaces.

1. Green LED (Para. 9.4)
2. Yellow LED (Para. 9.4)
3. Red LED (Para. 9.4)
4. Key (red insert) location in socket: Assigned plug has tab in some location broken off.
5. Jumpers, factory installed at following terminals:
   - 4 and 4a
   - 15 and 3*
   - 11 and 3*
   - Remove jumpers if safety sensors installed.
6. DCW upgrade card plug included in card scope of delivery.
7. Fire protection upgrade card plug included in card scope of delivery.

![Terminal board electrical connections](image)

**WARNING**

ED100/ED250 115 Vac branch circuit disconnect must be Off while making accessory connections!

**TIPS AND RECOMMENDATIONS**

- Use documentation provided with each device for electrical installation.
- Do not connect system accessories to board until operator has been commissioned and learning cycle performed (Chapter 22).

Note 1: Terminals 3 and 43 are also used for swing side overhead presence sensor input when Parameter ST is set to 7 or 8. Reference Appendix A, Driving parameter detail.
10 ED100/ED250 door signage

10.1 Full energy operator

10.1.1 Overview
Signage and warnings are specified in ANSI /BHMA A156.10, American National Standard for Power Operated Pedestrian Doors, paragraph 11.

10.1.2 Door, one way traffic.
1. Arrow and AUTOMATIC DOOR, one side of decal (Fig. 10.1.1).
   - Shall be visible from approach side of a swinging door, mounted on door at a height of 50" ± 12" from floor to centerline of sign.
2. DO NOT ENTER and AUTOMATIC DOOR, one side of decal (or separate decal for solid doors - DD0739-020).
   - Shall be visible from non-approach side of door that swings towards pedestrians attempting to travel in wrong direction.

10.1.3 Door, two way traffic.
1. Arrow and AUTOMATIC DOOR, one side of decal (Fig. 10.1.2).
   - Shall be visible from approach side of a swinging door, mounted on door at a height of 50" ± 12" from floor to centerline of sign.
2. CAUTION AUTOMATIC DOOR, one side of decal.
   - Swinging doors serving both egress and ingress shall have a "CAUTION AUTOMATIC DOOR" sign visible from swing side of door.
   - Sign shall be mounted on door at a height of 50 ± 12" from floor to centerline of sign.

10.2 Low energy operator

10.2.1 Overview
Signage and warnings are specified in ANSI /BHMA A156.19, American National Standard for Power Assist and Low Energy Power Operated Doors.

10.2.2 All low energy doors.
1. AUTOMATIC CAUTION DOOR decal.
   - All low energy doors shall be marked with signage visible from both side of door with the words "AUTOMATIC CAUTION DOOR".
   - Signs shall be mounted 50" ± 12" from floor to centerline of sign.

10.2.3 Knowing act switch used to initiate door operation.
1. ACTIVATE SWITCH TO OPERATE decal.
   - When a knowing act device is used to initiate operation of door operator, door shall be provided with sign on each side of door where switch is operated with message "ACTIVATE SWITCH TO OPERATE".

10.2.4 Push/Pull used to initiate door operation.
1. PUSH TO OPERATE, PULL TO OPERATE decals.
   - When push/pull is used to initiate operation of door operator, doors shall be provided with the message "PUSH TO OPERATE" on push side of door and "PULL TO OPERATE" on pull side of door.
11.3 Door signage, full energy single swing door

Fig. 11.3.1 One decal, one way traffic
Approach
Non-approach

Fig. 11.3.2 One decal, two way traffic
Non-swinger side
Swinger side

11.4 Door signage, low energy single swing doors, initiation of door operation

Fig. 11.4.1 Knowing act device

Fig. 11.4.2 Push/Pull
Push To Operate
Pull To Operate

1 Activate Switch to
Operate DD0758-010

2 Push to Operate
DD0762-010

3 Pull to Operate
DD0762-020
11.5 Door signage, full energy double swing doors

Fig. 11.5.1 One way traffic, approach side

Fig. 11.5.2 One way traffic, non-approach side

Fig. 11.5.3 Two way traffic, non-swing side

Fig. 11.5.4 Two way traffic, swing side

Fig. 11.5.5 One way traffic, knowing act, approach side

Fig. 11.5.6 One way traffic, knowing act, non-approach side
Fig. 11.5.7  Double egress, RH, one way traffic, interior
Swing side  Approach side

Fig. 11.5.8  Double egress, RH, one way traffic, exterior
Swing side  Approach side

Fig. 11.5.9  Double egress, LH, two way traffic, interior
Swing side  Approach side

Fig. 11.5.10 Double egress, LH, two way traffic, exterior
Swing side  Approach side
11.6 Door signage, low energy double swing doors

Fig. 11.6.1 Knowing act, SA header side

Fig. 11.6.2 Knowing act, hinge side

Fig. 11.6.3 Push/Pull, push to operate

Fig. 11.6.4 Push/Pull, pull to operate
11.7 Safety label, automatic swing doors

11.7.1 Automatic swinging door safety information label.
This AAADM label outlines safety checks that should be performed daily on automatic swinging door controlled by an ED100 or ED250 operator configured for full energy mode.

11.7.2 Safety information label location.
Place label in a protected, visible location on door frame, near program switch panel if possible.

11.7.3 Annual compliance section of label.
This section of label is only completed on automatic swing doors that comply with ANSI/BHMA A156.19 standard and pass inspection by an AAADM certified dormakaba USA, Inc. technician.

11.7.4 Additional annual compliance inspection labels.
Place additional labels over annual compliance inspection section of safety information label.

11.8 Safety label, low energy swing doors

11.8.1 Low energy swinging door safety information label.
This AAADM label outlines safety checks that should be performed daily on low energy swinging door controlled by an ED100 or ED250 operator configured for the low energy mode.

11.8.2 Safety information label location.
Place label in a protected, visible location on door frame, near program switch panel if possible.

11.8.3 Annual compliance section of label.
This section of label is only completed on low energy swing doors that comply with ANSI/BHMA A156.19 standard and pass inspection by an AAADM certified dormakaba USA, Inc. technician.

11.8.4 Additional annual compliance inspection labels.
Place additional labels over annual compliance inspection section of safety information label.
12 ED100/ED250 SA arm configurations

12.1 Single swing door right hand arm configurations

Fig. 12.1.1 RH pull

1 Pull arm
2 Track

Fig. 12.1.2 RH deep pull

2 Track
3 Pull arm with CPD lever

Fig. 12.1.3 RH pull as a push

2 Track
6 Pull arm with CPD lever as a push

Fig. 12.1.4 RH push

4 Push arm
7 Door stop (optional)
### Fig. 12.1.5 RH deep push

5 Deep push arm  
7 Door stop (optional)

---

### 12.2 Single swing door left hand arm configurations

#### Fig. 12.2.1 LH pull

1 Pull arm  
2 Track

#### Fig. 12.2.2 LH deep pull

2 Track  
3 Pull arm with CPD lever

#### Fig. 12.2.3 LH pull as a push

2 Track  
6 Pull arm as a push with CPD lever
12.3 Single swing door center hung door arm configurations

Fig. 12.3.1 Center hung door, RH push arm

Fig. 12.3.2 Center hung door, LH push arm

4 Push arm
7 Door stop (optional)
8 Bottom pivot assembly (by others)
Chapter 12

Fig. 12.3.3  Center hung door, RH pull arm

Fig. 12.3.4  Center hung door, pull as push LH

Fig. 12.3.5  Center hung door, LH pull arm

Fig. 12.3.6  Center hung door, pull as push RH

2 Track
3 Pull arm with CPD lever
8 Bottom pivot assembly (by others)
9 Pull arm with CPD lever as push
12.4 Double door arm configurations

**Fig. 12.4.1 Double door pull**

1. Pull arm
2. Track

**Fig. 12.4.2 Double door deep pull**

2. Track
3. Pull arm with CPD lever

**Fig. 12.4.3 Double door pull as a push**

2. Track
6. Pull arm with CPD lever as a push

**Fig. 12.4.4 Double door push**

4. Push arm
8. Door stop (optional)

**Fig. 12.4.5 Double door deep push**

5. Deep push arm
8. Door stop (optional)
12.5 Double egress arm configurations

Fig. 12.5.1 Double egress LH

2 Track
3 Pull arm with CPD lever
4 Push arm

Fig. 12.5.2 Double egress RH

2 Track
3 Pull arm with CPD lever
4 Push arm
12.6 Double door center hung arm configurations

Fig. 12.6.1 Center hung door, double door pull

2 Track
3 Pull arm with CPD lever
8 Bottom pivot assembly (by others)
10 Top pivot assembly (by others) not shown

Fig. 12.6.2 Center hung door, double door push

4 Push arm
7 Door stop (optional)
8 Bottom pivot assembly (by others)
10 Top pivot assembly (by others) not shown

Fig. 12.6.3 Center hung door, double door pull as push

2 Track
6 Pull arm with CPD lever as a push
8 Bottom pivot assembly (by others)
10 Top pivot assembly (by others) not shown
# 13 Header installation

## 13.1 Installation preparation

**NOTICE**
Installation steps listed in Chapter 13 are a recommendation. Structural, local conditions, available tools, or other factors or circumstances may require modification to these steps.

**WARNING**
Review safety information in Chapter 3!

**WARNING**
ED100 / ED250 header assembly should be installed by trained and knowledgeable installers experienced in installation and commissioning of automatic door closers. The installer should be familiar with all applicable local and national building code requirements, and with requirements of current ANSI/BHMA standards:
- A156.10, Power Operated Pedestrian Doors
- A156.19, Power Assist and Low Energy Power Operated Doors

**WARNING**
Operator 115 Vac branch circuit disconnect must be OFF at start of installation!

**NOTICE**
Installation templates: Refer to paragraphs starting with 13.7.

### 13.1.1 dormakaba USA, Inc. hardware.
Locate shipping containers for header assembly and ED100/ED250 operator.

### 13.1.2 Door frame and door.
1. Insure area around door frame, adjacent walls and door is readily accessible and free of objects and debris.

### 13.1.3 Accessories
1. Verify accessories planned for or in place for the door. Chapter 10, accessories, list typical accessory types for ED100 /ED250 operators.

#### TIPS AND RECOMMENDATIONS
Accessory wiring to header should be planned for prior to header installation.

### 13.1.4 Handing of door.
1. Left hand in, push
2. Right hand in, push
3. Right hand out, pull (Left hand reverse)
4. Left hand out, pull (Right hand reverse)

#### TIPS AND RECOMMENDATIONS
Handing of door, with back to door frame.

## 13.2 Unpack header assembly

1. **ED100/ED250 4" x 6" single door header**
2. **Header cover**
3. **Cover screws**
4. **Program switch panel mounting surface**

![Fig. 13.2.1 Single door header](image)

### 13.2.1 Unpack contents from header.
1. Remove header assembly from package.
2. Open cover secured by two screws (three for double door header) and remove cover.
3. Remove contents from header.

### 13.2.2 Single door header contents.
- Accessory installation kit, either low energy or full energy (Chapter 5).
- Program switch panel assembly (Chapter 5).
- Box containing pull arm or push arm kit.

### 13.2.3 Double door header content additions to Para. 13.2.2.
- Accessory installation kit, either low energy or full energy.
- Box containing pull arm or push arm kit.
- 115 Vac power connecting cable (Para. 5.5).
- Communication cable (Para. 5.5).
13.3 Remove mounting plate from ED150 / ED250 operator

13.3.1 Remove 115 Vac plug from receptacle.
1. Remove 115 Vac plug (5) from its receptacle (6).

13.3.2 Remove mounting plate from operator.
1. Loosen all eight captive ED100 / ED250 M6 socket head cap screws (SHCS) using a 5 mm hex T-handle.

**TIPS AND RECOMMENDATIONS**

Insure all eight fasteners are free of the mounting plate.

2. Remove operator from mounting plate.

**TIPS AND RECOMMENDATIONS**

Guide pin resistance may require screwdriver to start operator removal from end of mounting plate (Fig. 13.3.3).
13.4 Single header installation

13.4.1 Single header installation preparation.
1. Door frame installed.
2. Confirm header width.
   • Header width equals door frame width plus three inches.
3. Confirm handing of door with header.
4. Determine type of door frame or header mounting surface.
5. Determine type and location of studs, or wall material, above door frame.
6. Mark stud locations on wall above door frame.
7. Select header mounting screws (Chapter 5, Accessory kits).

13.4.2 Drill holes in header.
1. Drill four 1/4" holes in header bottom slide channel, two on header axle side and two on header door strike side.
2. Drill two holes in header on door strike side for 115 Vac and low voltage wiring.

13.4.3 Install program switch panel.
1. Install program switch panel in header (Para. 13.5).

13.4.4 Mount header to door frame.
1. Using applicable installation template for reference, locate header on door frame.
2. Drill holes into door frame using header bottom slide channel 1/4" hole locations.
3. Fasten header to wall.
   • Use shims as required to make header square to door frame.

**CAUTION**
Header must be square to door frame!

4. Drill 1/4" holes in header top V-groove on centerline of marked stud locations and secure header to wall with selected screw.

**CAUTION**
After drilling holes, clean all metal debris from header!
13.5 Install program switch panel in header

**Fig. 13.5.1 Program switch panel installed in header**

1. Fasten program switch panel to header door strike side using two 1/8-32 x 1/4 FHMS supplied with program switch panel assembly.

**TIPS AND RECOMMENDATIONS**

Lack of adequate space between side of header and door frame may require program switch panel to be installed at another location on header or door frame.

- Program switch panel cable length is 36”.
  
  Refer to Para. 14.7.
13.6 Double header installation

13.6.1 Double header installation preparation.
1. Door frame installed.
2. Confirm header width.
   - Header width equals door frame width plus three inches.
3. Determine type and location of studs, or wall material, above door frame.
4. Mark stud locations on wall above door frame.
5. Select header mounting screws (Chapter 5, Accessory kits).

Fig. 13.6.2 Double header mounting holes, conduit holes

13.6.2 Drill holes in header.
1. Drill six 1/4" holes in header bottom slide channel, two on each side and two in middle of header.
2. Drill two holes in middle of header for 115 VAC and low voltage wiring.

**TIPS AND RECOMMENDATIONS**
If 115 Vac wiring is located on a door swing side, drill hole for wiring on that side.

13.6.3 Install program switch panel.
1. Install program switch panel in header (Para. 13.5) on active door side.

13.6.4 Mount header to door frame.
1. Using applicable installation template for reference, locate header on door frame.

**CAUTION**
Header must be plumb and level to door frame!

2. Drill holes into door frame using header bottom slide channel 1/4" hole locations.
3. Fasten header to wall.
   - Use shims as required to make header square to door frame.

**CAUTION**
After drilling holes, clean all metal debris from header!
Fig. 13.6.3  Header located on door frame/wall

1  Screws in bottom slide channel

2  Screws in top V-groove (located on stud centerlines)

3  Low voltage and 115 VAC wiring (may be in different location)

4  Program switch panel (may be in different location)
13.7 SA narrow header (4 x 6") – push arm template

Fig. 13.7.1 Standard push arm template

**13.8.1 Axle distance “A”**
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>●</td>
<td>●</td>
<td>7/16”</td>
</tr>
<tr>
<td>60 mm</td>
<td>●</td>
<td>●</td>
<td>1 9/16”</td>
</tr>
<tr>
<td>90 mm</td>
<td>●</td>
<td></td>
<td>2 3/4”</td>
</tr>
</tbody>
</table>
13.8 SA narrow header (4 x 6") – deep push arm installation template

Fig. 13.8.1 Deep push arm template

13.9.1 Axle distance "A"
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>●</td>
<td>●</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>60 mm</td>
<td>●</td>
<td>●</td>
<td>1 9/16&quot;</td>
</tr>
<tr>
<td>90 mm</td>
<td>●</td>
<td></td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>
13.9 SA narrow header (4 x 6") – pull arm template

Fig. 13.9.1  Deep pull arm template

13.9.1 Axle distance "A"
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>●</td>
<td>●</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>60 mm</td>
<td>●</td>
<td>●</td>
<td>1 9/16&quot;</td>
</tr>
<tr>
<td>90 mm</td>
<td>--</td>
<td>●</td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>
13.10  SA narrow header (4 x 6") – deep pull arm template

Fig. 13.10.1  Deep pull arm template

13.10.1  Axle distance "A"
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>●</td>
<td>●</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>60 mm</td>
<td>●</td>
<td>●</td>
<td>1 9/16&quot;</td>
</tr>
<tr>
<td>90 mm</td>
<td>--</td>
<td>●</td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>
13.11 SA narrow header (4 x 6") – center hung door, push arm template

Fig. 13.11.1 Push arm template

13.11.1 Axle distance "A"
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>●</td>
<td>●</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>●</td>
<td>●</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>60 mm</td>
<td>●</td>
<td>●</td>
<td>1 9/16&quot;</td>
</tr>
<tr>
<td>90 mm</td>
<td>--</td>
<td>●</td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>
13.12 Offset pivot door, surface applied header, push arm template

Fig. 13.12.1 Offset pivot door, surface applied header, push arm template

13.12.1 Axle distance "A"
Bottom of header to bottom edge of door frame.

<table>
<thead>
<tr>
<th>Axle extension</th>
<th>ED100</th>
<th>ED250</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mm</td>
<td>⬤</td>
<td>⬤</td>
<td>0</td>
</tr>
<tr>
<td>30 mm</td>
<td>⬤</td>
<td>⬤</td>
<td>7/16&quot;</td>
</tr>
<tr>
<td>60 mm</td>
<td>⬤</td>
<td>⬤</td>
<td>1 9/16&quot;</td>
</tr>
<tr>
<td>90 mm</td>
<td>--</td>
<td>⬤</td>
<td>2 3/4&quot;</td>
</tr>
</tbody>
</table>
14 ED100/ED250 operator installation

14.1 Single header mounting plate installation

**Fig. 14.1.1** Header with header tracks

1. Slide header tracks (7) to side of header with operator axle hole.

**Fig. 14.1.2** Mounting plate

1. Place mounting plate on header tracks, aligning holes in header track with 1/4 x 20 UNC mounting plate holes.
2. Thread eight 1/4-20 x FSMSP into mounting plate hole locations (Fig. 14.1.3). Do not tighten screws.

**Fig. 14.1.3** Header with mounting plate installed

1. Slide mounting plate to dimension shown between inside edge of jamb bracket and edge of mounting plate (Fig. 14.1.4).
2. Tighten all eight screws using No. 3 Phillips screwdriver. Recheck dimension in step 1.

**Fig. 14.1.4** Mounting plate location in header

1. **Position header tracks.**
   1. Slide header tracks (7) to side of header with operator axle hole.

2. **Fasten mounting plate to header tracks.**
   1. Place mounting plate on header tracks, aligning holes in header track with 1/4 x 20 UNC mounting plate holes.
   2. Thread eight 1/4-20 x FSMSP into mounting plate hole locations (Fig. 14.1.3). Do not tighten screws.

3. **Fix location of mounting plate in and secure to header.**
   1. Slide mounting plate to dimension shown between inside edge of jamb bracket and edge of mounting plate (Fig. 14.1.4).
   2. Tighten all eight screws using No. 3 Phillips screwdriver. Recheck dimension in step 1.

4. **Install third guide pin.**
   1. Install third guide pin (6).
14.2 Double header mounting plate installation

Fig. 14.2.1 Double header with header tracks

3 Axle centerline
4 Header track
12 Program switch panel

Fig. 14.2.2 Double header with mounting plates installed

5 Guide pin
6 Third guide pin

Fig. 14.2.3 115 Vac power cable
8 115 Vac power cable
DX3484-010, 5.8 ft.
DX3484-020, 7.9 ft.
DX3484-030, 11 ft.

Fig. 14.2.4 Header and mounting plate wiring channels
1 Mounting plate channel
5 115 Vac terminal block
10 Header center channel

14.2.1 Install mounting plates in double header.
1. Refer to Para. 14.1, install mounting plates in header.

14.2.2 Install 115 Vac power cable.
1. Route 115 Vac power cable through both mounting plate channels.

TIPS AND RECOMMENDATIONS
Cable will connect 115 Vac between the two operators (Ref. Para. 14.6).

14.2.3 Install third guide pin.
1. Install third guide pin in each mounting plate (Fig. 14.2.2).

TIPS AND RECOMMENDATIONS
Use header center channel for low voltage wiring.
14.3 Customer 115 Vac connection to mounting plate terminal block

**fig. 14.3.1 Mounting plate power connection side**

1. 115 Vac terminal block
2. Ground terminal
3. Terminal block screw torque label
4. Preferred 115 Vac wiring entry point

**fig. 14.3.2 115 Vac connections**

1. 115 Vac terminal block
2. Ground terminal
3. Mains terminal torque and wire label
4. M3.5 screw
5. 115 Vac plug to operator
6. L 115 Vac
7. N Neutral
8. G Ground

**fig. 14.3.3 Mains terminal torque and wire label**

- **WARNING**
  Routing and connection of 115 Vac wiring to ED100 / ED250 must be performed by a qualified person!

- **WARNING**
  115 Vac branch circuit disconnect or circuit breaker must be OFF!

1. Route wiring into header, use appropriate fitting to secure conduit or wiring to header, and route wiring to 115 Vac terminal block.

2. Terminate 115 Vac wiring at terminal block.

- **CAUTION**
  Use copper conductors only!

- **TIPS AND RECOMMENDATIONS**
  - Maximum wire strip length, 1/4”.
  - Tighten terminal screws to torque referenced in Fig. 14.3.3.
  - Leave service loop in wiring at terminal block for maintenance.

3. Terminate ground wire at ground terminal. Remove nut and washer on ground terminal, bend ground wire around terminal, replace washer and nut and tighten. Leave service loop in ground wire.
  - Use 5/16" [8 mm] socket for nut.

**fig. 14.3.4 Double door header 115 VAC connection**

1. 115 Vac terminal block
2. Ground stud

**NOTICE**

A 115 Vac power cable connects the two operators together (Para. 14.6).

14.4 Double door header 115 Vac mounting plate connection

**fig. 14.4.1 Double door header 115 Vac connection**

1. 115 Vac terminal block
2. Ground stud

**WARNING**

Routing and connection of 115 Vac wiring to ED100 / ED250 must be performed by a qualified person!
14.4 Remove protective film strips from operator

1. Remove two protective film strips from operator heat conductive pads.

**CAUTION**
Heat conductive pads must remain clean once protective film strips are removed!
14.5 Install ED100/ED250 operator on mounting plate in header

![Fig. 14.5.1 Header with mounting plate installed](image1)

![Fig. 14.5.2 Installing operator on mounting plate](image2)

![Fig. 14.5.3 115 Vac plug connection](image3)

![Fig. 14.5.4 Operator and mounting plate assembly](image4)

1.1 Install operator on mounting plate.

**CAUTION**

Insure protective film strips have been removed from heat conductive pads (Para. 14.4).

1. Place operator over the three mounting plate guide pins.
2. Move operator in toward mounting plate, guiding all wiring into operator housing.
3. Once operator is placed flush against mounting plate, use a 5 mm T handle hex key to thread eight M6 SHCS into mounting plate.
4. Tighten all eight SHCS.
5. Insert 115 Vac mounting plate plug into operator 115 Vac socket.

**NOTICE**

Customer 115 Vac wiring (Para. 14.3) not shown for clarity.
14.6 Double header ED100/ED250 operator installation

![Double header with operators installed](image1)

**Fig. 14.6.1** Double header with operators installed

**Fig. 14.6.2** 115 Vac power cable installed on operator with 115 Vac customer connection

**Fig. 14.6.3** 115 Vac power cable installed on second operator

**Fig. 14.6.4** 115 Vac power cable

---

**14.6.1 Install operators on mounting plates.**

1. Refer to Para. 14.5 for installation of ED100 / ED250 operators.

**14.6.2 Connect 115 Vac power cable to both operators.**

Refer to Para. 14.2.1 for installation of power cable in mounting plates.

1. Insert power cable 115 Vac plug into socket on power switch board.
   - Remove ground stud nut (5/16" [8 mm] socket) and washer.
2. Insert power cable ground wire ring terminal on ground stud.
3. Replace washer, install ground stud nut and tighten.

---

**TIPS AND RECOMMENDATIONS**

Customer 115 Vac power connection may be on opposite operator.
14.7 Connect cables to ED100/ED250 operator

1. Program switch panel
2. Header for program switch cable
3. RJ45 connector, 36" long
4. COM1 service connector
5. User interface legend plate
6. RJ45 comm cable, 36" long, DX4607

14.8 Double header operator legend plate

1. Program switch panel
2. Header for program switch cable
3. COM1 connector
4. User interface legend plate
5. RJ45 comm cable, 36" long, DX4607

**14.7.1 Connect program switch cable to operator.**
1. Carefully insert cable connector into header connector on operator.

**CAUTION**
Connector inserts vertically into header connector.

**14.7.2 Install RJ45 program switch comm cable.**
1. Connect one end of cable to program switch panel RJ45 connector.
2. Connect other end of cable to COM 1 service connector on operator.

**14.8.1 Reverse legend plate orientation.**
1. Remove and reverse orientation of legend plate on RH operator so that letters face upward.
2. Reinstall legend plate.
15 Arm with track mount installation

15.1 Arm with track installation

NOTICE
Reference Para. 12.2 (single door) and Para. 12.3 (double door) installation templates.

15.2 Splined arm and track assemblies

Fig. 15.2.1 Splined arm with CPD lever and track assembly, LH

1 Drive arm
2 CPD
3 Track

Fig. 15.2.2 Splined arm with CPD lever and track assembly, RH

1 Drive arm
2 CPD
3 Track

Fig. 15.2.3 Splined arm and track assembly

15.3 Splined arm and track hardware

Fig. 15.3.1 Track assembly

1 Track
2 End cap
3 Fixing piece
3.1 M5 x 15 Phillips FHS
4 Pull arm
5 20 mm axle extension
5.1 Splined
6 CPD lever
6.1 M6 x 10 SHCS
7 Slotted spring pin
8 Pull arm cap
9 Slide shoe
10 Pivot pin
11 Retaining ring
12 Bumper
13 M8 x 1.25 x 40 SHCS
14 Wood screws
15 Machine screws
16 Bumper stop
17 M5 x 13 FHMS cross recessed
15.4 Slide shoe assembly

**Fig. 15.4.1 Slide shoe and pivot pin**

- **9** Slide shoe
- **10** Pivot pin
- **11** Retaining ring

### 15.4.1 Install pivot pin into slide shoe.

1. Insert pivot pin into slide shoe.
2. Install spring clip into pivot pin slot.

15.5 Install hardware into track

**Fig. 15.5.1 RH track assembly**

- **1** Track
- **3** Fixing piece
- **9** Slide shoe
- **12** Bumper
- **16** Bumper stop
- **17** M5 x 13 FHMS cross recessed

**Fig. 15.5.2 LH track assembly**

- **1** Track
- **3** Fixing piece
- **9** Slide shoe
- **12** Bumper
- **16** Bumper stop
- **17** M5 x 13 FHMS cross recessed

### 15.5.1 Track assembly.

**CAUTION**

Assemble track hardware based on RH or LH installation.

1. Remove both end caps (2) and one fixing piece (3) from track.
2. Slide bumper stop (16), bumper (12) and slide shoe assembly (9) into track.
   - Do not tighten bumper stop M5 screw (17).
3. Secure fixing piece to end of track with M5 x 15 screw (3.1).
   - Use No. 2 Phillips, do not over-tighten.
15.5 Fasten track assembly to door

15.5.1 Mount track assembly on door.

**CAUTION**

**Insure track hardware is assembled for hand of door.**

1. Use applicable template (Chapter 13) to locate two track mounting holes on door.

**CAUTION**

**Fastener type:**

**Fig. 15.5.1 shows wood screws.**

- Select fastener based on door material.

2. Drill holes in door, hole size based on selected screw or fastener (Ref. Chapter 5, Accessory kits).

3. Mount track to door; thread fasteners through fixing pieces (2) into door and tighten.

**CAUTION**

Check track for level when tightening fasteners.
15.6 Arm assembly

1 Arm

15.7 Arm assembly with CPD lever

6.1 M6 x 10 SHCS
11 Slotted spring pin

6 CPD lever
7 Slotted spring pin

CAUTION
Assemble arm and CPD lever based on RH or LH pull or push.

1. Press CPD lever slotted spring pins into corresponding holes in arm.
2. Secure CPD lever to arm with M6 x 10 SHCS.

6 CPD lever
6.1 M6 x 10 SHCS
7 Slotted spring pin
16 Arm

Fig. 15.6.1 Arm assembly

Fig. 15.7.1 Slotted spring pin
Fig. 15.7.2 M6 x 10 SHCS for CPD

Fig. 15.7.3 CPD lever and slotted spring pins

Fig. 15.7.4 Arm assembly, RH pull, LH push

Fig. 15.7.5 Arm assembly, LH pull, RH push
15.8 Mount drive arm to operator

Fig. 15.8.1 Mount drive arm to operator at 12 degrees

Fig. 15.8.2 Rotate drive arm 10 degrees in door opening direction

Fig. 15.8.3 Remove drive arm

Fig. 15.8.4 Install drive arm and axle extension

15.8.1 Mount drive arm to operator.

**WARNING**

Use caution when working in proximity of door and drive arm!

**CAUTION**

ED operator spindle zero position.

In order to mount the drive arm in the correct position, the spindle must be brought to the zero position.

1. Set ED operator spring preload to approximately ten clockwise rotations.
   - Spindle rotates to the zero position.

**TIPS AND RECOMMENDATIONS**

Reference Chapter 19, Operator spring tension.

2. Turn spring preload back to zero rotations (fully CCW).

3. Push drive arm onto spindle at an angle of approximately 12° to ED operator (Fig. 15.8.1).

4. Rotate drive arm approximately 10° in door’s opening direction (Fig. 15.8.2).

5. Remove drive arm from spindle (Fig. 15.8.3)

6. Position drive arm one tooth in the door’s closing direction (Fig. 15.8.4)

7. Push drive arm and axle extension onto spindle.

8. Thread M8 x ___ mm SHCS into spindle and tighten M8 SHCS.

**CAUTION**

Use torque wrench with hex key socket to tighten M8 screw to 17 ft-lb [23 Nm].

Fig. 15.8.5 Torque wrench, 5 mm hex key
15.8.2 Attach drive arm to pivot pin.
1. Use 6 mm T handle hex key to rotate pivot pin M8 socket head into drive arm and tighten.

**CAUTION**

Use torque wrench with hex key socket to tighten M8 screw to 5.9 - 7.4 ft-lb [8 - 10 Nm].

15.8.3 Set operator spring tension.

**CAUTION**

A minimum of ten spring tension revolutions are required to operate system.
- Reference Chapter 19 for spring tension adjustment procedure.
16 Push arm installation

16.1 Push arm installation templates

NOTICE
Reference Chapter 13 for installation templates.

Fig. 16.1.1 Push arm assemblies

1 Standard push arm, reveal depths
  0 - 8” maximum
2 Deep push arm reveal depths
  8 - 12” maximum

16.2 Hardware

Fig. 16.2.1 Push arm assembly, 8 7/8” [225]

1 Splined drive arm
2 Socket
4 Adjustment arm
   11 1/4” [285]
5 Adjustment arm tube
   12 1/4” [311]
6 Shoe
7 M6 x 10 mm flanged button head screw
8 Ball head
9 Shoe screw cover
10 M8 x 1.25 x 40 mm SHCS
11 Cap

Fig. 16.2.2 Push arm assembly, 19 11/16” [500]

1 Splined drive arm
2 Socket
6 Shoe
7 M6 x 10 mm flanged button head screw
8 Ball head
9 Adjustment arm,
   17 3/4” [450]
10 Adjustment arm tube, 17 3/4” [450]
11 Shoe screw cover
12 M8 x 1.25 x 40 mm SHCS
13 Cap
16.3 Install push arm assembly

16.3.1 Mount drive arm to operator.

**WARNING**
Use caution when working in proximity of door and push arm.

**CAUTION**
ED operator axle zero position.
In order to mount the drive arm in the correct position, the spindle must be brought to the zero position.

1. Set ED operator spring preload to approximately ten clockwise rotations.
   • Spindle rotates to the zero position.

**TIPS AND RECOMMENDATIONS**
Reference Chapter 19, Operator spring tension.

2. Push drive arm and axle extension onto spindle at an angle of approximately 90° to the ED operator.

3. Thread M8 x __ mm SHCS into spindle and tighten M8 SHCS.
   **CAUTION**
   Use torque wrench with hex key socket to tighten M8 screw to 17 ft-lb [23 Nm].

16.3.2 Mount adjustment arm to door.

1. Locate and drill holes for adjustment arm shoe.
   • Select fasteners based on door material.
   **CAUTION**
   Use selected Installation template to locate mounting holes for adjustment arm shoe.

2. Fasten adjustment arm to door (Fig. 16.3.2).

16.3.3 Fasten adjustment arm to drive arm.

1. Loosen two M6 x 10 flanged button head screws on adjustment arm.

2. Align adjustment arm ball head with drive arm socket.

3. Push ball head into socket.
   • Spring in socket will retain ball head.

4. Rotate drive arm until adjustment arm is at a 90° angle to door.

5. Tighten two M6 x 10 flanged button head screws.
16.3.4 Connect adjustment arm to drive arm.

1. Loosen the two adjustment M6 x 10 mm flanged button head screws (Fig. 16.3.5).

2. Using square, position adjustment arm assembly at 90° angle to door (Fig. 16.3.8).

3. Rotate drive arm and adjust length of adjustment arm until drive arm ball head (8) is aligned with adjustment arm socket (2).

   **CAUTION**
   Maintain adjustment arm assembly at a 90° angle to door.

4. Insert adjustment arm ball head (8) into drive arm socket (2).
   - Spring in socket will retain ball head in socket.

5. Secure adjustment arm position by tightening the two M6 x 10 mm flanged button head screws.

   **CAUTION**
   Recheck that adjustment arm is at 90° angle to door.
17  Measure reveal depth, door width

17.1  Reveal depth parameter rd

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Reference paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>rd</td>
<td>Para. 20.1.9</td>
</tr>
</tbody>
</table>

**17.1.1  Reveal depth parameter.**

1. Reveal depth is set in increments of 10 mm (approximately 3/8”).
2. Measured reveal depth of 30 mm (approximately 1 3/16”) equals rd parameter value of 3.

17.2  Record reveal depth measurement, rd value

**17.3  rd parameter values**

**17.3.1  ED100/ED250 reveal depths, rd parameter**

<table>
<thead>
<tr>
<th>Reveal measurement</th>
<th>ED100/ED250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches [mm]</td>
<td>rd</td>
</tr>
<tr>
<td>-1 3/16</td>
<td>-30</td>
</tr>
<tr>
<td>-3/4</td>
<td>-20</td>
</tr>
<tr>
<td>-3/8</td>
<td>-10</td>
</tr>
<tr>
<td>0</td>
<td>0*</td>
</tr>
<tr>
<td>3/8</td>
<td>10</td>
</tr>
<tr>
<td>3/4</td>
<td>20</td>
</tr>
<tr>
<td>1 1/8</td>
<td>30</td>
</tr>
<tr>
<td>1 9/16</td>
<td>40</td>
</tr>
<tr>
<td>1 15/16</td>
<td>50</td>
</tr>
<tr>
<td>2 3/8</td>
<td>60</td>
</tr>
<tr>
<td>2 3/4</td>
<td>70</td>
</tr>
<tr>
<td>3 1/8</td>
<td>80</td>
</tr>
<tr>
<td>3 1/2</td>
<td>90</td>
</tr>
<tr>
<td>3 15/16</td>
<td>100</td>
</tr>
<tr>
<td>4 5/16</td>
<td>110</td>
</tr>
<tr>
<td>4 3/4</td>
<td>120</td>
</tr>
<tr>
<td>5 1/8</td>
<td>130</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reveal measurement</th>
<th>ED100/ED250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches [mm]</td>
<td>rd</td>
</tr>
<tr>
<td>5 1/2</td>
<td>140</td>
</tr>
<tr>
<td>5 7/8</td>
<td>150</td>
</tr>
<tr>
<td>6 5/16</td>
<td>160</td>
</tr>
<tr>
<td>6 11/16</td>
<td>170</td>
</tr>
<tr>
<td>7</td>
<td>180</td>
</tr>
<tr>
<td>7 1/2</td>
<td>190</td>
</tr>
<tr>
<td>7 7/8</td>
<td>200</td>
</tr>
<tr>
<td>8 1/4</td>
<td>210</td>
</tr>
<tr>
<td>8 5/8</td>
<td>220</td>
</tr>
<tr>
<td>9</td>
<td>230</td>
</tr>
<tr>
<td>9 7/16</td>
<td>240</td>
</tr>
<tr>
<td>9 13/16</td>
<td>250</td>
</tr>
<tr>
<td>10 1/4</td>
<td>260</td>
</tr>
<tr>
<td>10 5/8</td>
<td>270</td>
</tr>
<tr>
<td>11</td>
<td>280</td>
</tr>
<tr>
<td>11 7/16</td>
<td>290</td>
</tr>
<tr>
<td>11 13/16</td>
<td>300</td>
</tr>
</tbody>
</table>

**17.3.2  ED250 additional reveal depths, rd parameter**

<table>
<thead>
<tr>
<th>Reveal measurement</th>
<th>ED250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches [mm]</td>
<td>rd</td>
</tr>
<tr>
<td>12 3/16</td>
<td>310</td>
</tr>
<tr>
<td>12 5/8</td>
<td>320</td>
</tr>
<tr>
<td>13</td>
<td>330</td>
</tr>
<tr>
<td>13 3/8</td>
<td>340</td>
</tr>
<tr>
<td>13 3/4</td>
<td>350</td>
</tr>
<tr>
<td>14 3/16</td>
<td>360</td>
</tr>
<tr>
<td>14 9/16</td>
<td>370</td>
</tr>
<tr>
<td>15</td>
<td>380</td>
</tr>
<tr>
<td>15 3/8</td>
<td>390</td>
</tr>
<tr>
<td>15 3/4</td>
<td>400</td>
</tr>
<tr>
<td>16 1/8</td>
<td>410</td>
</tr>
<tr>
<td>16 9/16</td>
<td>420</td>
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<tr>
<td>16 15/16</td>
<td>430</td>
</tr>
<tr>
<td>17 5/16</td>
<td>440</td>
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<tr>
<td>17 3/4</td>
<td>450</td>
</tr>
<tr>
<td>18 1/8</td>
<td>460</td>
</tr>
<tr>
<td>18 1/2</td>
<td>470</td>
</tr>
<tr>
<td>18 7/8</td>
<td>480</td>
</tr>
<tr>
<td>19 1/4</td>
<td>490</td>
</tr>
<tr>
<td>19 11/16</td>
<td>500</td>
</tr>
</tbody>
</table>

*Factory setting

**TIPS AND RECOMMENDATIONS**

Use of arm and CPD lever (Fig. 17.1.1):
Value of parameter rd must be reduced by 3/16” [30].
- Example: ED250 with CPD pull arm and lever in pull installation with reveal of 30 mm (1 1/8”). Parameter rd setting = 0 (Reveal of 30 mm - 30 mm).
17.4 Door width parameter Tb

<table>
<thead>
<tr>
<th>Parameter Tb value</th>
<th>Door width measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Tb</td>
</tr>
</tbody>
</table>

17.4.1 Door width parameter
Door width is set in increments of 100 mm (4”), Measured width of 1000 mm (39.4") = Tb value of “10".
ED100: [700 - 1219 mm] 28” - 48”
ED250: [700 - 1219 mm] 28” - 48”

17.5 Record door width measurement, Tb value

17.6 Tb parameter values

17.6.1 ED100/ED250 door widths

<table>
<thead>
<tr>
<th>Door width measurement</th>
<th>Door width measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches [mm] Tb Width inches</td>
<td></td>
</tr>
<tr>
<td>28 to 31 15/16 [711] to [811] 7 28</td>
<td></td>
</tr>
<tr>
<td>32 to 35 15/16 [813] to [912] 8 32</td>
<td></td>
</tr>
<tr>
<td>36 to 39 15/16 [914] to [1014] 9 36</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Door width measurement</th>
<th>Door width measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches [mm] Tb Width inches</td>
<td></td>
</tr>
<tr>
<td>40 to 43 15/16 [1016] to [1116] 10&quot; 40</td>
<td></td>
</tr>
<tr>
<td>44 to 47 15/16 [1118] to [1218] 11 44</td>
<td></td>
</tr>
<tr>
<td>48 to 51 15/16 [1219] to [1319] 12 48</td>
<td></td>
</tr>
</tbody>
</table>
18  Braking circuit plug

18.1  Braking circuit plug position

**Fig. 18.1.1**  Braking circuit socket and plug, plug factory installed in pull installation location

1  Braking circuit plug  
2  Braking circuit  
3  3 pin socket  
3  User interface

**Fig. 18.1.2**  Plug position, pull installation

1  Braking circuit plug  
2  Braking circuit  
3  3 pin socket

**Fig. 18.1.3**  Power switch

1  Power switch  
2  (shown ON)

**Fig. 18.1.4**  Plug position, push installation

1  Braking circuit plug  
2  Braking circuit  
3  3 pin socket

**Fig. 18.1.5**  Standard push arm

**Fig. 18.1.6**  Arm and CPD lever and track, pull or push installation

---

18.1.1  **Braking circuit plug.**
Operator braking circuit plug is positioned in its 3 pin socket for a push or pull installation.

⚠️ **WARNING**
Braking circuit will not work correctly if braking circuit plug is improperly positioned, or if an incorrect plug is used!
Door may close at high speed and/or be difficult to open!

18.1.2  **Factory-installed plug position.**
Braking circuit plug is factory installed in the left two pins, the pull installation position (Fig. 18.1.1 and Fig. 18.1.2).

18.1.3  **Change braking circuit plug position to push installation.**
To change plug position for push installation, install plug in right two pins, toward user interface (Fig. 18.1.4).

⚠️ **WARNING**
Insure power switch is OFF before changing plug position!
19 Operator spring tension

19.1 Set operator spring tension

1. Spring tension sets closing force on door.
2. Required spring tension is based on door width.

19.1.2 Operator spring tension function.
1. Spring tension adjustment is factory set fully CCW, no spring tension.
2. Pretension spring per Para. 19.1.1.

CAUTION

A minimum of ten spring tension revolutions are required to operate system.

CAUTION

Any change to spring tension setting requires a new learning cycle (Chapter 22)!

19.1.3 Spring tension adjustment factory setting.
1. Spring tension adjustment is factory set fully CCW, no spring tension.
2. Pretension spring per Para. 19.1.1.

19.1.4 Check door closing force.
1. Table 19.1.1 lists approximate spring tension settings.
2. Use pressure gauge to check door closing force at 2° and adjust tension setting if necessary.
3. For reveals greater than 11 5/16" [300 mm] check minimum closing force between 88° and 92°.

TIPS AND RECOMMENDATIONS

Reference Chapter 29, ANSI/BHMA standards for closing forces.

TIPS AND RECOMMENDATIONS

System checks spring tension during learning cycle (Chapter 22). Learning cycle will be canceled if spring is insufficiently tensioned; door will stop and display will show a rotating "0" and an "F".

Table 19.1.1

<table>
<thead>
<tr>
<th>Door width</th>
<th>Inches</th>
<th>32</th>
<th>36</th>
<th>42</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td></td>
<td>813</td>
<td>914</td>
<td>1067</td>
<td>1219</td>
</tr>
<tr>
<td>Spring setting revolutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ED100</td>
<td>10</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>ED250</td>
<td>10</td>
<td>10</td>
<td>14</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 19.1.1 Spring tension adjustment

1 T handle hex key for spring tension adjustment

Fig. 19.1.2 Door pressure gauge

4 Door pressure gauge

TIPS AND RECOMMENDATIONS

Reference Chapter 29, ANSI/BHMA standards for closing forces.

TIPS AND RECOMMENDATIONS

System checks spring tension during learning cycle (Chapter 22). Learning cycle will be canceled if spring is insufficiently tensioned; door will stop and display will show a rotating "0" and an "F".
20  Power fail closing speed

20.1  Set power fail closing speed

20.1.1  Power fail closing speed potentiometer.
- Single turn.
- Factory setting: fully CCW
- CCW increases closing speed.
- CW decreases closing speed.

20.1.2  Setting door closing speed upon power failure.
1. Turn ED100 / ED250 power switch OFF.
2. Manually open door to 90° angle and let it close.
3. If door closes in less than 5 seconds, turn potentiometer 1/4 turn CW and retry test.
4. Continue retrying test after potentiometer adjustment until the door closing time is a minimum of 5 seconds.

NOTICE

Error message E73:
If door closes in less than three seconds, error message E73 (System error 3, braking circuit) will be displayed.
Reference: Appendix B, Troubleshooting.

TIPS AND RECOMMENDATIONS

Minimum 5 second closing time is required to meet requirements of:
- A117.1, Accessible and Usable Buildings and Facilities, Section 404.2.7.
- 2010 ADA Standards for Accessible Design, Section 404.2.8.
21 Parameters

21.1 Parameters

21.1.1 Firmware version and updates.
- Operator firmware version is displayed during first commissioning. Reference Chapter 22.
- dormakaba handheld can be used to check operator firmware version and to perform firmware updates.
- Reference Appendix C, dormakaba handheld, or dormakaba handheld manual.

21.1.2 Configuration parameters.
Configuration parameters (Para. 21.1.6) are set during first commissioning (Chapter 22).

21.1.3 Driving parameters.
Driving parameters can be set once first commissioning has been completed.
- Reference Para. 21.1.6 for a list of driving parameters.
- Reference Appendix A for details on each driving parameter.

21.1.4 Changing parameter values
1. Set program switch to the CLOSE position

2. Use 4 button keypad as outlined in Steps 1 through 8 to view or change parameter values.

---

Step 1
- Press and hold right button > 3 s to enter program mode.

Step 2
- Press up or down button to scroll through parameters until desired parameter is displayed.

Step 3
- Press right button to display current parameter value.

Step 4
- Press right button again to enable editing of value, display will start flashing.

Step 4
- Press up or down button to select desired parameter value.

Step 5
- Press right button to save selected value. Display stops flashing.

Step 6
- Press left button to return to selected parameter.

Step 7
- Press up or down button to scroll through parameters until next desired parameter is displayed.

Step 8
- Press left button for a minimum of 3 s to exit program mode.

---
## 21.1.5 Configuration parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 AS</td>
<td>Installation type</td>
</tr>
<tr>
<td>2 rd</td>
<td>Reveal depth</td>
</tr>
<tr>
<td>3 Tb</td>
<td>Door width</td>
</tr>
<tr>
<td>4 dL</td>
<td>Door type</td>
</tr>
</tbody>
</table>

## 21.1.6 Driving parameters

Reference Appendix A, Parameters

<table>
<thead>
<tr>
<th>Driving parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 So</td>
<td>Opening speed, automatic mode</td>
</tr>
<tr>
<td>6 Sc</td>
<td>Closing speed, automatic mode</td>
</tr>
<tr>
<td>7 dd</td>
<td>Hold open time, automatic mode</td>
</tr>
<tr>
<td>8 dn</td>
<td>Hold open time, night/bank</td>
</tr>
<tr>
<td>9 do</td>
<td>Hold open time, manual opening of door</td>
</tr>
<tr>
<td>10 Sb</td>
<td>Wall masking on door swing (hinge) side</td>
</tr>
<tr>
<td>11 ST</td>
<td>Safety sensor test</td>
</tr>
<tr>
<td>12 SA</td>
<td>Activation by safety sensor on approach (opposite hinge) side</td>
</tr>
<tr>
<td>13 SP</td>
<td>Suppression of safety sensor on swing (hinge) side during initial movement</td>
</tr>
<tr>
<td>14 Ud</td>
<td>Locking mechanism delayed opening time</td>
</tr>
<tr>
<td>15 Pu</td>
<td>Door preload prior to unlocking</td>
</tr>
<tr>
<td>16 TS</td>
<td>PR (Power reserve) module test</td>
</tr>
<tr>
<td>17 Fo</td>
<td>Static force on door closing edge in opening direction (wind load control)</td>
</tr>
<tr>
<td>18 Fc</td>
<td>Static force on door closing edge in closing direction (wind load control)</td>
</tr>
<tr>
<td>19 EP</td>
<td>Motor driven latching action, automatic mode</td>
</tr>
<tr>
<td>20 EA</td>
<td>Door opening angle at which motor driven latching action is activated</td>
</tr>
<tr>
<td>21 FH</td>
<td>Keep closed force</td>
</tr>
<tr>
<td>22 PG</td>
<td>Push and Go</td>
</tr>
<tr>
<td>23 PS</td>
<td>Program switch type</td>
</tr>
<tr>
<td>24 S1</td>
<td>DCW EPS, electronic program switch behavior following a power reset</td>
</tr>
<tr>
<td>25 S2</td>
<td>Internal program switch, function on delay</td>
</tr>
<tr>
<td>26 du</td>
<td>Door unlocking during business hours</td>
</tr>
<tr>
<td>27 Sr</td>
<td>Status relay function, terminal block X7</td>
</tr>
<tr>
<td>28 bE</td>
<td>Input 4/4a and X3, 1G 24V locking device output configuration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driving parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 CC</td>
<td>Cycle counter, number displayed * 10000</td>
</tr>
<tr>
<td>30 EC</td>
<td>Delete error log</td>
</tr>
<tr>
<td>31 CS</td>
<td>Reset service interval display (yellow LED)</td>
</tr>
<tr>
<td>32 SL</td>
<td>Factory setting level (Fact Setup button)</td>
</tr>
<tr>
<td>33 OA</td>
<td>Opening angle, set during learning cycle</td>
</tr>
<tr>
<td>34 hd</td>
<td>Door closer mode, automatic or manual</td>
</tr>
<tr>
<td>35 hA</td>
<td>Power assist function activation angle</td>
</tr>
<tr>
<td>36 hF</td>
<td>Power assist function force adjustment</td>
</tr>
<tr>
<td>37 hS</td>
<td>Power assist function support for manual mode in door closed position</td>
</tr>
<tr>
<td>38 F1</td>
<td>Upgrade card, fire protection</td>
</tr>
<tr>
<td>39 F2</td>
<td>Full energy</td>
</tr>
<tr>
<td>40 F3</td>
<td>Not used</td>
</tr>
<tr>
<td>41 F4</td>
<td>Not used</td>
</tr>
<tr>
<td>42 F5</td>
<td>Not used</td>
</tr>
<tr>
<td>43 F7</td>
<td>Upgrade card, barrier free toilet</td>
</tr>
<tr>
<td>44 F8</td>
<td>Upgrade card, DCW I/O module</td>
</tr>
<tr>
<td>45 C1</td>
<td>Configuration of COM.1 interface</td>
</tr>
<tr>
<td>46 bc</td>
<td>Backcheck angle when door opened manually</td>
</tr>
<tr>
<td>47 Td</td>
<td>Door thickness [mm]</td>
</tr>
<tr>
<td>48 d1</td>
<td>Deactivation of drive, emergency pushbutton at X4, 4 and 4a, trigger type (v1.7)</td>
</tr>
<tr>
<td>49 d2</td>
<td>Night/bank function, trigger type</td>
</tr>
<tr>
<td>50 FC</td>
<td>Hold open system release by manually closing door, trigger type</td>
</tr>
<tr>
<td>51 Ad</td>
<td>Active door with astragal: castor angle, angle door must reach before passive door starts to open</td>
</tr>
<tr>
<td>52 HS</td>
<td>Hinge clearance</td>
</tr>
<tr>
<td>53 S3</td>
<td>OHC mode: permanent open mode via night-bank input</td>
</tr>
<tr>
<td>54 S4</td>
<td>OHC mode: adjustable behavior after a blockage / hold open</td>
</tr>
<tr>
<td>55 S5</td>
<td>Reversing after triggering of approach side safety sensor / opposite hinge side in mode hd = 1</td>
</tr>
</tbody>
</table>
Chapter 21

21.1.7 Configuration parameters, detail

<table>
<thead>
<tr>
<th>Parameter and value range. Factory setting = <strong>bold.</strong></th>
<th>Parameter description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installation type</strong></td>
<td></td>
</tr>
<tr>
<td>Pull (0)</td>
<td>Arm with track (Fig. 21.1.4).</td>
</tr>
<tr>
<td></td>
<td>Arm and CPD lever with track (Fig. 21.1.5).</td>
</tr>
<tr>
<td></td>
<td>Wall mounting on swing (hinge) side.</td>
</tr>
<tr>
<td>Push (1)</td>
<td>Standard push arm (Fig. 21.1.6).</td>
</tr>
<tr>
<td></td>
<td>Deep reveal push arm (Fig. 21.1.7).</td>
</tr>
<tr>
<td></td>
<td>Wall mounting on approach (non-hinge) side.</td>
</tr>
<tr>
<td>Push (2)</td>
<td>Arm with track (Fig. 21.1.4).</td>
</tr>
<tr>
<td></td>
<td>Arm and CPD lever with track (Fig. 21.1.5).</td>
</tr>
<tr>
<td></td>
<td>Wall mounting on approach (non-hinge) side.</td>
</tr>
<tr>
<td>OHC RH (3)</td>
<td>Overhead concealed (OHC), right hand (v2.1)</td>
</tr>
<tr>
<td>OHC LH (4)</td>
<td>OHC, left hand (v2.1)</td>
</tr>
<tr>
<td>Push (5)</td>
<td>ANSI door closer size ≥ 6, greater than 1400 mm (55.1&quot;) width</td>
</tr>
<tr>
<td></td>
<td>Mounting version only used with gearbox with splined shaft axle</td>
</tr>
<tr>
<td></td>
<td>Wall mounting on approach (non-hinge) side.</td>
</tr>
<tr>
<td><strong>Reveal depth</strong></td>
<td></td>
</tr>
<tr>
<td>ED100 -3 to 30</td>
<td>ED100: [-30 to 300 mm]</td>
</tr>
<tr>
<td></td>
<td>-13/16&quot; to 1113/16&quot;</td>
</tr>
<tr>
<td>ED250 -3 to 50</td>
<td>ED250: [-30 to 500 mm]</td>
</tr>
<tr>
<td></td>
<td>-13/16&quot; to 1911/16&quot;</td>
</tr>
<tr>
<td></td>
<td>If using CPD lever (Fig. 21.1.5), approximately 3/16&quot; [30 mm] must be deducted from actual reveal (Para. 17.1).</td>
</tr>
</tbody>
</table>

21.1.8 Arm with CPD lever; rd parameter adjustment.

- Value of parameter **rd** must be reduced by 3/16” [30] when using the arm and CPD lever in a pull installation.
- Example: ED250 with arm and CPD lever in pull installation with reveal of 30 mm (1 1/8”). Parameter rd setting = 0 (Reveal of 30 mm - 30 mm).

21.1.9 Arm with track in a push installation [Application specific].

1. For doors without fire or smoke detection requirements.
2. Maximum reveal depth of 2 3/8" [60].
3. Maximum opening width at a reveal depth of 2 3/8"[60] is reduced to 95 degrees.
22 Single door first commissioning

22.1 First commissioning

1. Program switch, 3 position

2. Power switch

3. Four button keypad

4. Two digit display

**TIPS AND RECOMMENDATIONS**

If pressing down button (Step 3) does not result in desired display orientation, return to Step 2, turn power button off, then on to repeat commissioning steps.

**Conditions prior to commissioning.**

1. Header with operator is installed.
2. Standard push arm or arm with track is installed.
3. Key switches and other separately supplied hardware are installed and connected to operator.
4. 115 Vac branch circuit to operator is energized.
5. Operator motor is cold.

**CAUTION**

Motor must be cold for commissioning!

**22.1.1 First commissioning.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Program switch to CLOSE position.</td>
</tr>
<tr>
<td>2</td>
<td>Power switch to ON position.</td>
</tr>
<tr>
<td>3</td>
<td>System check.</td>
</tr>
<tr>
<td></td>
<td>• Series of letters and numbers rapidly displayed.</td>
</tr>
<tr>
<td></td>
<td>Control unit self check.</td>
</tr>
<tr>
<td></td>
<td>• Two segments jumping back and forth.</td>
</tr>
<tr>
<td>4</td>
<td>Horizontal dashes move up and down.</td>
</tr>
<tr>
<td>5</td>
<td>Press 4 button keypad down button ▼.</td>
</tr>
<tr>
<td></td>
<td>While 2 digit display segments move up and down, letters and numbers will change if required to display correct orientation.</td>
</tr>
<tr>
<td></td>
<td>Display scrolls:</td>
</tr>
<tr>
<td></td>
<td>• Device ID (Ed 100 or Ed250)</td>
</tr>
<tr>
<td></td>
<td>• Firmware version</td>
</tr>
<tr>
<td></td>
<td>(format F x x x)</td>
</tr>
<tr>
<td>6</td>
<td>Program mode display.</td>
</tr>
<tr>
<td></td>
<td>Program mode will be displayed indicating system requires further parameter settings.</td>
</tr>
</tbody>
</table>
22.2 Set configuration parameters

22.2.1 Set parameter AS, installation type.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Press PRG &gt; 3 s to enter program mode, AS parameter displayed. If no change required, go to step 7.</td>
</tr>
<tr>
<td>2</td>
<td>Press Displays &quot;00&quot;, factory setting.</td>
</tr>
<tr>
<td>3</td>
<td>&quot;00&quot; starts flashing.</td>
</tr>
<tr>
<td>4</td>
<td>Scroll to select parameter value. &quot;1&quot; shown as example.</td>
</tr>
<tr>
<td>5</td>
<td>Saves value entered. Display stops flashing.</td>
</tr>
<tr>
<td>6</td>
<td>Returns to Installation type parameter.</td>
</tr>
</tbody>
</table>

22.2.2 Set parameter rd, reveal depth.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Scroll to rd parameter.</td>
</tr>
<tr>
<td>8</td>
<td>Displays &quot;00&quot;, factory setting.</td>
</tr>
<tr>
<td>9</td>
<td>&quot;00&quot; starts flashing.</td>
</tr>
<tr>
<td>10</td>
<td>Scroll to select parameter value. &quot;6&quot; shown as example.</td>
</tr>
<tr>
<td>11</td>
<td>Saves value entered. Display stops flashing.</td>
</tr>
<tr>
<td>12</td>
<td>Returns to reveal depth parameter.</td>
</tr>
</tbody>
</table>

Configuration parameter settings continue on next page.

---

### Installation type

<table>
<thead>
<tr>
<th>Parameter value</th>
<th>Parameter description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0*</td>
<td>Pull arm with track, wall mounting on swing (hinge) side.</td>
</tr>
<tr>
<td>1</td>
<td>Push arm, wall mounting on approach (opposite hinge) side.</td>
</tr>
<tr>
<td>2</td>
<td>Push arm with track, wall mounting on approach (opposite hinge) side.</td>
</tr>
<tr>
<td>3</td>
<td>Overhead concealed (OHC) RH</td>
</tr>
<tr>
<td>4</td>
<td>OHC LH</td>
</tr>
<tr>
<td>5</td>
<td>ANSI door closer size ≥ 6, greater than 1400 mm (55.1&quot;) width (v2.2).</td>
</tr>
<tr>
<td>*</td>
<td>Factory setting</td>
</tr>
</tbody>
</table>

---

### TIPS AND RECOMMENDATIONS

Reference Chapter 17 for reveal depth parameter values.
**22.2.3 Set parameter Tb, door width.**

**Step 13**
Press Scroll to Tb parameter.

**Step 14**
Press Displays "10", factory setting.

**Step 15**
Press "10" starts flashing.

**Step 16**
Press Scroll to select parameter value. "7" shown as example.

**Step 17**
Press Saves value entered. Display stops flashing.

**Step 18**
Press Returns to door width parameter. If single door, exit program mode (Step 19).

**Step 19**
Press Exits program mode. Display indicates "ready for learning cycle".

**22.3 Key switch option; set parameter PS, program switch type**

**22.3.1 Full width cover option – set parameter PS to 1.**

**Step 1**
Press Press and hold PRG > 3 s to enter program mode, AS parameter displayed.

**Step 2**
Press Scroll to PS (Program switch type) parameter.

**Step 3**
Press Displays "00", factory setting.

**Step 4**
Press "00" starts flashing.

**Step 5**
Press Scroll to select parameter value "1", External mechanical program switch connected to operator terminal board.

**Step 6**
Press Saves value entered. Display stops flashing.

**Step 7**
Press Returns to program switch parameter.

**Step 8**
Press Exits program mode.

---

**TIPS AND RECOMMENDATIONS**

Reference Chapter 17 for door width parameter values.

**Parameter dL, door type.**

**TIPS AND RECOMMENDATIONS**

Parameter dL factory setting is 0, single door. Reference Chapter 23 for double door commissioning.

---

**CAUTION**

Key switch option – Program switch wired to ED100/ED250 terminal board. Reference Appendix E. Parameter PS (Program switch type) must be set to 1.
## 22.4 Perform learning cycle

### CAUTION

Learning cycle must be performed while motor is cold!

### CAUTION

Door must not be manually moved or held in position during the learning cycle!

### CAUTION

Verify that the following parameters have been set (Para. 22.2):
- **AS**, Installation type
- **rd**, Reveal depth
- **Tb**, Door width

### TIPS AND RECOMMENDATIONS

During learning cycle:
- Safety sensors and activators, are switched off to insure learning cycle sequence is not interrupted.
- Operator functions are deactivated.

### WARNING

No personnel or objects must be in range of door motion during learn cycle!

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secure motion range of door.</td>
</tr>
<tr>
<td>2</td>
<td>Set program switch to CLOSE position.</td>
</tr>
</tbody>
</table>
| 3    | Rotating "o" and a "0" indicates operator learning cycle is required.  
|      | Press and hold down button until display changes.  
|      | • Door performs several movements and display shows a sequence of symbols.  
|      | • Movements of door must not be interrupted!  
| 4    | Display indicates door is at 70° position and is waiting for door opening angle to be set.  
|      | • Manually move door to desired opening angle.  
|      | Maximum door angle is 110°.  
| 5    | Momentarily press down button to continue learning cycle.  
|      | • Door performs several movements and display shows a sequence of symbols.  
|      | • Movements of door must not be interrupted!  
| 6    | Operator spring tension too low.  
|      | • Display with small rotating "o" and an "F" during learn cycle indicates spring tension is too low.  
|      | • Door will close.  
|      | 1. Increase spring tension (Chapter 19).  
|      | 2. Restart learning cycle (Step 3).  
| 7    | Door completes learning cycle.  
|      | • Display with two horizontal bars indicate operator is ready for operation.  
| 8    | Momentarily press down button to cycle door.  
| 9    | Following automatic learning cycle, actual forces on door, and door opening and closing times must be measured and changed if necessary to insure compliance with ANSI/BHMA standards, reference Chapter 30.  
|      | Set program switch to Auto.  

---

WARNING: No personnel or objects must be in range of door motion during learn cycle!
23 Double door first commissioning

23.1 Separately commission active and inactive doors

23.1.1 Commission active door first.
1. Refer to Para.22.1 and commission active door.

23.1.2 Commission inactive door.
1. Refer to Para.22.1 and commission inactive door.

23.2 Set operator parameters for double door operation

23.2.1 Active door, set parameters dL and Ad.
1. Set program switch to CLOSE.
2. Set parameters dL (door type) and Ad (caster angle) for active door.
   • Castor angle sets opening angle of active door before inactive door starts to open.
   Factory setting is 30°.

1 Program switch, 3 position

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Press</td>
<td>Press and hold PRG &gt; 3 s to enter program mode, AS parameter displayed.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Press</td>
<td>Scroll to dL parameter.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Press</td>
<td>Displays &quot;00&quot;, factory setting.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Press</td>
<td>&quot;00&quot; starts flashing.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Press</td>
<td>Scroll to select parameter value (&quot;1&quot; as an example).</td>
</tr>
<tr>
<td>Step 6</td>
<td>Press</td>
<td>Saves value entered. Display stops flashing.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Press</td>
<td>Returns to door type parameter.</td>
</tr>
<tr>
<td>Step 8</td>
<td>Press</td>
<td>Scroll to Ad parameter.</td>
</tr>
<tr>
<td>Step 9</td>
<td>Press</td>
<td>Displays &quot;30&quot;, factory setting.</td>
</tr>
<tr>
<td>Step 10</td>
<td>Press</td>
<td>Scroll to select parameter value (10° as an example).</td>
</tr>
<tr>
<td>Step 12</td>
<td>Press</td>
<td>Returns to caster angle parameter.</td>
</tr>
<tr>
<td>Step 13</td>
<td>Press</td>
<td>Exits program mode. Operator is ready for operation.</td>
</tr>
</tbody>
</table>

Fig. 23.1.1 Program switch

1 Program switch:
   - 3 position

### Table: Door type

<table>
<thead>
<tr>
<th>Parameter value</th>
<th>Parameter description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0*</td>
<td>Single door</td>
</tr>
<tr>
<td>1</td>
<td>Double door, with astragal. Active door operator, door opens first.</td>
</tr>
<tr>
<td>2</td>
<td>Double door, without astragal. Inactive door operator.</td>
</tr>
<tr>
<td>3</td>
<td>Double door, without astragal. Active door operator. Both doors open simultaneously.</td>
</tr>
<tr>
<td>4</td>
<td>Double door, without astragal. Inactive door operator. Both doors open simultaneously.</td>
</tr>
</tbody>
</table>

* Factory setting
23.2.2 Inactive door, set parameter dL.
1. Set program switch to CLOSE.
2. Set parameter dL (door type) for inactive door.

<table>
<thead>
<tr>
<th>Step 1 Press</th>
<th>Press and hold PRG &gt; 3 s to enter program mode, AS parameter displayed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2 Press</td>
<td>Scroll to dL parameter.</td>
</tr>
<tr>
<td>Step 3 Press</td>
<td>Displays &quot;00&quot;, factory setting.</td>
</tr>
<tr>
<td>Step 4 Press</td>
<td>&quot;00&quot; starts flashing.</td>
</tr>
<tr>
<td>Step 5 Press</td>
<td>Scroll to select parameter value (&quot;3&quot; as an example).</td>
</tr>
<tr>
<td>Step 6 Press</td>
<td>Saves value entered. Display stops flashing.</td>
</tr>
<tr>
<td>Step 7 Press</td>
<td>Returns to door type parameter.</td>
</tr>
<tr>
<td>Step 25 Press</td>
<td>Exits program mode. Operator is ready for operation.</td>
</tr>
</tbody>
</table>

23.3 Connect communication cable between operators

1. RJ45 jack (horizontal) for communication cable
2. Communication cable, 36" long DX4607
3. RJ45 plug
4. Program switch cable

**Fig. 23.3.1** Double door operators, RJ45 jack for communication cable

**Fig. 23.3.2** RJ45 jack

**Fig. 23.3.3** Communication cable

**Fig. 23.3.4** Program switch

23.3.1 Install communication cable.
1. Set program switch to CLOSE.
2. Connect communication cable to active and inactive operator RJ45 jacks.
3. Secure cable to header

23.3.2 Test door operation,
1. Set program switch to AUTO.
2. Test double door operation.

**TIPS AND RECOMMENDATIONS**

IF sensors have not been connected, set program switch to OPEN, and after doors have opened set back to CLOSE.
24  Connect accessory wiring

24.1  Connect accessory wiring

24.1.1  Connect accessory wiring.

**TIPS AND RECOMMENDATIONS**

- Reference Chapter 10, System Accessories.

1. Terminate all accessory wiring at ED100/ED250 terminal board.
2. Secure all accessory wiring.

24.1.2  Test system accessories.

Test functionality of all accessories.

25  Set track bumper stop

25.1  Set track bumper stop position

25.1.1  Set bumper stop position.

1. Set program switch to OPEN.
2. Door moves to set opening angle.

**WARNING**

Use caution when working in proximity of door and track.

3. Slide bumper and bumper stop toward slide shoe until bumper is 3/16" from edge of slide shoe.
4. Tighten bumper stop M5 screw. Do not overtighten.

**CAUTION**

Using program switch, close then open door to verify gap between bumper and slide shoe with door at full open position.

25.1.2  Place program switch in AUTO.

Fig. 25.1.2  Program switch panel
27 Install push arm door stop

27.1 Install push arm bumper stop (optional assembly)

1. Attach bumper to bumper mounting plate with 1/2" shoulder screw. Use 5 mm hex key.

27.1.2 Open door.

1. Set program switch to OPEN.
2. Door moves to set opening angle.

**WARNING**
Use caution when working in proximity of door and push arm!

27.1.3 Locate bumper stop on door frame.

1. With door at its full open position locate bumper on door frame 1/8" beyond arm.
2. Mark mounting plate hole locations on frame. Plate hole diameter is 1/4".
3. Select screws based on door frame material.
4. Attach bumper stop to door frame.

**CAUTION**
Using program switch, close then open door to verify gap between bumper and slide shoe with door at full open position.

27.1.4 Place program switch in AUTO.

**TIPS AND RECOMMENDATIONS**
Contact local dormakaba USA, Inc. distributor for bumper stop assembly DC4633.

---

1. 1/2" thick base plate DC4633-002
2. 1/4" thick base plate DC4633-001
3. Rubber bumper DC4633-003
4. Shoulder screw DC4633-004
5.1 1/4 x 1 1/4" Phillips FHS, black oxide, SS

---

**Fig. 27.1.1 Bumper stop assembly**

**Fig. 27.1.2 Bumper stop installed**

**Fig. 27.1.3 Program switch panel**
28 Install header cover

28.1 Install header cover

28.1.1 Install header cover.

CAUTION
Before installing cover, check header assembly:
- All wiring secured.
- No pinched wiring.
- Remove any debris in header; assembly must be clean.

1. Install header cover on header and secure with supplied flat head screws.
Note: Headers with pull arms shown as an example.

Fig. 28.1.1 Single door header with cover installation

1. Header cover
2. Flat head screw

Fig. 28.1.2 Double door header with cover installation

1. Header cover
2. Flat head screw

29 Install door signage

29.1 Install door signage

29.1.1 Install door signage based on type of door and ED100/ED250 operator configuration.
Install applicable door signage as outlined in Chapter 11, ED100/ED250 door signage.
30 ANSI/BHMA standards

30.1 A156.10 Power operated pedestrian doors

The following table references portions of content from ANSI/BHMA A156.10. Refer to the standard, available through ANSI or BHMA for additional information. Standard material reprinted with BHMA permission.

Reference Appendix A for additional parameter detail.

30.1.1 Door measurements, power operated swing door.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function</th>
<th>Factory setting</th>
<th>Adjustment range</th>
<th>Para.</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>So</td>
<td>Opening speed, automatic mode</td>
<td>25%</td>
<td>ED100 8% - 50% ED250 8% - 60%</td>
<td>10.2.1</td>
<td>Swing door opening time to 80°, not less than 1.5 s.</td>
</tr>
<tr>
<td>Sc</td>
<td>Closing speed, automatic mode</td>
<td>25%</td>
<td>ED100 8% - 50% ED250 8% - 60%</td>
<td>10.2.5</td>
<td>Swing door closing time to latch check. Reference 28.1.2.</td>
</tr>
<tr>
<td>Fo</td>
<td>Static force in opening direction</td>
<td>13.5 lb f [60 N]</td>
<td>4.5 lb f - 33.7 lb f Reduced in low energy mode.</td>
<td>10.2.2</td>
<td>Not to exceed 30 lb f measured 1&quot; from lock edge of door.</td>
</tr>
<tr>
<td>Fc</td>
<td>Static force in closing direction</td>
<td>13.5 lb f [60 N]</td>
<td>4.5 lb f - 33.7 lb f Reduced in low energy mode.</td>
<td>10.2.7</td>
<td>Not to exceed 30 lb f measured 1&quot; from lock edge of door at any point in closing cycle.</td>
</tr>
<tr>
<td>bc</td>
<td>Back check</td>
<td>10°</td>
<td>5° - 40°</td>
<td>10.2.3</td>
<td>Shall occur at no less than 10° of full open position.</td>
</tr>
<tr>
<td>dd</td>
<td>Hold open time</td>
<td>0 s - 30 s</td>
<td>0 s - 180 s</td>
<td>10.2.4</td>
<td>Minimum of 1.5 seconds after loss of detection (F2 parameter set to full energy)</td>
</tr>
<tr>
<td>Latch check</td>
<td>Checking or slowing down of door speed</td>
<td>Not adjustable</td>
<td></td>
<td>10.2.6</td>
<td>Not less than 10° from closed position. The door will not close through the final 10° in less than 1.5 s.</td>
</tr>
</tbody>
</table>

30.1.2 A156.10, 10.2.5 swing door closing time to latch check.

<table>
<thead>
<tr>
<th>&quot;D&quot; door width, minimum (inches)</th>
<th>&quot;W&quot; door weight, maximum (pounds)</th>
<th>&quot;T&quot; closing time, minimum, to latch check (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 or less</td>
<td>100</td>
<td>2.0</td>
</tr>
<tr>
<td>42</td>
<td>110</td>
<td>2.3</td>
</tr>
<tr>
<td>48</td>
<td>150</td>
<td>2.7</td>
</tr>
<tr>
<td>48</td>
<td>120</td>
<td>2.8</td>
</tr>
<tr>
<td>48</td>
<td>160</td>
<td>3.2</td>
</tr>
</tbody>
</table>

30.1.3 Other door weights and widths.

Closing time \( T = \left( \frac{D \cdot W}{188} \right) \)

- \( D \) = Width of door in inches.
- \( W \) = Weight of door in pounds.
- \( T \) = Closing time to latch check in seconds.
30.2  A156.19 Low energy power operated doors

The following table references portions of content from ANSI/BHMA A156.19. Refer to the standard, available through ANSI or BHMA for additional information. Standard material reprinted with BHMA permission.
Reference Appendix A for additional parameter detail.

### 30.2.1 Door measurements, low energy power operated door.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function</th>
<th>Factory setting</th>
<th>Adjustment range</th>
<th>Para.</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>So</td>
<td>Opening speed</td>
<td>Swing door opening speed</td>
<td>19% Note 1</td>
<td>ED100 8% - 60% ED250 8% - 60%</td>
<td>4.2</td>
</tr>
<tr>
<td>bc</td>
<td>Back check</td>
<td>Checking or slowing down of door speed before door being fully opened</td>
<td>10°</td>
<td>5° - 60°</td>
<td>4.2</td>
</tr>
<tr>
<td>Sc</td>
<td>Closing speed</td>
<td>Swing door closing speed, automatic mode.</td>
<td>19% Note 1</td>
<td>ED100 8% - 50% ED250 28% - 60%</td>
<td>4.4</td>
</tr>
<tr>
<td>dd</td>
<td>Hold open time</td>
<td>Hold open time</td>
<td>5 s</td>
<td>5 s - 30 s</td>
<td>4.3</td>
</tr>
<tr>
<td>hS</td>
<td>Support for manual mode in door closed position.</td>
<td>Reference Appendix A for parameter detail.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hA</td>
<td>Adjustment, door activation angle.</td>
<td>Reference Appendix A for parameter detail.</td>
<td></td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>hF</td>
<td>Power assist function.</td>
<td>Reference Appendix A for parameter detail.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fo</td>
<td>Static force in opening direction</td>
<td>Static force on door closing edge in opening direction</td>
<td>13.5 lb f</td>
<td>4.5 lb f - 33.7 lb f Reduced in low energy mode.</td>
<td>4.5</td>
</tr>
<tr>
<td>Fc</td>
<td>Static force in closing direction</td>
<td>Static force on door closing edge in closing direction</td>
<td>13.5 lb f</td>
<td>4.5 lb f 33.7 lb f Reduced in low energy mode.</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Note 1: Speed may be slower after learning cycle completed.
30.2.2 **A156.19, Table I: Minimum opening and closing times.**

<table>
<thead>
<tr>
<th>&quot;D&quot; door width, inches</th>
<th>&quot;W&quot; door weight, pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td>36</td>
<td>30 s</td>
</tr>
<tr>
<td>42</td>
<td>35 s</td>
</tr>
<tr>
<td>48</td>
<td>40 s</td>
</tr>
</tbody>
</table>

Minimum opening time to backcheck or 80 degrees (whichever occurs first).
Minimum closing time from 90 degrees to latchcheck or 10 degrees (whichever occurs first).

30.2.3 **A156.19, Table II: Total opening time to 90 degrees.**

<table>
<thead>
<tr>
<th>Backcheck at 60°</th>
<th>Backcheck at 70°</th>
<th>Backcheck at 80°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table I plus 2 s</td>
<td>Table I plus 1.5 s</td>
<td>Table I plus 1 s</td>
</tr>
</tbody>
</table>

If door opens more than 90°, it shall continue at the same rate as backcheck speed.
Backcheck occurring at a point between positions shall use lowest setting.

30.2.4 **Other door weights and widths.**

Closing time \( T = \frac{(D \sqrt{W})}{188} \)
\( D = \) Width of door in inches.
\( W = \) Weight of door in pounds.
\( T = \) Closing time to latch check in seconds.
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31 Upgrade cards

31.1 Upgrade cards

31.1.1 Upgrade card installation.
dormakaba upgrade cards can be used to expand the range of functions of ED100/ED250 operators. When upgrade cards are installed, information is exchanged between and permanently allocated to both the operator control unit and the upgrade card.

Fig. 31.1 Upgrade card slot

1 Upgrade card slot
2 Upgrade card socket
Status LEDs
3 Green LED
4 Yellow LED
5 Red LED
6 Upgrade card professional (green)

31.1.2 Upgrade cards.

<table>
<thead>
<tr>
<th>Upgrade card</th>
<th>EDxxx</th>
<th>Upgrade card color</th>
<th>Paragraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire protection</td>
<td>ED100</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ED250</td>
<td>Transparent red</td>
<td></td>
</tr>
<tr>
<td>DCW</td>
<td>ED100/ED250</td>
<td>Yellow</td>
<td></td>
</tr>
<tr>
<td>Barrier free toilet</td>
<td>ED100/ED250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

31.2 Container module

31.2.1 Container module.
- The first upgrade card installed becomes the container module.
- Every operator control unit has only one container module.
- Functions of upgrade cards installed after the first upgrade card are saved in the container module.

31.2.2 Container module removal.
- If the container module is removed, all previously enabled functions will be deactivated after a certain time.

31.2.3 Operator control unit replacement.
- If the control unit is replaced, the container module is removed from the old control unit and inserted into the new control unit.
- The new control unit synchronizes with the container module and all upgrade card functions are available.

31.2.4 Inserting an upgrade card that has already been activated.
- Rapidly flashing yellow LED on upgrade card indicates card is rejected.
- Card’s functions in operator control unit are still valid.

31.2.5 Inserted a container module from third party control unit.
- Rapidly flashing yellow and green LEDs on container module indicates module is rejected.
- Container module can only be synchronized with one control unit.

31.2.6 Container module defective.
- Upgrade cards that were installed after the container module must be reinstalled.
### 31.3 Installing upgrade cards

#### 31.3.1 Set program switch to CLOSE.

1. Insert first upgrade card into upgrade card slot.
2. This card will become container module.
3. Yellow LED flashes on and off once during card insertion.
4. Green LED slowly flashes on and off indicating communication between card and control module.
5. Upgrade card becomes container module; green LED continues to slowly flash on and off.
   - Upgrade card function is now available.

#### 31.3.2 Installing first upgrade card.

1. Insert first upgrade card into upgrade card slot.
2. This card will become container module.
3. Yellow LED flashes on and off once during card insertion.
4. Green LED slowly flashes on and off indicating communication between card and control module.
5. Upgrade card becomes container module; green LED continues to slowly flash on and off.
   - Upgrade card function is now available.

#### 31.3.3 Installing additional upgrade cards.

1. Remove container module from upgrade card slot.
2. Insert next upgrade card into upgrade card slot.
3. Remove upgrade card from upgrade card slot.
4. Reinsert container module into upgrade card slot.
   - Card function is copied to control module; upgrade card is then invalidated.
   - Yellow LED indicates procedure is complete.
4. Reinsert container module into upgrade card slot.
   - Control unit recognizes container module; container module stores new functions.
   - Green LED slowly flashes on and off indicating successful operation.
   - New card functions are now available.

---

**TIPS AND RECOMMENDATIONS**

Container module can be configured using applicable parameter (F1 - F8) for card.
Reference Appendix A, Parameter detail.

**TIPS AND RECOMMENDATIONS**

New upgrade card can be configured using applicable parameter (F1 - F8) for card.
Reference Appendix A, Parameter detail.
# 32 Maintenance

## 32.1 Safety label, automatic swing doors

### 32.1.1 Automatic swinging door safety information label.

This AAADM label outlines safety checks that should be performed daily on full power automatic swinging door controlled by an:
- ED100 operator
- ED250 operator

### 32.1.2 Annual compliance section of label.

This section of label is only completed on automatic swing doors that comply with ANSI/BHMA A156.10 standard and pass inspection by a AAADM certified dormakaba USA, Inc. technician.

### 32.1.3 Additional annual compliance inspection labels.

Place additional labels over annual compliance inspection section of safety information label.

## 32.2 Safety label, low energy swinging doors

### 32.2.1 Low energy swinging door safety information label.

This AAADM label outlines safety checks that should be performed daily on low energy swinging door controlled by an:
- ED100 operator
- ED250 operator

### 32.2.2 Safety information label location.

Place label in a protected, visible location on door frame, near operator power switch if possible.

### 32.2.3 Annual compliance section of label.

This section of label is only completed on automatic swing doors that comply with ANSI/BHMA A156.19 standard and pass inspection by a AAADM certified dormakaba USA, Inc. technician.

### 32.2.4 Additional annual compliance inspection labels.

Place additional labels over annual compliance inspection section of safety information label.

---

**Fig. 32.1.1 Annual compliance inspection labels**

**Fig. 32.1.2 Safety information labels**

---

**SAFETY INFORMATION**

Automatic Swinging Doors

These minimum safety checks, in addition to those in the Owner's Manual, should be made each day and after any loss of electrical power.

1. Walk toward the door at a normal pace. The door should open when you are about 4 feet from the door.

2. Stand motionless on threshold for at least 10 seconds. The door should not close.

3. Move clear of the area. The door should remain open for at least 1.5 seconds and should close slowly and smoothly.

4. Repeat steps 1 through 3 from other direction if door is used for two way traffic.

5. Inspect the floor area. It should be clean with no loose parts that might cause user to trip or fall. Keep traffic path clear.

6. Inspect door's overall condition. The appropriate signage should be present.

7. Have door inspected by an AAADM certified inspector at least annually.

See Owner's manual or instructions for details on each of these and other safety items. If you need a copy of the manual, contact the manufacturer.

---

**SAFETY INFORMATION**

Low Energy Swinging Doors

These minimum safety checks, in addition to those in the Owner's Manual, should be made each day and after any loss of electrical power.

1. Activate the door. Door should open at a slow smooth pace (4 or more seconds), and stop without impact.

2. Door must remain fully open for a minimum of 5 seconds before beginning to close.

3. Door should close at a slow, smooth pace (4 or more seconds), and stop without impact.

4. Inspect the floor area. It should be clean with no loose parts that might cause user to trip or fall. Keep traffic path clear.

5. Inspect door's overall condition. The appropriate signage should be present and the hardware should be in good condition.

6. Have door inspected by an AAADM certified inspector at least annually.

See Owner's manual or instructions for details on each of these and other safety items. If you need a copy of the manual, contact the manufacturer.
32.3 ED100/ED250 environment and cleaning

Table 32.3.1 Operator environmental requirements.

| Ambient temperature | 5 to 122 °F |

32.3.1 ED100/ED250 environmental requirements.
ED100/ED250 header assembly is designed to operate on an interior building surface under the specifications shown in Table 32.3.1.

32.3.2 Areas around door(s) and door swing radius.
Areas around doors and door swing radius must be kept clear of all obstacles.

32.3.3 Cleaning

**WARNING**
Cleaning of header surfaces must be done with program switch in Close position!

External surfaces of header can be cleaned with a damp cloth and commercial cleaning agents.

**TIPS AND RECOMMENDATIONS**
A abrasive (scouring) agents should not be used as they may damage external surfaces.

32.3.4 Water and other liquids.

**CAUTION**
No water or other liquids must be sprayed or spilled on ED100/ED250 header!

32.4 Yellow LED, service level

32.4.1 Service level indicator.
Header cover must be opened to view operator LEDs.

Yellow LED on operator power switch side is service level indicator. Operator system should be scheduled for service when yellow LED is first illuminated, or annually, whichever comes first.

**TIPS AND RECOMMENDATIONS**
Reference Appendix A, Parameters for information on:
- Parameter CS, reset service interval display.
- Parameter CC, cycle counter.
32.5 Pull arm maintenance

1. Set program switch to CLOSE.
2. Remove track end caps.
3. Check tightness of track mounting screws.
4. Replace end caps.

32.5.2 Track maintenance.
1. Set program switch to OPEN.
2. Track.
   - Check for wear or damage.
3. Slide shoe and pivot pin.
   - Check for wear or damage.
   - Check bumper stop position (bumper location approximately 1/8" from slide shoe)
   - Check tightness of screw.

32.5.3 CPD lever.
1. Check tightness of M6 SHCS.
32.5.1 Arm fasteners – torque requirements

32.5.1.1 Check drive arm M8 SHCS torque.
1. Set program switch to CLOSE.
2. Remove cap over M8 SHCS.
3. Check torque.
4. Replace cap.

**CAUTION**

Using torque wrench with 5 mm hex key socket, check M8 SHCS torque: 17 ft-lb [23 Nm].

32.5.1.2 Check pivot pin M8 socket head torque.
1. Check torque.

**CAUTION**

Use torque wrench with hex key socket. M8 screw torque: 5.9 - 7.4 ft-lb [8 - 10 Nm].

Reference Para. 15.8 for arm assembly.
32.6 Push arm maintenance

Fig. 32.6.1 Push arm assembly

1. Drive arm
2. Adjustment arm
3. Adjustment arm tube
4. M6 x 10 mm flanged button head screw
5. Drive arm socket
6. Adjustment arm ball head
7. Shoe
8. Shoe mounting screws (2)
9. Shoe mounting screws
10. Hinge cover caps

Fig. 32.6.2 Adjustment and drive arms

1. Drive arm
2. Adjustment arm
3. Adjustment arm tube
4. M6 x 10 mm flanged button head screw
5. Drive arm socket
6. Adjustment arm ball head

Fig. 32.6.3 Push arm shoe fasteners

32.6.1 Push arm maintenance.

WARNING

Set program switch to CLOSE before performing maintenance!

1. Adjustment arm.
   • Check for wear or damage.
   • Check tightness of M6 x 10 flanged button head screws (Fig. 32.6.2).
2. Shoe and adjustment arm assembly:
   • Check for wear or damage at shoe bearing (Fig. 32.6.1).
3. Adjustment arm socket and ball head (Fig. 32.6.2).
   • Check for wear or damage.

32.6.2 Shoe door mounting screws.

1. Remove hinge cover caps (Fig. 33.6.3).
2. Check for tightness of mounting screws.
3. Replace hinge cover caps.
32.6.1 Push arm – M8 SHCS torque requirements

**Fig. 32.6.1 Push arm M8 SHCS**

32.6.1.1 Drive arm M8 SHCS torque.
1. Remove spindle cap.
2. Check tightness of M8 SHCS.
3. Replace spindle cap.

**CAUTION**

Using torque wrench with 5 mm hex key socket, check M8 SHCS torque. 17 ft-lb [23 Nm].

M8 x __mm SHCS
# Appendix A - Driving Parameters

## A.1 Driving parameters – detail

### A.1.1 Driving parameters detail

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opening speed, automatic mode</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Opening speed refers to automatic mode, speed can be adjusted using this parameter.</td>
</tr>
<tr>
<td></td>
<td>ED100</td>
<td>8 - 50°/s</td>
<td>25</td>
<td>2. Internal monitoring system checks if parameter setting is admissible. If setting exceeds admissible value, the setting is alternately displayed with the permissible value.</td>
</tr>
<tr>
<td></td>
<td>ED250</td>
<td>8 - 60°/s</td>
<td></td>
<td>3. After parameter set, verify setting meets ANSI/BHMA standards A156.10 (full energy) or A156.19 (low energy) standards. See Chapter 30.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. *Maximum opening speed reduced to 27°/s in low energy mode.</td>
</tr>
<tr>
<td><strong>Closing speed, automatic mode</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Closing speed refers to automatic mode, speed can be adjusted using this parameter.</td>
</tr>
<tr>
<td></td>
<td>ED100</td>
<td>2 - 50°/s (v2.0)</td>
<td>25</td>
<td>2. Internal monitoring system checks if parameter setting is admissible. If setting exceeds admissible value, the setting is alternately displayed with the permissible value.</td>
</tr>
<tr>
<td></td>
<td>ED250</td>
<td>2 - 60°/s (v2.0)</td>
<td></td>
<td>3. After parameter set, verify setting meets ANSI/BHMA standards A156.10 (full energy) or A156.19 (low energy) standards. See Chapter 30.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. *Maximum closing speed reduced to 27°/s in low energy mode.</td>
</tr>
<tr>
<td><strong>Hold open time, automatic mode</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Hold open time starts once all internal, external, safety and push and go inputs have been opened or dropped, and door is in an open position.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 - 30 s</td>
<td>5</td>
<td>2. Hold open time values from 0 to 30 are set in increments of 1 second.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 - 180°</td>
<td></td>
<td>3. Hold open time values greater than 30 seconds are set in increments of 5 seconds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. In low energy mode, a minimum hold open time of 5 seconds is required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. Hold open time can be re-triggered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Parameter F2, when set to full energy, extends maximum hold open time to 180 seconds.</td>
</tr>
<tr>
<td><strong>Night-bank hold open time</strong></td>
<td></td>
<td>0 - 30 s</td>
<td>10</td>
<td>1. Night-bank (key switch) hold open time is set using this parameter.</td>
</tr>
<tr>
<td><strong>Hold open time, manual opening</strong></td>
<td></td>
<td>0 - 30 s</td>
<td>1</td>
<td>1. Default hold open time of 1 second that follows every manual opening of door can be adjusted using parameter do (v1.9).</td>
</tr>
<tr>
<td><strong>Wall masking on door hinge side</strong></td>
<td></td>
<td>60 - 99°</td>
<td>80</td>
<td>1. Wall masking required if door opens against an obstacle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. When door reaches set wall masking angle, system will ignore signal from safety sensor on door swing (hinge) side.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. The wider the detection range of safety sensor used, the greater the area must be in which system has to ignore sensor’s emitted signal. To insure personnel safety, it is advised to keep this range as small as possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. If set wall masking angle is exceeded when door is being opened, a rapidly flashing dot appears in top left hand corner of 2 digit display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. Rapidly flashing dot disappears when door angle drops below set wall masking angle.</td>
</tr>
</tbody>
</table>
## A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety sensor test</td>
<td></td>
<td></td>
<td></td>
<td>Safety sensor parameter <strong>ST</strong> must be set to sensors used and if they are active-high or active-low. See E 04 safety sensor test error, Appendix B.4.</td>
</tr>
<tr>
<td></td>
<td>0 - 8</td>
<td></td>
<td>0</td>
<td>0: Sensor test off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1: Sensor test on swing (hinge) side. Active-high</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2: Sensor test on swing and approach sides. Active-high</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3: Sensor test on swing and approach sides. Active-high</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4: Sensor test on swing side. Active-low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5: Sensor test on approach side. Active-low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6: Sensor test on swing and approach sides. Active-low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7: Wall mounted sensor with data line. Lock monitoring not available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8: Sensor test, overhead sensor type Bodyguard III or Premier T with monitoring input. (v2.1)</td>
</tr>
<tr>
<td>Activation by safety sensor on</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>Safety sensor’s input is disregarded as soon as door is closed.</td>
</tr>
<tr>
<td>opposite hinge) side</td>
<td></td>
<td></td>
<td></td>
<td>1: Safety sensor can trigger an opening pulse while door is closed.</td>
</tr>
<tr>
<td>Suppression of safety sensor on</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>Safety sensor on swing side is active during an initialization drive after a power on reset.</td>
</tr>
<tr>
<td>swing (hinge) side during</td>
<td></td>
<td></td>
<td></td>
<td>1: With SP set to 1, operator will disregard swing side safety sensor during initialization drive (v1.9).</td>
</tr>
<tr>
<td>initialization drive</td>
<td></td>
<td></td>
<td></td>
<td>• After a power on reset, operator starts an initialization drive at slow speed. The initialization drive cannot be completed if safety sensor on hinge side is, or has been triggered.</td>
</tr>
<tr>
<td>Delayed opening time for locking</td>
<td>0 - 40</td>
<td>ms</td>
<td>3</td>
<td>1: Delayed opening time delay starts as soon as door opening pulse has been generated.</td>
</tr>
<tr>
<td>mechanism</td>
<td>*100 ms</td>
<td></td>
<td></td>
<td>2: Door opens on expiration of time delay.</td>
</tr>
<tr>
<td></td>
<td>*100</td>
<td></td>
<td></td>
<td>3: If parameter is set to “0” and input for locking feedback contact is closed, door will not perform a preload <strong>Pu</strong> before door unlocks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4: Since various motor locks do not have feedback contacts, a delay of up to 4 seconds is possible (v1.7).</td>
</tr>
<tr>
<td>Door preload prior to unlocking</td>
<td>0 - 9</td>
<td></td>
<td>0</td>
<td>1: Door preload prior to unlocking; force with which door is pushed in the “closed” direction before door is opened.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2: The door may need to be pushed in closing direction (preload) in order to release electric strike to insure door opens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3: Preload time is set by parameter <strong>Ud</strong>, delayed opening time for locking mechanism.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4: To maintain long service life, set preload force only as high as necessary.</td>
</tr>
</tbody>
</table>
## A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Power reserve module SVP-PR 12 test** | 0 - 1 | 0 | 0 | 1. SVP-PR 12 power reserve module test is performed once every 24 hours, or 10 minutes after AC power has been turned on. In event of an error:  
   • Unlocking is not performed and no automatic door movements are initiated.  
   • Error code E 25 is displayed, See Appendix B.4, Troubleshooting Error Codes.  
2. SVP-PR 12 power reserve module can be used but must be tested on a regular basis if using:  
   • SVP-2000 DCW® emergency escape motor lock with automatic latching action.  
   • M-SVP 2000 DCW® emergency escape lock, v1.5 or later.  
3. Test is automatically activated if a fire protection module is recognized in conjunction with SVP-2000 DCW® or M-SVP 2000 DCW® locks. |
| **Static force in opening direction** | 2 - 15 *10 N | 6 *10 | | 1. Static force in opening direction (basic parameter for wind load control). Static force on door closing edge can be changed using this parameter.  
2. Internal monitoring system checks if parameter setting is admissible. If setting exceeds admissible value, the setting is alternately displayed with the permissible value.  
3. After parameter set, verify setting meets ANSI/BHMA standards A156.10 (full energy) or A156.19 (low energy) standards. See Chapter 36.  
*Static force range is reduced with Low Energy mode. See Chapter 36. |
| **Static force in closing direction** | 2 - 15 *10 N | 6 *10 | | 1. Static force in closing direction (basic parameter for wind load control). Static force on door closing edge can be changed using this parameter.  
2. Internal monitoring system checks if parameter setting is admissible. If setting exceeds admissible value, the setting is alternately displayed with the permissible value.  
3. After parameter set, verify setting meets ANSI/BHMA standards A156.10 (full energy) or A156.19 (low energy) standards. See Chapter 36.  
*Static force range is reduced with Low Energy mode. See Chapter 36. |
| **Motor driven latching action, automatic mode** | 0 - 9 | | 0 | 1. System offers a motor driven latching action in automatic mode in addition to mechanical latching action.  
2. The EP parameter setting (v1.7) is designed to increase static force on door to insure proper closing despite resistance caused by door seals or locking devices.  
3. Setting should be increased step by step from a low setting so as to avoid damage to the system. Use the lowest possible setting.  
4. Ensure that both the door itself and the arm or track installation are suitable for the additional, permanent forces. |
| **Motor driven latching action angle (v1.7)** | 2 -10 ° | 3 | | Door opening angle at which motor driven latching action EP is activated.  
• Starting angle of the latching angle adjustable from 10° (v1.7). |
| **Keep closed force** | 0 - 9 | | 0 | 1. Keep closed force is:  
   • Permanently applied following motor drive latching action.  
   • Designed to keep door in closed position even if wind acts on door.  
2. Keep closed force can be set from 0 (off) to 9, maximum force. |
## A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push &amp; Go</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>0 Off</td>
</tr>
</tbody>
</table>
|           |             |       | 1              | 1. Parameter is activated.  
2. Automatic opening of door is started when door is manually moved 4° out of the closed position.  
3. Door close mode parameter `hd` must be set to “0” (manual) to enable this function. |
| Program switch type | 0 - 4 |       | 0              | Internal, operator mounted program switches are active. |
|           |             |       | 1              | External mechanical program switch with contacts is connected to operator terminal board. Internal program switch connector must be removed. |
|           |             |       | 2              | External DCW® electronic program switch (EPS) is connected to operator terminal board. Internal program switch connector must be removed. |
|           |             |       | 3              | Program switch control by TMS Soft control software. |
| DCW Electronic program switch (EPS) behavior following power reset | 0 - 1 |       | 0              | 1. In event of power failure, or if operator is deliberately switched off, EPS will automatically switch to last known position when power returns.  
2. Important: The time at which power returns might not be during business hours and may affect insurance-compliant door locking requirements. |
|           |             |       | 1              | 1. In event of power failure, or if operator is deliberately switched off, EPS will automatically switched to OFF position when power returns.  
2. This function should be used if insurance compliant locking if required. |
| Internal program switches, switch on delay | 0 - 1 |       | 0              | Operator will perform function of new switch setting as soon as internal program switch is moved. |
|           |             |       | 1              | 1. Operator will perform function of new switch setting after a delay of 10 seconds from when internal program switch is moved.  
2. This function is useful if user has to pass through door and its connected detectors and sensors after program switch is set to new function. |
| Unlocking during business hours | 0 - 1 |       | 0              | Door is always locked when it reaches closed position. |
|           |             |       | 1              | 1. In automatic mode, door will not lock when it reaches closed position. This achieves faster door opening when system is equipped with motor driven locks.  
2. If an electric strike opener is used, it must be suitable for 100% continuous duty factor to avoid possibility of damage. |
### A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status relay function, X7 terminals</td>
<td>0 - 6</td>
<td></td>
<td>1</td>
<td>Status relay is deactivated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 Status relay activated as soon as door reaches door &quot;closed&quot; position.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 Status relay activated as soon as door reaches door &quot;open&quot; position.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 Status relay activated when error codes are displayed on 2 digit operator display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 &quot;Door closed and locked&quot; activates status relay.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 Status relay activated when information or error codes are displayed on 2 digit operator display (v1.9).</td>
</tr>
</tbody>
</table>
| | | | | 6 1. Status relay activated when door is opened further than opening angle parameter OA, set during learning cycle.  
| | | | | 2. Parameter OA value can only be changed using dormakaba handheld or by performing another learning cycle. |
| Locking device output configuration; output X3, 1G (24V) and input X6, 4/4a | | | | Reference Chapter 7 |
| | | | 0 | Locking device output terminal X3, 1G (24V) is independent of Input X6, 4/4a. |
| | | | | 1. Locking device output terminal X3, 1G (24V) is turned on as soon as contact at X6, 4/4a is opened (v1.9). |
| | | | | 2. Terminal X3, 1G 24V output is on for as long as contact at X6, 4/4a is open, motor lock with a 100% duty factor is required. |
| | | | | 3. This function is not available for DCW®- motor locks. |
| Cycle counter | 0 - 99 cycles | | | 1. Total number of opening and closing cycles displayed is shown in increments of 10000. |
| | | | | • Display value, "4", 40,000 cycles. |
| | | | | • Display value, "53", 530,000 cycles. |
| | | | | 2. Total number of cycles can be displayed on dormakaba handheld. |
| | | | | 3. A display value of "99" means 990,000 cycles or greater. |
| Delete error log | 0 - 1 | | | 0 No function. |
| | | | | 1. When "1" entered, Error log is deleted. |
| | | | | 2. Parameter is then automatically reset to "0". |
| Reset service interval display, operator yellow LED | 0 - 1 | | | 0 No function. |
| | | | | 1. When "1" entered: |
| | | | | • Service cycle counter is reset to 200,000. |
| | | | | • Service interval is reset to 12 months. |
| | | | | • Yellow LED not illuminated. |
| | | | | 2. Parameter is then automatically reset to "0". |
| | | | | 3. Values other than default values must be set using dormakaba handheld: |
| | | | | • Maintenance interval |
| | | | | • Maintenance cycles |
### A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factory setting level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| SL | 1 - 2 | ° | 1 | Parameter SL is used to determine what data will be reset during factory setting process. Standard factory settings:  
1. Program switches OFF.  
2. Door closed.  
3. Press 4 button keypad down button ▼ for > 8 s.  
4. All parameters reset to factory settings.  
5. Procedure completed when "8" on 2 digit displays blinks twice.  
6. Installed upgrade cards remain valid and do not require reinstallation.  
7. Learning cycle required.  |
| Opening angle | 0 - 110 | ° | 3 | 1. Door opening angle set during learning cycle is displayed.  
2. Opening angle can only be changed during learning cycle.  
3. Due to installation and parameter tolerances, display value may not match actual door position.  |
| Door closer mode | 0 - 1 | | 1 | 1. Automatic mode. This mode is applicable whenever door is mainly opened automatically and where motion detectors are installed.  
2. Mode is optimized for high frequency use.  
3. Full energy upgrade card provides for higher door opening and closing speeds.  
4. In case door is blocked during a closing cycle, operator reverses automatically.  
5. Driving phase is optimized to provide reliable closing cycles.  
6. Keep closed force (wind load control) parameter FH and Push & Go function parameter PG are only available in automatic mode.  |
| Power assist activation angle (v1.7) | 1 - 5 | ° | 3 | 1. Setting of door activation angle for Power assist function (hF).  
2. Higher settings of hA result in better spring force compensation for easier manual opening.  
3. Power assist function is more sensitive the smaller the activation angle. |
## A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power assist function (v1.7)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Force setting for Power assist function.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Power assist function only available with ( h_d ) parameter = 1, manual mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. &quot;0&quot;; power assist function OFF; power assist function enabled for available values greater than 0.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Power assist function enabled when power assist activation angle ( h_A ) reached.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. The greater the value of ( h_F ), the easier the door can be manually opened from power assist activation angle ( h_A ).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6. If power assist set too high, door can open automatically.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7. Power assist function is not available</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• If operator is switched off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• A smoke detector or emergency button has been triggered.</td>
</tr>
<tr>
<td><strong>Power assist function support for manual mode in door closed position (v1.9)</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Setting for power assist function support with door in closed position.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Power assist function only available with ( h_d ) parameter = 1, manual mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. The greater the value of ( h_S ), the easier the door can be manually opened from the closed position.</td>
</tr>
<tr>
<td><strong>Upgrade card codes</strong></td>
<td></td>
<td></td>
<td></td>
<td>0 Upgrade card not installed, function not available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 Upgrade card installed, function not activated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 Upgrade card installed, function activated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 Upgrade card has been removed, function no longer available.</td>
</tr>
<tr>
<td><strong>Upgrade card, fire protection</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Once upgrade card installed, parameter value will automatically change to 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Following activation, drive may be used as a electrically controlled hold-open system according to EN 14437, Building hardware-Electrically controlled hold-open systems for fire/smoke door assemblies, or similar standards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Full energy function is automatically activated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Plug for terminal board X9 socket included with upgrade card.</td>
</tr>
<tr>
<td><strong>Full energy</strong></td>
<td></td>
<td></td>
<td></td>
<td>1. Function must be activated by changing parameter ( F_2 ) to 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. The full setting range of parameters ( S_0, S_c, F_0 ) and ( F_c ) will be available after the activation.</td>
</tr>
<tr>
<td><strong>Not used.</strong></td>
<td></td>
<td></td>
<td></td>
<td>40 Not used.</td>
</tr>
<tr>
<td><strong>Not used.</strong></td>
<td></td>
<td></td>
<td></td>
<td>41 Not used.</td>
</tr>
</tbody>
</table>
### A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Not used.</td>
</tr>
<tr>
<td>43</td>
<td>0, 1, 2, 3</td>
<td></td>
<td>0</td>
<td>1. Once upgrade card installed, parameter value will automatically change to 1.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Function must be activated by changing parameter F7 to 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Operator power reset is required; turn power switch off, wait 10 s and turn power back on.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Upgrade card assigns inputs and outputs of the control unit with functions which are required for this application.</td>
</tr>
<tr>
<td>44</td>
<td>0, 2, 3</td>
<td></td>
<td>0</td>
<td>1. Once upgrade card installed, parameter value will automatically change to 2.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Upgrade card provides operator with DCW® bus connection.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Plug for terminal board X8 socket included with upgrade card.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. DCW® bus enables connection of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Program switch EPS DCW® (max. 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Motor lock controls SVP-S 2x DCW® (max. 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Motor lock SVP 2000 (max. 1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• RM-ED lintel mounted smoke detector</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Key switch button ST 32 DCW® (max. 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• I/O module DCW (max. 1)</td>
</tr>
<tr>
<td>45</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>0 Interface programmed for communication with dormakaba handheld.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1 Interface programmed for use with dormakaba TMS Soft control software.</td>
</tr>
<tr>
<td>46</td>
<td>5 - 40°</td>
<td></td>
<td>10</td>
<td>1. Angle after which door is braked when manually opened.</td>
</tr>
<tr>
<td></td>
<td>(v1.9)</td>
<td></td>
<td></td>
<td>2. Back check level is automatically optimized during manual door opening cycles. This function improves door braking behavior in end position so door does not move beyond set opening angle OA (v1.7).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Entered value is subtracted from set opening angle OA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Example</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Opening angle, 90°</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Parameter bc, 12°</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Door back check starts at 78°.</td>
</tr>
<tr>
<td>47</td>
<td>0 - 99 mm</td>
<td></td>
<td>35</td>
<td>1. Parameter is entered in mm.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Door thickness affects measured door opening angle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Parameter Td enables a more accurate door width to be entered, if required.</td>
</tr>
</tbody>
</table>

**A.1.2 Driving parameters detail.**

- **Parameter 42:** Not used.
- **Parameter 43:** 0, 1, 2, 3
- **Parameter 44:** 0, 2, 3
- **Parameter 45:** 0 - 1
- **Parameter 46:** 5 - 40° (v1.9)
- **Parameter 47:** 0 - 99 mm, 37/8"
## A.1.1 Driving parameters detail.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value range</th>
<th>Units</th>
<th>Factory setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deactivation of drive; X6, 4 and 4a, trigger type (v1.7)</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>NC contact, drive function is deactivated when NC contact is open.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>NO contact, drive function is deactivated when NO contact is closed.</td>
</tr>
<tr>
<td>Night-bank contact X1; 3 and 35, trigger type (v1.7)</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>1. NO contact, night-bank function is triggered when NO contact is closed. 2. Typically used when using a key switch or an access control system.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1. NC contact, night-bank function is triggered when NC contact is opened. 2. Typically used when connected to building management system to trigger doors (signal normally present).</td>
</tr>
<tr>
<td>Release of hold-open system (v1.7)</td>
<td>0 - 1</td>
<td></td>
<td>1</td>
<td>1. Upgrade care Fire Protection installed, users may release hold-open by manually moving door in closed direction. 2. A manual release button is not required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>1. Hold-open release by manually moving door in closed direction is deactivated. 2. A manual release button is required.</td>
</tr>
<tr>
<td>Castor angle for double doors</td>
<td>0 - 30 °</td>
<td></td>
<td>30</td>
<td>Active door with astragal, angle active door must open before passive door opens.</td>
</tr>
<tr>
<td>Hinge clearance</td>
<td>± 5 &quot;10 mm</td>
<td>3 &quot;10</td>
<td></td>
<td>1. Clearance between hinges is critical for the calculated door angle. 2. It may only have a small effect but the clearance can be adjusted in extreme cases to improve accuracy. 3. Factory setting is 3 * 10, 30 mm, 1 3/16&quot;. 4. With CPD doors, setting must be changed to a negative value. A learning cycle is then required as system creates an angle table as a function of the set parameters.</td>
</tr>
<tr>
<td>Overhead concealed mode (OHC): Activation of permanent open via night-bank input (v2.2)</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>Function disabled.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>If night-bank signal is longer than 3 seconds, operator changes to permanent open mode.</td>
</tr>
<tr>
<td>Overhead concealed mode (OHC): Adjustable behavior after blockage / hold open (v2.2)</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>Standard behavior (3 x restart).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Manual mode after blockage.</td>
</tr>
<tr>
<td>Reversing after trigger of approach side safety sensor / opposite hinge side in operating mode hd=1 (v2.2)</td>
<td>0 - 1</td>
<td></td>
<td>0</td>
<td>Standard behavior, stop.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Reversing</td>
</tr>
</tbody>
</table>
Appendix B - Troubleshooting

B.1 Information and error codes

B.1.1 Overview
Operator monitors internal circuits and external safety circuits managed by the operator.

B.1.2 Error and information messages
1. With operator in use, certain situations may develop resulting in error or information messages.
2. Operator attempts to identify the cause and respond accordingly.
3. Response depends on the severity of the error:
   • Information message (ln)
   • Error message (E)
   • Deactivating the operator’s automatic function; operator will switch to emergency mode. Users can then access door manually.

B.1.3 User information display.
User interface display, or dormakaba handheld displays:
   • Information ln codes
   • Error message E codes

B.1.4 Viewing error messages.
To access and view error messages, briefly press the right button on the 4 button keypad.

B.1.5 Red LED on operator.
Red LED adjacent to operator power switch displays blinking codes for:
1. Certain ln information
2. E status codes (Para. B.2)

TIPS AND RECOMMENDATIONS
Para. B.2, Red LED Status Codes
Para. B.3, Information Codes
Para. B.4, Error Codes

B.1.6 Resetting error codes.
Options for resetting error codes:
1. Set program switch in Close (off) position.
2. User interface Reset buttons:
   • Press both left and right buttons greater than 3 seconds to reset system (v1.8).
   • Header cover must be opened to access user interface.
3. Power reset:
   • Turn power switch OFF.
   • Turn power switch back on after 10 seconds.

B.1.7 Error message memory.
1. There are ten error message memory locations; E 0 through E 9.
2. The latest error message is always stored in error memory location E 0:
   • As soon as another error occurs, the existing error stored in E 0 will be moved to E 1 and the latest error will be stored in E 0.
3. A maximum of 9 errors can be stored in memory locations E1 through E9.
4. Identical error messages occurring one after another are not stored again.

CAUTION
Always analyze and remove cause for error before resetting error message!
Troubleshooting charts (Para. B.3, 4) are intended as a guide for diagnosing errors.
## B.2 Red LED status codes

### B.2.1 Red LED status codes.

<table>
<thead>
<tr>
<th>Red LED status</th>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady flashing</td>
<td></td>
<td>Control unit has detected error, emergency mode activated.</td>
</tr>
<tr>
<td>On steady</td>
<td>In 11</td>
<td>Hold-open device triggered.</td>
</tr>
<tr>
<td>Flashing 2 times</td>
<td>E 02</td>
<td>Locking device error.</td>
</tr>
<tr>
<td>Flashing 4 times</td>
<td>E 04</td>
<td>Safety sensor test error.</td>
</tr>
<tr>
<td>Flashing 5 times</td>
<td>E 25</td>
<td>SVP.PR DCW module test negative.</td>
</tr>
<tr>
<td>Flashing 5 times</td>
<td>E 51, E 52, E 53</td>
<td>Incremental encoder error.</td>
</tr>
<tr>
<td>Flashing 6 times</td>
<td>E 62</td>
<td>Double door operation, 2nd system has incompatible firmware version.</td>
</tr>
<tr>
<td>Flashing 6 times</td>
<td>E 63</td>
<td>Double door operation, 2nd system has incompatible fire protection setting.</td>
</tr>
<tr>
<td>Flashing 7 times</td>
<td>E 71</td>
<td>System error 1 (test), second shutdown option.</td>
</tr>
<tr>
<td>Flashing 7 times</td>
<td>E 72</td>
<td>System error 2 (test), current measuring circuit.</td>
</tr>
<tr>
<td>Flashing 7 times</td>
<td>E 73</td>
<td>System error 3 (test), braking circuit.</td>
</tr>
<tr>
<td>Flashing 12 times</td>
<td>E 12</td>
<td>EEPROM error.</td>
</tr>
<tr>
<td>Flashing 13 times</td>
<td>E 13</td>
<td>Motor overcurrent.</td>
</tr>
<tr>
<td>Flashing 15 times</td>
<td>E 15</td>
<td>Faulty learning cycle.</td>
</tr>
</tbody>
</table>
### B.3 Troubleshooting chart, "ln" codes

#### B.3.1 Troubleshooting chart, information messages.

<table>
<thead>
<tr>
<th>No.</th>
<th>Display</th>
<th>Red LED</th>
<th>Description</th>
<th>Troubleshooting information messages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In 01</td>
<td>Off</td>
<td><strong>Obstruction</strong> Door obstructed by an obstacle or person; door movement stopped by operator.</td>
<td>Sustained operation on a door with an obstruction can result in damage to drive. 1. Object or person obstructing door movement. • Check door movement while system is deenergized. • Remove cause of anything obstructing door movement. 2. Sensor detection range too small. • Obstructions are often caused by people using door due to sensor’s detection range not matching operator’s opening speed. Door is unavoidably contacted by person using door. • Sensors detection range should be increased and/or operator’s opening speed should be increased. 3. Test system operation after cause of obstruction found.</td>
</tr>
<tr>
<td>2</td>
<td>In 08</td>
<td>Off</td>
<td><strong>Deactivation of drive function</strong> • Contact at X6, 4 and 4a is opened. • Operator switched to emergency mode, door can only be used manually.</td>
<td>An emergency close switch, lock switch, or other system safety device may be connected to the X6 input. 1. One of the activators connected to X6 may have opened, or a defect is present. 2. Reset the applicable activator. Operator should start operation automatically. 3. If In 08 still present, check activators or system wiring.</td>
</tr>
<tr>
<td>3</td>
<td>In 09</td>
<td>Off</td>
<td><strong>Upgrade card error</strong> • Installed upgrade card has been removed. • If two upgrade cards were installed, the upgrade card installed first (container module) has not been reinstalled or is defective.</td>
<td>1. Installed Upgrade card may not be removed from operator. 2. If more than one upgrade card is installed, the first card installed becomes the container module. • Reference Chapter 31 for Upgrade card installation. • The container module must be installed last, after all other Upgrade cards are installed. 3. If container module defective, first upgrade card (container module) must be replaced and all other upgrade cards must be reinstalled,</td>
</tr>
<tr>
<td>4</td>
<td>In 11</td>
<td>On</td>
<td><strong>Hold-open system triggered.</strong></td>
<td>1. Hold-open system can be triggered: • Automatically by smoke detector or building interface system. • Manually by a manual release button. • Manually moving door. 2. The system must be reactivated by a deliberate action. 3. Depending on system’s configuration, reactivation can be done by: • Manually moving door to taught opening angle. • Switching program switch to Close (off). • Pressing both 4 button keypad left ◀ and right ➤ buttons &gt;3s. 4. It must be ensured that a smoke detector or building interface has not been triggered. 5. If reactivation is unsuccessful, there may be a defect in the smoke detector or building interface system or its connections.</td>
</tr>
<tr>
<td>5</td>
<td>In 23</td>
<td>Off</td>
<td><strong>Locking alarm</strong> • Door is blocked while in the closed position.</td>
<td>1. Most common cause of this error is the drive unit attempting to open a locked door. 2. To eliminate the occurrence of this error, install a lock status switch. • Lock switch detects the lock pin’s switching status and switches the drive unit off if necessary. 3. It is recommended to use a lock status switch, as repeated attempts to open a locked door may damage the drive unit or the door.</td>
</tr>
</tbody>
</table>
# Troubleshooting chart, information messages

<table>
<thead>
<tr>
<th>No.</th>
<th>Display</th>
<th>Red LED</th>
<th>Description</th>
<th>Troubleshooting information messages</th>
</tr>
</thead>
</table>
| 6   | In 61   | Off     | Communication error, double door system  
      |         |         | No communication between the two operators. | 1. Check communication cable connection at the two operators.  
      |         |         |                                           | • Cable connects to the horizontal RJ45 connector next to the user interface (Chapter 23).  
      |         |         |                                           | 2. Check communication cable. |
| 7   | In 72   | Off     | Current measuring circuit  
      |         |         | • System could not successfully perform internal current measuring test, performed once every 24 hours. | 1. The initial current measuring test may not always be successfully completed due to system tolerances and environmental conditions.  
      |         |         |                                           | 2. The test may also fail, as an example, if someone uses the door while the test is in progress. |
| 8   | In 73   | Off     | Braking circuit test  
      |         |         | • System could not successfully perform internal braking circuit test, performed once every 24 hours. | 1. The initial braking circuit test may not always be successfully completed due to system tolerances and environmental conditions.  
      |         |         |                                           | 2. The test may also fail, as an example, if someone uses the door manually while the test is in progress.  
      |         |         |                                           | 3. If the cyclical test fails ten times in a row, error message In 73 will be displayed. |
| 9   | In 91   | Off     | DCW® communication  
      |         |         | • At least one registered DCW® device is missing. | 1. Reconnect the corresponding DCW® device.  
      |         |         |                                           | 2. If this is not possible, reactivate the drive. Reactivation can be done by:  
      |         |         |                                           | • Switching program switch to Close (off).  
      |         |         |                                           | • Pressing both 4 button keypad left and right buttons >3s. |

## Troubleshooting chart, "E" code

### Troubleshooting chart, "E" codes

<table>
<thead>
<tr>
<th>No.</th>
<th>Display</th>
<th>Red LED</th>
<th>Description</th>
<th>Troubleshooting error codes</th>
</tr>
</thead>
</table>
| 1   | E 02    | Flashing 2 x | Locking device error  
      |         |         | • Operator is attempting to open or close a locking device with feedback, or a DCW® locking device. An error has occurred during this process. | 1. Probable causes are a defective locking device or wiring defect.  
      |         |         |                                           | • Check the locking device and feedback system. |
| 2   | E 03    | Flashing 3 x | DCW® program switch is missing. | 1. Check the DCW® program switch and its connections. |
| 3   | E 04    | Flashing 4 x | Safety sensor test error  
      |         |         | • Test of moving safety sensors was unsuccessful. | 1. Factory setting level of "safety sensor test" parameter ST is 0, test off (See Appendix A, Parameter detail).  
      |         |         |                                           | 2. When ST is configured to installed safety sensors, a test signal is sent to the sensors before each door opening or closing cycle. Operator waits for a response within a certain time window.  
      |         |         |                                           | 3. Check whether parameter ST has been configured to the installed safety sensors and their active-high or active-low signal level.  
      |         |         |                                           | 4. Check for activation of the test at the safety sensors. |
| 4   | E 12    | Flashing 12 x | EEPROM error  
      |         |         | • Internal memory check could not be completed.  
      |         |         | • Drive unit works in door closer mode. | 1. Using dormakaba handheld, reload current firmware to reinitialize system.  
      |         |         |                                           | 2. If the error is still present, the control unit must be replaced. |
### B.4.1 Troubleshooting chart, "E" codes (continued)

<table>
<thead>
<tr>
<th>No.</th>
<th>Display</th>
<th>Red LED</th>
<th>Description</th>
<th>Troubleshooting error codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>E 13</td>
<td>Flashing 13 x</td>
<td>Overcurrent detection&lt;br&gt;• Motor is consuming more current than drive unit can provide.</td>
<td>1. Motor is consuming too much power, check for any external causes. 2. Drive unit or control unit is defective. 3. If error repeats, operator must be replaced.</td>
</tr>
<tr>
<td>6</td>
<td>E 15</td>
<td>Flashing 15 x</td>
<td>Faulty learning cycle.&lt;br&gt;• Learning cycle could not be completed (Chapter 14).</td>
<td>1. Error may occur if learning cycle has been interrupted, for example if door movement has been interrupted during the learning cycle. 2. Learning cycle must be repeated.</td>
</tr>
<tr>
<td>7</td>
<td>E 25</td>
<td>Flashing 5 x</td>
<td>SVP-PR 12 power reserve module test negative</td>
<td>1. See Appendix A, parameter TS, Power reserve module test. 2. Check power reserve module and its wiring.</td>
</tr>
<tr>
<td>8</td>
<td>E 51&lt;br&gt;E 52&lt;br&gt;E 53</td>
<td>Flashing 5 x</td>
<td>Incremental encoder error&lt;br&gt;• Motor gear unit encoder monitoring detected a faulty state.</td>
<td>1. Check encoder plug connection at operator: Ref. Chapter 4. • Secure connection. • Wiring terminations • Short circuits. 2. Check locking device for short circuits. 3. Error can be caused by defective motor or short circuit in locking device. 4. Motor gear unit must be replaced in event of defective motor.</td>
</tr>
<tr>
<td>9</td>
<td>E 62</td>
<td>Flashing 6 x</td>
<td>Incompatible firmware version, double door system, second system.</td>
<td>1. Equip both operators with same firmware version.</td>
</tr>
<tr>
<td>10</td>
<td>E 63</td>
<td>Flashing 6 x</td>
<td>Incompatible fire protection setting, double door system.</td>
<td>1. For double door systems, the Upgrade card fire protection must be installed in both control units.</td>
</tr>
<tr>
<td>11</td>
<td>E 71</td>
<td>Flashing 7 x</td>
<td>System error 1, 2nd shutdown option</td>
<td>1. In order to reliably switch off the drive unit, several switching elements are used and their functions are tested periodically. 2. If the function test always results in the error code, the control unit must be replaced.</td>
</tr>
<tr>
<td>12</td>
<td>E 72</td>
<td>Flashing 7 x</td>
<td>System error 2, current measurement circuit</td>
<td>1. The current measurement circuit is part of the safety mechanisms and its function is tested periodically. 2. If the function test always results in the error code, the control unit must be replaced.</td>
</tr>
<tr>
<td>13</td>
<td>E 73</td>
<td>Flashing 7 x</td>
<td>System error 2, current measurement circuit</td>
<td>1. The braking circuit is a safety element in the closer mode and will be tested every 24 hours. • During the test the motor is shut down during door closing and when the door closes at a set angle in emergency mode. • Test can be noticed as a short jerk on the door and is normal. 2. Error can be due to door closing in the deenergized state too fast (under 3 seconds). See Chapter 20. 3. Check the closing speed and reduce if necessary.</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td>Energy management&lt;br&gt;• Motor is too hot (for example, too high an ambient temperature)&lt;br&gt;• System responds automatically.</td>
<td>1. Movement dynamics in the closed direction will be reduced. 2 Movement dynamics in both the open and closed directions will be reduced. 3 System shuts down for 3 minutes (door closer mode). 4 Hold-open time will be extended.</td>
</tr>
</tbody>
</table>
Appendix C - dormakaba handheld

C.1 dormakaba handheld

![Fig. C.1.1 dormakaba handheld]

1. Off/On key
2. Function keys
3. Arrow keys
4. ENTER key
5. DEL key
6. SHIFT key
7. Alpha numeric keyboard
8. LED, recharging battery status (Off when batteries fully charged)
9. SD card slot

C.1.1 Interface cable
Use dormakaba interface cable (Article No. 16596101170) to connect dormakaba handheld to operator Com 1 interface.

**CAUTION**
Never use conventional network cable with RJ45 plug! Using conventional cable may result in permanent damage to operator!

![Fig. C.1.2 Com 1 interface]

1. 2 digit display
2. 4 button keypad
3. Vertical Com 1 interface

C.1.2 Handheld key functions.
1. OFF ON, switches Handheld on or off.
2. Function keys F1 - F3, trigger functions shown in bottom line of display (e.g., "RPT" for repeat, "UP" and "DOWN" to switch lines, "UpDoLd" for file up and download, "CHANGE" to change values, "OPEN" to trigger opening pulses.
3. Arrow keys, allow navigation within the display. Use left arrow to get back to previous screen.
4. ENTER, selects individual menu items and confirms changes of values and settings.
5. DEL, deletes figures or letters.
6. SHIFT, switch between figures and letters or small and capital letters. Current function is indicated on display (n: numeral, A: capital letters, a: small letters).
7. Alpha numeric keyboard, allows entering values and file names in small and capital letters. There are several special characters (dot, comma, hash key, plus, minus, asterisk and diagonal slash).

C.1.3 Handheld startup.
1. Press OFF ON to turn on Handheld terminal.
2. Screen displays Current version, creation date and name of data plate. Handheld is ready for operation.
3. Select "COMMUNICATION" and enter user code (DORMA original setting: 123456).
4. Handheld displays current software version of the connected operator (e.g., ED250 SW- V1.90).

C.1.4 Downloading current parameters.
1. Press function key F2 "UpDoLd" to access menu "UP/DOWNLOAD".
2. Select "Download" to download current adjustments and parameters. System stores this data as temporary file under file name "temp.tab".
3. Every change in configuration, parameter setting or special functions confirmed with the "ENTER" key automatically uploads to the operator.
4. The Handheld does not automatically save the changes. The Handheld will prompt you to save the changes when quitting the menu.

C.1.5 Menu structure
# Parameter and default | Description / Selections
--- | ---
1 Installation | * Pull arm
 | Push arm
 | Gleit BGS (Track w push arm)
 | cm | Inches
2 Reveal depth | 0
 | ED100/ED250 -3 ... 50 -1 3/16 ... 19 11/16
3 Door width (steps of 4") | 100
 | ED100/ED250 70 ... 160 28 ... 63
4 Door type | * single
 | 1. leaf
 | 2. leaf
 | Master
 | Slave
5 Sensor test | 0
 | 0 off
 | 1 Pull side high active
 | 2 Push side high active
 | 3 Both sides high active
 | 4 Pull side low active
 | 5 Push side low active
 | 6 Both sides low active
 | 7 Bodyguard

## C.2 Configuration parameters

### C.2.1 Configuration parameters

<table>
<thead>
<tr>
<th>#</th>
<th>Parameter and default</th>
<th>Description / Selections</th>
</tr>
</thead>
</table>
| 12 | Start safety push side | * Off
 | * Signal ignored once door closed
 | On Sensor can trigger pulse with door closed
| 14 | Lock delay | 3 Delayed opening time for locking mechanism (0 ... 3) *100 msec
| 15 | Unlock force | 0 Preload prior to unlocking 0 ... 9
| 12 | Test PR module | * 0 Test off
 | * 1 Test once every 24 hrs.
| 23 | Program switch | * Internal
 | * External
 | DCW
| 24 | PGS power up (DCW) | * Last
 | * Off
| 25 | PGS delay | * Off
 | * On
| 26 | Daytime unlock | * Off
 | On Locking device remains permanently unlocked while door is in closed position.
| 27 | Door status (Status relay function, X7 terminals) | * Off
 | Off Relay off
 | Open Door reaches closed position
 | Close Door reaches open position
 | Error Any error message
 | Door closed and locked
 | Information or error codes displayed
 | Door opened further than opening angle

---

**NOTICE**

Parameters and detail may change depending on firmware version.
### C.2.1 Configuration parameters

<table>
<thead>
<tr>
<th>#</th>
<th>Parameter and default</th>
<th>Description / Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Off Manual mode disabled.</td>
</tr>
<tr>
<td>35</td>
<td>Power assist winkel</td>
<td>Activation angle for power assist function (0 ... 5)</td>
</tr>
<tr>
<td></td>
<td>(angle)</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Power assist kraft (force)</td>
<td>Force adjustment for power assist. 0 ... 10</td>
</tr>
<tr>
<td>21</td>
<td>Keep closed force</td>
<td>Force activated after latching action 0 ... 9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>On; function activated. Moving door manually in closing direction from hold open position deactivates hold open function.</td>
</tr>
<tr>
<td>48</td>
<td>Input enable operator</td>
<td>Normal* NC contact, operator deactivated when contact is open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inverse NO contact, operator deactivated when contact is closed</td>
</tr>
</tbody>
</table>

### C.3 Driving parameters

#### C.3.1 Driving parameters

<table>
<thead>
<tr>
<th>#</th>
<th>Parameter and default</th>
<th>Description / Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Speed open</td>
<td>ED100 8 ... 50 27 max. L.E. mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ED250 8 ... 60</td>
</tr>
<tr>
<td>6</td>
<td>Speed close</td>
<td>ED100 2 ... 50 27 max. L.E. mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ED250 2 ... 60</td>
</tr>
<tr>
<td>17</td>
<td>Limit force open</td>
<td>Static force in opening direction (wind load control) (20 ... 150) N</td>
</tr>
<tr>
<td>18</td>
<td>Limit force close</td>
<td>Static force in closing direction (wind load control) (20 ... 150) N</td>
</tr>
<tr>
<td>7</td>
<td>Hold-open time</td>
<td>Hold-open time automatic mode (0 ... 180) s (ED100/ED250)</td>
</tr>
<tr>
<td>8</td>
<td>Nurse bed function</td>
<td>Hold-open time nurse bed function (0 ... 180) s</td>
</tr>
</tbody>
</table>

#### C.3.1 Driving parameters

<table>
<thead>
<tr>
<th>#</th>
<th>Parameter and default</th>
<th>Description / Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Offenhaltez man.</td>
<td>Hold-open time manual mode (0 ... 30 s)</td>
</tr>
<tr>
<td>10</td>
<td>Wall blanking</td>
<td>Angle when system ignores safety sensor on hinge side (60 ... 99)°</td>
</tr>
<tr>
<td>19</td>
<td>Latching action</td>
<td>Motor-driven latching action, automatic mode (0 ... 9)</td>
</tr>
<tr>
<td>20</td>
<td>Latching angle</td>
<td>Opening angle, motor-driven latching angle activated. (2 ... 10)°</td>
</tr>
<tr>
<td>46</td>
<td>Back check angle</td>
<td>Backcheck angle for manual opening cycles. (5 ... 40)°</td>
</tr>
<tr>
<td>51</td>
<td>Coord. offset angle</td>
<td>Starting angle for second door of two door system. (0 ... 30)°</td>
</tr>
</tbody>
</table>
## C.4 Special functions (Upgrade cards)

### C.4.1 Special functions (upgrade cards)

<table>
<thead>
<tr>
<th>#</th>
<th>Parameter and default</th>
<th>Description / Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade card status codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Full energy r/o</td>
<td>locked</td>
</tr>
<tr>
<td>40</td>
<td>Flip-flop func.</td>
<td>unlocked</td>
</tr>
<tr>
<td>41</td>
<td>extend HOT (extended hold-open time) r/o</td>
<td>unlocked</td>
</tr>
<tr>
<td>42</td>
<td>Nurse-Bed func.</td>
<td>unlocked</td>
</tr>
<tr>
<td>38</td>
<td>Fire protection r/o</td>
<td>unlocked</td>
</tr>
<tr>
<td>22</td>
<td>Push &amp; Go</td>
<td>Off*</td>
</tr>
</tbody>
</table>

*Door opens automatically when moved manually by 4° from closed position. Only available when "manual operation" is turned "off".*
### C.5 Diagnostics

#### C.5.1 Diagnostics

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW vers BM r/o</td>
<td>Displays firmware (FW) version of basic module</td>
<td>$x \times y$ (e.g., 0190 v 1.9.0)</td>
</tr>
<tr>
<td>Rev FW version r/o</td>
<td></td>
<td>0 ... zzz</td>
</tr>
<tr>
<td>FW version SK r/o</td>
<td>Displays firmware version of Service Key</td>
<td>$x \times y$ (e.g., 01.00 = v 1.0.0)</td>
</tr>
<tr>
<td>FW bootloader</td>
<td></td>
<td>$x \times y$</td>
</tr>
<tr>
<td>Current error r/o</td>
<td>Displays current error</td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 1</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 2</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 3</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 4</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 5</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 6</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 7</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 8</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Error log 9</td>
<td></td>
<td>(…)</td>
</tr>
<tr>
<td>Current information</td>
<td>Displays current error</td>
<td>(…)</td>
</tr>
<tr>
<td>Delete errors</td>
<td>Press &quot;ENTER&quot; to delete error log.</td>
<td>Cmd -&gt;</td>
</tr>
<tr>
<td>Installation dat r/o</td>
<td>Displays date of installation (month / yr)</td>
<td>mmyy (e.g., 1110 November 2010)</td>
</tr>
<tr>
<td>Hours counter r/o</td>
<td>Displays number of operating hours</td>
<td>(…) h</td>
</tr>
<tr>
<td>Service time interval</td>
<td>Enter maintenance interval</td>
<td>(6 .. 24) months</td>
</tr>
<tr>
<td>Service cycle interval</td>
<td>Enter number of opening and closing cycles until next maintenance</td>
<td>$200$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter name</th>
<th>Description</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wartungs datum</td>
<td>Maintenance data</td>
<td>$x \times y$ (month, year)</td>
</tr>
<tr>
<td>Cycles total r/o</td>
<td>Displays total opening and closing cycles</td>
<td>(…)</td>
</tr>
<tr>
<td>Zyklen max h r/o</td>
<td>Displays maximum number of cycles in one hour</td>
<td>(…) h</td>
</tr>
<tr>
<td>Zyklen / h r/o</td>
<td>Displays number of cycles in previous hour</td>
<td>(…) h</td>
</tr>
<tr>
<td>Zyklen / h akt.</td>
<td>Displays number of cycles in current hour</td>
<td>(…) h</td>
</tr>
<tr>
<td>Learning cycle</td>
<td>Press &quot;ENTER&quot; to start learning cycle. Cmd-+</td>
<td></td>
</tr>
<tr>
<td>Learn cycle stat. r/o</td>
<td>Indicates status of learning cycle</td>
<td>(…)</td>
</tr>
<tr>
<td>Factory reset</td>
<td>Press &quot;ENTER&quot; to reset system to original settings</td>
<td>Cmd -&gt;</td>
</tr>
<tr>
<td>Latching action p/u</td>
<td></td>
<td>(…) kg</td>
</tr>
<tr>
<td>Setup level (Ref. parameter SL, no. 28)</td>
<td>- Level 1, standard original settings. - Level 2, extended original settings</td>
<td>- Level 1</td>
</tr>
<tr>
<td>DCW® list r/o</td>
<td>Displays DCW® list</td>
<td>List -&gt;</td>
</tr>
<tr>
<td>DCW® reset</td>
<td></td>
<td>Cmd -&gt;</td>
</tr>
<tr>
<td>Function mode r/o</td>
<td>Displays program switch setting</td>
<td>(…)</td>
</tr>
</tbody>
</table>
C.6 New dormakaba handheld; language change to English

C.6.1 New dormakaba handheld; language change.
If German language is displayed on screen when handheld is first turned on (Fig. C.7.1, handheld power on sequence), use following steps to change to English.

1. Scroll down Main Menu to EXTRAS:
   • Press 3 times to highlight EXTRAS.

2. Press ENTER to select EXTRAS menu.

3. Press ENTER to select EINSTELLUNGEN (Settings) menu.

4. Scroll down EINSTELLUNGEN Menu to Sprachen (Languages):
   • Press twice to highlight Sprachen.

5. Press to select Sprachen (Fig. 18.6.6).

6. Press F3 to select Änd (Amendments).

7. Scroll down SPRACHEN menu to Englisch:
   Press once to highlight "Englisch".

8. Press ENTER to select Englisch.

Handheld programmer will retain English setting when unit is turned off. Change to English only required the first time the programmer is turned on "out of the box".
C.7 dormakaba handheld; firmware update

C.7.1 Firmware update procedure

**CAUTION**

For all firmware changes, set program switch to CLOSE and allow door to close completely before any updates are made!

1. Connect Handheld to COM 1 port (Para. 27.1) and power on.
   - Handheld will boot up and display main menu.

2. With Communication highlighted, press ENTER.

3. Enter handheld user code and press ENTER.

---

**Fig. C.7.1 Handheld power on sequence**

**Fig. C.7.2 Select communication menu**

**Fig. C.7.3 Enter Handheld user code**
4. Press F2 to select UpDoLd.

5. Use Up and Down arrows to select Firmware upload and press ENTER.

6. Use Up and Down arrows to select firmware version and press ENTER.

7. Press any key to start firmware transmission.

8. Firmware uploading to controller. Wait time of 3 to 5 minutes to upload.

9. Press any key to complete firmware update.
Appendix D - Header hole preparation

D.1.1 Header, no preparation

Fig. D1.1.1 Header with no hole preparation

D.1.2 Single LH header

1. 1 1/2" dia. drive axle hole
2. 3/8" dia. spring tension hole
3. 17/64" dia. jamb bracket mounting hole

Fig. D1.2.1 LH single header

Fig. D1.2.2 LH single header top view

Fig. D1.2.2.1 17/64" dia. thru hole

Fig. D1.2.3 LH single header bottom view

D.1.3 Single header cover bottom view

Fig. D1.3.1 Single header cover bottom view

D.1.4 Single RH header

1. 1 1/2" dia. drive axle hole
2. 3/8" dia. spring tension hole
3. 17/64" dia. jamb bracket mounting hole

Fig. D1.4.1 RH single header
D.1.5 Double header

Fig. D1.5.1 Double header

1 11/2” dia. drive axle hole  2 3/8” dia. spring tension hole  3 17/64” dia. jamb bracket mounting hole

Fig. D1.5.2 Double header top view

Fig. D1.5.3 Double header bottom view

Fig. D1.5.4 Double header cover bottom view
**Appendix E - Wiring diagrams**

**E1.1 DX4604-21C Key Switch Panel with RJ45 connector**

Reference Para. 14.7 for RJ45 cable connection.

**E1.1.1 Key switch panel option.**
Set parameter PS to 1.

**CAUTION**

Key switch panel option. Program switch wired to ED100/ED250 terminal board.

1) Parameter PS (Program switch type) must be set to 1. Reference: Appendix A, Parameter detail and Para. 22.3, Set Parameter PS.

2) Internal program switch connector must be disconnected from operator. Reference Para. 14.7
E2.1 DX4604-11C Key Switch Panel

E1.1.2 Key switch panel option.
Set parameter PS to 1.

**CAUTION**

Key switch panel option.
Program switch wired to ED100/ED250 terminal board.

1) Parameter **PS** (Program switch type) must be set to 1.
Reference: Appendix A, Parameter detail and Para. 22.3, Set Parameter PS.

2) Internal program switch connector must be disconnected from operator.
Reference Para. 14.7