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1 Revision

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<thead>
<tr>
<th>Page</th>
<th>Revision 4.0 → 5.0</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Updates according to EN 16005</td>
</tr>
</tbody>
</table>
2 Important information

Instructions for safe operation

- Failure to observe the information in this manual may result in personal injury or damage to equipment.
- To reduce the risk of injury of persons - use this operator only with pedestrian doors.
- Do not use the equipment if repair or adjustment is necessary.
- Disconnect supply when cleaning or other maintenance is to be carried out.
- The operator can be used by children age 8 and above, and persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, if they have been given supervision or instruction by a person responsible for their safety concerning safe operator use and the possible hazards involved. This does not however prevent those persons to use the door where the operator is installed.
- Cleaning and user maintenance shall not be made by children without supervision.
- Do not let children climb on or play with the door or the fixed/remote controls.
- In all instances, where work is being done, the area is to be secured from pedestrian traffic, and the power removed to prevent injury.
- Installer must properly ground door package! Improper grounding can lead to risk of personal injury.
- Do not connect the main connection cable to the power supply unit until all units are connected.
- The doorset can be operated automatically by sensors or manually by activators.
2.1 Intended use

The EM SL T is an automatic sliding door operator developed to facilitate entrances to buildings and within buildings through sliding doors.

The EM SL T is designed to be surface-mounted to the wall or a beam. It is easy to install for both new construction and retrofit application, and it can be adapted to a wide range of door requirements. It is to be installed indoors where it is suitable for almost all types of external and internal sliding doors.

A EM SL T operator can be combined with the full range of Entrematic Group safety units, such as presence and motion sensors.

The door is designed to offer continuous use, a high degree of safety and maximum lifetime. The system is self-adjusting to the effects caused by normal variations in the weather conditions and to minor friction changes caused by e.g. dust and dirt.

In emergency situations the doorset is opened and remains open automatically. It may also be equipped with break-out function, in which case the door leaf is pushed manually open in the escape direction.

Dual batteries and motors are used in escape routes as indicated in associated certificates. See “Electrical emergency unit with batteries” on page 62 and “Electrical emergency unit with batteries and two motors” on page 62. For manual break-out see “Break-out unit PSB” on page 62.

This manual contains the necessary details and instructions for the installation, maintenance and service of the Sliding Door Operator EM SL T.

For use see User manual 1005274.

Save these instructions for future reference.

2.2 Safety precautions

Be sure to complete a risk assessment and site acceptance test before taking the door into operation.

To avoid bodily injury, material damage and malfunction of the product, the instructions contained in this manual must be strictly observed during installation, adjustment, repairs and service etc. Training is needed to carry out these tasks safely. Only Entrematic Group-trained technicians should be allowed to carry out these operations.
2.3 Electronic equipment reception interference

The equipment complies with the European EMC directive (US market FCC Part 15), provided installed according to Installation and Service manual.

The equipment may generate and use radio frequency energy and if not installed and used properly, it may cause interference to radio, television reception or other radio frequency type systems.

If other equipment does not fully comply with immunity requirements interference may occur.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient the receiving antenna.
- Relocate the receiver with respect to the equipment.
- Move the receiver away from the equipment.
- Plug the receiver into a different outlet so that equipment and receiver are on different branch circuits.
- Check that protective earth (PE) is connected.

If necessary, the user should consult the dealer or an experienced electronics technician for additional suggestions.

2.4 Environmental requirements

Entrematic Group products are equipped with electronics and may also be equipped with batteries containing materials which are hazardous to the environment. Disconnect power before removing electronics and battery and make sure it is disposed of properly according to local regulations (how and where) as was done with the packaging material.
3 Technical specification

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>Entrematic Group AB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Lodjursgatan 10, SE-261 44 Landskrona, Sweden</td>
</tr>
<tr>
<td>Type:</td>
<td>EM SL T</td>
</tr>
<tr>
<td>Mains power supply:</td>
<td>120 V AC -10 % to 240 V AC +10 % 50/60 Hz, fuse 10 A</td>
</tr>
<tr>
<td></td>
<td><strong>Note!</strong> Switch with clearly marked OFF-position, having a contact separation of at least 3 mm in all poles, must be incorporated in the fixed wiring and installed at a minimum height of 1.5 m and not accessible for the public.</td>
</tr>
<tr>
<td>Power consumption:</td>
<td>Max. 250 W</td>
</tr>
<tr>
<td>Auxiliary voltage:</td>
<td>24 V DC, 640 mA</td>
</tr>
<tr>
<td>Recommended max. door weight:</td>
<td>EM SL T-1: 100 kg/leaf  EM SL T-2: 75 kg/leaf</td>
</tr>
<tr>
<td>Clear opening:</td>
<td>EM SL T-1: 1000 – 3990 mm  EM SL T-2: 1600 – 4000 mm</td>
</tr>
<tr>
<td>Opening and closing speed:</td>
<td>variable up to approx. 1.4m/s (EM SL T-2)</td>
</tr>
<tr>
<td>Hold open time:</td>
<td>0-60 s</td>
</tr>
<tr>
<td>Relative humidity (non-condensing):</td>
<td>max. 85 %</td>
</tr>
<tr>
<td>Ambient temperature:</td>
<td>-20 °C to +50 °C</td>
</tr>
<tr>
<td>Degree of protection:</td>
<td>IP20</td>
</tr>
<tr>
<td>Degree of protection, control actuators:</td>
<td>IP54</td>
</tr>
<tr>
<td>Approvals:</td>
<td>Third party approvals from established certification organizations valid for safety in use, see Declaration of Incorporation.</td>
</tr>
<tr>
<td>For indoor use only.</td>
<td></td>
</tr>
</tbody>
</table>
## Classification to DIN 18650-1

<table>
<thead>
<tr>
<th>Digit 1</th>
<th>Digit 2</th>
<th>Digit 3</th>
<th>Digit 4</th>
<th>Digit 5</th>
<th>Digit 6</th>
<th>Digit 7</th>
<th>Digit 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1,2,3</td>
<td>1,2</td>
<td>1,2,4</td>
<td>4</td>
</tr>
</tbody>
</table>

- **Type of drive, digit 1.** 2 sliding door drive
- **Drive durability, digit 2.** 3 1,000,000 test cycles, at 4,000 cycles/day
- **Type of door leaf, digit 3.** 2 sliding door
- **Suitability for use as a fire protection door, digit 4.** 0 not suitable for use as a fire protection door
- **Drive safety devices, digit 5.** 1 force limitation
- **Special requirements for drives/functions/fittings, digit 6.** 1 in escape routes with a break-out system
- **Safety at door leaf or leaves, digit 7.** 1 with sufficiently dimensioned safety distances
- **Ambient temperature, digit 8.** 4 temperature range as specified by the manufacturer
4 Design and function description

4.1 Design

The sliding door operator EM SL T works electromechanically. The motor, control unit, transmission – and optional emergency unit and electromechanical locking device – are all assembled in a support beam with an integrated cover. The motor and gear box transmit movement to the door leaves by means of a tooth belt. The door leaf is fitted to a door adapter/carriage wheel fitting and hangs on a sliding track. Movement of the bottom of the door leaf is controlled by the floor guides.

4.2 Function

Opening
When an OPENING IMPULSE is received by the control unit the motor starts and transmits movement to the door leaves, which move to the open position.

Closing
The closing starts when no OPENING IMPULSE is received and the HOLD OPEN TIME has run out.

4.3 Safety functions integrated in the operator

To permit safe passage between closing doors, the doors immediately reverse if an obstruction is detected, then resume their interrupted movement at low speed to check whether the obstruction has disappeared or not. If an obstruction is detected between opening doors and surrounding walls or interior fittings, the doors immediately stop and then close after a time delay.

4.4 Microprocessor for precise control

The microprocessor has a routine for self-monitoring, which detects any interference or faulty signals in door operation. If an input signal does not correspond to the preprogramming, the microprocessor automatically takes necessary actions to ensure safe door operation.

4.5 Emergency escape

The EM SL T can be combined with an emergency unit that automatically opens or closes¹ the doors in the event of a power failure and can also be interfaced with the fire alarm or smoke detector. Safety can be further reinforced by incorporating a break-out fitting. This enables the doors and side screens to swing outwards in an emergency situation by applying a defined pressure at the front edge.

Doors used for emergency escape in buildings such as hospitals and homes for elderly people may not be locked or put in programme selection OFF.

¹ Electrical emergency unit only
5 Models

Two main models are available:

- **EM SL T-2**; for bi-parting doors, consisting of two pairs of door leaves which are sliding away from each other to form a common door opening.
- **EM SL T-1**; for single sliding doors with two sliding door leaves.

**EM SL T-2 (bi-parting)**

![Diagram of EM SL T-2]

**EM SL T-1 (single sliding, right opening)**

![Diagram of EM SL T-1, right opening]

**EM SL T-1 (single sliding, left opening)**

![Diagram of EM SL T-1, left opening]

**Dimensions and Abbreviations**

- **FW** = Frame width
- **CL** = Cover length (incl. end plates, 2 x 30 mm)
- **COW** = Clear opening width
- **SW** = Side screen width
- **DW** = Door leaf width
6 Identification

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Support beam</td>
<td>13</td>
<td>Cover lock</td>
</tr>
<tr>
<td>2</td>
<td>Drive unit</td>
<td>14</td>
<td>Cover</td>
</tr>
<tr>
<td>3</td>
<td>Control unit</td>
<td>15</td>
<td>End plate</td>
</tr>
<tr>
<td>4</td>
<td>Carriage wheel fitting</td>
<td>16</td>
<td>Programme selector</td>
</tr>
<tr>
<td>5</td>
<td>Tension wheel</td>
<td>17</td>
<td>Floor guide</td>
</tr>
<tr>
<td>6</td>
<td>Tooth belt, fast moving outer doors</td>
<td>18</td>
<td>Locking device (option)</td>
</tr>
<tr>
<td>7</td>
<td>Tooth belt fitting</td>
<td>19</td>
<td>Electrical emergency unit (option)</td>
</tr>
<tr>
<td>8</td>
<td>Tooth belt, slow moving inner doors</td>
<td>20</td>
<td>Fast moving outer door leaf</td>
</tr>
<tr>
<td>9</td>
<td>Bracket (fixing the slow moving tooth belt to the top of the support beam)</td>
<td>21</td>
<td>Slow moving inner door leaf</td>
</tr>
<tr>
<td>10</td>
<td>Door stop</td>
<td>22</td>
<td>Side screen</td>
</tr>
<tr>
<td>11</td>
<td>Mains power connection block</td>
<td>23</td>
<td>Carrier bracket</td>
</tr>
<tr>
<td>12</td>
<td>Cable inlet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7 Space required

Profile System EMPS

COH = Clear opening height
DH = Door height (incl. door adapter)
FFL = Finished floor level

* Optional cover e.g. for full glass doors.
8 Pre-installation

8.1 General tips/Safety concerns

In all instances, where work is being done, the area is to be secured from pedestrian traffic, and the power removed to prevent injury.

- If there are sharp edges after drilling the cable outlets, chamfer the edges to avoid damage to the cables.
- For enhanced security and vandalism protection, always mount the operator access in the interior of a building whenever possible.
- Make sure the ambient temperature is in the range specified in section Technical specification.
- Make sure that the power is off before installing.
- Make sure that the door leaf and the wall are properly reinforced at the installation points.
- Unpack the operator and make sure that all parts are delivered in accordance with the packing note and that the operator is in good mechanical condition.
- Ensure proper material is being used for the door leaves and that there are no sharp edges. Projecting parts shall not create any potential hazards. If glass is used bare glass edges shall not come in contact with other glass. Toughened or laminated glass are suitable glasses.
- For support beam length over 5 m, remove the motor, or two technicians are needed.
- Ensure that entrapment between the driven part and the surrounding fixed parts due to the opening movement of the driven part is avoided. The following distances are considered sufficient to avoid entrapments for the parts of the body identified;
  - for fingers, a distance greater than 25 mm or less than 8 mm
  - for heads, a distance greater than 200 mm
  - for feet, a distance greater than 50 mm
  - and for the whole body, a distance greater than 500 mm
- The operator may be installed above or below 2.5 m from the floor level.
- The operator shall not be used with a doorset incorporating a wicket door.
9 Mechanical installation

9.1 Checking

Check that the fixing material and the upper part of the door leaf have the necessary reinforcements and that the floor is level and smooth.

The beam/wall used to fix the support beam must be flat and smooth. If necessary use Entrematic Group mounting spacers behind the support beam to keep its straightness.

<table>
<thead>
<tr>
<th>Fixing material</th>
<th>Minimum requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>5 mm*</td>
</tr>
<tr>
<td>Aluminium</td>
<td>6 mm*</td>
</tr>
<tr>
<td>Reinforced concrete</td>
<td>Min. 50 mm from the underside</td>
</tr>
<tr>
<td>Wood</td>
<td>50 mm</td>
</tr>
<tr>
<td>Brick wall</td>
<td>Expansion shell bolt, min. M6x85, UPAT PSEA B10/25 min. 50 mm from the underside</td>
</tr>
</tbody>
</table>

* Thinner wall profiles must be reinforced with rivnuts

<table>
<thead>
<tr>
<th>Fixing material</th>
<th>Minimum requirements</th>
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<td>Brick wall</td>
<td>Expansion shell bolt, min. M6x85, UPAT PSEA B10/25 min. 50 mm from the underside</td>
</tr>
</tbody>
</table>

9.1.1 Tools required

- Set of metric box spanners and wrenches
- Spirit level
- Taper rule
- Power drill and set of drill bits, Hammer drill
- Screw driver Torx (T10 and T20)
- Small flat blade screw driver for wire connection
- Screw driver for adjustment of potentiometers
- Centre punch
- Wire stripper
- Plumb bob
- Cable strap tightener
- Installation and Service Manual (this manual)
9.2 Installation examples

9.2.1 Bi-parting doors (EM SL T -2)
During installation the support beam is placed so that its centre line is aligned with the centre of the of the daylight width. This ensures that the support beam will be fixed symmetrically over the daylight width. See also Installation of support beam, on page .

9.2.2 Single sliding doors (EM SL T -1)
See also Installation of support beam, on page 18.

**Recommended installation (EM EMPS)**
To reduce the risk of finger traps the jamb is used as door stop for closing and labyrinth sealings are used between door leaves and fixed screen. The door leaves can be open fully and align with the fixed screen.

![Diagram of single sliding doors](attachment:image.png)

**Alternative installation of door system (by others)**
If the distance measured between the glass pane of one door and the profile of the facing door/fixed screen exceeds 8 mm, the recommended installation above is not allowed by authorities in some countries owing to the risk of finger trap. To avoid this, the leading edge of the door leaves must not pass the mullion of the fixed screen but stop at least 25 mm before, see page 36.

![Diagram of alternative installation](attachment:image.png)
9.3 Installation of support beam

**Marking and fixing**
To determine the installation height from the **highest point** of the finished floor:

a. Measure the door leaf height **inclusive door adapter**.
b. Add **110 mm**.
c. Mark the installation height on the wall as determined under items 1 and 2.
d. Mark for two holes 100 mm to the left and right of the support beam centre line.
e. Drill the two holes, tap or plug and apply a screw in the left hole (key hole).
f. Remove the cover, see page 38.
g. Remove all screws 1) fixing the track[s] 2).
h. Lift off the track[s] 2).
i. Apply spacers 3) to the back of all support beam fixing holes.
j Position the support bracket(s) 4) as shown in the illustration.

EM SL T -2
(bi-parting doors)

k Hang up the support beam in the keyhole and apply another screw in the round hole 200 mm to the right.

l Make sure that the support beam is level and tighten the key hole screw.

m Compensate for possible sag at the ends of the beam and mark all remaining fixing holes.

n Tilt or remove the support beam.

o Drill the holes, tap or plug them.

p If the wall is uneven, compensate by hanging Entrematic Group mounting spacers around the bolts before they are tightened.
Fix the support beam using bolts.

**Note!** The height of the bolt head must not exceed 6.5 mm.

---

**Bi-parting**

- Support beam
- Installation height
- FFL

**Single sliding**

- Support beam length
- FFL = Finished floor level
- LAP = Overlap (profile width)

---

SBL = Support beam length.
FFL = Finished floor level.
LAP = Overlap (profile width).
Installing the door adapter on top of the door leaf (frame doors by others)

For **Entrematic Group doors** the door adapters and door fittings are factory-mounted. Proceed on page, 25.

a. If necessary cut the door adapter to correspond with the door leaf width.

b. Make sure that the upper part of the door leaf is sufficiently reinforced.

c. Establish the “Y” distance between the slow moving door leaf and the fixed screen/wall, considering door design and draught excluders.

d. Place the door adapter on top of the door leaf. The distance “Y” serves to ensure the correct depth installation.

e. Mark on the door leaf after the pre-drilled slotted holes. One slotted hole in each group of three has to be used as the attachment carries the whole weight of the door leaf.

f. Drill and thread for M6 or use self-tapping screws (Taptite) in the door leaf.

g. The door adapter can be roughly adjusted for depth, ± 5 mm, in relation to the door leaf. This rough adjustment is to be carried out when the door adapter is fitted on the door leaf.

h. Tighten the door adapter.

i. Repeat the procedure above for the fast moving door leaf using the distance “Y” between the door leaves.

If a break-out unit is to be installed, a special break-out adapter has to be ordered and then always cut to size. See separate installation instructions.

![Diagram of door adapter installation](image-url)

1. Door adapter (standard)
2. Door leaf
9.5 Installing the carriage wheel fittings on the door adapter

9.5.1 Carriage wheel fitting

a. Adjust the vertical adjustment screw (3) to the lowest position.

b. Inner slow moving door leaves only: Replace the screws (2) with the enclosed screws (8) loosely. Let the wheel fitting settle to the lowest position.

1. Slotted hole for vertical adjustment
2. Fastening screw for outer fast moving door leaves
3. Vertical adjustment screw
4. Wheel fitting
5. Square hole for lock hook and for fixing the tooth belt fitting
6. Slotted hole for depth adjustment
7. Carriage fitting
8. Fastening screw for inner slow moving door leaves
9. Lock nut
10. Slot for anti-derailing device
9.5.2 Fast moving outer door leaves (left opening shown)

For **Entrematic Group doors** the door adapters and door fittings are factory-mounted. Proceed on page 25.

a Fasten one carriage wheel fitting 40 mm from the door leaf trailing edge.

b Fasten the other carriage wheel fitting 43 mm from the door leaf leading edge (measured from the estimated centre line with the door leaves in closed position).

**Note!** Make sure that the carriage wheel fittings are completely in line with the door adapter.
9.5.3 Slow moving inner door leaves (left opening shown)

a Fasten the carriage wheel fittings as close as possible to the leading and trailing edges but no less than 22 mm (see illustration below).

**Note!** Make sure that the carriage wheel fittings are completely in line with the door adapter.
9.6 Hanging the door leaves (bi-parting shown)

9.6.1 Slow moving inner door leaves

a  Ensure that the inner sliding track 1) in the support beam is clean.

b  Raise the door leaves and place them **carefully** over the floor guide 2). If any brackets in the support beam are interfering, mark the position and move temporarily.

c  Lean the door leaves against the support beam and lift the loose wheel fittings over the inner sliding track 1).

d  Adjust with the adjustment screw 3) until the door leaf is about 8 mm above the floor (adjustment range ± 7 mm (wall mounted), +5/-10 (beam mounted)). Slide the door leaf over the floor guide 2) to check it is not jamming.

e  Tighten the fastening screws 4) and thereafter the adjustment screw 3). To secure the assembly tighten the lock nut 6).

f  Make sure the door leaves are parallel to each other and to the side screens. Close the doors as much as possible and ensure that the distance between the door leaves is equal at the top and bottom.

g  The anti-derailing device 5) consists of plastic wheel sleeve and screw.

h  Press the enclosed plastic wheels, with the thumb, into the slot in the support beam (see illustration).
Apply the sleeve with screw in the plastic wheel and slide into the outer slotted fastening holes in the carriage wheel fittings (one in each fitting). Adjust horizontally to avoid jamming and tighten the screws firmly.

**Note!** All carriage wheel fittings should be adjusted in the same way.

1. Inner sliding track
2. Floor guide
3. Adjustment screw
4. Fastening screw
5. Anti-derailing device
6. Lock nut
Installing the wheel stay and transmission arm

a Install the wheel stay 2) by means of the enclosed countersunk screw and washer 3) to the square hole on the carriage wheel fitting at the door leaf trailing edge as shown below.

b Install the transmission arm 4) by means of the enclosed countersunk screw 5) to the square hole on the carriage wheel fitting at the door leaf leading edge as shown below.

Note! The wheels are factory mounted to fit a left opening door. When installing on a right opening door the wheels must be moved to the lower alternative fixing holes.
Fitting the fixed stay, slow moving tooth belt and carrier bracket

a  Push the door leaves to **open** position.

b  Hook the fixed stay 1) into the grooves in the top of the support beam, positioned close to the leading edge wheel 2) as shown in the illustration and tighten the two screws.

c  Fasten one end of the tooth belt 3) to the middle of the fixed stay 1) **with all teeth engaged** and fix it with a belt securing clip 4).

d  Pull the belt around the wheels and cut at the middle of the stay.

e  Tension the belt, fasten the other end to the stay **with all teeth engaged** and fix with a belt securing clip 4). Check and if necessary tension the belt by loosening the wheel screw 2) and tension with the adjustment screw 5). Retighten the wheel screw.

f  Fit the carrier bracket 6) to the tooth belt 3) close to trailing edge wheel 7) as shown in the illustration.

**Note!** Do not apply the enclosed belt securing clip(s) 4) until the fast moving door leaves have been installed. (See illustration on page 35 ).

g  Push the door leaves to closed position.

**Note!** Right opening shown, left opening mirror image.

---

1  Fixed stay
2  Leading edge wheel
3  Slow moving tooth belt
4  Belt securing clip
5  Adjustment screw (belt tension)
6  Carrier bracket
7  Trailing edge wheel
9.6.2 Fast moving outer door leaves

a Re-hook the outer sliding track 2) and retighten 1) to all brackets.

b Ensure that the outer sliding track 2) in the support beam is clean.

c Raise the door leaves and place them carefully over the floor guide 4).

d Lean the door leaves against the track, with the labyrinth seal (if present on the inner door leaves) in the middle of the outer door leaf and with the carrier bracket 7) between the carriage wheel fittings. Lift the loose wheel fittings over the outer sliding track 2).

e Fasten the carrier bracket 7) to the carriage wheel fitting with the enclosed self tapping screw 8) and disengage the slow moving tooth belt from the carrier bracket.

f Adjust with the adjustment screw 5) until the door leaf is about 8 mm above the floor [adjustment range ± 7 mm (wall mounted), +5/-10 (beam mounted)]. Slide the door leaf over the floor guide 4) to check it is not jamming.

g Tighten the fastening screws 3) and thereafter the adjustment screw 5). To secure the assembly tighten the lock nut 9).

h Make sure the door leaves are parallel to each other and to the inner door leaves. Close the doors and ensure that the distance between the door leaves is equal at the top and bottom.

i The anti-derailing device 6) consists of plastic wheel sleeve and screw.
j Press the enclosed plastic wheels, with the thumb, into the slot in the outer sliding track (see illustration).

k Apply the sleeve with screw in the plastic wheel and slide into the outer slotted fastening holes in the carriage wheel fittings (one in each fitting). Adjust horizontally to avoid jamming and tighten the screws firmly.

Note! All carriage wheel fittings should be adjusted in the same way.
9.7 Installation of Entrematic Group floor guides (frame doors by others)

**Bi-parting operators**
Push the fast moving outer doors together and slide them until their meeting point is aligned with the centre of the clear opening width. Position the slow moving inner door leaves with required overlap to the fast moving door leaves.

**Single sliding operators**
Slide the fast moving outer door leaf to closed position. Position the slow moving inner door leaf with required overlap to the fast moving door leaf.

**Fast moving outer door leaf**
- a The door guides are fitted on the underside of the door leaf.
- b The door leaf can be adjusted ± 1.5 mm horizontally by turning the eccentric pin 180°.
- c For vertical adjustment, turn the pin complete turns.
- d Tighten the lock screw after the adjustment of the door leaf, to secure the setting.
**Slow moving inner door leaf**

The floor guides can be adjusted depthwise about ± 4 mm after being installed, using the eccentric nut underneath the plastic block.

Before installing the floor guide make sure that the plastic block is adjusted to the middle position to ensure full adjustability (±4 mm).

a  Push the door to closed position.

b  Fit the floor guide on the threshold so that the **plastic block** is in line with the **trailing edge** and depthwise in accordance with the instructions and illustrations for “Frame Doors by Others” on page 36.

c  Mark the position for the floor guide.

d  Push the door leaf sideways to clear the space.

e  Mark, drill and plug the three holes and fasten the floor guide.

![Diagram of door installation](image)

1 Plastic block  3 Slow- moving door leaf  5 Lock screw
2 Door guide track  4 Eccentric pin  6 Fast moving door leaf
9.8 Final adjustment of the door leaves

A final adjustment of the door leaves is necessary after the installation of the floor guides.

9.8.1 Depth adjustment

a The distance $A$, between the top of the door leaf and the fixed screen, and the distance $B$, between the door leaves, are to be adjusted by loosening the two screws connecting the carriage wheel fitting to the door adapter. The holes in the carriage wheel fitting are slotted and the door leaf/adapter can be adjusted ±7 mm. The distances $A$ and $B$ shall be 22 mm for EM EMPS System. For frame doors made by others the distances $A$ and $B$ depend on the door leaf thickness and draught excluders. When draught excluders is used between the door leaf and the fixed screen and between the door leaves, they should seal equally for the total vertical height.

**Note!** Make sure that the carriage wheel fitting is completely in line with the door adapter.

**Note!** The carriage fittings 1 are turned 180°.

b The distance $C$ shall be equal to $A$ and the distance $D$ to $B$. With EM floor guide on frame doors made by others, the distance $C$ can be adjusted ±4 mm with the eccentric nut on the floor guide and the distance $D$ can be adjusted ±1.5 mm with the eccentric pin.

---

**Diagram:**

- **EM EMPS**
  - 1 Carriage fitting
  - 2 Door adapter (integrated in the door leaf for EMPS)

- **Frame doors by others**
  - 1 Carriage fitting
  - 2 Door adapter (integrated in the door leaf for EMPS)
9.8.2 Height adjustment (final check)

The height adjustment is to be carried out with the vertical adjustment screw as described on page 25.

a It is very important that the door leaf hangs vertically after the adjustment and that bi-parting doors are parallel in the closed position (no gap at the top or bottom).

b The plastic block on the floor guide (frame doors by others) should not touch the upper surface of the door guide track.

c If a draught excluder is used on the lower edge of the door leaf, it should only lightly touch the floor.

d Check that all door leaves and fixed screens are parallel.

\[ FFL = \text{Finished floor level} \]
9.9 Attachment of tooth belt fittings

The tooth belt fitting joining the belt ends is factory-mounted to the lower part of the tooth belt.

**Single sliding operators**

a. Pull the tooth belt until the tooth belt fitting is just opposite the right square hole in the left carriage wheel fitting of the fast moving outer door leaf.

b. Fasten the tooth belt fitting to the carriage wheel fitting with the enclosed flanged screw.

c. Slide all doors to closed position. Fit the **slow moving tooth belt** to the carrier bracket 7) and secure with the belt clips (see illustration on page 28).

**Bi-parting operators**

a. Push the fast moving outer doors together and slide them until their meeting point is aligned with the centre of the opening. **Make sure the door leaves do not change position during installation.**

b. Pull the tooth belt 1) until the lower tooth belt fitting 2) is just opposite the left square hole in the carriage wheel fitting at the leading edge of the fast moving left door leaf.

c. Fasten the tooth belt fitting 2) to the carriage wheel fitting with the enclosed flanged screw 5).

d. Apply the enclosed tooth belt fitting 4) to the right square hole in the carriage wheel fitting at the leading edge of the fast moving right door leaf with the enclosed flanged screw 5).

e. Attach the tooth belt fitting to the upper part of the belt and lock it with the enclosed belt securing clip 6).

f. Slide all doors to closed position. Fit the **slow moving tooth belt** to the carrier bracket 7) and secure with the belt clips (see illustration on page 28).
9.10 Adjustment of the leading edge

a Push the doors by hand to desired opening.

**Note!** In case of frame doors made by others, the leading edge of the door leaf must not pass the mullion of the fixed screen but stop at least 25 mm before to avoid finger trap.

b Loosen the door stops, move them against the carriage wheel fittings and tighten firmly.

c Fasten the plastic sliding track(s) with the screw on top of the right door stop (single sliding) and with screws on both door stops (bi-parting).

d Check that required opening and finger protection (if any) are achieved. EM EMPS is designed to give finger protection without consideration to the safety distance F.

**Frame doors by others**

F = Safety distance (finger protection frame doors by others)

1 Door leaf
2 Fixed screen
3 Door stop
4 Carriage wheel fitting
9.11 Checking and adjusting the belt tension

The belt tension is factory adjusted and readjustment is normally not needed. If despite this the belt tension has to be corrected proceed in the following way:

a. Loosen the two fixing screws (1).
b. Tighten the belt adjustment screw (2) M6, to a torque of 1.1 Nm ± 0.1 Nm.
c. Tighten the two fixing screws (1).
9.12 Installing/Removing the cover

Two pre-mounted rotary-locks in each end of the cover fit into a slot in the track. By turning the locks clockwise the cover is secured.

**Installing**

a  The rotary-locks are made rectangular. Make sure they are turned “horizontally”.

b  Fit the upper part of the cover into the hinge and place the cover support tool (optional) into the beam, to keep the cover open.

c  i  Connect the protective earth cable coming from the mains power connection box to the cover, see page 40.

ii  Fix the cover support block with enclosed self-tapping screws in the centre of the cover. If electromechanical look is installed in the middle, move the block 100 mm in any direction.

d  When properly installed and adjusted, attach the product label, which includes the CE mark on the right side of the lower part of the operator cover (see illustration).

e  If the electrical connections are not terminated proceed to page 40.

f  Remove the cover support tool and close the cover.

g  Make sure the rotary-locks fit into the slot. Fasten the cover by inserting a 10 mm standard wrench from the underside and turn the rotary-locks clockwise (approx. 90°).
Removing is carried out in reverse order

1  Rotary lock
2  Slot in the support beam
3  Cover support block
10 Electrical connections

Note!
During any work with the electrical connections the mains power and the electrical emergency unit must be disconnected.

- Place the electric switch easily accessible from the operator. If a plug contact is used in the installation the wall socket shall be placed easily accessible from the operator.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Installation
a Open the cover, see page 38.
b Install extension unit EXU-4 or EXU-3 if required, see page 48.
c Install and connect the mains cables, see below.
d Carry out START-UP, see page 50.

Mains connection
a Unscrew the fastening screw and remove the protective lid.
b Connect the incoming mains power through the strain relief to the connection block as shown in the illustration below.
c Connect the protective earth to the cover.
d Put the protective lid back in place.

1 Protective lid
2 Mains connection block
3 Strain relief
4 Protective earth for the cover
10.1 Control unit

The control unit is equipped with:

10.1.1 Contacts for connection of standard units

10.1.2 Terminal block for connection of accessories

*Total load on 24 V DC = max. 640 mA
10.1.3 Function selector, FS, used to select special operating functions

The function selector switches are factory set to OFF.

#### Function selector (FS)

<table>
<thead>
<tr>
<th></th>
<th>OFF</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor direction of rotation</td>
<td>CCW</td>
</tr>
<tr>
<td></td>
<td>[CCW = bi-parting and single sliding, left opening]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[CW = single sliding, right opening]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Lock type (locked with/without power)</td>
<td>With</td>
</tr>
<tr>
<td>3</td>
<td>Lock release</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>[To be set to ON if electric lock is installed]</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Presence detection type (normally open/closed)</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>[Applies in common for the terminals 11, 12 and 13 on the control unit CUF and terminal 4 on the EXU-4]</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Emergency unit type</td>
<td>Electrical</td>
</tr>
<tr>
<td></td>
<td>[To be set to OFF if no emergency unit is installed]</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Emergency unit monitoring</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>[To be set in accordance with local authority requirements]</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sensor monitoring</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>[To be set in accordance with local authority requirements]</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Hold force on closed door (0 N / 45 N)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>[Setting ON always recommended]</td>
<td></td>
</tr>
</tbody>
</table>

**Note!** Press the LEARN BUTTON briefly after any FS adjustment to ensure proper configuration.
10.1.4 Potentiometers and LEARN BUTTON

See the “Guide for installers of Powered Pedestrian Sliding Doors”, document PRA-0004, for calculation of speed.

The potentiometers are factory set to approx. 50% of the adjustment range.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSO: HIGH SPEED OPENING</td>
<td>0.10 – 0.70 m/s</td>
</tr>
<tr>
<td>HSC: HIGH SPEED CLOSING</td>
<td>0.10 – 0.70 m/s</td>
</tr>
<tr>
<td>LS: LOW SPEED</td>
<td>0.05 – 0.70 m/s</td>
</tr>
<tr>
<td>POP: PARTIAL OPENING POSITION</td>
<td>0 – 100%</td>
</tr>
<tr>
<td>KTD: KEY HOLD OPEN TIME</td>
<td>0 – 60s</td>
</tr>
<tr>
<td>TD: HOLD OPEN TIME</td>
<td>0 – 60 s</td>
</tr>
<tr>
<td>LB: LEARN BUTTON</td>
<td>See page 50</td>
</tr>
<tr>
<td>LED: ERROR INDICATION</td>
<td>See page 11</td>
</tr>
</tbody>
</table>

Note! Press the LEARN BUTTON briefly after any potentiometer adjustment, to use the new configuration. The speed applies to single sliding operator.
10.1.5 Connection of programme selector

Programme selector PSO-5T
(Used for MEU with TÜV requirements)

This part can be broken off (see below) and installed in the mounting box PSMB-5.

From Configuration Tool CT

Programme selector PSO-5R
(Mounted in the support beam)

Breakable perforation

For remote control, break off and install this part in the mounting box PSMB-5.

2 x 0.25 mm² ≤ 500 m

Central control of an optional number of operators with programme selector PS-5M

With PS-5M in setting AUTO every connected operator are individually controlled by its own programme selector.

PS-6

To operator No. 3, 4 -> n and to central programme selector e.g. PS-5M.

PS-5M

ILL-02167
10.1.6 Connection of activation units
See sensor manuals for mounting and adjustments. Protective device shall comply with EN 12978.
**Electrical connections**

1. Inner impulse
2. Outer impulse
3. Presence impulse, NO
4. Presence impulse, NC
5. Stop impulse
6. Key impulse / (Emergency open impulse, EEU required)
10.1.7 Side presence sensors

Can be monitored

If side presence impulse monitoring is not selected (=off), the sensor monitoring input should be connected to EXU-4: 1 (0 V DC)
10.2 Extension units

When functions beyond those implemented on the main control unit are required, two extension units are available, EXU-4 and EXU-3. These units are to be applied on top of the control unit (if not factory installed).

**Note!** When installing or replacing an extension unit the LEARN BUTTON LB must be pushed for a minimum of 2 seconds.

**Fitting the extension units EXU-4 or EXU-3 to the control unit CUF**

1. Fastening screws (2 pcs)
2. Tagstrip (long pins to be fitted into the EXU)
3. Extension unit, EXU-4 or EXU-3
4. Label (EXU-4 or EXU-3)
5. Lid
6. Screw for fixing the lid
10.2.1 Extension unit, EXU-4

Following functions can be obtained with this unit:

- NC (normally closed)
- Common
- NO (normally open)
- Error/Status indication relay, max. 48 V AC/DC, 1 A
- Emergency opening push button (fireman’s opening) [non-locking]
- PS-2

From battery [(12) 24 V DC]
Battery wake up
Battery wake up common
Emergency open input
Emergency open common

(+/-) 24 V DC

Close
Side presence
Interlock out
Interlock in
(-) 0 V DC

Cable:
- min. 0.25 mm²
- max. 500 m

Battery fuse, 10 AT

1) Connects the battery in absence of main power
2) Total load on all 24 V DC, max. 640 mA

10.2.2 Extension unit, EXU-3

This extension unit has the functions electrical emergency unit or convenience battery. The battery cable is to be connected to the EXU-3.
11 Start-up

After installing the operator, the START-UP and adjustment must be carried out in the following order (see also Electrical connections on page 40).

a. Remove the mains power plug from the control unit CUF.

b. Connect the mains power cables to the connection block.

c. Make sure that FS-1 (direction of rotation) and FS-2 (locked with or without power) are correctly set.

d. Unplug the programme selector. Unplug all activation units and presence sensors, terminals 1-16.

e. Put the door in half open position. Apply the mains power plug to the control unit CUF and push the LEARN BUTTON LB for minimum 2 seconds. The door will now carry out a complete OPEN/CLOSE cycle at low speed to learn the opening width and the closed position. When finished, check that the door is closed.

Note! The LEARN BUTTON LB has different functions:

- Push LB briefly and adjusted potentiometer and/or function selector FS settings will be accepted. A battery will also be detected, if connected.

- If the LB is pushed for a minimum of 2 seconds, the operator will carry out a complete OPEN/CLOSE cycle at low speed to learn the opening width and the closed position and also detect an eventual extension unit.

f. To check the door movement, give opening impulse by strapping the terminals No. 1 and 2 on the control unit CUF.

g. Remove the mains power plug from the CUF and install activation units, presence sensors, programme selector and accessories.

h. Select correct functions with the function selector FS, for the connected accessories.

i. Apply the mains power plug to the CUF, push shortly the LEARN BUTTON LB.

If necessary, adjust the door speeds and sensor detection field values to meet the specific application and regulation requirements.

See the “Guide for installers of Powered Pedestrian Sliding Doors”, document PRA-0004, for calculation of speed.

Note! The LOW SPEED is self adjusting to optimal operation if the LOW SPEED potentiometer is set to max. Depending on authority or installation requirements the LOW SPEED can be further reduced.

Note! Press the LEARN BUTTON briefly after any FS or potentiometer adjustment to ensure proper configuration. Further parameters can be adjusted by using the Configuration Tool, CT. See separate manual.
12 Signage

Mandatory indicates that the signage is required by European directives and equivalent national legislation outside the European Union.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Product label: Mandatory</td>
</tr>
<tr>
<td>B</td>
<td>Emergency break-out: Mandatory, if approved for escape route.</td>
</tr>
<tr>
<td>C</td>
<td>Entrematic Group door sticker: Mandatory, if applicable to highlight the presence of the glass (applied to all glass sections that are moving).</td>
</tr>
<tr>
<td>D</td>
<td>Supervision of child: Mandatory, if applicable (applied to both sides of the door). To be placed on entrances where the risk analysis shows use by children, elderly and disabled.</td>
</tr>
<tr>
<td>E</td>
<td>Operator designed for disabled people: Recommended, if applicable (applied to both sides of the door)</td>
</tr>
<tr>
<td>F</td>
<td>Activation by disabled people: Recommended, if applicable</td>
</tr>
<tr>
<td>G</td>
<td>No entry, identifying one-way traffic: Mandatory in GB and US, if applicable</td>
</tr>
<tr>
<td>H</td>
<td>Automatic door</td>
</tr>
<tr>
<td>J</td>
<td>Keep clear</td>
</tr>
</tbody>
</table>
13 Programme selectors and functions

13.1 Operation

The functions of the door are set with key programme selectors. The key must always be removed on emergency escape doors after changing settings.

- PSO-5R, can be fully remote-controlled by PS-5M.
- PSO-5T, can be remote-controlled, day/night by PS-2, used for MEU.
- PSMB-5, mounting box, flush or surface mounted on the side screen or on the wall close to the door.
- PS-5M, flush or surface mounted, for central control of an optional number of operators. In setting AUTO every connected operator are individually controlled by its own programme selector.
- PS-6, surface mounted on the side screen or on the wall close to the door.

Mounted in the operator

Flush mounted

Surface mounted
### 13.2 Programme selector functions

<table>
<thead>
<tr>
<th>Programme Selector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFF</strong></td>
<td>This function is only used on emergency escape doors after it is certain that all people have left the building. The door cannot be opened with inner and outer activation units. The door is locked if an electromechanical locking device has been fitted. The door can be opened partially with a key switch (if fitted). With an emergency push-button (if fitted) the door opens fully.</td>
</tr>
<tr>
<td><strong>EXIT</strong></td>
<td>Passage from inside only. The door is normally locked if an electromechanical locking device has been fitted. The door can only be opened with the inner activation unit or with a key switch/emergency push-button (if fitted).</td>
</tr>
<tr>
<td><strong>AUTO</strong></td>
<td>Two-way traffic, normal operation of the door. The door can be opened with the inner and outer activation units and with a key switch/emergency push-button (if fitted).</td>
</tr>
<tr>
<td><strong>AUTO PARTIAL</strong></td>
<td>Two-way traffic, AUTO PARTIAL is obtained. The door can be opened partially with the inner and outer activation units and with a key switch (if fitted). With an emergency push-button the door opens fully.</td>
</tr>
<tr>
<td><strong>OPEN</strong></td>
<td>The door is permanently open. The door can be moved by hand e.g. for window cleaning. All activation units except for the emergency push button (if fitted) are disconnected.</td>
</tr>
<tr>
<td><strong>RESET</strong></td>
<td>Set the programme selector to AUTO. Insert a narrow object in the small hole on the programme selector and push briefly. The operator makes a system test of the emergency unit (if selected), electromechanical lock, watchdog relay and closed door position. The operator is after closing reset and ready for normal operation. <strong>Note!</strong> The RESET is not available on programme selector PS-5M.</td>
</tr>
</tbody>
</table>

**RESET**

Turn the key clockwise to the position “R” (six o’clock) and insert a narrow object in the small hole on the programme selector and push briefly. Then turn the key counter-clockwise back to the requested setting. The operator makes a system test of the emergency unit (if selected), electromechanical lock, watchdog relay and closed door position. The operator is after closing reset and ready for normal operation. **Note!** The key cannot be removed in the “R” position.

**Note!** If monitored emergency unit is a demand, a test of the emergency unit is performed when the programme selector is turned from OFF or OPEN to any other position.
14 Troubleshooting

Before starting the troubleshooting, check that the programme selector setting is correct and then RESET the operator. Start the troubleshooting by checking the mechanical and electrical parts of the operator in the following order.

The control unit, emergency unit and electromechanical lock are fixed with brackets in the support beam. To replace, the complete unit is to be loosened and replaced.

14.1 Mechanical checking and remedies

 Disconnect the mains power. Unlock all mechanical locks. Pull the door leaf manually and check that the door can be easily moved over the complete sliding track/floor guide. If the door leaf stops or is hard to move, the reason may be sand, stones, rubbish etc. in the floor guide. The door leaf may also be jamming on the floor or on the draught excluders. Clean the floor guide, adjust the door leaf height/depth or take other necessary measures e.g. replacement of wear parts until the door leaf is running smoothly when manually operated.

14.2 LED indication and CT Error codes

 The control unit is equipped with a light emitting diode LED for error indication. By means of the configuration tool CT, a more detailed error description (CT error codes) can be obtained. See also separate manual for CT.

14.2.1 Normal operation/Non-critical errors

 During normal operation and for non-critical errors the LED on the control unit is illuminated.

14.2.2 Power failure (no error code)

 If the LED is extinguished check the mains power, power supply cable and perform a RESET. If the problem remains replace the control unit.
14.2.3 LED indication

- **Sensor error**
  1 fast flash (0.2s), pause (1.0s) etc.

- **Emergency Unit error**
  2 fast flashes (0.4s), pause (1.0s) etc.

- **CUF error**
  3 fast flashes (0.6s), pause (1.0s) etc.

- **Motor/Encoder error**
  4 fast flashes (0.8s), pause (1.0s) etc.

- **Lock error**
  5 fast flashes (1.0s), pause (1.0s) etc.

- **Motor Temperature High**
  1 slow flash (1.8s), pause (0.2s) etc.

- **Normal operation/Non-Critical errors**
  Illuminated
14 Troubleshooting

14.2.4 Sensor Error

LED indication: 1 fast flash (0.2s), pause (1.0s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence Impulse Error</td>
<td>The control unit doesn’t get a test answer, from the activation unit.</td>
<td>Make sure that the monitoring output is connected and the connections are OK.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace the presence activation unit.</td>
</tr>
<tr>
<td>Side Presence Impulse Error</td>
<td>The control unit doesn’t get a test answer, from the activation unit.</td>
<td>Make sure that the monitoring output is connected and the connections are OK.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace the side presence activation unit.</td>
</tr>
<tr>
<td>Inner Impulse Error</td>
<td>The control unit doesn’t get a test answer, from the activation unit.</td>
<td>Replace the presence activation unit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adjust sensor field so that the sensor can give a test answer.</td>
</tr>
</tbody>
</table>

14.2.5 Emergency Unit Error

The door is opened and stays open

LED indication: 2 fast flashes (0.4s), pause (1.0s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Action Timeout</td>
<td>The door is prevented from fulfilling its emergency unit test within a stated time, due to broken or weak rubber band, high friction or jammed door.</td>
<td>Check rubber band tension and make sure that the door can open to fully open position.</td>
</tr>
<tr>
<td>Emergency Unit Error</td>
<td>The battery voltage drops due to low capacity.</td>
<td>Charge or replace battery.</td>
</tr>
<tr>
<td></td>
<td>The battery voltage measurement is wrong.</td>
<td>Replace the EXU-4 extension unit.</td>
</tr>
<tr>
<td>Battery Error</td>
<td>The battery is disconnected or short-circuited.</td>
<td>Make sure that the cables are OK and connected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check the battery fuse.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Charge or replace battery.</td>
</tr>
</tbody>
</table>
14.2.6 CUF error

LED indication: 3 fast flashes (0.6s), pause (1.0s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM Error</td>
<td>Internal RAM memory error.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>ROM Error</td>
<td>Internal ROM memory error.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>EEPROM Error</td>
<td>Serious internal EEPROM memory error.</td>
<td>RESET</td>
</tr>
<tr>
<td>EEPROM Critical Write Error</td>
<td>Internal write EEPROM memory error. This error mainly occurs when it's impossible to change a configuration parameter.</td>
<td>Try to change the configuration parameter that caused the problem, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>SMPS Over Voltage</td>
<td>The internal link voltage has for some reason increased to above 47 V.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>A/D Converter Error</td>
<td>The internal A/D Converter or multiplexer is broken.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>Lock Circuit Error</td>
<td>It is not possible to disconnect the lock with the lock relay.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>Hardware Watchdog Error</td>
<td>It is not possible to disable the motor bridge.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>Output Enable Error</td>
<td>Test of safety related circuits failing.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>Register Error</td>
<td>Internal register error.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>OS Error</td>
<td>Internal program error.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
<tr>
<td>Flash Code Error</td>
<td>Serious internal programming error.</td>
<td>Replace the control unit.</td>
</tr>
<tr>
<td>Link Voltage Error</td>
<td>The internal link voltage measurement is wrong.</td>
<td>RESET, and if the problem remains, replace the control unit.</td>
</tr>
</tbody>
</table>

14.2.7 Motor / Encoder error

The motor and lock power are disconnected.

LED indication: 4 fast flashes (0.8s), pause (1.0s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encoder Error</td>
<td>The encoder, encoder cable or Motor cable is damaged.</td>
<td>Make sure that the encoder cable and the motor cable are connected.</td>
</tr>
<tr>
<td></td>
<td>Wrong Motor type is selected.</td>
<td>Check Motor Type configuration with the CT-Tool.</td>
</tr>
<tr>
<td>Motor Current Error</td>
<td>The Motor cable or Encoder cable is damaged.</td>
<td>Make sure that the encoder cable and the motor cable are connected.</td>
</tr>
<tr>
<td></td>
<td>Wrong Motor type is selected.</td>
<td>Check Motor Type configuration with the CT-Tool.</td>
</tr>
<tr>
<td>Encoder Cable Error</td>
<td>The encoder cable is damaged.</td>
<td>Make sure that the encoder cable is connected.</td>
</tr>
</tbody>
</table>
14.2.8 Lock error

The motor and lock power are disconnected.

LED indication: 5 fast flashes (1.0s), pause (1.0s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock Failure</td>
<td>The lock or something else was preventing the door from opening the first 14 mm from closed position.</td>
<td>Make sure that the lock is operating without friction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make sure that HOLD FORCE and LOCK RELEASE are set correctly.</td>
</tr>
</tbody>
</table>

14.2.9 Motor Temperature High

The door is opened and stays open.

LED indication: 1 slow flash (1.8s), pause (0.2s), etc.

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Temperature High</td>
<td>The duty cycle of the door is too high for the current speed settings and HOLD OPEN TIME.</td>
<td>If the motor is warm, put the door in PS OPEN and wait for at least 1 minute. Reduce speeds and increase HOLD OPEN TIME.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The heavy-duty motor is replaced with a normal duty motor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Put the door in PS OPEN and wait for at least 5 minutes.</td>
</tr>
</tbody>
</table>

**Note!** This error is not removable by RESET, only by setting the door in programme selection OPEN with the power on.

14.2.10 Non-Critical errors

These errors don’t influence the door operation but are logged in the error log, and can only be displayed by means of the CT-Tool.

LED indication: Illuminated

<table>
<thead>
<tr>
<th>CT error code</th>
<th>Reason</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Error</td>
<td>The cable to the CT-Tool was removed before performing DISCONNECT from the CT-Tool.</td>
<td>Connect the CT-Tool and DISCONNECT from the CT-Tool before removing the cable.</td>
</tr>
<tr>
<td>EEPROM Access Error</td>
<td>The EEPROM queue is full.</td>
<td>Too many events to log in the event log. Reduce the number of events to log in the event log configuration.</td>
</tr>
<tr>
<td>EEPROM Non-critical Write Error</td>
<td>The control unit cannot write error log, event log, or service log information to the EEPROM memory.</td>
<td>RESET, and if the problem remains, replace the control unit if it is important to read log information.</td>
</tr>
</tbody>
</table>

14.3 After remedy or replacement the operator has to be checked as follows:

a Study the door movement and adjust the functions to the values required for a smooth door operation.

b Check that correct functions and values have been selected for the installed accessories and that the installation complies with valid regulations and requirements from the authorities.

c Clean the cover and the doors.
Service/Maintenance

Regular inspections shall be made according to national regulations and product documentation by an Entrematic Group-trained and qualified technician. The number of service occasions should be in accordance with national requirements and product documentation. This is especially important when the installation concerns a fire-approved door or a door with an emergency opening function.

As with all other technical products, an automatic door needs maintenance and service. It is essential to know the importance of maintenance to have a reliable and safe product.

Service and adjustments will ensure a safe and proper operation of an automatic door unit.

The “Service Log Book” shall be used together with the “Site Acceptance Test and Risk Assessment” document provided. Keep both documents available for maintenance and service records.

The table below shows the recommended interval in months, when to replace parts during preventive maintenance.

<table>
<thead>
<tr>
<th>Part</th>
<th>Part number</th>
<th>Cycles/hour in operation</th>
<th>Abusive Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;10 Low traffic</td>
<td>&lt;100 Medium traffic</td>
</tr>
<tr>
<td>Electrical emergency</td>
<td>33550475</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>unit battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical emergency</td>
<td>331700121</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>unit elastic cord</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor guide shoe</td>
<td></td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Standard</td>
<td>33830064</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt padded</td>
<td>33831622</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Break-out</td>
<td>830792</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carriage wheel</td>
<td>331000525</td>
<td>36</td>
<td>24</td>
</tr>
<tr>
<td>Double</td>
<td>33550716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-derailing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sliding track</td>
<td>33701596</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>Tooth belt</td>
<td>33735251</td>
<td>60</td>
<td>48</td>
</tr>
</tbody>
</table>

Check that all required signage, see page 51, is applied and intact. Also check other consumable parts, such as brushes, door stops and glazing rubbers.

a) Remove dust and dirt from the operator. Dirt on the sliding track should be removed with methylated spirits. If necessary replace the sliding track.

b) None of the parts need lubrication.

Note! The force for redundant opening with MEU is created with help of elastic cords. The material for these cords may be slowly degraded if exposed to lubricants.

c) The tooth belt must be kept dry and clean. Check the belt tension.

d) Check that all nuts and bolts are tightened well.

e) Adjust, if necessary, the door leaf speed, the HOLD OPEN TIME and the door leaf position to comply with valid regulations and requirements.
   See the “Guide for installers of Powered Pedestrian Sliding Doors”, document PRA-0004, for calculation of speed.

f) Check, and re-adjust if needed, door leaves height and tilt to secure a proper and smooth sliding, opening and closing.
g  Check, re-adjust or exchange if needed, brushes, rubber sealings etc to secure proper closing and efficient energy saving by helping to prevent energy waste.

h  Check that all the safety distances required by applicable norms to prevent accidents by crushing, shearing, drawing-in, etc. are kept and respected. Re-adjust or exchange or suggest additional protection if needed.

i  Check that the function of emergency escape units always is operational.

j  If an electromechanical lock, LDP (locked with power) or LDB (bi-stable), is installed check the function as follows:

•  Set the programme selector to EXIT. The door should open and close without any sound from the lock.

•  Set the programme selector to OFF. Make sure the door can not be opened by pulling the door leaf in the opening direction.

•  When the programme selector is set back to EXIT, two clicking sounds (LDB) or one clicking sound (LDP) indicate that the lock is unlocked. The door should then open and close without any sound from the lock.
16 Accessories

16.1 Safety accessories

Even though the EM SL T is installed to comply with all applicable safety regulations, it is possible to enhance safety/comfort with the following add-ons (please contact your local Entrematic Group company for detailed description).

- Combined motion and presence sensors
- Separate presence sensors

16.2 General accessories

Your EM SL T can be further improved with the following add-ons (please contact your local Entrematic Group dealer for detailed description).

16.2.1 Cover
Made in clear anodized aluminium as standard. Paint finished in RAL colours or anodizing optional.

16.2.2 Motion sensors
Motion and presence sensors, see separate manuals or installation drawings.

16.2.3 Programme selectors
Programme selectors
See page 52 and separate installation drawings 656037 and 656058.

16.2.4 Electrical locks
Locked with power, locked without power or bistable lock.
See separate installation drawing 656007.

16.2.5 Manual unlocking device
For manual unlocking of the electrical lock, locked without power.
See separate installation drawing 656017.

16.2.6 Micro switch kit
For indication of door and lock position.
See separate installation drawing 656006.

16.2.7 Locked door indicator
For indication of locked lock and closed door for connection to alarm system.
See separate installation drawing 656084.
16.2.8 Electrical emergency unit with batteries

Used if a door is required to be opened or closed by means of a rechargeable battery unit and remain in this position in the event of power failure. Authorities can demand that the emergency units are monitored on a regular time basis. Half an hour before this time has elapsed the following opening impulse generates an emergency opening test. If there is no opening impulse within the next half hour, the operator control unit generates the opening impulse itself.

If the battery opens the door within the limited time the test is successful and the door resumes the function set by the programme selector.

**Note!** The test is never performed in programme selector setting OPEN. In setting OFF it can be selected. The test is always performed after a RESET and after changing program selection, from a position where a test is not done to a position where the test is a demand.

16.2.9 Electrical emergency unit with batteries and two motors

Used if a door is required to be opened by means of a rechargeable battery unit and remain in this position in the event of power failure. Authorities can demand that the emergency unit is monitored on a regular time basis. Half an hour before this time has elapsed the following opening impulse generates an emergency opening test. If there is no opening impulse within half an hour, the operator control unit generates the opening impulse itself.

If the battery opens the door within the limited time the test is successful and the door resumes the function set by the programme selector.

**Note!** The test is never performed in programme selector setting OPEN. In setting OFF it can be selected. The test is always performed after a RESET and after changing program selection, from a position where a test is not done to a position where the test is a demand.

See separate installation drawing 1006706.

16.2.10 Emergency closing with repeated closing

If the door is opened by hand after an electrical emergency closing, it will close again.

See separate installation drawing 656006.

16.2.11 Mechanical emergency unit with elastic cord

Used if a door is required to be opened and remain opened by means of an elastic cord in the event of power failure. Authorities can demand that the emergency unit is monitored on a regular time basis. Half an hour before this time has elapsed the following opening impulse generates an emergency opening test. If there is no opening impulse within half an hour, the operator control unit generates the opening impulse itself.

If the elastic cord opens the door within the limited time the test is successful and the door resumes the function set by the programme selector.

**Note!** The test is never performed in programme selector setting OPEN. In setting OFF it can be selected. The test is always performed after a Reset and after changing program selection, from a position where a test is not done to a position where the test is a demand.

See separate installation drawings 656008 and 1005454.

16.2.12 Break-out unit PSB

Enables the door/side screens to be broken outwards in case of emergency closing, it will close again.

See Emergency escape on page 11 and separate installation drawing 1003658.

16.2.13 Interlocking

Used between two operators when the first operator must close before the other one can open (typical to reduce energy losses and not for security reasons). EXU-4 required.
16.2.14 Convenience battery UPS
Stand-by supply which gives continued operation during short power failure. EXU-3 or EXU-4 required. See separate installation drawing 656056.

16.2.15 Emergency opening
Opens the door in any programme selector setting (fireman’s opening). EXU-4 required.

16.2.16 External error indication
Obtained if a lamp or a buzzer is connected. EXU-4 required.

16.2.17 Key switches (flush and/or surface mounted)
Used to give opening impulse to the door in any programme selector setting. With electrical emergency unit also during power failure.

16.2.18 Push button
Used to give opening impulse to the door.
See separate installation drawing 656005.

16.2.19 Double carriage wheels
Used for door weights over 100 kg and for narrow door leaves as anti-tilt.

16.2.20 Synchronization
Used between the operators of two single sliding doors, working together in very large openings.