CB17 CONTROL SYSTEM

USER MANUAL
PS20007

INDEX

1. CONTROL BOX

CONTROL BOX INSTALLATION

1. Decide the installation position of control box first, it is suggested to be installed near the gate and should be protected from possible damage. Be aware of the motor cable length before deciding the installation position.
2. Remove the cover by unscrewing the four screws on the cover. See *Figure 1(1)*.
3. Puncture the holes beneath the bottom of the control box for cables to go through. See *Figure 1(2)*.
   * Be careful of this process, should not damage the main panel inside the box
4. Secure it on the wall. See *Figure 1(3).*

Figure 1(1)	Figure 1(2)	Figure 1(3)
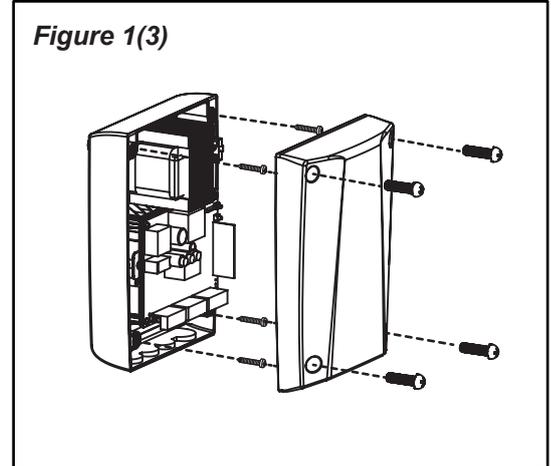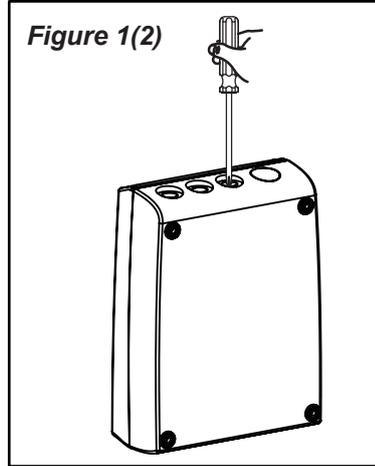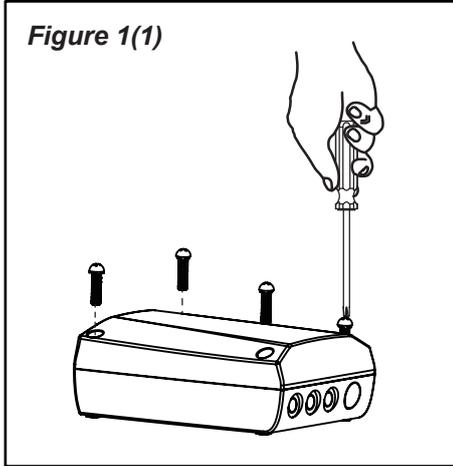
5. Wiring Connection:
   Prepare all the wires of the accessories beforehand and connect the wires to the gear motors and accessories on the PCB as shown in *Figure 1(4)*. All of the wiring connections of the accessories are not requested to distinguish the positive (+) and the negative (-) polarity.

1). Flashing light: Connect the two wires from the flashing light to the terminal L+ and L- on the PCB.
2). Electric Latch: Connect the two wires from the electric latch to the terminal Lo + and Lo- on the PCB.
3). Gate openers: Refer to Figure 1(4) and connect the wires separately to the terminals on the PCB.
   Motor 1: Connect the motor wire (White +) to the terminals Mo1 +, and (Yellow -) to the Mo1-.
   Motor 2: Connect the motor wire (White +) to the terminals Mo2 +, and (Yellow -) to the Mo2 -.

Notes:
   For gates opened outward,
   Motor 1: Connect the motor wire (Yellow -) to the terminals Mo1 +, and (White +) to the terminals Mo1-.
   Motor 2: Connect the motor wire (Yellow -) to the terminals Mo2 +, and (White +) to the terminals Mo2 -.

4). Photocells: *See Figure 1(4)*
   (A) installed one set Photocell to FO1, SW3 setting as below:
    4. Ph_conn1 > OFF and 5. Ph_conn2 > ON

   (B) installed one set Photocell to FO2, SW3 setting as below:
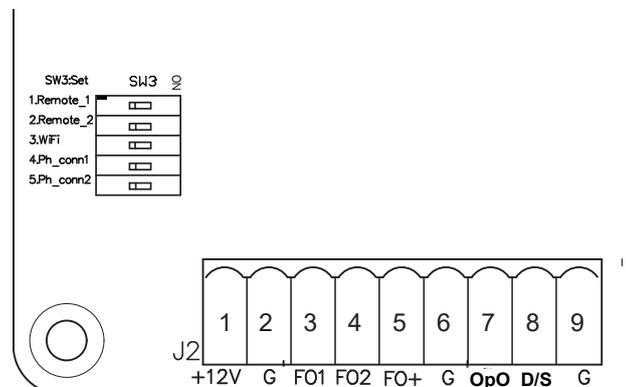   4. Ph_conn1 > ON and 5. Ph_conn2 > OFF

   (C) installed two sets Photocell, SW3 setting as below:
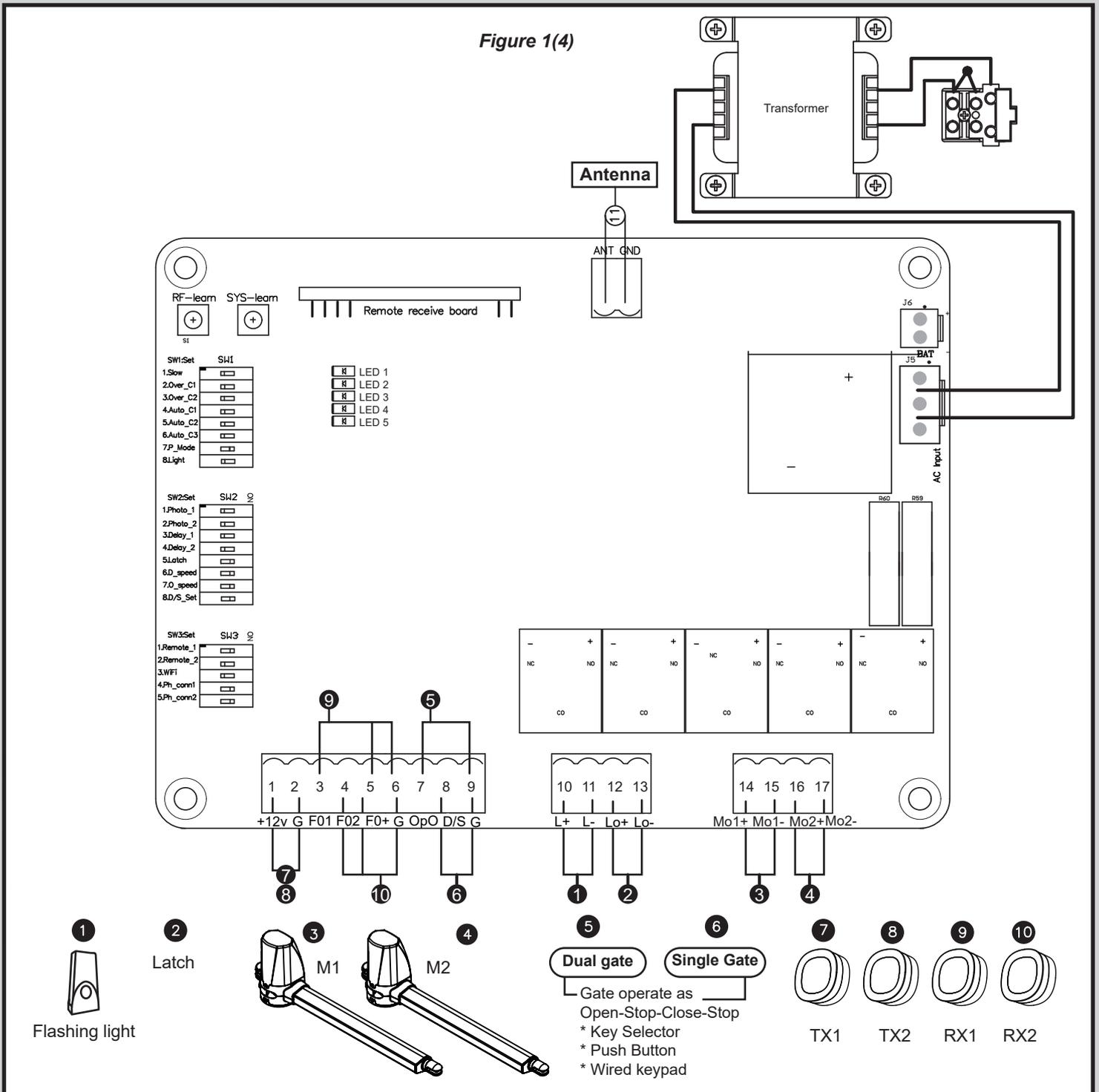   4. Ph_conn1 > OFF and 5. Ph_conn2 > OFF

   (D) No Photocell has been installed, SW3 setting as below:
    4. Ph_conn1 > ON and 5. Ph_conn2 > ON

2. CB17 CONTORL PANEL LAYOUT AND WIRE CONNECTION INDICATION

Figure 1(4)

Transformer

Antenna

ANT GND

RF−learn SYS−learn

Remote receive board

J6

J5 BAT

AC Input

SW1:Set	SW1
1.Slow	
2.Over_C1	
3.Over_C2	
4.Auto_C1	
5.Auto_C2	
6.Auto_C3	
7.P_Mode	
8.Light	

LED 1
LED 2
LED 3
LED 4
LED 5

SW2:Set	SW2 ON
1.Photo_1	
2.Photo_2	
3.Delay_1	
4.Delay_2	
5.Latch	
6.D_speed	
7.O_speed	
8.D/S_Set	

R60 R59

SW3:Set	SW3 ON
1.Remote_1	
2.Remote_2	
3.WIFI	
4.Ph_conn1	
5.Ph_conn2	

−	+	−	+	−	+	−	+	−	+
NC	NO	NC	NO	NC	NO	NC	NO	NC	NO
	CO		CO		CO		CO		CO

⑨   ⑤

1	2	3	4	5	6	7	8	9
+12v	G	F01	F02	F0+	G	OpO	D/S	G

10	11	12	13
L+	L−	Lo+	Lo−

14	15	16	17
Mo1+	Mo1−	Mo2+	Mo2−

⑦   ⑩   ⑥   ①   ②   ③   ④
⑧

① Flashing light

② Latch

③ M1

④ M2

⑤ **Dual gate**

⑥ **Single Gate**

Gate operate as
Open-Stop-Close-Stop
* Key Selector
* Push Button
* Wired keypad

⑦ TX1   ⑧ TX2   ⑨ RX1   ⑩ RX2

2.1 Wi-Fi DEVICE
Functions of Buttons and Terminals

LED Display

P button:
Wi-Fi Paring: Press 1 sec
Default Setting: Press 3 sec

Ports

NOTE
The SW3_3 (Wi-Fi) dip switch <u>MUST</u> be set to **ON** for further APP setup.
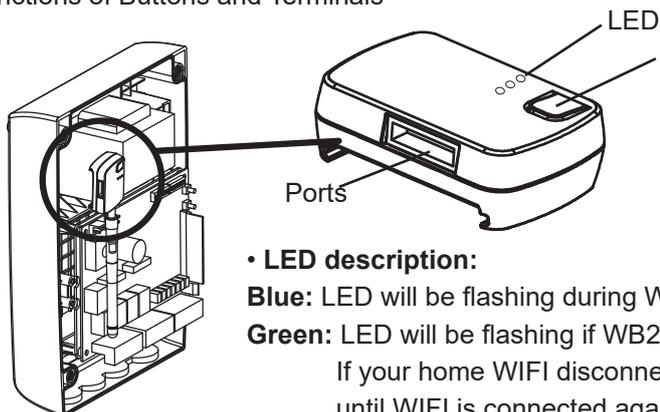
• **LED description:**
Blue: LED will be flashing during WIFI pairing, and be ON when completed.
Green: LED will be flashing if WB2 receives signal from APP.
　　　If your home WIFI disconnects, the green light will continuously flash, and it will be off
　　　until WIFI is connected again.
Red: System failure or wrong PIN.

3. SYSTEM SET UP PROCEDURE
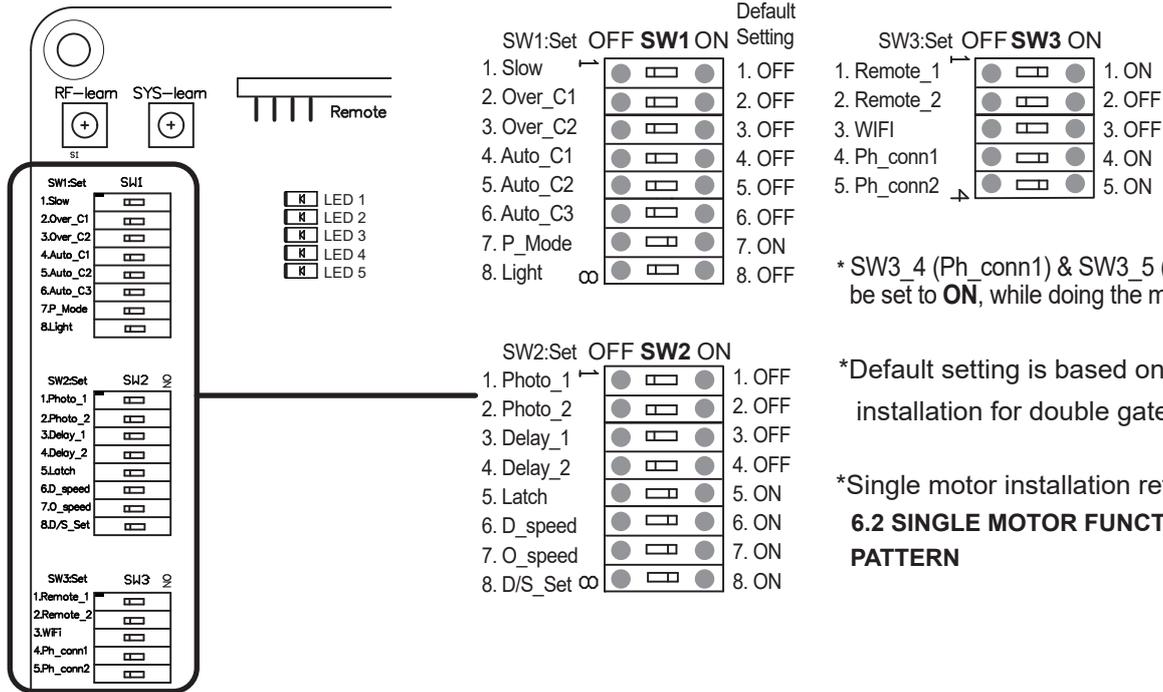
! IMPORTANT: Before the system set up procedure, make sure the DIP Switches are set to correct pattern

SW1:Set OFF **SW1** ON	Default Setting
1. Slow	1. OFF
2. Over_C1	2. OFF
3. Over_C2	3. OFF
4. Auto_C1	4. OFF
5. Auto_C2	5. OFF
6. Auto_C3	6. OFF
7. P_Mode	7. ON
8. Light	8. OFF

SW3:Set OFF **SW3** ON	
1. Remote_1	1. ON
2. Remote_2	2. OFF
3. WIFI	3. OFF
4. Ph_conn1	4. ON
5. Ph_conn2	5. ON

* SW3_4 (Ph_conn1) & SW3_5 (Ph_conn2) <u>MUST</u> be set to **ON**, while doing the motor system learning.

SW2:Set OFF **SW2** ON	
1. Photo_1	1. OFF
2. Photo_2	2. OFF
3. Delay_1	3. OFF
4. Delay_2	4. OFF
5. Latch	5. ON
6. D_speed	6. ON
7. O_speed	7. ON
8. D/S_Set	8. ON

*Default setting is based on double motor installation for double gate

*Single motor installation refer to:
6.2 SINGLE MOTOR FUNCTION SETTING PATTERN

LED 1
LED 2
LED 3
LED 4
LED 5

Follow below *3 STEPS* to complete the basic set up of the control system

*STEP1 :* Memorize the transmitter to the receiver board on the main panel *(procedure 3.1)*

STEP2 : Complete the system learning procedure of the main panel *(procedure 3.2)*

STEP3 : Operate the gate automation system by trigger the memorized transmitter and make sure the gate operates correctly.

3.1 TRANSMITTER MEMORIZING AND ERASING PROCESS

A. TRANSMITTER MEMORIZE

Press "RF-learn" button for 1 seconds, and the Blue LED5 will be on; then press the transmitter (A) button;
The Blue LED5 will blink three times and stay on for 10 seconds then be off. And the remote memorize has completed.

RF-Learn
S1 Blue LED ON
2 Sec

LED5

Blue LED blink Three times

Blue LED OFF
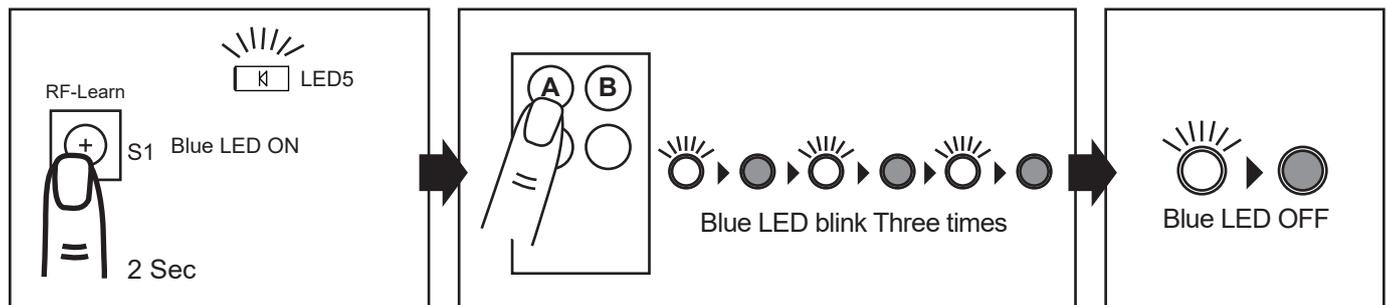
* To memorize more than one transmitter during this process, press the (A) button on the new transmitter within the 10seconds of the above procedure, then all remotes will be memorized at once.

B. ERASING TRANSMITTER MEMORY:

Press and hold the "RF-learn " button for 10 seconds, once the LED5 light turn off on the receiver board, release the "RF-learn" button and memory is cleared

### C. MEMORIZING NEW TRANSMITTER WITHOUT TAKING THE CONTROL BOX COVER OFF :

Press and hold (A) and (B) button at the same time for 7 seconds and release both button, press any un-memorized transmitter with (A) button to memorize. Press the (A) button again on the new remote to make sure the process has completed.

* A flashing light will blink after 7 seconds to indicate if installed

3.2 SYSTEM LEARNING PROCESS

! CAUTION: Before proceeding to system learning, the transmitter memorizing process has to be completed.

Press "SYS-learn" button for 3 seconds, after press button (A) on the remote. System learning will be executed step by step as followings: Wait for the learning process to be completed without any interruption.
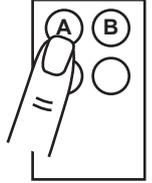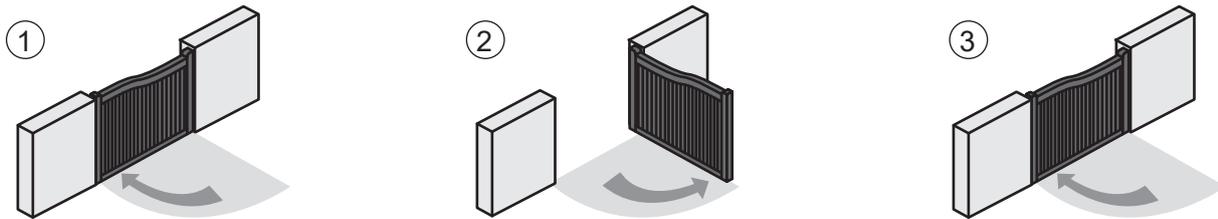
A. Dual Gate:

(1) Slave Gate Close → (2) Master Gate Close → (3) Master Gate Open →
(4) Slave Gate Open → (5) Slave Gate Close → (6) Master Gate Close
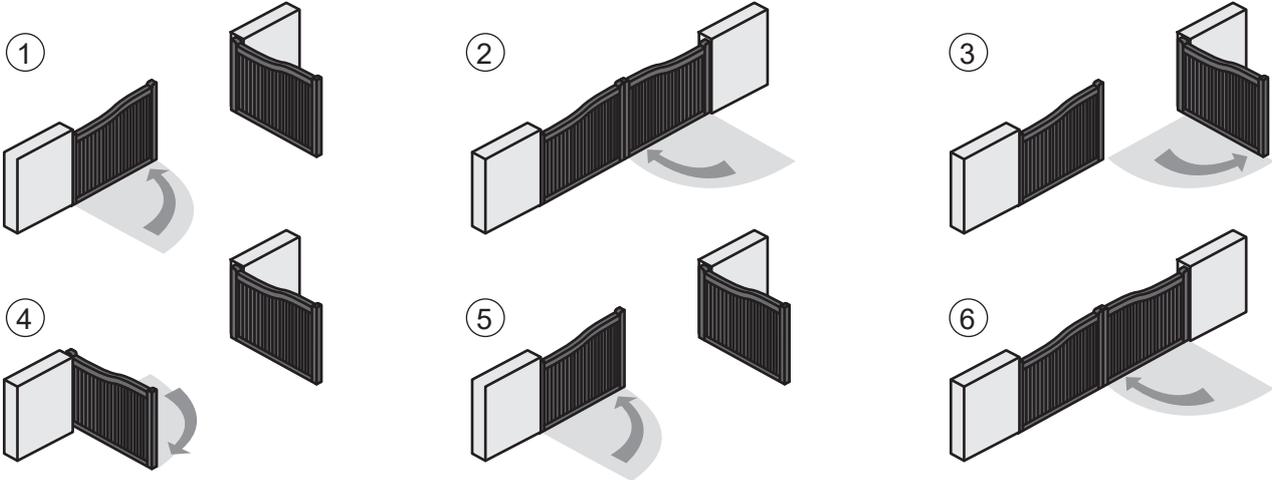
B. Single Mode :

(1) Master Gate Close → (2) Master Gate Open → (3) Master Gate Close

! Aware: If install of Single motor, set both SW2_8 (D/S_Set) & SW1_7 (P_Mode) to OFF, for single gate operation.

3.3 LED INDICATION

LED1 System Learning: LED1 is always ON when the system learning in not completed.
LED1 blinks once when single-gate learning is completed ;
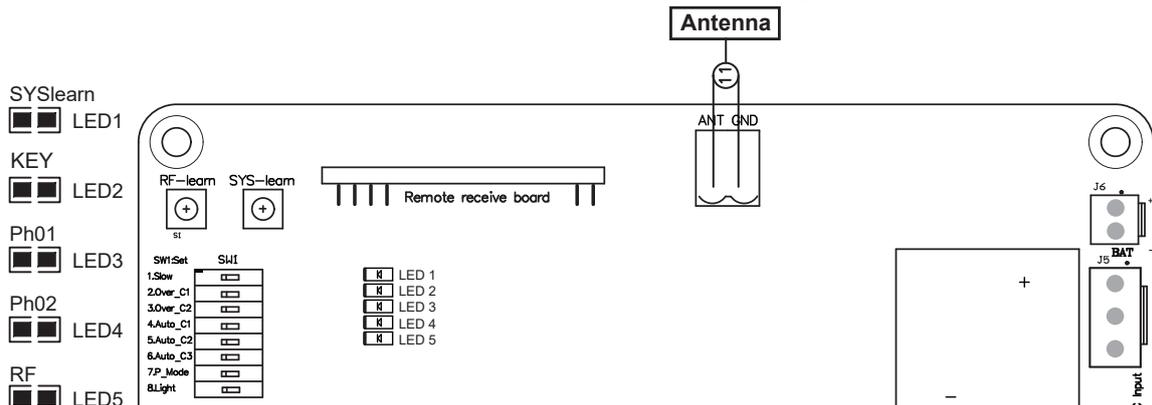LED1 blinks twice when dual-gate learning is completed.

LED2 KEY : If the OpO or D/S terminals is triggered, LED2 will be on.

LED3 Photocells 1 : LED3 will be on when the first pair of the photocell is activated.

LED4 Photocells 2 : LED4 will be on when the second pair of the photocell is activated.

LED5 RF Indicator : Blue LED will be on once the transmitter has been triggered.

4. PARAMETER SETTING

4.1 SW1 DIP SWITCH SETTING
SLOWDOWN ADJUSTMENT (SW1_1: SLOW)

ON: The gear motors do not slow down before the gates completely close or open.

OFF: The gear motors slow down before the gates completely close or open. (Default)

OVER-CURRENT ADJUSTMENT (SW1_2: OVER C1 & SW1_3: OVER C2)

OVER C1	OVER C2	Current (Amp)
Dip Switch 2 OFF	Dip Switch 3 OFF	2A (Default)
Dip Switch 2 OFF	Dip Switch 3 ON	3A
Dip Switch 2 ON	Dip Switch 3 OFF	4A
Dip Switch 2 ON	Dip Switch 3 ON	5A

GATE AUTO-CLOSE ADJUSTMENT
(SW1_4: AUTO C1 & SW1_5: AUTO C2 & SW1_6: AUTO C3)

Auto C1	Auto C2	Auto C3	Effect
Dip switch 4 OFF	Dip Switch 5 OFF	Dip Switch 6 OFF	No auto-close (Default)
Dip switch 4 OFF	Dip Switch 5 OFF	Dip Switch 6 ON	3 sec.
Dip switch 4 OFF	Dip Switch 5 ON	Dip Switch 6 OFF	10 sec.
Dip switch 4 OFF	Dip Switch 5 ON	Dip Switch 6 ON	20 sec.
Dip switch 4 ON	Dip Switch 5 OFF	Dip Switch 6 OFF	40 sec.
Dip switch 4 ON	Dip Switch 5 OFF	Dip Switch 6 ON	60 sec.
Dip switch 4 ON	Dip Switch 5 ON	Dip Switch 6 OFF	120 sec.
Dip switch 4 ON	Dip Switch 5 ON	Dip Switch 6 ON	300 sec.

NOTE

To **TURN OFF** the auto-closing feature:
Press button (B) and (D) simultaneously for around 3 seconds, the auto-closing feature will be turned off.

To **TURN ON** the auto closing feature:
Press button (B) and (C) simultaneously for around 3 seconds, the auto-closing feature will be turned on.

PARTIAL OPENING ADJUSTMENT (SW1_7: P MODE)

ON: Partial Opening setting opens the gate for 45 degree (Default)

OFF: Partial Opening is disabled.

FLASHING LIGHT ADJUSTMENT (SW1_8: LIGHT)

ON: The flashing light blinks for 3 seconds before the gate moves, and blinks simultaneously during the movement.

OFF: The flashing light blinks and the gate moves simultaneously. (Default)

4.2 SW2 DIP SWITCH SETTING
PHOTOCELL ADJUSTMENT (SW2_1: PHOTO1 & SW2_2: PHOTO2)

1. SW2_1, SW2_2: OFF, OFF

Position of Gate	When safety devices are activated	
Type of Safety Device	Safety Device2 : Photocell-OPEN	Safety Device1 : Photocell-CLOSE
FULLY CLOSED	Open not allowed	No effect
FULLY OPENED	No effect	Reload automatic closing time
STOP DURING MOVING	Open not allowed	Reload automatic closing time
CLOSING	No effect (WARNING)	Open
OPENING	Close	No effect

2. SW2_1, SW2_2: ON, OFF

Position of Gate	When safety devices are activated	
Type of Safety Device	Safety Device2 : Safety Edge	Safety Device1 : Photocell-CLOSE
FULLY CLOSED	Open not allowed	No effect
FULLY OPENED	Reload automatic closing time	
STOP DURING MOVING	Locks	Reload automatic closing time
CLOSING	Reverse to open for 2 seconds	Open
OPENING	Reverse to clsoe for 2 seconds	No effect

3. SW2_1, SW2_2: OFF, ON

Position of Gate	When safety devices are activated	
Type of Safety Device	Safety Device2 : Opening Device	Safety Device1 : Photocell-CLOSE
FULLY CLOSED	Open	No effect
FULLY OPENED	Reload automatic closing time	
STOP DURING MOVING	Open	Reload automatic closing time
CLOSING	Open	Open
OPENING	No effect	No effect

4. SW2_1, SW2_2: ON, ON

Position of Gate	When safety devices are activated	
Type of Safety Device	Safety Device2 : Photocell-OPEN	Safety Device1 : Photocell-CLOSE
FULLY CLOSED	Open not allowed	No effect
FULLY OPENED	No effect	The gate is forced to be closed in 2 sec
STOP DURING MOVING	Locks	Close not allowed
CLOSING	No effect (WARNING)	Open
OPENING	Close	No effect

NOTE
The auto-closing feature is determined by the SW1_4/5/6 setup.

CLOSE DELAY OF DUAL GATE OPERATION ADJUSTMENT (SW2_3: DELAY1 & SW2_4: DELAY2)

Close/Open delay of two leaves of gate can be adjusted from 2 to 5 seconds

DIP switch		Open Delay	Close Delay
Dip3. Delay 1	Dip4. Delay 2		
OFF	OFF	0 sec	0 sec (Default)
ON	OFF	0 sec	3 sec
OFF	ON	2 sec	4 sec
ON	ON	2 sec	5 sec

ELECTRIC LATCH ADJUSTMENT (SW2_5: LATCH)

ON: The master leaf will move toward closing direction for 0.25 second once command the remote, then unlock the latch to open the gate. (Default)

OFF: Once command the remote, the the latch will be unlocked to open the gate immediately

DECELARATION SPEED ADJUSTMENT OF THE GEAR MOTORS (SW2_6: D_SPEED)

ON: The speed is 70% output of the full speed. (Default)

OFF: The speed is 50% output of the full speed.

OPERATION SPEED ADJUSTMENT OF THE GEAR MOTORS (SW2_7: O_SPEED)

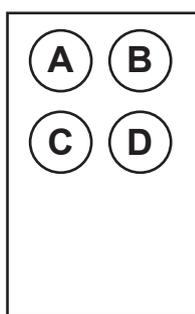ON: The speed is 100% output of the full speed. (Default)

OFF: The speed is 80% output of the full speed.

SINGLE AND DUAL GATE OPERATION ADJUSTMENT (SW2_8: D/S_SET)

ON: Dual Gates operation in system learning and normal operation. (Default)

OFF: Single Gate operation in system learning and normal operation.

ADVANCED OPERATION OF THE TRANSMITTER (SW3_1: REMOTE1 & SW3_2: REMOTE2)

A B
C D

See the following description:

SW3:Set OFF **SW3** ON
1. Remote_1
2. Remote_2
3. WIFI
4. Ph_conn1
5. Ph_conn2

Situation 1: SW3_1: ON ; SW3_2: OFF (Default)
Transmitter button A for dual gate operation
Transmitter button B for single gate operation

Situation 2: SW3_1: ON ; SW3_2: ON
Transmitter button A for single gate operation
Transmitter button B for dual gate operation

Situation 3: SW3_1: OFF ; SW3_2: OFF
Transmitter button C for dual gate operation
Transmitter button D for single gate operation

Situation 4: SW3_1: OFF ; SW3_2: ON
Transmitter button C for single gate operation
Transmitter button D for dual gate operation

4.3.2 CONTROL FUNTION BY Wi-Fi DEVICE or DIP SWITCH (SW3_3: WIFI)

ON: The motor function is set up by Wi-Fi device, all parameter settings will be according to the APP setup.

OFF: The motor function is set up by dip switch and Wi-Fi device is not allowed to control the motor (Default)

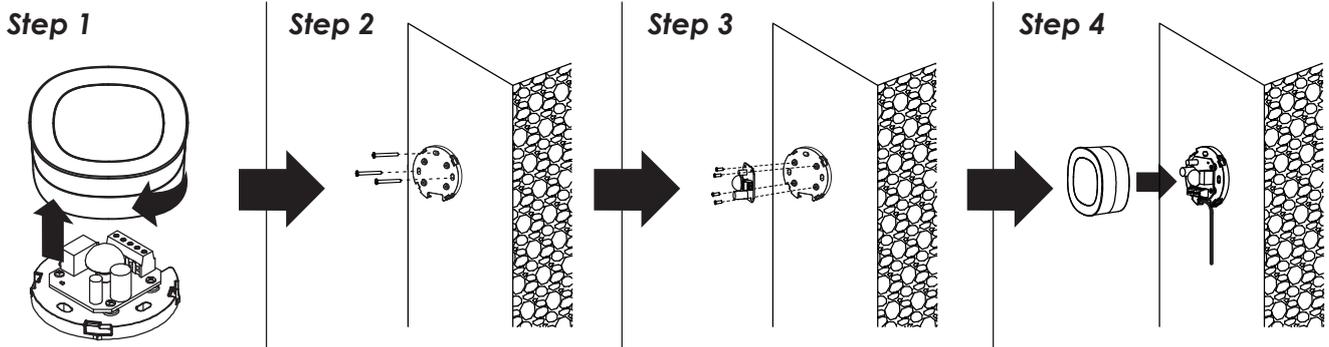## 4.4 WIRE CONNECTION OF H2 PHOTOCELL (SAFETY BEAM)

Figure 5(1)

Step 1 → **Step 2** → **Step 3** → **Step 4**

Figure 5(2)

RX   TX

Power LED
Indicator

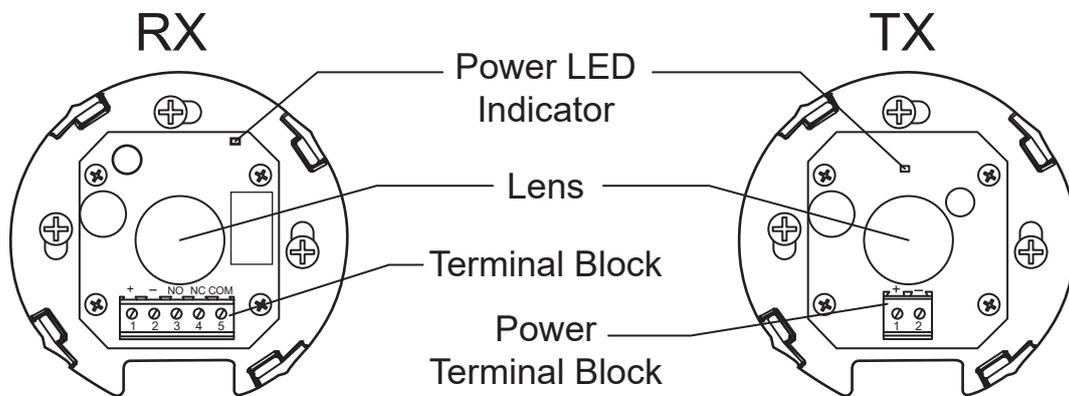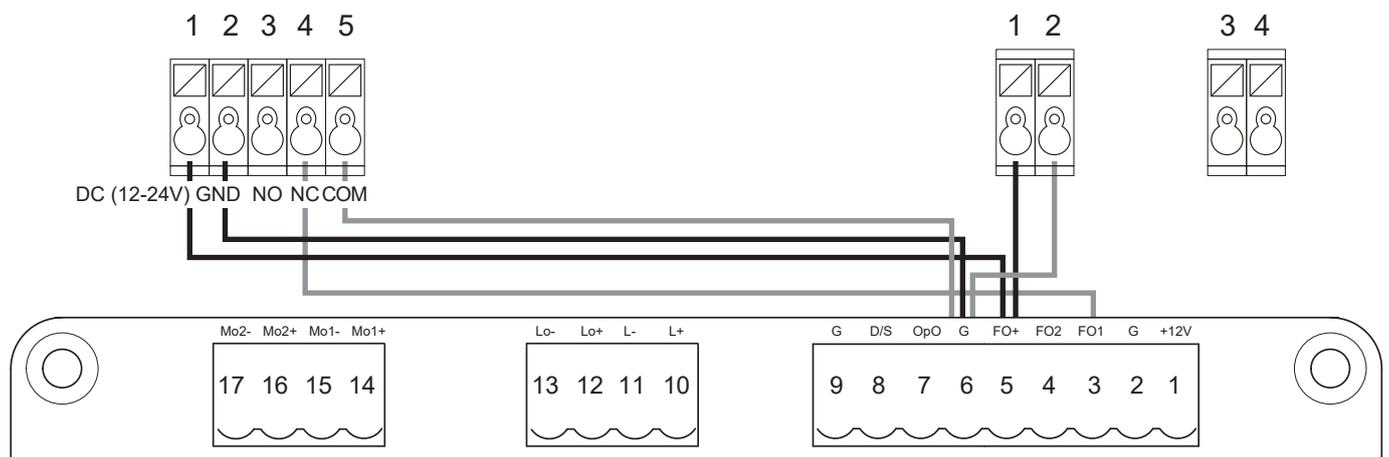Lens

Terminal Block

Power
Terminal Block

Figure 5(3)

INSTALLATION:

1. Open the cover and connect wires.

   TX: Connect the terminals +, - on the transmitter with the terminals FO+, G on PCB.

   RX: Connect the terminals +, -, NC, COM on the receiver with the terminals FO+, G, FO1, G on PCB.

2. Mount the receiver and transmitter on the proper position.

3. Ensure there are no obstacles between receiver and transmitter. For optional efficiency, the receiver and transmitter should be properly aligned.

4. Power-up the photocells and make sure LED light on receiver and

5. Transmitter are ON.

1	2	3	4	5
DC (12-24V)	GND	NO	NC	COM

1	2

3	4

Mo2-	Mo2+	Mo1-	Mo1+		Lo-	Lo+	L-	L+		G	D/S	OpO	G	FO+	FO2	FO1	G	+12V
17	16	15	14		13	12	11	10		9	8	7	6	5	4	3	2	1

5. TROUBLE SHOOTING

Overheated Back-up Batteries	Check the wiring connection of the batteries.
The gate doesn't move when pressing the button of the transmitter	1. Check if LED2 is "ON" once press the transmitter. 2. Check if the voltage of the batteries is above 22V. 3. Check if LED1 is "ON" and blinks accordingly. 4. Make sure all the wiring connections are firmly connected to the terminals on the PCB. 5. Make sure the fuse is workable. on the panel and power socket.
The gate only moves a little distance when pressing the button of the transmitter.	Make sure the wiring connection of the hall sensor is firm. * when using the CB20 control panel.
The transmitting distance is too short	Make sure the connecting terminals of the Antenna is firm. Check the battery on the trasmitter.
The gear motors run very slowly	Check the dip switch setting of the speed adjustment.
The Flashing light does not work	Check if the wiring connection of the flashing light is correct.
The leaves shall be closed instead of opening	Change the polarity connection of the positive (+) with the negative (-) of the gear motors.
The leaves suddenly stop during moving The leaves does not move or only move toward one direction	1. Check if the gate can be moved freely and no obstacles in between. 2. Make sure the wiring connection of the gear motors is firm. 3. Make sure the fuse is workable. 4. Make sure the safety beam are operating properly if installed. IF necessary release the motor and make sure the gate can move freely. The software has been built with auto-adjustment feature, press the remote button A to operate the gate open and close few times until the sequence is correct.
The master gate closes to the end first and the slave gate stops, which the opening or closing sequence is not being operated properly	Cut off the AC input power and the output of the batteries. Releases the master gate and slave gate manually, and moving both gates freely to the close position, then power the whole unit up by connecting the AC and battery terminals. IF necessary release the motor and make sure the gate can move freely. The software has been built with auto-adjustment feature, press the remote button A to operate the gate open and close few times until the sequence is correct.
The gear motors does not run and the relay is noisy when operating the gate opening and closing	Check if the fuse is burned.

* IF any of the above trouble shooting procedure is not solving your problem, please contact us with no hesitation
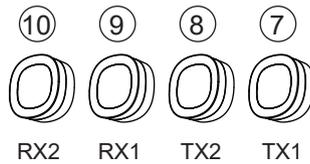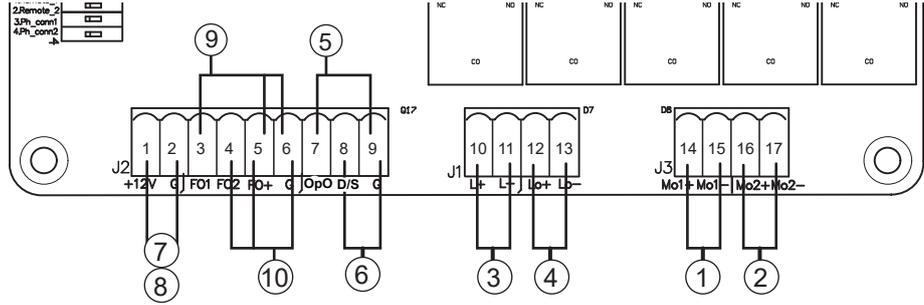
6. FUNCTION SETTING PATTERNS WITH WIRE CONNECTION

6.1 DUAL MOTOR FUNCTION SETTING PATTERN WITH ADDITIONAL ACCESSORIES

Default Setting

SW1:Set OFF **SW1** ON
1. Slow — 1. OFF
2. Over_C1 — 2. OFF
3. Over_C2 — 3. OFF
4. Auto_C1 — 4. OFF
5. Auto_C2 — 5. OFF
6. Auto_C3 — 6. OFF
7. P_Mode — 7. ON
8. Light — 8. OFF

SW2:Set OFF **SW2** ON
1. Photo_1 — 1. OFF
2. Photo_2 — 2. OFF
3. Delay_1 — 3. OFF
4. Delay_2 — 4. OFF
5. Latch — 5. ON
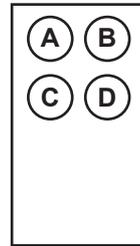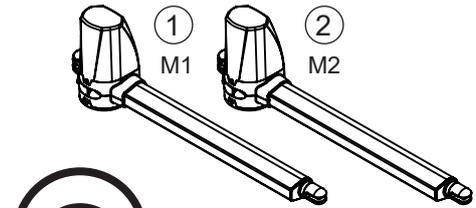6. D_speed — 6. ON
7. O_speed — 7. ON
8. D/S_Set — 8. ON

SW3:Set OFF **SW3** ON
1. Remote_1 — 1. ON
2. Remote_2 — 2. OFF
3. WiFi — 3. OFF
4. Ph_conn1 — 4. ON
5. Ph_conn2 — 5. ON

RX2   RX1   TX2   TX1

IF FO1 connected with photo beam
> 3. Ph_conn1 must turn to OFF

IF FO2 connected photo beam
> 3. Ph_conn1 must turn to OFF

SW3:Set OFF **SW3** ON
1. Remote_1 — 1. ON
2. Remote_2 — 2. OFF
3. WiFi — 3. OFF
4. Ph_conn1 — 4. ON
5. Ph_conn2 — 5. ON

J2: 1 2 3 4 5 6 7 8 9 — +12V G FO1 FO2 FO+ G OpO D/S G
J1: 10 11 12 13 — L+ L+ Lo+ Lo−
J3: 14 15 16 17 — Mo1+ Mo1− Mo2+ Mo2−

M1   M2

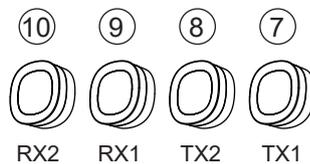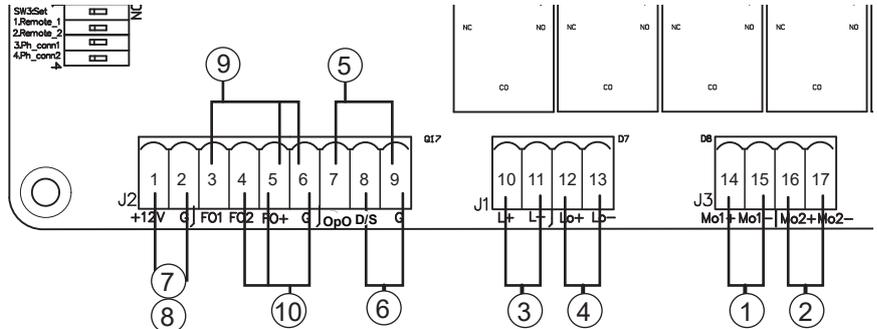A: Dual gate
B: Single gate/partial open
C/D non active

6.2 SINGLE MOTOR FUNCTION SETTING PATTERN WITH ADDITIONAL ACCESSORIES

Default Setting

SW1:Set OFF **SW1** ON
1. Slow — 1. OFF
2. Over_C1 — 2. ON
3. Over_C2 — 3. OFF
4. Auto_C1 — 4. OFF
5. Auto_C2 — 5. OFF
6. Auto_C3 — 6. OFF
7. P_Mode — 7. OFF
8. Light — 8. OFF

SW2:Set OFF **SW2** ON
1. Photo_1 — 1. OFF
2. Photo_2 — 2. OFF
3. Delay_1 — 3. OFF
4. Delay_2 — 4. OFF
5. Latch — 5. ON
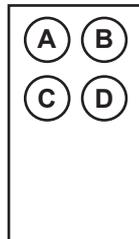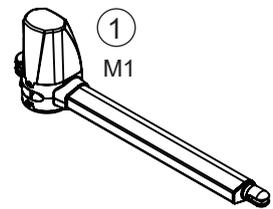6. D_speed — 6. ON
7. O_speed — 7. ON
8. D/S_Set — 8. OFF

SW3:Set OFF **SW3** ON
1. Remote_1 — 1. ON
2. Remote_2 — 2. ON
3. WiFi — 3. OFF
4. Ph_conn1 — 4. ON
5. Ph_conn2 — 5. ON

SW3:Set
1.Remote_1
2.Remote_2
3.Ph_conn1
4.Ph_conn2

RX2   RX1   TX2   TX1

IF FO1 connected with photo beam
> 3. Ph_conn1 must turn to OFF

IF FO2 connected photo beam
> 3. Ph_conn1 must turn to OFF

SW3:Set OFF **SW3** ON
1. Remote_1 — 1. ON
2. Remote_2 — 2. ON
3. WiFi — 3. OFF
4. Ph_conn1 — 4. ON
5. Ph_conn2 — 5. ON

J2: 1 2 3 4 5 6 7 8 9 — +12V G FO1 FO2 FO+ G OpO D/S G
J1: 10 11 12 13 — L+ L+ Lo+ Lo−
J3: 14 15 16 17 — Mo1+ Mo1− Mo2+ Mo2−

M1

A: Single gate
B/C/D non active