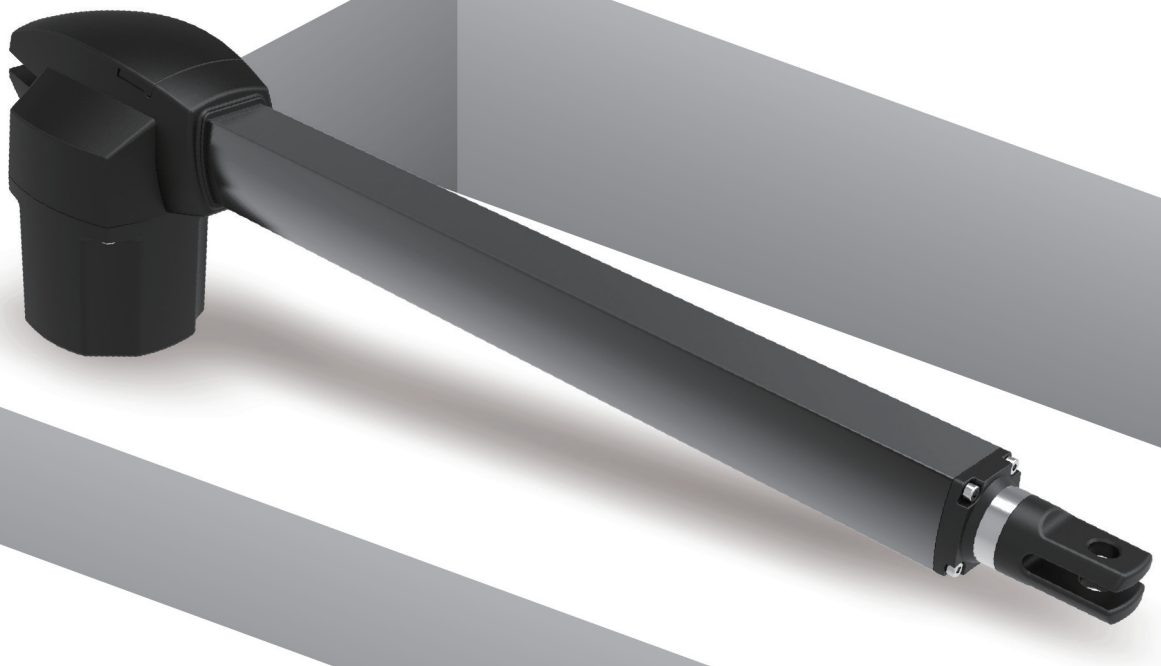
Armstrong

Swing Gate Opener

230V AC Motor
For Residential Use Only



TMT AUTOMATION INC.

Contents

I. General Safety Warnings And Precautions

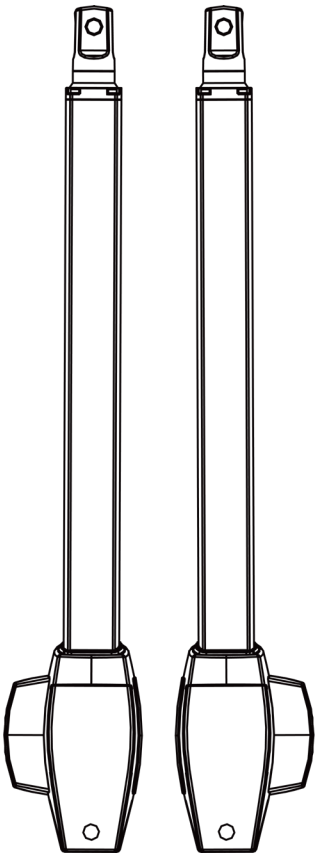
⚠ WARNING!

Please read this instruction manual carefully before the installation of gate-automated system.
This manual is exclusively for qualified installation personnel.
The manufacturer is not responsible for improper installation and failure to comply with local electrical and building regulations.
Keep all the components of Armstrong system 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 works 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.

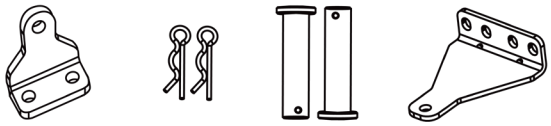
II. Product Description And Tended use

1. Kit Content

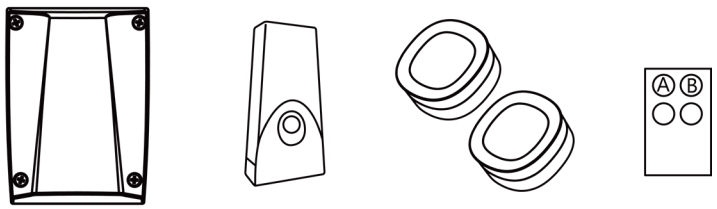
- **Motos**



- **Hardware**



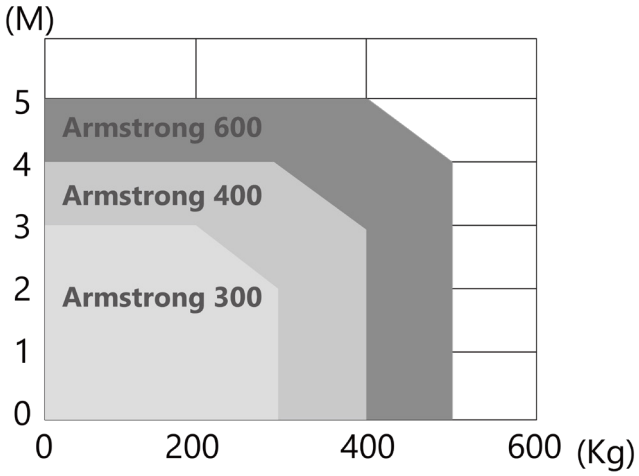
- **Accessories**



- **REF**

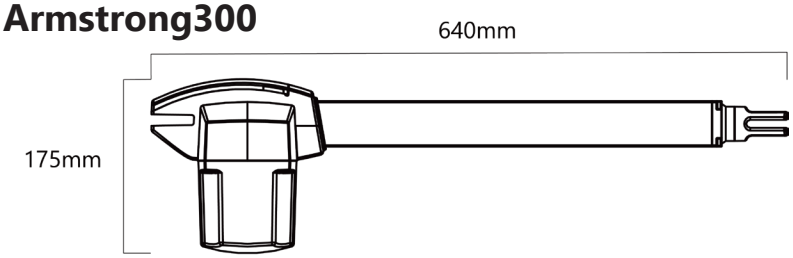
	DESCRIPTION	QUANTITY
1.	Motor 1 (Master) including	1
2.	Motor 2 (Slave)	1
3.	Front bracket	1
4.	R-type pin	2
5.	Metal plug	2
6.	Rear bracket	1
7.	A301U control board	1
8.	Flashing light (Optional)	1
9.	Photocells (Optional)	2
10.	Remote	2

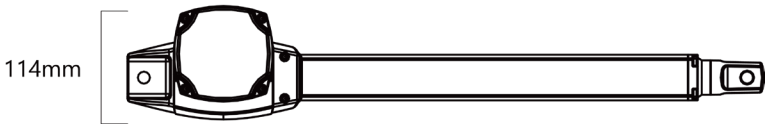
2. Product Usage Limits



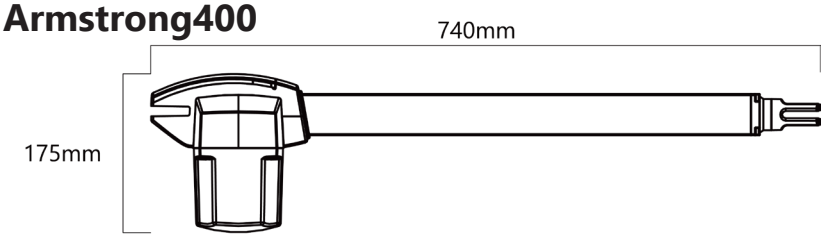
3. Dimensions

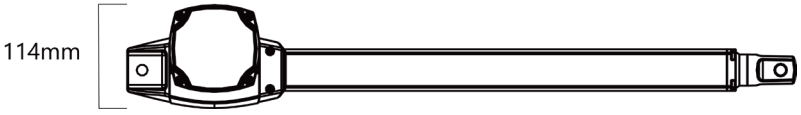
- **Armstrong300**



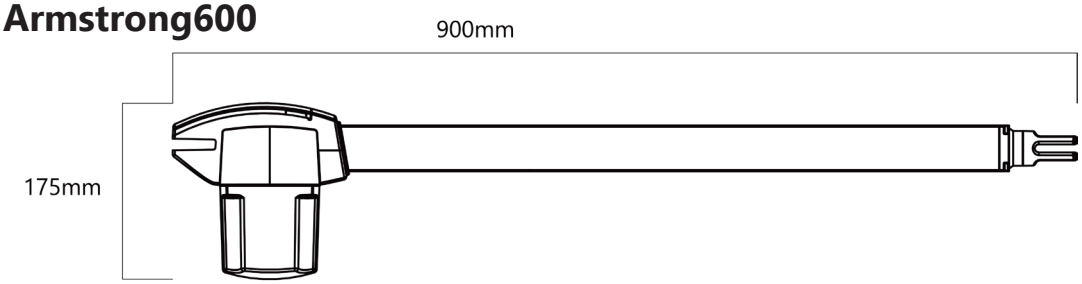


- **Armstrong400**





- **Armstrong600**



III. Installation

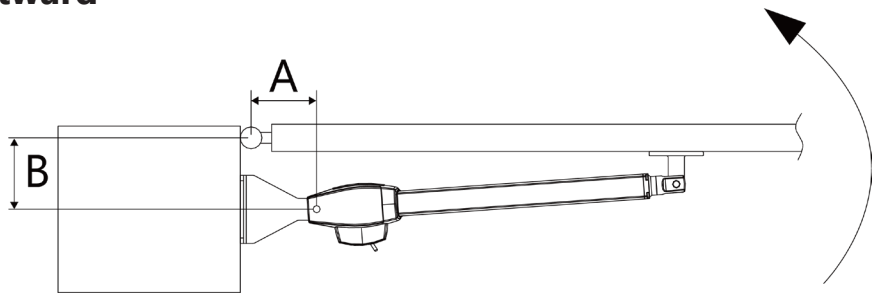
The Armstrong 300 gate openers are applicable to per leaf of 3/4 meters in width and 300/400 kg in weight which can be opened up to 110 degrees primarily for residential use; where the performance shall be influenced by the factors such as gate dimension, weight and climate that the driven torque is necessarily to be adjusted properly.

1. Pre-Installation Checks

Armstrong300 / 400 is not applicable to a gate which is inefficient or unsafe, neither to solve the defects due to incorrect installation nor poor maintenance.

1. Make sure the weight and dimensions of the gate conform to the operation range of Armstrong300 .
   Armstrong300 if the gate specifications do not meet the requirements.
2. Make sure the gate structure conform to the criteria of automatic operation and force regulations.
3. Make sure there is no serious friction existing in the opening or closing travel of the gate leaves.
4. Make sure the gate is at horizontal level that the gate will not move aside at any position.
5. Make sure the gate can bear the impact of the motor torque when it is installed on any hole of the bracket which the surface is sufficiently sturdy.
6. Make sure the photo sensors are installed on flat surfaces to ensure the two ends of receiving and transmitting corresponded to each other.
7. Check the dimensions of the motors as below.
8. Make sure to leave enough space when the gate is opening.
9. If the gate is OPENED OUTWARD, please leave at least 70mm between the post brackets and the gate.
10. Using the leaf-opening angle as criteria to make sure all criteria .

- **Open Outward**



Armstrong300

A \ B	100	110	120	130	140	150	160	170
100	β>120°							
110								
120		β°=110°-120°						
130								
140			β=100°-110°					
150								
160				β=90°-100°				
170					β<90°			

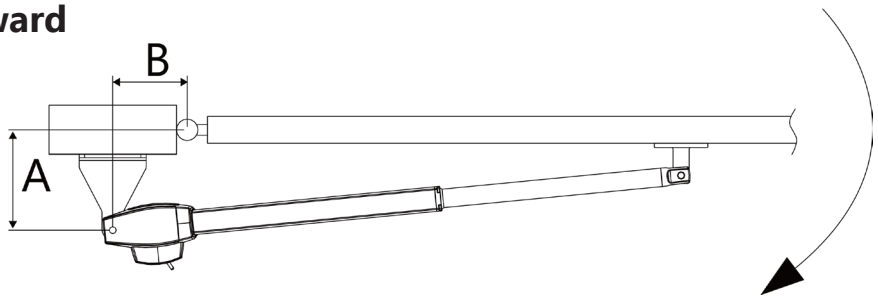
Armstrong400

A \ B	150	160	170	180	190	200	210	220
150	β>120°							
160								
170		β°=110°-120°						
180								
190			β=100°-110°					
200								
210				β=90°-100°				
220					β<90°			

Armstrong600

A \ B	250	260	270	280	290	300	310	320	330	340
250	β>120°									
260										
270		β°=110°-120°								
280										
290			β=100°-110°							
300										
310				β=90°-100°						
320										
330					β<90°					
340										

- **Open Inward**



Armstrong300

A \ B	100	110	120	130	140	150	160	170
100	β>120°							
110		β°=110°-120°						
120			β=100°-110°					
130				β=90°-100°				
140					β<90°			
150								
160								
170								

Armstrong400

A \ B	150	160	170	180	190	200	210	220
150	β>120°							
160		β°=110°-120°						
170			β=100°-110°					
180				β=90°-100°				
190					β<90°			
200								
210								
220								

Armstrong600

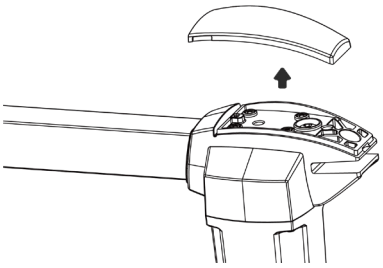
A \ B	230	240	250	260	270	280	290	300	310	320
230	β>120°									
240		β°=110°-120°								
250			β=100°-110°							
260				β=90°-100°						
270					β<90°					
280										
290										
300										
310										
320										

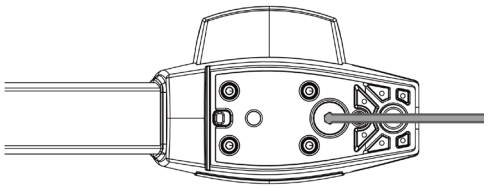
11. “C” value is 139mm.
12. “D” can be measured from the gate easily.
13. “A” = “C” + “D”
14. The value of “B” can be calculated from the value of “A” and the leaves opening angle. Ex. If “A”=180-190mm with the leaves opening angle of 100 degrees, then the value of “B” is approximate 190mm.

****Please make sure “B” and “A” are similar or the same in value that the leaves can be operated smoothly , also to reduce the burden of the motor.****

- **Release Gear**

1. Remove the upper cover of the motor.
2. Turn the release axle with a hex key to release the motor.
3. The inner tube can be moved inward or outward.
4. Turn the release axle to engage the gear.



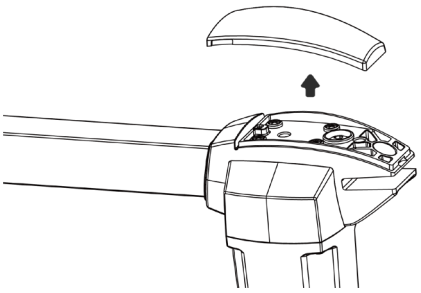


2. Installation Of The Motors

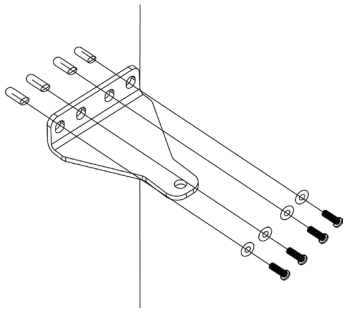
1. Choose the correct dimensions of the motors and position to be installed.
2. Check if the mounting surface the brackets to be installed is smooth, vertical and rigid..
3. Arrange the cable conduit for power supply cable of the motors.
4. Loosen the screw and remove the cover of the motor . (Figure1)
5. Place the leaves in the closed position.
6. Refer to the distance of “B” on page 6 ,place the rear plate in the correct position on the mounting surface.

7. Place 4 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. (Figure2)Make sure to leave enough space when the gate is opening.
8. Please make sure the front plate is completely installed horizontally.
9. Refer to Figure 2, the distance between front plate of the motor and rear plate is 640mm , the difference in height is 175mm .

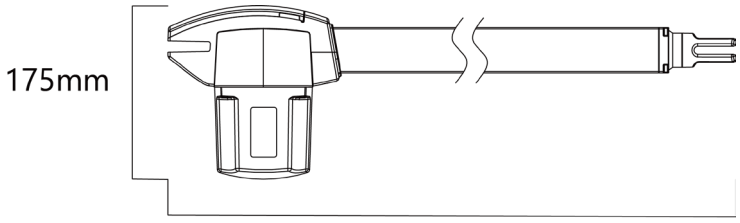
- **Figure 1**



- **Figure 2**

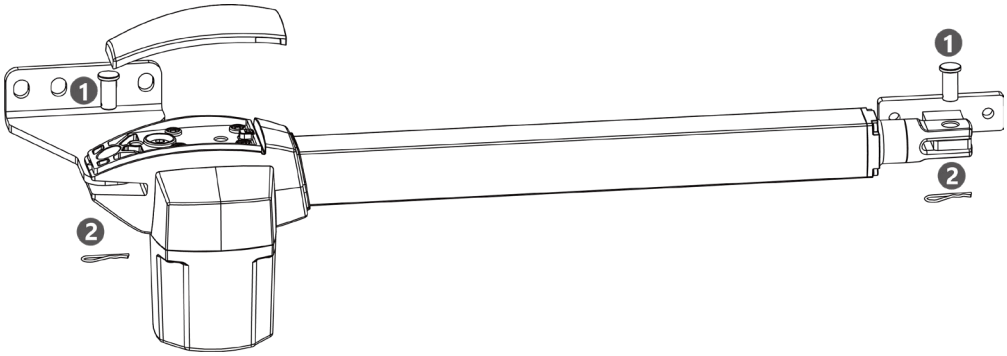


- **Figure 3**



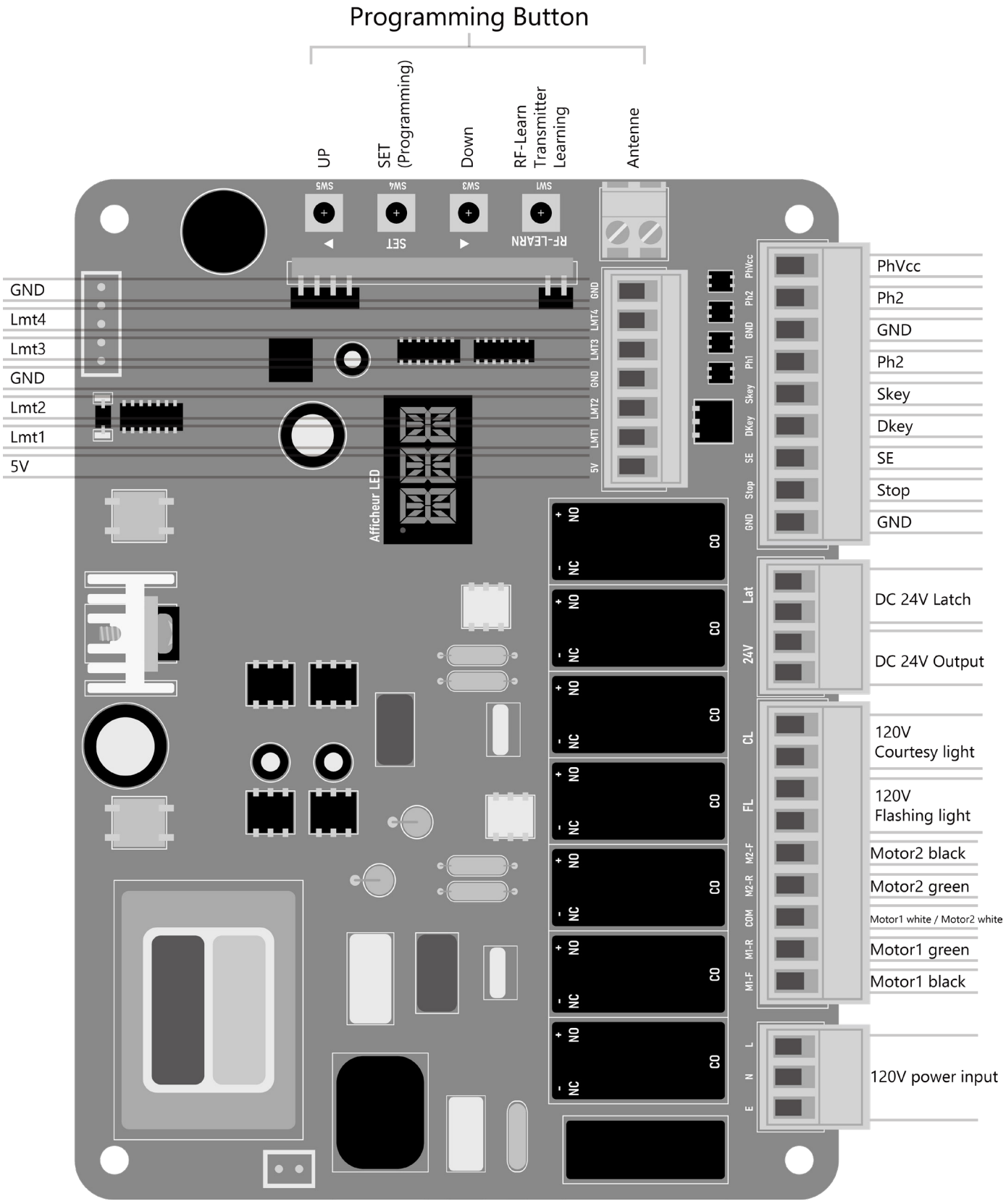
10. Clamp and fix the motor front plate on the door temporarily.
11. Lift up the motor and insert the screws into the front plate.Arrange the cable conduit for power supply cable of the motors.
12. Lift the motor overhead and push the gate to the end until the screw holes of the motor end matches the holeson the rear plate. Fasten the motor to the rear plate with the bolt .(Figure4)
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 plug ❶ and ❷ pin tightly .
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.
19. Loosen the plastic nut under the power cable of the motor end, and penetrate the power cable through the nut and screw it up.

- **Figure 4**



IV. Commissioning

1. A301U Control Board



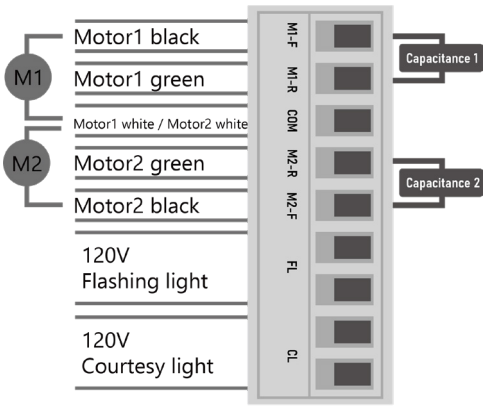
2. Motor Wiring

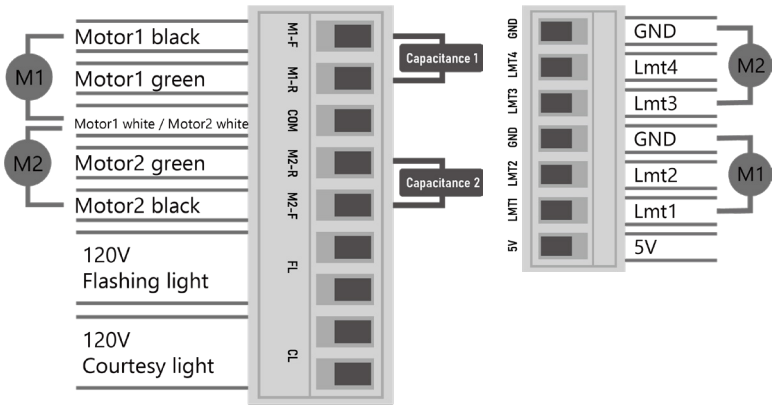
- **Time Mode**

Refer to parameter table-parameter F-A1-0.

- **Limit Switch Mode**

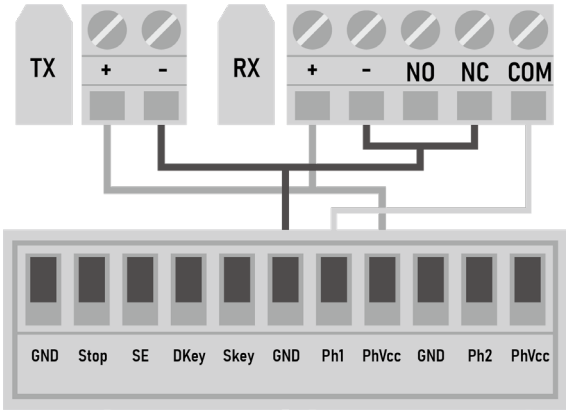
Refer to parameter table-parameter F-A1-1



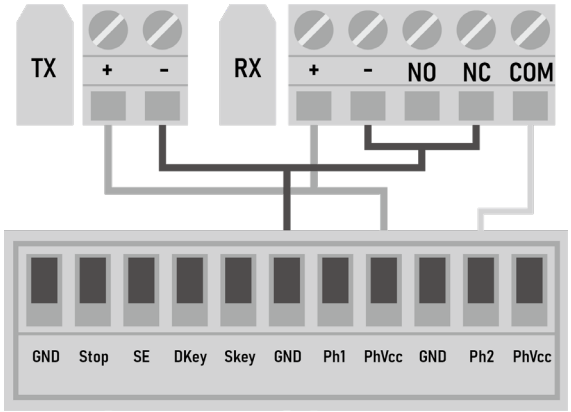


3. Wiring Of Accessories

- **Safety Device 1 Wiring**

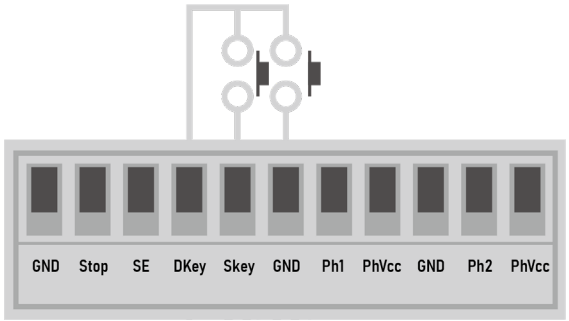


- **Safety Device 2 Wiring**

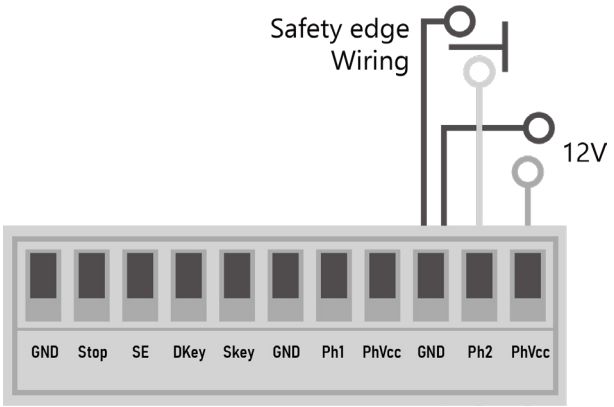


- **Auxiliary Device Wiring**

Dkey : Double gate Open/Stop/Close/Stop
Skey : Single gate Open/Stop/Close/Stop



- **12V Available To Power Accessories**



4. Remote Learning

- **Pairing Remotes**

Press the RF button for 2 seconds and the LED display show [RFL]

Press any key of the remote and the [RFL] blink

Wait for 10 seconds till the [RFL] goes OFF

- **Delete a Paired Remote**

Press the RF button twice and the LED shows [DYK]

Press any key of the paired remote and the LED show blinks for 3 times.

Wait till the [DYK] goes OFF .

- **Delete All Paired Remote**

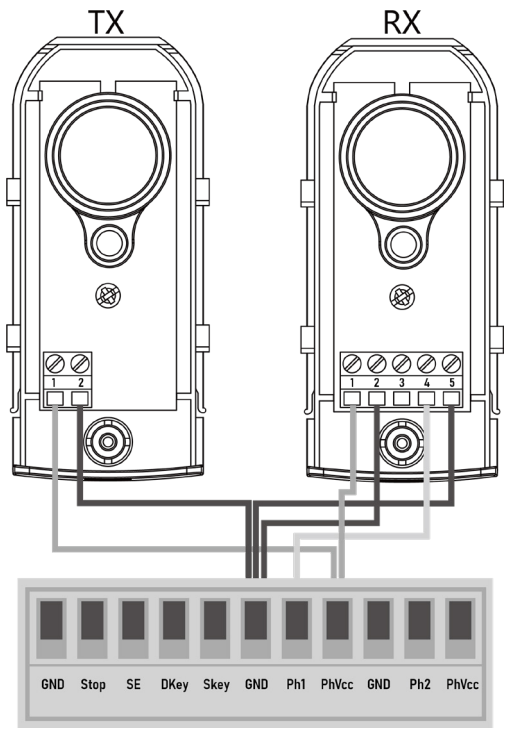
Press the RF button for 5 seconds and the LED shows [DAL]

Press any key of the paired remote and the control panels deletes all the paired remotes .

- **Pairing Remotes With a Paired Remote**

Press a new remote for 5 seconds and the Flashing light will be ON.
Press the paired remote for 3 times and the Flashing light will blink.
Press any key of a new remote to pair.

5. Photocells



Open the cover and connect wires .
Mounted the receiver and transmitter on the proper position.
Ensure there are no obstacles between receiver and transmitter.
For optimal efficiency, the receiver and transmitter should be properly aligned.
Power-up the photocells and make sure the LED light on receiver and transmitter are ON

6. Safety Device Logic

- **F5 PH1 functions**

Paramter	Function	Gate Status	Reaction
F5-0(Default setting)	PH1 function OFF	No function	No function
F5-1	Photocell-Close	Gate fully close	Not allow to open
		Gate fully open	Fast closing
		Stop during cycle	Not allow to close
		Closing phrase	Open
		Opening phrase	No effect
F5-2	Photocell-Open	Gate fully close	Not allow to open
		Gate fully close	Not allow to close
		Stop during cycle	Not allow to Open/close
		Closing phrase	No effect
		Opening phrase	Close
F5-3	Safety edge	Gate fully close	Not allow to open
		Gate fully open	Reload auto-closing time
		Stop during cycle	Not allow to Open/close
		Closing phrase	Open for 2 seconds
		Opening phrase	Close for 2 seconds

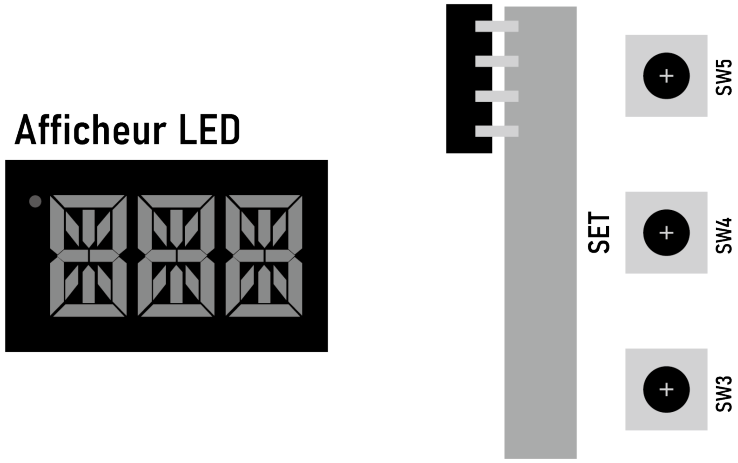
- **F6 PH2 functions**

Paramter	Function	Gate Status	Reaction
F6-0(Default setting)	PH2 function OFF	No function	No function
F6-1	Photocell-Close	Gate fully close	Not allow to open
		Gate fully open	Fast closing
		Stop during cycle	Not allow to close
		Closing phrase	Open
		Opening phrase	No effect
F6-2	Photocell-Open	Gate fully close	Not allow to open
		Gate fully close	Not allow to close
		Stop during cycle	Not allow to Open/close
		Closing phrase	No effect
		Opening phrase	Close
F6-3	Safety edge	Gate fully close	Not allow to open
		Gate fully open	Reload auto-closing time
		Stop during cycle	Not allow to Open/close
		Closing phrase	Open for 2 seconds
		Opening phrase	Close for 2 seconds

7. Programming

- **Indication On The LED Display**

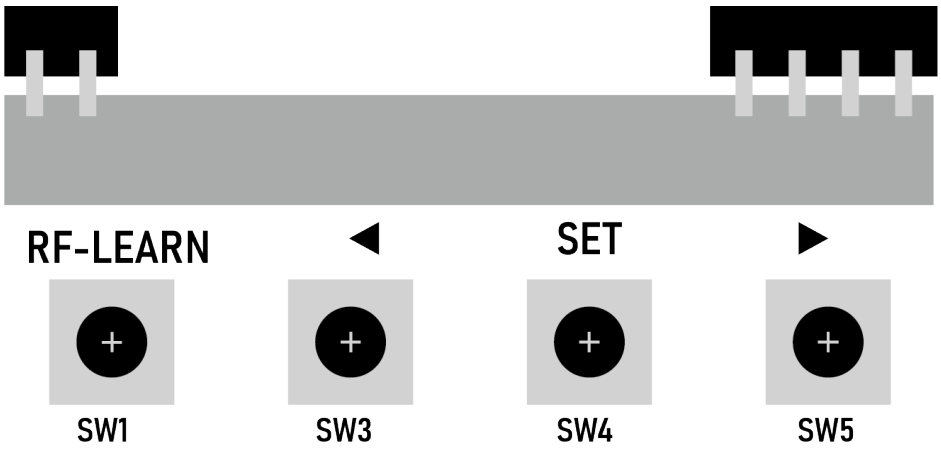
Indication of the LED display
N-L: System learning not been done yet
D-G: Double gate
S-G: Single gate
RFL: Remote learning
DKY: Delete single remote
DAL: Delete all remotes
OPN: Open
CLS: Close
STP: stop



Indication example on the LED display

- **Parameter Settings**

Press and hold ▲ / **SET** for 3 seconds
The LED display « A1» parameter setting
Select main setting with ▲ / ▼ then confirm with SET
Display of the sub-setting (ex: parameter A1-subvalue=1)
Modify sub-setting value ▲ / ▼
Validate sub-setting value with **SET**
Press ▲ / ▼ to display and configure other settings



8. Parameter Table

Setting	Function	Paramters	Description
A1	Limit mode	A1-0	Limit switch mode
		A1-1	Time mode (default setting)
A2	Operation mode	A2-0	Standard mode (default setting)
		A2-1	Condominium mode
		A2-2	Holiday mode
A3	Double/Single gate	A3-0	Single gate
		A3-1	Double gate (default setting)
A4	LED direction	A4-0	Control box (default setting)
		A4-1	Arm gate opener
A5	Operation direction	A5-0	Open inward (default setting)
		A5-1	Open outward
C1/C2	C1 Slowdown area for opening C2 Slowdown area for closing	C1/C2-0	No slowdown area
		C1/C2-1	5% slowdown area
		C1/C2-2	10% slowdown area
		C1/C2-3	15% slowdown area
		C1/C2-4	20% slowdown area (default setting)
		C1/C2-5	25% slowdown area
		C1/C2-6	30% slowdown area
C3/C3	C3 Delay time for opening C4 Delay time for closing	C3/C4-0	No delay
		C3/C4-1	1 seconds
		C3/C4-2	2 seconds (C3 default setting)
		C3/C4-3	3 seconds (C4 default setting)
		C3/C4-4	4 seconds
		C3/C4-5	5 seconds
		C3/C4-6	6 seconds
		C3/C4-7	10 seconds
		C3/C4-8	15 seconds
		C3/C4-9	20 seconds
C5/C6	C5 Motor1 running time for opening C6 Motor2 running time for opening	0-99 seconds	Default setting 22 seconds
C7/C8	C7 Motor1 running time for closing C8 Motor2 running time for closing	0-99 seconds	Default setting 24 seconds
E1/E2	E1 over-current reaction while opening E2 over-current reaction while closing	E1/E2-0	Stop (E1 default setting)
		E1/E2-1	Reverse for 1 second
		E1/E2-2	Reverse for 2 seconds (E2 default setting)
		E1/E2-3	Reverse for 3 seconds
		E1/E2-4	Reverse for 4 seconds
		E1/E2-5	Reverse till the end

Setting	Function	Paramters	Description
E3	Reverse time when closing	E3-0	(default setting)
		E3-1	0.1 second
		E3-2	0.2 second
		E3-3	0.3 second
		E3-4	0.4 second
		E3-5	0.5 second
		E3-6	0.6 second
E4	Ignore over-current time when start	E4-0	0.4 second
		E4-1	0.5 second
		E4-2	(default setting)
E5	Over-current sensitivity	E5-0	20%
		E5-1	30%
		E5-2	40%
		E5-3	50%
		E5-4	60%
		E5-5	70%
		E5-6	80% (default setting)
		E5-7	90%
		E5-8	100%
E6	F orce	E6-0	100%
		E6-1	30%
		E6-2	40%
		E6-3	50%
		E6-4	60%
		E6-5	70%
		E6-6	80% (default setting)
		E6-7	90%
		E6-8	100%
F1	Auto-closing time	F1-0	No Auto-closing (default setting)
		F1-1	3 seconds
		F1-2	10 seconds
		F1-3	20 seconds
		F1-4	40 seconds
		F1-5	60 seconds
		F1-6	120 seconds
		F1-7	180 seconds
		F1-8	300 seconds
F2	Fast closing	F2-0	0 seconds
		F2-1	1 seconds
		F2-2	2 seconds
		F2-3	3 seconds
		F2-4	4 seconds (default setting)
		F2-5	6 seconds
		F2-6	8 seconds
		F2-7	10 seconds

Setting	Function	Paramters	Description
F3	Pedestrian mode	F3-0	10%
		F3-1	20%
		F3-2	30%
		F3-3	40%
		F3-4	50%
		F3-5	60%
		F3-6	70%
		F3-7	80%
		F3-8	90%
F4	Flashing light – Pre flashing	F4-0	0 second (default setting)
		F4-1	1 second
		F4-2	2 second
		F4-3	3 second
		F4-4	4 second
		F4-5	6 second
		F4-6	8 second
		F4-7	10 second
F5	Ph1 Photocells mode	Please refer to Safety device logic	
F6	Ph2 Photocells mode	Please refer to Safety device logic	
F7	Buzzer	F7-0	OFF (default setting)
		F7-1	ON
F8	Latch release mode	F8-0	Function OFF (default setting)
		F8-1	Latch function ON
		F8-2	Latch function ON with reverse for 1 second
F9	Courtesy light	F9-0	OFF (default setting)
		F9-1	5 seconds
		F9-2	10 seconds
		F9-3	20 seconds
		F9-4	30 seconds
		F9-5	40 seconds
		F9-6	60 seconds
		F9-7	80 seconds
		F9-8	100 seconds
		F9-9	120 seconds
H1	A Button	H1-0	Function OFF
		H1-1	Step by step Open/Stop/Close/Stop (default setting)
		H1-2	Open/Stop/Close
		H1-3	Ped mode
		H1-4	Open
		H1-5	Stop
		H1-6	Close
		H1-7	Lamp
		H1-8	Auto-closing switch
		H1-9	Holiday mode switch

Setting	Function	Paramters	Description
H2	B Button	H2-0	Function OFF (default setting)
		H2-1	Step by step Open/Stop/Close/ Stop
		H2-2	Open/Stop/Close
		H2-3	Ped mode
		H2-4	Open
		H2-5	Stop
		H2-6	Close
		H2-7	Lamp
		H2-8	Auto-closing switch
		H2-9	Holiday mode switch
H3	C Button	H3-0	Function OFF (default setting)
		H3-1	Step by step Open/Stop/Close/ Stop
		H3-2	Open/Stop/Close
		H3-3	Ped mode
		H3-4	Open
		H3-5	Stop
		H3-6	Close
		H3-7	Lamp
		H3-8	Auto-closing switch
		H3-9	Holiday mode switch
H4	D Button	H4-0	Function OFF (default setting)
		H4-1	Step by step Open/Stop/Close/ Stop
		H4-2	Open/Stop/Close
		H4-3	Ped mode
		H4-4	Open
		H4-5	Stop
		H4-6	Close
		H4-7	Lamp
		H4-8	Auto-closing switch
		H4-9	Holiday mode switch
J1	Skey terminal	J1-0	Function OFF
		J1-1	Double gate Open/Stop/Close/Stop
		J1-2	Single gate Open/Stop/Close/Stop (default setting)
		J1-3	Ped mode
		J1-4	Open
		J1-5	Stop(NO)
		J1-6	Stop(NC)
		J1-7	Close
		J1-8	Lamp
		J1-9	Auto-closing switch
		J1-10	Holiday mode switch

Setting	Function	Paramters	Description
J2	Dkey terminal	J2-0	Function OFF
		J2-1	Double gate Open/Stop/Close/Stop (default setting)
		J2-2	Single gate Open/Stop/Close/Stop
		J2-3	Ped mode
		J2-4	Open
		J2-5	Stop(NO)
		J2-6	Stop(NC)
		J2-7	Close
		J2-8	Lamp
		J2-9	Auto-closing switch
		J2-10	Holiday mode switch
J3	Stop terminal	J3-0	Function OFF
		J3-1	Double gate Open/Stop/Close/Stop
		J3-2	Single gate Open/Stop/Close/Stop
		J3-3	Ped mode
		J3-4	Open
		J3-5	Stop(NO) (default setting)
		J3-6	Stop(NC)
		J3-7	Close
		J3-8	Lamp
		J3-9	Auto-closing switch
		J3-10	Holiday mode switch
J4	SE terminal	J4-0	Function OFF (default setting)
		J4-1	Stop
		J4-2	Reverse for 2 seconds
		J4-3	Reverse till the end
U1	Return to the default setting	U1	The parameters return to the default setting
U2	Return to the default setting	U2	The parameters return to the default setting Delete all the remote pairing Delete all the system learning memory

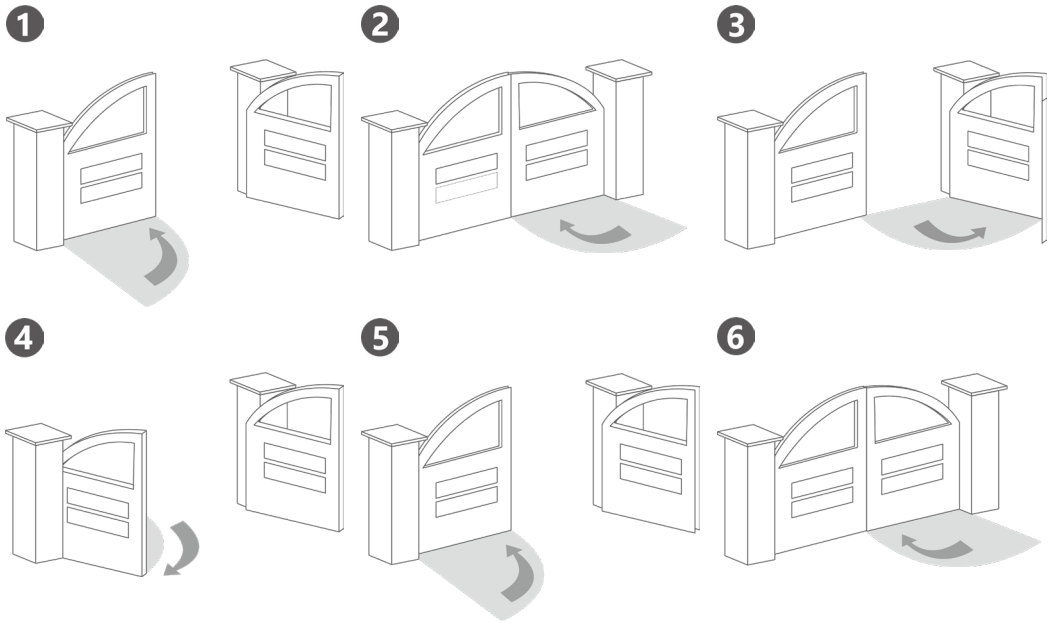
Condominium Mode				
	Step by step button	Ped button	PH2	PH1
Stop in the middle	Open till fully open and reload auto-closing time	No effect. Auto-closing countdown	When Ph2 is triggered, auto-closing stops untill the obstacle is removed.	When Ph1 is triggered, auto-closing stops untill the obstacle is removed.
Gate fully open	Reload auto-closing time	No effect. Auto-closing countdown	When Ph2 is triggered, auto-closing stops untill the obstacle is removed.	When Ph1 is triggered, auto-closing stops untill the obstacle is removed.
Opening phrase	No effect	No effect	No effect	No effect
Gate fully close	Open the gate untill it's fully open and start auto-closing countdown	No effect	No effect	No effect
Closing phrase	Open the gate untill it's fully open and start auto-closing countdown	No effect	When Ph2 is triggered, reverse to the fully open position. Auto-closing stops untill the obstacle is removed.	No allowed to open

9. System Learning

Open the cover and connect wires .
Mounted the receiver and transmitter on the proper position.
Ensure there are no obstacles between receiver and transmitter.
For optimal efficiency, the receiver and transmitter should be properly aligned.
Power-up the photocells and make sure the LED light on receiver and transmitter are ON

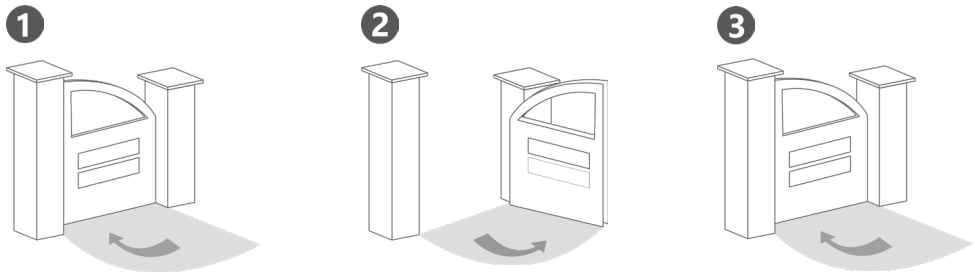
- **Dual Gate Movement During Systen Learning Procedure:**

1. Motor 2 close
2. Motor 1 close
3. Motor 1 open
4. Motor 2 open
5. Motor 2 close
6. Motor 1 close



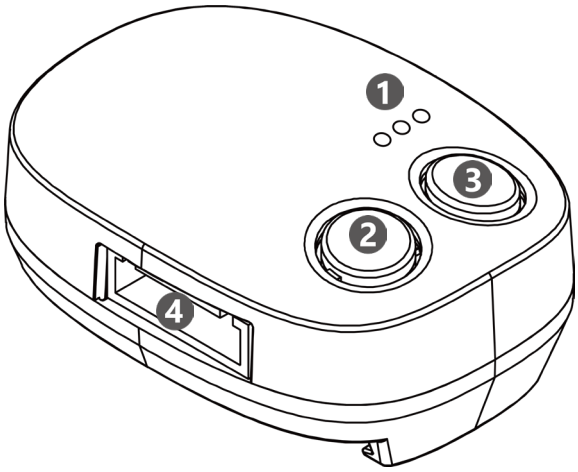
- **Single Gate Movement Single Systen Learning Procedure:**

1. Motor close
2. Motor open
3. Motor close



V. Smartphone Control With CHOW! Mobile Application

1. Wi-Fi Box WB3



1 LED Display
2 R Button (press to restart)
3 P Button
4 Terminals

- **LED Indicators Description**

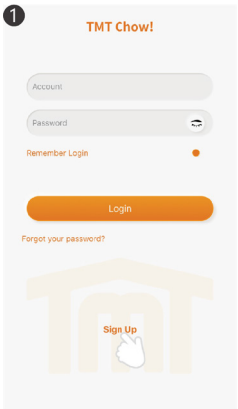
BLUE : Blue LED is a indicator for the Bluetooth connection.
GREEN : Green LED is a indicator for the state of device.
RED : Red LED blinks indicates wrong ful operations or system errors.

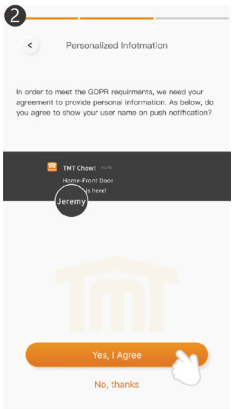
Please refer to FAQ when the Res LED is ON.

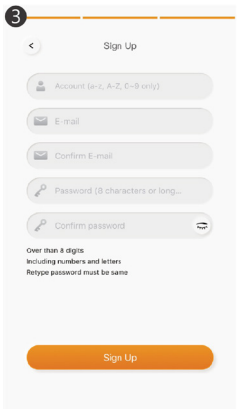
2. Quick Set Up Guide

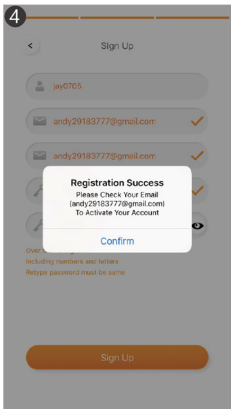
- **Apply for a new Chow! account**

1. Please scan the QR code and download the Chow! App
2. Press sign up icon and press the agree icon to continue
3. Please type the following informeation for registration:
   a. Email(enter twice for verification)
   b. Password(enter twice for verification)
   c. The password should have at least 1 English character and at least 8 characters in total
4. The system will send a link to your email when the registration succeedec.
5. Please go to your email, and click the linkto activate your Chow! account.
6. Please log in your Chow! account.





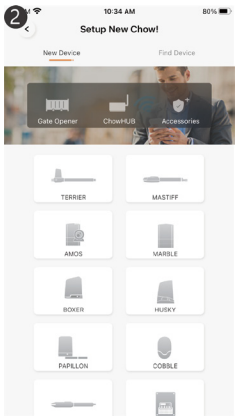


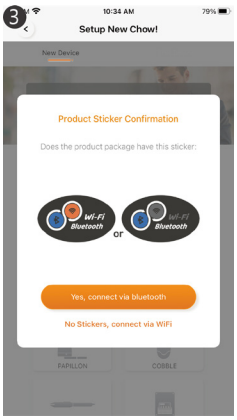


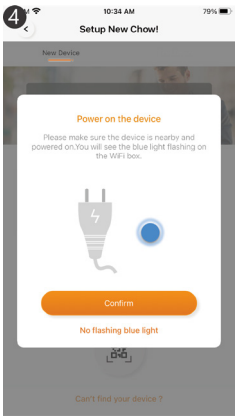
- **Connect the Wifi/Bluetooth Module to the Chow! App**

Please turn ON the Bluetooth function of your smartphone

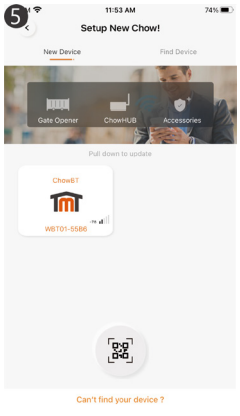
1. Tap the (+) icon to add new device.
2. Tap the type of your device to add a new device.
3. Please check if the product has the WBT sticker.
4. Please check if you power the device.

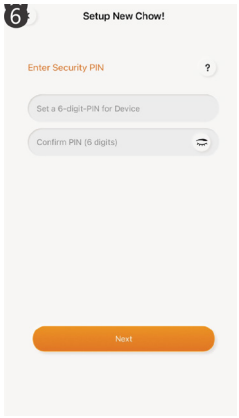


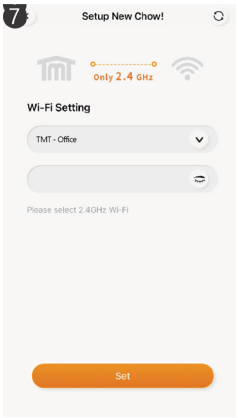


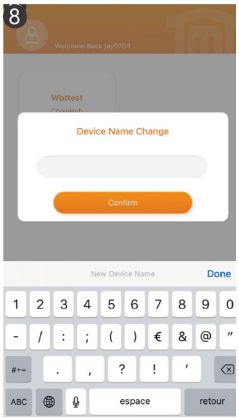


5. Please select your device or scan QRcode on device.
6. Set a security PIN code by enter the same code twice.
7. Entering the correct password of your Wi-Fi.
8. After connection countdown, you can name your device.



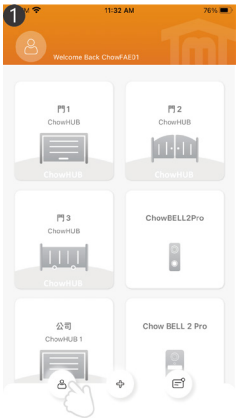


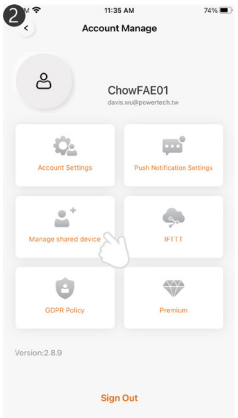




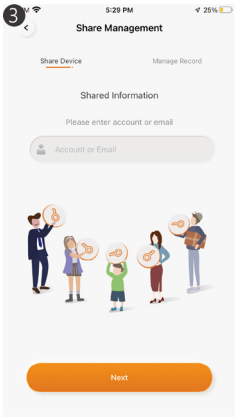
- **Owner shares the device to other users**

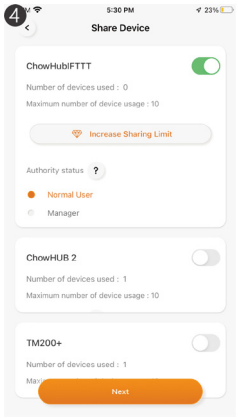
1. Press the icon on the corner to enter the account management page.
2. Tap the manage shared device.





3. Enter the account which you are going to share.
4. Choose the device you are going to share and tap next.





a. The Owner can decide the permission of device sharing. A manager can share and operate this device, but a normal user can only operate it.
b. One device can only be shared to 10 users.

VI. Technical Specifications

Model Name	Armstrong300	Armstrong400	Armstrong400
Max gate length	3 meters	4 meters	5 meters
Max gate weight	300 kilos	400 kilos	500 kilos
Voltage	230VAC	230VAC	230VAC
Motor Speed (RPM)	1450	1450	1450
Stroke Length (mm)	300	400	600
Duty cycle	50%	50%	50%
No-load Speed (mm/s)	16	16	16
No-load Current	≤1.0A	≤1.0A	≤1.0A
Rated Current	≤2.5A	≤2.5A	≤2.5A
Noise	≤55db	≤55db	≤55db
Operating Temperature	-20°C+50°C	-20°C+50°C	-20°C+50°C
Waterproo	IP44	IP44	IP44

Swing Gate Opener

Armstrong

230V AC Motor
For Residential Use Only

34100-243