









LoLUX

Operating Instructions

To assist us communicate of important parts, DEA System adopts the symbols shown.

	Warning
	Danger
	Consultation
	Observation
	Inspection
	Certification

LoLUX (LIVI)

Electromechanical operators for sliding gates

Operating instructions and warnings

ENGLISH

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ANNEXES

- Instructions for the final user
- Terms of warranty

OVERVIEW

SCOPE OF THE INSTRUCTIONS

These instructions were prepared by the manufacturer and are an integral part of the product. The operations described are intended for adequately trained and qualified operators and must be carefully read and conserved for future reference.

Chapters "2 RESIDUAL RISK WARNINGS" and "4 OPERATING INSTRUCTIONS" contain all the information that **DEA** System provides in order for the product to constantly satisfy the Essential Safety Requirements prescribed by the Machinery Directive (European Directive 2006/42/CE). Read these chapters carefully because they contain important instructions for safe installation, use and maintenance and important warnings regarding the residual risks remaining even after all the safety devices and measures described have been applied. The product is designed for installation in complete closing systems subject to specific legislation. Chapter 6 "COMPLETE CLOSING ASSEMBLY" provides useful information for the respect of the Essential Safety Requisites for special types of closing.



1

PRODUCT CONFORMITY

DEA System guarantees the conformity of the product to European Directives 2006/42/CE regarding machinery safety, 2004/108/CE electromagnetic compatibility and 2006/95/CE low voltage electrical equipment. **DEA** System also encloses the

manufacturer's Declaration of Conformity with these instructions (see Directive 2006/42/CE Art. 4, paragraph 2).



2 RESIDUAL RISK WARNINGS

Read these warnings carefully; the failure to respect the following warnings can create risk situations.

WARNING The use of the product under unusual conditions not foreseen by the manufacturer can create situations of danger, and for this reason all the conditions prescribed in these instructions must be respected.

WARNING Under no circumstances must the product be used in explosive atmospheres or surroundings that may prove corrosive and damage parts of the product.

WARNING All installation, maintenance, cleaning or repair operations on any part of the system must be performed exclusively by qualified personnel with the power supply disconnected working in strict compliance with the electrical standards and regulations in force in the nation of installation

WARNING All other adjustment/setting operations beyond the adjustment of the limit switch cams and of the mechanical clutch are made by the manufacturer. Tampering with these settings may cause malfunction and/or situations of risk to people, animals and property. Refrain from performing any operations not authorised by **DEA** System.

WARNING The use of spare parts not indicated by **DEA** System and/or incorrect re-assembly can create risk to people, animals and property and also damage the product. For this reason, always use only the parts indicated by **DEA** System and scrupulously follow all assembly instructions.

WARNING Awareness of the operation of the key-release mechanism (see F9 Page 32) is essential for all users of the automatism because the failure to use the device quickly during emergencies can jeopardise people, animals and property. Enclosure I to these instructions, which the installer is required to deliver to the final user, illustrates operation and can be detached.

WARNING **DEA** System reminds all users that the selection, positioning and installation of all materials and devices which make up the complete automation system, must comply with the European Directives 2006/42/CE (Machinery Directive), 2004/108/CE (electromagnetic compatibility), 2006/95/CE (low voltage electrical equipment). In order to ensure a suitable level of safety, besides complying with local regulations, it is advisable to comply also with the above mentioned Directives in all extra European countries.

WARNING To ensure an appropriate level of electrical safety always keep the 230V power supply cables apart (minimum 4mm in the open or 1 mm through insulation) from low voltage cables (motors power supply, controls, aerial and auxiliary circuits power supply), and fasten the latter with appropriate clamps near the terminal boards.

WARNING Any external safety device installed in order to conform to the limits set for impact forces must comply with EN 12978.



WARNING Wrong assessment of impact forces may cause serious damage to people, animal and things. DEA System reminds all personnel that the installer must ascertain that these impact forces, measured according to EN 12445 prescriptions, are actually below the limits indicated by EN14453 regulation.



WARNING In line with EU Directive 2002/96/EC for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to your local municipal collection point for recycling.



3 MODELS AND CONTENTS OF THE PACKAGE

The name LIVI identifies a series of electromechanical operators with different features as to motor and control board power supply voltage, range of built-in or external control board and mechanical adjustment of force, electronic clutch and built-in limit switch. DEA System articles in the series are listed in the "AVAILABLE MODELS" table. LIVI is completed by a set of accessories listed in the "PRODUCT ACCESSORIES" table. Inspect the "Contents of the Package" on Page 30 and compare it with your product for useful consultation during assembly.



4 OPERATING INSTRUCTIONS

In compliance with Directive 2006/42/CE Enclosure I, Point 1.7.4.

4.1 Product description

LIVI is an electro-mechanical operator designed for the automation of sliding gates. LIVI is basically made up of a mechanical gear motor (vedi F1 pag. 30) rotating the draft gear that, in association to a properly installed rack, converts the circular movement of the gear motor into straight-line movement, thus allowing the gate to move in its own slide.





4.2 Technical data

See the "TECHNICAL DATA" table.

4.3 Labelling information

Part of the summarised data for the CE label are listed in the label applied to the product (see Position F5, Page 30); the data regarding the seller are found in the enclosed Warranty, while "Indispensable Operating Safety Elements" are found under Point "4.2 Technical data".

"PRODUCT ACCESSORIES" table

Article Code	Description
111 619000	 Nylon rack
112 126001	 Zinc plated rack 22x22
113 126000	 Zinc plated rack 30x12
460 619010	 Foundation base to be cemented

4.4 Appropriate conditions of use

The LIVI is designed for installation in sliding gates as an actuator for the operational automatism as shown in F3 on Page 31. Brackets for both "horizontal" (standard) and "vertical" (see "PRODUCT ACCESSORIES" table) installation have been arranged for. The LIVI has been designed and tested for operation under "normal" civil gate opening conditions; temperature limits, degrees of protection against dust and water, and other data are provided in Point 4.2 "Technical Data". Satisfactory operation requires the correct positioning of the LIVI operator with respect to the gate; DEA System recommended measurements are shown in F3 page 31. The automatism required must be selected according to the gate to be moved; the attrition on the attachments, the weight, the length/height of the gate wing, and the degree of closing of the surfaces are the elements to be considered.

WARNING The use of the product under unusual conditions not foreseen by the manufacturer can create situations of danger, and for this reason all the conditions prescribed in these instructions must be respected.

WARNING Under no circumstances must the product be used in explosive atmospheres or surroundings that may prove corrosive and damage parts of the product.

	403E - 6NET	803E - 9NET	5/24NET/F	8/24NET/F
Motor power supply voltage (V)	230 V ~ ±10% (50/60 Hz)		24 V ===	
Absorbed power (W)	320	450	80	110
Max Thrust (N)	340	490	210	260
Work cycle (leaf L=5m)	18 cycles/hour	11 cycles/hour	22 cycles/hour	18 cycles/hour
Max n° of operations in 24 hour (leaf L=5m)	60	40	60	40
Built-in capacitor (µF)	8	12,5	-	
Operating temperature range (°C)	-20÷40 °C			
Motor thermal protection (°C)	140 °C	160 °C	-	
Opening speed (m/min)	10			
Weight of product with package (Kg)	11	12,5	12	
Protection degree	IPX4			



4.5 Instructions for risk-free operation

4.5.1 Transport

The LIVI gate operator is always delivered packed in boxes that guarantee the product adequate protection. Carefully read any warnings or instructions for storage and handling provided on the box.

4.5.2 Installation, assembly and disassembly

The following operations are essential to the correct laying of the product:

- The careful definition of the entire automatic opening layout (see also paragraph "6 Complete Closing Assembly"); in particular, after carefully assessing the characteristics of the place you have selected, define model and correct positioning of the foundation base (see F3, pages 31);
- screw in the foundation base (see F8 page 32) or put it in concrete with item nr. 460;
- Check carefully the correct positioning of the foundation base;
- Screw LIVI and the foundation base together using appropriate screws (see F7 page 32);

WARNING All installation, maintenance, cleaning or repair operations on any part of the system must be performed exclusively by qualified personnel with the power supply disconnected working in strict compliance with the electrical standards and regulations in force in the nation of installation.

4.5.3 Starting

The installation of the product requires masonry and/or welding and electrical connection operations using adequate equipment for the job in complete respect of the accident-prevention standards and regulations in force in the nation of installation.

The product must be electrically connected to a gate operator control board which is built-in in some LIVI models; see the instructions provided for such device for further information.

4.5.4 Use

The product is destined for incorporation in the assembly of devices that comprise the gate's automatism. **DEA** System assumes that it will always be used in compliance with the standards and regulations in force.

All LIVI models have an unlocking system; the working of this system is the following: after unlocking the lock on the handle (protected by a plastic cover) turn the lever in the direction shown in F9, page 32; the operator is now unlocked and, if no obstructions hinder its movement, the gate can now move freely. The opposite procedure, that is the rotation of the lever up to the limit switch and the locking of the lock (remember to protect

the lock with the appropriate cover) returns LIVI to its normal working conditions.

4.5.5 Adjustment

Each LIVI model is equipped with a limit switch whose operation must be adjusted on site. **DEA** System supplies two limit switch cams (see F4 page 30) which must be installed on the gate rack and subsequently adjusted so as to guarantee the gate functionality and safety distance both during opening and closing. Some LIVI models are equipped with mechanical clutch to limit the pressure of the gate against an obstacle obstructing its travel while opening or closing. Follow these instructions to adjust it (see F6 page 31):

- disconnect power supply to the operator;
- hold firmly the motor shaft with a wrench while rotating the grub screw with an Allen wrench (turn clockwise to increase force, and turn counterclockwise to reduce force);

WARNING All the other adjustment/setting operations beyond the adjustment of the oil flow are made by the manufacturer. Tampering with these settings may cause malfunction and/or situations of risk to people, animals and property. Refrain from performing any operations not authorised by **DEA** System.

4.5.6 Maintenance and repair

Good preventive maintenance and regular inspection ensure long working life (see also "Warranty"). Consult the "TROUBLE-SHOOTING" table (see page 9) whenever anomalies are observed in order to find the solution to the problem and contact **DEA** System directly whenever the solution required is not provided.

The inspection/maintenance operations to be routinely scheduled in the "complete automatism maintenance register" are:

INTERVENTION TYPE	PERIODICITY
cleaning of external surfaces	6 months
checking of screw tightening	6 months
checking of release mechanism operation	6 months

WARNING All installation, maintenance, cleaning or repair operations on any part of the system must be performed exclusively by qualified personnel with the power supply disconnected working in strict compliance with the electrical standards and regulations in force in the nation of installation.

WARNING The use of spare parts not indicated by **DEA** System and/or incorrect re-assembly can create risk to people, animals and property and also damage the product. For this reason, always use only the parts indicated by **DEA** System and scrupulously follow all assembly instructions.

"TROUBLE-SHOOTING" table

MALFUNCTION	CAUSES / SOLUTIONS
When the opening or closing command is activated the gate leaf fails to move and the operator's electric motor fails to start.	The operator is not receiving correct power supply. Check all connections, fuses, and the power supply cable conditions and replace or repair if necessary. If the gate does not close check the correct functioning of photocells.
When the opening command is activated, the motor starts but the gate leafs fail to move	Check that the unlocking system is closed (see F9, page 32) Check the electronic force adjustment device and the mechanical clutch Make sure that the motor does not push in the opposite direction, the limit switch electrical connections might be reversed
The gate moves by fits and starts, it is noisy, it stops at half run or it does not start	Make sure that nothing hinders the gate wheels movement and the slide in which they roll; There always must be backlash between rack and pinion; make sure the rack is accurately positioned. The power of the gearmotor may be insufficient for the characteristics of the gate's wing; check the choice of model whenever required If the operator attachment to the gate bends or is badly fastened, repair and/or buttress it.



4.6 Training

After installation and setting, the correct operation of the complete automatism must be carefully illustrated to the final user.

The LIVI gate operator requires careful instruction on the release mechanism (see "Enclosures") in particular and the respective maintenance schedule (see Point 4.5.6.).

WARNING Awareness of the operation of the LIVI key-release mechanism (see F9 Page 32) is essential for all users of the automatism because the failure to use the device quickly during emergencies can jeopardise people, animals and property. Enclosure I to these instructions, which the installer is required to deliver to the final user, illustrates operation and can be detached.

4.7 Inappropriate use

Chapter "4.4 Appropriate conditions of use" describes the conditions for which the product has been designed and tested. The product must never be used for other purposes.

WARNING The use of the product under unusual conditions not foreseen by the manufacturer can create situations of danger, and for this reason all the conditions prescribed in these instructions must be respected.

WARNING Under no circumstances must the product be used in explosive atmospheres or surroundings that may prove corrosive and damage parts of the product.



5 SPARE PARTS LIST

The list of spare parts that can be ordered (Pages 28, 29 and 33) is a detailed list that accompanies the exploded view of the product and must be used to order spare parts.

The following data must always be provided when ordering spare parts:

- the code of the product (seen on the product label; see F5, Page 31),
- the part's position number in the exploded view,
- if available, the product's purchase date may be useful in some cases.



6 COMPLETE CLOSING ASSEMBLY

This chapter illustrates the typical installation of a complete automatism for the purpose of informing and assisting the installer in the selection of the various parts to be used in compliance with Machinery Directive (2006/42/CE) and European Safety Standards (EN 14453 - EN 12445) for gate installation.

The data provided in this chapter are neither complete nor exhaustive, and **DEA** System declines all liability for any errors, omissions or inaccuracies that may occur.

6.2 Crushing in the opening area

The risk of crushing can also arise in the area between the gate being opened and the wall or other construction behind it. F10 on Page 32 provides the measurements that must be respected whenever measures are not taken to limit the impact force or whenever presence detection systems are not used.

6.3 Impact in the opening/closing area

Install a pair of photocells on one or the other side of the gate or on both in order to avoid the risk of impact with the gate in the closing area. (recommended height: 500 mm) in order to detect the presence of the test parallelepiped (height: 700 mm) positioned as shown in F11 on Page 32.

Note. The presence detection test sample is a parallelepiped with 3 sides with light-coloured reflecting surfaces and 3 sides with dark-coloured, opaque surfaces.

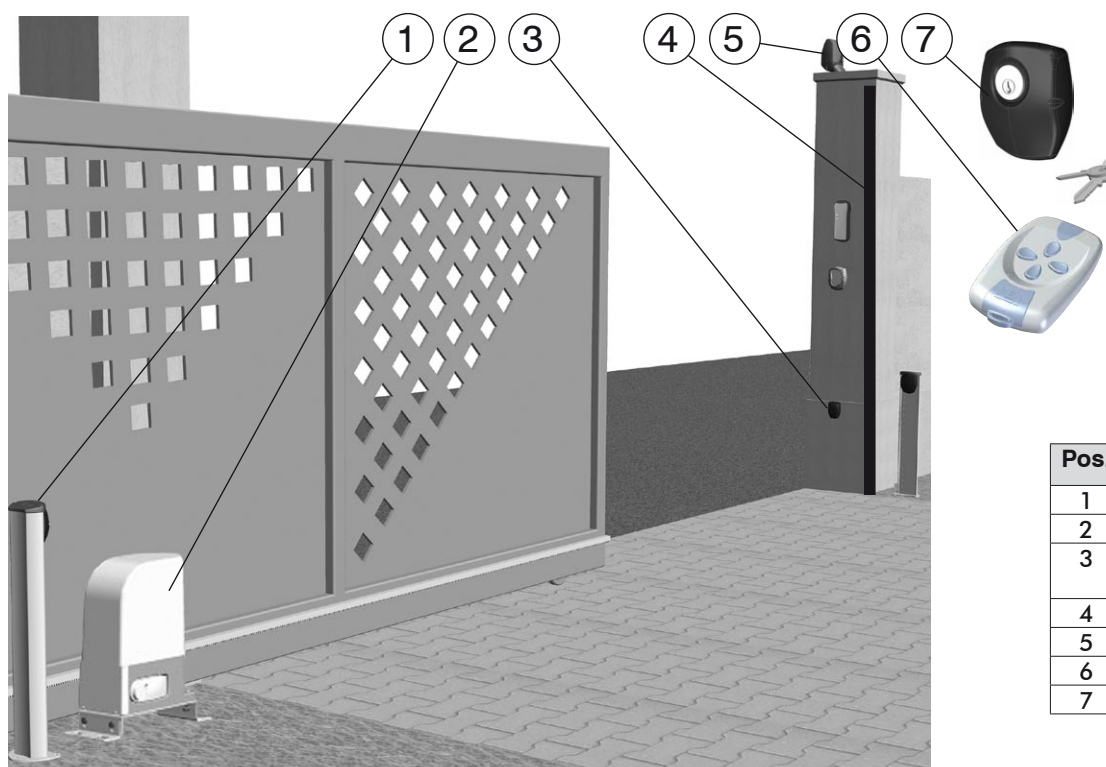
Make sure there is no conflict when the photocells are installed on both sides. The system working on the gate side where the test sample is positioned must detect all test objects.

6.1 Minimum level of protection provided by the safety edge

The risk of getting crushed between the gate and the fence or wall and/or other fixed parts is among the most serious risks to be considered when automating a sliding gate is. An appropriate type of operating control board must be used according to the gate type and use against such risk, as provided for by the quoted regulations (see "OPERATING CONTROL" table).



"EXAMPLE OF TYPICAL INSTALLATION" picture



Pos.	Description
1	1 Pilly 60 column
2	LIVI
3	104 Lux series photocells
4	Safety edge
5	Lumy flashing light
6	Remote-control
7	102 Lux key selector

"OPERATING CONTROL" table

Type of control	Type of use		
	Informed users (private areas)	Informed users (public areas)	Uninformed users
Person-present control	Pushbutton control	Pushbutton control with key	The person-present control is not possible
Pulse control with the gate in sight	Force limitation or presence detectors	Force limitation or presence detectors	Force limitation and photocells or presence detectors
Pulse control with the gate not in sight	Force limitation or presence detectors	Force limitation and photocells or presence detectors	Force limitation and photocells or presence detectors
Automatic control (i.e. control with timed closing)	Force limitation and photocells or presence detectors	Force limitation and photocells or presence detectors	Force limitation and photocells or presence detectors

RESPONSIBILITIES OF THE INSTALLER

Remember that anyone who sells and/or motorises doors/gates becomes the manufacturer of the automatic door/gate machine and must therefore prepare and conserve a **technical folder** that contains the following documents (see Machinery Directive Enclosure V):

- Assembly drawing of the automatic door/gate;
- Electrical connection and control circuit wiring diagram;
- Risk analysis including: a list of the essential safety requirements provided in Machinery Directive Enclosure I; a list of the risks posed by the door/gate and the description of the solutions adopted.
- Keep these operating instructions in a safe place together with the instructions for all the other components;
- Prepare these operating instructions and general safety warnings (for the completion of these operating instructions) and deliver a copy to the final user;
- Fill out the maintenance register and deliver a copy to the final user;
- Fill out the complete CE label or plate and apply it to the door/gate.

Note: The technical folder must be conserved for inspection by the competent national authorities for at least ten years from the date construction of the automatic door/gate.



Downee

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