Automation Systems

AUSTRALIA

TiTAN 1000

Advanced Digital Sliding Gate System

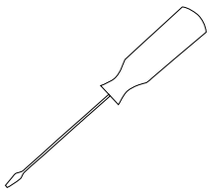
EASY

Step by Step Simple Installation
Guide on Page 2

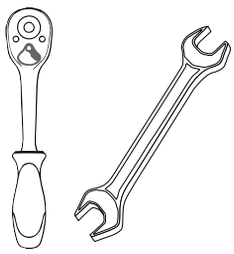
REV 0

Table of Contents

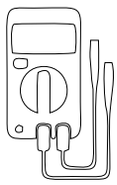
Typical Tools Required



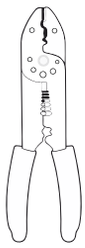
2/2.5mm Flat Head for Terminal Connections



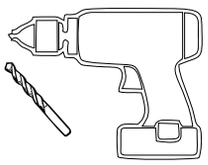
Socket & Spanner Sets



Multi Meter (not essential)



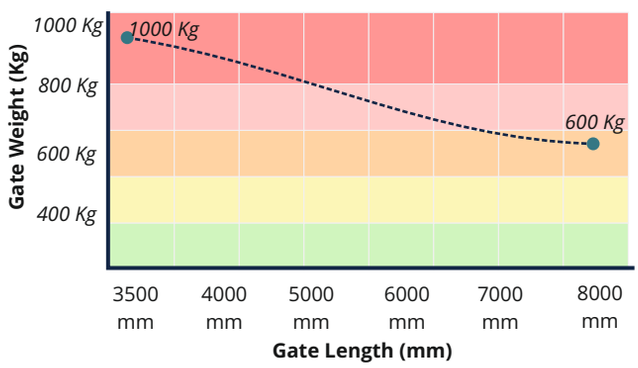
Wire Stripper



Drill and Drill Bits Masonry and Metal

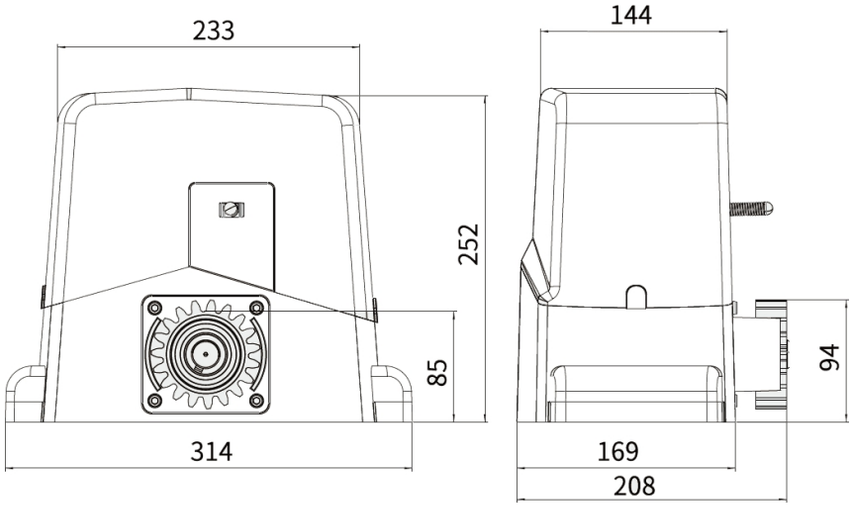
Specifications

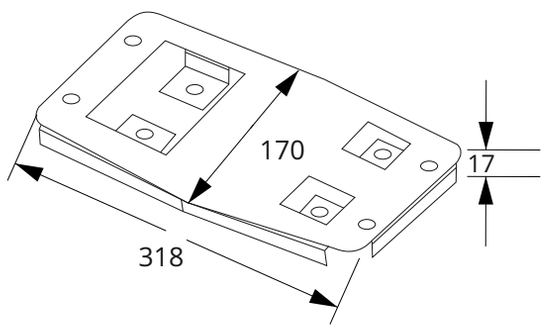
Operating Voltage	220-240V AC
Standby Consumption	~40mA
Speed	20cm/s (12M/MIN)
Motor Limit	N/C Micro Switch
Torque	27NM
Duty Cycle	40%
Light Output	Warning 220-240V AC
Accesories Power	12V DC (250mA)
Safety Inputs	Photocell, Detector, Safety Edge, Stop
Operation Temprature	-10°C to +60°C
Remote Button Capacity	20 Remotes

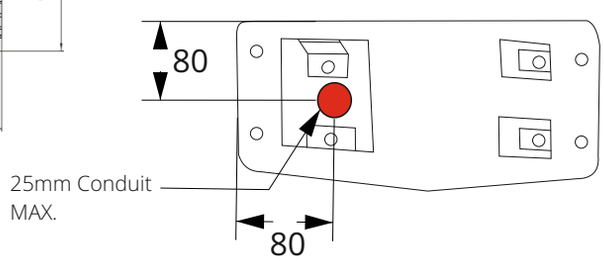


*Tested ratings are level gate installations and does not take into account inclined installations

Dimensions







25mm Conduit MAX.

Step by Step Installation Guide

Install gate motor, rack and limit strikers

↓

Connect in WIRED accesories
See accessories pages or there specific manuals

↓

Turn on the Power Point

↓

Pair remotes and wireless keypads
PAGE. 9

Remote's are Pre-set if purchased with the system

↓

Set the gate mid way using the manual release
PAGE. 2/PAGE.5

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Set the gate operating Direction
PAGE. 6

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Automatic Learning Cycle
PAGE. 6

→ Set the correct direction by following the troubleshooting
PAGE. 5

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Test system using a remote

→ Adjust TORQUE and TIME
PAGE.8

↓

Set the automatic closing timer (if required)
PAGE. 8

↓

Configure applicable safety devices, Photocell type, special detector and STOP
PAGE. 10/PAGE. 11

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Test Safety Devices

→ TROUBLESHOOTING
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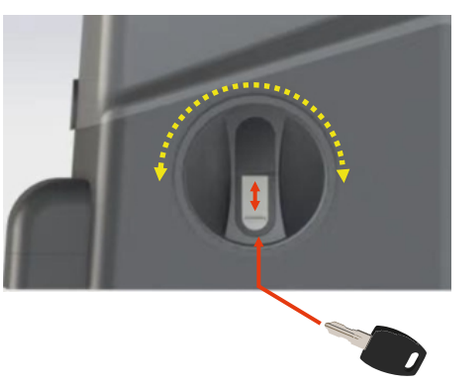
Manual Release



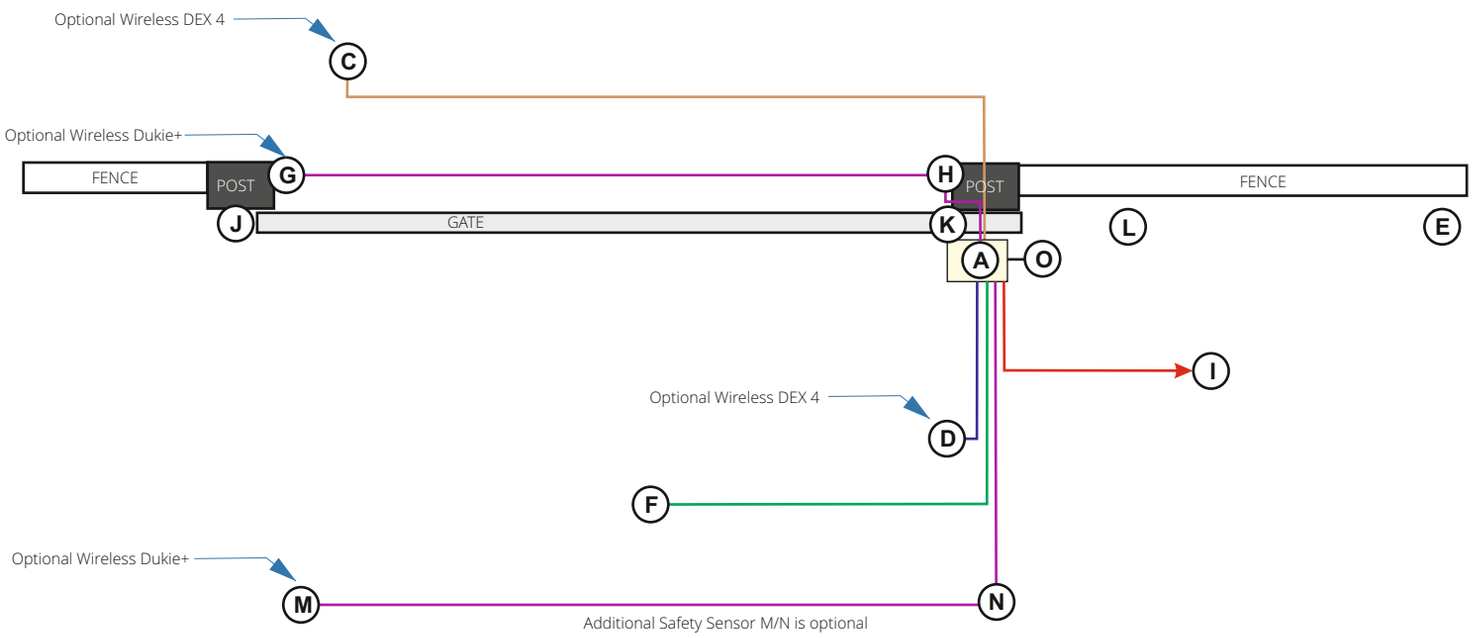
To manually release (disengage clutch):
1. Slide the key cover UP
2. Insert the key (fits only one way into the cylinder) and turn the key clockwise.
3. Turn the lever one full turn clockwise (360°)

Gate can now be moved by hand.

To return to automated mode (engage clutch):
1. Turn the lever one full turn counter-clockwise (360°)
2. Insert the key (fits only one way into the cylinder) and turn the key counter-clockwise.
3. Slide the key cover DOWN

Gate cannot be moved by hand and is ready for automated use.

Installation Layout



Number	Accesory	Requirments
A	Gate Motor	Power by Power Point
C	Entry Keypad	Dex 4 (wireless), All others wired to gate controller by 4 core cable
D	Exit Keypad	Dex 4 (wireless), All others wired to gate controller by 4 core cable
E	Gate Stop	Physically Mounted Hardware Item. Mandatory Stop to prevent accident or injury incase of failure
F	Induction Loop	Housed inside gate controller with 1 core cable for the driveway loop
G	Photocell Transmitter	No cable required for Dukie+, Standard Dukie 2 core Cable to gate controller
H	Photocell Receiver	4 Core cable to gate controller
I	Gate Controller Power Source	Power Point or Hardwired
J	Meeting Point	Physically Mounted Hardware Item
K	Gate Top Guide	Physically Mounted Hardware Item
L	Ground Track	Physically Mounted Hardware Item
M	ADDITIONAL Photocell Transmitter	Optional Additional Safety Device, No cable required for Dukie+, Standard Dukie 2 core Cable to gate controller
N	ADDITIONAL Photocell Receiver	Optional Additional Safety Device, 4 Core cable to gate controller
O	Automatic Light	2 core cable to gate controller (HIGH VOLTAGE)

Motor Installation

Step 1

Identify the OPENING direction of your gate based on the illustrations below.

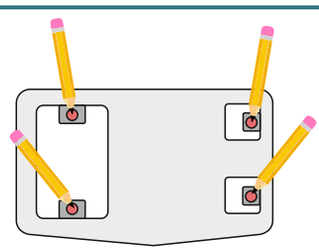
Gate opens to the LEFT or RIGHT is always made from the inside looking towards the street (outside).

Step 2

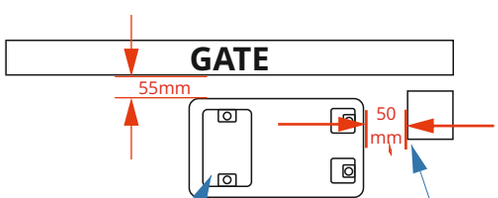
Mark the centre of the mounting holes of the base plate, note the orientation of the large conduit entry hole.

The base plate should be positioned within 50mm from the support post/edge of the driveway.

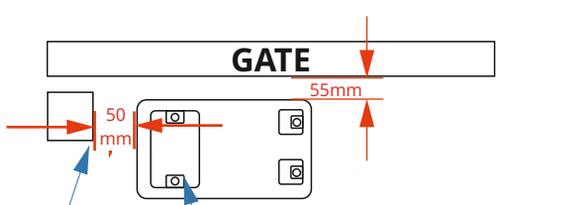
The base plate is positioned 55mm away from the backside of the gate to achieve the correct base distance for the limit switch spring and gear rack alignment. The motor distance can be fine tuned when installing to the base plate.



LEFT HAND SIDE OPENING



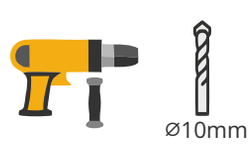
RIGHT HAND SIDE OPENING

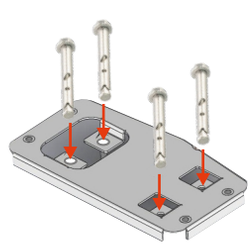


Step 3

Drill the four fixing hole using a 10mm masonry drill, ensure that the holes are cleaned thoroughly in preparation to install the dyna bolts.

Install the base plate ensuring it is stable, if unstable against the concrete (can tilt back and forth) install with large washers from the under side (with at least a 10mm ID (not supplied)) to achieve level. The dyna bolt will slip through the base plate then the washer. Tighten the dyna bolts.



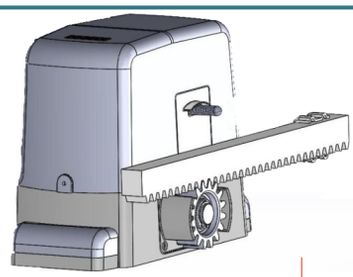


Step 4

Install the gate motor to the metal base plate, ensure the front of the plate (side facing the gate) is flush with the front of the gate motor.

Step 5

Manually Release the gate motor and set the gate 250mm from the open position .

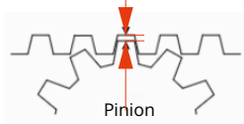


Sit a piece of gear rack on top of the motors pinion gear and level it according to the gates current level (adjustable later), allow for a 2-3mm clearance (backlash) between the top of the pinion tooth and the base of the gear rack.

Screw in the first piece of gear rack in place from the start of the gate using self drilling metal screws in the CENTRE of the elongated hole.

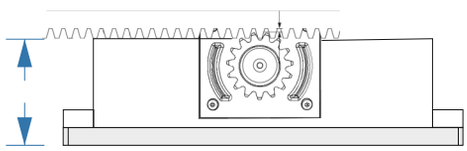
Slide in the next adjoining piece of gear rack and close the gate by hand til the pinion is centred to the next piece of gear rack that has been added, once again as per the previous step the rack should be levelled according to the gates current level (adjustable later), once again allow for a 2-3mm clearance (backlash) between the top of the pinion tooth and the base of the gear rack.

2-3 mm space between the Top of Pinion Tooth and the gear rack root



Screw the piece of gear rack in place using self drilling metal screws in the CENTRE of the elongated hole.

Approx. 100mm Base of gear rack to concrete



Repeat this step until the gate has gear rack installed across its entire length.

Step 6

Manually open and close the gate at a very slow speed, observe that the gear rack always retains the 2-3mm clearance backlash.

If the gate feels tight in certain areas most likely the backlash is less than advised, loosen the gear rack piece and adjust to correct then re-test.

If the gate feels loose in certain areas or the rack slips off the pinion most likely the backlash is greater than advised, loosen the gear rack piece and adjust to correct then re-test.

Step 7

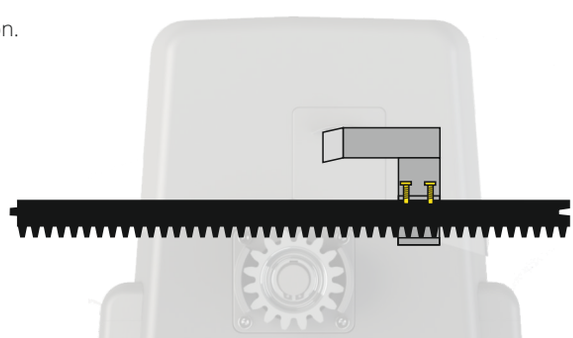
Install the TWO bolts to each striker plate.

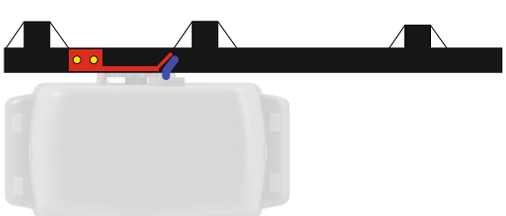
OPEN the gate til 50mm before it touches the gate stop or the maximum open position.

Install the striker plate to the gear rack THE SPRING SHOULD BE BENT to 45°, the striker plate CLAMPS to the gear rack and does not require any holes to be drilled.

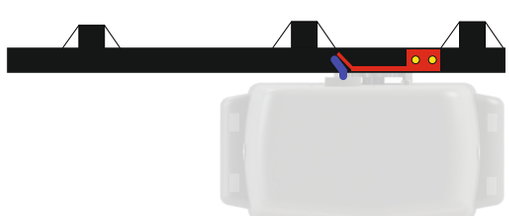
CLOSE the gate til 20mm before it touches the meeting points base.

Install the striker plate to the gear rack THE SPRING SHOULD BE BENT to 45°, the striker plate CLAMPS to the gear rack and does not require any holes to be drilled.





Gate has travelled all the way to the right and has engaged the spring



Gate has travelled all the way to the left and has engaged the spring

Step 8

Cut off any EXCESS gear rack using an angle grinder, ensure the motor cover is installed and the excess rack is in the furthest possible and safe position away from the motor, cutting will produce sparks due to the racks steel core, ensure no stray sparks reach the gate motor to avoid damage.

Slip on the side covers on each side to cover the mounting bolts.

Move the gate to the half way point and engage the clutch and proceed to learn Working Times

Learn Working Time Calibration

The Learning of working Time "WORK" procedure will teach the gate controller the operational times for the gate motors travel, this will allow for the correct calibration and introduce a slowdown at the appropriate position along with the relevant protection cut off time.

Please ensure that the system is set to the appropriate direction as per step 2

NOTE: Stop Button safety input is automatically configured during this stage also ensure the photocell/detector is NOT interrupted and is in correct alignment. DO NOT BLOCK ANY SENSORS as the gate will not close.

1 Set the gate to the half way position using the manual release and then RE-ENAGE the system.

2

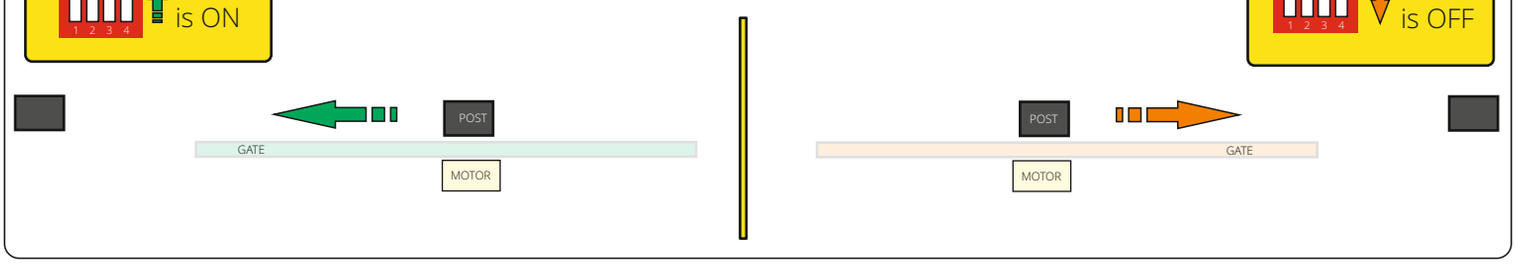
OPEN to the LEFT

DIP 4 is ON

Set DIP SWITCH 4 to the appropriate position based on the opening direction as illustrated below.

OPEN to the RIGHT

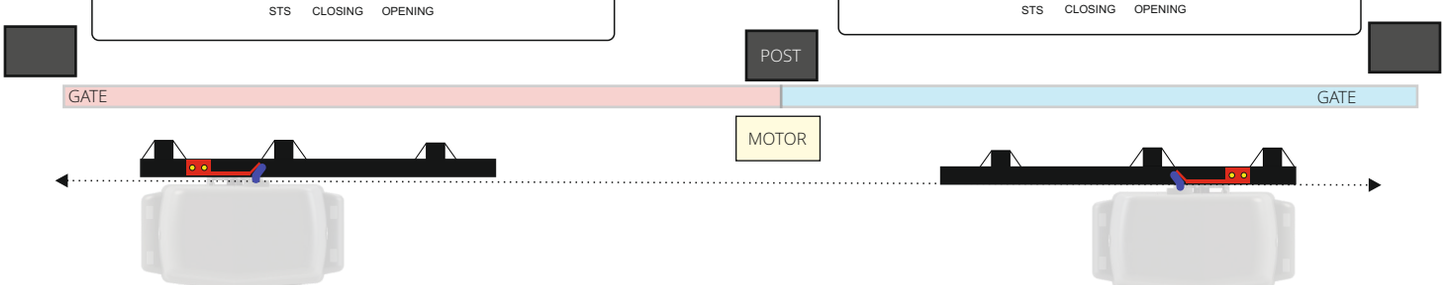
DIP 4 is OFF



3 HOLD the "WORK" button to begin the learning of Working Times. Release the button when the gate begins to close.

4 The gate will now close at full speed til the striker plate touches the spring for the limit switch.

5 The gate will now open at full speed til the striker plate touches the spring for the limit switch.



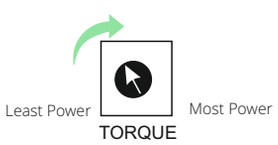
Gate has travelled all the way to the RIGHT and has engaged the spring

6 The gate will now close with a Soft Start and slow down before reaching the closed position.

Gate has travelled all the way to the LEFT and has engaged the spring

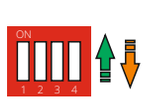
Troubleshooting TORQUE

If DURING OR AFTER the Learning of Working Times the gate did not completely open or completely close and a high frequency noise is hear from the motor then the motor power is set to low, increase by adjusting clockwise slightly and restart the procedure.



Troubleshooting Direction

If DURING the Learning of Working Times the gate is not travelling in the correct direction. Press the START button to cancel the procedure, Adjust DIP 4 to set the correct direction then restart the procedure.



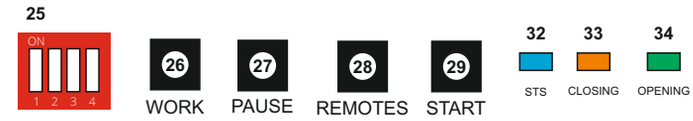
Controller Layout

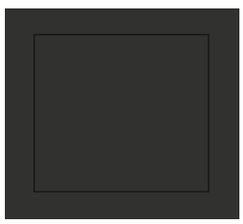
24. Fuse
25. Settings DIP Switches
26. Working Time Button

27. Pause Time Button
28. Remote Learning Button
29. Start Test Button

30. Torque Trim Pot
31. Slow Time Trim Pot

32. Status LED
33. Closing Status LED
34. Opening Status LED





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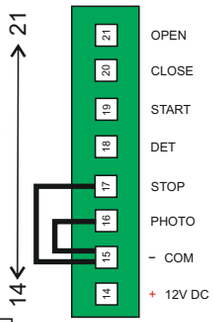
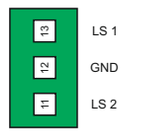
23. Antenna
22. Antenna GND/Shield

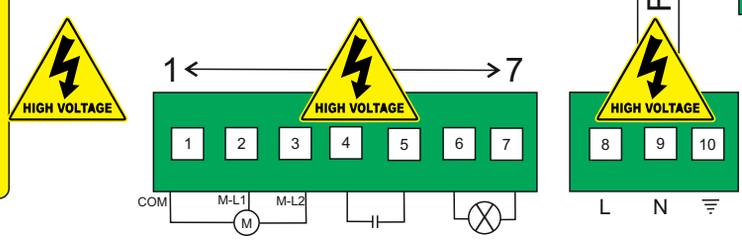


21. Open Terminal
20. Close Terminal
19. Start Terminal (Open/Stop/Close)
18. Detector Terminal
17. STOP Terminal
16. Photocell Terminal
15. Accessories Negative
14. Accessories +12V DC



13. Pre-Wired Limit Switch N/C
12. Pre-Wired Limit Switch GND
11. Pre-Wired Limit Switch N/C

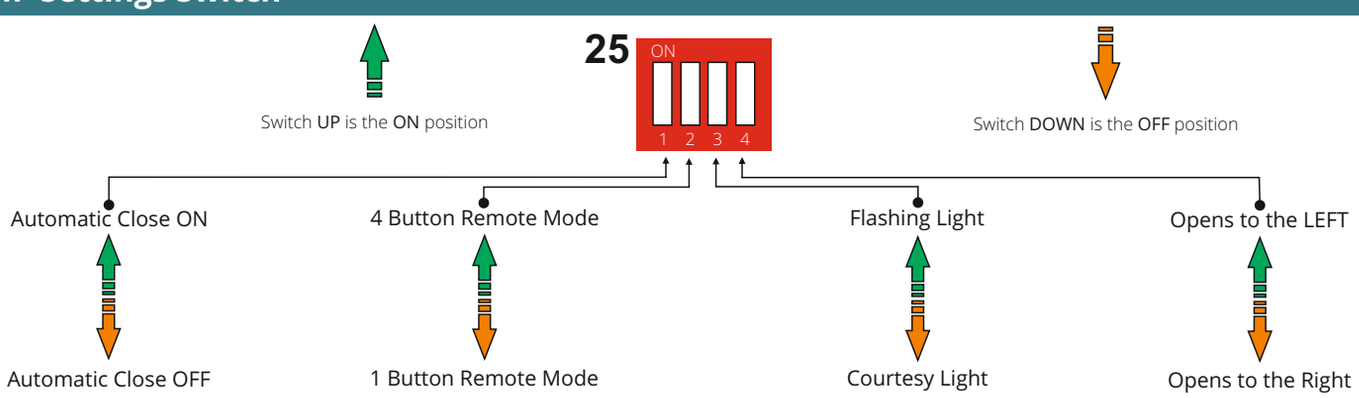
1. Motor N
2. Motor L1
3. Motor L2
4. Capacitor
5. Capacitor
6. Light Out N
7. Light Out L
8. Input Power L
9. Input Power N
10. Power Earth



LED Status

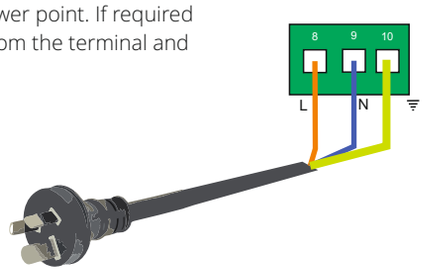
	Standby	Closing	Opening	Automatic Close
32 STS	Blinks at 5 Second Intervals	ON	ON	ON
33 CLOSING	OFF	FAST SPEED Blinks 0.5 Second Interval SLOW SPEED Blinks 1 Second Interval	OFF	Blinks 1 Second Interval
34 OPENING	OFF	OFF	FAST SPEED Blinks 0.5 Second Interval SLOW SPEED Blinks 1 Second Interval	Blinks 1 Second Interval

DIP Settings Switch



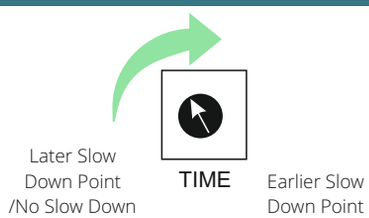
AC Mains Connection (Pre-Wired)

The AC Mains connection is pre-wired with a power cord and is ready to plug into a standard 10A power point. If required the motor can be hardwired to power by a licenced electrician by unscrewing the power cord wires from the terminal and replacing with the hardwired mains cable.

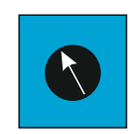


"TIME" Slow Down Position Adjustment

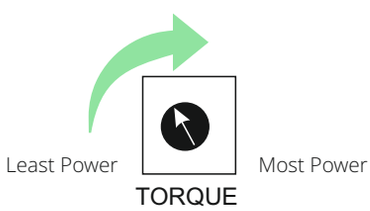
The "TIME" Trim pot is the adjustment in where the controller introduces the slow down speed. A TOO late position may cause the gate to stop more abruptly as it has not had enough time to decrease the
speed of movement. A TOO early position may cause difficulties in overcoming resistance points within the sliding moment of the gate and also creates a slower operating cycle time which may be undesirable.



"TORQUE" Power Adjustment



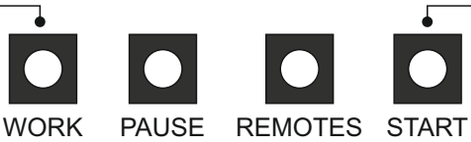
The "TORQUE" Trim pot is the POWER adjustment to the motor. It functions by reducing/increasing the maximum power available to the motor. Gate and Environmental factors will determine how high or low to adjust based on gate weight, and the required power to operate the motor. Setting too high will affect how quickly the controller will shut off under load or accident. Setting too low can cause the controller to shut off too early (too sensitive) or stall the movement and cause intermittent operations.



Setting Buttons

"WORK" Initiates the working time learning of the gate.

"START" Initiates the operating procedure OPEN/STOP/CLOSE depending on the gates current state.



"PAUSE" Initiates the configuration of the Automatic Closing Time.

"REMOTES" Initiates the learning OR deleting of remote controls and other wireless equipment.

NORMAL: Enabling and Setting the Automatic Close Timer

1

Turn DIP SWITCH 1 to the ON position

2

HOLD DOWN the "PAUSE" button for ONE second, the STS LED will begin to blink.

3

Each blink of the STS LED dictates ONE second of Automatic Close Pause time.

eg. 10 Blinks is equal to 10 seconds.

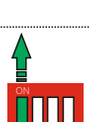
4

Count out the desired pause time/blinks then press "PAUSE" to save the setting

MAX TIME 4 Minutes (240 Seconds)

WITH WEEKLY TIMER MODE: Enabling and Setting the Automatic Close Timer

1



Turn DIP SWITCH 1 to the ON position

2

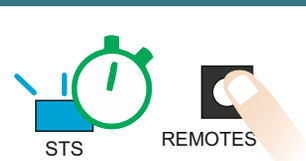
HOLD DOWN the "PAUSE" button for ONE second, the STS LED will begin to blink.

3

Each blink of the STS LED dictates ONE second of Automatic Close Pause time.

eg. 10 Blinks is equal to 10 seconds.

4



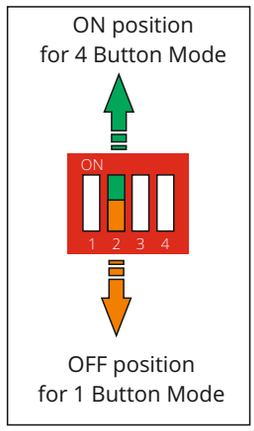
Count out the desired pause time/blinks then press the "REMOTES" button to save the setting

MAX TIME 4 Minutes (240 Seconds)

Setting the System to 1 Button/4 Button Mode (Remote Usage)

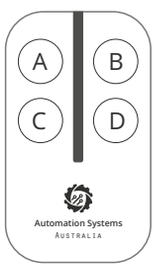
Set as you wish in 1 Button Mode
Strongly Recommended Layout to Use

- A — Operate this Gate Open - Stop - Close
  (also stops the automatic closing timer if pressed during the countdown)
- B — Operate Pedestrian Open - Stop - Close
  (also stops the automatic closing timer if pressed during the countdown)
- C — Operate a garage door
- D — Operate another Gate Open - Stop - Close
  (also stops the automatic closing timer if pressed during the countdown)

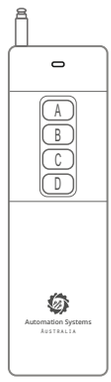


Fixed 4 Button Mode Layout
Best Suited For Gate House/Security Operators

- A — Close
- B — Open
- C — Pedestrian Open Close
- D — Stop
  (also stops the automatic closing timer if pressed during the countdown)



STX4K
Maximum Clear Line
of Sight 100 Metres
Operating Distance



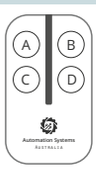
STX4L
Maximum Clear Line
of Sight 800 Metres
Operating Distance

Remote Learning

Operation Command Learning (1Button and 4Button Mode)

1 → 2

From the standby press the "REMOTES" button once

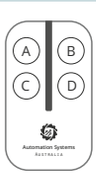


1 Button: Press the button you wish to use on the remote for the Operating Command.
4 Button: Press ANY button, All features are learnt automatically

Pedestrian Gate (1Button Mode ONLY)

1 → 2

From the standby press the "REMOTES" button TWICE



Press the button you wish to use on the remote for Pedestrian Feature.

Wireless Keypad Learning

Operation Command Learning (1Button and 4Button Mode)

1 → 2

From the standby press the "REMOTES" button once

Type 1111

Pedestrian Gate (1Button Mode ONLY)

1 → 2

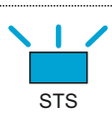
From the standby press the "REMOTES" button TWICE

Type 2222

Delete all remote's / wireless keypads

1 → 2 → 3

From the standby press **AND HOLD** the "REMOTES" button



The STS LED will now illuminate, continue to HOLD the "REMOTES" button.

After FIVE seconds the STS LED will blink OFF-ON-OFF to indicate the process is complete. You can now release the "REMOTES" button

DUKIE and DUKIE+ Photocells

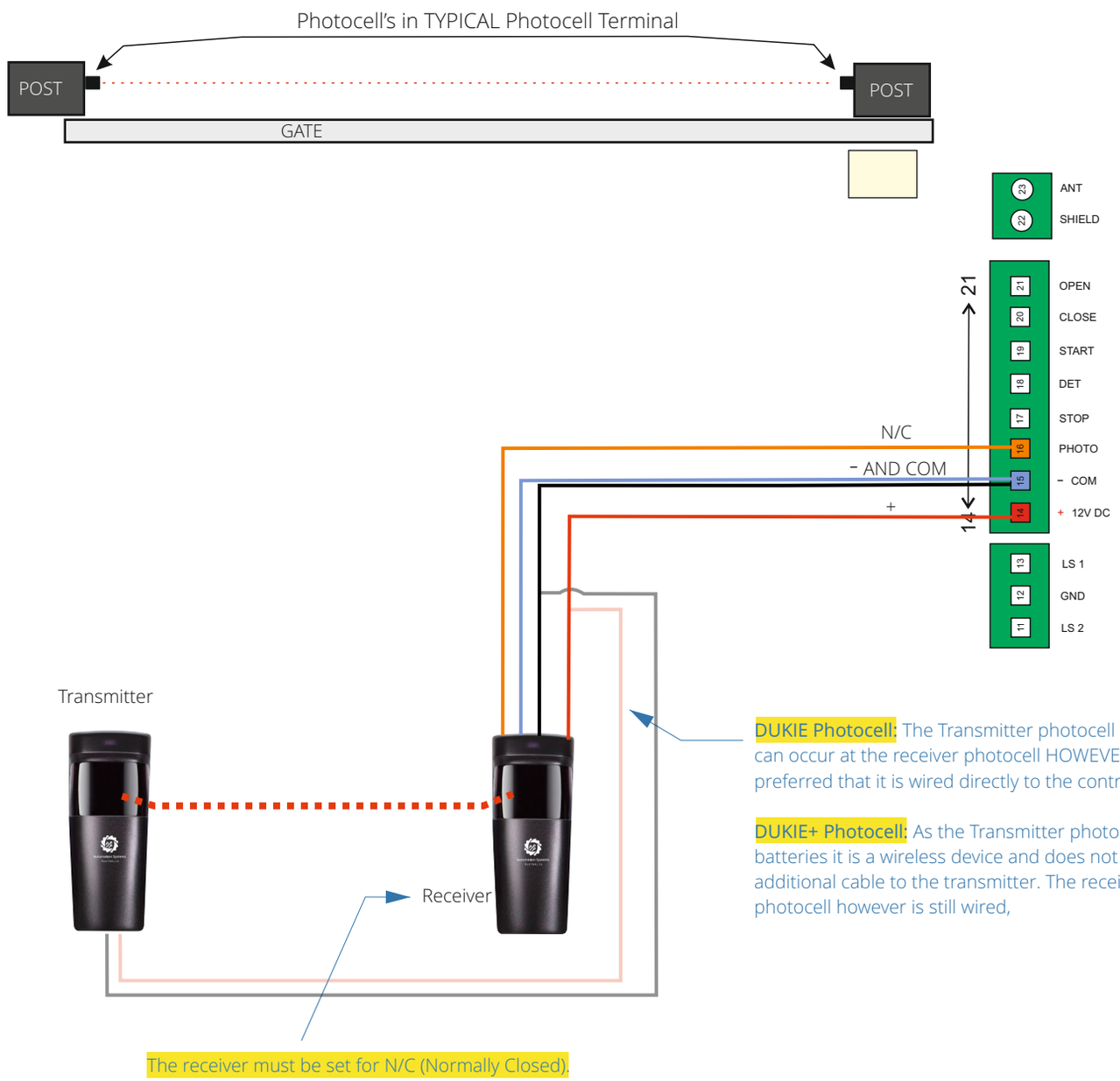
Typical Photocell Arangment

SEE NEXT PAGE ON SPECIAL DETECTOR

Photocells are a necessity when automating, they provide an additional layer of safety by infrared beam across the driveway.

The photocell terminal is used as the primary photocell connection which will revert the gate back to open when an obstacle is detected during close. If an obstacle is present before a close command then it will prevent closure til the obstacle is clear.

In the case where the automatic closing timer is used then each time an obstacle passes through the photocell infrared beam the timer will restart.



Troubleshooting PC

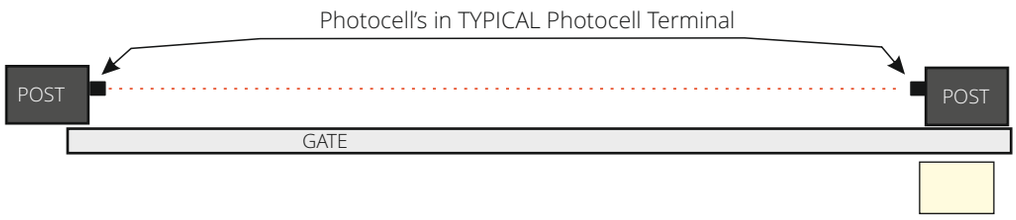
If after powering the system on you cannot close the gate it means:
1. Bad photocell alignment or there is an obstacle, wave your hand in front of the RECEIVER photocell, you should hear a very low audibility click, this means the photocell is in alignment. No click means bad alignment, incorrect/bad wiring or no power at one or both each cells- check there LED indicators.
2. Wired/set for wrong relay on photocell, if totally covering the photocell the gate can function It means the wiring/selection jumper on the RECEIVER photocell is incorrect..

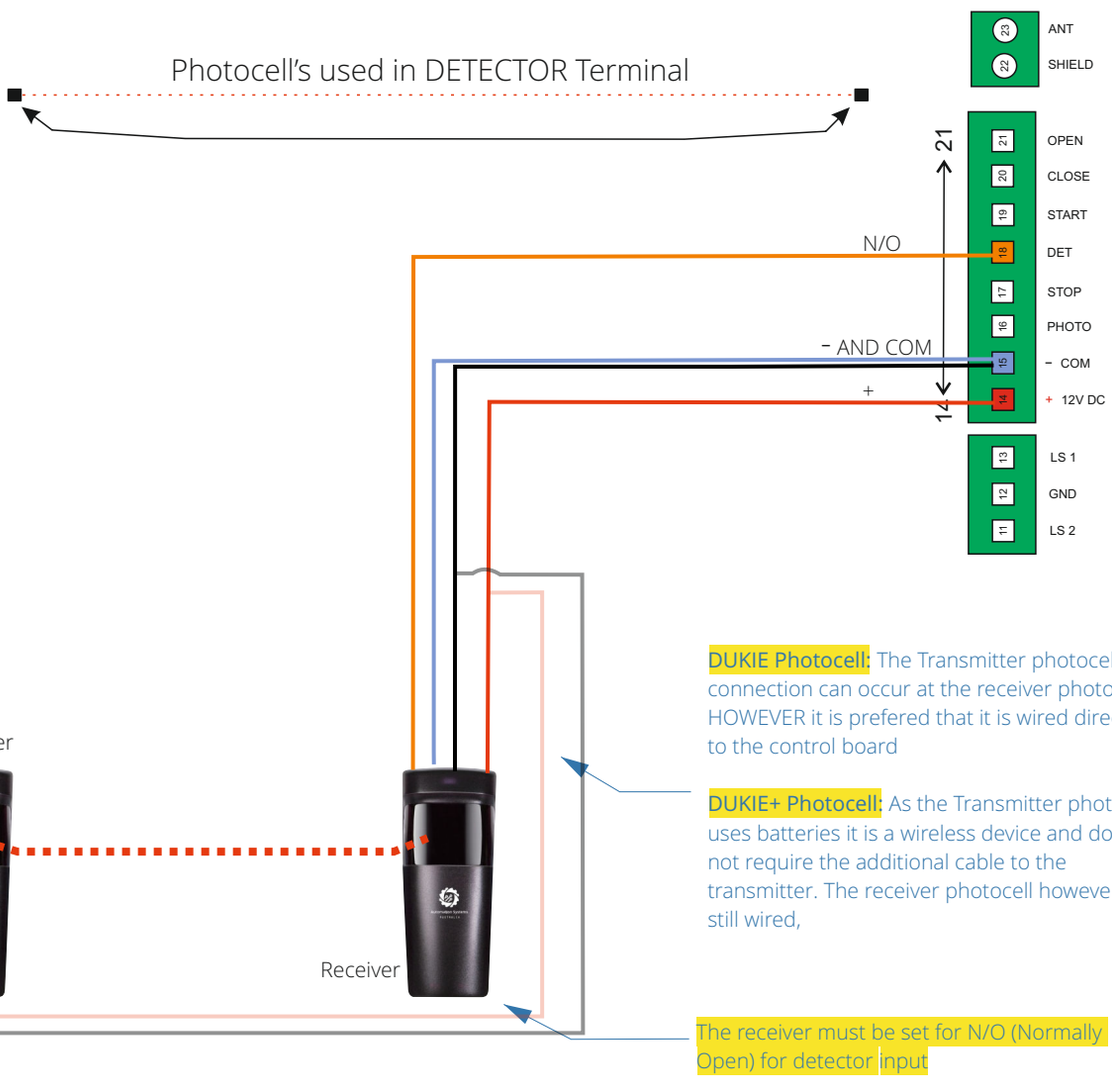
Special Detector Mode / Photostop

SEE PREVIOUS PAGE ON TYPICAL PHOTOCELL CONNECTION

An additional set of photocells installed just past the gates open position. Ideal for scenarios requiring a command to close after the vehicle has passed through and used to signal the system that the gate has been used and is ready to close.

1. If detected whilst opening it will finish the opening then after two seconds close
2. Whilst closing it will re-open gate then after two seconds close the gate
3. Whilst open it will tell the gate to close





DUKIE Photocell: The Transmitter photocell connection can occur at the receiver photocell HOWEVER it is prefered that it is wired directly to the control board

DUKIE+ Photocell: As the Transmitter photocell uses batteries it is a wireless device and does not require the additional cable to the transmitter. The receiver photocell however is still wired,

The receiver must be set for N/O (Normally Open) for detector input

Troubleshooting Detector

If after powering the system on you cannot close the gate it means:

1. Bad photocell alignment or there is an obstacle, wave your hand in front of the RECEIVER photocell, you should hear a very low audibility click, this means the photocell is in alignment. No click means bad alignment, incorrect/bad wiring or no power at one or both each cells- check there LED indicators.

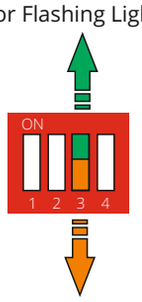
2. Wired/set for wrong relay on photocell, if totally covering the photocell the gate can function It means the wiring/selection jumper on the RECEIVER photocell is incorrect.

Warning Light Output

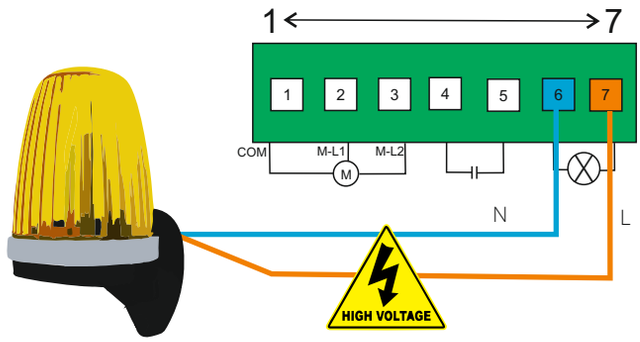
A typical 240V alert beacon or light to allow users to know the gate is in motion.

Flashing will be ON only during the gates open and close movements.
Static will turn off 90 Seconds after the gate has reached EITHER open or close position

ON position
for Flashing Light



OFF position
for Static Light



240V Output
3A Max.

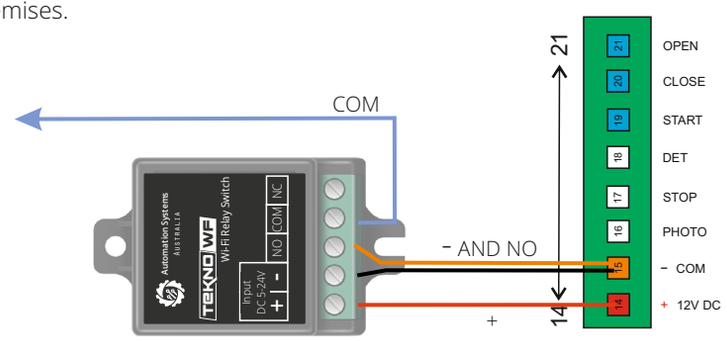
Tekno Wi-Fi APP Switch

The Tekno Wi-Fi App Switch integrates into the system allowing for operation by APP anywhere in the world, the Tekno module requires good 2.4GHZ connection to the Wi-Fi of the premises.

For Full Gate operation OPEN and CLOSE connect to terminal START 19

For OPEN Gate Operation ONLY connect to terminal OPEN 21

For CLOSE Gate Operation ONLY connect to terminal CLOSE 20

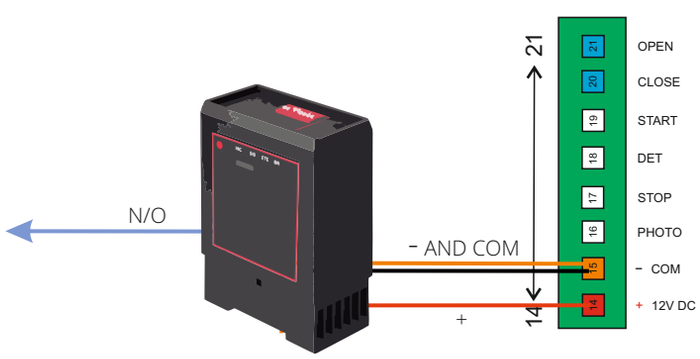


Loop Detector (12 Volt Version)

Typically for commercial and industrial use the loop detector can be used to command an OPEN or a CLOSE operation when detecting a vehicle.

For OPEN Gate Operation ONLY connect to terminal OPEN 21

For CLOSE Gate Operation ONLY connect to terminal CLOSE 20



Tekno K1 Wired Keypad

A Tekno K1 wired keypad is typically (but not exclusively) used in a commercial or industrial environment as a wireless keypad can be used in a residential home. A wired keypad has little to no maintenance required as its power feed is supplied by the system through wiring.

For Full Gate operation OPEN and CLOSE connect to terminal START 19

For OPEN Gate Operation ONLY connect to terminal OPEN 21

For CLOSE Gate Operation ONLY connect to terminal CLOSE 20

Digital Weekly Timer (12 Volt Version)

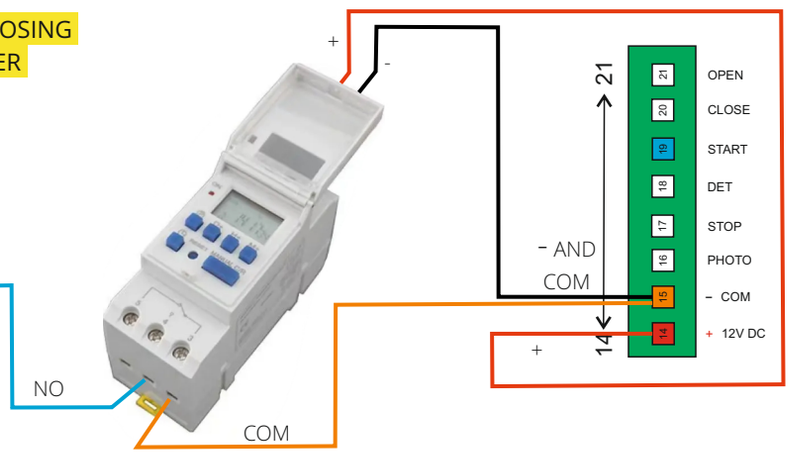
Typically for commercial and industrial the gate an be set to open at a certain time (and hold open), then close also at a set time. Multiple times can be programmed for all 7 days of the week selectively.

All other operations (outside of weekly time, eg. After Hours) by other access control devices such as a keypad will result in an automatic closing after the set control board automatic closing timer.

NOTE: YOU MUST CONFIGURE THE AUTOMATIC CLOSING AS PER THE METHOD OUTLINED FOR WEEKLY TIMER OPERATION.

For OPEN Gate Operation connect to terminal START 19

Closing will occur by the Automatic Closing timer once the Weekly timer releases its relay



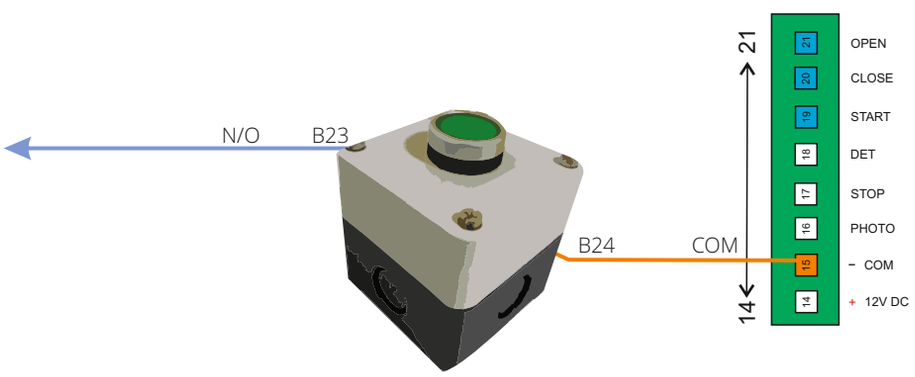
Push Button

Suitable for all applications a push button can be used to operate the gate simply by pressing the button.

For Full Gate operation OPEN and CLOSE connect to terminal START 19

For OPEN Gate Operation ONLY connect to terminal OPEN 21

For CLOSE Gate Operation ONLY connect to terminal CLOSE 20



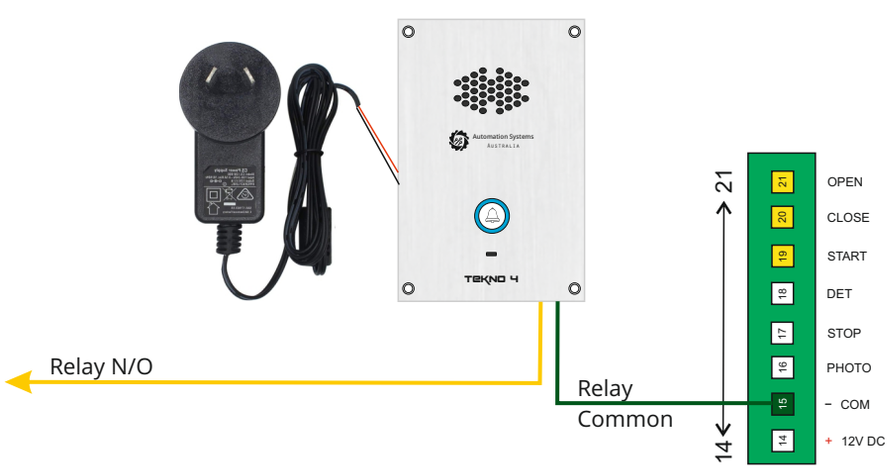
Tekno 4 GSM Intercom

The Tekno 4 GSM intercom allows totally wireless TWO WAY communication to any user, anywhere in the world using the mobile network. It allows for the automatic gate operation by pressing * during a call or by sending an SMS command at any time.

For Full Gate operation OPEN and CLOSE connect to terminal START 19

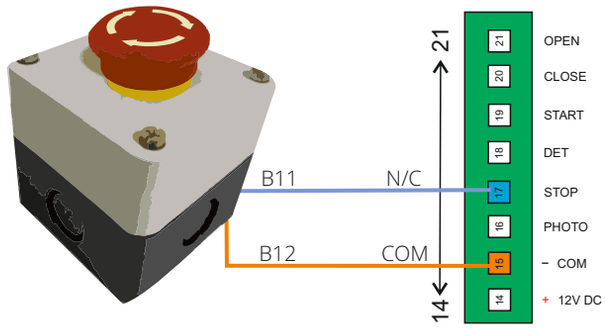
For OPEN Gate Operation ONLY connect to terminal OPEN 21

For CLOSE Gate Operation ONLY connect to terminal CLOSE 20



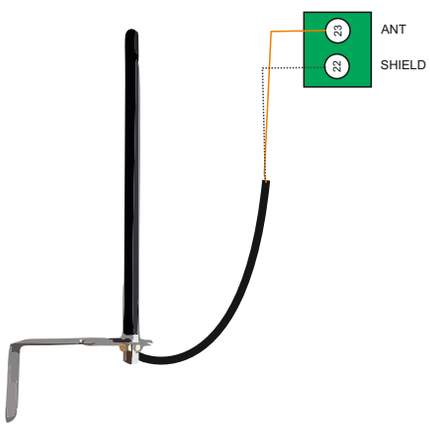
Emergency Stop Button

An emergency stop button is used typically if the system is in a manned operation such as a security office or gate house OR such applications where an internal door is automated.



Amplify Booster Antenna

The Amplifiy Booster Antenna will assist with remote signal in a case where the signal has been blocked by the fencing or the gate. The antenna should be installed as high as possible allowing it to be visually seen over the fence line.



Warranty Terms and Conditions

The product is warranted for a period of twelve months (one year) from the date of purchase, unless expressly specified as extended warranty (extension to the warranty period). The product is to be installed for its intended purpose and for normal use as outlined within the installation manual, the product warranty is exclusively for defects in manufacturing and manufacturing workmanship. It does not cover out of guidelines use, natural or other disasters, abnormal weather conditions, damage incurred in shipping or handling, damage caused by disaster such as fire, flood, wind, earthquake, lightning, excessive voltage, mechanical shock, water damage, damage caused by unauthorized attachment, alterations, modifications, or foreign objects, damage caused by peripherals (unless such peripherals were supplied by Automation Systems Australia), defects caused by failure to provide a suitable installation environment for the products, damage caused by usage of the products for purpose other than those for which it was designed, damage from improper maintenance, damage arising out of any other abuse, mishandling, and improper application of the products.

At is discretion Automation Systems Australia will require the item determined by the support staff to be returned to base in it original unmodified condition for a warranty inspection if within the warranty period. A return authorization “RA” number will be provided to be enclosed with the product in question. The warranty will not cover freight fees to base, customs fees or any labour costs at the installation site but will cover repair or replacement of the product as seen fit. Automation Systems Australia will cover the freight of the returned item to the original address if deemed as a warranty repair or replacement item. Any warranty repairs or replacements continue to carry through the remaining warranty period and do not extend or restart the period.

Under no circumstances shall Automation Systems Australia be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose). And of all other obligations or purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

Automation Systems Australia will at its option repair or replace out-of-warranty products at a determined cost which are returned to its base according to the following conditions. Anyone returning goods to Automation Systems Australia must first obtain an authorization number. Automation Systems Australia will not accept any shipment whatsoever for which prior authorization has not been obtained. Products which Automation Systems Australia determines to be repairable will be repaired and returned. A set fee which Automation Systems Australia has been predetermined and which may be revised from time to time will be charged for each unit repaired. Products which Automation Systems Australia determines not repairable will be replaced by the nearest equivalent product available at that time. The current market price for the replacement product will be charged for each replacement unit.