



# Sliding Door Operator EM SL



User Manual  
Original instructions

# CONTENTS

- Congratulations on your new automatic door! ..... 4
- Electronic equipment reception interference ..... 4
- Environmental requirements ..... 4
- Product liability ..... 4
- Service ..... 5
- Intended use ..... 5
- How the EM SL works ..... 5
- Locking ..... 5
- Unlocking ..... 6
- Programme selectors ..... 7
- Technical specification ..... 8
- Integrated safety ..... 8
- Emergency escape ..... 9
- Regular safety checks ..... 10
- Safety accessories ..... 13
- General accessories ..... 13
- Troubleshooting ..... 15
- Maintenance plan ..... 16
- Other products from Entrematic Group ..... 16
- Declaration of conformity ..... 17

© All rights in and to this material are the sole property of Entrematic Group AB. Copying, scanning, alterations or modifications are expressly forbidden without the prior written consent of Entrematic Group AB. Rights reserved for changes without prior notice.

Backtrack information: folder:Workspace Publish old version, version:a5, Date:2014-08-08 time:12:03:10, state: Working

---

## 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.

# Congratulations on your new automatic door!

Entrematic Group has developed automatic doors for more than 50 years. State-of-the-art technology and carefully tested materials and components provide you with a superior product.

As with all other technical products, your automatic door requires periodic maintenance and service. It is essential that you know your automatic door (system) and that you recognize the importance of maintaining it in compliance with applicable standards for safety.

Your local Entrematic Group-authorized representative is familiar with these standards, as well as all applicable local codes and Entrematic Group recommendations for power-operated pedestrian doors. Service and adjustments performed by your Entrematic Group-authorized representative, will ensure safe and proper operation of your automatic door unit.

## 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.

However, 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 electronic technician for additional suggestions.

## 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.

## Product liability

According to regulations, the following are the responsibility of the owner or caretaker of the equipment

- that the equipment operates correctly, so that it gives sufficient protection in regard to safety and health
- that the equipment is operated and regularly maintained, inspected and serviced by someone with documented competence in the equipment and in applicable regulations
- that a journal is kept of inspection, maintenance and service records including the provider
- that inspection covers the emergency opening function (when applicable)
- that the closing force is appropriate for the door size on fire-approved door systems (when applicable)

## Service

Regular inspections by a trained and qualified person, and the frequency of service occasions, should at minimum be made according to national regulations or industry standard, in the absence of a national regulation. This is especially important when the installation concerns a fire-approved door or a door with an emergency-opening function. To extend the life of your investment and ensure safe and reliable operation of the door, we recommend a minimum of 2 visits per year or more, depending on usage and operating conditions. Environmental aspects shall also be considered. Talk to your Entrematic Group representative to learn more about our service offering.

## Intended use

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

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.

It is to be used indoors where it is suitable for almost all types of external and internal sliding doors. Ensure that the lock is only activated when there are no persons in the room.

For installation and maintenance see Installation and Service manual 1004572.

Save these instructions for future reference.

## How the EM SL works

The EM SL works electromechanically. The drive unit, control unit, transmission, 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 and hangs on a sliding track. The active leaf travel is directed by a floor guide.

When an opening impulse (e.g. from a motion sensor) is received by the control unit, the drive unit starts and transmits movement to the door leaves to open.

The closing starts when no OPENING IMPULSE is received, the HOLD OPEN TIME has ended and no PRESENCE IMPULSE is activated.

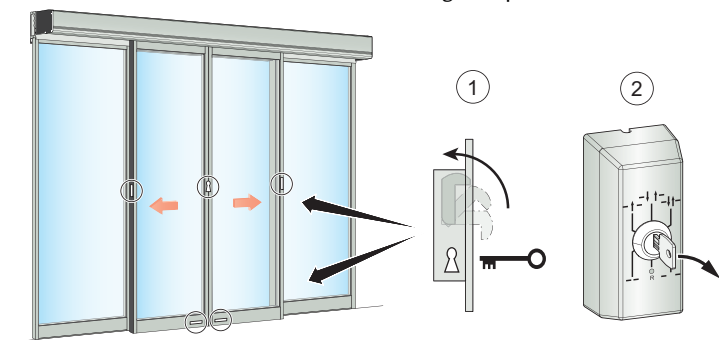
The EM SL user can select five different modes of operation if a programme selector is installed. See Programme selectors on page 7.

## Locking

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 mode. In other buildings emergency escape doors may be locked or put in programme selection OFF mode after it has been secured and all people have left the building.

# Unlocking

Unlock *all* the mechanical locks before activating the operator.



## Programme selectors

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

### Flush mounted

PSMB-5  
PS-5M

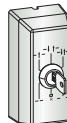


### Surface mounted

PSMB-5  
PS-5M



PS-6



## Programme selector functions



OFF

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.



EXIT

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).



AUTO

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).



AUTO  
PARTIAL

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.



OPEN

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.



RESET

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.

**Note!** The RESET is not available on programme selector PS-5M.



## 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.

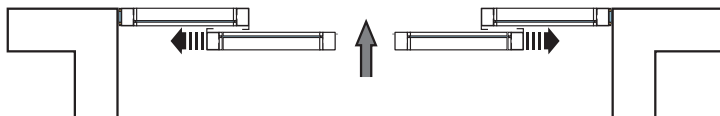
**Note!** If monitored emergency unit is a demand, a test of the emergency unit is performed when the programme selector is turned from OFF or OPEN to any other position.

## Technical specification

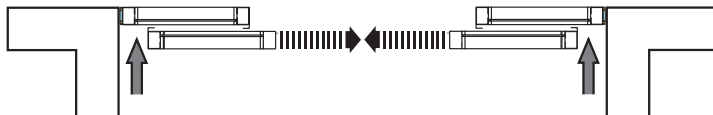
Manufacturer:	Entrematic Group AB
Address:	Lodjursgatan 10, SE-261 44 Landskrona, Sweden
Type:	EM SL
Mains power supply:	120 - 240 V AC 50/60 Hz, mains fuse max 10A
Power consumption:	Max. 250 W
Degree of protection:	IP20
Approvals:	Third party approvals from established certification organizations valid for safety in use, see Declaration of Incorporation.

## Integrated safety

To permit a safe passage between closing doors, the doors reverse immediately if an obstruction is detected. They 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 stop immediately, and then close after a time delay.



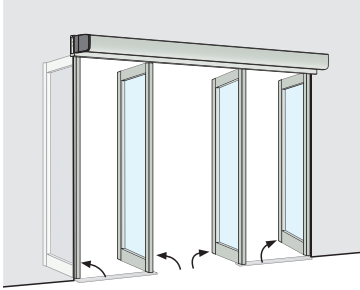


## Emergency escape

The operator can be fitted with different emergency escape units to ensure a safe evacuation of the building.

### Break-out unit PSB

The door leaves and the side screens are swung outwards when a defined pressure is applied. The break-out function can also be used to create a wider opening. From the fully swung out position, the door leaves can be manually slid sideways, offering the possibility to transport wide objects through the opening, or to make a shop entrance more inviting during good weather.



### Mechanical emergency unit (MEU)

An elastic cord is used to open the door in the event of power failure. Until the power is restored, the door remains open. The operator will then resume the function set by the programme selector. The emergency unit is monitored by the operator control unit. A monitoring error means that the door opens and remains open until the error is cleared.

For further information, see General accessories on page 13.

### Electrical emergency unit (EEU)

The door is opened by means of a rechargeable battery unit in the event of a power failure. The door remains in this position until the power is restored. The operator will then resume the function set by the programme selector. The emergency unit is monitored by the operator control unit. A monitoring error means that the door opens and remains open until the error is cleared.

For further information, see General accessories on page 13.

The electrical emergency function can also be used to close the door in the event of power failure. The fire authorities make this a requirement to stop fire or smoke from spreading throughout the building.









## Regular safety checks

To help you fulfil the national/international requirements and to avoid malfunction and risk for injuries, we have provided the following checklist.



Do not use if repair or adjustment is necessary.

Disconnect supply <sup>⑫</sup> when cleaning or other maintenance is to be carried out.

Daily Action			If problem occurs
Activate your operator and <i>visually</i> check, fastening of <ul style="list-style-type: none"><li>operator and cover ①</li><li>cables ②</li><li>programme selector(s) ③</li><li>door and glass (stability) ④</li></ul>			
Also inspect your operator and check <i>visually</i> for <ul style="list-style-type: none"><li>condition of door seals and weather stripping ⑤</li><li>condition of glazing rubbers ⑥</li><li>finger protection ⑦</li><li>proper operation; closes slowly and smoothly</li><li>any ventilation being obstructed</li></ul>			 
Set the programme selector to OFF and check that the operator and electromechanical lock (if fitted) work together. Also check that the lock ⑧ really secures the door.			
Activate the manual activation units ⑨, if any, and walk towards the door. Check that the door has opened appropriately while you pass the entrance/exit. Then proceed with the automatic activation units ⑩ in the same way.			
Check the safety sensors ⑪ if any. If you are unsure of which type of sensor you have, please contact your Entrematic Group representative.			
Escape doors	By law, these tests must be performed regularly by trained personnel.	If the operator is equipped with break-out system, set the programme selector to AUTO mode. Push the door manually while in the escape direction to ensure that nothing prevents the door from being open. Also ensure that the escape route is free for use. After the test, restore the door(s) to their normal mode of operation.	 
		If the operator is equipped with automatic opening system, shut off the power and the door should open and remain open. Restore power and the door should close.	
Fire doors			Let the door close after an impulse ensuring nothing prevents the door from closing and locking (if regulations require it).

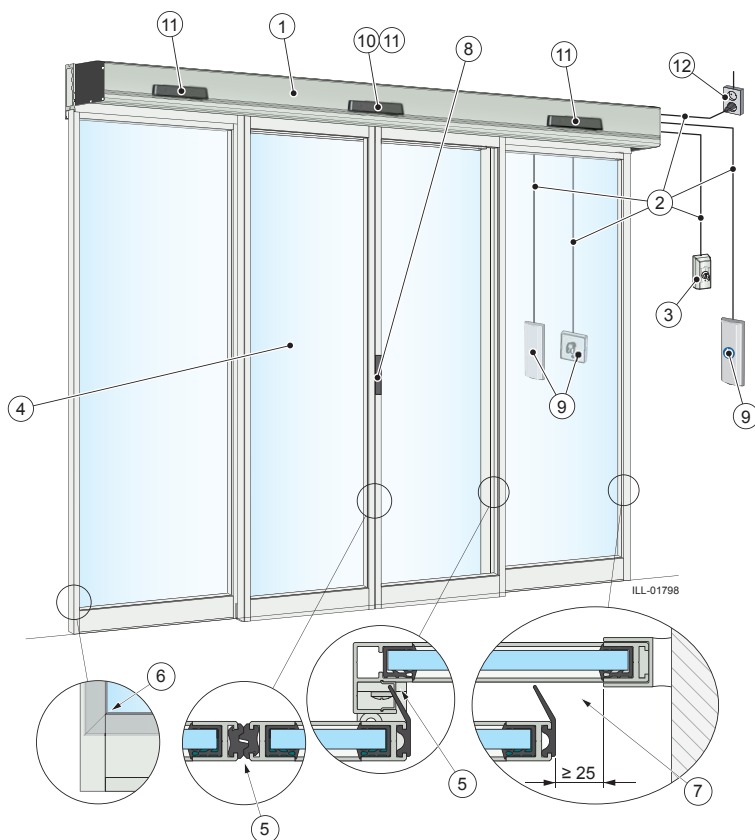


= Take appropriate measures.



= Contact your Entrematic Group representative. For contact information, see last page.

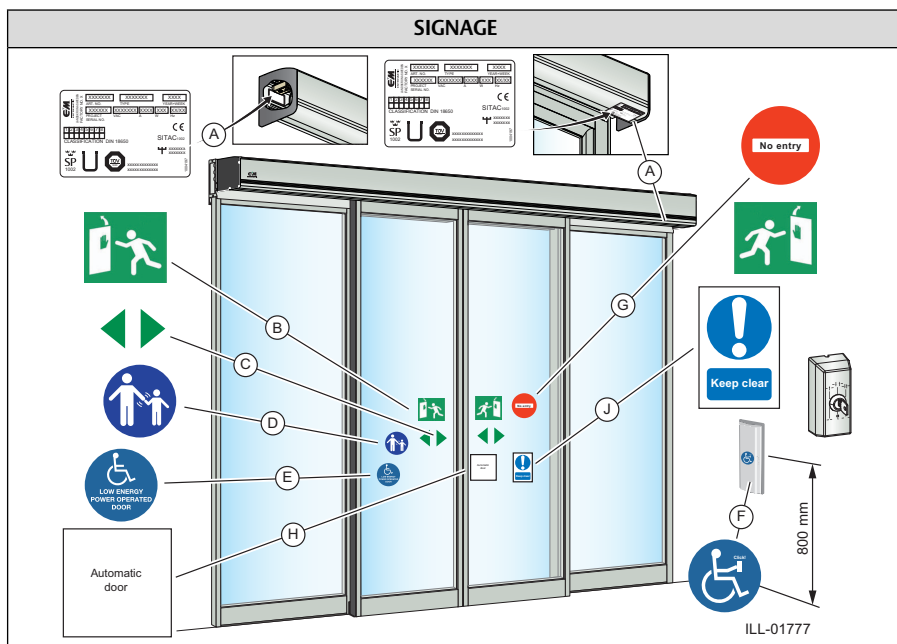
## FUNCTION AND VISUAL INSPECTION



## CLEANING

The best way to remove dust and dirt from the EM SL is to use water and a soft cloth or a sponge. A gentle detergent may be used. To maintain the quality of the enamel layer, the surfaces should be cleaned once/four months period. The cleaning should be documented. To avoid damages to the profiles the brushes/weather stripping must be vacuum-cleaned weekly.

- Do not expose windows, doors or profiles to alkalis. Both aluminium and glass are sensitive to alkalis.
- Do not clean with high pressure water. Operator, programme selector and sensor may be damaged and water may enter the profiles.
- Do not use polishing detergent.
- Do not scrub with materials like Scotch-brite, as this will cause mechanical damage.



Action		If problem occurs
Check that all required signage is applied and intact. Mandatory indicates that the signage is required by European directives and equivalent national legislation outside the European Union.		
(A)	Product label: Mandatory	
(B)	Emergency break-out: Mandatory, if approved for escape route.	
(C)	Entrematic Group door sticker: Mandatory, if applicable to highlight the presence of the glass (applied to all glass sections that are moving).	
(D)	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.	
(E)	Operator designed for disabled people: Recommended, if applicable (applied to both sides of the door)	
(F)	Activation by disabled people: Recommended, if applicable	
(G)	No entry, identifying one-way traffic: Mandatory in GB and US, if applicable	
(H)	Automatic door: Only mandatory in GB	
(J)	Keep clear: Only mandatory in GB	

= Contact your Entrematic Group service representative. For contact information, see last page.

## Safety accessories

Even though the EM SL 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

## General accessories

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

- Cover  
Made in clear anodized aluminium as standard. Paint finished in RAL colours or anodizing optional.
- Motion and presence sensors, see separate manuals or installation drawings.
- Programme selectors  
See page 7.
- Electrical locks  
Locked with power, locked without power or bistable lock.
- Manual unlocking device  
For manual unlocking of the electrical lock, locked without power.
- Micro switch kit  
For indication of door and lock position.
- Locked door indicator  
For indication of locked lock and closed door for connection to alarm system.
- 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 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 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.

- 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.

- **Emergency closing with repeated closing**  
If the door is opened by hand after an electrical emergency closing, it will close again.
- **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.

#### Break-out unit PSB

Enables the door/side screens to be broken outwards in case of emergency by applying a defined pressure.

- **Break-out unit PSB**  
Enables the door/side screens to be broken outwards in case of emergency by applying a defined pressure.  
See page 9.
- **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.
- **Convenience battery UPS**  
Stand-by supply which gives continued operation during short power failure. EXU-3 or EXU-4 required.
- **Emergency opening**  
Opens the door in any programme selector setting (fireman's opening). EXU-4 required.
- **External error or status indication**  
Obtained if a lamp or a buzzer is connected. EXU-4 required.
- **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.
- **Push button**  
Used to give opening impulse to the door.
- **Synchronization**  
Used between the operators of two single sliding doors, working together in very large openings.

# Troubleshooting

What's wrong?	Remedies
<b>The door does not open</b>	
The motor does not start	Change the setting of the program selector.
	If break-out unit PSB is installed, check that the door leaves and side screens are completely closed.
	Check the mains switch and fuse in the building.
The motor starts but stops during opening	Unlock the mechanical locks.
	Clean the floor guide.
	Check for objects jammed under the door.
<b>The door does not close</b>	
The motor does not start	Change the setting of the program selector.
	If a presence sensor is installed, check for and remove objects placed in the presence zone.
The motor starts but stops during opening	Clean the floor guide.
	Check for objects jammed under the door.
<b>The door moves slowly</b>	
	Prevent traffic using the door and allow it to do a complete opening and closing cycle with low speed.
	Reset the operator by setting the programme selector to AUTO and pushing a narrow object in the small hole on the programme selector.
	Allow the operator to control the closed position without interruption.
<b>If the problem continues, please contact your Entrematic Group representative.</b>	

# Maintenance plan

As mentioned earlier in this manual, service and adjustments performed by your Entrematic Group-authorized representative will ensure safe and proper operation of your automatic door unit. The table below shows the recommended interval in months, when to replace parts during preventive maintenance.

Part	Part number	Cycles/hour in operation			Abusive Environment
		<10	<100	>100	
		Low traffic	Medium traffic	High traffic	
Electrical emergency unit battery	33550475	24	24	24	24
Mechanical emergency unit elastic cord	331700121	12	12	12	12
<b>Floor guide shoe</b> Standard Felt padded Break-out	33830064 33831622 830792	24	12	6	6
<b>Carriage wheel</b> Double Anti-derailing	331000525 33550716	36	24	12	12
Sliding track	33701596	48	36	24	12
Tooth belt	33735251	60	48	36	24

## Other products from Entrematic Group

- Door Systems
- Sliding doors
- Swing doors
- Automatic and manual activation units



# Declaration of conformity



We  
Entrematic Group AB  
Lodjursgatan 10  
SE-261 44 Landskrona  
Sweden

declare under our sole responsibility that the type of equipment:

**EM SL Single or Double, EM SL T Single or Double. With or without emergency unit**

complies with the following directives:

**2006/95/EC Low Voltage Directive (LVD)**  
**2004/108/EC ElectroMagnetic Compatibility Directive (EMCD)**  
**2006/42/EC Machinery Directive (MD)**

Harmonized European standards which have been applied:

EN 60335-1      EN 61000-6-2      EN 61000-6-3      EN ISO 13849-1      EN 16005

Other standards or technical specifications, which have been applied:

BBR      BVL      DIN 18650-1/-2      FCC 47 CFR Part 15 B

EN 60335-2-103

EC type examination or certificate issued by a notified or competent body (for full address, please contact Entrematic Group AB) concerning the equipment:

SITAC 0137/05      SITAC 0145/05

SITAC 0147/05      TÜV B 12 07 74969 007

The manufacturing process ensures the compliance of the equipment with the technical file. The manufacturing process is regularly assessed by 3rd party.

Compilation of technical file:

Johnny Persson  
Entrematic Group AB  
Lodjursgatan 10  
SE-261 44 Landskrona  
Sweden

Email: [johnny.persson@entrematic.com](mailto:johnny.persson@entrematic.com)

Place  
Landskrona

Date  
2013-05-07

Signature  
Johnny Persson

Position  
Product Safety & Liability Manager

DoC 1000190-EMEI-7.0



Entrematic Group AB, Lodjursgatan 10, SE-261 44 Landskrona, Sweden

Tel: +46 10 47 48 300 • Fax: +46 418 201 15

[www.entrematic.com](http://www.entrematic.com) • [info.em@entrematic.com](mailto:info.em@entrematic.com)