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# A. SAFTY INSTRUCTION



#### **WARNING!**

Please read this instruction manual carefully before the installation of gate-automated system.

This manual is exclusively for qualified installation personnel. Powertech Automation Inc. is not responsible for improper installation and failure to comply with local electrical and building regulations.

Keep all the components of the kit content and this manual for further consultation.

In this manual, please pay extra attention to the contents marked by the symbol: 🗥

Be aware of the hazards that may exist in the procedures of installation and operation of the gate-automated system.

Besides, the installation must be carried out in conformity with local standards and regulations.

If the system is correctly installed and used following all the standards and regulations, it will ensure a high degree of safety.

Make sure that the gates work properly before installing the gate-automated system and confirm the gates are appropriate for the application.

Do not let children operate or play with the gate-automated system.

Do not cross the path of the gate-automated system when operating,

Please keep all the control devices and any other pulse generator away from children to avoid the gate-automated system being activated accidentally.

Do not make any modifications to any components except that it is mentioned in this manual.

Do not try to manually open or close the gates before you release the gear motor.

If there is a failure that cannot be solved and is not mentioned in this manual, please contact qualified installation personnel.

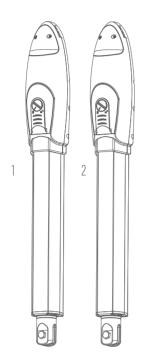
Do not use the gate-automated system before all the procedures and instructions have been carried out and thoroughly read.

Test the gate-automated system weekly and have qualified installation personnel to check and maintain the system at least every 6-month. Install warning signs (if necessary) on the both sides of the gate to warn the people in the area of potential hazards.

# **B. PRODUCT DESCRIPTION AND INTENDED USE**

### **B1. KIT CONTENT**

#### ► MOTORS ◀



#### ► FASTEN ◀

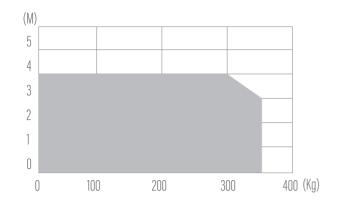


#### ► ACCESSORIES ◀

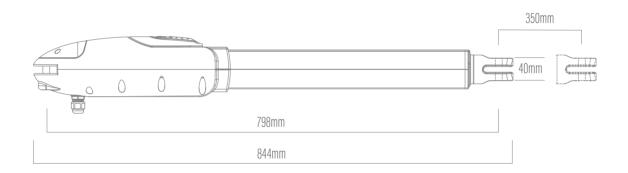


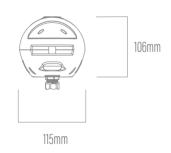
► REF. —	DESCRIPTION —	QUANTITY <
1,	Motor 1 (Master)	1
2.	Motor 2 (Slave)	1
3,	Bracket plate	4
4.	Front bracket	2
5.	Rear end Bracket	2
6,	M8*40L hex bolt	2
7,	M8 self-locking nut	2
8,	Washer	4
9,	Washer	4
10.	PC190U Control Box	1
11,	Flashing light	1
12.	Photocells	1
13.	Remote	2

# **B2. PRODUCT USAGE LIMITS**



# **B3. DIMENSIONS**

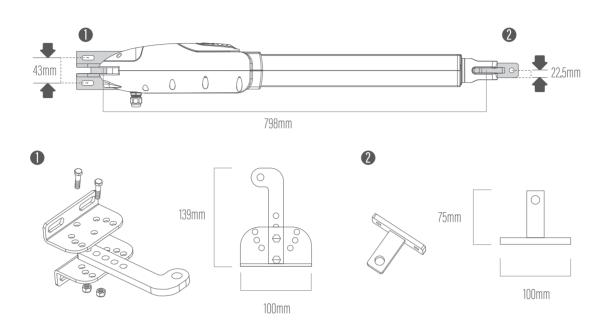




# C. INSTALLATION

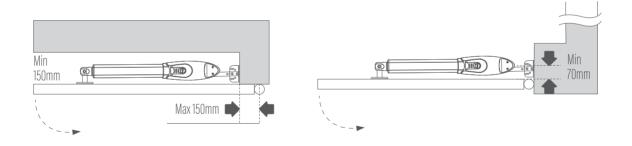
#### **C1. INSTALLATION DIMENSIONS**

• DIMENSIONS FRONT AND REAR BRACKET

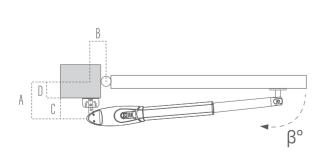


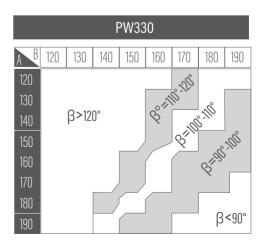
#### FORWARD OPENING

#### OUTWARD OPENING



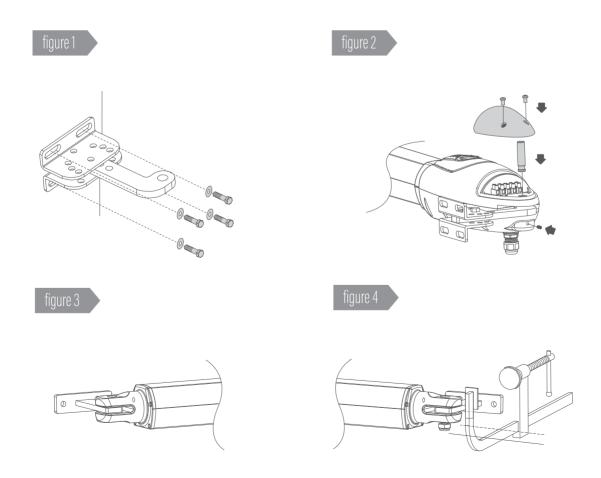
#### INSTALLATION DIMENSIONS





#### **C2. INSTALLATION OF GEARMOTORS**

- 1. Choose the correct dimensions of the motors and position to be installed.
- 2. Check if the mounting surface the brackets to be installed is smooth, vertical and rigid.
- 3. Arrange the cable conduit for power supply cable of the motors.
- 4. Loosen the screw and remove the cover of the motor as shown in Figure 1.
- 5. Place the leaves in the closed position.
- 6 . Refer to the distance of "B" in dimensions, place the rear plate in the correct position on the mounting surface. Inspect if the distance is proper as shown in dimensions (section B3) i.e. the position the front plate of the motor to be installed.
- 7. Place two post brackets on the surface to be installed and mark the drilling points, then drill minimum diameter of 8mm holes by four on the mounting surface to be installed and fasten up the brackets with screws and washers.
- 8. Please make sure the front plate is completely installed horizontally.
- 9. Refer to dimensions (section B3), the distance between front plate of the motor and rear plate is 875mm (PW330), the difference in height is 18.3mm (PW330).
- 10. Clamp and fix the motor front plate on the door temporarily.
- 11. Lift up the motor and insert the screws into the front plate.
- 12. Lift the motor overhead and push the gate to the end until the screw holes of the motor end matches the holes on the rear plate. Fasten the motor to the rear plate with the bolt as shown in Figure 4.
- 13. Fasten the nut tightly and loosen it for half round for motor supporting in rotating.
- 14. Fasten the motor front end to the front plate with the bolt and nut tightly. Fully tighten the screw.
- 15. Use appropriate release key to release the gear motor.
- 16. Try to push the released gate and make sure the motor can be manually moved easily.
- 17. Make sure the motor front plate can be fastened on the gate to be installed permanently.
- 18. Use the appropriate release key to fasten the gear motor again.



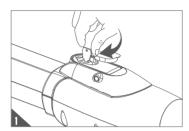
### **C3. MANUAL RELEASE OF THE MOTOR**

#### To unlock the device

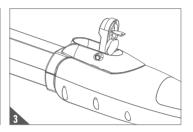
- 1. Insert the key
- 2. Turn it anti-clockwise by 180°
- 3. The gate leaf can now be moved manually to the desired position.

#### • To lock the device

- 1. Insert the key
- 2. Turn it clockwise by 180°
- 3. Remove the key

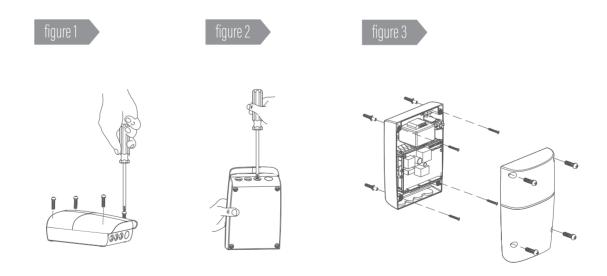






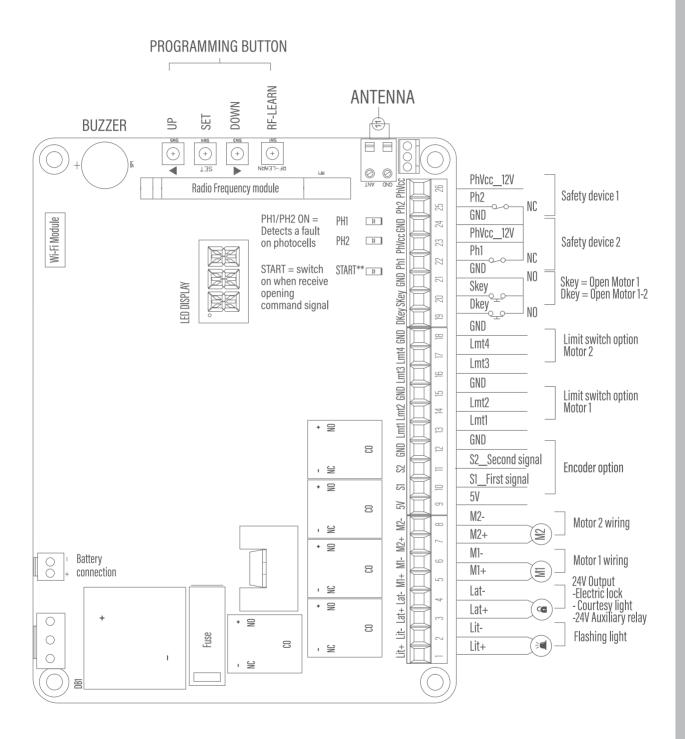
# **C4. INSTALLATION OF THE CONTROL BOX**

- 1. Remove the cover by unscrewing the 4 screws from the control box.
- 2. Use a screwdriver to puncture the holes beneath the bottom of the control box.
- 3, Install the control box



# **D. COMMISSIONING**

#### D1. PC190U CONTROL BOARD



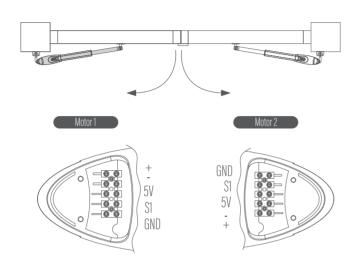
MOTOR is the MASTER Motor that will open first and close last.

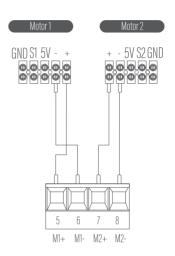


WARNING! BY DEFAULT, THE SAFETY DEVICES PH1-PH2 ARE DISABLED. (PARAMETER FD AND FE)
When powering on for the first time, the LED display will show N-L = System learning not completed.
DURING STANDARD OPERATION, the photocells are wired and aligned, the 3 LED indicators are OFF.
Control: By passing your hand in front of the photocell beam, LED 1 will switch ON.

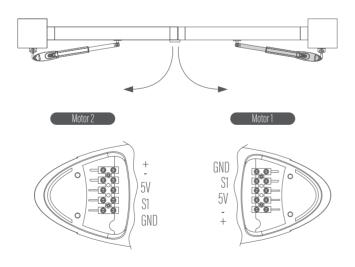
### D2. MOTOR WIRING

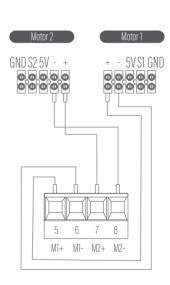
- MOTOR WITHOUT LIMIT SWITCH
- MANDATORY: Make sure stoppers are placed on the ground or on the motors
- Refer to parameter table PARAMETER F 11 (DEFAULT SETTING)
- MOTOR 1 installed on the LEFT pillar





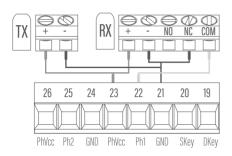
• MOTOR 1 installed on the RIGHT pillar



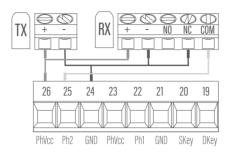


# **D3. WIRING OF ACCESSORIES**

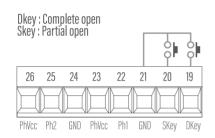
# • Safety Device 1 wiring



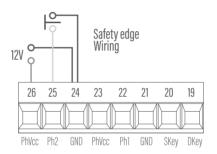
# • Safety Device 2 wiring



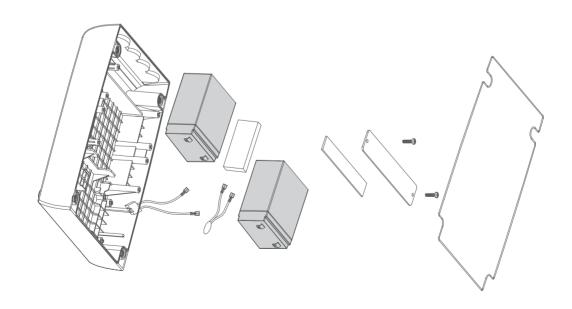
# • Auxiliary Device wiring



### • 12V available to power accessories



### Battery wiring (optional)



D4. REMOTE LEARNING
MANDATORY: Before processing system learning, you must first memorize the remotes.
• RESET (DELETE) ALL THE REMOTES  Press and hold RF button. After 10 seconds, the LED display will first show DKY then DAL that confirms that all the transmitters have been deleted.
OPEN/CLOSE/STOP ON DUAL GATE
Press RF Learn button. The LED display show OSC  Press and hold a button on the remote for at least 1 second then release. OSC blinks 3 times, completing the memorization process You have 5 seconds to memorize another remote.
OPEN/STOP/CLOSE ON SINGLE GATE (PEDESTRIAN OPENING)
Press RF Learn button. The LED display show OSC . Press RF button a 2nd time, the LED display show PED Press and hold a button on the remote for at least 1 second then release. PED blinks 3 times, completing the memorization proces You have 5 seconds to memorize another remote.
COMMAND FOR AUXILIARY DEVICE (FM FUNCTION)
Press RF Learn button. The LED display show OSC . Press RF button a 2nd time, the LED display show PED Press RF button a 3rd time, the LED display show LIT .

blinks 3 times, completing the memorization process. You have 5 seconds to memorize another remote.

Press and hold a button on the remote for at least 1 second then release.

# **D5. SAFETY DEVICE LOGIC**

# • MOTOR REACTION FOLLOWING A FAULT ON CONTACT PH1 / PH2 – PARAMETER SETTINGS SELECTION - FA

IMPORTANT : PH1 and PH2 are disabled by default.

	FA-1 – Anticrush safety between the ga	ate and the wall
Safety device category	Photocells default on PH1	Safety edge default on PH2
Gate fully closed	No effect	No effect
Opening phase	No effect	Stop and close
Stop during cycle	Reload pause time = > Automatic closing	No effect
Gate fully opened	Reload pause time =>Automatic closing at slow speed	No effect
Closing phase	Stop = > Open at slow speed	No effect
	FA-2 -Security during closing	ı stage
Safety device category	Photocells default on PH1	Safety edge default on PH2
Gate fully closed	Blocks the open command	No effect
Opening phase	No effect	Stop => Reverse 2 seconds = > Pause time => Automatic closing
Stop during cycle	Reload pause time =>Automatic closing at slow speed	No effect
Gate fully opened	Reload pause time = > Automatic closing	Reload pause time = > Automatic closing
Closing phase	Stop = > Open at slow speed	Stop => Reverse 2 seconds = > Pause time => Automatic closing
,	FA-3 - Loop detector	
Safety device category	Photocells default on PH1	Loop detector default on PH2
		·
Gate fully closed	No effect	Open
Opening phase	No effect	No effect
Stop during cycle	Reload pause time = > Automatic closing	Open
Gate fully opened	Reload pause time = > Automatic closing	Reload pause time = > Automatic closing
Closing phase	Stop = > Open at slow speed	Stop = > Open at slow speed
	FA-4 - Photocells on pillars and photo	cells on column
Safety device category	Photocells default on PH1	Photocells default on PH2
Gate fully closed	No effect	No effect
Opening phase	No effect	No effect
Stop during cycle	Reload pause time = > Automatic closing	Open
Gate fully opened	Stop => Reload pause time = > Automatic closing	Reload pause time = > Automatic closing
Closing phase	Open	Stop = > Open at slow speed
	FA-5 - Quick closing - Pausing time is red	uced to 5 seconds
Safety device category	Photocells default on PH1	Photocells default on PH2
Gate fully closed	No effect	No effect
Opening phase	Pause time before automatic closing reduced to 5 seconds	Pause time before automatic closing reduced to 5 seconds
Stop during cycle	Pause time before automatic closing reduced to 5 seconds	Pause time before automatic closing reduced to 5 seconds
Gate fully opened	Pause time before automatic closing reduced to 5 seconds	Pause time before automatic closing reduced to 5 seconds
Closing phase	Open = > Reduce pause time to 5 seconds	Open = > Reduce pause time to 5 seconds
stooms printed	FA-6 - Standard residential mode ***DEF	
Safety device category	Photocells default on PH1	Photocells default on PH2
Gate fully closed		
,	No effect	No effect
Opening phase	No effect	No effect
Stop during cycle	Reload pause time = > Automatic closing	Reload pause time = > Automatic closing
Gate fully opened	Reload pause time = > Automatic closing	Reload pause time = > Automatic closing
Closing phase	Open Open	Open
FA-7 - Condon	ninium mode. Transmitters only accept signal for op	pening / Automatic closing is mandatory
Safety device category	Photocells default on PH1	Photocells default on PH2
Gate fully closed	No effect	No effect
Opening phase	No effect	No effect
Stop during cycle	Impossible	Impossible
Gate fully opened	No effect	No effect
Closing phase	Open	Open

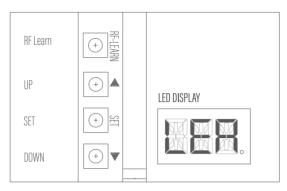
#### **D6. PROGRAMMING**

#### INDICATIONS ON THE LED DISPLAY



During the programming and operation, the LED display is ON and provides indications.

- N-L = System learning not completed
- LEA = In process of system learning
- S-G = Completed system learning for single gate
- D-G = Completed system learning for dual gate
- OPN = Motors in opening phase
- CLS = Motors in closing phase
- STP = Fault (display for 10 seconds)
- CLN = Return to default setting
- FI = Motor wiring fault



Indication example on the LED display

#### PARAMETER SETTINGS



MARNING! Depending on the placement of the control unit, the programming buttons may be located on the right or left side, the RF button at the top or bottom.







- 3. Select main setting with riangle /  $extbf{\psi}$  then confirm with SET.
- 4. Display of the sub-setting (ex: parameter F1-subvalue=1)
- 5. Modify sub-setting value with ▲ / ▼ (ex: F1-1, F1-2···)
- 6. Validate sub-setting with SET.
- 7. Press ▲ / ▼ to display and configure other settings · · · .



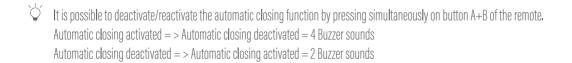
 $oldsymbol{\Lambda}$  The LED display will switch off after 8 seconds if no button is pressed.



### **D7. PARAMETER TABLE**

SETTING		DESC	CRIPTION		DEFAULT SETTIN
F1	MOTOR WITHOUT LIMIT SWITCH / WITH LIMIT SWITCH / WITH ENCODERS  F1-1: Motor without limit switch, MANDATORY: Stoppers must be placed on the ground or on the motor F1-2: Limit switch F1-3: Encoders - Wiring on 5V/S1 and 5V/S2		F1-1		
F2	MOTOR FORCE DURING OPI F2-1 = 1 amp F2-2 = 2 amp F2-3 = 3 amp F2-4 = 4 amp	ENING PHASE F2-5 = 5 amp F2-6 = 6 amp F2-7 = 7 amp	Recommended value: PW200 = 2A / 4A PW320/330 = 2A / 5A PW530 = 2A / 6A	WARNING!  Do not exceed recommended value or you may damage the motors	F2-2
F3	MOTOR FORCE DURING CLO F3-1 = 1 amp F3-2 = 2 amp F3-3 = 3 amp F3-4 = 4 amp	PSING PHASE  F3-5 = 5 amp F3-6 = 6 amp F3-7 = 7 amp	Recommended value: PW200 = 2A / 4A PW320/330 = 2A / 5A PW530 = 2A / 6A	WARNING!  Do not exceed recommended value or you may damage the motors	F3-2
F4	MOTOR SPEED DURING OPENING PHASE  F4-1 = 40% of full speed F4-3 = 75% of full speed F4-2 = 50% of full speed F4-4 = 100% of full speed		F4-3		
F5	MOTOR SPEED DURING CLC F5-1 = 40% of full speed F5-2 = 50% of full speed	OSING PHASE F5-3 = 75% of full speed F5-4 = 100% of full speed			F5-3
F6	MOTOR DECELERATION DUI F6-1 = 40% F6-2 = 50%	F6-3 = 75% F6-4 = 100%	IG PHASE		F6-2
F7	MOTOR DEPHASING DURIN  F7-0 = 0 second  F7-1 = 2 seconds  F7-2 = 5 seconds	G OPENING PHASE  F7-3 = 10 seconds F7-4 = 15 seconds F7-5 = 20 seconds	F7-6 = 25 seconds F7-7 = 35 seconds F7-8 = 45 seconds	F7-9 = 55 seconds	F7-1
F8	MOTOR DEPHASING DURIN  F8-0 = 0 second F8-1 = 2 seconds F8-2 = 5 seconds	G CLOSING PHASE  F8-3 = 10 seconds F8-4 = 15 seconds F8-5 = 20 seconds	F8-6 = 25 seconds F8-7 = 35 seconds F8-8 = 45 seconds	F8-9 = 55 seconds	F8-1
F9	PAUSE TIME BEFORE AUTO  F9-0: No automatic closin F9-1 = 3 seconds F9-2 = 10 seconds		F9-6 = 120 seconds F9-7 = 180 seconds F9-8 = 300 seconds		F9-0

Temporary suspension of automatic closing function (Party mode)





# D7. PARAMETER TABLE

PARAMETERS	DESCRIPTION	DEFAULT SETTING	
	SAFETY DEVICE LOGIC		
FA	FA-1 Anti-crush FA-4 Quick close 1 FA-6 Standard residential mode FA-2 Safety edge FA-5 Quick close 2 FA-7 Condominium mode FA-3 Loop detector	FA-6	
FB	PEDESTRIAN OPENING (PARTIAL OPENING) ON MOTOR 1  FB-0 = Open motor 1 to the maximum range FB-1 = Open at 1/2 of the motor 1 maximum range		
FC	PRE-FLASHING (24V Flashing Light wiring on LIT+ / LIT- terminals)  FC-0 = Deactivated FC-1 = Activated = preflashes 3 seconds before the gate maneuver		
FD	SAFETY DEVICE 1  FD-0 = Deactivated FD-1 = Activated		
FE	SAFETY DEVICE 2  FE-0 = Deactivated FE-1 = Activated		
FF	BUZZER FUNCTION (Buzzer beeps during every gate maneuver)  FF-0 = Activated FE-1 = Deactivated (Can be useful during the commissioning and parameter settings)		
FG	ELECTRIC LOCK (wiring between LAT+ / LAT-)  FG-0 = Release OFF FG-1 = Release ON (During opening phase, motor reserves for 0,25s to release tension and unlock the electric lock)		
FH	LED DISPLAY DIRECTION (LED display direction is reversed on the articulated arm)  FH-0 = Value facing up FH-1 = Value facing down		
FI	SINGLE OR DUAL GATE  FI-1 = 1 motor (Wiring on M1+ / M1-)  FI-2 = 2 motors		
FJ	MOTOR DISCHARGE AFTER CLOSING AND OPENING  FJ-0 = No discharge FJ-2 = Retour de 0,2s FJ-5 = Reversal 0,5s FJ-1 = Reversal 0,1s FJ-4 = Retour de 0.4s FJ-6 = Reversal 0,6s	FJ-2	
FK	LAT+ / LAT- OUTPUT: ELECTRIC LOCK / ZONE LIGHTING / 24V OUTPUT (ACTIVATED BY BUTTON C ON THE REMOTE)  FK-1 = Power an electric lock in 24V (activated at start of the cycle)  FK-2 = Zone lighting (activated during the movement of the gates)  FK-3 = 24V output (courtesy light) controlled by the C button of the remote (adjustment of the duration with FL setting)		
FL	TRIGGER DURATION ON LAT+/LAT- / 24V OUTPUT (ACTIVATED BY BUTTON C ON THE REMOTE)  FL-0 = 0N / 0FF FL-3 = 60 seconds FL-1 = 1 second FL-4 = 90 seconds FL-2 = 30 seconds FL-5 = 180 seconds		
FM	MOTOR SENSITIVITY (OVERCURRENT SENSITIVTY WHEN DETECTING AN OBSTACLE)  FM-1 = Stop after 0,2 second FM-2 = Stop after 0,5 second FM-3 = Stop after 0,75 second  **MARNING!** For values exceeding 1 and 1,5 seconds, an additional safety device (safety edge) MUST be installed.	- FM-1	

#### **D8. SYSTEM LEARNING**

#### PRF-CHECK UP BEFORE LEARNING PROCEDURE

The motors, photocells and other safety devices are installed and wired.

The stoppers or limit switchs are installed and adjusted.

The remotes are memorized.

Unlock the motors. Manually move the gate to 75% of the travel and lock the motors.

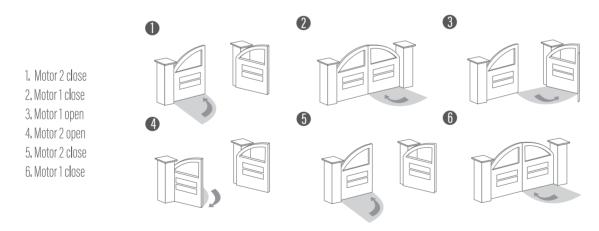
## SYSTEM LEARNING PROCEDURE A MANDATORY

- 1, Press and hold SET for 3 seconds
- 2. The LED display  $\begin{picture}(100,0) \put(0,0){\line(0,0){100}} \put$
- The first movement of the motors must be in the closing direction.

  If it is not the case, power off and invert the wiring of the 2 motors M+/M-
  - 3. The motor(s) perform(s) closing/opening movements then stop.
  - 4. The display of DG (2 motors) or SG (1 motor) confirms that the learning procedure has been completed successfully.
- During the learning phase, the LED display the motor power consumption (in Ampere). If this value fluctuates a lot during the gates movement, make sure to verify if there are any hard spots.



#### DUAL GATE MOVEMENT DURING SYSTEM LEARNING PROCEDURE



#### **D9. RESET TO DEFAULT SETTINGS**

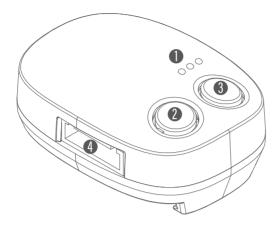
Press and hold SET / .

The LED display confirming that the system has successfully returned to default settings.

Release the buttons => The LED display N-L (System learning not completed)

# E. SMARTPHONE CONTROL WITH EYEOPEN MOBILE APPLICATION

#### E1.WB1 Wi-Fi MODULE



- LED INDICATORS
- 2 R BUTTON (RESET)
- 3 P BUTTON (PAIR)
- 4 TERMINALS

#### • LED INDICATORS DESCRIPTION

BLUE: The blue LED blinks before pairing and stays ON when successfully connected to the WiFi. GREEN: The green LED blinks once when the WB1 module receives a signal from the application.

If the WiFi is disconnected or the WiFi signal is weak, the green LED blinks constantly.

RED: Indicates that the system is disconnected or WiFi password is incorrect.

The range between WB1 module and router is 30 meters (in open space).

#### **E2. QUICK SET UP GUIDE**

- Select which smartphone will be the « owner » smartphone
  The owner is able to give authorization to the other shared smartphones.

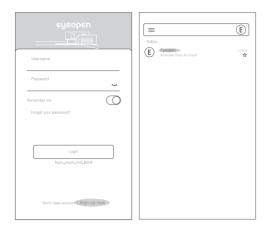
  Activate and connect the smartphone to the WiFi that will be connected to the WB1 WiFi module.

  EYEOPEN is only compatible with 2.4Ghz WiFi network
  - 1. Download the EYEOPEN application on your smartphone.





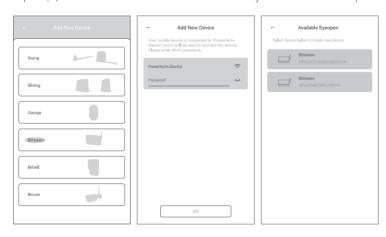
2. Sign up and create login and password. Confirm and exit EYEOPEN application. Open your mailbox and activate the link received in the email.



3. Open and login in the application.



4. Tap the (+) icon to add device and follow the instructions. Key in and confirm the WiFi password and select the device.

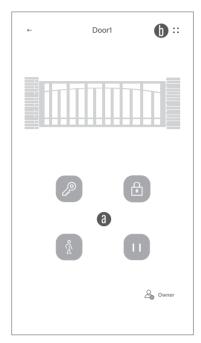


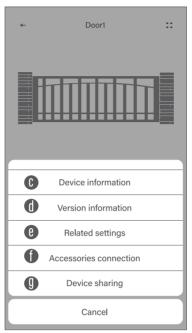
5. Set up the 6 digits PIN Code twice and confirm.



By default, choose 123456 (Twice). You can later modify
This PIN code once you are more comfortable with the application.

6. You have now access to the operation interface of the device. You can control, modify settings, add accessories or share the access,





a. Operation button

- b. Setting page
- c. Device information
- d. Version information
- e. Related settings
- f. Accessories connection
- g. Device sharing

# F. TECHNICAL SPECIFICATIONS

Model Name	PW330
Category	24V
Gear Type	Worm gear
Thrust	3000N
Stroke Length	350mm
Power Supply	24Vdc
Max Operating Current	5.5A pour 10 secondes
Max Gate Weight	350kg par vantail
Max Gate Length	4.0 meters
Duty Cycle	20%
Operating Temperatures	-20°C∼+50°C
Dimension	844x115x106mm

# **G. MAINTENANCE AND TROUBLESHOOTING**

#### **MAINTENANCE**

Conduct the following operations at least every 6 months. For intensive use scenarios, shorten this delay.

# Disconnect the power supply

- 1. Clean and lubricate the screws, hinges with grease.
- 2. Make sure the fastening are properly tightened.
- 3. Make sure the wire connection is in good functioning conditions.

# **Connect the power supply**

- 1. Double check the parameter settings.
- 2. Check the manual release.
- 3. Check the photocells and other safety devices.

# TROUBLESHOOTING

Problem	Solution
The gate is not moving when pressing the buttons on the remote	<ol> <li>Check if LED2 blinks when pressing buttons on the remote</li> <li>Check if the voltage on the batteries is above 22V</li> <li>Check if LED3-4 are "ON".</li> <li>Make sure all the wires are connected to the PCB terminals</li> <li>Make sure the fuse is fully functional on the panel and power socket.</li> </ol>
Transmission range on the remote/keypad is too short	1. Make sure the antenna is well attached and screwed on the control board 2. Make sure there is no obstruction of the antenna (power or motor cables)
Flashing light does not function	1. Make sure the wiring is correct
The gate stops during movement.	1. Manually move the gate and check if there are any hard spots.
The gate does not move or only move towards a single direction.	1. Verify the motors wiring. 2. Check the fuse status 3. Make sure there are no obstacles obstructing the photocells beam.
One gate fully closes but the other gate stops.	Manually move the gate and check if there are any hard spots.  1. Verify the motors wiring.  2. Check the fuse status  3. Make sure there are no obstacles obstructing the photocells beam.  4. Increase the F2-F3 settings (Force)

