

# Q71A 230V Control Board

## Swing Gate – Double Leaf

### Instruction Guide



#### TECHNICAL FEATURES

Control Panel Dimensions	-	135 x 140 x 60mm
Control Panel Weight	-	1Kg
On-Board Transformer	-	30VA 230/0 – 12 /24Vac
Flashing light Power Supply	-	24Vdc, MAX 20W
Accessory Output Power Supply	-	12Vdc – 24Vdc, MAX 3W
Obstacle Detection Level	-	Automatic
Programming Procedure	-	Streamline
Deceleration Time	-	Adjustable
Pause Time	-	Adjustable



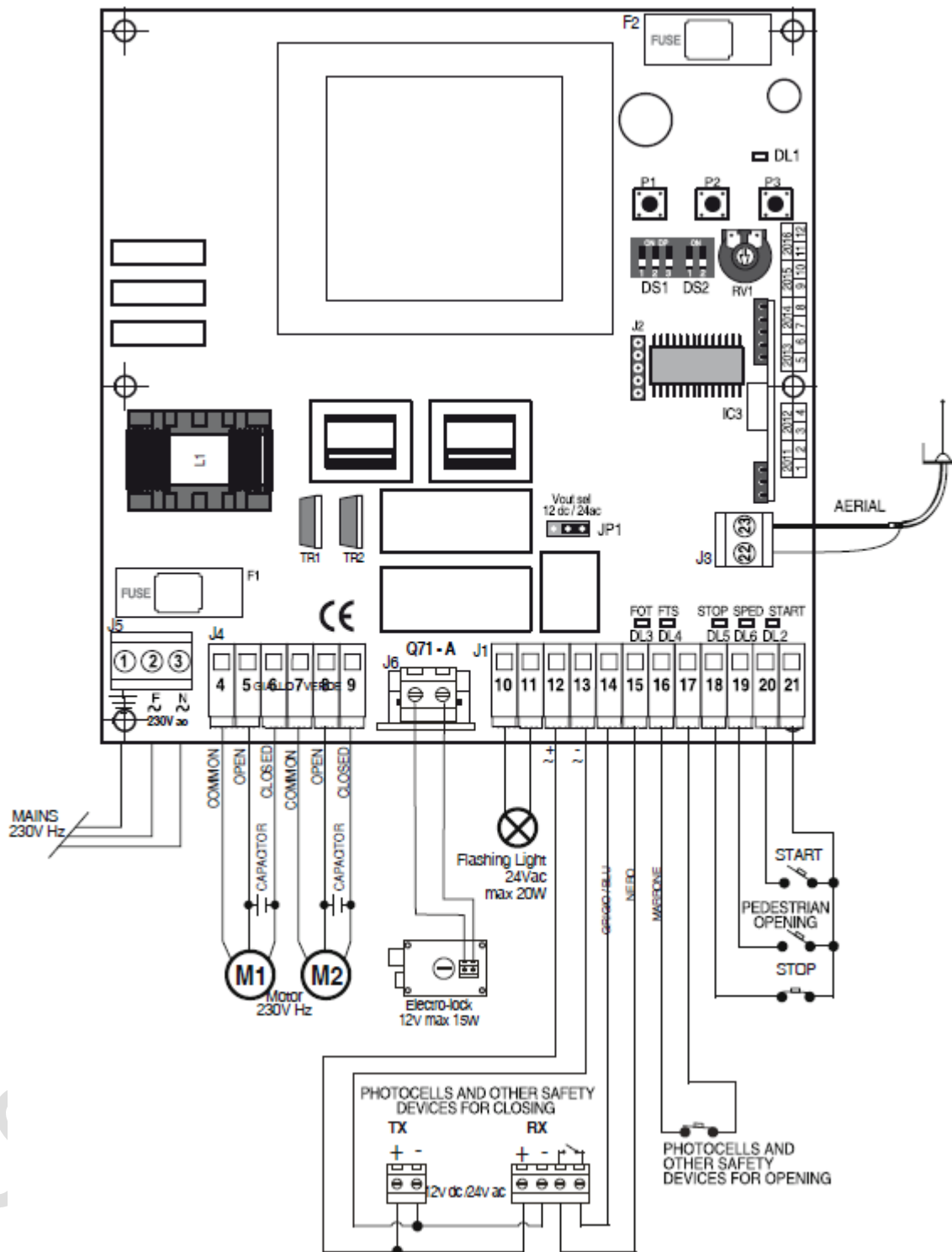
## Contents

Q71A control board layout .....	3
Pre-installation checks .....	4
Linking Essential Terminals .....	5
Connecting the motors to the control board.....	6
Connecting the capacitors to the control board .....	7
Photocells .....	8
Photocell positioning.....	8
Photocell Wiring .....	9
To Use in Closing Cycle .....	10
Connecting power to the control board.....	12
Programming the remote control / key-fob .....	13
Saving a new remote controls / key-fobs to the control board.....	13
Deleting existing remote controls / key-fobs from the control board .....	13
Changing the code the key-fob transmits.....	14
Remote Control Receiver .....	15
Extended Aerial – (optional accessory) .....	15
Fitting the Extended Aerial.....	15
Selecting the Operating Mode .....	16
Programming the gates open & closing cycles.....	17
Programming – Double Gates (for two leafs) .....	17
Setting the Pause Time .....	18
Obstacle Detection .....	18
Appendix: A .....	21
Q71A connection map – terminals 1 to 21 .....	21
Appendix: D .....	22
Q71A control board – FAQ'S .....	22
Comments & Feedback.....	26

## Q71A control board layout

## Map of Q71A

### Q71A legend



## Pre-installation checks

Thank you for choosing Gate Motors MyGate product for your gate automation needs. This instruction booklet accompanies every swing gate automation model that uses the Q71A control board.

This control board tells the motors what to do and how to behave. The control board has memory chips onboard which store the key-fob transmitting codes and the parameters the motors will be working to. These memory chips contain a bare-bones program which literally tells the motors how to walk and talk, but of course we need to tell the motor how far they are walking and who they will be talking to at the end. This guide will take you through every step of the installation, one step at a time to ensure that the control board is wired, configured and operating at full capacity to promote safe and durable working life of your gate automation system.

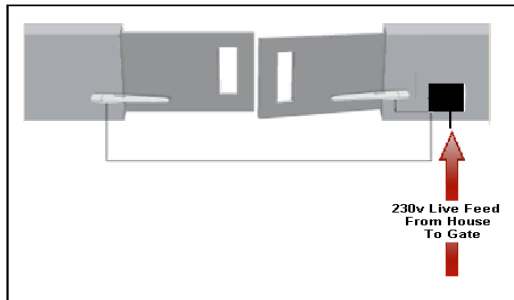
With all installations of electrical equipment, your approach should be methodical and concise. Please do follow this guide correctly, whilst observing personal health and safety for your own protection and for those around you.



**DO NOT** use live power to the control board during wiring of the equipment to its terminals  
**DO NOT** touch the control board components or the printed circuit board tracking with your fingertips  
**DO NOT** allow moisture / rain / liquid substances to come into contact with the control board in any manner

This instruction guide is designed to be as simple as possible, including **jargon free guidance**, to allow you to follow the complete installation from start to finish at your own pace and leisure to promote perfect smooth operation of your MyGate gate automation system.

# So Before We Get Started.....



- Ensure sure you have access to 230v power feed from your property to the control panels junction box. Cable used must be 3 core armoured and should be placed inside a conduit and buried underground to reduce risk of trip and accidental cutting hazard.



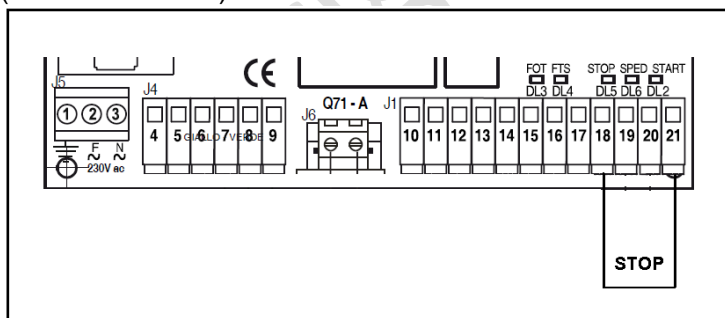
- The junction box and control board has been located near the gates and is mounted and attached to your pillar securely. This reduces the need for extension cabling to the motors from the control panel and forms a means of ease of access to the gate automation control board should the need arise.

Once the control panel junction box has been fixed into location, and you have power accessible to the control board, we next look at getting your motors physically operational and ensure they are communicating efficiently with the control board.

## Linking Essential Terminals

In order to activate the gate control board, an essential “link” must be fitted. A “link” in this instance, is a piece of wire that connects terminals together so that a voltage charge can be distributed from one terminal to another in order to complete a circuit. Links are placed between terminals on occasions to complete a circuit to “fool” the control board some equipment is there when it is not.

If you do not have an EMERGENCY STOP button fitted, a link must be placed between terminals 18 & 21 (illustrated below)



The EMERGENCY STOP function is an **ESSENTIAL SAFETY FEATURE** and is a continuous circuit. The quickest way to STOP the gates if ever an accident was to occur is to cut all power to the motors – like tripping a fuse. Of course you may not be in a position to “disconnect the power” to the control board and this is never recommended.

For Emergency Stop button - Gate Motors push button switch can be fitted into terminals 18 & 21 (**optional accessory**). As soon as the push button is pressed, this breaks the circuit and the control board sees the broken circuit and **IMMEDIATELY STOPS** the motors during their operation.

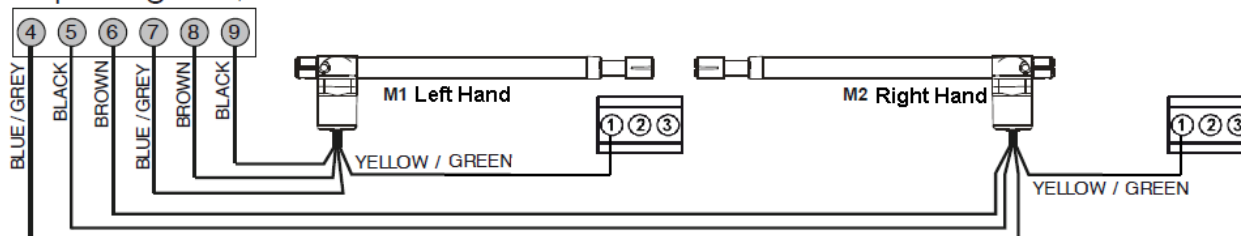
If you **do not** have an EMERGENCY STOP button and you do not place a link between these two terminals, the control board “thinks” you have pressed a STOP button and, of course, will halt all operations – regardless to any command you may give it. Be sure to tighten the terminals screws to ensure good contact is made.

Next stage of the installation is to introduce the motor(s) to the control board. From following your 'Motor Installation Guide' each motor is wired the respective terminals as required for your particular model of automation. If you do not have this guide to hand, below is a re-cap of connections to the control board based on the model and which side of the gate is to open first (LEFT HAND / RIGHT HAND)

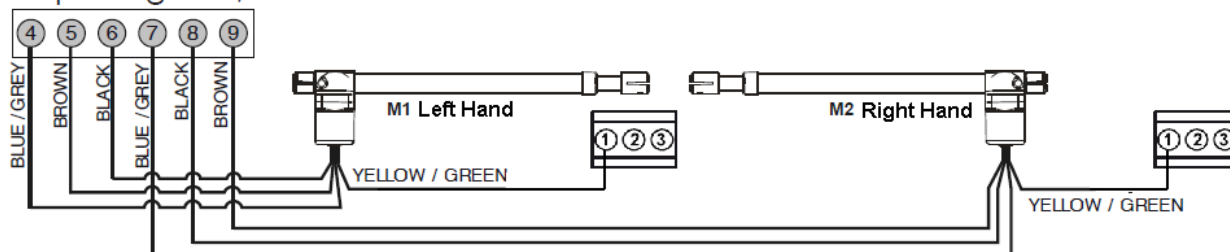
## Connecting the motors to the control board

### MyAster

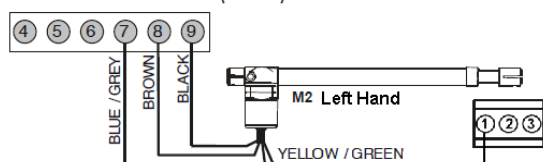
#### First opening leaf, LEFT



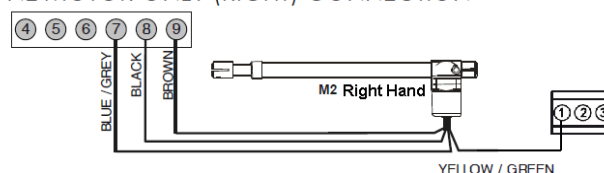
#### First opening leaf, RIGHT



#### ONE MOTOR ONLY (LEFT) CONNECTION

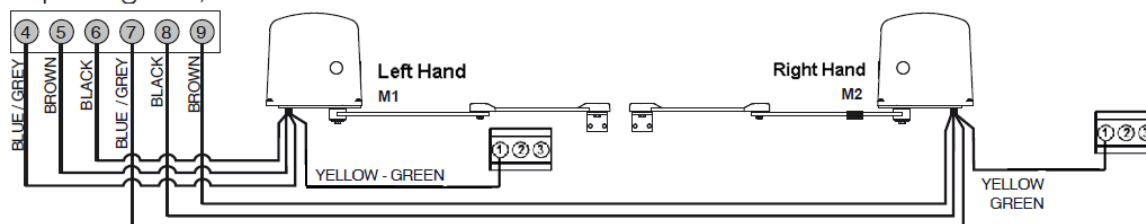


#### ONE MOTOR ONLY (RIGHT) CONNECTION

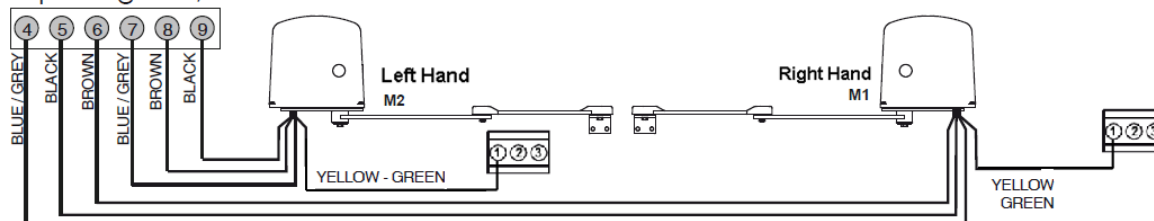


### MyHook

#### First opening leaf, RIGHT

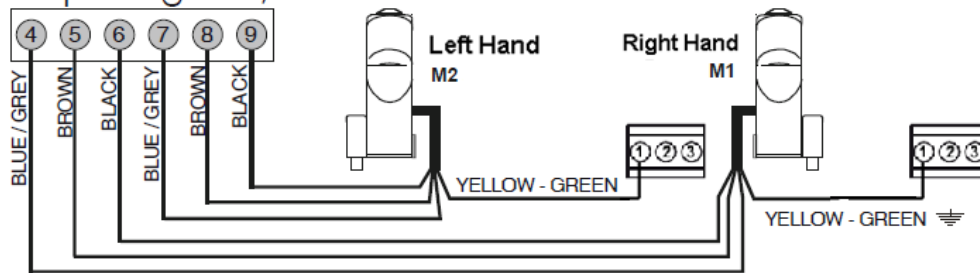


#### First opening leaf, LEFT

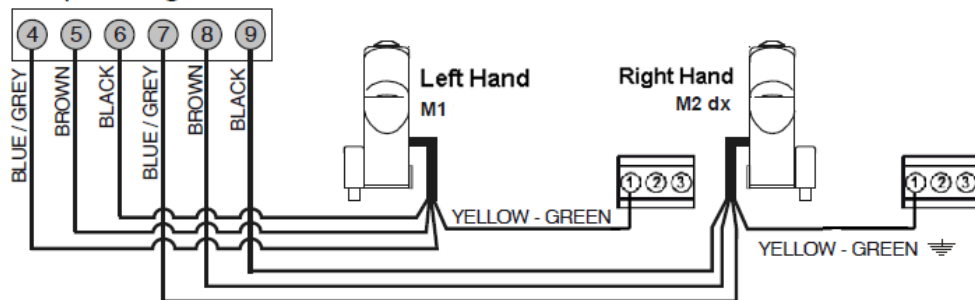


## MyFlow

### First opening leaf, LEFT



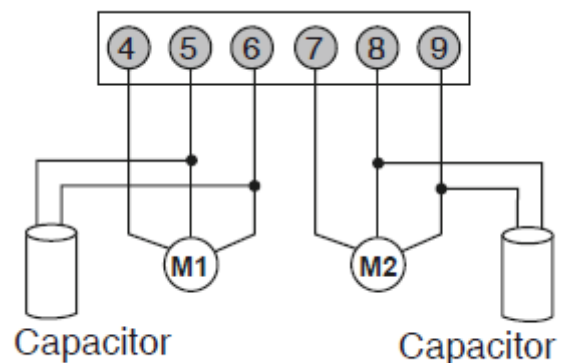
### First opening leaf, RIGHT



## Connecting the capacitors to the control board

It is essential to wire the capacitors for the motors to the control board. Typically these are wired into the same terminals as the Brown (opening) and the Black (closing) wires. In effect, both will be sharing the same terminal space. Without the capacitor, the motors will struggle to start and may “BUZZ” without movement to the mechanical arm.

Connection illustrated right:



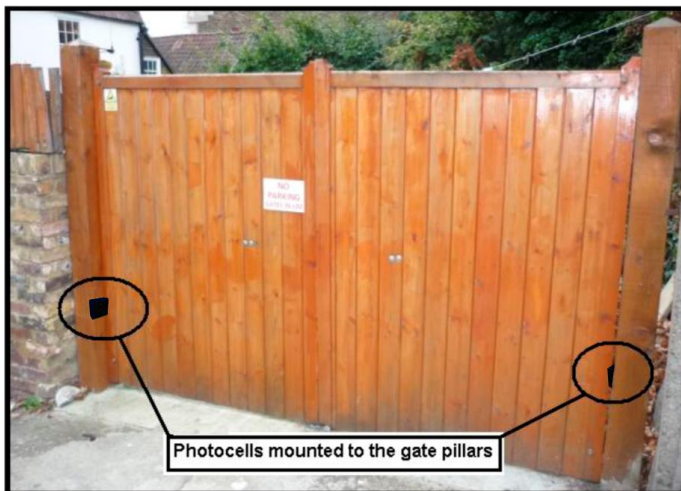
Having attached the motor(s), we can now introduce the photocells to the control board.



## Photocells

The MyGate photocells are essential for safe use of your gate automation system. These are units that are comprised of a transmitter and receiver. The photocell transmitter projects an Infrared confined beam in a straight line and is intercepted by the photocell receiver. The receiver is not a mirrored unit as it absorbs the Infrared beam. The transmitter and receiver unit must be placed directly opposite each other to have a clear line of sight and be fixed to the inside of your pillar, just beyond your gate. The photocell then acts as an “invisible trip-wire” across your drive way, permanently watching for any kind of obstruction. As soon as the Infrared beam is broken, the “trip-wire” is activated and the motors will immediately stop and will reverse in their motion. Typically the photocells are used for the **closing phase** of the gates automated cycle. “Closing Phase” means that as gates are closing / returning to their original closed position, if your car stalls in-between the gates or an object / pedestrian moves through the closing gates – the gates will immediately stop and reverse to the full open position at great speed. There is no control over the speed at which the motors will run. At this stage the control board’s main objective is to get the gates back open as fast as possible. The gates will continue to be held open until the obstruction has been cleared (the Infrared beam has been restored) and the control board will continue with its original closing cycle and your gates will return to their fully closed position.

### Photocell positioning



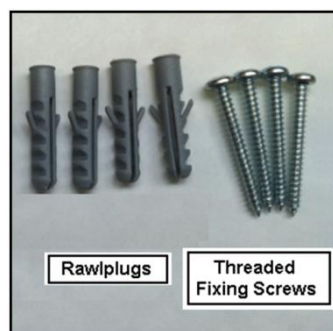
As the transmitter and receiver unit must be directly opposite each other, typically these units are fixed to the inside of your pillar, just beyond your gate (illustrated left). If pillars are not wide enough to support the fixing of the photocells, do consider using a Gate Motors photocell column with rain hood (optional accessory – pictured below):



The photocell pack comes complete with fixings. Each fixing pack contains (illustrated below right):

The photocell pack comes complete with fixings. Each fixing pack contains (illustrated below below):

- 4 x Threaded screws
- 4 x Rawlplugs
- 1 x Photocell Transmitter
- 1 x Photocell Receiver







Remove the covers of the photocells by removing the fascia fixing screw (circled left)

## Photocell Wiring

**IMPORTANT SAFETY NOTICE: Please disconnect power to the control board before proceeding. This reduces the risk of personal shock and any voltage feedback to the control board.**

There are two functions the photocells can perform depending on how they are wired to the control board.

### Option 1 – Closing Phase (photocells placed on the outside of the gates)



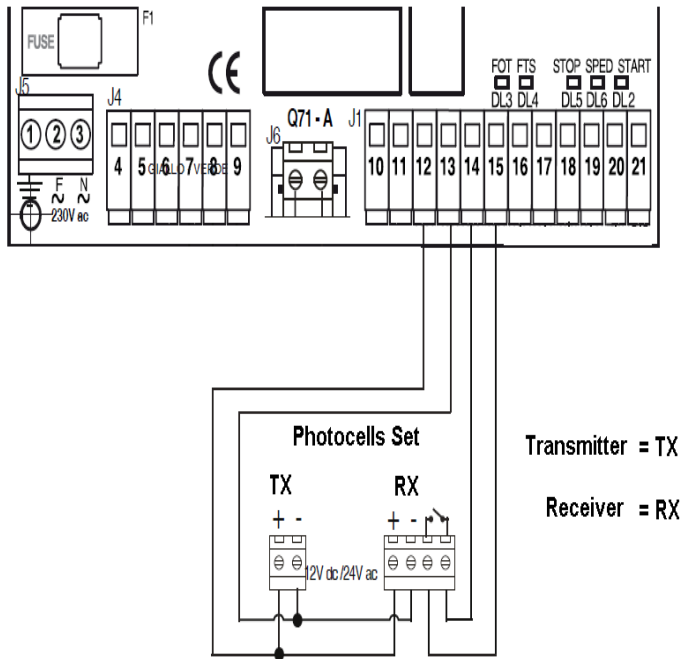
Closing Phase means that as gates are closing / returning to their original closed position, if your car stalls in-between the gates or an object / pedestrian moves through the closing gates and breaks the Infrared beam – the gates will immediately stop and reverse to the full open position at great speed.

### Option 2 – Opening Phase (photocells installed on the inside of the gates)



Opening Phase means that as gates are opening, if your car stalls in-between the gates or an object / pedestrian moves through the closing gates and breaks the Infrared beam – the gates will immediately stop and reverse to the full open position at great speed.

## To Use in Closing Cycle



### To connect power to Transmitter Unit

Use 1 core wire to connect AC+ on photocell Transmitter Unit (TX) to Terminal 12.

Use 1 core wire to connect AC- on photocell Transmitter Unit (TX) to Terminal 13

### To connect power to Receiver Unit

Use 1 core wire to connect AC+ on photocell Receiver Unit (RX) to Terminal 12

Use 1 core wire to connect AC- on photocell Receiver Unit (RX) to Terminal 13

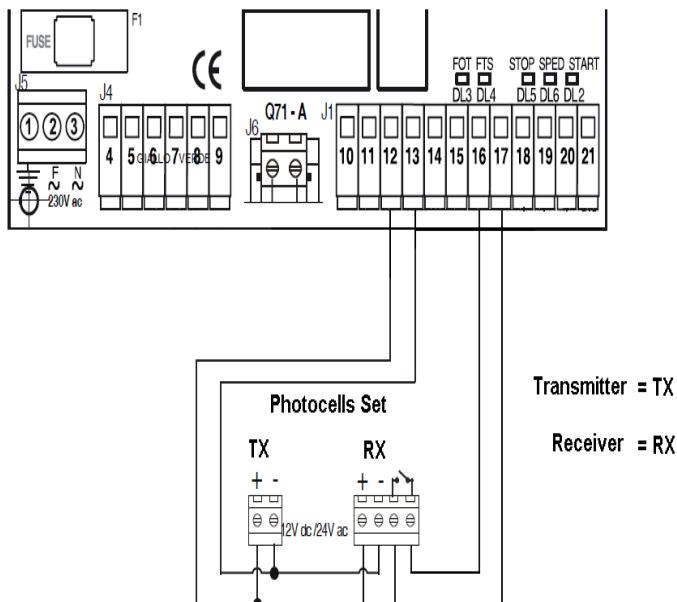
### To connect the relay function to Control Board

Use 1 core wire to connect 3<sup>rd</sup> terminal (looking from left to right) on photocell Receiver Unit (RX) to Terminal 15

Use 1 core wire to connect 4th terminal (looking from left to right) on photocell Receiver Unit (RX) to Terminal 14

**IMPORTANT: Please place a link between terminals 16 and 17**

## To Use in Opening Cycle



### To connect power to Transmitter Unit

Use 1 core wire to connect AC+ on photocell Transmitter Unit (TX) to Terminal 12

Use 1 core wire to connect AC- on photocell Transmitter Unit (TX) to Terminal 13

### To connect power to Receiver Unit

Use 1 core wire to connect AC+ on photocell Receiver Unit (RX) to Terminal 12

Use 1 core wire to connect AC- on photocell Receiver Unit (RX) to Terminal 13

### To connect the relay function to Control Board

Use 1 core wire to connect 3<sup>rd</sup> terminal (looking from left to right) on photocell Receiver Unit (RX) to Terminal 17

Use 1 core wire to connect 4th terminal (looking from left to right) on photocell Receiver Unit (RX) to Terminal 16

**IMPORTANT: Please place a link between terminals 14 and 15**

Ensure all wiring is touching the metal contact within each individual terminal block on the control board – you can use a Choc Block (terminal strip) as an expansion. The terminals on the control board are narrow and may have multiple cables in them depending on what other accessories you may be using in conjunction with your gate automation kit. Please ensure all wires are touching the metal contact strip within the terminal. This ensures that power can flow through the cable. If you are using a terminal strip, make sure the cable used to connect the terminal strip to the terminal block is sufficient to carry the current.

### Photocell Maintenance - IMPORTANT

Photocells are one piece of equipment supplied with the automation kit that **does** require regular maintenance. As they sit on the pillar and quietly operate, they can be forgotten. **Faults** can occur if insects, webs, dirt or grease is present in and around the sensors or the case lenses (inside and out). This scatters the Infrared beam and the control board will interpret this as a warning that an obstacle is present and the motors will fail to respond to your command – this is a safety feature. The motors will not operate if they believe there is an obstacle that may potentially cause damage.

The photocells are supplied with cable grommets in an attempt to keep the bugs on the outside. Check that the cases are clean and obstacle free and have the grommets in place. You may find using a silicone sealant may help to keep the bugs at bay.

At this stage of the installation:

- We have our emergency stop link in place
- We have wired the motor(s) to the control board
- We have wired the photocells to the control board



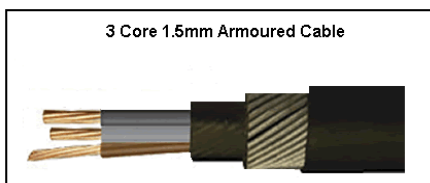
We can now introduce power to the control board so we can enable the programming of the key-fobs and the programming of the gate automation opening and closing settings.

## Connecting power to the control board

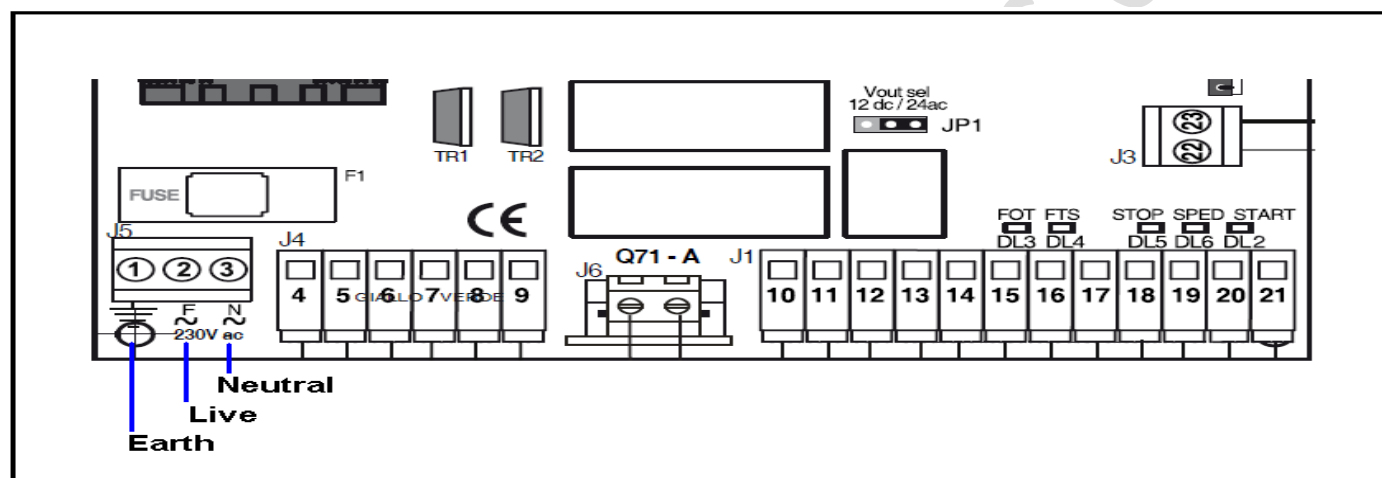
Connecting power to the control board using 1.5mm - 3 core armoured cable 230v.

Cable identification should be:

Colour	Identification
Brown	Live
Blue	Neutral
Yellow / Green	Earth



Insert the Live (brown) wire to terminal 2 and the Neutral (blue) to terminal 3 and tighten the terminal screws to ensure good safe contact is made. Please connect your Earth (yellow/green) wire to terminal 1.



Please switch the power supply on. After a few seconds you will see three LED's lit:

- DL3 (above terminal 15)
- DL4 (above terminal 16)
- DL5 (above terminal 18)

DL3 Lit = Photocells status OK, wiring is complete and control board can see the photocells

DL4 Lit = 2nd set of photocells status is OK, wiring is complete and control board can see the photocells. If second set of additional photocells are fitted (optional).

**If a second set is not used, link must be placed between terminals 16 + 17.**

DL5 Lit = Emergency stop button status OK, wiring is complete and control board can see it.

**If an emergency stop button is not fitted, a link must be placed between terminals 18 + 21**

Now we look to program the remote control key-fob(s) to the control board.

## Programming the remote control / key-fob

– **Please have your key-fob(s) to hand**

Every DOUBLE GATE automation kit comes equipped with 2 MyKey remote controls as standard.



These are three channel Rolling Code remote controls. Rolling Code means the key fob has multiple combinations (like cut keys for a door lock) at its disposal which can be changed at anytime digitally. Each channel sends an individual code on a 433.92 MHz frequency that the control board's internal receiver intercepts. The key fob contains 16,000 code combinations.

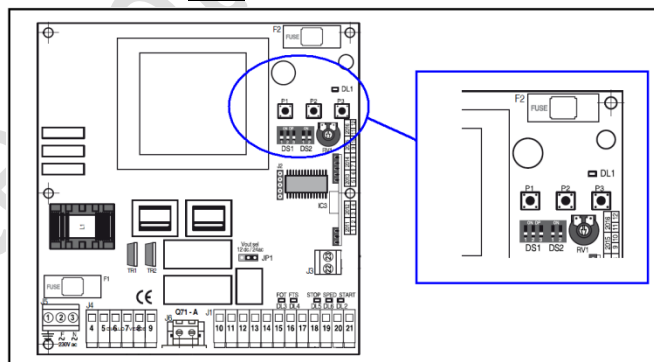
When the remote control is transmitting, an LED will be seen lit on the remote control. This is confirmation that the remote control is transmitting.

The remote control is powered by 12v A23 battery with an average life span of 3-5 years depending on usage.

When the capacity of this battery runs low, you may see the LED transmitting indicator on the key fob lit faint and the control board may not respond to your command as the signal may be too weak.

Before we program your remote controls to the control board, select **one** button to act as the activation key for your gate automation.

On the control board, towards the right hand side, there are three buttons marked P1, P2 & P3 (illustrated right). These are the control board's operational buttons. To program they remote control to the control board, please follow next set of steps below:



### Saving a new remote controls / key-fobs to the control board

- Press **button P1** on the control panel **once and hold for a few seconds then release**. The DL1 light will come on then will go off then come on again. You will hear the relay on the control board click once. The light will stay on for 10 seconds, allowing 10 seconds to program the remote control to the control board.
- Press and hold the button on the remote control until the DL1 light goes off and the relay on the control board "clicks".

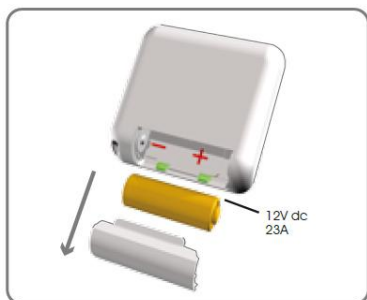
The control board can store up to 50 remote controls.

### Deleting existing remote controls / key-fobs from the control board

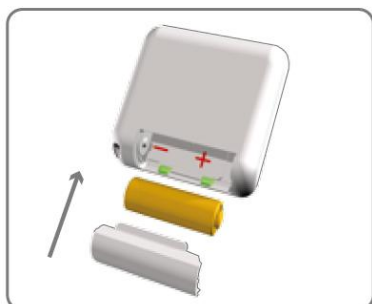
- Press and hold the **P1 button**, the DL1 light will come on. Keep the button pressed until the DL1 light goes off.

## Changing the key-fob battery

When the capacity of this battery runs low, you may see the LED transmitting indicator on the key fob lit faint and the control board may not respond to your command as the signal may be too weak. To change the battery, follow the next set of steps:



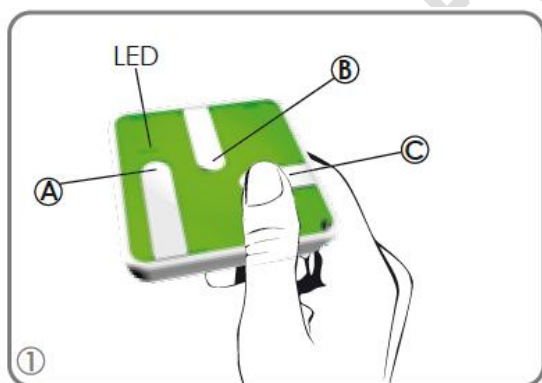
- 1) Turn the key-fob over so it is resting on its front. To the bottom of the key fob you will see a compartment cover. Using a small flathead screwdriver, insert this between the casing and the battery compartment cover to gently release the cover.



- 2) Obtain size 23A 12V battery from Gate Motors and replace like for like. Once the battery is in place replace the compartment cover.

## Changing the code the key-fob transmits

Upon use of the key-fob, if you find that the code the key-fob transmits is not being identified by the control board, is intermittent in receiving the signal produced or someone else in the immediate area is using (RF) radio equipment that is transmitting a similar code on the same frequency, you can change the **rolling code** that the key-fob transmits. This is achieved by following the next set of steps:



Simultaneously press buttons B and C (about 4-5 seconds) till the red light of the remote control illuminates.

Hold button B pressed and at the same time release button C and press it again twice.

The two lights, red and green, should alternating blink to show that the generation of a new random code succeeded.

Now you can release button B. The remote control is ready to transmit with a new radio code. **N.B.** – Please delete the previous stored key fob from the control board

Once this has been completed you must program the key-fob to the control board so it can recognise the new code generated.



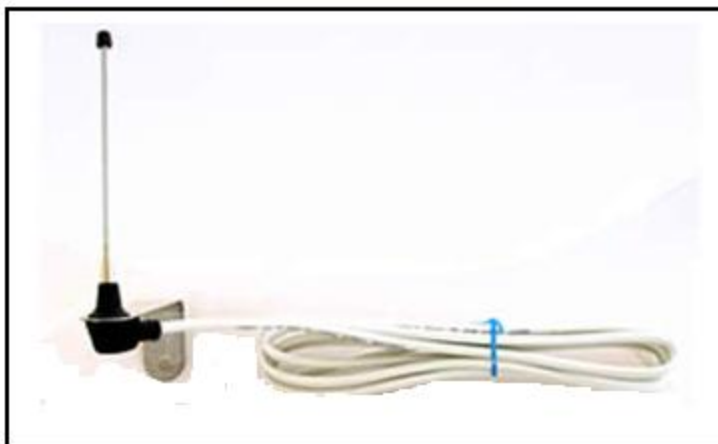
## Remote Control Receiver

The key-fob signal receiver is built-in to the control panel has a range of up to 30M.

As the signal transmitted from the key-fob is a radio frequency, the signal quality and strength may be hindered if the control panel for the gate automation is mounted onto a metal plate / bracket or is mounted against thick concrete pillar, in addition atmospheric conditions (rain / fog) can reduce the strength of the radio signal. Neighbouring radio signals, especially in built-up areas, can impede the control board's ability to single out your key-fob's code.

If you find the range your radio receiver is having trouble with the interception of your key-fobs transmitting frequency and code, a **MyGate Extended Aerial** can be fitted to your receiver unit.

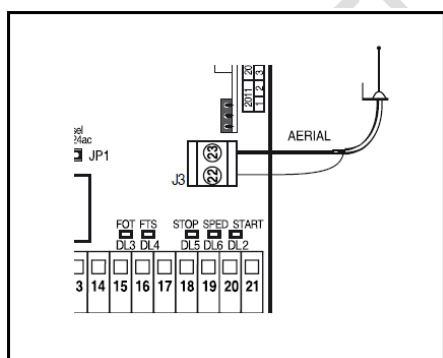
## Extended Aerial – (optional accessory)



The Gate Motors extended aerial substitutes the standard internal aerial to extend the range of your transmitters to **80m** (max) in free field conditions. Typically mounted on top of the gate pillar, the 2M coaxial cable length makes this unit easy to install on a variety of applications. Using its "L" shaped bracket, the extended aerial is very versatile as it can be mounted on top of pillars, fence posts, or any other structure near your gates that is elevated.

## Fitting the Extended Aerial

Fitting of the Extended Aerial is very simple and effective.



- Simply remove existing white aerial wire by using a small flat head screwdriver to loosen its terminal screw and take out the aerial cable.
- Place the Extended Aerial coaxial cable into terminal 23 (Illustrated left).
- Twist the braiding from the Extended Aerial and place into terminal 22.

## Selecting the Operating Mode

Before we program the opening / closing cycles, we first need to establish the cycles operating mode.

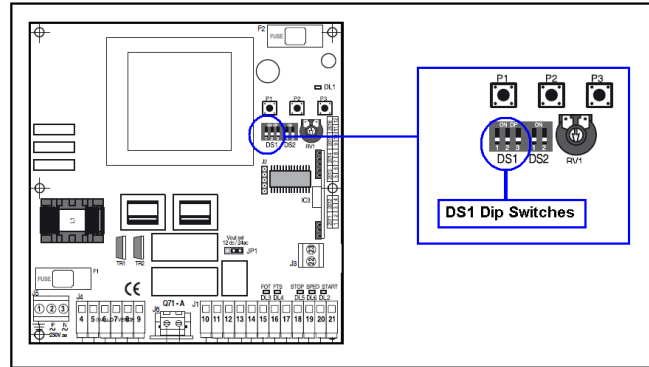
The operating mode is selected through DS1 dip-switches. The switches are located to the right hand side of the control board (illustrated right):

There are three different operating modes:

Step by Step

Automatic Closing

Automatic Closing with Multi-occupation



### STEP by STEP Mode (Automatic closing turned off)

This operating function turns off the automatic closing. When a START command is given by pressing remote control button or

A first START command makes the gate OPEN.

A second START command while the gate is opening will STOP the gate.

A further START command makes the gate CLOSE.

A START command while the gate is closing will STOP the gate.

To select this operating mode place the DS1 dip-switches as shown right:



### AUTOMATIC CLOSING Mode

A first START command makes the gate OPEN, once the gate has reached the complete opening it stops and the PAUSE-TIME starts.

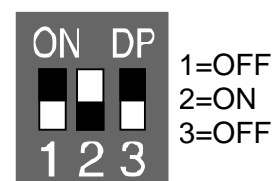
When the pause-time elapses the gate automatically CLOSES.

If a START command is given while the gate is opening, the gate STOPS still.

A further START command makes the gate CLOSE.

If a START command is given while the gate is closing, the gate STOPS and REVERSES in about 1.5 seconds.

To select this operating mode place the DS1 dip-switches as shown right:



## AUTOMATIC CLOSING mode with MULTI-OCCUPATION Function

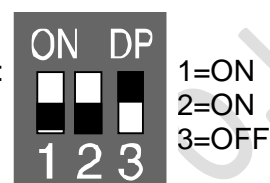
A first START command makes the gate OPEN, once the gate has reached the complete opening it stops and the PAUSE-TIME starts.

When the pause-time elapses the gate automatically CLOSES.

A START command given while the gate is opening has no effects.

A START command given whilst the gate is closing makes the gate STOP and REVERSE in its direction - this may take about 1.5 seconds to action.

To select this operating mode place the DS1 dip-switches as shown right:



Now we look to program your gates opening & closing cycles and allow the control board to become familiar with the operating of your gate automation by pushing and pulling the weight of your gate leaf(s) to ascertain the correct level of obstacle detection required and calculate the time period required to complete the opening and closing operation.

## Programming the gates open & closing cycles

At this stage of the installation we have:

- We have our emergency stop link in place
- We have wired the motor(s) to the control board
- We have wired the photocells to the control board
- We have programmed the key-fob remotes
- We have set the gate operation mode




Now we look to program the automation cycles. The programming sequence is a short and fully automatic process. Please have your key-fob close to hand and read the next set of instructions thoroughly **before** proceeding.

## Programming – Double Gates (for two leafs)

**Make sure that the gate is fully closed.**

- a) Press **Button P2 and hold**. The DL1 LED light comes on and stays on for a few seconds and then goes off. When the DL1 light turns off, release button P2. The motors will initially work in the opposite direction (over close) for a few seconds before stopping and then travelling in the right direction (opens the gate). This is normal programming operation and is critical to the continued operation of the gates as the control board is determining its start position by pushing your gate leaf against your centre gate stop.

- b) During the first **8 seconds** of the opening cycle, the motor is travelling slowly. This is the control board calculating the 'deceleration speed' required for the motor. Use the **RV1** adjuster to adjust the deceleration speed accordingly (clockwise to increase speed of motor, anti-clockwise to increase deceleration speed) 
- c) After the **8 second period**, the motor will then operate at full speed. The control board's relays will "click" quickly. Use the RV1 to set the torque force required for the motor to move the physical weight of your gate leaf. It is critical for the motor to just push the weight of the gate and not to over set the torque. If the torque is too high, the obstacle detection facility will be compromised and will not function accordingly therefore leaving the safety of the gate operation at risk.
- d) After a short time after opening, the gates will close automatically: the control boards relays will "click" slowly.
- e) Once the gates have closed, the control board automatically saves the settings.

Now we need to set the pause time. This is the time taken where the gates are open before automatically closing – of course this will only be active if you have set the gate operation mode to Automatic Closing / Automatic Closing with Multi-occupation.

### Setting the Pause Time

- a) Press **button P3 and hold** until the DL1 LED is lit and stays lit. Once permanently lit, release the button.
- b) Count down the seconds the gates are to stay open before automatically closing and then press **button P3** again. The DL1 LED will turn off.

If you need to change the pause time, please repeat the above steps.

**It is essential after completing the installation programming process to run a complete open and close cycle before general use.**

The control board is self-learning and needs to use the very first full cycle to use as a "bench mark" for future operations. It is during this process the control board is calibrating the level of obstacle detection required.

### Obstacle Detection

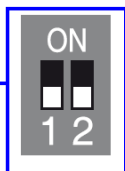
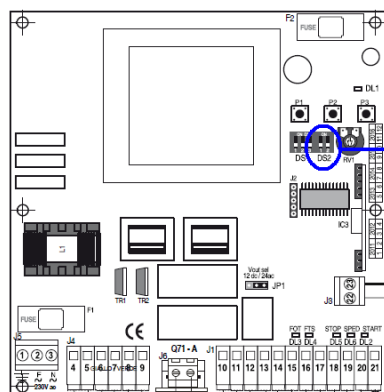
The Q71A features built-in obstacle detection during opening and closing cycles. This feature is present during the whole gates operation and cannot be turned off. The control board automatically adjusts the detection sensibility according to the force required to the motor to physically move the gate. The obstacle detection operates by measuring the force required to move the weight of the gate and detects resistance if the gate becomes obstructed. The gate reacts by stopping in its motion, waits for a 1 / 2 seconds and then reverses in its travel for between 1 / 2 cm's to allow the obstruction trapped to be safely removed.

The gate will not continue to operate UNTIL you have pressed your key fob button or give another start signal. The control board will then continue to complete the cycle it was in before the obstruction happened.

There are incidences where the Obstacle Detection level can be sensitive when the gate is about to fully open / close (gate leaf rests against gate stop). When the motor is decelerating, it is using a quarter of its

power consumption. Therefore even the friction created by the coming into contact with your gate stops may trigger the obstacle detection system and the gates will reverse.

This sensitivity during deceleration of the motors can be adjusted with ease by simply moving the DIP switches marked on the control board as DS2 (illustrated below):



#### OBSTACLE DETECTION ON during DECELERATION

DIP Switch Positions  
1= OFF 2= OFF



#### OBSTACLE DETECTION OFF during DECELERATION

DIP Switch Positions  
1= ON 2= OFF



Sometimes anomalies are encountered during the normal duty cycle, for example:

- Gate stops and reverses before completing full travel when opening
- Gate stops and reverses just after starting

Repeated 'stop & reverse' incidences are specifically seen in cases where heavy gates are being automated and/or gates with hinges that adds friction to the gates motion and sudden temperature falls.

It is possible to reduce the sensibility level of the obstacle detection applying the following procedure:

- 1) Keep buttons P1 & P2 pressed at the same time - the Led DL1 will blink a certain number of times (example: 10 blinks), then let go of P1 & P2 and keep a note of the amount of times the light blinks.
- 2) After the DL1 light has stopped blinking, press P1 as many times as the number of blinks seen – then add 3 additional times (example: 10 + 3 = 13 times). Every press of the P1 button corresponds to the blinking of the DL1 light.
- 3) Confirm the procedure by pressing button P2

The procedure is now completed and the level of the obstacle detection has been reduced. If the anomalies continue to re-occur (false and repeated stops / reversing) repeat the same procedure again up to step 2, and then follow step 2 but instead of adding 3 additional strokes of the P1 button, this time increase by more.

The Obstacle Detection feature on this control board is completely self-learning. Please remember that it is essential after completing the installation programming process to run a complete open and close cycle before general use.

**Have you tried the gate automation's full open & close cycle for the first time since completion of the programming?**








**Did the gate(s) open and close perfectly?**

If the gates timing was not as perfect as you would like, please repeat the programming process from step "a)". The completion of the programming sequence will replace any previously saved settings.

**Have you tried and tested the gates Obstacle Detection after completing the first cycle since completion of the programming?**

If the gates did not respond as quickly as you would of hoped, please repeat the programming process from step "a)" paying particular attention to the position of the RV1 trimmer for the torque setting. Adjust this trimmer switch to a lower position. The motors may be providing more push and pull power than they need to be for the weight of your gate.

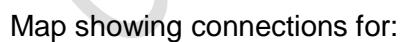
To recap:

- The emergency stop link in place 
- The photocells have been wired to the control board 
- The motor(s) have been wired to the control board 
- The remote controls have been programmed the control board 
- The opening & closing cycles have been programmed 
- The opening & closing cycle has been tested 
- The Obstacle detection level / setting has been tested 

**Your installation is now complete!**



### Q71A connection map – terminals 1 to 21



- 21

## Appendix: D

### Q71A control board – FAQ'S

#### Photocells – Do I need to use the photocells that come with the kit?

Included in each double and single gate automation kit is a pair of safety photocells – one transmitter cell and one receiver cell. The transmitter projects an Infrared beam direct across the drive way to the receiver unit. These units should be mounted on each gatepost, directly opposite each other. This creates an invisible "Trip Wire" that detects any obstacles that comes into its path. As soon as the beam is broken, the relay in the receiver sends a signal to the control board telling it there is an obstruction. If the gates are in their fully closed or open position, the breaking of the photocell beam will stop any automation from commencing until the obstacle is/has cleared. If the beam is broken during the automated open / close cycle, the breaking of the beam triggers the relay in the receiver to send a signal to the control board telling it there is an immediate obstruction. The motors will instantly stop and begin to reverse. Once the motors have reversed fully, the motors will stop and will stay still until the photocell receiver can see the beam transmitted from its opposite unit. Once the beam is seen again, unbroken, the motors will continue to complete their original cycle. The photocells are an important safety feature and must be installed – at all times.

If you have large / deep gates then an additional pair of photocells should be purchased and mounted on posts just beyond the leading edges of the open gate. These will protect the full radial sweep of the gate.

#### Photocells - My gates are not working, I cannot see LED DL3 Lit. What can I do?

When DL3 light is not seen, this is the board telling us that the photocell beam is broken / there is an obstacle. Without this resolved, the motors will not work – this is a safety feature. Make sure there are no obvious obstructions breaking the beam(s) – custom brackets, branches etc. If there are no obstructions then we need to look closely at the photocells themselves – this includes removing the covers of the photocells and looking to see if insects, webs, dirt or grease is present in and around the sensors or the case lenses (inside and out). Photocells are supplied with cable grommets in an attempt to keep the bugs on the outside. Check that the cases are clean and obstacle free.

Heavy rain and direct sunlight may cause disruption to the photocell Infrared beam. An attempt to stop the disruption can be made by using a hood protector to cover the photocells.

Photocells should not be installed where direct sunlight may affect their use.

#### Key-fob – I am pressing the button but my gates are not opening, what can I do?

If your key-fob is new, check that it has been programmed to the control board. If not, please follow instruction below:

- a) Press **button P1** on the control panel **once and hold for a few seconds then release**. The DL1 light will come on then will go off then come on again. You will hear the relay on the control board click once. The light will stay on for 10 seconds, allowing 10 seconds to program the remote control to the control board.
- b) Press and hold the button on the remote control until the DL1 light goes off and the relay on the control board "clicks".

If the key-fob has been programmed to the control board and has been working fine before, check the key-fob indicator LED is alit when you are pressing the button. If the light is not seen or is faintly illuminated, please change the battery. Remove the small screw on the reverse side of the key-fob and remove the key-fob cover, this will show the battery compartment.

Weather condition - As the key-fob remotes function by transmitting a radio frequency signal to the control board, signal quality can be diminished as a result of poor weather; rain, fog and in some cases electrical storms. In these situations, capture range can reduce to as little as 5M. Using an extended aerial will increase capture range to 80M in all weather.

### Key-fob - My gates are opening randomly for no reason, is someone else using my key-fob signal?

With any unit that transmits a radio frequency, there are incidences where radio receiving equipment catches the signal and thinks it is intended for that unit by recognizing the coding contained within that frequency it has intercepted. In this case, the gate control board radio receiver unit has collected a signal that is similar if not almost the same as the one your key-fob is transmitting and believes it is being told to open by you.

The key-fobs transmit a 433,92Mhz frequency and are DIP switch operated. To resolve this clash of signals, we need to give the control board another code to recognize. This is done in three steps:

#### **Step 1: Deleting your existing key-fob code.**

- Press button P1 on the control board until DL1 light comes on. Keep this button pressed for a further 10 seconds, the DL1 light will go out. This is confirmation all key fob codes have been deleted.

#### **Step 2: Re-modulating the frequency code**

On the reverse side of your key-fob's casing is a small metal screw. Remove the screw and remove the front cover of the key-fob. Please be careful when removing the key-fob cover as the tactile switch circular button covers are loose and may fall out from their place.

Look towards the bottom of the key-fob's printed circuit board (PCB) and you will see a row of white tiny DIP switches. By moving the DIP switches, the key-fob will transmit a different coded frequency. Use a pin or tip of pencil to move a few of these switches up and down. Re-attach the key-fobs case, paying attention to the alignment of the tactile switch covers and screw the case tightly in place.

#### **Step 3: Programming the control board to accept your key-fob signal**

- a) Press **button P1** on the control panel **once and hold for a few seconds then release**. The DL1 light will come on then will go off then come on again. You will hear the relay on the control board click once. The light will stay on for 10 seconds, allowing 10 seconds to program the remote control to the control board.
- b) Press and hold the button on the remote control until the DL1 light goes off and the relay on the control board "clicks".

### Key-fob - What range does the remote key-fob have?

The radio frequency range is 30m from the key-fob, on an ideal day. As the key-fob remotes function by transmitting a radio frequency signal to the control board, signal quality can be diminished as a result of poor weather including rain or fog and in some cases electrical storms. In these situations, capture range by the built-in aerial can reduce to as little as 5m. Using the Gate Motors Extended Aerial in conjunction with your automation kit will ensure up to 80m signal capture range in all conditions.

### Key-fob – What are the extra buttons on the remote key-fob for?

To avoid having to carry around a pile of different remote controls for your other remote devices, these buttons may be programmed to open a second gate, a garage door, outside lighting, etcetera. In order for these devices to work with the MyKey key-fob remotes, each device will need an additional radio receiver.

## Aerial - What does the extended aerial do and do I need one?

The extended aerial boosts the radio frequency capture range to 80m in all weather conditions. As the key-fob remotes function by transmitting a radio frequency signal to the control board, signal quality can be diminished as a result of poor weather. The improved signal capture range can also help for installations where there is a long drive way to the gates or you need to open the gates much before you arrive.

## Intercoms– I have an intercom system, how do I connect it to my gate?

### Power

Your intercom system may already be powered by separate source. If you are fitting a new intercom, the Q71A control board has 12/24vdc power outputs available for fueling such equipment that requires 12/24vdc to function. Terminal 12 (power positive) and terminal 13 (power negative) provide the power output. Check with your intercom install guide for suitability.

### Opening the gate

Your intercom should have 2 sets of outputs for unlocking MAG locks (labeled as C – Common & N/C - Normally Closed) and for switching volt free contact equipment (labeled as C – Common, N/O - Normally Open). To connect the intercom to the Q71A control board for opening the gate from your intercom handset:

<u>Intercom</u>	-	<u>Q71A Terminals</u>
<b>C (Common)</b>	-	<b>21</b>
<b>N/O (Normally Open)</b>	-	<b>20</b>

## Digital Keypads – I have a keypad for coded access, how do I connect it to my gate?

### Power

Your digital keypad system may already be powered by separate source. If you are fitting a new digital keypad, the Q71A control board has 12/24vdc power outputs available for fueling such equipment that requires 12/24vdc to function. Terminal 12 (power positive) and terminal 13 (power negative) provide the power output. Check with your digital keypad install guide for suitability.

### Opening the gate

Your digital keypad should have 2 sets outputs for unlocking MAG locks on doors (labeled as C – Common & N/C - Normally Closed) and for switching volt free contact equipment (labeled as C – Common, N/O - Normally Open). To connect the digital keypad to the Q71A control board for opening the gate by entering your pin code:

<u>Intercom</u>	-	<u>Q71A Terminals</u>
<b>C (Common)</b>	-	<b>21</b>
<b>N/O (Normally Open)</b>	-	<b>20</b>

### Will my gates still open in the winter when it is very cold and icy?

Climate conditions do affect how the internal mechanics operate. During periods where the outside temperature can drop as low as -20 in some parts of the UK, the motors can physically have trouble starting, just like a motor vehicle. Although the internal gears are protected by machine grease, of course anti-freeze cannot be used. If the motors do struggle to push and pull the gates and you are finding them closing short or opening short, a simple adjustment to the torque force is required to give the motors an extra helping hand. This adjustment will increase the power output to the motor to help it mobilise. During the summer season or where the temperature increases, this torque force adjustment may need to be reversed as the mechanics will be able to move a lot more freely and you may find your gates closing quicker or over closing / opening. For the MyDiamond and MyAster, if you are finding ice forming on the motor arms, wiping the arm with liquid paraffin will help reduce ice formation. Due to the unique way the motors are fabricated, no ice will get into the motor via the arms, however if it has settled and compacts when the arm retracts to open your gate, the ice build-up may force the arm not to fully retract.

### What happens if there is a power cut?

In the event of a power cut, naturally the gate automation kit will not function. Once the automation kit has completed either a closing or opening cycle, the arms are locked into position. All Gate Motors automation kits have an emergency release system, where a special key is used to disengage the motor gearing from its mechanical arm to allow the gates to be opened manually.

Always remember to re-engage the emergency release when power has been restored. If the release is not engage, the motor(s) will fail to operate.

If the power cut is a result of a grid surge and you find the gate automation kit ceases to function once power has been restored, check the quick blow fuses on the control board to ensure these have not blown.

### Do the motors need maintaining?

Unlike hydraulic motors, the Gate Motor gate automation kits are electromechanical motors and do require periodic maintenance including cable checks to make sure there are no breaks, chew marks from animals and make sure the motors are free from dirt, free from fallen branches from neighbouring trees and other obstacles that could pose as a risk to the efficient working of the gate motors.

Following practical maintenance will ensure continued uninterrupted automation service.

## Comments & Feedback

We thank you for taking the time in reading and following the new version of our instructions. This instruction guide has been compiled from comments and feedbacks received from previous / existing customers who are familiar with our automation and had followed the old version (also included alongside with this guide). The aim of this guide is to appeal to all “walks” of life - from end users to Tradesmen. We understand that not everyone can follow complex wiring diagrams and often instructions can be over complicated. We, at Gate Motors, feel that a “one size fits all” guide, with simple straight forward jargon-free would benefit the customer & installers alike and promote safe operation of the automation.

Your feedback is valuable to us to help us with continued development and fine tuning of our instructions to suit customers' needs.

If there is a subject or topic relating to the control board and its functions that you feel we could include, re-write or present in a different way, please let us know by email on [sales@gatemotors.co.uk](mailto:sales@gatemotors.co.uk).

For more information on GateMotors full line of automatic gate openers and access controls visit our website at [www.gatemotors.co.uk](http://www.gatemotors.co.uk)

### Phone Sales Lines

UK: 01202 717191  
Outside UK: (+44)1202 717191

### Phone Technical Lines

UK: **0905 235 1700\*** (service available 8:30am to 5:30pm Monday to Friday only, closed Weekends and Public Holidays)  
ROI: **156 099 9667\*\*** (service available 8:30am to 5:30pm Monday to Friday only, closed Weekends and Public Holidays)  
Email: [support@gatemotors.co.uk](mailto:support@gatemotors.co.uk)

\*UK calls to this number are billed by the second and cost £1.02 per minute from a standard landline; other networks charges may also apply.

\*\*IRISH calls to this number are billed by the second and cost €1.25 per minute from a standard landline; other networks charges may also apply.  
Service is provided by Digital Select Ltd, 271 Regent Street, London, W1B 2ES whose helpline number is 0844 448 0165

*Trading address: GateMotors UK, Unit 16c, Chalwyn Industrial Estate, St. Clements Road, Poole, Dorset. BH12 4PE.*

***GateMotors** is the trading name of Screwjack Limited - registered office at 21 Oxford Road, Bournemouth, Dorset. BH8 8ET.  
Registered # is 4287804, VAT #:785 3450 06*