

***DOORHAN***<sup>®</sup>



# **AUTOMATION SYSTEMS CATALOGUE**

**SAFETY • DURABILITY • RELIABILITY • EFFICIENCY**



**OPERATORS  
FOR RESIDENTIAL  
SECTIONAL DOORS**

# OPERATORS FOR RESIDENTIAL SECTIONAL DOORS

Installation of Sectional door operators — is an optimal solution for both, residential and commercial sectional doors. These operators are easy to install, simple to program, reliable and easy to use. Built-in receiver, radio control button and built-in lamp, ensure a convenient and a comfortable use. Wide model range of DoorHan operators allows you to choose the best option for any sectional doors.

## MODEL RANGE



**DIY-500** — operator with collapsible belt guide, in set, for sectional doors with height up to 2300 mm and area up to 8 m<sup>2</sup>.



**Sectional-750** — operator for sectional doors with height up to 2800 mm and area up to 10 m<sup>2</sup>.

**Fast-750** — operator with adjustable speed, for sectional doors with height up to 2800 mm and area up to 10 m<sup>2</sup>.

**Sectional-1000** — operator for sectional doors with height up to 3400 mm and area up to 13 m<sup>2</sup>.

**Sectional-1200** — operator for sectional doors with height up to 3800 mm and area up to 16 m<sup>2</sup>.



**Sectional-500 PRO** — operator for sectional doors with height up to 2600 mm and area up to 8 m<sup>2</sup>.

**Sectional-750 PRO** — operator for sectional doors with height up to 2800 mm and area up to 10 m<sup>2</sup>.

# APPEARANCE



## 01

Operator body is made of shockproof ABS-plastic with high insulating properties. Plastic thickness and a large number of stiffening ribs, protects it from deformation and possible failure in case of accidental mechanical damages. Body colour allows the operator to keep its pleasant appearance throughout the entire service life.

## 02

Programming keys and the digital display located in front of the operator make the setting process very comfortable. To prevent unauthorized access to the programming keys, these are hidden under a decorative panel.



## 03

Collapsible belt guide which is included in the DIY-500 kit, allows easy transportation and a noiseless operation ensured by the belt transmission.

Each Sectional door operator is characterized by an ergonomic and modern design, and high functionality.



## 04

A particular attention was paid to the convenience and simplicity of connecting and setting the operator. There is no need for special tools to get access to the control board — just open the front cover of the body.

## 05

In the DIY-500/Sectional-PRO programming keys are protected from unwanted access by a courtesy light.



## 06

An optimal fit of all components allowed to design an operator with a ultra-compact body.

## 07

All the tightening screws which connect the two parts of the body are hidden and invisible after installation, which allow to keep the operator appearance nice and neat.



**08**

There is an opening for cable, which allows you to easily connect additional accessories (photo-cells, key-switch, etc.) without disturbing the integrity of the body.



**09**

For a convenient operation of sectional doors, Sectional-750/1000/1200 and Fast-750 operators are equipped with a lamp, which automatically turns on upon opening and closing of the door. The built-in lamp (25 W) allows you to freely navigate your garage, without switching on the central lighting. The standard lamp (E14) is easily replaced if necessary.



**10**

The DIY-500 / Sectional-500/750 PRO operator has built-in LED lighting system that allows you to save energy and exclude the expenses for incandescent lamps.



**11**

Power cord is attached to the operator according to the standards and can withstand the load on the pull out force of more than 50 kg.



## 12

There are special markings placed on the rear part of the body — QR-Code and Barcode — to quickly identify operator warranty period, production date, time and place of sale, as well as the warranty card number. The availability of this information can significantly reduce the time of repair execution during warranty period.

## MOTOR



## 13

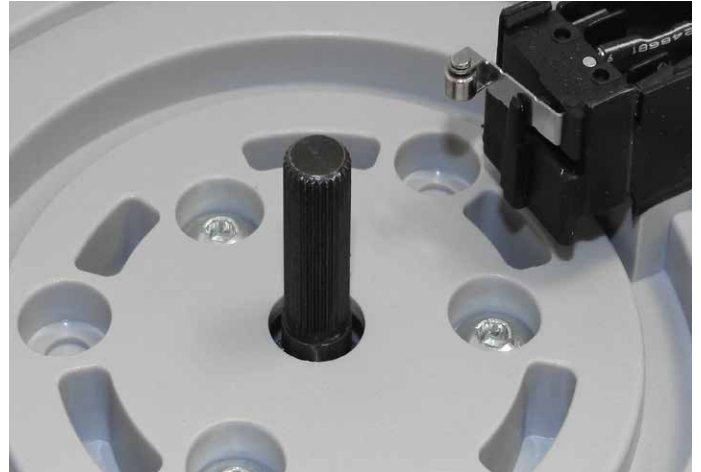
All motor components are made from high quality materials and comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances.

## 14

Motor body is galvanized, which protects it from corrosion.

**Motor dimensions of all Sectional operators, as well as their power and torque are optimized and fitted to automate the specified above door areas.**

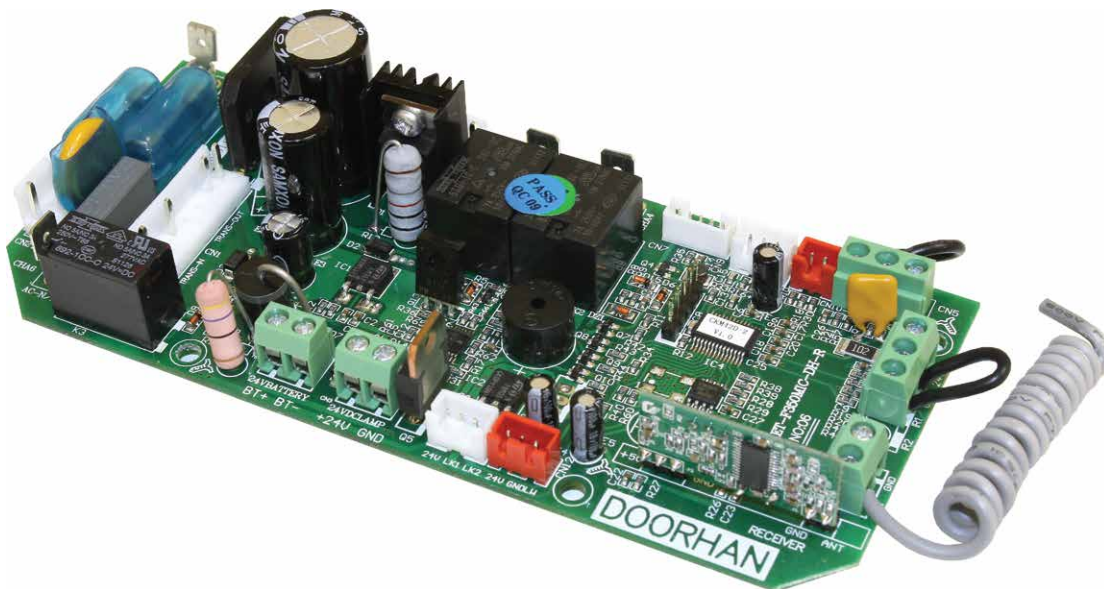




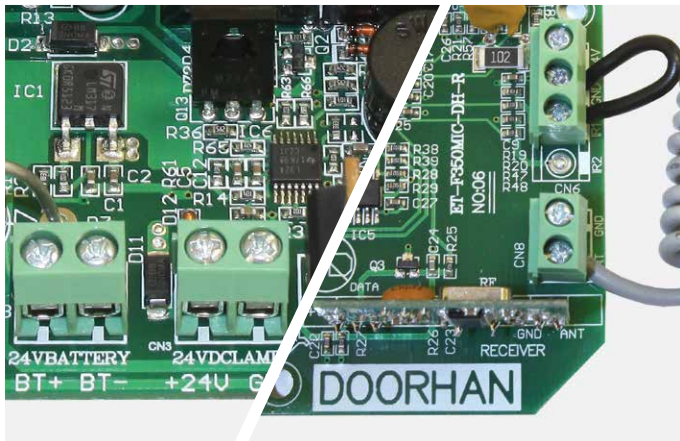
**15** Built-in encoder and synchronizing device provides a high precision of door stop in extreme positions and allows you to control the desired speed of door leaf.

**16** Wear-resistant construction of the spline shaft provides the most reliable connection with the chain sprocket wheel.

## CONTROL BOARD



**17** Control boards are manufactured in accordance with requirements of all applicable safety standards.



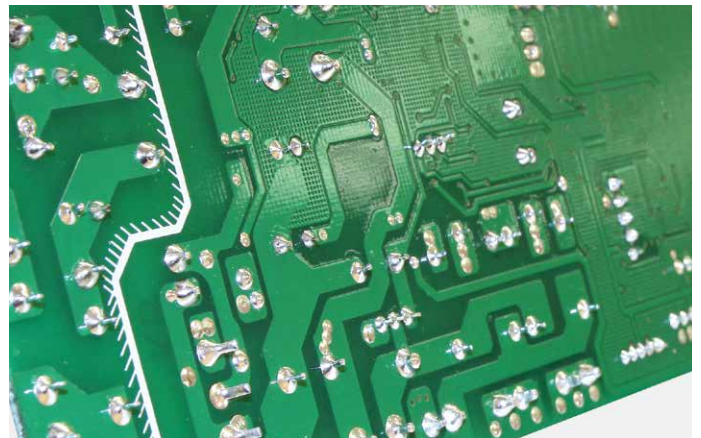
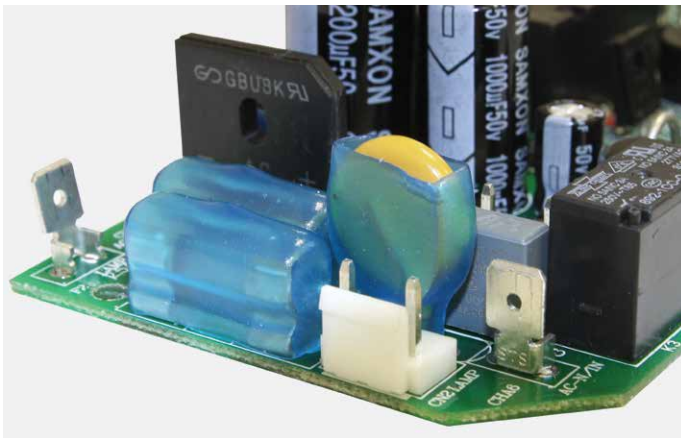
## 18

One of the main advantages of the control board is the possibility to connect a large number of accessories:

- backup battery that lets you operate the door during power failure;
- LED lamp is designed to alert you of the leaf movement throughout the whole cycle of opening and closing;
- emergency stop button — that allows to immediately stop the door in case of emergency;

- open pass door sensor which blocks the operator when the pass door is open;
- photocells stopping the leaf movement when the beam is interrupted by an obstacle;
- external antenna greatly increases the range of radio signal reception;
- external control button allows you to control the operator without using a remote control.

**DoorHan control boards use a unique method of protection against short-circuit (transformer and motor). This method is based on the use of the operational amplifier and a current sensor that does not require control of the main controller; this allows to achieve maximum safety level in the operation of DoorHan operators.**



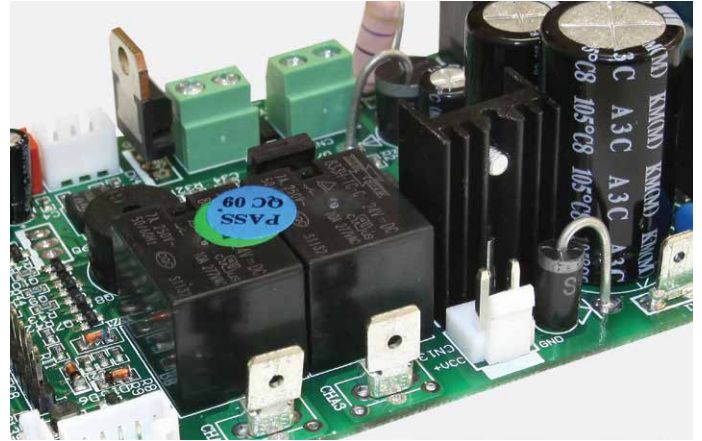
## 19

Optimally matched value of the varistor operating voltage, allows to protect the transformer and the control board against high voltage impulse noise.

## 20

Insulation resistance of each control board is tested at the manufactory before installation, under voltage of 1000 V, which guarantees high efficiency in demanding conditions.

**Modern control board construction with PWM control, allowed to implement the function of smooth start and smooth stop, which significantly reduces the load on the system components and prolongs the life of the door and operator construction. The board is designed with the latest requirements: all necessary EMI filters that allows the operator to work smoothly when exposed to unintended radio interference, and prevent the occurrence of interference from other technical reasons.**

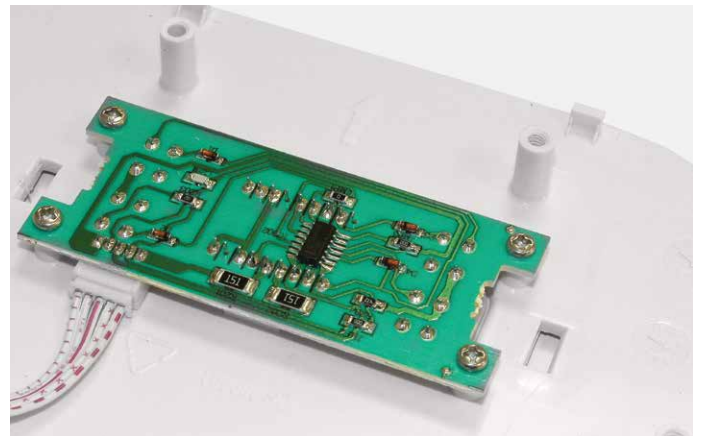


## 21

Built-in receiver with carrier frequency of 433 MHz, enables to assign up to 20 remote controls.

## 22

Large radiators on the transistors do not allow them to overheat, thus increasing their lifespan.



## 23

LED display has a soft green backlight and operates at low ambient temperatures.

## 24

For display control it is applied a method that does not require the complex interface microchips with a wide connection trail, which greatly reduces the cost of the node without losing its quality.



## 25

Using separately installed transformer improves the cooling and increase power reserve.

## GUIDES



### 26

One of the advantages in choosing the operator for sectional doors, is a wide range of guides:

- length: 3000 3300, 3600, 4200 and 4600 mm;
- chain operated;
- collapsible chain and belt operated;
- belt operated.



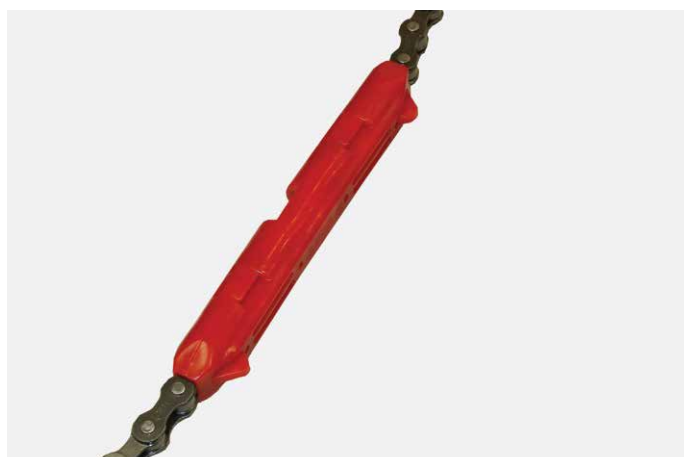
### 27

Chain sprocket is made of high quality metal and has unlimited exploitation resource.



### 28

Carriage of chain operated guide is made of impact-resistant and wear-resistant fiberglass plastic.



### 29

Support plate is made of high strength fiberglass plastic.

**All the guides are manufactured with the latest technologies and high quality materials. The guides are pre-assembled and ready for installation.**



**30**

Guide construction uses a special node to tension the chain. The built-in spring, supports the chain tight and prevents it from sagging during operation.

**31**

Release system is simple and user-friendly. Coupling and uncoupling of the operator with the door occurs in the same movement.

**INSTALLATION**



**32**

All the mounting holes are located on the body, which ensures a fast and easy installation.

**33**

All necessary connection adjustments are pre made at the manufactory — it remains only to plug in the operator and start the programming process.



### 34

If the room depth is limited, the operator can be rotated by 90°; this will not affect its operational features and its performance.



### 35

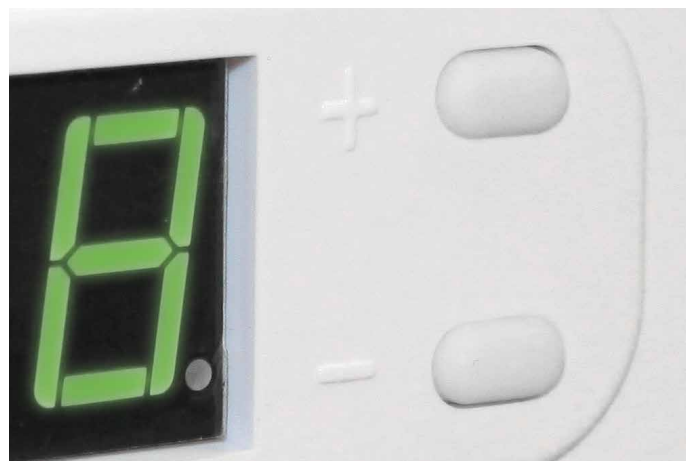
Transmitter-4 is supplied with Sectionals operators, which allows you to control remotely the operator and does not require additional installation. For stationary control, radio button can be easily mounted on the wall or on the car visor using a special mount supply.

## PROGRAMMING



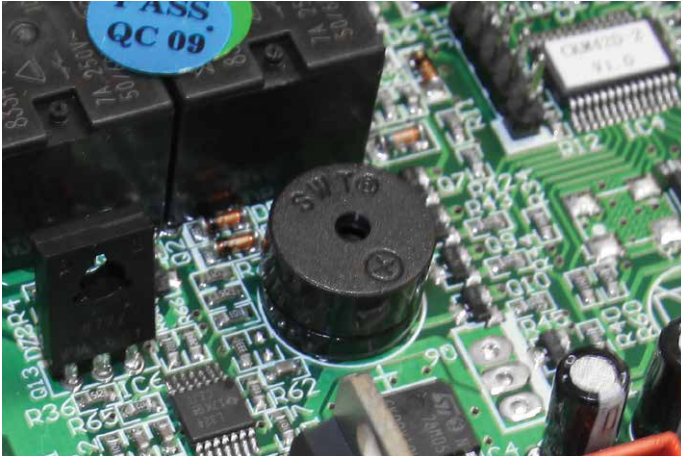
### 36

Programming is made easy using the keys located on the front panel. All steps of the programming are shown on the display.



### 37

Simplicity and consistency of programming is ensured by DoorHan software development. «+» and «-» buttons allow you to accurately adjust the extreme positions of the door as well as the density of their closing.



### 38

Any user is able to configure the operator due to its simple programming. A range of features ensure an optimal adjusting of the operator and its reliable operation. The following features should be noted:

- auto-adjustment of force that occurs during long-term operation of the door;
- cycle counter which is designed to track operation cycles; together with service maintenance counter, enables a timely service and maintenance.

Also the operator can be programmed remotely which allows you to program a remote control within receiver's operation area.

You also can adjust the speed of the door opening/closing (for Fast-750 operator).

### 39

The control board has a special algorithm implemented that enables to detect obstacles and to command the door to stop and reverse movement.

**For a convenient programming of remote controls, there is a separate button that, when clicked, turns on the needed programming mode.**

## OPERATION

All sectional door operators are operating in a temperature range from -20 to +55 °C. This feature allows you to use operators in different climatic zones.

Wide operating voltage range (from 200 to 240 V) allows using the operators in networks with unstable voltage.

# COMPLETE SET



## 40

The package contains the guide, mounting kit, as well as all the necessary brackets and hardware, including anchor bolts.



## 41

All brackets are made of high-quality steel, zinc coated with thickness 12 microns.



## 42

An intermediate mount is provided for the guide installation, which may be freely mounted in any position to the ceiling on the entire length of the guide.





### 43

Curved rod, allows to install the operator in case of low lift sectional door.



### 44

To ensure a good fastening of the rod to the door leaf, there is a special bracket which is fixed on the upper door leaf, using eight screws. It eliminates rod tearing in case when excessive force is applied or when the door is jammed.



### 45

The package also includes:

- instruction in English and other languages;
- warranty card with a unique code corresponding to the marking located on the operator and the box.

The box is filled with a foam filling, which ensures its safety during transportation.

**Before packing, all operators pass weight control test that guarantees the presence of the entire assembly.**



## 46

Lock, Lock-N and Lock-mini (optional) releases kits are designed to be used in cases of power failures.

# TECHNICAL SPECIFICATIONS

Model	Sectional DIY-500	Sectional-500	Sectional-750	Fast-750	Sectional-1000	Sectional-1200
Supply voltage, V/Hz	230/50					
Maximum power consumption, W	150	150	200	200	250	300
Force, N	500	500	750	750	1000	1200
Door speed, m/sec	0.14	0.14	0.1	0.1-0.18	0.1	0.1
Maximum door area, m <sup>2</sup>	8	8	10	10	13	16
Maximum opening height, mm	2300	2600	2800	2800	3400	3800
Intensity, %	50					
Temperature range, °C	-20 to +55					
Degree of protection	IP20					

Sectional	500 PRO	750 PRO
Supply voltage, V/Hz	230 / 50/60	
Maximum power consumption, W	150	200
Force, N	500	750
Door speed, m/sec	0,14	0,1
Degree of protection	IP20	
Intensity, %	50	
Temperature range, °C	-20 to +55	
Operating frequency, MHz	433	
Drive type	Chain/belt	
Motor, V	24	

# CERTIFICATES

**DO** **CERTIFICATE**



**TYPE CERTIFICATE**

Registration number 01.242.826/10/07/02/0



**TÜV AUSTRIA CERT GMBH**  
Certification Body



**TÜV**  
**AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate No.: TA 380 14 2254

**Product:** The Electromechanical chain operator for sectional doors

**Applicant:** "DoorStar"  
DoorHan s.r.o. Kralovský VRCH 2018  
43201 Kadaň, Czech Republic

**Manufacturer:** "DoorStar"  
DoorHan s.r.o. Kralovský VRCH 2018  
43201 Kadaň, Czech Republic

**Model:** 208-240 V/50Hz  
150, IP20

**Serial Number:** 103.2003A11-2009  
6-3.2007A1-2011

**Reference:** 324EM-LAB1211

**Product Description:** product complies with the applicable requirements of the CE mark and this certificate in connection with the declaration of conformity.

**Declaration:** Applicant based on the results of testing performed by the manufacturer, product or the production process of this certification based on any change of the design, materials, some of the qualification tests is subject for the test report and certificate.

**Authorized Representative:** A. Dvořák, Certification representative

**Validity:** This certificate is valid until: March 25, 2015

**Annex:** The annex which forms an integral part of this certificate is attached to this certificate.

**Approval:** Issued by approval by TÜV AUSTRIA CERT GMBH, based on the opinion of the certification body that the information contained herein reflects the results of the tests performed by the manufacturer, product or the production process of this certification based on any change of the design, materials, some of the qualification tests is subject for the test report and certificate.

**Standards:** BS EN 60335-2-95:2004  
EN 60335-1:2002

**CE Mark:** The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.

**Signature:** [Signature of A. Dvořák]

**Address:** Ústí 10, Berkovka South Industrial Estate, Berkovka, District DĚČÍN SÁD. Tel +42 (0)31 377 2000. Fax +42 (0)31 377 2000. Registered in England No. 1187985. Registered Business Park, Ebbw Vale, South Wales, CF83 1EN. www.sgs.com

**SGS PAPER**  
0558206

used for the producer:  
**Han Europe s.r.o.**  
Náměstí 1689  
- 432 01 Kadaň  
Identification number: 27305619

For the product:  
**Sectional Door Drive**  
**SECTIONAL DOOR DRIVE**

to the certification scheme Advice ISO/IEC 67 - the certification system of TÜV SÜD Czech, the test report no 4790108T12/25 from March 22, 2015.

Manufacturer fulfills the applicable requirements of the documents which were the basis for its certification. The applicable requirements are:  
EN 60335-1:2002  
EN ISO 13857:2008  
EN 61526:2008 Coll. (Directive 2004/108/EC)  
EN 60335-2-95:2004, CSN ETSI EN 301 489-1 V1.8.1, 301 489-3 V1.4.1:2003  
EN 60335-2-95:2004, CSN EN 60 335-2-95

is valid till: March 25, 2015

are stated in the annex which forms an integral part of this certificate.

**Signature:** [Signature]

**Address:** Jindřichova 194, 142 21 Prague 4, Czech Republic. TÜV



**OPERATORS  
FOR INDUSTRIAL  
SECTIONAL DOORS**

# OPERATORS FOR INDUSTRIAL SECTIONAL DOORS

Electromechanical operators SHAFT are designed to automate industrial sectional doors. SHAFT operators are reliable, have an ergonomic design and are adapted for different operating conditions. Wide temperature range from -20 to +55 °C enables the shaft operators to be installed in different climatic zones.

## MODEL RANGE



**Shaft-20** is designed for sectional doors with area up to 12 m<sup>2</sup>.



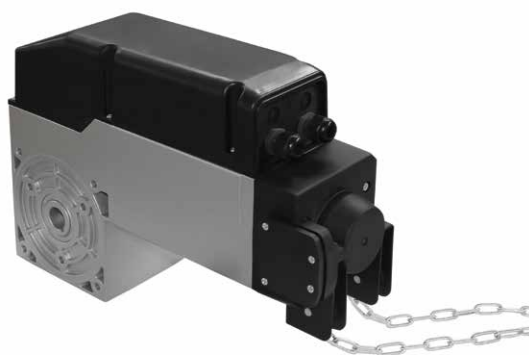
**Shaft-30** is designed for sectional doors with area up to 18 m<sup>2</sup>.

**Shaft-60** is designed for sectional doors with area up to 28 m<sup>2</sup>.



**Shaft-50** is designed for sectional doors with area up to 25 m<sup>2</sup>.

**Shaft-50 PRO** is designed for sectional doors with area up to 25 m<sup>2</sup>. Has function of smooth start and stop.



**Shaft-120** is designed for sectional doors with area up to 40 m<sup>2</sup>.



All operator components are made of materials that comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances.

## APPEARANCE AND DESIGN



### 01

SHAFT operators are manufactured using “oil bath” technology, whereby the gear is immersed in the lubricant liquid. This technology allows Shaft operators to withstand heavy operating loads. Frost resistant oil poured into the operators body, ensures high performance of engine, which significantly extends their lifespan. With this technology, all operators have a low noise level and a lack of vibration during operation, high efficiency, smooth running and high intensity of use (up to 65 %).



### 02

A high level of engine heat loss is also provided by the body design, which is equipped with a large number of cooling fins; excluding operator failure due to overheating.

Operator body is made of durable aluminium alloy that protects all mechanical and electrical parts from the negative effects of the environment (protection class — IP44-IP65).



### 03

Chain releaser is provided in cases of power failure.

### 04

In the case of long-term power outage, the gear can be unlocked by turning the lever release; this will allow opening and closing the door manually.

The unique design of the Shaft-30 gear, allows you to open the door by 30 % faster than other industrial operators.



### 05

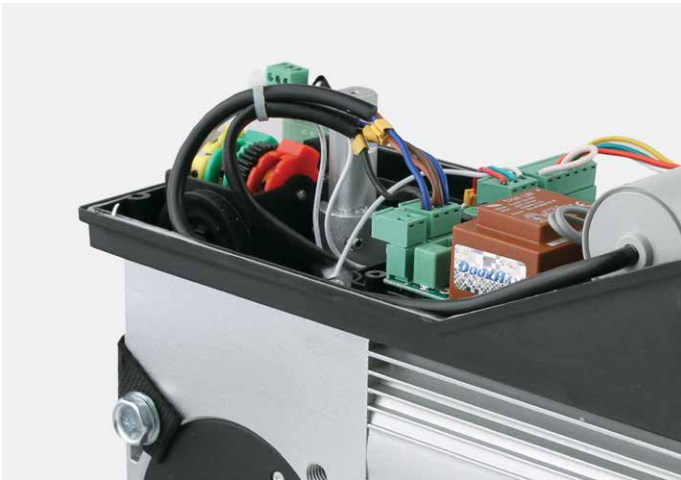
The cooler of Shaft-20 increases operator intensity.

### 06

Simple and quick installation of Shaft-20 operator is made directly on the shaft.



All operators undergo multiple-stage tests before warehouse shipment. Mechanical and electronic parts are checked on a special stand, by more than 15 criteria, to determine their functionality under generally expected operating conditions.

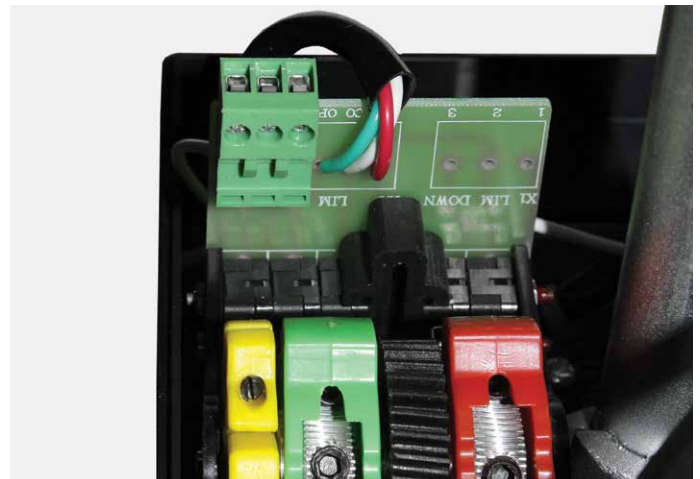


## 07

Due to the built-in control unit, operators have a compact size. All necessary electrical connections are made at the production stage, which greatly reduces installation time.

## 08

The end positions of the doors are adjusted with cam-type limit switches, using a hexagon socket. Cam construction provides a coarse and accurate adjustment.



## 09

To ensure maximum safety on each end position, two micro switches are used, one — main and the other — duplicate.

## 10

The unit of limit switches has a separate terminal to connect the traffic light without using additional control unit and a separate cam responsible for displaying the current position of the gate.



## 11

Opener Shaft-50 PRO supply with new three position control box with extension function ability.



## 12

If there is no possibility to directly mount the operator on the shaft, it can be mounted using optional trans chain with a ratio of 1:1 or 1:1.5 to increase the torque.



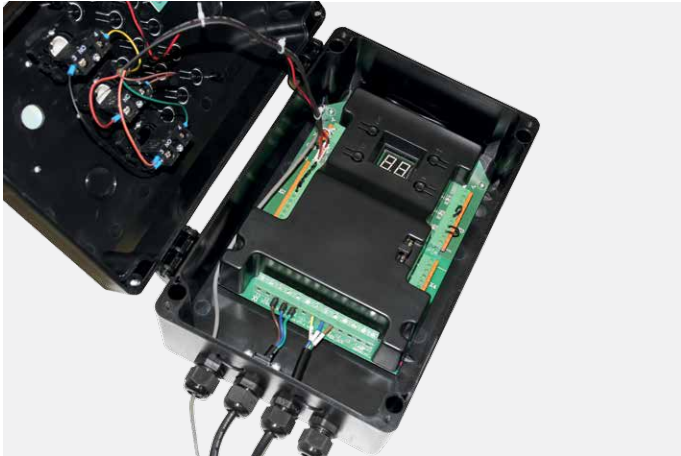
## 13

To identify the operator during the warranty period, special marking is located on the body — individual operator code for quick determination of the production date, time and place of sale, as well as warranty card numbers. This information is significantly reducing the standard execution time of warranty works.



## 14

Limit switches realise though encoder that increases open functionality.



## 15

For maximum ease of connection and programming control board placed into three position control box, that significantly eases mounting and setting of opener (Shaft-50 PRO).

## 16

Gear chain is made of high-quality steel with galvanized coating, with more than 12 microns thickness. All units are welded which provides increased reliability and durability. The chain is supplied with the operator, length — 8 m for Shaft-30/50/60 and 12 m for Shaft-120.

Operators are equipped with self-locking gear that provides door locking at the end positions and eliminates the need to install additional locks.

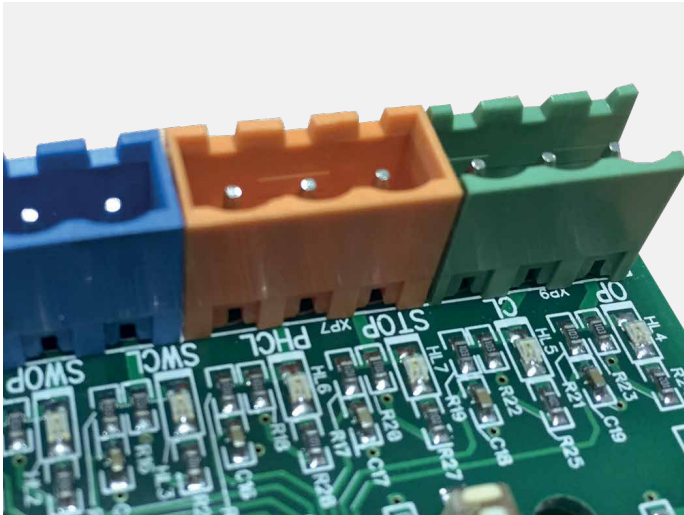
## CONTROL BOARD

The control board is designed according to the latest requirements of electromagnetic compatibility, and includes all the necessary EMI filters. Filters allow operator to continuously work when exposed to unintentional radio interference, and prevent the occurrence of interference from other technical reasons.



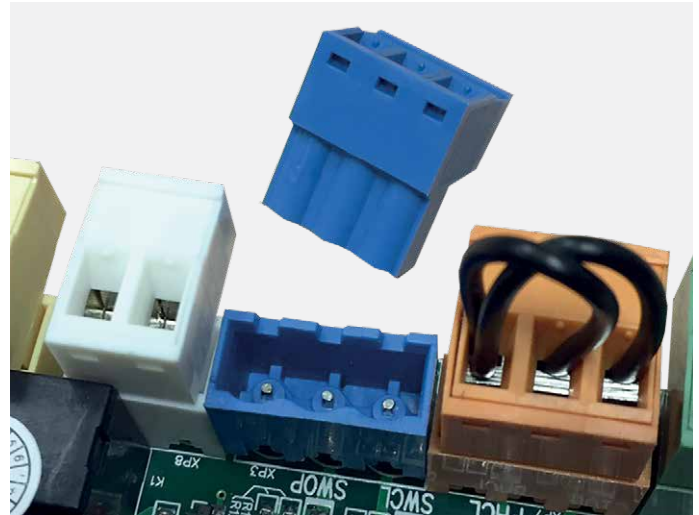
## 17

Control board of Shaft operator is made in accordance with all applicable safety standards.



## 18

The presence of the indicator lights on the board helps to visually monitor all stages of programming and get information about the selected logic of operation.



## 19

Advantages of the control board are the convenience and ease of programming. Easily removable terminals greatly simplify this process.



## 20

Realised inverter allows to provide smooth start and stop of the opener (Shaft-50PRO).



Radio-control system uses dynamic code technology that changes at every signal; provides total security and confidentiality, eliminating unauthorized use of the operator.



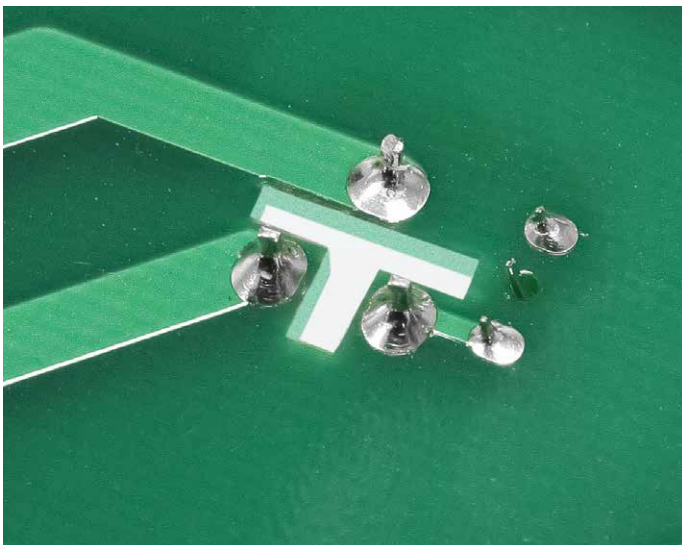
## 21

Built-in receiver with carrier frequency of 433 MHz, allows to assign up to 39 remote controls (Shaft-30/50).



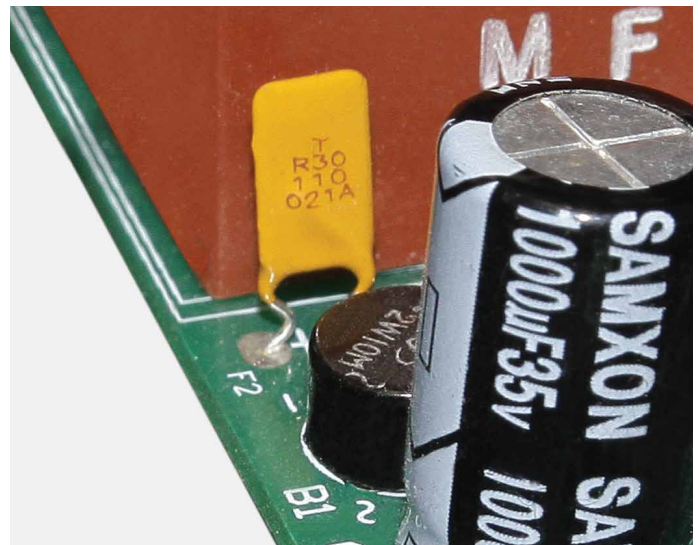
## 22

Due to the increased cross-section of the winding wires and core optimization, the transformer has improved electrical characteristics.



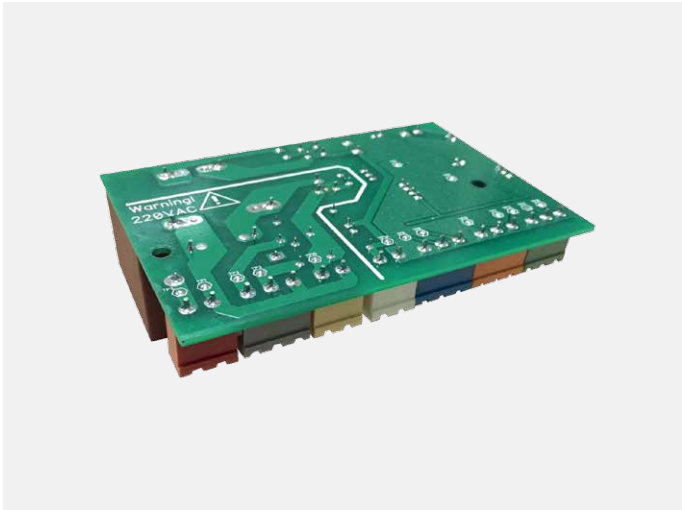
## 23

Reliable galvanic isolation between circuits eliminates the influence of the power circuits on the signal.



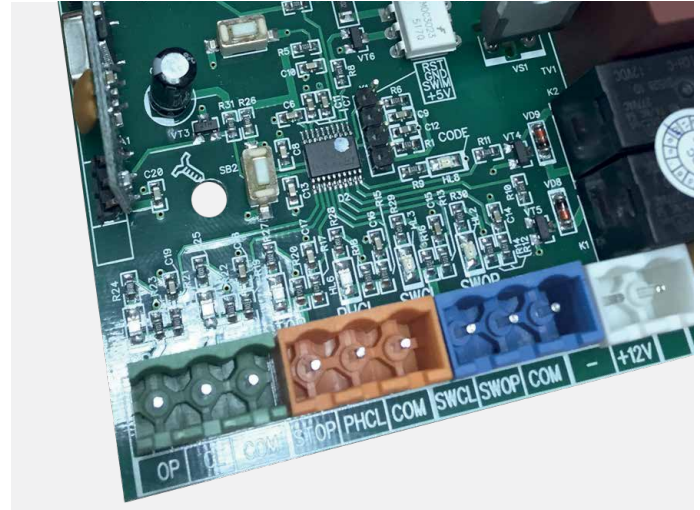
## 24

The control board is equipped with resettable fuse which is made of polymeric material with a very low resistance. In the case of over-current, the resistance increases sharply knocking the maximum current to a safe value. When the power is off, or the chain is restored, the fuse will automatically reset, i.e. reduce its resistance.



## 25

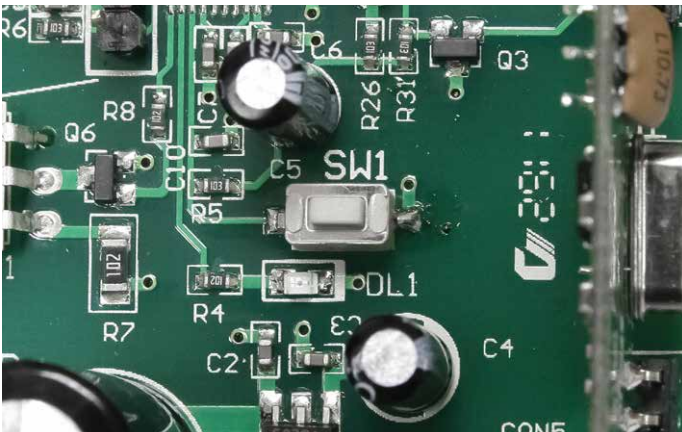
The control board has special measuring points which perform automatic testing during manufacture, that guarantees high quality and efficiency.



## 26

For protection against moisture, control board surface is lacquered.

# PROGRAMMING FUNCTIONS



## 27

Programming is made using a button located on the control board.

Development of DoorHan software is based on a simple and logic programming. The process of programming an operator is divided into steps and has elementary logic.

Control board ensures a convenient and a safe use of SHAFT operators.

**Auto-closing.** This function automatically closes the door after a pre-set period of time.

**Available control modes:**

- Door moves when the button is slightly pressed; door stops — on a limit switch or when pressing the “Stop” button (Impulse control).
- Door moves only when holding the button



**28**

For more ease connection of accessories screw terminals implemented (Shaft-50 PRO).

**29**

There is an information display implemented on the opener control box for more convenience advanced programming.

**COMPLETE SET**





### 30

Operator is supplied with all the brackets, fixing bolts and dowels necessary for mounting.

The operator complete set includes:

- operator;
- three-position control post;
- mounting bracket;
- mounting bolts;
- set of dowels;
- mounting tool kit (wrench, screwdriver, hexagon);
- locking rings;
- manual chain, length of 8 or 12 m;
- warranty card individually labelled, fully replicating the information on the operator and the box;
- instruction in English and other languages.

**All brackets are made of high-quality steel, zinc coated with thickness of 12 microns.**



### 31

Mounting bracket has holes for fine adjustment of the operator position, according to installation dimensions.



### 32

Operator box is filled with foam filling which ensures a safe transportation.



# TECHNICAL SPECIFICATIONS

Model	Shaft-20	Shaft-30IP65	Shaft-50	Shaft-60IP65	Shaft-120
Supply voltage, V/Hz	230/50, 1 phase			400, 3 phases	
Maximum power consumption, W	300		370	350	700
Torque, Nm	20	30	50	60	120
Shaft speed, RPM	25	32	24	32	22
Maximum door area, m <sup>2</sup>	12	18	25	28	40
Intensity, %	30	50	50	60	65
Temperature range, °C	-20 to +55		-20 to +50	-20 to +55	
Degree of protection	IP20	IP65	IP54	IP65	IP44

Shaft-50 PRO	
Supply voltage, V/Hz	230 / 50/60
Maximum power consumption, W	370
Torque, Nm	50
Shaft speed, RPM	24
Degree of protection	IP54
Intensity, %	50
Temperature range, °C	-20 to +55
Maximum door area, m <sup>2</sup>	25
Chain length, m	8

# CERTIFICATES

**TÜV AUSTRIA CERT GMBH**  
Certification Body

**TÜV AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate - No.: TA 380 14 2246

**TÜV AUSTRIA CERT GMBH**  
Certification Body

**TÜV AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate - No.: TA 380 14 2240

Product: Industrial sectional door opener Applicant: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

Manufacturer: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

2009, 2011, 14

Complies with the applicable requirements of the certificate in connection with the declaration of conformity.

Based on the results of testing performed by the test report by TÜV AUSTRIA CERT GmbH, product or the production process of this test or any change of the design, materials, qualification tests in order for the test report and

11/2009, 12/2011, 03/14

Complies with the applicable requirements of the certificate in connection with the declaration of conformity.

Based on the results of testing performed by the test report by TÜV AUSTRIA CERT GmbH, product or the production process of this test or any change of the design, materials, qualification tests in order for the test report and

checked on the TÜV AUSTRIA Homepage.

is product after fulfillment of all EU technical documentation as well as the

QFM-TAC-COC-06, Rev.01

Doorhan s.r.o.  
Kralovský VRCH 2018,  
Kadan 432 01,  
Czech Republic

Page 1 of 1

### Certificate of Compliance

Electromagnetic Compatibility

For

#### Garage Door Operator – Shaft-30

Date of Issue: 22<sup>nd</sup> December 2010  
SGS Reference: 142943.1

**SGS**

Vie d'In Vero  
s. Akalovo, ul.Novaya  
120 143002 Odintsovskiy r-n  
Russia, Moscow region

Page 1 of 1

### Certificate of Compliance

Electrical Safety

For

#### Door Operator – SHAFT-30

Date of Issue: 23<sup>rd</sup> September 2010  
SGS Reference: 139606/1

Details of Sample: Model No.: SHAFT-30  
Unique Identifier: Not Supplied

Date of Receipt: 14<sup>th</sup> May 2010

Date of Test: 14<sup>th</sup> May 2010 To 06<sup>th</sup> September 2010

Test Required: Test for compliance with:-  
BS EN 60335-2-95: 2004  
BS EN 60335-1:2002

Conclusion: In the configuration tested the sample meets the requirements of the standards detailed above.

Issue Number: 1

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**CE**

Authorized Signatory

**A. Papp**  
Operations Manager

Unit 10, Boreham South Industrial Estate, Boreham, Essex SSO 5AD Tel +44 (0)191 377 2000 Fax +44 (0)191 377 3020  
Registered in England No. 1199900 Roversham Business Park, Ebbw Vale, South Wales NP23 5JN www.sgs.com

Member of SGS Group (Société Générale de Services)

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TÜV AUSTRIA CERT GMBH  
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QFM-TAC-COC-06, Rev.01

**TÜV AUSTRIA CERT GMBH**  
Certification Body

**TÜV AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate - No.: TA-380 14 2239

Product: Industrial sectional door opener Applicant: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

Manufacturer: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

**TÜV AUSTRIA CERT GMBH**  
Certification Body

**TÜV AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate - No.: TA 380 14 2252

Product: Industrial sectional door opener Applicant: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

Manufacturer: "Doorhan" s.r.o. Kralovský VRCH 2018, 43201 Kadan, Czech Republic

Type / Model / Trademark: Shaft-30

Description / Technical Specification: Power supply, V/Hz 400/50  
Rated power, W 300

Standard(s) / Product - Certification Basis: EN 60335-1:2012, EN 60335-2-103:2003A/11:2009;  
EN 61000-6-1:2007, EN 61000-6-3:2007A/1:2011

Test Report: Report No 1009LAB009/14, No 1009EM - LAB009/14

Comments: none

According to the above stated test report(s) the specified product complies with the applicable requirements of the mentioned standard(s). The applicant may use the test report and this certificate in connection with the declaration of conformity according to the EU Directive and Annex.

This Certificate of Conformity has been granted to the applicant based on the results of testing performed by the applicant/manufacturer or an approved laboratory and the consequent review of the test report by TÜV AUSTRIA CERT GMBH. Therefore, it does not imply any assessment of the institution (product, project or the production process of this product) by TÜV AUSTRIA. Revisions to the referenced certification basis or any change-of the design, materials, components or production process may require the repetition of all or some of the qualification tests in order for the test report and therefore this associated certificate to remain valid.

**CE**

2014-10-03  
Date of Issue

G. Eichinger, Certification representative

Additional regulations and directives may apply. The CE Mark may only be affixed to this product after fulfillment of all EU directives applicable to this product and the preparation of the necessary technical documentation as well as the conformity declaration by the manufacturer.

The validity of this certificate (Max. 5 years from the date of issue) can be checked on the TÜV AUSTRIA Homepage. Any alteration or falsification of this document is prohibited and is subject to approval by TÜV AUSTRIA CERT GMBH.

The holder of this document is advised that it does not reflect a notified body's opinion but that the information contained herein reflects the certification body's findings on the date of issue and within the limits of the applicant's instructions, if any.

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www.tuv.at e-mail: product@tuv.at

QFM-TAC-COC-06, Rev.01

**SWING GATE  
OPERATOR WITH  
ARTICULATED ARM**

# SWING GATE OPERATOR WITH ARTICULATED ARM

ARM-320/ARM-320 PRO — electromechanical operator designed for swing gates and separate pass doors, with door leaf weighing up to 400 kg.



ARM-320 operator is adapted to use in different climatic conditions, is certified and meets all safety standards. High-quality components and the frost resistant lubricants ensure smooth functioning of the operator within temperature range from -20 to +55 °C. Wide operating voltage range (from 180 to 250 V) allows you to use the operator in networks with unstable voltage. Due to high torque (320 Nm), Arm-320 can be installed on industrial gates weighing up to 400 kg.



All elements of the operator are made of high quality materials and comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances.

## APPEARANCE AND DESIGN



### 01

Operator body is made of impact-resistant ABS-plastic with high insulating properties. Large thickness and quality of plastic reliably protects the components of the operator from the deformation and negative environmental effects. Elegant body design will ensure a nice and neat appearance throughout its entire service life. The rubber seals are preventing from moisture and dust ingress. The limit switches unit is securely closed with the body, which has a protection class IP54.



### 02

ARM-320 is equipped with self-locking gear that provides gate lock at the end positions and eliminates the need to install additional locks.



### 03

In case of power failure the mechanical releaser will allow to operate the gate manually.

When the operator reaches 125 °C during heavy use, thermal protection is triggered and the operator is turned off, protecting the motor from overheating and failure.

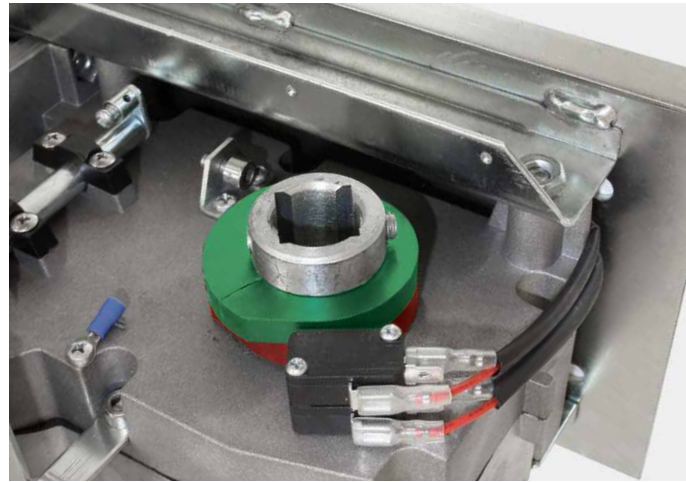


## 04

The motor and gear are located in a single body, making the operator very compact.

## 05

To prevent unauthorized gate unlocking, decoupling lever is located under a special cover with a lock. The cover is waterproof and dust resistant which ensures operating capability in all environmental conditions.



## 06

To ensure maximum safety during the operation, a special construction of the arm has been developed, which has no pinch point.

## 07

The operator is equipped with coloured micro switches that help accurately and simply to adjust the gate stop in the end positions. Double-ended design of limit switches unit, allows installing the operator on the left side of the gate opening as well as on the right side; this provides exceptionally easy installation and configuration.

One of the advantages of the arm operator is its versatile design that ensures installation on both, left and right side of the gate and also to open the gate to the outside or inside of the fenced area.



## 08

To quickly identify operator warranty period, production date, time, place of sale, as well as warranty card number — special marking is located on the body. The availability of this information is significantly reducing the standard execution time of warranty works.

## CONTROL BOARD

The control board of swing operators is designed according to the latest requirements of electromagnetic compatibility, and includes all the necessary EMI filters. Filters allow the operator to continuously operate when exposed to unintentional radio interference, and prevent the occurrence of interference from other technical reasons.



## 09

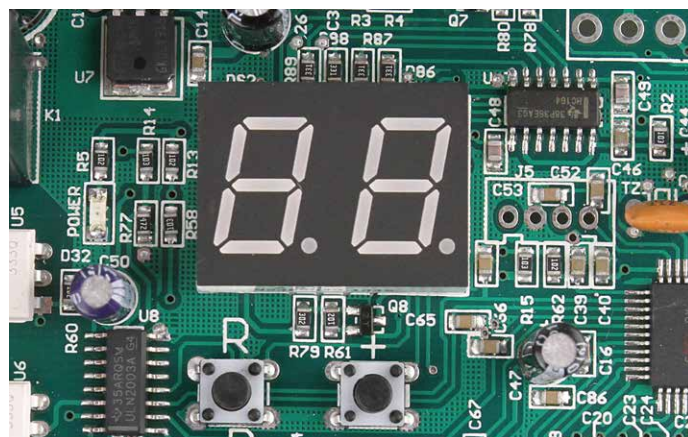
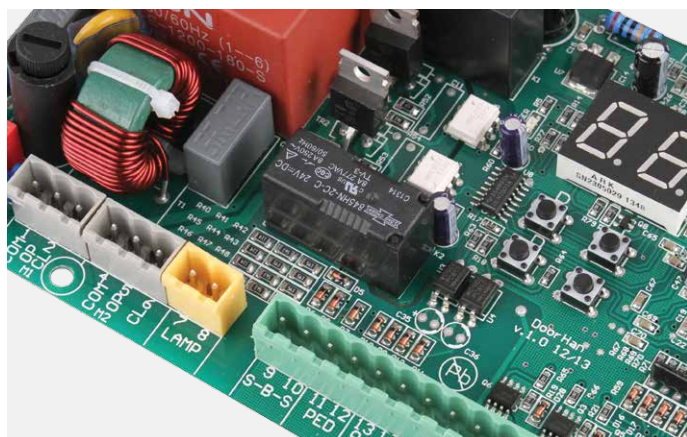
Multifunction control box for all motors Swing and ARM series (pcb-sw).



## 10

Basic control box for all motors Swing and ARM series (sw-mini).

Availability of connectors allows you to connect a large number of additional control and safety devices such as photocells, which can be connected to both, opening and closing of the gate.



## 11

Advantages of the control board are convenience and ease of configuration. All terminals on the board are undersign, this helps to make connections instinctively and very fast.

## 12

Frost resistant LED-display allows you to monitor all programming stages of the operator and receive information on the number of recorded remote controls.

The control board has a number of technical solutions that makes the high quality and reliability its distinctive features.



## 13

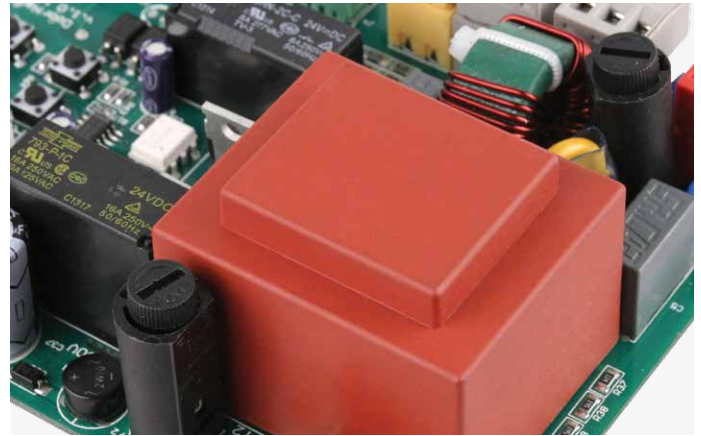
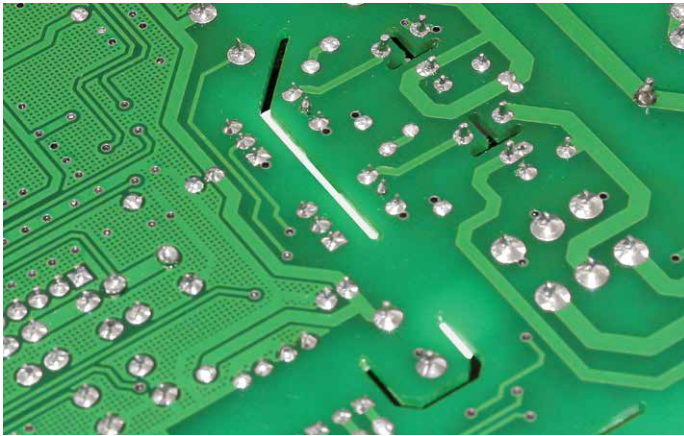
Due to the increased cross-section of the winding wires and optimized core, the transformer has improved electrical characteristics.

## 14

Optimally matched operating voltage value of the varistor allows to protect the transformer and control board against high voltage impulse noise.



The emergency button “Stop”, can be connected to the control unit, allowing to stop the gate in case of emergency.



**15**

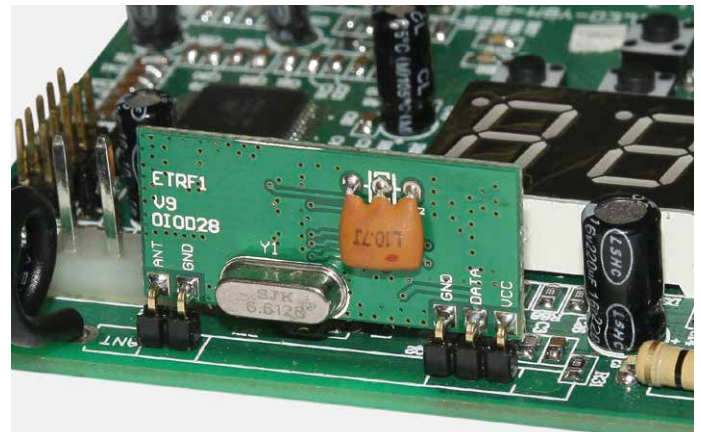
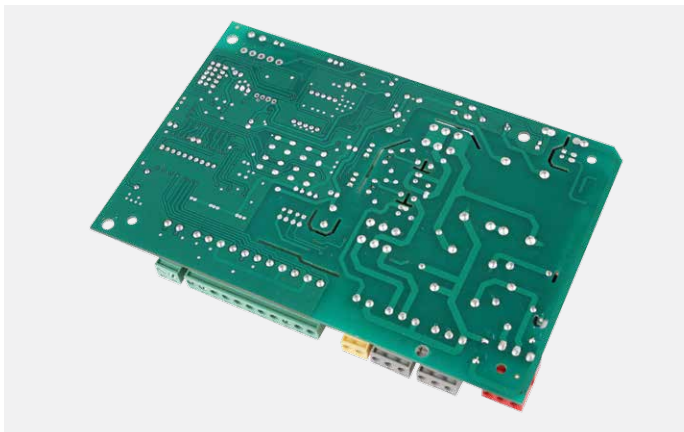
Reliable galvanic isolation between power and signal circuits eliminates the influence of the power circuits on the signal.

**16**

The input and output voltage is controlled by two fuses.



Radio-control system uses dynamic code technology that changes at every signal; provides total security and confidentiality, eliminating unauthorized use of the operator.

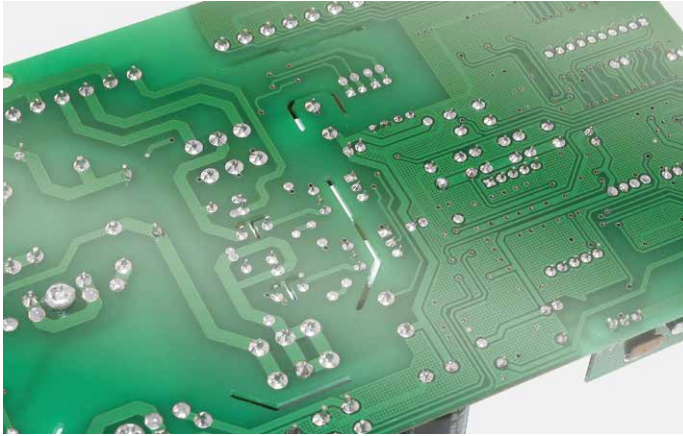


**17**

The control board has special measuring points to perform automatic testing during its manufacture, this guarantees high quality of board design and its efficiency.

**18**

The built-in receiver with carrier frequency of 433 MHz, enables to assign up to 60 remote controls.



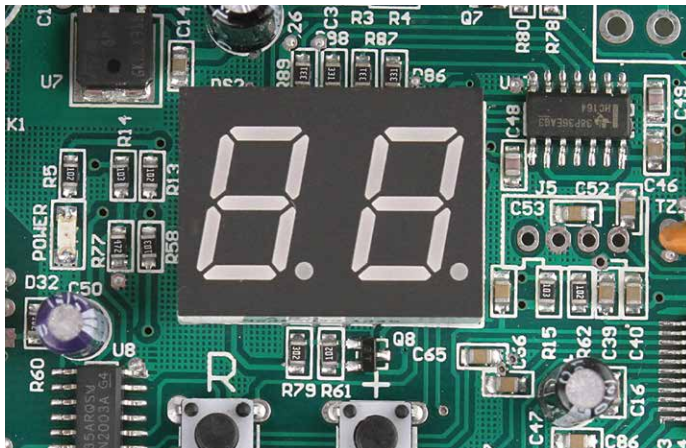
## 19

For protection against moisture, the board surface is lacquered.



The control board has a function, which if necessary, will display information about the number of cycles performed for a timely maintenance. This feature ensures a reliable and a stable operation of the operator.

## PROGRAMMING FUNCTIONS



## 20

Programming is carried out by buttons located on the control board. All stages of the programming are shown on the display.

Development of DoorHan software is based on a simple and logic programming. The process of programming an operator is divided into steps and has elementary logic. Control board ensures a convenient and a safe use of SWING operators.

- Possibility to connect traffic light.
- Universal control unit may be used with operators based on the limit switches system or stops system, with both, one or two sashes.
- The control unit has 2 separate logics: to control the gate and to operate the electromagnetic lock.
- Algorithm for remote programming.
- Slowdown function on the end positions of the gate.
- Possibility to reset to factory settings.
- Buzzer for audio recording/deleting of the remotes.
- Reverse on the force, which has a separate setting.
- Auto-closing of the gates after a pre-set period of time.

# COMPLETE SET



## 21

The complete set includes:

- operator;
- mounting plate with holes;
- front bracket;
- straight lever;
- curved lever;
- warranty card with individual markings that duplicates the information on the operator and the box;
- instruction in English and other languages. The complete set is packed in a box with foam filling, which ensures its safety during transportation.



## 22

Front bracket has 3 holes for setting the optimal position of the lever on the already installed bracket.

## 23

In the development of ARM-320 operator, a special attention was paid to the simplicity and ease of installation. Due to the strong coupling plate, the operator can be mounted on different column sizes with any surface. This allows you to use it in places where it is impossible to mount other types of operators.



**Installation of the operator is made without welding.**



## 24

Powerful galvanized levers are made of high-quality steel and are corrosion resistant, so they will maintain the aesthetic appearance and performance throughout the entire life cycle.

**All brackets are made of high-quality stainless steel with a zinc coating with thickness of 12 microns.**

# TECHNICAL SPECIFICATIONS

Model	Arm-320	Arm-320 PRO
Supply voltage, V/Hz	230/50	220/50
Maximum power consumption, W	150	150
Torque, Nm	320	320
Maximum leaf weight, kg	400	400
Maximum leaf length, m	3	3
Intensity, %	30	30
Temperature range, °C	-20 to +55	от -20 до +55
Degree of protection	IP54	IP54

# CERTIFICATES

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT

  
Czech

### INSPECTION CERTIFICATE

File number 06.371.914

Issued by inspection body No. 4002 accredited by CAI to the organization:

Doorhan s.r.o.  
Královský vrch 2018  
432 01 Kadaň  
Czech Republic

On the basis of results conducted inspection, which are listed under Inspection report of TUV SUD Czech file No.: 06.371.905 we hereby confirm conformity of the below mentioned device:

Name: Documentation for ARM-320  
Type: ARM-320  
Producer: Doorhan s.r.o. Královský vrch 2018, 432 01 Kadaň, Czech Republic

With requirements

EN 60335-2-103:2005  
EN 60335-1:2002 / A15:2011  
EN 61000-6-1:2007  
EN 61000-6-3:2007 / A1:2011  
EN 55022: 2006 / A2:2010  
EN 55014-1:2006 / A2:2011

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- The certificate shall only be reproduced complete including all annexes.
- The certificate shall only promote in the case of keeping conditions mentioned in the inspection report TUV SUD Czech file No.: 06.371.905 issued on 2012-12-14

in Prague, on 2012-12-14

  
  
On behalf of TUV SUD Czech s.r.o.: Ing. Miroslav Seidl

TUV SUD Czech s.r.o. • Novodvorská 594 • 142 21 Prague 4 • Czech Republic • [certification@tuv-sud.cz](mailto:certification@tuv-sud.cz)  
P 4002-0004 002-01-02-00-01-01-001

TUV®

# **OPERATORS FOR SWING GATES**

# OPERATORS FOR SWING GATES

Electromechanical operators Swing — are an optimal solution for automation of residential and industrial swing gates, with medium to high intensity use. A predominant feature of these operators is the ability to install them on narrow columns. All Swing operators meet the highest safety standards and are adapted for use in different climatic conditions. The high quality materials and the frost resistant lubricants ensure a smooth operation in different climatic conditions (from -40 to +55 °C). Operating voltage range (from 180 to 250 V) allows you to use the operator in networks with unstable voltage. Swing gate operators are certified and meet all European quality standards.

## MODEL RANGE



**Swing-2500** operator for swing gates with leaf weight up to 350 kg and leaf width up to 2.5 m.



**Swing-3000** operator for swing gates with leaf weight up to 400 kg and leaf width of up to 3 m.

**Swing-5000** operator for swing gates with leaf weight up to 500 kg and leaf width of up to 5 m.



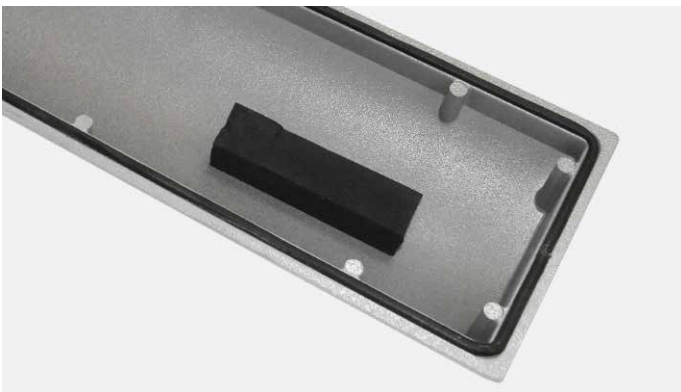
All components are made of high quality materials and comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances.



# APPEARANCE AND DESIGN



All body elements are painted using powder method that creates an environmental friendly durable coating, which allows the operator to maintain its aesthetic appearance throughout the entire operation cycle.



## 01

The operator is made of high strength aluminum alloy and is protected from any kind of negative environmental effects. Special rubber seals make all connections of aluminum parts completely sealed (protection class IP54).

## 02

The lead screw is made of high strength steel and has improved kinematic characteristics. Double lead thread holds the grease in the friction zone, which significantly increases wear resistance of the transmission. In addition, this design helps to increase smoothness and reduce the noise level of the operator during its operation. Resource of the lead screw is designed for the entire life cycle of the operator.

Swing gate operators are equipped with non-reversible motor, which in combination with a special geometry of the lead screw, facilitates strong fixation and retention of the leaf in extreme positions even under heavy wind loads.



### 03

The nut is made of high-strength alloy steel and bronze that minimizes the coefficient of friction between the lead screw and nut; which greatly increases the life of the components.



### 04

Swing gate operators are equipped with planetary gear, the main advantage of which is a large ratio in a compact and a light weight body.



### 05

The operator is equipped with a release mechanism that allows you to open and close the gate manually in case of power failure. The release system is equipped with a special lock, designed to protect the operator against unauthorized release.



### 06

The release is ensured by a compact key with triangular groove. It is made of plastic with metal insert which guarantees a longer service life and eliminates the blurring of key edges.

Swing gate operator is equipped with an electromagnetic brake, which provides the most accurate stop of the gate leaf in the end positions and its further locking. This feature excludes the need of installation of additional locking devices.



## 07

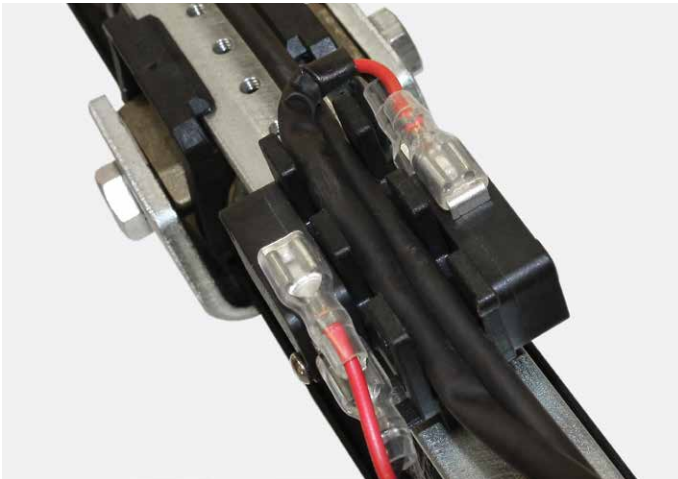
Gear parts are made of steel and bronze, which increases the Swing-2500 operator service life.



## 08

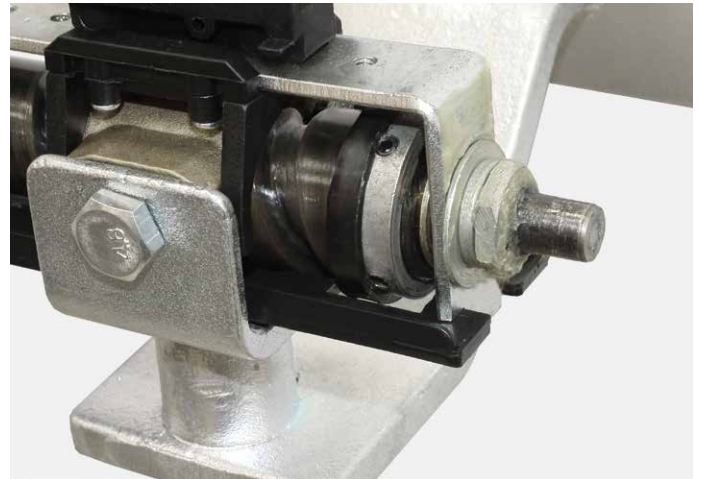
The advantages of swing gate operators are also the reliability and accuracy of limit switches system, which allows an accurate adjustment of the gate stop in end positions.

The operator stops in end positions on the limit switches, this significantly reduces the load on the nodes and increases its lifespan.



## 09

Besides the basic limit switches of opening and closing the gate, an additional backup limit switch is provided. The backup limit switch eliminates body damages due to overshoot of the main limit switch by the operating nut.



## 10

The operator Swing-5000 ensures the stop on the limiter, which is an additional guarantee of a smooth operation.



**11**  
The construction of limit switches provides fine adjustment of the gate in end positions.



**12**  
All necessary connections are made at the manufactory, which significantly reduces installation time.



**13**  
The limit switches, the lead screw and the nut are protected against various negative environmental effects, by a robust aluminum body.



**14**  
At the bottom these elements are closed by a plastic cover, which protects the lead screw from dust.



**15**  
To quickly identify operator warranty period, production date, time, place of sale, as well as warranty card number — special marking is located on the body. The availability of this information is significantly reducing the standard execution time of warranty works.

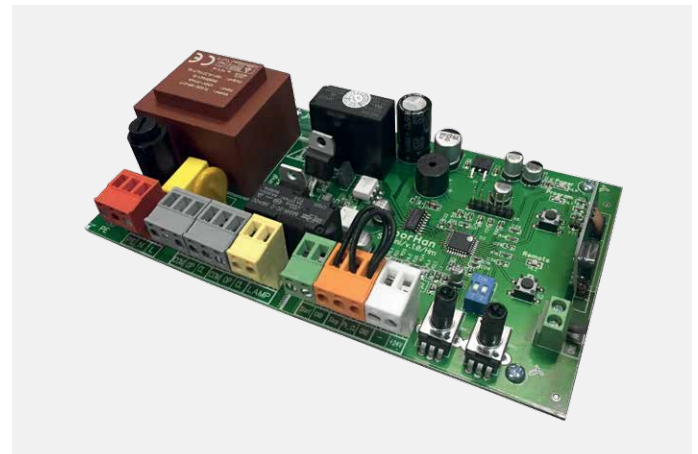
# CONTROL BOARD

The control board of swing operators is designed according to the latest requirements of electromagnetic compatibility, and includes all the necessary EMI filters. Filters allow the operator to continuously operate when exposed to unintentional radio interference, and prevent the occurrence of interference from other technical reasons.



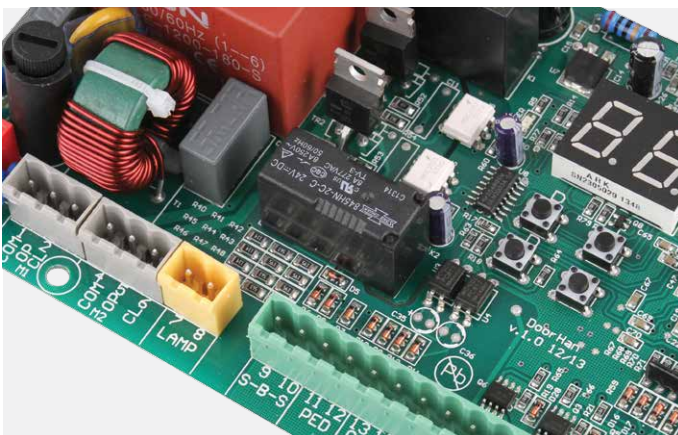
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Multifunction control box for all motors Swing and ARM series (pcb-sw).



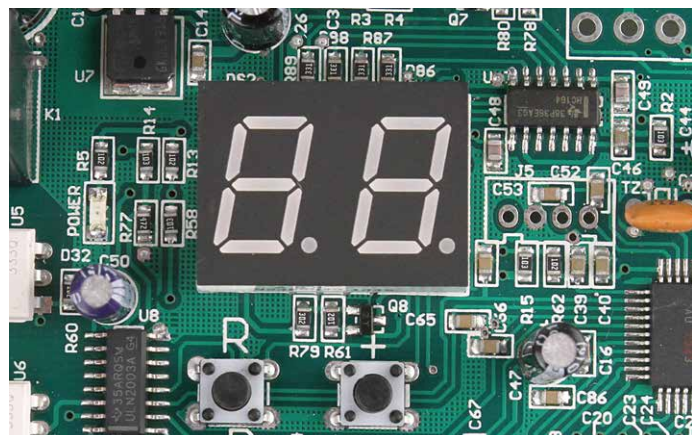
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Advantages of the control board are convenience and ease of configuration. All terminals on the board are undersign, this helps to make connections instinctively and very fast.



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Frost resistant LED-display allows you to monitor all programming stages of the operator and receive information on the number of recorded remote controls.

Availability of connectors allows you to connect a large number of additional control and safety devices such as photocells, which can be connected to both, opening and closing of the gate.

The control board has a number of technical solutions that makes the high quality and reliability its distinctive features.



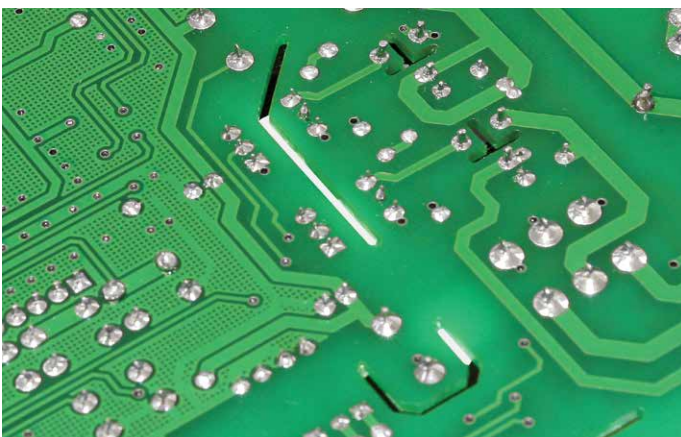
## 20

Due to the increased cross-section of the winding wires and optimized core, the transformer has improved electrical characteristics.



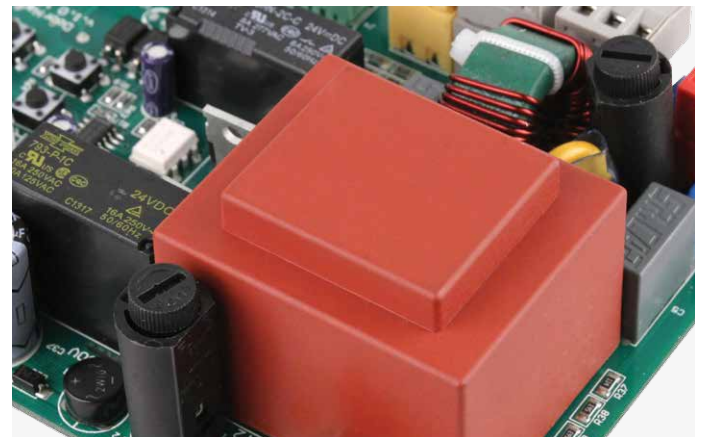
## 21

Optimally matched operating voltage value of the varistor allows to protect the transformer and control board against high voltage impulse noise.



## 22

Reliable galvanic isolation between power and signal circuits eliminates the influence of the power circuits on the signal.



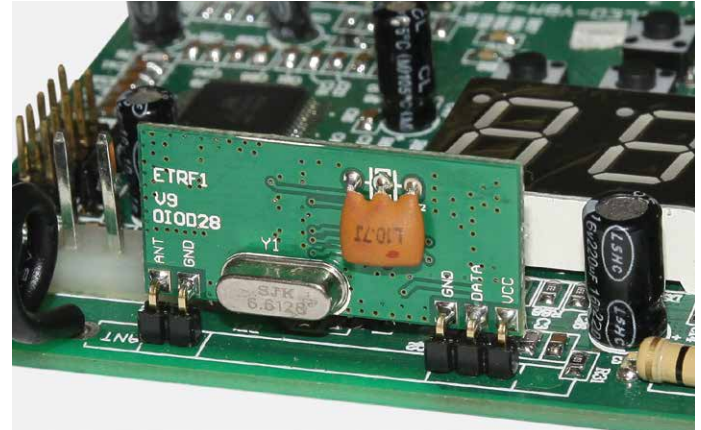
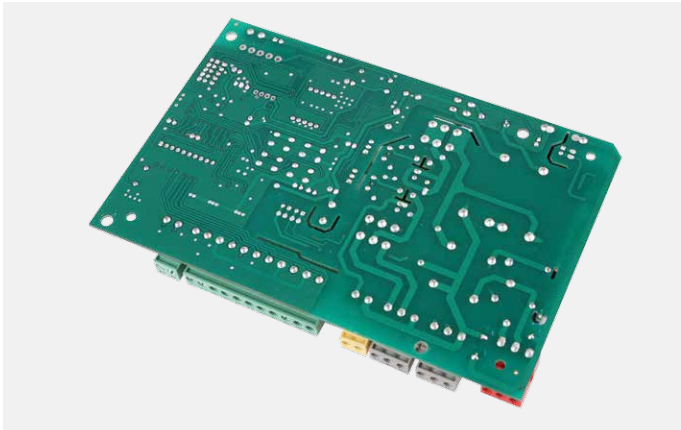
## 23

The input and output voltage is controlled by two fuses.

The emergency button “Stop”, can be connected to the control unit, allowing to stop the gate in case of emergency.



Radio-control system uses dynamic code technology that changes at every signal; provides total security and confidentiality, eliminating unauthorized use of the operator.

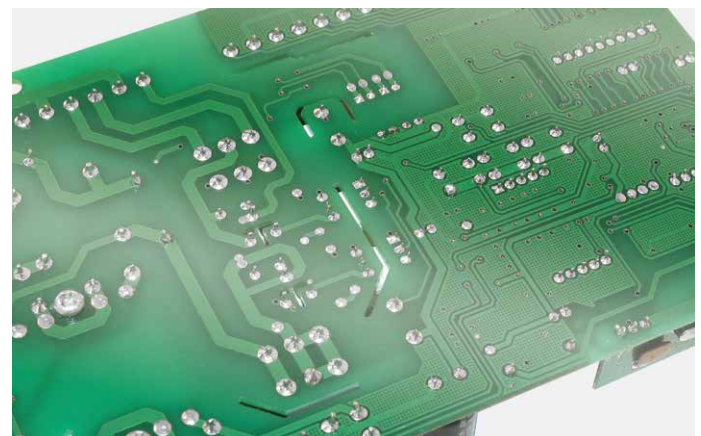


## 24

The control board has special measuring points to perform automatic testing during its manufacture, this guarantees high quality of board design and its efficiency.

## 25

The built-in receiver with carrier frequency of 433 MHz, enables to assign up to 60 remote controls.



## 26

Availability of a special connector to connect the receiver allows you to control DoorHan operators using remote controls from other manufacturers.

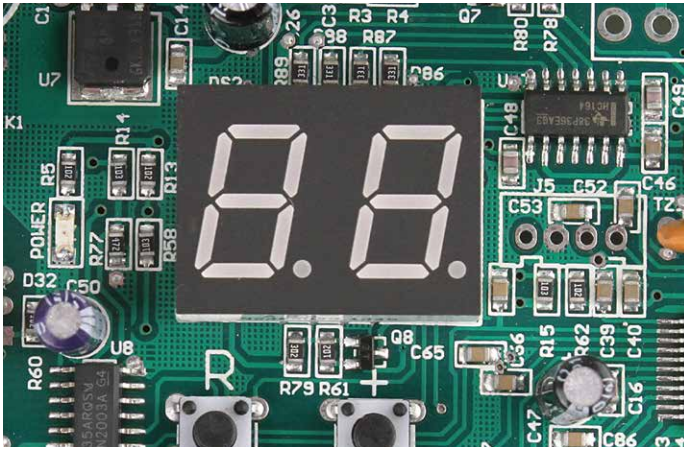
## 27

For protection against moisture, the board surface is lacquered.



The control board has a function, which if necessary, will display information about the number of cycles performed for a timely maintenance. This feature ensures a reliable and a stable operation of the operator.

# PROGRAMMING FUNCTIONS



## 28

Programming is carried out by buttons located on the control board. All stages of the programming are shown on the display.

Development of DoorHan software is based on a simple and logic programming. The process of programming an operator is divided into steps and has elementary logic. Control board ensures a convenient and a safe use of SWING operators.

- Possibility to connect traffic light.
- Universal control unit may be used with operators based on the limit switches system or stops system, with both, one or two sashes.
- The control unit has 2 separate logics: to control the gate and to operate the electromagnetic lock.
- Algorithm for remote programming.
- Slowdown function on the end positions of the gate.
- Possibility to reset to factory settings.
- Buzzer for audio recording/deleting of the remotes.
- Reverse on the force, which has a separate setting.
- Auto-closing of the gates after a pre-set period of time.



# COMPLETE SET



The operator package includes all the necessary mounting brackets and fixing bolts.

The complete set includes:

- operator;
- front bracket;
- rear fork;
- rear bracket;
- mounting bolts;
- hexagonal key;
- triangular release key;
- warranty card with individual markings that duplicates the information on the operator and the box;
- instruction in English and other languages.

All brackets are made of high-quality stainless steel, zinc coated with thickness of 12 microns.



### 29

The front and rear brackets are welded to the gate. If the material of gate leaf or column is not suitable for welding, the plates are supplied in the package to which brackets are welded, and then the plates are mounted to the gate leaf or column using four bolts.



### 30

Installation of Swing-2500 operator is carried out by bolted connections, eliminating the need of welding, which significantly speeds up and simplifies the installation.



### 31

Rear bracket has 9 holes which allows a fine adjustment of the operator position according to installation requirements.



### 32

The operator is packed in a box with foam filling which ensures a safe transportation.

# TECHNICAL SPECIFICATIONS

Model	Swing-2500	Swing-3000	Swing-5000
Supply voltage, V/Hz	230/50		
Maximum power consumption, W	150		
Maximum leaf weight, kg	350	400	500
Maximum leaf length, m	2,5	3	5
Intensity, %	50		
Temperature range, °C	-20 to +55	-40 to +55	
Degree of protection	IP44	IP54	

Swing	3000 PRO	5000 PRO
Supply voltage, V/Hz	220 / 50/60	
Maximum power consumption, W	150	
Maximum door weight, kg	400	500
Maximum leaf width, m	3	5
Intensity, %	50	
Temperature range, °C	40 to +55	
Degree of protection	IP54	

# CERTIFICATES

CERTIFICADO ◆ CERTIFICAT



## INSPECTION CERTIFICATE

File number 06.055.422 - rev 1

Issued by inspection body No. 4002 accredited by CAI to the organization:

**DoorHan s.r.o.**  
 Královský vrch 2018  
 432 01 Kadaň, Czech Republic



DoorHan s.r.o.  
Královský Vrch 2018,  
Kadaň 432 01,  
Czech Republic

Page 1 of 1

### Certificate of Compliance

Electrical Safety  
For  
Electric Drives For Gates

**Date of Issue:** 7<sup>th</sup> September 2011

**SGS Reference:** CST1515107/B

**Details of Sample:** Model No: SWING-3000 and SWING-5000  
Unique Identifiers: Not Supplied

**Date of Receipt:** 2<sup>nd</sup> October 2010

**Date of Test:** 2<sup>nd</sup> October 2010 To 4<sup>th</sup> August 2011

**Test Required:** Test for compliance with:  
BSEN 60335-1:2002 / IEC 60335-2-103:2003

**Conclusion:** In the configuration tested the sample meets the requirements of the standards detailed above.

**Issue Number:** 1

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 Authorized Signatory  
**K. Hutchinson**  
 UK CTS Manager

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SGSPAPER

sted under inspection report of TÜV in conformity of the below

ing 3000, 5000, (name of this SUD Czech Is Swing 3000/5000)

ský vrch 2018, Republic

documentation mentioned therein, otherwise than as a whole unless mer, is inadmissible as well as its use by including all annexes. ing conditions mentioned in the 5.806 - rev.2 issued on 2012-08-07

  
 i.r.o. : Ing. Roman Prásek Ph.D.  
 in Republic • [prasek@tuz-sud.cz](mailto:prasek@tuz-sud.cz)  
 KADAŇ  


# **OPERATORS FOR SLIDING GATES**

# OPERATORS FOR SLIDING GATES

Operators for sliding gates are designed to automate sliding gates of residential and industrial use. Sliding gate operators are specifically designed for use in different environmental conditions — the operating temperature range is -40 to +55 °C. A wide operating voltage range (from 180 to 250 V) allows the operators be used in networks with unstable voltage.

## MODEL RANGE



**Sliding-300** — operator for residential sliding gates, with leaf weight up to 300 kg.

**Sliding-800** — operator for residential sliding gates, with leaf weight up to 800 kg.



**Sliding-1300** — operator for industrial sliding gates, with leaf weight up to 1 300 kg.

**Sliding-2100** — operator for industrial sliding gates, with leaf weight up to 2 100 kg.



All components of Sliding operators are made of high quality materials and comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances. Operators are certified and meet all European quality standards.

## APPEARANCE



Sliding gate operators feature a modern and ergonomic design.



### 01

The upper part of the body is made of impact-resistant ABS-plastic, which reliably protects the operator mechanism against deformation and the negative environmental impact. Due to the high class protection (IP54), moisture and dust ingress is excluded.



### 02

The bottom part of the operator is made of high strength aluminum alloy, coated using powder method, which creates a durable and environmental friendly finish.



### 03

At the bottom of the aluminum case, there is an opening for cable input for easy routing to the control unit of power supply and accessories.

Before warehouse shipment, all operators undergo multiple-stage test. Mechanical and electronic parts are checked on more than 15 criteria of the required values, in an environment as close as possible to the operating conditions.

Insulation resistance of each operator is tested at the manufactory under a voltage of 1 000 V, which guarantees its operation in severe operating conditions.



## 04

During the production of the operator a special attention was paid to the quality of the gear. The gear is made of high-quality steel and has a high wear resistance. The safety margin of the gear is designed for the entire operation cycle.



## 05

Operators for sliding gates are equipped with a special release mechanism, to operate the gate manually in case of power failure. Decoupling lever system is equipped with a lock to prevent unauthorized unlocking of the gate.



## 06

To quickly identify operator warranty period, production date, time, place of sale, as well as warranty card numbers — special marking is located on the body. The availability of this information is significantly reducing the standard execution time of warranty works.



## 07

The operator has a reliable fastening to the mounting base, in four points. The fastenings are conveniently located on both sides of the operator, which allow a quick installation. The side brackets are corrosion free and are covered with plastic covers, which additionally protect them from corrosion.

When the operator temperature reaches 125 °C during heavy use, thermal protection is triggered and the operator is turned off, protecting the motor from overheating and failure.



# MOTOR

The motor is a single-phase asynchronous motor. The simplicity of its construction ensures high operational reliability.



## 08

Sliding gate operators intended for industrial use, are designed using the “oil bath” technology; which means that the motor and gear are immersed in oil and are located in one single body. With this technology, operators do not overheat during intensive use, have a high wear resistance and operate smoothly throughout their entire lifespan.

This technology provides:

- low noise level;
- absence of vibrations;
- increased efficiency;
- high operation intensity (70 %);
- stable operation at low ambient temperatures.

## 09

The motor body and the cooling fins are made of aluminum alloy, which efficiently direct the heat and eliminate motor failure in case of overheating.



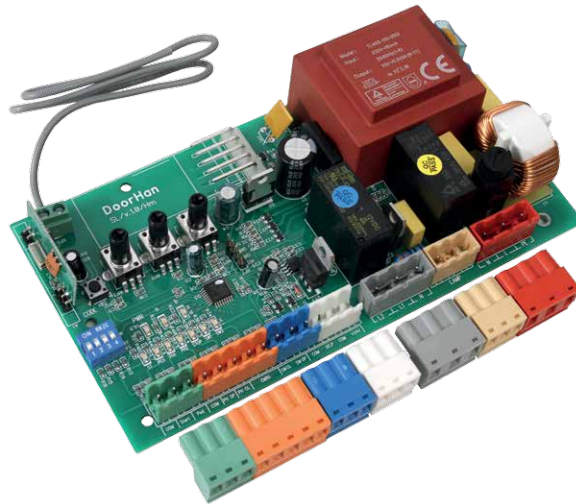
## 10

The gear wheels are made of durable polymer material which significantly decrease noise from the motor and are designed for long service life.

All motor elements are optimally matched for automation of above declared gate weights.

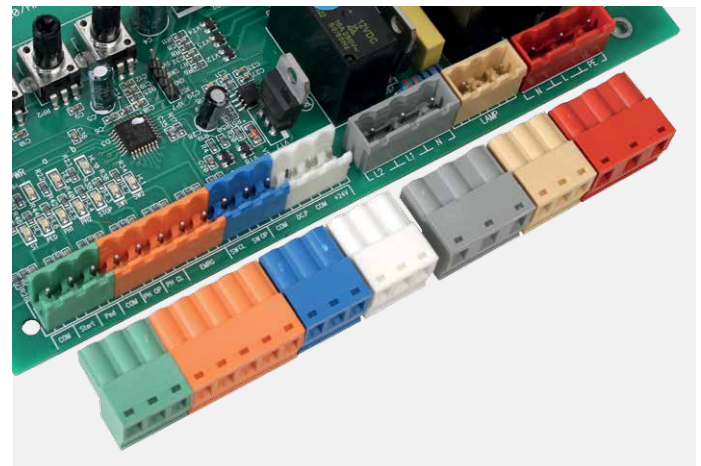
# CONTROL BOARD

The control board of sliding operators is designed according to the latest requirements of electromagnetic compatibility, and includes all the necessary EMI filters. Filters allow the operator to continuously operate when exposed to unintentional radio interference, and prevent the occurrence of interference from other technical devices.



## 11

The control board is made in accordance with all applicable safety standards.



## 12

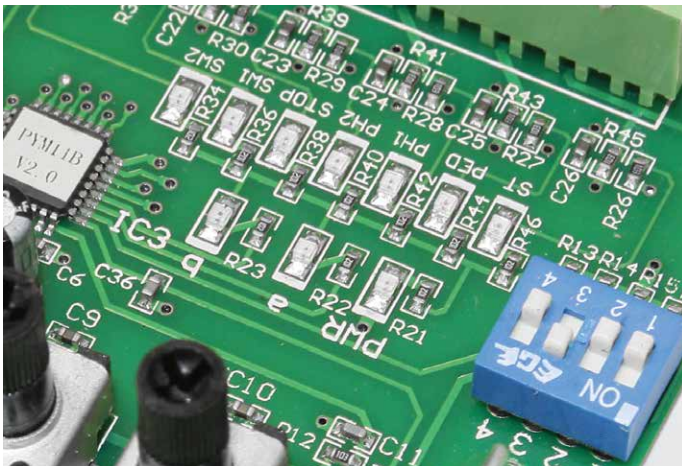
The advantage of the control board is the ease of configuration of the operator. All terminals on the control board are marked for a convenient connection.

## 13

Easily removable colour terminals greatly simplify connection process.

Availability of connector allows you to connect a large number of additional control and safety devices, such as photocells, which can be connected to both, opening and closing of the gate.

All necessary connections have already been made at the manufactory, which significantly reduces installation time.



**14** The availability of the indicator lights on the board helps you to visually monitor the operation.

**15** The control board located on the top of the operator greatly simplifies the setup process and effectively protects it from dust and moisture.



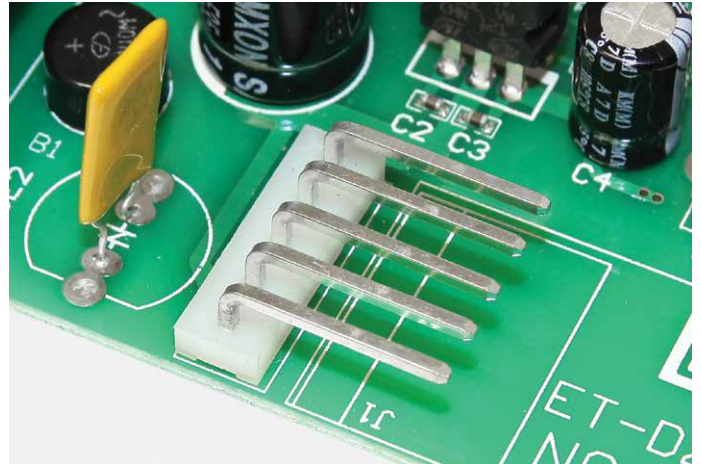
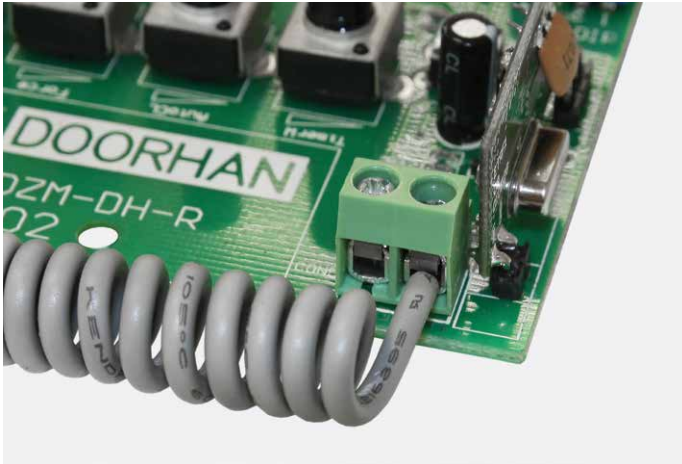
**16** The board has its own plastic body that protects against accidental contact with current-carrying elements, providing additional safety.

**17** On the cover, there are fine adjustment knobs that make it easy to set up the operator for without opening board housing.

The main features of the control board are high quality, reliability and universality. It can be used not only for sliding gate operators, but also for the barriers.



Radio-control system uses dynamic code technology that changes at every signal; provides total security and confidentiality, eliminating unauthorized use of the operator.

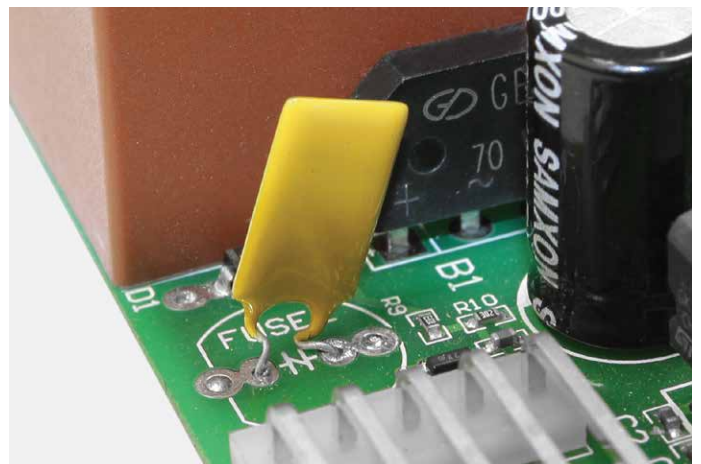


## 18

The control board provides a connector for an external antenna, which greatly extends the range of signal reception.

## 19

Availability of a special connector on the board intended to connect the receiver, allows you to control DoorHan operators using remote controls from other manufacturers.



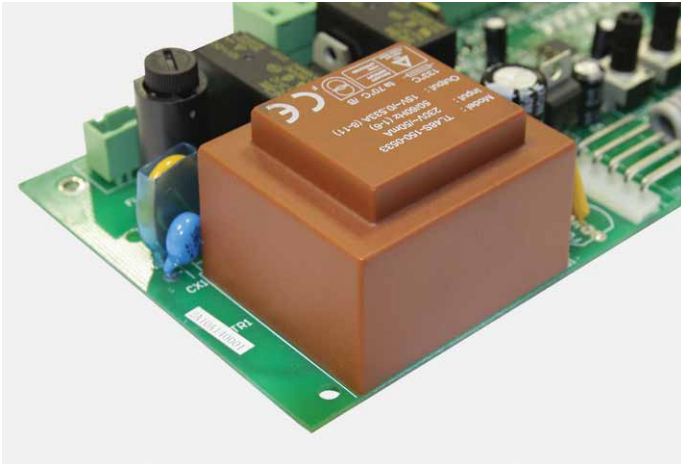
## 20

The built-in receiver with carrier frequency of 433 MHz, enables to assign up to 60 remote controls.

## 21

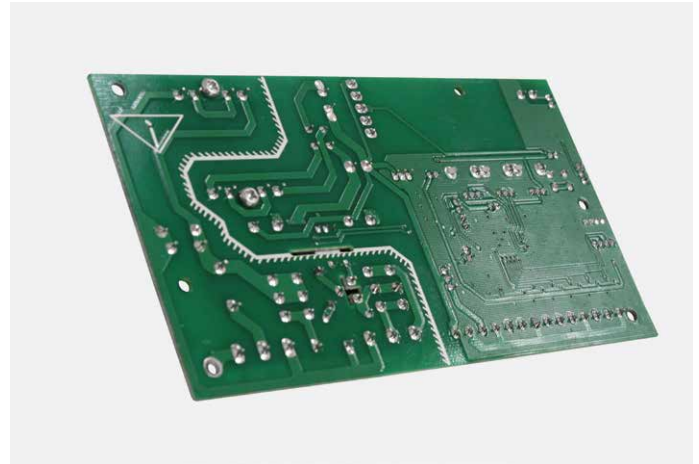
The board uses a resettable fuse which is made of a polymeric material with a very low resistance. In case of overcurrent, the resistance increases sharply, knocking the current to a safe value. When the power is turned off, or the chain is restored, the fuse will automatically reset, i.e. lower its resistance.

The emergency button “Stop”, can be connected to the control unit, which allows to immediately stop the gate in case of emergency.



## 22

Due to the increased cross-section of the winding wires and optimized core, the transformer has improved electrical characteristics.



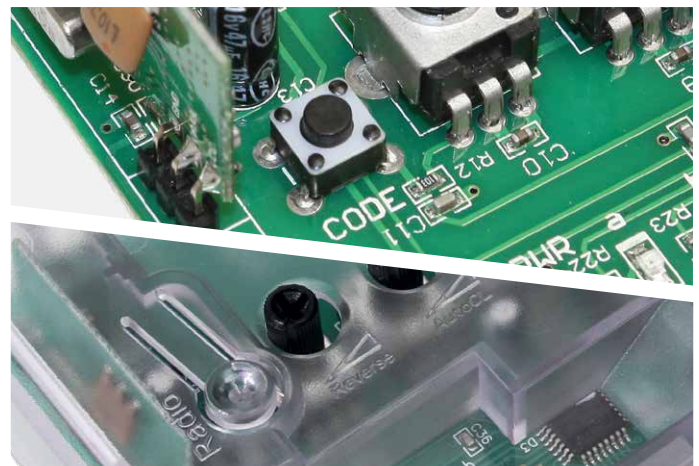
## 23

For protection against moisture, board surface is lacquered.



## 24

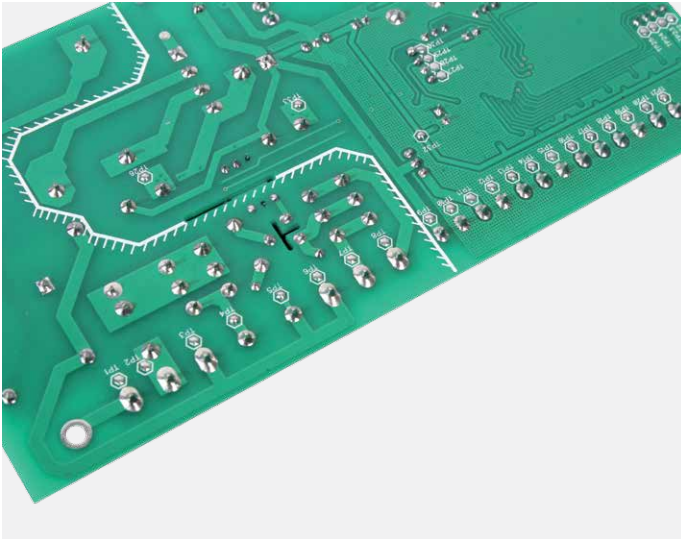
Optimally matched operating voltage value of the varistor, allows to protect the transformer and board against high voltage impulse noise.



## 25

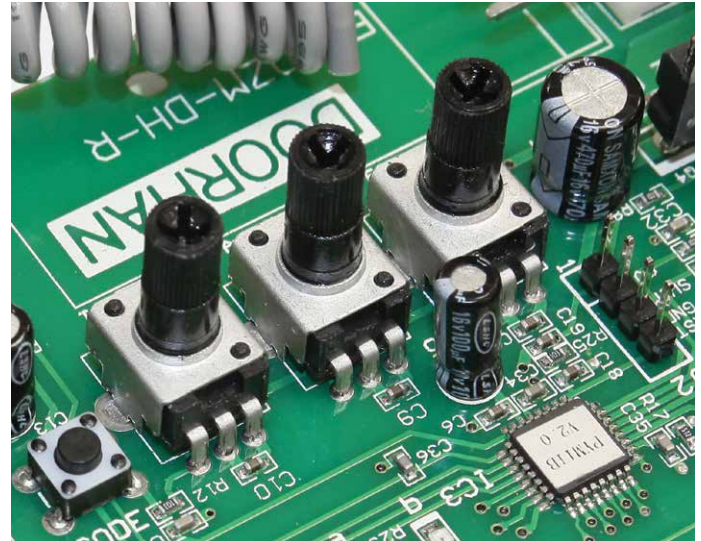
A separate button is provided to conveniently program the remote controls.

# PROGRAMMING FUNCTIONS



## 26

There are a special measuring points on control board.



## 27

Programming is carried out by fine adjustment knobs and switches of DIP type. The board allows you to program a number of functions to ensure a convenient and a safe use.

- Auto-close. The gate closes automatically after a pre-set period of time.
- Forced reverse. This function aims to increase the safety level. The algorithm implemented on the board is able to recognize obstacles in the gate opening, and give command to stop and reverse the gate direction. This allows you to avoid injuries or substantial costs in case if a person or a foreign object is hit during gate operation. The force with which the gate reverse, is adjustable.
- Reverse on limit switches. This feature eliminates the gate movement by inertia, when the limit switches are triggered.
- Pedestrian walkway. This feature allows you to adjust gate opening width, enough for pedestrian passage.
- Start-up mode. Within 2 seconds after the command of opening the gate is given, the operator operates with maximum force, which is essential for a comfortable operation of sliding gates, especially during winter. This function allows you to easily slide off the gate leaf, in the initial moment of movement.
- Remote programming of remote controls.
- Slowing down before end positions.

## LIMIT SWITCHES



### 28

Sliding gate operators are equipped with non-contact magnetic limit switches, eliminating any contact with the operator and preventing possible mechanical damage. The magnets are protected by a decorative cover.



### 29

The bracket is securely fastened to the gate leaf with four bolts, which allows you to adjust the horizontal position of the magnet, accurately.



### 30

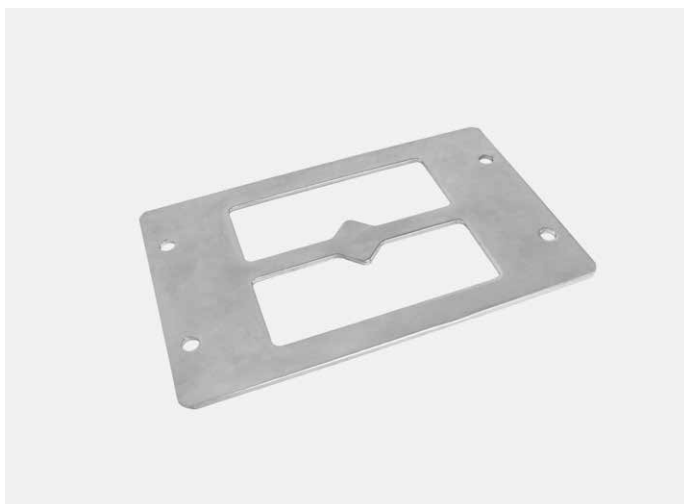
Reading device — the reed switch provides reliable triggering of the limit switches. It is located inside the operator. It allows to completely seal the body and to increase the level of IP protection.

## COMPLETE SET



The complete set includes:

- operator with built-in control unit;
- mounting base;
- a set of limit switches magnets;
- mounting kit, including anchor bolts;
- warranty card with individual markings that fully duplicates the information on the operator and the box;
- instructions in English and other languages.



### 31

Mounting base designed for concreting is supplied with special bolts.



### 32

Operator is packed in a box with foam filling, which ensures its safety during transportation.

**All brackets and mounting base are made of high-quality stainless steel, zinc coated with a thickness of 12 microns.**



# TECHNICAL SPECIFICATIONS

Model	Sliding-300	Sliding-800	Sliding-1300	Sliding-2100
Supply voltage, V/Hz	230/50			
Maximum power consumption, W	130	250	550	750
Gate speed, m/min	9	12	10	
Maximum gate weight, kg	300	800	1 300	2 100
Intensity, %	50		70	
Temperature range, °C	-20 to +55		-40 to +55	
Degree of protection	IP54			



# TUBULAR MOTORS

# TUBULAR MOTORS

DoorHan tubular motors are designed to automate rolling gates, rolling shutters, sun-screening marquee, screens, and shutters. They differ in high-quality design, high reliability, and also meet the strictest safety requirements and adapted to extreme environmental conditions. Wide operating temperature range (from -60 to +55 °C) allows the use of tubular motors in different climatic zones, which is confirmed by a test report. The model range includes more than 20 different motors with torque from 6 to 300 Nm.

## MODEL RANGE



### SERIES 35

Electric motors of 35 Series are designed for automation of roller shutters with leaf weighing up to 20 kg and a shaft with diameter of 40 mm.



### SERIES 45

Electric motors of 45 Series are designed for automation of roller shutters with leaf weighing up to 60 kg and a shaft with diameter of 60, 70 mm.

Operating voltage range from 180 to 240 V allows using tubular motors in the networks with unstable voltage.

Motors of electric drive are equipped with electric brake which provides accuracy of stopping in the end positions and performs functions of the lock.



### SERIES 45M

Electric motors of 45M Series are designed for automation of roller shutters with leaf weighing up to 60 kg and a shaft with diameter of 60, 70 mm. The drive has a built-in reducer of emergency opening that allows you to control roller shutters in the absence of power in the network.



### SERIES 45L

Electric motors of 45L Series are designed for automation of roller shutters with leaf weighing up to 60 kg and a shaft with diameter of 70 mm. The drive has a built-in releaser of emergency opening that allows you to control roller shutters in the absence of power in the network.



### SERIES 55

Electric motors of 55 Series are designed for automation of roller shutters with leaf weighing up to 120 kg and a shaft with diameter of 70, 102 mm.



### SERIES 55M

Electric motors of 55M Series are designed for automation of roller shutters with leaf weighing up to 120 kg and a shaft with diameter of 70, 102 mm. The drive has a built-in reducer of emergency opening that allows you to control roller shutters in the absence of power in the network.



### **SERIES 64M**

Electric motors of 64M Series are designed for automation of roller shutters with leaf weighing up to 180 kg and a shaft with diameter of 102 mm. The drive has a built-in reducer of emergency opening that allows you to control roller shutters in the absence of power in the network.



### **SERIES 92M**

Electric motors of 92M Series are designed for automation of roller shutters with leaf weighing up to 300 kg and a shaft with diameter of 102 mm. The drive has a built-in reducer of emergency opening that allows you to control roller shutters in the absence of power in the network.

**Before ex-warehouse delivery, all the internal electric motors undergo multiple-stage test. They are checked on more than 15 criteria for compliance with the required values in the environment maximally close to operating conditions.**

# APPEARANCE



## 01

Metal housing of the drive securely protects the motor, reducer and limit switches unit from various types of impacts.

## 02

Drive is supplied completed with shaft adapter, which are made either of plastic or aluminium alloy. The choice of material depends on the drive model and its maximum electric load.



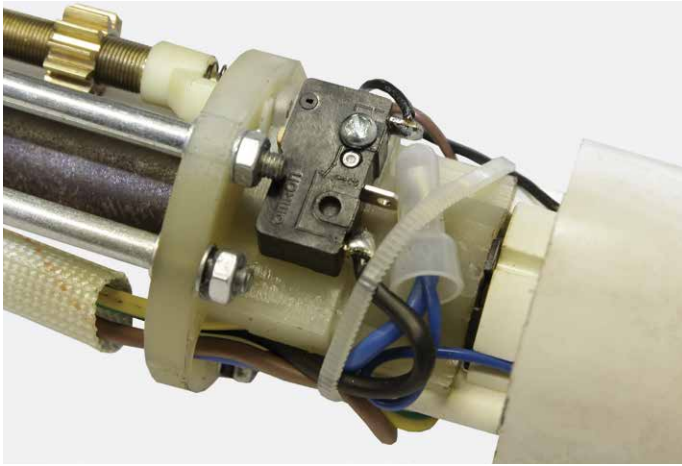
## 03

The drive package also includes back plates of metal or plastic (depending on the model of the drive and its maximum load). They are equipped with special fasteners that allow you to quickly install the drive.

## 04

High quality paint of drive housing protects against corrosion and extends the operation life time.

## ELECTRIC SWITCH



### 05

High quality micro switches produced by leading manufacturer provide the most accurate drive to stop on a limit switches and are designed for a large number of triggers.



### 06

Limit switches have highly accurate and reliable performance due to its metal gears and axes resistant to wear.



### 07

Nuts of limit switches are spring-assisted in end positions that prevents damage to the micro switches and prolongs their lifespan.

Insulation resistance of tubular motors is tested at the factory under voltage of 1 000 V. It guarantees its operation in severe operating conditions.



## REDUCER



### 08

3-stage planetary reducer, gears of which are made of high strength steel is located inside the case. Their durability ensures long service life.

## INSTALLATION

Electric drive installation is simple and does not take much time.



### 09

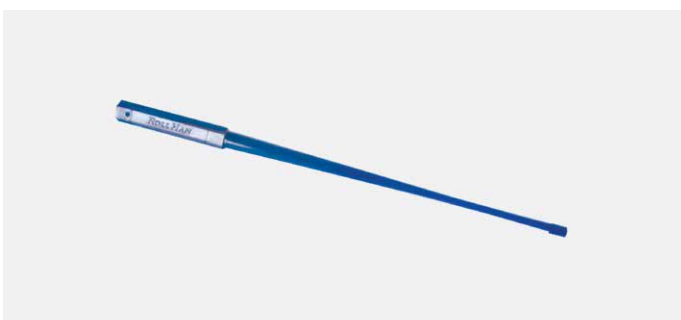
Electric drive is installed in the shaft of rolling shutters by means of special adapters supplied with it.

### 10

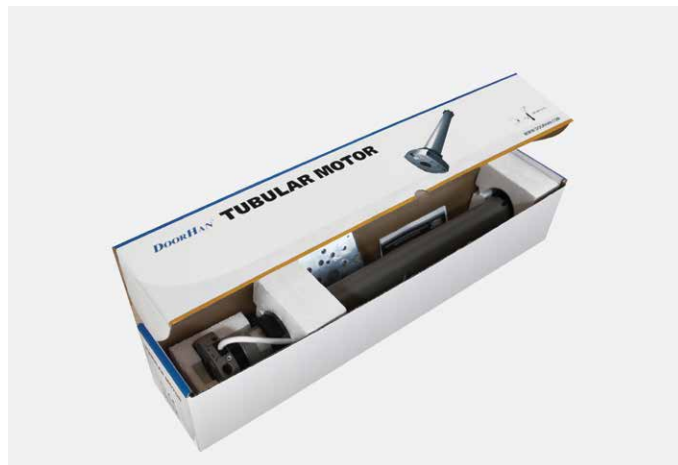
On the rear side the drive is attached to the side cover of the rolling shutter box using a special plate that is supplied with the drive.

### 11

On the rear side the drive is attached to the side cover of the rolling shutter box using a special plate that is supplied with the drive.



# PACKAGE



## 12

The electric drive package includes:

- drive;
- back plate;
- external adapter;
- internal adapter;
- plastic hex wrench to adjust the limit switches;
- loop of emergency opening (for motors with emergency opening);
- instruction;
- warranty card.

\* Depending on the type model of drive, the packaging may vary.

# TECHNICAL SPECIFICATIONS

Operators with emergency opening reducer

Operator	Rated torque, Nm	Rated speed, rpm
RS10/15MKIT	10	15
RS20/15MKIT	20	15
RS20/26MKIT	20	26
RS30/15MKIT	30	15
RS40/15MKIT	40	15
RS50/12MKIT	50	12
RS60/12MKIT	60	12
RS80/12MKIT	80	12
RS100/10MKIT	100	10
RS140/7MKIT	140	7
RS160/7MKIT	160	7
RS180/7MKIT	180	7
RS230/12MKIT	230	12
RS300/9MKIT	300	9

Operators without emergency opening reducer

Operator	Rated torque, Nm	Rated speed, rpm
RS6/28KIT	6	28
RS10/17KIT	10	17
RS13/14KIT	13	14
RS10/15KIT	10	15
RS10/26KIT	10	26
RS20/15KIT	20	15
RS20/26KIT	20	26
RS30/15KIT	30	15
RS40/15KIT	40	15
RS50/12KIT	50	12
RS60/12KIT	60	12
RS80/12KIT	80	12
RS100/10KIT	100	10

Operators with emergency opening release

Operator	Rated torque, Nm	Rated speed, rpm
RS50/12LKIT	50	12

# CERTIFICATES



## ТАМОЖЕННЫЙ СОЮЗ ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель, ООО «ДорХан 21 век»  
143002, Московская область, Одинцовский р-н, с. Акулово, ул. Новая, д. 120,  
ОГРН 1065032054933  
в лице Рассохин Михаил Анатольевич, Генеральный директор  
заявляет, что Комплексы внутренних приводов для рольставен DOORHAN в составе  
(см. приложение на 1 листе), ТУ 3468-002-96279372-2013  
изготовитель: ООО «ДорХан 21 век», 143002, Московская область, Одинцовский р-н, с.  
Акулово, ул. Новая, д. 120  
Код ТН ВЭД ТС: 8501200009

**ФЕДЕРАЛЬНОЕ АГЕНТСТВО  
ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ**  
**СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р**  
Закрытое акционерное общество "МНИТИ"  
Государственный испытательный центр телевизоров  
Аттестат аккредитации № РОСС RU.0001.21MC56 от 03.12.2007 г., срок действия до 03.12.2010 г.

107241, г. Москва, Уральская, 21  
тел. (495) 460-00-38  
факс (495) 460-33-18  
e-mail: certifica@mail.ru

**УТВЕРЖДАЮ**  
Начальник ГИЦ ЗАО "МНИТИ"  
*А.Н. Петушков*  
"МНИТИ" 28 июня 2010 г.

**ПРОТОКОЛ ИСПЫТАНИЙ № 30/2010**

1. Цель испытаний	Проверка работоспособности электромеханического внутреннего привода при пониженной температуре окружающей среды от -30 °С до -60 °С
-------------------	-------------------------------------------------------------------------------------------------------------------------------------

утриальный привод

оборудования"; ТР ТС 020/2011  
"векст"  
Испытательный центр ООО «АКАДЕМСИБ»,  
к: 630024, Новосибирская обл., г.  
Танай № 1021-2013-023 от 06.11.2013 г.  
8 от 28.10.2011, адрес: 105568, г. Москва,  
гасмой к продукции  
платуационной документации.  
в с даты регистрации по 06.11.2018

Рассохин Михаил Анатольевич  
ты и фамилия руководителя организаци-  
ли физического лица, зарегистрированного в  
ве индивидуального предпринимателя)

ТИВИ:  
ствин: ТС № RU Д-РУ.ММ04.В.01306  
07.11.2013

**СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р**  
**ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ**

**СЕРТИФИКАТ СООТВЕТСТВИЯ**

№ РОСС RU.AВ28.В14970  
Срок действия с 14.02.2013 по 13.02.2016  
№ 0770311

ОРГАН ПО СЕРТИФИКАЦИИ рег. № РОСС RU.0001.11АВ28.ОРГАН ПО СЕРТИФИКАЦИИ  
ПРОДУКЦИИ ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "СЕРКОНС". РФ,  
115114, г. Москва, ул. Дербовская, д. 20, стр. 16, тел. (495) 782-17-08, e-mail: info@serkons.ru

ПРОДУКЦИЯ Комплексы внутренних приводов для рольставен  
DoorHan с комплексушками и аксессуарами (см. приложение на 2 листах,  
бланки №№ 0609843, 0609844). код ОК 005 (ОКП):  
ТУ 3468-002-96279372-2013. 34 6890  
Серийный выпуск.

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ  
ГОСТ Р 52161.1-2004; ГОСТ Р 51318.14.1-2006 (разд. 4); ГОСТ Р  
51318.14.2-2006 (разд. 5, 7); ГОСТ Р 51317.3-2-2006 (разд. 6, 7); ГОСТ Р  
51317.3.3-2008 код ТН ВЭД России:  
8479 00 000 0

ИЗГОТОВИТЕЛЬ ООО «ДорХан 21 век».  
Адрес: 143002, Московская обл., Одинцовский р-н, с. Акулово, ул. Новая, д. 120.  
Телефон + 7 (495) 933-24-00, факс + 7 (495) 937-95-50, ИНН 5032151280

СЕРТИФИКАТ ВЫДАН ООО «ДорХан 21 век».  
Адрес: 143002, Московская обл., Одинцовский р-н, с. Акулово, ул. Новая, д. 120.  
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НА ОСНОВАНИИ протокола сертификационных испытаний № 643-02/14 от 14.02.2013 г.  
Испытательная лаборатория ООО "УЭС-Калининград", рег. № РОСС RU.0001.21АВ65 от 13.07.2011, адрес:  
236039, Россия, Калининградская область, г. Калининград, ул. Новый Вых, 22, к. 13

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Место нанесения знака соответствия: знак соответствия  
по ГОСТ Р 2860-92 наносится на корпус изделия и (или) в эксплуатационную документацию.  
Объем сертификата: 3.

Руководитель органа *И.Л. Еришес*  
Эксперт *Б.П. Чумков*

Свидетельство имеет юридическую силу на всей территории Российской Федерации

# CV01 CONTROL UNITS

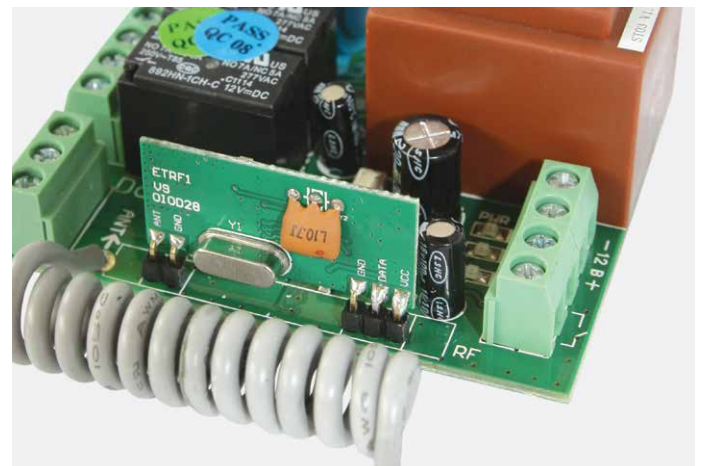


The main advantage of units of 1-series is that they are forming of various schemes allow you to manage as a single roller shutter, and their group. For greater ease of use, different switches offered by DoorHan can be connected to the units.



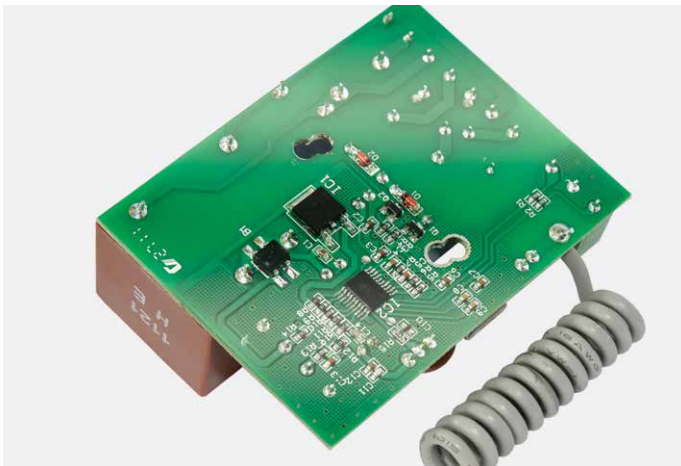
## 13

The unit is equipped with a powerful and reliable transformer, electrical characteristics of which are improved due to the increased section of the windings wire and optimized core.



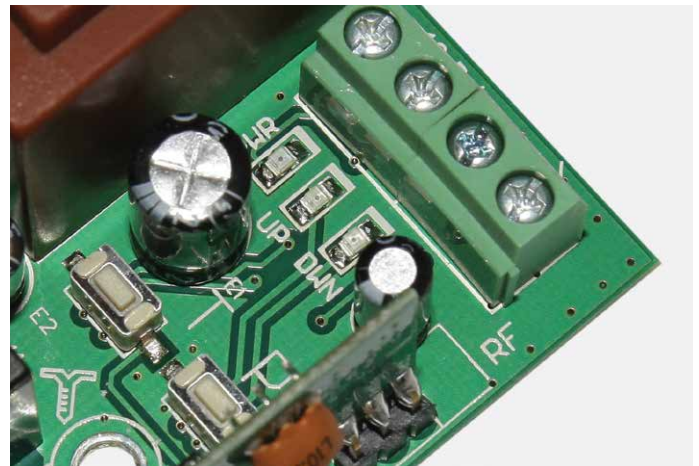
## 14

the radio receiver with a carrier frequency of 433 MHz, the memory of which can be assigned up to 60 panels is built in plate.



## 15

For moisture protection, board surface is lacquered.



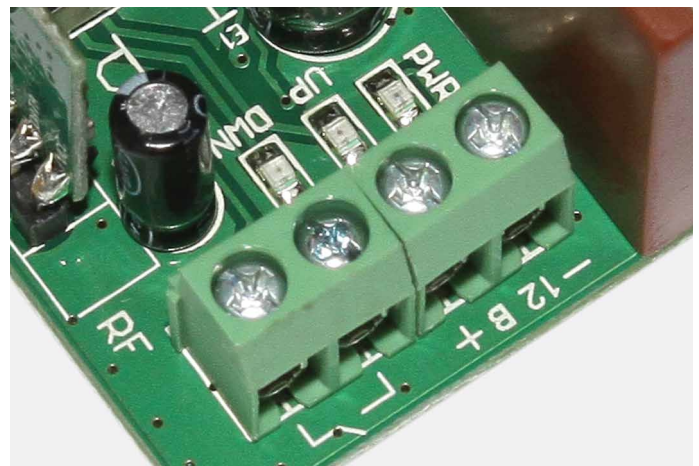
## 16

Indicator LED lights helps to visually monitor all stages of drive programming and get information about the selected operation logic.



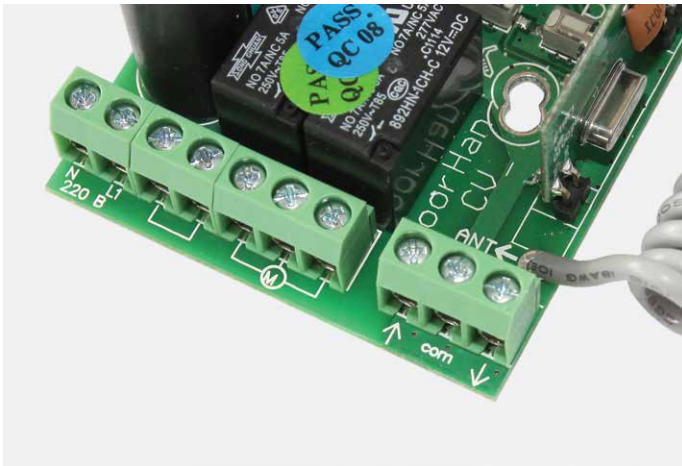
## 17

The board is protected against overload with fuse.



## 18

The board provides a connector for an external receiver that allows you to program more panels, and use panels from other manufacturers.



## 19

Availability of terminals on board allows you to connect a switch or key button.

## 20

The control unit is supplied completed with a sealed enclosure (protection class IP65) ensuring its securely protection against the environmental effects and can be installed outdoors.



## 21

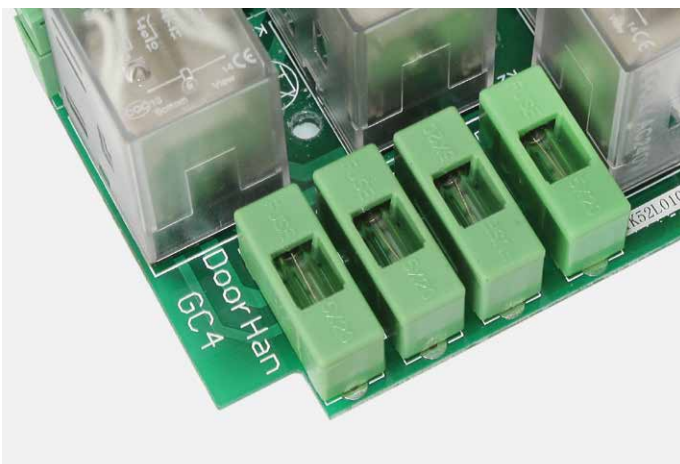
The board is equipped with special buttons, one of which is used to select the operation mode (rolling drive / electric lock / light lamp), the second — for programming remote control panels and clear the memory of built-in receiver.

## GC2 AND GC4 CONTROL UNITS



GC2 unit is designed for the simultaneous control of two electric motors using master switch. Separate control using switches connected to each electric drive is also possible.

GC4 unit is used for group control of four electric motors. Due to the combination of several units, it is possible to control a large number of roller shutters.

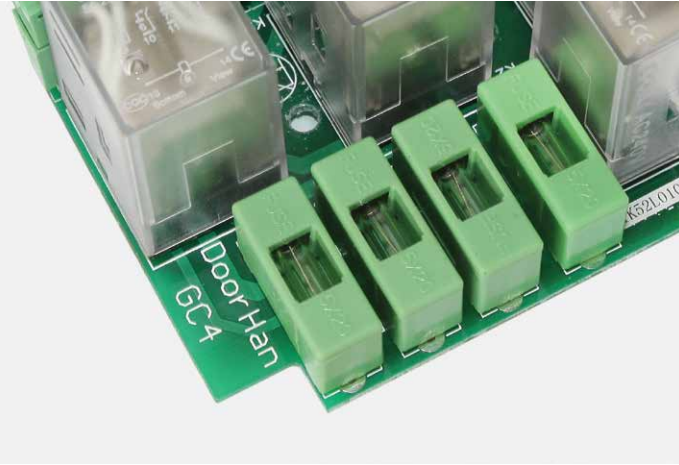


### 22

The board of control unit is securely protected against overloads with fuse.

### 23

For moisture protection, board surface is lacquered.



## 24

The presence of removable terminals makes the connection process more comfortable.

## 25

The control unit is supplied completed with a sealed enclosure (protection class IP65) ensuring its securely protection against the environmental effects and can be installed outdoors.

# ROLL, ROLL 1 AND ROLL 2 CONTROL UNITS



Units of the 2nd Series combine modern ergonomic design, ease of electrical connections, as well as a convenient remote control. One of the advantages of units of this series is three-point control with the buttons “up”, “stop” and “down” located on the device and the remote control panel.





## 26

The minimum of connecting wiring is used when connecting the control units.



## 27

These units can be installed both in attachable and integrated way.



## 28

When using units of the 2nd series, there is no need for additional switches, as they are equipped with their own control keys (Roll 1, Roll 2).

The combination of ease of installation and configuration of devices with their high functionality allows implementation of many combinations of control.

## PROGRAMMING FUNCTIONS

These control devices provide operation in two modes — normal and adjusting.

Normal operation mode (default) allows making a complete cycle of opening and closing of roller shutters through one pressing of “up” and “down” buttons. At that the drive can be stopped by pressing the “stop” button.

Adjusting mode provides more accurate positioning of roller shutters leaf in the required position.

In this mode, when short pressing (for 1-2 seconds) on the “up” or “down” button, the drive starts to work, and when you release the button it stops.

By holding the “up” or “down” button for more than 3 seconds, a complete opening or closing of the the roller shutter is performed, the motion can be cancelled by pressing the “stop” button.

## REMOTE CONTROL BOARDS



### T1

Single-channel remote control panel is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of all devices simultaneously.



### T5

Five-channel remote control panel is also used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of channels separately and simultaneously.

**T15**

Five-channel remote control panel is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of channels separately and simultaneously.

**T15timer**

Five-channel remote control panel equipped with timer is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling channels separately and simultaneously, as well as programming the time of daily opening and closing of the roller shutters.

**29**

The wall bracket and mounting kit for its mounting is supplied complete with remote control panel.

**TW1**

Wall-mount single-channel remote control panel is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of all devices simultaneously.



**TW2**

Wall-mount single-channel remote control panel is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of channels separately.

**TW15**

Wall-mount five-channel remote control panel is used with control units of the 2nd series — Roll 1 and Roll 2. Allows controlling of channels separately and simultaneously.



**30**

Convenient wall-mount bracket allows the use of this panels both stationary, and as a remote device.

**31**

Panels have a soft blue backlighting; which appears in every pressing of the button.

# SWITCHES



## SWB

Key-operated two-position switch which is mounted in attachable way.



## SWH

Key-operated two-position switch, which is mounted in integrated way.



## SWM

Two-position press-button key has a steel anti-vandal housing and is protected with key against unauthorized control. It is installed in attachable way.



## SWK

Two-position press-button key is protected with key against unauthorized control. It is installed in attachable way. It differs by a compact housing that allows you to install it on the guides of the roller shutters of all sizes.

## EMERGENCY OPENING DEVICE



### PP200

PP200 loop is design to withdraw the emergency control from a protective box.



### RK7E

RK7E drive shaft is design to withdraw the emergency control through the wall. Shaft length is 1 000 mm.

The various types of driver (VRS, VRK, VRP), which differ in the way of fastening and the presence of the cardan drive are used for emergency opening of roller shutters.

**AUTOMATIC DOOR  
MOTOR FOR SLIDING  
DOORS**

# AUTOMATIC DOOR MOTOR FOR SLIDING DOORS AD-LCD

Automatic door motor AD-LCD is intended for automation of sliding single-leaf or double-leaf doors installed both inside and outside of buildings. This automatic door motor is easily mounted and there is a possibility of setting interval and speed of opening/closing of leaves.

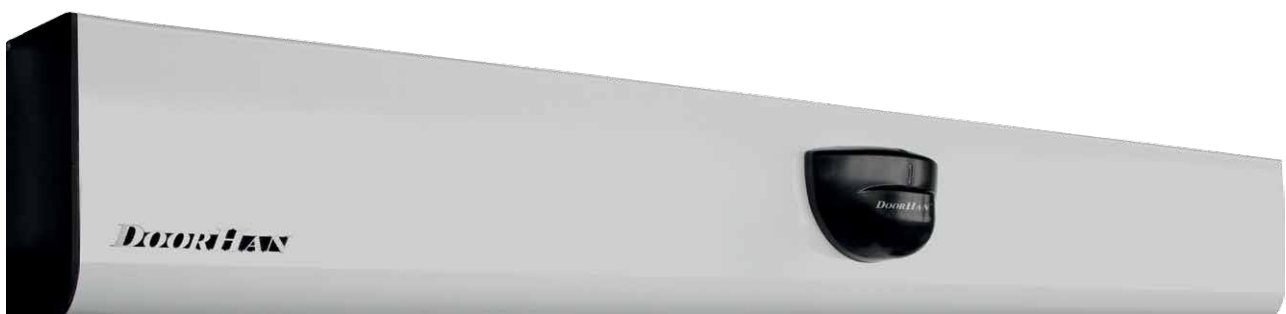
AD-LCD can withstand high operating loads and is completely safe to use thanks to what it is suitable for applications with high bandwidth.

In the presence of power supply, the automatic door motor securely locks the leaf doors preventing unauthorized opening of the gate.

In the absence of power supply the automatic door motor is locked by electromechanical lock.

## Main advantages:

- Ease of mounting and programming
- Long life
- Wide range of operating temperatures
- Control unit and keyboard are included in the package
- Different programming operation logic





## APPEARANCE



### 01

The components of automatic door motor are installed in a box made of aluminum profile. Aluminum profiles are manufactured in the process of pressure treatment of AD31T1 alloys according to high quality standard 22233-2001 and AlMgSi0,5 F22 and AlMgSi0,5 F25 in accordance with DIN1725, DIN1748, DIN17615. Powder coating based on polyester and polyurethane resins in accordance with high quality standard 9.410-88 is used as a protective and decorative coating of aluminum profiles.

## PACKAGE



### 02

The DC motor has an encoder and the locking system of the door (when you switch to mode "Lock").

### 03

It controls the operation of automatic doors. When power is applied the unit automatically adjusts the end positions of the door. There is a possibility to control the main functions of motion: the speed of opening/closing, actuation time, the buffer distance when closing and opening, etc.



## 04

The sensor is designed for automatic opening of doors; it is placed on a cover of the automatic door motor profile. You can adjust the sensitivity and area of actuation.



## 05

The tensioning unit provides the belt tension. The adjustment is made by rotation of a bolt with a spring and fixing of the selected position with bolts.



## 06

The power button is conveniently located on the box of the automatic door motor.



## 07

The door moves in the direction of the profile using the sliders.



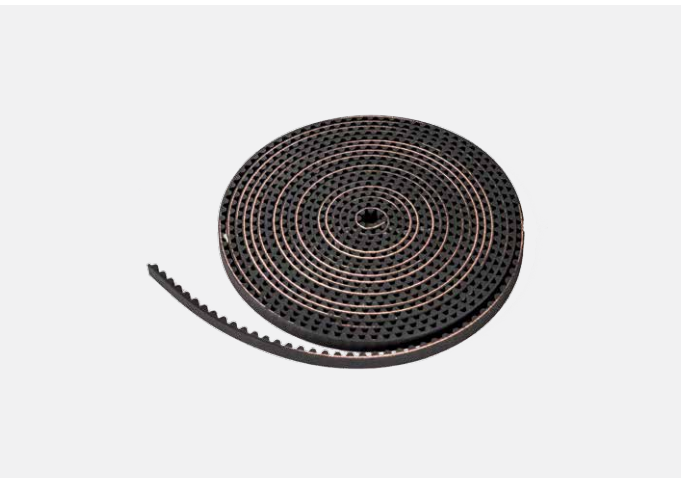
**08**

08 Holders of the automatic door motor belt (left and right) ensure its smooth running.



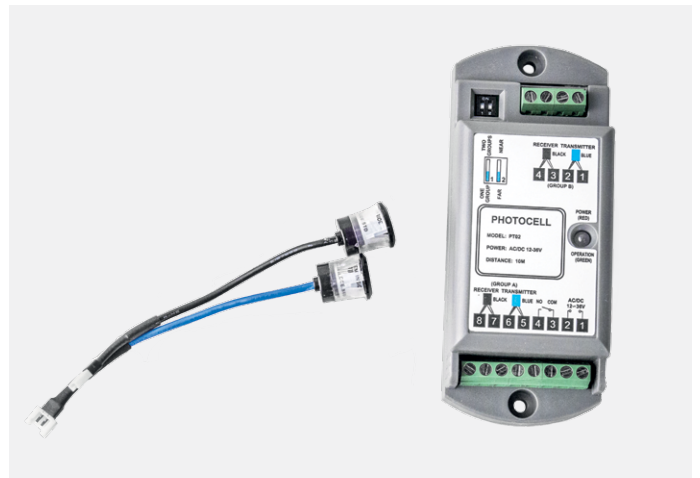
**09**

09 The stopper provides soft fixation of stop of the door.



**10**

10 The automatic door motor belt is of high durability and quality.



**11**

11 Photocells ensure safety operation of the door. The door opens automatically if the person gets to a doorway during the door closing.

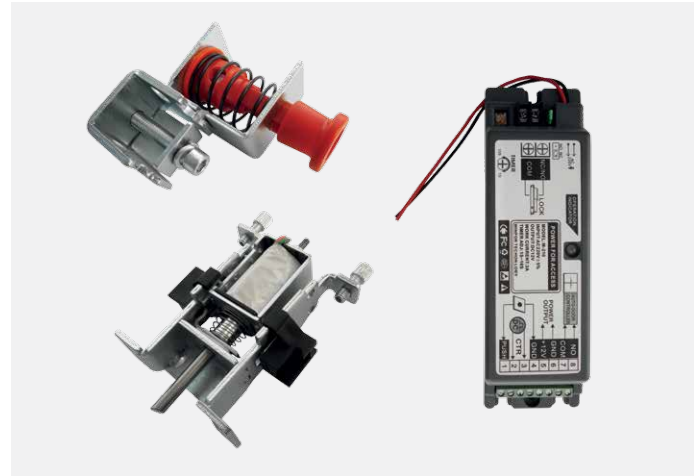


## 12

Keyboard for programming of automatic doors controls the modes of their operation:

- “Lock” — mode “lock” (sensors-radars do not work, the door is locked);
- “Full Open” — the door is open (sensors-radars do not work);
- “Automatic” — auto mode (door opens by the radars);
- “Partial open” — doors operate in an automatic mode (opening for 50 %);
- “Exit Only” — doors operate in an automatic mode (only the sensor for exit works).

The keyboard can be protected by internal password.



## 13

Electromechanical lock (option) consists of 3 parts — control unit, coil with latch and lever mechanism. It is mounted on tension pulley.

# COMPLETE SET



## TECHNICAL PARAMETERS

Parameters	Single-leaf	Double-leaf
Maximum weight of a leaf, kg	110	2 x 90
Maximum width of a shutter, mm	1500	2900
Speed of opening (is regulated), mm/sec	150–500	150–450
Speed of closing (is regulated), mm/sec	100–450	100–430
Delay period (is regulated), sec		0–9
Operating cycles		1 000 000
Electric motor	DC, voltage 24 V, power 55 W	
Voltage	220 V, AC, 50-60 Hz	
Operating temperature, °C	-20...+55	

# CERTIFICATE

**Eurasian Conformity Declaration**

**ТАМОЖЕННЫЙ СОЮЗ  
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ**

Заявитель, Общество с ограниченной ответственностью «ДорХан 21 век»,  
ОГРН: 1065032054933

Адрес: 143002, Россия, Московская область, Одинцовский район, село Азулово, улица  
Новая, дом 120, Телефон: +74959332400, Факс: +74959379550

в лице Генерального директора Рассохина Михаила Анатольевича

заявляет, что Комплект привода для раздвижных дверей моделей AD-LED, AD-LCD в  
составе (см. Приложение № 1 на 1 листе), изготовляемый по ТУ 3468-006-96279272-2014

изготовитель Общество с ограниченной ответственностью «ДорХан 21 век»,  
Адрес: 143002, Россия, Московская область, Одинцовский район, село Азулово,  
улица Новая, дом 120, ОГРН: 1065032054933, Телефон: +74959332400, Факс: +74959379550  
Код ТН ВЭД 8501402009. Серийный выпуск

соответствует требованиям


ТР ТС 004/2011 "О безопасности низковольтного оборудования";  
ТР ТС 020/2011 "Электромагнитная совместимость технических средств"

Декларация о соответствии принята на основании  
протокола испытаний № 11517 от 23.06.2014 года. Испытательный центр Испытательный  
центр Общество с ограниченной ответственностью «АКАДЕМСИБ», регистрационный №  
РОСС RU.0001.21AB09 до 01.08.2016 года, адрес: 630024, Новосибирская область, город  
Новосибирск, улица Бетонная, дом 14

Дополнительная информация

Условия хранения продукции в соответствии с требованиями ГОСТ 15150-69. Срок  
хранения (службы, годности) указан в прилагаемой к продукции товаросопроводительной  
документации и/или эксплуатационной документации.

Декларация о соответствии действительна с даты регистрации по 29.06.2019  
исключительно

 (подпись)  
М.П.

Рассохин Михаил Анатольевич  
(инициалы и фамилия руководителя организации-  
заявителя или физического лица, зарегистрированного в  
качестве индивидуального предпринимателя)

Сведения о регистрации декларации о соответствии:  
Регистрационный номер декларации о соответствии: TC N RU Д-RU.MHO62.B.00281  
Дата регистрации декларация о соответствии: 30.06.2014

**BARRIERS**

# BARRIERS

Barriers are an optimal solution for vehicle access control within the fenced areas and protected sites (industrial, warehouse, retail, and office areas, parking lots, parking areas, etc.). Operating temperature range from -40 to +55 °C allows you to use them in different climatic zones. Wide operating voltage range (from 180 to 240 V) allows using barriers in the networks with unstable voltage.

## MODEL RANGE



**Barrier-RPD** — high-speed barrier with boom length 3000 mm.

**Barrier-4000** — barrier with boom length 4000 mm.

**Barrier-5000** — barrier with boom length 5000 mm.

**Barrier-6000** — barrier with boom length 6000 mm.



**Barrier PRO** is barrier stand of professional series. Zinc-coated steel case, comfortable spring balance system.





All barrier components are made of high quality materials and comply with Directive 2002/95/EC (RoHS) limiting the content of harmful substances.

## APPEARANCE



### 01

Anti-vandal, steel barrier case galvanized and powder paint coated, that protects barrier against the corrosion and environment influence (Barrier PRO).



### 02

Barrier body is made of steel sheet of 1.8 mm thickness, and has reinforced stiffening ribs located inside, which provide a high durability.



### 03

Co-molded top cover is made of high-quality steel, which securely protects the control unit against vandalism and unauthorized access.

**All DoorHan barriers are reliable, have a long service life and are adapted for different weather conditions.**

## BARRIER BODY



### 04

For a convenient and a safe operation, barrier is equipped with LED lamp, with low power consumption, which warns with a bright flashing light of the boom movement. The built in lamp in the upper steel cover, eliminates the need to purchase and install additional similar devices; thereby, reducing installation time and the number of electrical connections. The lamp is protected against accidental damage and breakages, due to its position.

**Before shipment, all barriers undergo multiple-stage test. All the mechanical and electronic parts are checked on more than 15 criteria to the required values, in an environment as close as possible to the operating conditions.**

**The insulation resistance of each barrier is tested at the manufactory under a voltage of 1 000 V, which guarantees their operation in the most demanding conditions.**



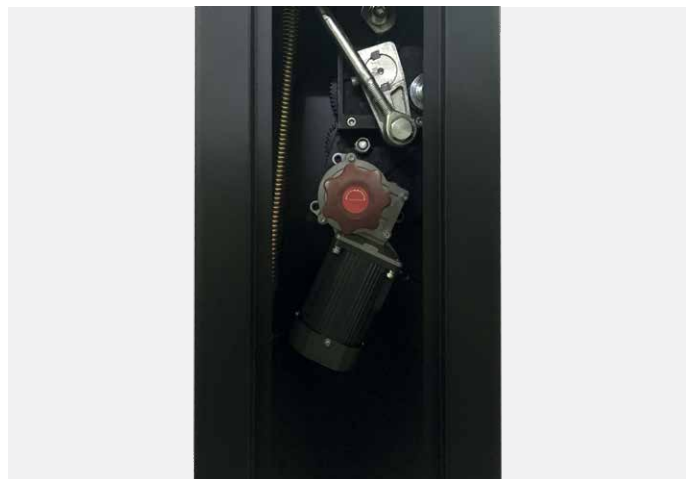
### 05

The access to the mechanical and electrical parts of the device is protected by a steel cover with lock, which can be opened only by a cross-shaped key supplied with the barrier.



## 06

A special release mechanism allows you to lift and lower the boom manually, in case of power failure. The release system is located inside the body and is protected by a steel cover with a lock.



## 07

The gear motor with release mechanism, the balancing mechanism, mechanical limit switches, and the control board are located inside the body.



## 08

The built-in fan inside the body, prevents overheating of the motor allowing the boom to operate at high intensity (70 %).



## 09

The gear motor made of high-strength bronze alloy is designed for the entire service life.

**The simplicity of design of a single-phase asynchronous motor ensures high operational reliability.**

**All barrier components are optimally matched to booms of above stated length and ensure a reliable operation of the mechanisms for the whole service life, which is more than 1 000 000 cycles of opening/closing, subject to simple technical regulations.**



## 10

Specially designed open type gear and the use of a large gear wheel diameter for uniform load distribution, significantly increases the life of the barrier. Gear wheels firmly fixed to the cast iron base ensure high reliability and faultless performance of the barrier.



## 11

Balancing mechanism is ensured by two springs with wire diameter — 6 mm. For barrier with a 4,000 mm boom length, only one spring is used. For boom with a 6000 mm length, an additional spring is installed, providing a precise balancing.



## 12

There is a balance spring tensioner for more comfortable mounting implemented in PRO series barriers.



## 13

Open bearings of balancing mechanism, according to the technical rules of service, have the ability of additional lubrication during operation process, which ensures easy maintenance and long service life of the barriers.



## 14

To quickly identify barrier warranty period, production date, time, place of sale, as well as warranty card numbers — special marking is located on the body. The availability of this information is significantly reducing the standard execution time of warranty works.

When the barrier reaches 125 °C during heavy use, thermal protection is triggered and the barrier is turned off, protecting the motor from overheating and failure.

## BOOM



## 15

The boom is made of durable aluminium profile with 1.4 mm wall thickness, and reinforced inside with additional stiffeners. Boom profile has rounded edges providing high resistance to wind loads.



## 16

Special reflective strips that are well visible in the dark are applied on the surface of the boom. This eliminates the need for additional electric power supply which greatly simplifies installation and saves energy. “Boom lightening” kit can be connected (optional).

## 17

Special rubber seal provided on the bottom part of the boom significantly softens the contact, in case a person or an object stands in the operating area.

The boom is pre-assembled at the manufactory, which greatly simplifies and speeds up the installation process.



### 18

Boom attachment is securely fixed in four points. To install the boom it is used a steel plate, which increases the reliability and durability of fastening during high operating loads.

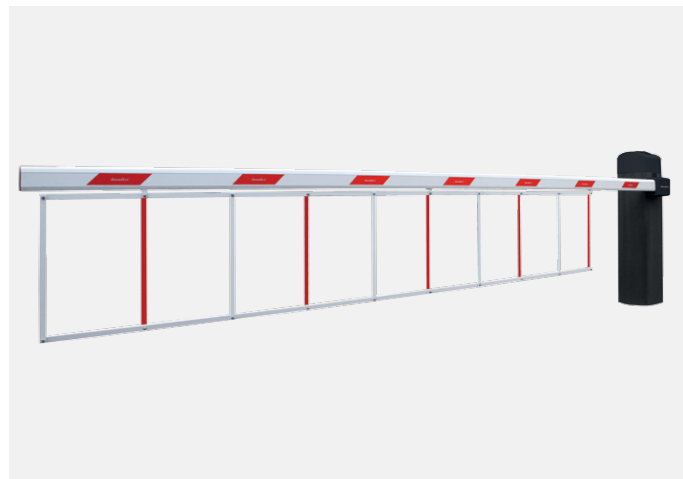
### 19

Rounded boom provides a high resistance to wind loads.



### 20

“Boom lightening” set ensures a high safety level of the barrier at night and in poor visibility conditions (optional).



### 21

Skirt set of barrier boom DH-SKIRT is mounting directly to the boom and serves for increasing barrier visibility, and also as additional fencing.

## V-HOLDER



### 22

Boom attachment is hidden under a decorative plastic cover reliably protecting the fasteners against negative environment effects.



### 23

V-Holder supplied as part of the package, is designed to relieve boom tension in closed position. In addition, it serves as an additional support for the boom and through special guides prevents its horizontal displacement in strong wind loads. V-Holder is made of durable aluminium alloy and is corrosion free.



### 24

For ease of installation, V-Holder can be adjusted in height.

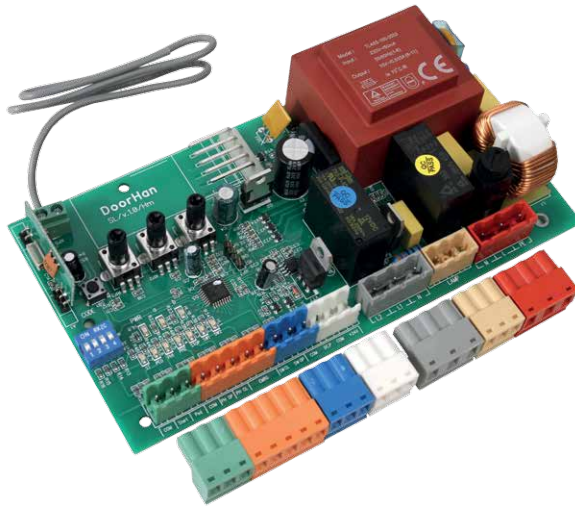


### 25

Special rubber bumper on the holder protects the boom from damage at closing.

# CONTROL BOARD

Barrier control board is designed according to the latest requirements of electromagnetic compatibility, and includes all the necessary EMI filters. Filters allow barrier to continuously operate when exposed to unintentional radio interference, and prevent the occurrence of interference from other technical reasons.



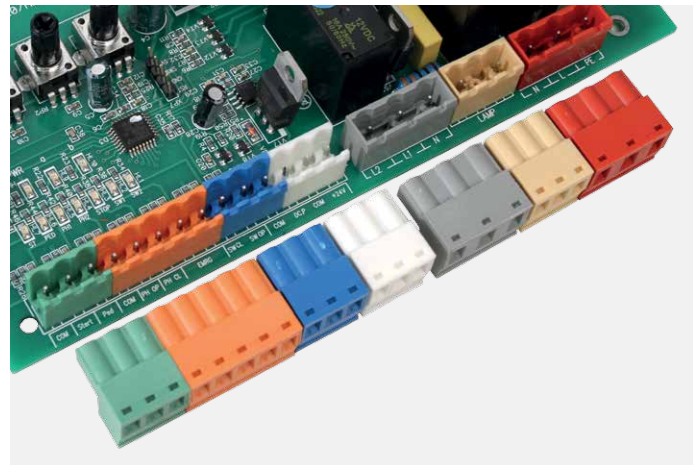
## 26

Barrier control board is made in accordance with all applicable safety standards.



## 27

The advantage of the control board is the ease of barrier configuration. All terminals on the board are marked for easy connection.



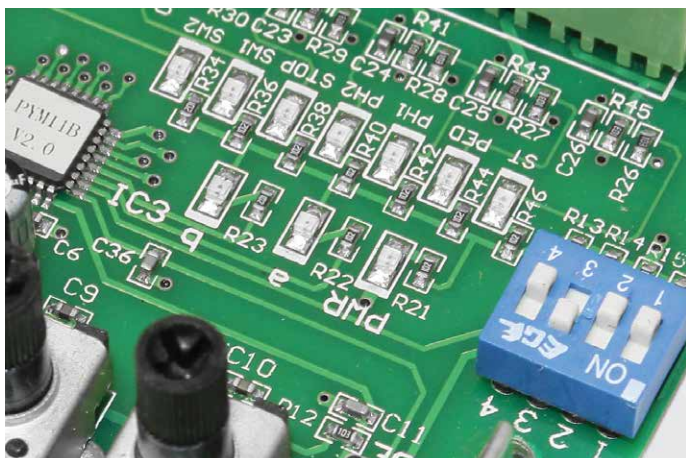
## 28

Easily removable terminals greatly simplify connection process.

Availability of connector allows you to connect a large number of additional control and safety devices such as photocells, which can be connected to both the opening and closing of the barrier.



All connections necessary for barrier operation have already been made at the manufacturer, which significantly reduces installation time.



## 29

The availability of indicator lights on the board helps to visually monitor the operation of the barrier.

## 30

Control board is located in the upper part of the barrier body which greatly simplifies the configuration process. The body has IP54 protection class, allowing to effectively protect the control board against dust and moisture ingress.



## 31

The control board has its own plastic body that protects it against accidental contact with current-carrying elements, providing additional safety in barrier operation.

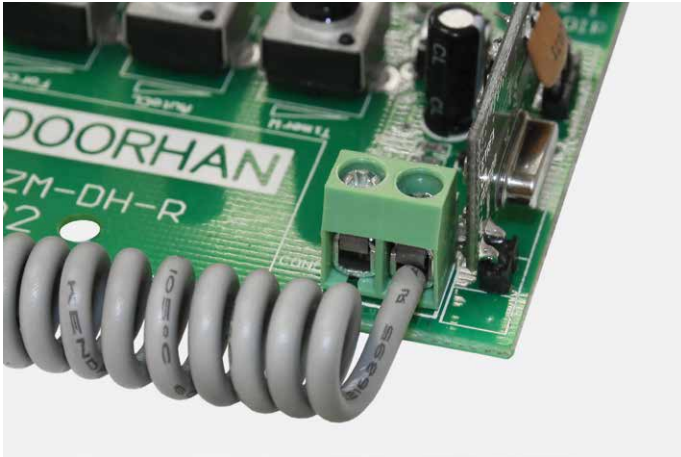
## 32

On the plastic cover, there are fine adjustment knobs that make it easy to prepare the barrier for operation without opening the housing.

Other features of this board are high quality, reliability and versatility. The control board may be used not only to the barriers but also for all types of sliding gate operators.

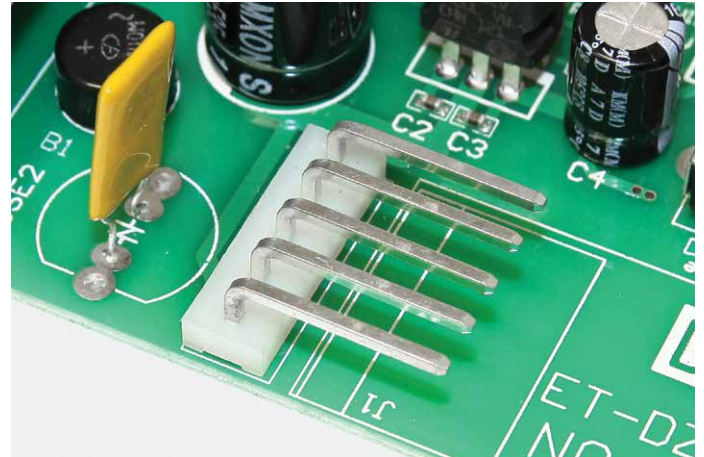


Radio-control system uses dynamic code technology that changes at every signal; provides total security and confidentiality, eliminating unauthorized use of the barrier.



### 33

The control board has a connector for an external antenna, which greatly extends the range of signal reception.



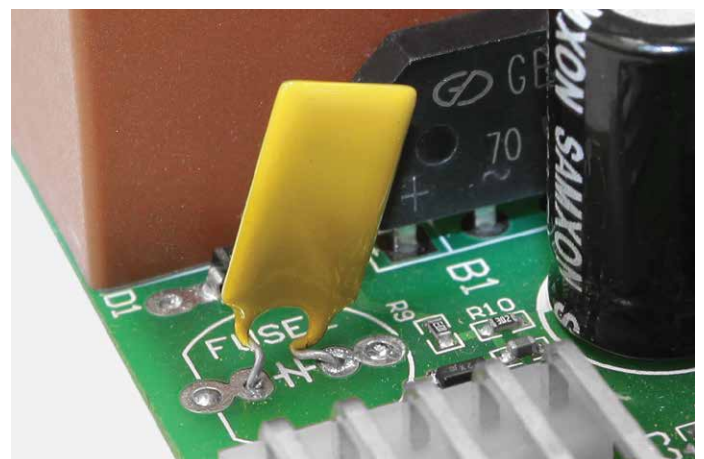
### 34

Availability of a special connector on the board used to connect the receiver, allows you to control DoorHan automation systems using remote controls from other manufacturers.



### 35

The built-in receiver with carrier frequency of 433 MHz, enables to assign up to 60 remote controls.



### 36

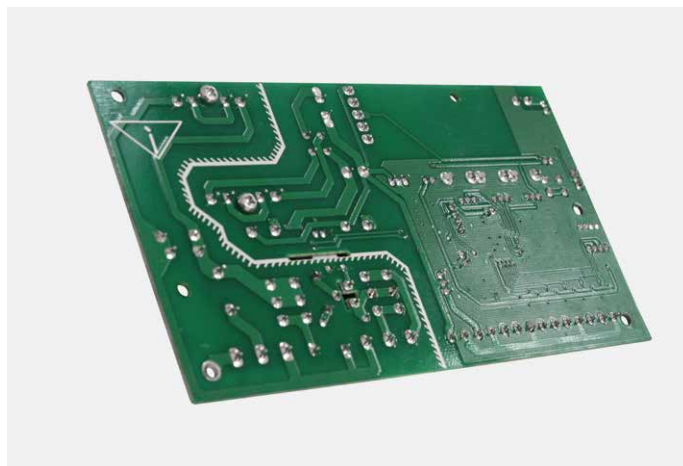
The board uses a resettable fuse which is made of polymeric material with a very low resistance. In the case of overcurrent, the resistance increases sharply, knocking the current to a safe value. When the power is off, or the chain is restored, the fuse will automatically reset, i.e. reduce its resistance.

The emergency button “Stop”, which can be connected to the control unit, allows to stop the boom instantly in case of emergency.



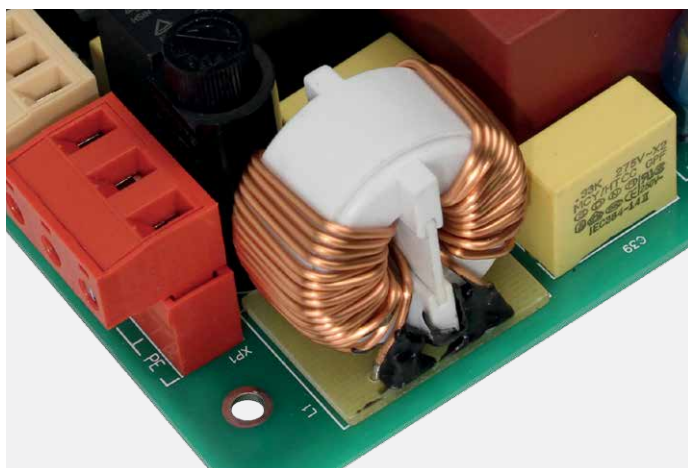
### 37

Due to the increased cross-section of the winding wires and optimized core, the transformer has improved electrical characteristics.



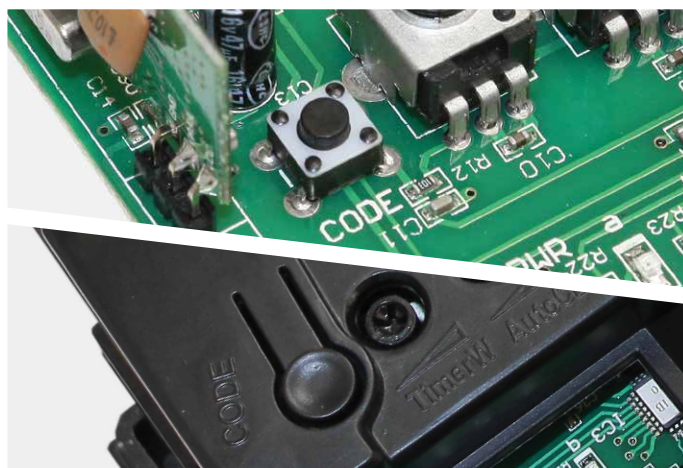
### 38

For protection against moisture, the control board surface is lacquered.



### 39

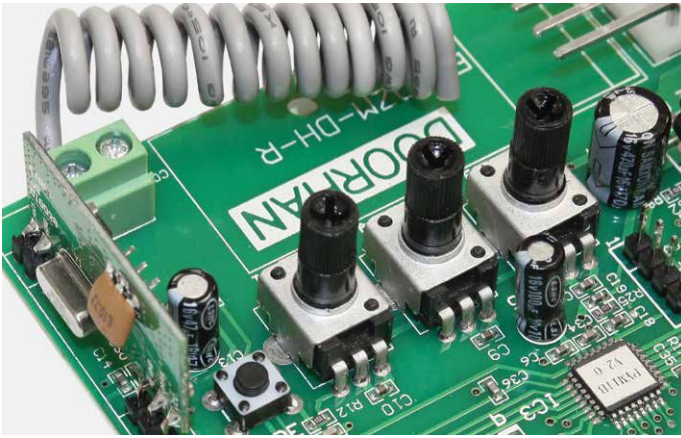
Optimally matched operating voltage value of the varistor, ensures transformer protection against high voltage impulse noise.



### 40

There is a separate button for a convenient programming of remote controls.

# PROGRAMMING FUNCTIONS



## 41

Barrier programming is carried out by fine adjustments knobs and switches of DIP type. The board allows you to program a number of features to ensure a comfortable and a safe use.

- Auto-closing. This function automatically closes the barrier after a pre-set period of time.
- Forced reverse. This feature is aimed to increase safety level. The algorithm implemented on the board, is able to recognize an obstacle in the barrier operation area, and give the command to stop and reverse the boom direction. This allows you to avoid serious injury or costs in case of damages. The reverse force, when the command is given, is adjustable.
- Starting mode. Within 2 seconds after the open command is given, the motor operates with maximum force, which is essential for a comfortable operation of the barrier during winter.
- Remote programming of remote controls.
- Slowing down before end positions.

**DoorHan barriers can be integrated into the DoorHan access control system or of other manufacturer.**

## INSTALLATION AND ADJUSTMENT



### 42

Barrier installation is simple and does not take much time. All electrical connections and mechanical adjustments are pre-made at the manufactory. During installation, it is enough to secure the barrier, install the boom and the V-Holder, connect the power supply and make the necessary settings.



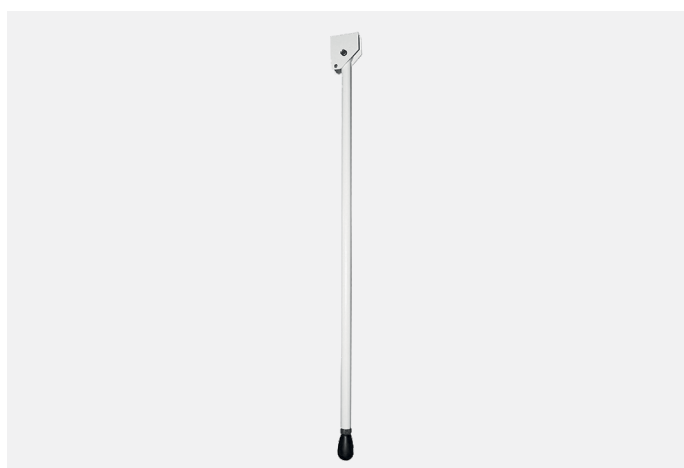
### 43

Barrier is securely fastened with anchor bolts from the inside of the body, at four points. Access to the fastening is protected by a cover with a lock against unauthorized removal. Fastening system allows to install the barrier on already prepared surface and does not require additional concreting. Due to special designed brackets, it is not necessary to prepare high precision holes for anchor bolts, since they have a wide adjustment range.



### 44

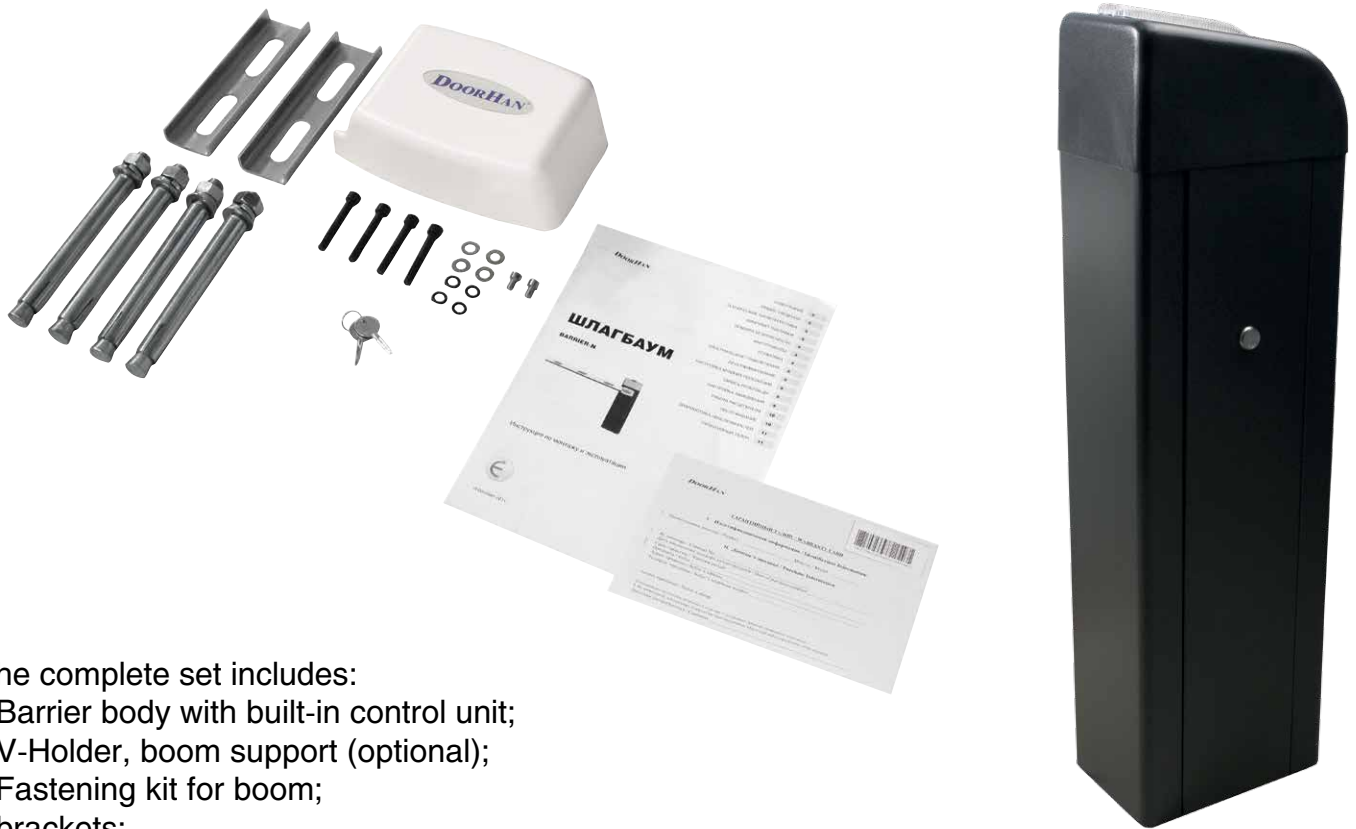
Redesigned limit switches in conjunction with integrated mechanical stops ensure a precise boom stop in the end positions and guarantee a long service life of the barrier.



### 45

Support endfoot for barrier boom has an ease height adjustment ability.

# COMPLETE SET



The complete set includes:

- Barrier body with built-in control unit;
- V-Holder, boom support (optional);
- Fastening kit for boom;
- brackets;
- anchor bolts;
- instruction in English and other languages;
- warranty card.



## 46

Barrier set is supplied with anchor bolts necessary for mounting.



## 47

Mounting bracket is made of high-quality stainless steel with 12 microns zinc coating.



## 48

Mounting base is corrosion-free zinc coated and resistant to negative environment effects. The package includes four L-shaped anchor bolts to secure the stand to the base (optional).

## 49

Barrier is packed in a box with a foam filling, which ensures its safety during transportation.

# TECHNICAL SPECIFICATIONS

Model	Barrier-4000	Barrier-5000	Barrier-6000
Supply voltage, V/Hz	230/50		
Maximum power consumption, W	220		
Maximum boom length, mm	4 000	5 000	6 000
Boom type	Aluminum: oval, round, oval with LED light		
Overall dimensions, mm	270x1015x140		
Number of springs	1	2	2
Opening time, sec	4	5	6
Intensity, %	70		
Temperature range, °C	-40 to +55		
Degree of protection	IP54		

Barrier-PRO	
Boom length, m	4/5/6
Maximum opening time, sec	6
Supply voltage, V/Hz	230 / 50/60
Boom type, %	Rigid
Use intensity (at 20°C)	70
Overall dimensions (L x W x H), mm	222 x 328 x 980
Engine speed	1 400 RPM
Power consumption, W	220
Thermal protection, °C	120
Temperature range, °C	-40 to +55 (from -60°C if thermal heater is provided)
Degree of protection	IP54
Limit switches	Electromechanical

# CERTIFICATES



**TÜV AUSTRIA CERT GMBH**  
Certification Body



**TÜV AUSTRIA**

## CERTIFICATE OF CONFORMITY

Certificate No.: TA 380 14 2235

Product:	Electromechanical barrier	Applicant:	"Doorfan" Doorfan s.r.o. Kralovský Vrch 2018, 43201 Kadan, Czech Republic
Manufacturer:	"Doorfan" Doorfan s.r.o. Kralovský Vrch 2018, 43201 Kadan, Czech Republic		

Page 1 of 1

### Certificate of Compliance

Electrical Safety  
For  
Electric Barrier

**Date of Issue:** 7<sup>th</sup> September 2011

**SGS Reference:** CST151510/UA

**Details of Sample:** Model No.: Barrier-5000  
Unique Identifier: Not Supplied

**Date of Receipt:** 2<sup>nd</sup> October 2010

**Date of Test:** 2<sup>nd</sup> October 2010 To 4<sup>th</sup> August 2011

**Test Required:** Test for compliance with: -  
BS EN 60335-1:2002 / IEC 60335-2-103:2003

**Conclusion:** In the configuration tested the sample meets the requirements of the standards detailed above.

**Issue Number:** 1

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SGSPAPER 



# ACCESSORIES

# ACCESSORIES

DoorHan safety devices are designed to provide maximum safety level during operation of sectional doors, gates and barriers. Control devices are used to send signal to open, stop and close. DoorHan wide accessory range, allows you to quickly and easily upgrade any automation system for residential and industrial use.

## TRANSMITTER-2 PRO



Transmitter is designed for two DoorHan automation devices distance controlling or other automation suppliers that DoorHan receiver is connected.

### Main advantages:

- dynamic code technology(16 millions combinations);
- two independent channels;
- modern ergonomic design;
- compact dimensions;
- increased battery life;
- there is a hole at case for connecting the transmitter with keys.



# TRANSMITTER 4



TRANSMITTER 4 is designed to remote control up to four DoorHan devices or devices from other manufacturer which are connected to the DoorHan receiver.

### Main advantages:

- dynamic code technology (16 million combinations);
- 4 independent channels;
- modern ergonomic design;
- supplied with a wall holder;
- the body features special tactile marking of channels according to the standards;
- battery reserve lasts an average for 3 years (depending on the operating conditions);
- a special opening is provided to attach the remote control to the keys.



# TRANSMITTER PREMIUM



TRANSMITTER PREMIUM is designed to remote control four DoorHan devices or devices from other manufacturer which are connected to the DoorHan receiver.

**Main advantages:**

- dynamic code technology (16 million combinations);
- 4 independent channels;
- modern ergonomic design;
- robust metal body has an opening provided to attach the remote control to the keys.



# TRANSMITTER-PRO



TRANSMITTER-PRO is designed to remote control four DoorHan devices or devices from other manufacturer which are connected to the DoorHan receiver.

**Main advantages:**

- availability of additional power system — built-in battery rechargeable from solar battery;
- mini-USB connector allows charging the internal battery from an external source;
- rolling code technology (16 million combinations);
- 4 independent channels;
- robust metal body has an opening to attach the remote control to the keys.



# CAR-TRANSMITTER



Car-Transmitter — is two channel transmitter of distance controlling.

**Main advantages:**

- for comfort the transmitter installs into standard nest of car cigarette lighter;
- transmitter works with autonomous battery;
- elegant case.



# KEYSWITCH N



KEYSWITCH N key button, is used to send commands to the control unit of an automation system to open, stop, and close the sectional door, gate or barrier; by turning the key on the following principle: “open” — “stop” — “close” — “stop”.

### Main advantages:

- protection against unauthorized access;
- mechanical locking, preventing the opening of the body without an installed and turned key;
- 2 modification of key button, with one or two micro switches, which allows using it for remote control;
- compact design;
- easy installation and connection;
- the ability to connect control input NO/NC;
- the ability to use it outdoor, due to its sealed body (protection class IP54).





# SWM



The SWM anti-vandal two-position key-switch operates rolling shutter tubular motors. The switch is suitable for surface mounting. It has a key which prevents the cover from being installed or removed without the inserted and turned key.

### Main advantages:

- Reliable anti-vandal metal housing, (protection class IP54).
- Easy installation and wiring.
- Hermetic rear wall prevents moisture penetration into housing.
- Reliable spring return mechanism.
- Protection from unauthorized use.



# SWITCH



One-button switch is used for giving a control command to an operator's control board. Both NO and NC contacts can be used for connection. Every push of the button corresponds with one control command: Open/Stop/Close/Stop.

**Main advantages:**

- Reliable return mechanism.
- Compact body.
- Easy mounting and connection.
- Can be used with any device that can receive an impulse signal.



## BUTTON3 AND BUTTON2K



Three-position control station BUTTON3 and two-position control station BUTTON2K, are designed to control shaft operators used for industrial sectional doors.

### **Main advantages:**

- the ability to immediately stop the door leaf in any position by pressing “Sto”» button (for Button3);
- key guard to prevent unauthorized control of the operator (for Button2K);
- compact design;
- the body is made of impact-resistant plastic;
- high protection level against negative environment influences (IP65);
- special design and large button size, for maximum pressing precision.

# KEYPAD



Radio code wireless keyboard, KEYPAD, is designed to remote control operators equipped with internal or external DoorHan receiver.

### Main advantages:

- the ability to record a 4-8 digits access code;
- built-in power supply with the ability to connect external source of 12/24 V AC/DC;
- light and sound indications;
- simultaneous control of two operators;
- the ability to use it outdoors due to the sealed body (IP54).
- buttons are protected against accidental pressing, by a lid.



# PHOTOCELL-N



PHOTOCELL-N — photocells consisting of an infrared transmitter and receiver which are installed in the opening of a sectional door or a gate, to ensure maximum safety of their use.

## Main advantages:

- the ability to connect to any supply voltage 12/24 V AC/DC;
- the connection of NO/NC control contact — availability of normally open contacts allows using the photocells as a control device;
- easy access to the terminals;
- dispersion of the beam angle at a distance of 20 m is 7°, eliminating the need for accurate positioning of the receiver according to the transmitter;
- modern ergonomic design;
- small size allows a convenient installation of photocells in the gate opening.



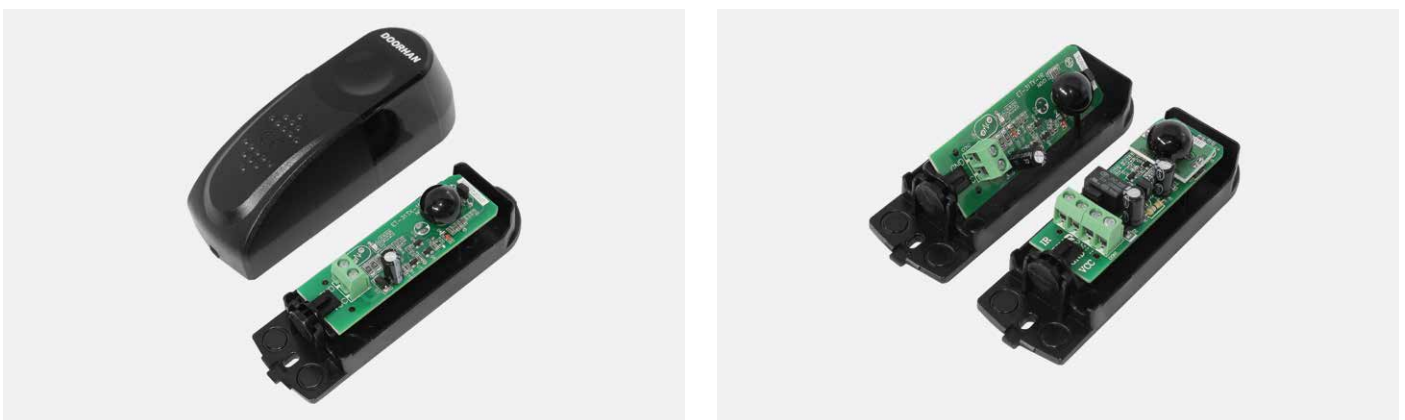
# PHOTOCELL-R



PHOTOCELL-R — photocells consisting of an infrared transmitter and receiver are designed to prevent occurrence of accidents when foreign objects enter into the gate or barrier operating zone.

**Main advantages:**

- the ability of installation on irregular and asymmetrical openings due to the rotating mechanism of the receiver/transmitter, which allows you to adjust its position in accordance to the receiver/transmitter;
- the ability to connect with any supply voltage 12/24 V AC/DC;
- the ability to connect NO/NC control contact;
- modern ergonomic design;
- small size allows convenient installation of photocells in the opening.



# PHOTOCELL-W



PHOTOCELL-W — photocells consisting of an infrared transmitter and receiver which are installed in the gate openings to ensure maximum safety of their use.

### Main advantages:

- this safety devices are powered by batteries, which allows installation without wiring;
- PHOTOCELL-W meet all the requirements of the most demanding customer: have a stylish design, easy and quick to install;
- supply voltage (DC) — 12-24 V;
- wave length 940 nm;
- receiver current consumption (RX) — <30 mA;
- operating temperature range — from -20 to +60 °C;
- dimensions — 37.5 x 108 x 36 mm;
- output contacts — NO/NC;
- battery type — CR123A.

# LAMP-LED



Signal lamp LAMP-LED is designed to alert you on the movement of the sectional door/gate leaf or barrier, throughout the whole cycle of opening and closing. The LED elements significantly reduce energy consumption and extends lamp service life.

### Main advantages:

- supply voltage (12/24/220 V) allows the use of the lamp with any type of DoorHan automation or of other manufacturer;
- built-in antenna greatly increases the signal range received by the operator;
- due to super-bright LEDs, the lamp light can be seen even on a sunny day;
- the ability to use the Lamp-LED outdoors due to its sealed body (IP54).





# LAMP



LAMP is a safety device designed to alert you on the movement of the sectional door, gate or barrier, throughout the whole cycle of opening and closing.

### Main advantages:

- bright, highly visible light;
- easy to replace incandescent lamp with a standard socket E14;
- reinforced mount with stiffeners allows you to securely fix the lamp on any surface;
- built-in antenna greatly increases the signal range received by the operator;
- all necessary cables to connect an external antenna and power are included into the package;
- modern design;
- the body is made of high-quality plastic.



## DHRE-1



External radio receiver DHRE-1 is designed to control DoorHan automation or automation of other manufacturer, using DoorHan remote controls.

**Main advantages:**

- the ability to connect to any operator with normally open control contacts;
- built-in antenna greatly increases signal range;
- the ability to record up to 1 000 remote controls;
- compact design.



## DHRE-2



External radio receiver DHRE-2 is designed to control DoorHan automation or automation of other manufacturer, using DoorHan remote controls.

**Main advantages:**

- the ability to connect to any operator with normally open control contacts;
- simultaneous control of two operators;
- built-in antenna greatly increases signal range;
- the ability to record up to 110 remote controls in each channel (total remote controls 220);
- compact design.



# GSM-MODULE



GSM-module is designed to receive signal from a mobile phone and convert it to a command, to control any automation system.

**Main advantages:**

- power consumption — up to 2 W;
- protection class — IP65;
- USB-interface;
- the ability to record a large number of phone numbers (up to 500);
- external antenna provides stability of GSM-signal reception;
- the ability to add/remove numbers using SMS-messaging.



# HEATER



HEATER is designed to heat gate operators and barriers when operating in low temperature conditions.

### Main advantages:

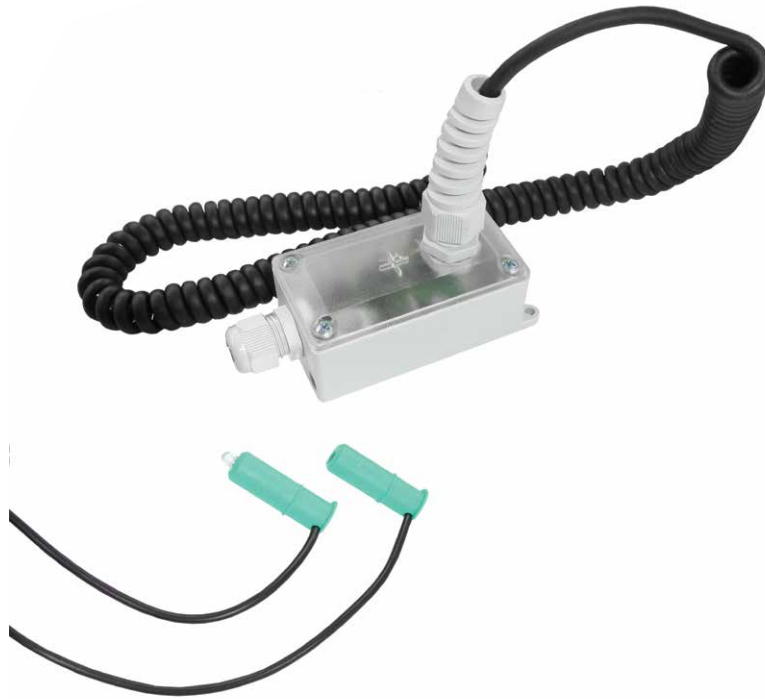
an easy way to mount to the operator gear motor;

fully automatic operation mode — turning on when the temperature lowers to  $-10^{\circ}\text{C}$  and turning off when the temperature rises to  $+5^{\circ}\text{C}$ ;

can be used with any operator.



# OPTOKIT



Infrared sensors OPTOKIT is designed to ensure operational safety of sectional doors. The transmitter and receiver are placed in the bottom rubber profile and when deformed, the optical beam is interrupted and the signal is send to the control unit to stop or reverse the door movement.

**Main advantages:**

- the ability to use with all types of operators for sectional gates;
- contact types — NO/NC;
- response time — 16 ms;
- protection class — IP65.



## WDKIT



WDKIT magnetic proximity sensor, designed to ensure a safe use of the doors with built-in pass door. When the pass door is open, the signal from the sensor blocks the operator, preventing the movement of the door.

### Main advantages:

- adjustable sensing distance;
- sensor compact size allows its installation to the profile of the built-in pass door;
- 3 m cable is included in the package.



# KEYCODE



Vandal-proof and waterproof controller KEYCODE — is designed to control one device (barrier, gate operator or roller shutters, electric lock, etc.) and can also be used as an external keypad or card reader.

**Main advantages:**

- waterproof (compliance with IP68);
- impact-resistant body made of zinc alloy with electrolytic coating;
- fully programmable using the keypad;
- the ability to record 2000 users (supports cards, PIN- codes, cards with PIN- codes);
- can be used as a standalone key console;
- lighted keys;
- adjustable time of the output, signal and door opening;
- low power consumption (30 mA);
- high operation speed (<20 ms);
- locking in short-circuit;
- ease of installation and programming;
- built-in light-sensitive resistor (LDR) to protect against unauthorized opening;
- built-in siren;
- displaying red, yellow, and green lights to display the operating status.



# LOCK



External emergency release LOCK is designed to open residential sectional doors in case of power failure, or in case there is no built-in pass door or other additional entrance to the building.

**Main advantages:**

- the cable is equipped with braided polymeric material to protect it from mechanical damages;
- corrosion free coated body, will maintain its aesthetic appearance through entire service life;
- reliable protection against breaking;
- two unique keys included;
- special cover protects the lock cylinder from foreign objects.

## LOCK-N



External emergency release LOCK-N is designed to open sectional doors in case of power failure, and in the absence of built-in pass door or other additional entrance to the object.

### Main advantages:

- modern appearance of the handle is easily combined with any design of door leaf;
- reliable locking mechanism ensures flawless performance throughout its lifetime;
- the cable (1.25 x 4700 mm) and braid (4.62 x 4520 mm) have adjustable length.



## LOCK-MINI



External emergency release LOCK-MINI is designed to open sectional doors in case of power failure, and in the absence of built-in pass door or other additional entrance to the object.

### Main advantages:

- modern appearance of the handle is easily combined with any design of door leaf;
- reliable locking mechanism ensures flawless performance throughout its lifetime;
- mounting hole diameter is 13 mm.



## DH-SENSOR-KIT



Safety edge is designed for providing automation sectional gates using safety. It installs into low rubber profile (art: 80042, UP19) of sectional gates, though with the slightest contact with obstacle the opener stops and go reverse goes. For mounting it is necessary to get sensor kit (art: DH-SENSOR-KIT) and safety tube (art: TUBE-SAFETY).

### Main advantages:

- simple principal operation;
- this safety devise works with battery that makes it ease to mount and increase serviceability;
- minimal response time — less then 0,3 sec;
- long service period.

Manufacturer (DoorHan) reserves the right to make necessary changes in the design of products without prior notice of the customers. All technical information is a reference. To make any technical or other changes without consulting the manufacturer is prohibited.





# PLANTS

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