



P190 Control Box

24V DC GEAR MOTOR

Swing Gate Opener

FOR RESIDENTIAL USE ONLY

USERS MANUAL

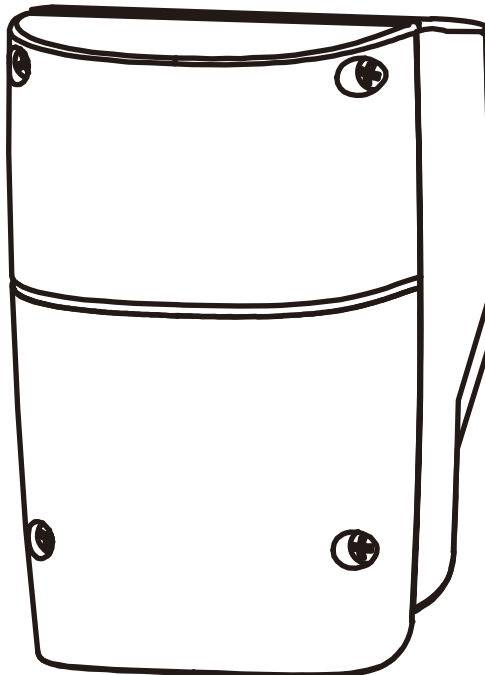


Table of Contents

1. PC190 CONTROL BOX	21
2. WIRE CONNECTION AND SYSTEM LEARNING GUIDE	22
2.1 PC190 WIRE CONNECTION	22
2.1 CODING IN REMOTE CONTROLS	23
2.2 SYSTEM LEARNING PROCESS	23
2.3 FUNCTION OF THE LED DISPLAY	24
2.4 LED INDICATION	24
3 FUNCTION SETTING	24
3.1 OPERATIONS FOR PARAMETER SETTINGS	24
3.2 PARAMETER SETTINGS	26
3.3 PHOTOCELL ADJUSTMENT	28
4. PHOTOCELL INSTALLATION GUIDE	29
5. TECHNICAL CHARACTERISTICS	30

WARNING!

Please read the manual carefully before you begin the installation and use. The installation of your new swing gate operator must be performed by a competent expert or a specialist company. A competent person is, in accordance with EN 12635, considered a person who has appropriate training, qualified knowledge and practical experience in order to assemble and install a door/gate system properly and safely. The installation or repair without technical qualifications can cause serious injury, death and / or property damage.



Declaration of Conformity

Declaration of Conformity (CE)

The Porte series swing gate openers from Schartec meet the requirements of the applicable European and national guidelines. Compliance was demonstrated and corresponding declarations, certificates, test reports and documents have been obtained by the manufacturer and can be found at: www.schartec.de/en/

Dear Customer,

Thank you for choosing a quality product from Schartec. Thanks to our unique quality management system, we continuously ensure that Schartec operators meet the highest standards of quality, reliability, and comfort. Thank you for your purchase and we wish you much pleasure with your new Schartec swing gate opener.

IMPORTANT SAFETY INFORMATION

ATTENTION! The assembly, maintenance, repair and disassembly of the swing gate operator is to be carried out only by qualified persons / specialist companies.

Incorrect assembly or handling of the motor can result in serious injury. For this reason, all instructions listed in this manual must be followed.

1. Important Safety Instructions

The Porte swing gate operator is intended exclusively for the operation with private / non-commercial gates. The maximum gate weight, as well as the allowed maximum gate size must not be exceeded. The maximum gate height must not exceed 2 m. The swing gate operator is not permitted to be used on gates on an incline.

The assembly must be carried out according to our specifications in order to avoid hazards. Gate systems which are located in the public area and are only accessible via a safety device such as, for example, Force limitation may be operated only under supervision.

2. Warranty

We are exempt from the warranty and product liability if the unit has been modified without our prior consent or improper installations are performed or initiated against our assembly instructions. Furthermore, we assume no responsibility for the inadvertent or negligent operation of the operator, improper maintenance of the operator and accessories, improper maintenance or repair of the door/ gate, improper installation of the the motor or the accessories, or the improper installation of the door/ gate. Batteries not covered by the warranty.

3. Warranty cont.

The warranty period is 2 years (batteries excluded)

The warranty time is not extended upon a warranty claim. For replacement deliveries and rectification work, the warranty period is six months or at least the remainder of the warranty period.

Conditions

The warranty applies only to the country where the product was purchased. The product must have been purchased through our authorized distribution channels. The warranty only covers damage to the contractual item itself. Reimbursement of expenditure for dismantling and installation, testing of corresponding parts, as well as demands for lost profits and damages are excluded from the guarantee. The receipt of purchase serves as proof of warranty.

Performance

For the duration of the warranty, we shall resolve any defects of the product which are demonstrably attributable to a material or manufacturing defect. At our discretion, we shall, free of charge, replace the defective product for a non-defective, repair or refund a diminished value. Excluded are damages caused by:

- Improper installation and connection
- Improper commissioning and operation
- External influences such as fire, water, abnormal weather conditions
- Mechanical damage due to accidents, dropping or shock
- Negligent or deliberate destruction
- Normal wear and tear or poor maintenance
- Repair by unqualified persons
- Use of non-original parts
- Removal or obscuring of the serial number
- Replaced parts become property of the manufacturer

IMPORTANT!

In the event of failure of the operator, a specialist must be directly commissioned for inspection and/or repair of the operator / gate.

4. Checking the Gates / Gate system

The operator is not designed for the operation of heavy gates, i.e. gates which can not be opened or closed with minimal difficulty by hand. **It is therefore absolutely necessary to check the gate before installing the operator and make sure that it can be easily moved by hand and that the gate system is safe.** Also, inspect the entire gate system (joints, hinges, bearings, and mounting parts) for wear and / or possible damage. Check whether rust, corrosion or cracks are present. The gate system must not be used if repairs, adjustments or maintenance work is required. An error in the gate system or an improperly adjusted gate can also lead to serious injuries.

IMPORTANT!

Before installing the operator, make sure that any necessary repairs or adjustment / maintenance work are carried out by a qualified person.

5. Important Instructions for Safe Installation

The installer of the operator must ensure that all national and European regulations for the operation of electrical equipment are complied with.

6. Before the Installation

All mechanical locking devices of the door, which are not required for actuation with a swing gate opener, must be disassembled before installation of the operator. These include, in particular, locking mechanisms connected with the door.

7. When performing Installation

When carrying out the assembly and installation of the operator, the applicable safety regulations must be observed.

IMPORTANT!

When drilling, the operator must be protected and covered so as to avoid later malfunction from drilling dust or drilling chips.

8. After completion of Installation

Once the assembly has been completed, the installer must account for conformity to DIN EN 13241-1.

9. Warning notice

Ensure that permanently installed control devices (such as push buttons) are placed within sight of the gate but away from moving parts and at a minimum height of 1.50 m. Keep out of reach of children.

Ensure that there are no persons or objects in the movement area of the door/gate. Ensure that children do not play on or with the gate.

Make sure that the included warning signs are placed prominently on the door/gate.

10. Inspection and Maintenance

The swing gate operator is maintenance-free. For your own safety, however, we recommend that you allow the inspection and testing of the complete gate system according to the manufacturer's specifications by an expert.

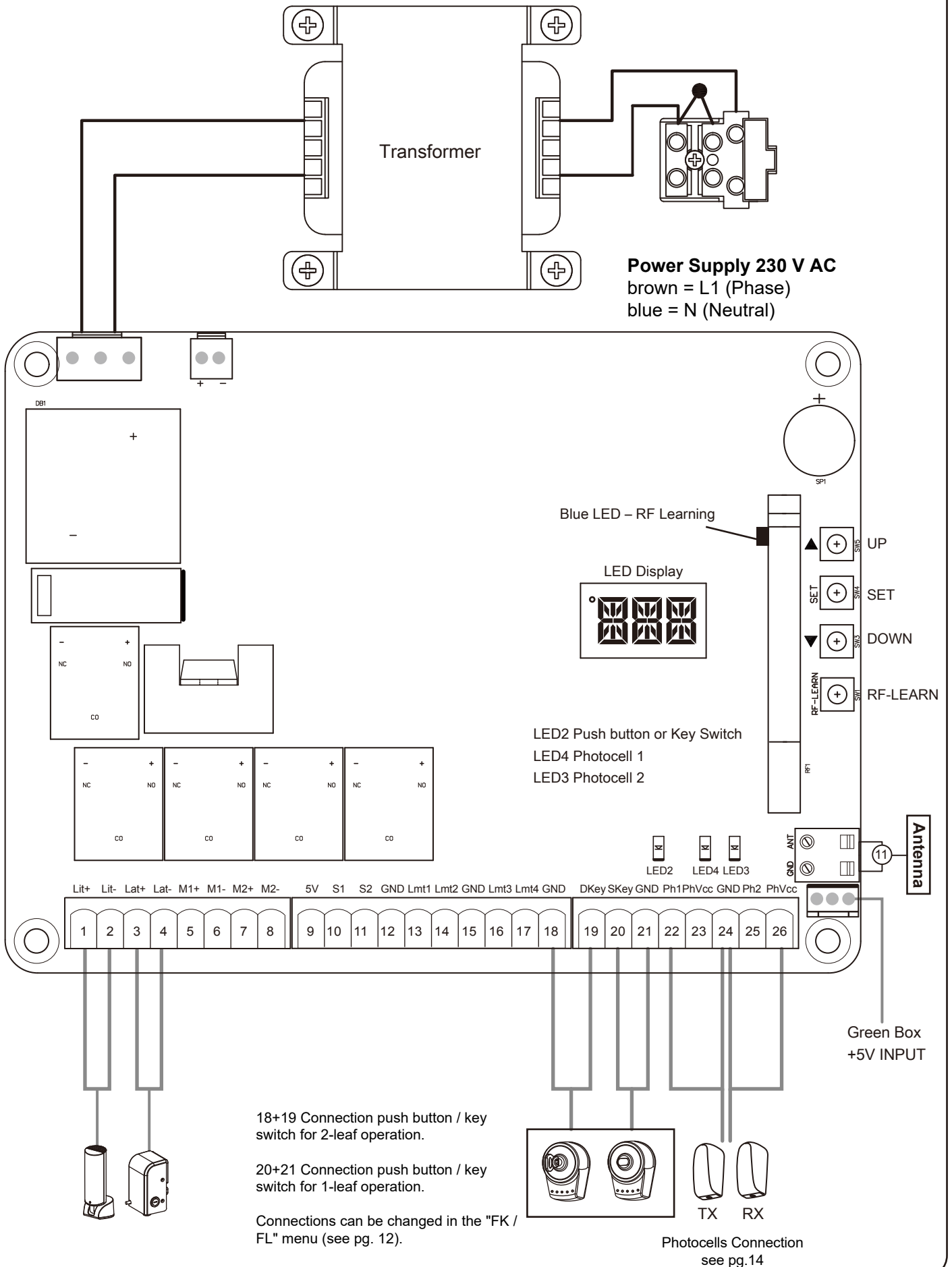
IMPORTANT!

All safety devices and protective functions must be checked for their function once a month, and, if necessary, faults or defects must be immediately rectified.

The inspection and maintenance may only be carried out by a competent person / company. An optical test may be carried out by the user.

If you need repairs, you should contact an expert. We do not assume any warranty for non-proper or non-professional repairs.

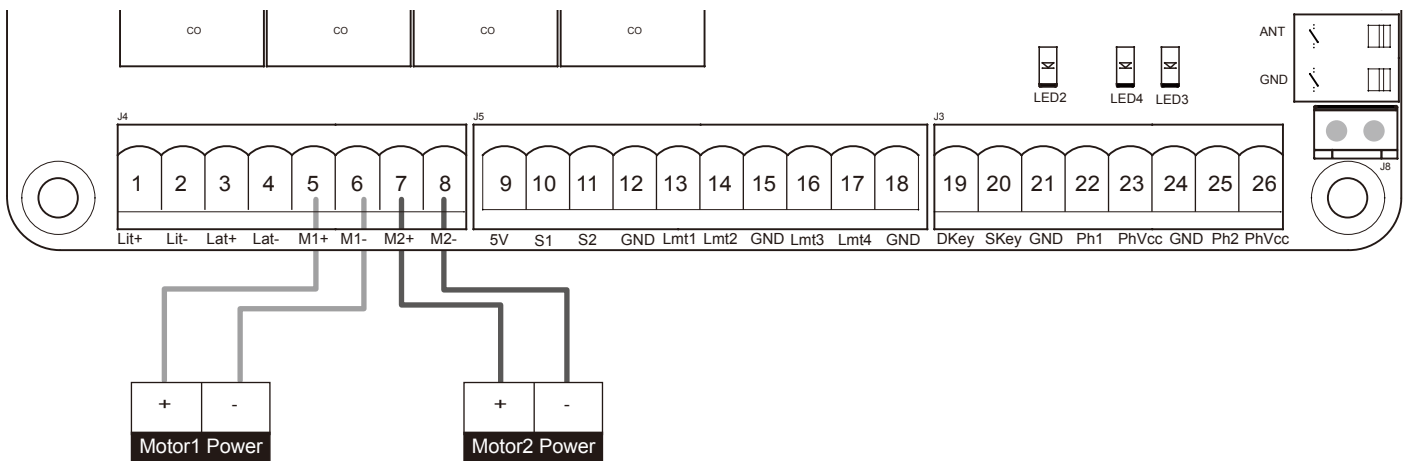
1. PC190 CONTROL BOX



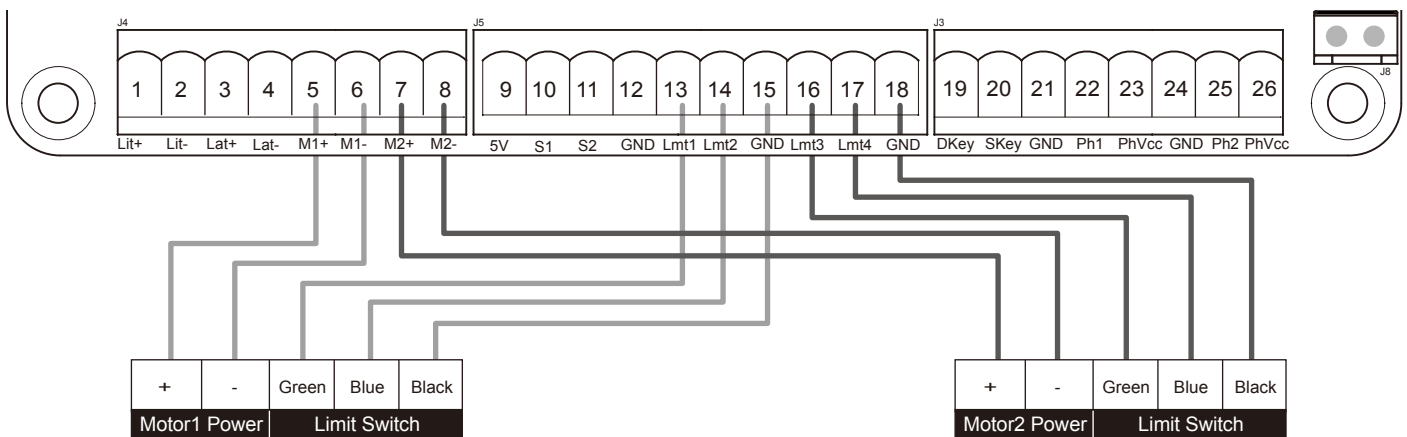
2. WIRE CONNECTION AND SYSTEM LEARNING GUIDE

2.1 PC190 WIRE CONNECTION

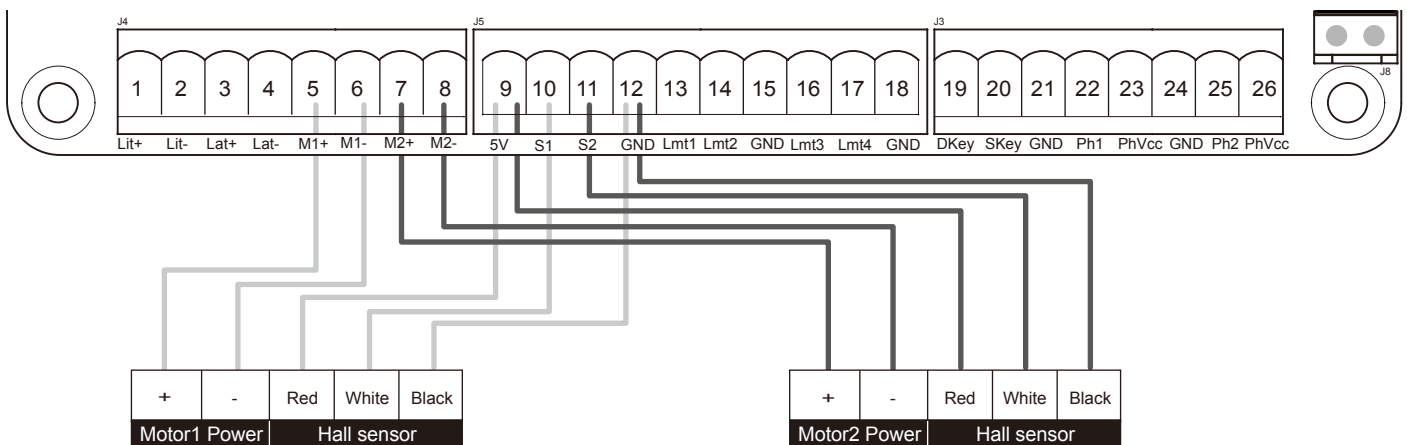
Motor Only



Motor with mechanical limit switch (not included)

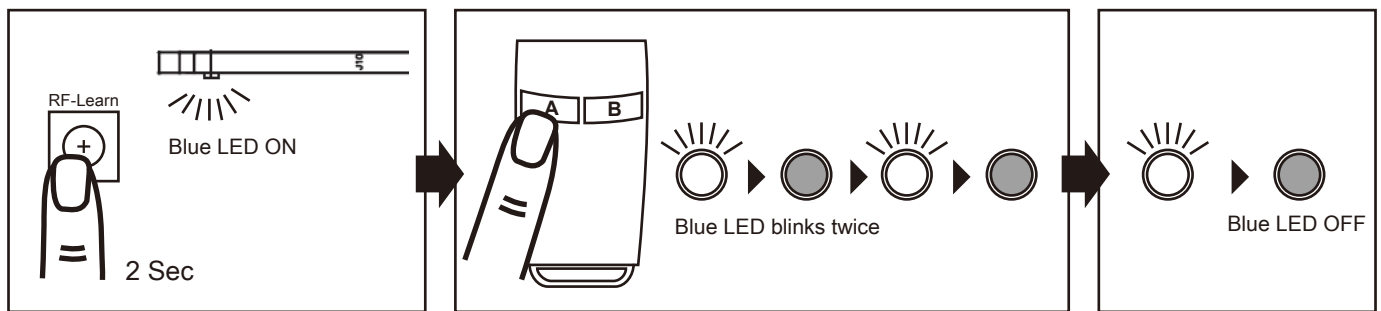


Motor with hall sensor (not included)



2.1 CODING IN YOUR REMOTE CONTROL

Press "RF-learn" button for 2 seconds, the Blue LED will come on; then press the (A) button on the remote; the Blue LED will blink twice and then turn off. The system learning is complete.



NOTE: Erase transmitter Memory (on motherboard): Press and hold the "RF-LEARN" button on the circuit board for 10 seconds until blue LED goes out.

2.2 SYSTEM LEARNING PROCESS (only possible with connected or deactivated photocell!!)

!CAUTION:

1. Before proceeding to system learning, the remote coding process must be completed.
2. Connect the Primary motor wires to M1 terminals and the Secondary motor wires to M2 terminals correctly. If only one gate is installed, the motor wires must be connected to M1 terminals.
3. Set the function F2-1 for double gate system (factory setting); or set the function F2-2 for single gate system.
4. **The photocell must be connected correctly, as this is factory-activated in the menu. Otherwise system learning is not possible!**
5. The A-dimension and B-dimension of the drives must be strictly adhered to (see instructions Porte 150 page 10)

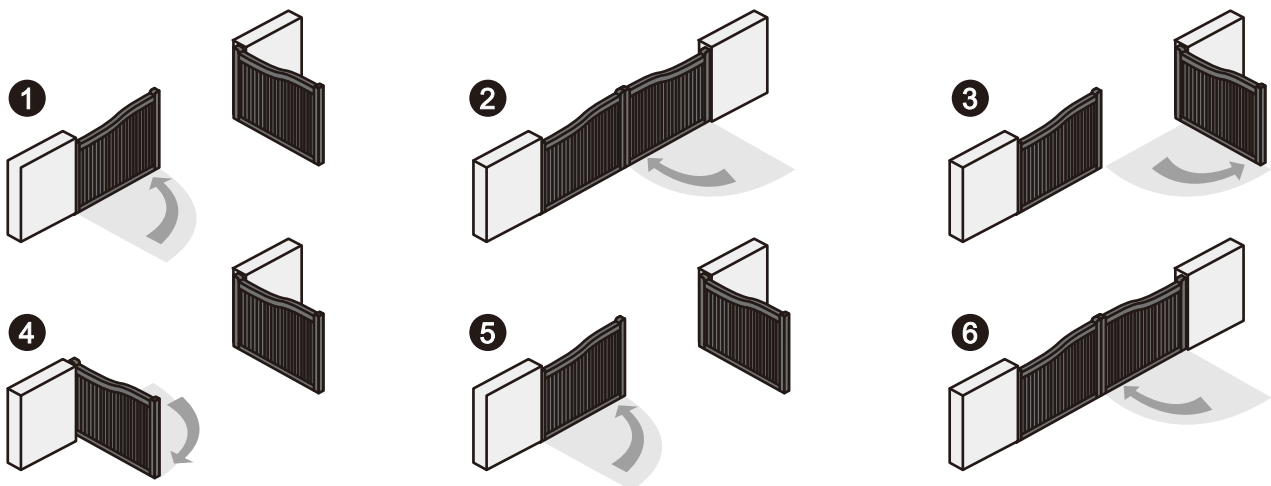
Press and hold the "UP+SET+DOWN" buttons on the motherboard for 3 seconds. After LED display shows ARN/ D-G, press the A-button on the transmitter to choose dual-gate or the B-button for single-gate system learning.

Note: The system learning will be interrupted as soon as a resistance, such as uneven opening/closing or a wobbling or jerking occurs. Due to new European standards and guidelines, gate operators must be very sensitive to changes in the movement. The gate must therefore be in perfect condition and have been serviced by a gate installation professional. The A dimension and B dimension of the drive arms must be adhered to.

Note: Press "UP+DOWN" for 5 seconds the LED display shows "CLN" and return to the factory settings.

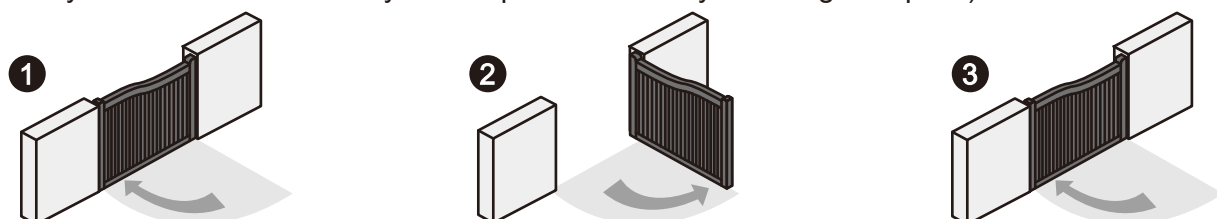
A. Dual Gate:

- ① Secondary Gate Close → ② Primary Gate Close → ③ Master Gate Open → ④ Secondary Gate Open
- ⑤ Secondary Gate Close → ⑥ Primary Gate Close (System Learning Complete)










B. Single Gate :

- ① Primary Gate Close → ② Primary Gate Open → ③ Primary Learning Complete)

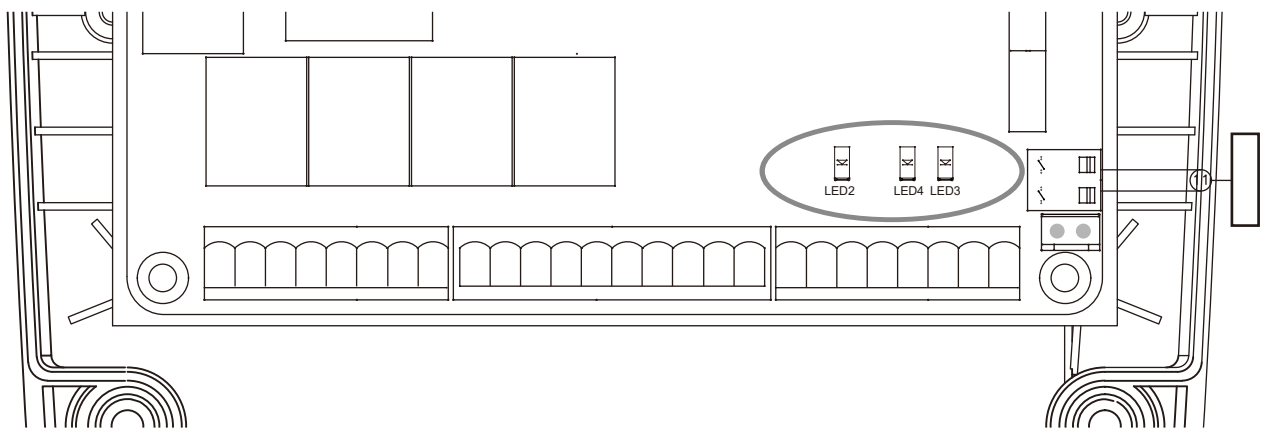


2.3 FUNCTION OF THE LED DISPLAY

LED Display	Programmable Functions
	"N-L": The system learning is not completed.
	"RUN": The system performing normally.
	"ARN": Enter learning mode and waiting for learning instructions. (see chapter 2.2 for instructions)
	During the learning process, the display shows the value of the required force at the respective point of the gate movement. ATTENTION! If the drive stops during the learning run, then the factory over-current setting of "15" has been exceeded. You will see the value on the display during system learning. The over-current setting can be set in menu F3 (see pg. 10 + 11).
	"CLN": The system memory is erased (factory setting). To do so, press "UP + DOWN" simultaneously for 5 seconds
	"ME": Motor operation error
	"STP": The motor has stopped in the middle of the operating process.

2.4 LED INDICATION

Blue LED System Learning: Blue LED on receiver board blinks twice when learning is completed.
 LED2: is illuminated when a key-switch or push-button is activated.
 LED3: is illuminated when the Photocells 2 are triggered.
 LED4: is illuminated when the Photocells 1 are triggered.



3 FUNCTIONS SETTINGS

3.1 OPERATIONS FOR PARAMETER SETTINGS

Step 1: Press the "Set" key for 3 seconds, the display will show the function code.

Step 2: Choose a setting via the Up and Down keys. After having chosen the desired parameter, press the Set key and enter the setting of this function. The second digit will be shown on the right of the display, indicating the related function (please refer below chart for details). Use the Up and Down Keys to choose the setting function and press the Set key to save.

Setting the power cut-off (over current) (Menu option F3 in display)

ATTENTION: The power cut-off is already set automatically during the learning run. An adjustment via the menu is usually not necessary.

The factory-set forces (value 15) are designed to provide a smooth operation of the opener with standard swing gates; the factory setting forces should be, in principle, sufficient to fully open and close the gate. The factory setting of the operator complies with the legal or relevant standards (such as the EN 13241-1, EN 12453, EN 60335-2-95) established requirements for operational forces, and thus the maximum allowable power limits. If necessary, the operating force of the operator may be increased or decreased (values 01 - 50) by the following procedure described below.

NOTE

This must be done, for example, if one of the end positions "gate open" or "gate closed" is not reached via the factory setting (value 15). Then, the setting for the maximum force, as described below, may be gradually increased until both end positions are reached.

In addition, during the operational period of the gate, the operational optimality may deteriorate. Therefore, for safety reasons, adjusting force of the operator on an unsound gate could result in a malfunctioning gate, thus increasing the risk of personal injury or property damage -- this risk is especially increased when activating the manual release of the garage door from the operator.

DANGER

Deviating/Increasing the factory force setting (value 15) can lead to serious personal injury, up to the danger of life as well as property damage! Altering the factory force setting increases the pressure exerted by the operator when opening and closing gate, thus increasing the force that the gate exerts in each respective phase. When changing or differing from the factory settings, the risk of severe injury to persons up to the danger of life as well as the risk of damage to property is increased - for example, by pinching or squeezing persons or things near the gate. Differing from the factory settings, increasing the power setting to exceed the aforementioned maximum allowable limit can cause power limitations. Therefore:

NOTE:

After each setting of the force (values 01 to 50) deviating from the factory setting (value 15), compliance with the force limit values required by law or in the relevant standards must be checked, accepted, measured and documented by a qualified person to exclude the aforementioned dangers to life and limb and property damage.

Photocell as additional safety device

In order to ensure safe operation of the gate system, it is absolutely necessary to install and activate the supplied photocell safety beam and keep it activated. Operation without a photocell can lead to serious injuries to persons and animals, even to life, as well as damage to property.

Adjusting the Reversing Limit (Menu FI/ FJ)

ATTENTION: the reversing limit is fixed at the factory to 90% of the total distance, which means the last 10% of the movement stroke, the motor will not reverse when encountering an obstacle. In the factory setting, the drive fulfills the statutory or relevant requirements of the standards.

A setting value deviating from the factory setting (value FI7 / FJ7) can lead to the most severe injuries for persons and animals up to the risk of life, as well as damage to property!

Note:

According to any setting deviating from the factory setting (value FI7 / FJ7), compliance with the reversing limits required by law or the relevant standards must be checked, measured, and documented by a competent person in order to rule out the dangers for life and property .

3.2 PARAMETER SETTINGS

LED Display	Definition	Parameter	Table	Description							
F1	Motor Type	F1-1	Motor only	1. The factory setting is "F1-1".							
		F1-2	Motor with Limit Switch								
		F1-3	Motor with Hall sensor								
F2	Dual or Single Gate	F2-1	Dual Gate	1. The factory setting is "F2-1".							
		F2-2	Single Gate								
F3	Over Current Setting	01	0.1A	11	1.1A	21	2.1A	31	3.1A	41	4.1A
		02	0.2A	12	1.2A	22	2.2A	32	3.2A	42	4.2A
		03	0.3A	13	1.3A	23	2.3A	33	3.3A	43	4.3A
		04	0.4A	14	1.4A	24	2.4A	34	3.4A	44	4.4A
		05	0.5A	15	1.5A	25	2.5A	35	3.5A	45	4.5A
		06	0.6A	16	1.6A	26	2.6A	36	3.6A	46	4.6A
		07	0.7A	17	1.7A	27	2.7A	37	3.7A	47	4.7A
		08	0.8A	18	1.8A	28	2.8A	38	3.8A	48	4.8A
		09	0.9A	19	1.9A	29	2.9A	39	3.9A	49	4.9A
		10	1A	20	2.0A	30	3.0A	40	4.0A	50	5.0A
1. Factory setting 15.											
F4	Operation Speed	F4-1	100% Full speed				1. The factory setting is "F4-2".				
		F4-2	80% Full speed								
F5	Deceleration function	F5-1	Function ON				1. The factory setting is "F5-1".				
		F5-2	Function OFF								
F6	Deceleration Speed	F6-1	70% Full speed				1. The factory setting is "F6-2".				
		F6-2	50% Full speed								
		F6-3	30% Full speed								
F7	Open/Close delay of dual gate operation adjustment	01	2 sec	11	14 sec		1. The factory setting is "01".				
		02	3 sec	12	16 sec						
		03	4 sec	13	18 sec						
		04	5 sec	14	20 sec						
		05	6 sec	15	22 sec						
		06	7 sec	16	24 sec						
		07	8 sec	17	26 sec						
		08	9 sec	18	28 sec						
		09	10 sec	19	30 sec						
		10	12 sec	20	35 sec						
F8	Auto-Close adjustment	F8-0	Function OFF				1. Auto-close mode activates when the gates move to the end position or stopped manually. If the transmitter, push button, or the key selector is activated before the auto-close counting, the gate will close immediately. 2. The factory setting is "F8-0".				
		F8-1	3 sec								
		F8-2	10 sec								
		F8-3	20 sec								
		F8-4	40 sec								
		F8-5	60 sec								
		F8-6	120 sec								
		F8-7	180 sec								
F9	Photocell function mode when using 2 photocells	F9-1	Mode 1				1. Please see 3.3 photocell adjustment for more information 2. The factory setting is "F9-1". For operation with a photocell in standard function.				
		F9-2	Mode 2								
		F9-3	Mode 3								
		F9-4	Mode 4								
FA	Pedestrian Mode function	FA-0	Function OFF				1. When function is on and button 2 on the remote is pressed, one gate will open partially. 2. The factory setting is "FA-1".				
		FA-1	Function ON								
FB	Pre-Flashing function	FB-0	Function OFF				1. When function is ON, the light will flash 3 seconds before the gate operates. If OFF, the light will begin flashing when the motor begins. 2. The factory setting is "FB-0".				
		FB-1	Function ON								

LED Display	Definition	Parameter	Table	Description
FC	Photocell 1 function	FC-0	Function OFF	1. The factory setting is "FC-1".
		FC-1	Function ON	
FD	Photocell 2 function	FD-0	Function OFF	1. The factory setting is "FD-0".
		FD-1	Function ON	
FE	Buzzer function	FE-0	Function OFF	1. The factory setting is "FE-0".
		FE-1	Function ON	
FF	Latch release function (electric lock)	FF-0	Function OFF	1. When function is active, gate moves slightly forward to unlock the lock. 2. The factory setting is "FF-0".
		FF-1	Function ON	
FG	Open/Stop/Close/Stop function key	FG-1	A Key	1. The factory setting is "FG-1".
		FG-2	B Key	
		FG-3	C Key	
		FG-4	D Key	
FH	Pedestrian Mode function key	FH-0	Function OFF	1. The factory setting is "FH-2".
		FH-1	A Key	
		FH-2	B Key	
		FH-3	C Key	
		FH-4	D Key	
FI	Reverse option when closing	FI/J-0	No reverse	1. FI factory setting FI-7.
		FI/J-1	Reverse 2 seconds within 95% of total stroke.	
		FI/J-2	Reverse 2 seconds within 90% of total stroke	
		FI/J-3	Reverse 2 seconds within 85% of total stroke.	
FJ	Reverse option when opening	FI/J-4	Reverse 2 seconds within 80% of total stroke.	2. FJ factory setting is "FJ-7".
		FI/J-5	Reverse 2 seconds within 75% of total stroke.	
		FI/J-6	Reverse to the end within 95% of total stroke.	
		FI/J-7	Reverse to the end within 90% of total stroke.	
		FI/J-8	Reverse to the end within 85% of total stroke.	
		FI/J-9	Reverse to the end within 80% of total stroke.	
FK	Functions of D Key terminal	FK/L-1	Double gates (Open/Stop/Close/Stop)	1. FK factory setting FK-1.
		FK/L-2	Single gates (Open/Stop/Close/Stop)	
		FK/L-3	Pedestrian	
		FK/L-4	Open	
FL	Functions of S Key terminal	FK/L-5	Stop	2. FL factory setting is "FL-2".
		FK/L-6	Close	
		FK/L-7	No Function	

Note when using Hall sensors (F3 Setting in Hall sensor setting):

Only in "F1-3" Hall sensor mode will the system learn the value of the current consumption. Please re-enter menu F3 after the learning process in conjunction with a Hall sensor.

ATTENTION: Any setting differing from the factory setting (value 15) must be checked, measured, documented and documented by a competent person in order to rule out the dangers for life and limb as well as damage to property .

3.3 PHOTOCCELL ADJUSTMENT

Functions for when 2 photocells are used

1. F9-1

Position of Gate	When the photocell beam is interrupted	
Type of Safety Device	Photocell 1	Photocell 2
FULLY CLOSED	Not possible to open gate	Not possible to open gate
FULLY OPENED	Reload automatic closing time	No effect
STOP DURING MOVING	Reload automatic closing time	Not possible to open gate
CLOSING	Gate opens	No effect
OPENING	No effect	Gate closes

2. F9-2

Position of Gate	When the photocell beam is interrupted	
Type of Safety Device	Photocell 1	Photocell 2
FULLY CLOSED	Not possible to open gate	Open not allowed
FULLY OPENED	Reload automatic closing time	
STOP DURING MOVING	Reload automatic closing time	Gate movement not possible
CLOSING	Gate opens	Reverse direction open for 2 seconds
OPENING	No effect	Reverse direction close for 2 seconds

3. F9-3

Position of Gate	When the photocell beam is interrupted	
Type of Safety Device	Photocell 1	Photocell 2
FULLY CLOSED	Not possible to open gate	Gate opens
FULLY OPENED	Reload automatic closing time	
STOP DURING MOVING	Reload automatic closing time	Gate opens
CLOSING	Gate opens	Gate opens
OPENING	No effect	No effect

4. F9-4

Position of Gate	When the photocell beam is interrupted	
Type of Safety Device	Photocell 1	Photocell 2
FULLY CLOSED	Not possible to open gate	Not possible to open gate
FULLY OPENED	Close not possible, Open for 2 seconds when auto closing is ON	
STOP DURING MOVING	Not possible to close gate	Gate movement not possible
CLOSING	Gate opens	Gate stops
OPENING	No effect	Gate stops

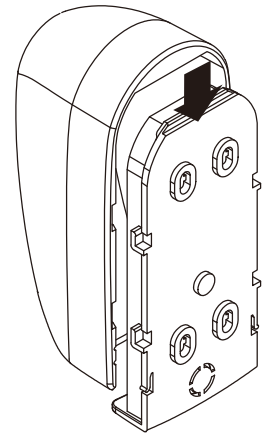
4. PHOTOCELL INSTALLATION GUIDE

The photocells are safety and security devices for gate openers and operators. They consist of one transmitter and one receiver in waterproof covers; it is triggered by breaking the path of the beams.

SPECIFICATIONS:

Detection Method	Through Beam
Sensing Range	25 meters
Input Voltage	AC/DC 12~24V
Response Time	100MS
Emitting Element	IR LED
Operation Indicator	Red LED(RX): ON(When Beam is Broken), Green(TX):ON
Dimensions	96*45*43mm
Output Method	Relay Output
Current Consumption Max	TX: 35MA/Rx: 38MA (When beam aligned properly); TX: 35MA/Rx: 20MA (When beam is broken)
Water Proof	IP54

Figure 1



INSTALLATION:

Wire Connection of Photocells

TX: Connect DC+ (1) to PhVcc and GND (2) to GND on the P190 motherboard.

RX: Connect DC+ (1) to PhVcc and COM (5) to Ph1 on motherboard. Connect the GND (2) to the GND (24) on the motherboard. Finally, connect a bridge between N.C (4) and GND (2) to the RX.

Figure 2

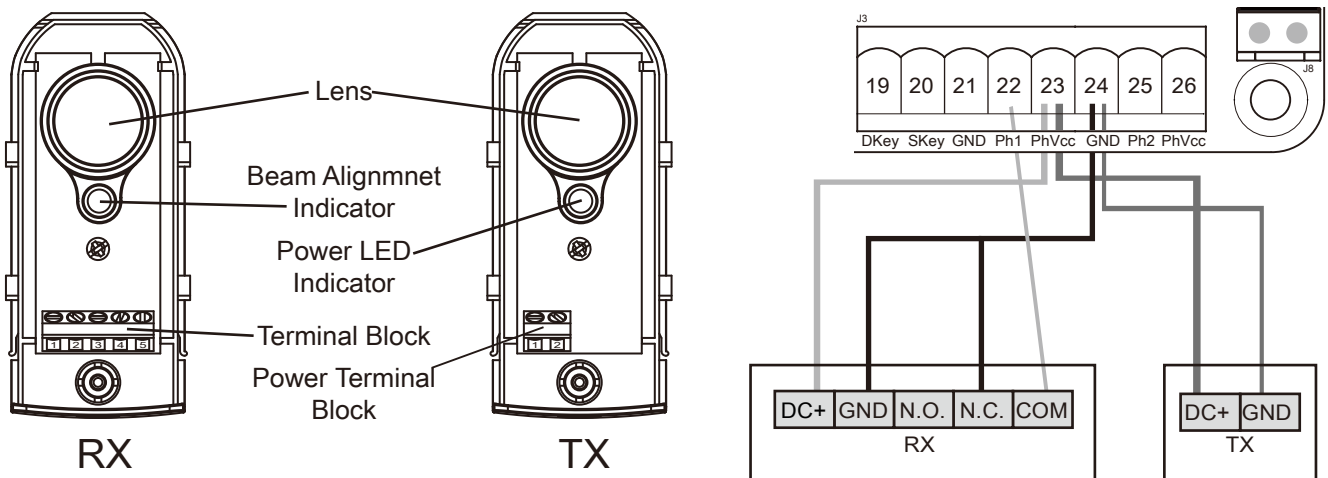
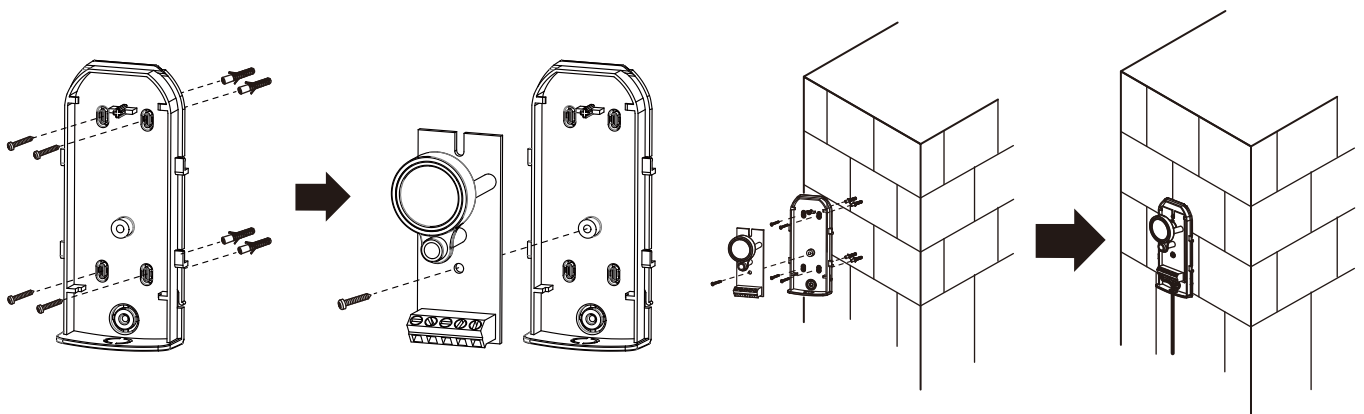


Figure 3



5. TECHNICAL CHARACTERISTICS

Main power supply	230V AC, 50Hz/60Hz
Working Voltage	24 V
Receiver board	433.92 MHz; memory for 200 transmitters
Installation	Wall mounted vertically
Operating Temperature	-20°C ~ +50°C
Dimension	275mm * 195mm * 102mm