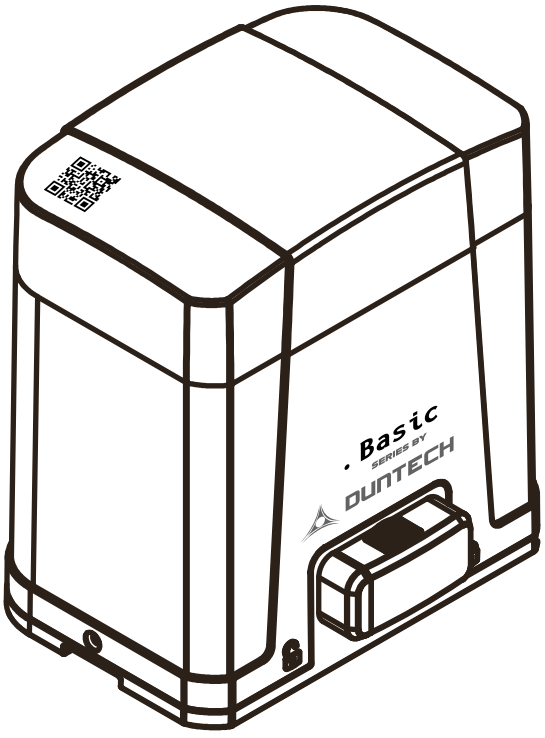
. Basic

SERIES BY

DUNTECH

SLIDING GATE OPENERS



INSTALLATION AND USER MANUAL



◄ Scan for our troubleshooting guide, parts or service

Open your phone's camera app, then point the camera at the code. Or, go to tiny.cc/dotbasic

Contents

Warning **1**

Product description **2**

24V DC gate motors 2

Device dimensions 2

Installation **3**

Preparation of the concrete base for motor mounting 3

Safety stoppers 3

Motor gear and gear rack 3

Limit brackets 5

Manual override 5

Removing the control panel's protective plastic cover 6

Connecting the wiring - 24V DC gate motors **8**

Connecting the wiring - Solar powered motor **9**

Initial setup and configuration **10**

Remote control button configuration 10

Initial setup 10

Deleting configuration of all remote control buttons 10

Gate motor configuration 10

Initial setup 10

Restore to factory settings 11

Automatic detection of motor current 11

Custom configuration **13**

How to change the configuration on your .Basic motor 13

Available settings and corresponding codes 14

24V DC gate motor settings 14

Photoelectric sensor configuration 18

Testing and checking 19

Technical specifications **20**

24V DC gate motors 20

PR-4 Transmitter data sheet 20

Troubleshooting **21**

All models 21

Warranty **22**

Australian Consumer Law 22

Terms & Conditions of Limited 12 month warranty 22

Declaration of Conformity **26**

Warning

- Read this instruction manual carefully before the installing the gate motor.
- This manual is exclusively for qualified installers. The manufacturer is not responsible for improper installation and failure to comply with local electrical and building regulations.
- Keep all parts and this manual for future reference.
- Pay special attention to any information in this manual accompanied by this symbol:



- To reduce the risk of injury, installation must be carried out in compliance with Australian standards and regulations.
- Check the operation of the gate before installing, and confirm the gates do not exceed the width and weight limits outlined in “Technical specifications” on page 20 of this installation and user manual.
- Do not allow children to operate or play with the gate motor.
- Do not walk in front of the gate opener while in operation.
- Keep all remote controls and any other radio transmitter devices away from children, to reduce the risk of the gate motor being accidentally activated.
- Do not modify any parts of the gate opener, except as described in this manual.
- Avoid manually opening or closing the gates if the gate motor is not in manual override mode.
- For any issues that cannot be resolved and are not mentioned in this manual, contact Duntech Automation in the first instance.
- Do not use the gate motor until all the procedures and instructions outlined in this user manual have been thoroughly read, understood, and completed in full.
- Weekly testing of the gate motor is recommended, as is 6 monthly checking and maintenance of the gate motor by qualified installers.
- Install warning signs on the both sides of the gate, advising that the gate is automatic.

Product description

24V DC gate motors

A. Gear
B. Limit switch device
C. 24V DC motor
D. Backup batteries (optional)
E. Manual override lever
F. Control panel
G. Accessory terminal block
H. Wi-Fi box (refer to separate Wi-Fi user manual)
I. Green box (optional)

Figure 1

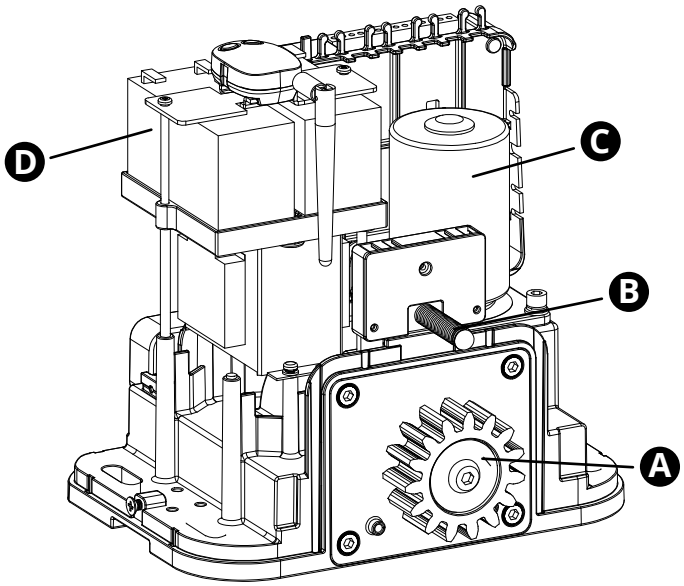
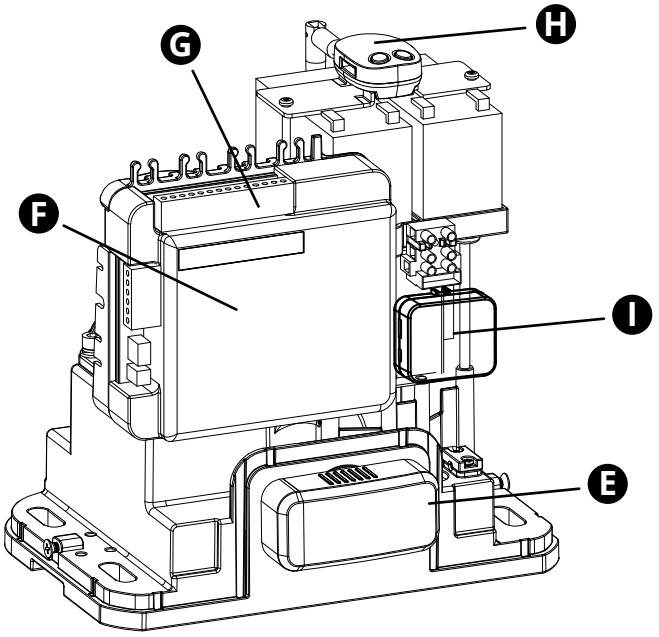
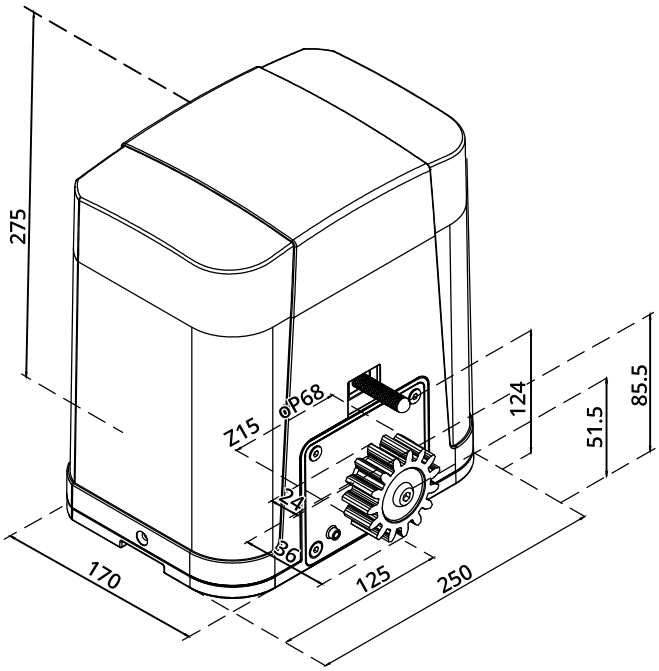


Figure 2



Device dimensions

Figure 3

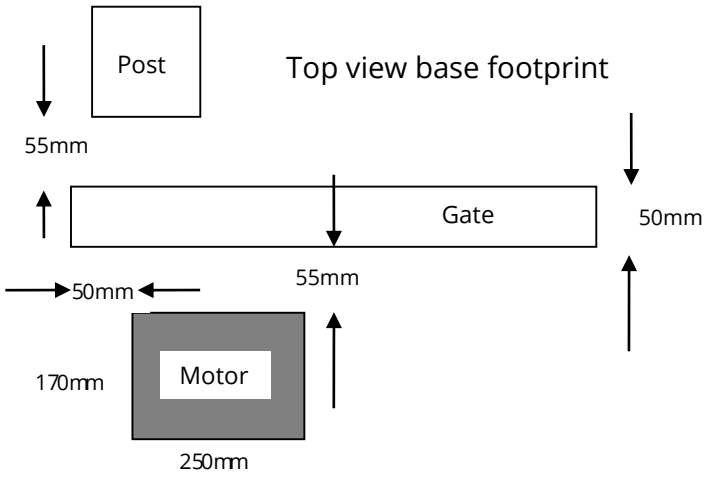


Installation

Preparation of the concrete base for motor mounting

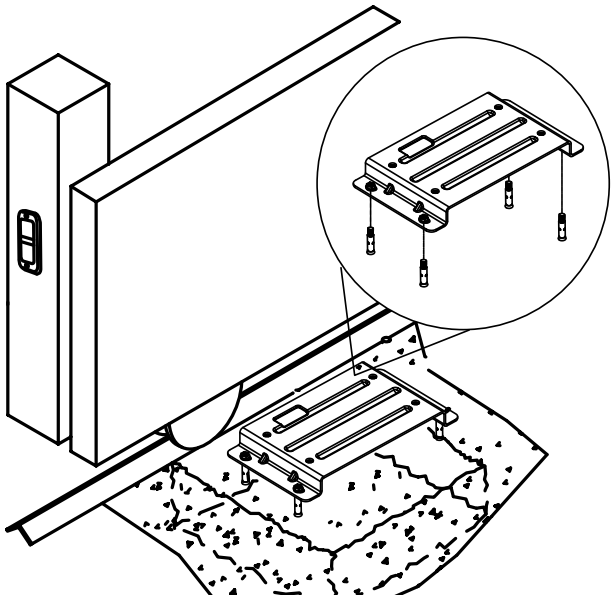
1. Make sure that the ground surface for mounting the motor is solid and level, and a minimum of 100mm thick. A good concrete base is paramount to the proper operation of the automatic gate.
2. Refer to Figure 4. The motor mounting plate is 170mm long x 250mm wide, or roughly the size of an A4 page. If installing cables, place these 250mm out from the wall/post and about 200mm in from the corner of the wall/post.
3. Position the motor mounting plate (the side closest to the gate) about 150mm to 160mm from the wall/post and about 50mm in from the driveway post corner point.

Figure 4



Note: You may need to raise the motor to allow the gear rack to mesh properly with the gate's bottom rail. Check this first by placing one of the gear racks on top of the motor's gear alongside the gate, and allow for the screw's thickness after installation. Open and close the gate, as the gate may have a bend in it.

Figure 5



Safety stoppers

Safety stoppers must be installed at each end of your gate. If the limit switch on the motor fails to stop the gate, the safety stoppers will prevent the gate from falling off the guide rollers and causing injury or damage.

Motor gear and gear rack

For the gate to function smoothly, you will need to install the gear rack correctly. The goal is to have a 2mm gap between the gear teeth and the gaps of the gear rack, for the entire the length of the gate. See Figure 11 on page 5.

Raise the motor temporarily by 2mm, using washer spacers or by adjusting the motor plate height. You can remove the washer spacers or lower the mounting plate by 2mm once the gear rack is installed, and secure the motor mounting nuts.

Note: We recommend you leave an extra gear rack overhanging by approximately 100mm until after you have mounted the silver limit brackets and tested the operation of the gate motor. Only cut off any extra gear rack length after the limit cams have been mounted. Do not fasten the gear rack screws where the gate wheels may come into contact with the screws. This will significantly increase the gate's resistance while in motion. If the gear rack's screws come into contact with the gear cover, it is probably due to an extra-long gate length, a bend in the gate or a slight variation in the wheel track alignment. You can remove the gear cover without altering the performance of the gate motor.

1. Set the gate to manual override, to allow the alignment and installation of the gear rack. See "Manual override" on page 5.
2. Lay all gear racks on the ground, along the length of the gate. Check the end rack supports for the best position to place the gear rack lugs. The lugs need to be positioned either side of the gear, when the gate is completely open and completely closed.
3. Place the first rack on the gear and ensure it is horizontally level. Trace a line along the top of the rack. See Figure 6. Trace each of the holes to be drilled. See Figure 7.

Figure 6

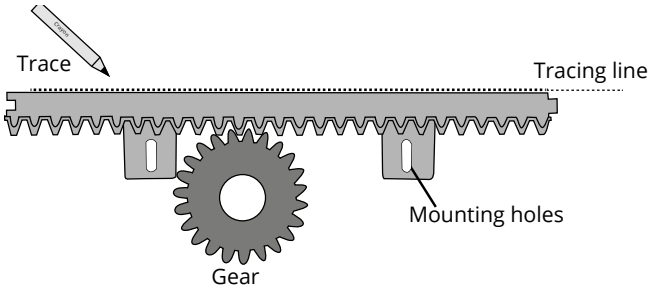
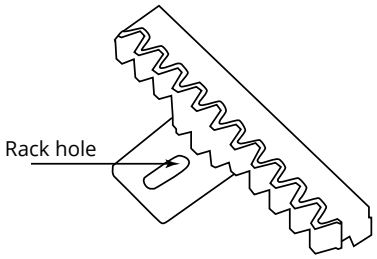


Figure 7



4. Move the gate 1 metre, or the length of the gear rack and repeat step 3 until the gear rack has been traced for the entire length of the gate. It may help to use one gear rack to stabilise two rack pieces. See Figure 8 and Figure 9.

Figure 8

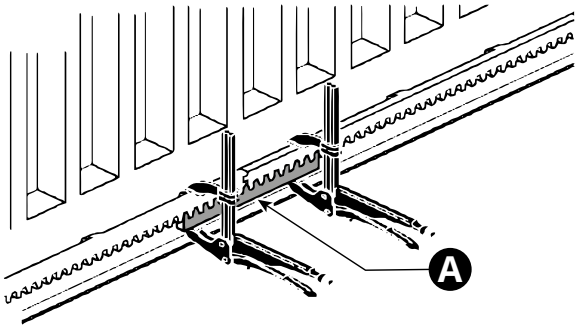
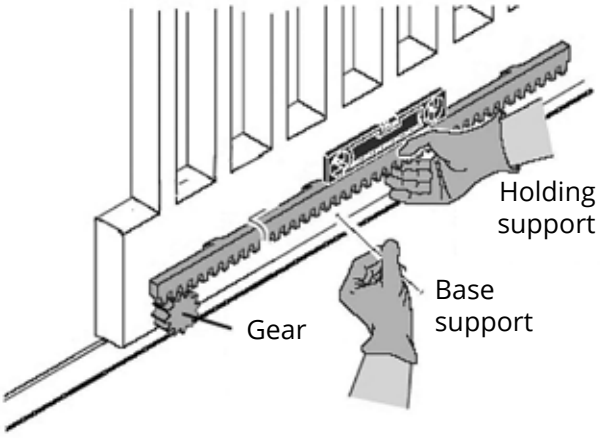
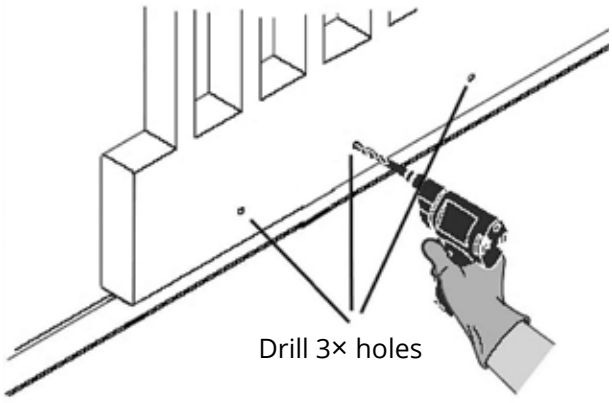


Figure 9



5. Fasten the gear racks onto the gate using the screws provided. See Figure 10.

Figure 10



6. Remove the washer / spacer from the motor, to leave a gap of 2mm between the gear teeth and the gear rack. See Figure 11.

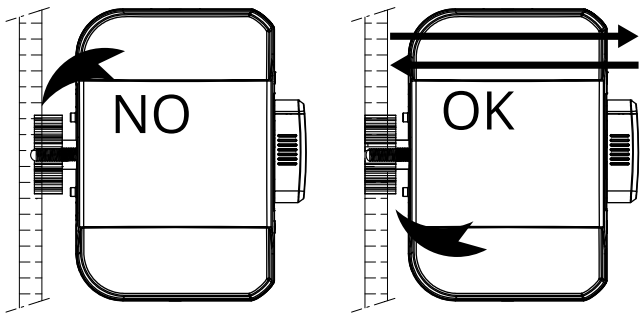
Figure 11



7. Check that the gear teeth and gear rack mesh consistently for the entire length of the gate. See Figure 12. If necessary, loosen the screws on the gear rack to adjust the gear rack's position.

Important: the gear and gear rack life depends almost entirely on their correct meshing.

Figure 12



Limit brackets

The limit brackets (2x silver brackets mounted on the nylon gear rack) must be installed at each end of the gate's gear rack. A right (SX) and a left (DX) bracket are supplied. When installed, they are designed to trigger the limit switch device (see "Product description" on page 2) to stop the gate before it hits the safety stopper. See Figure 13 and Figure 14.

Figure 13

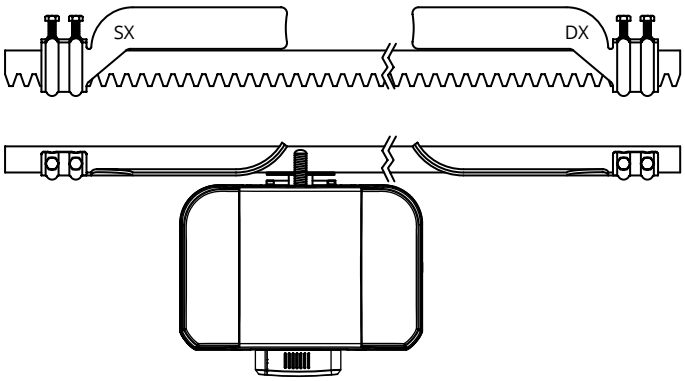


Figure 14



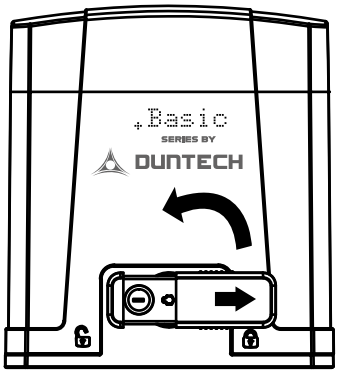
Manual override

In case of power failure, or for emergency release of the motor:

1. Push the lid of the release chamber and move it to the right. See Figure 15.
2. Insert the release key and turn it counter-clockwise to unlock the device.
3. Turn the lever counter-clockwise to release the motor.

To return to automatic operation, simply reverse steps 1 to 3.

Figure 15



Removing the control panel's protective plastic cover

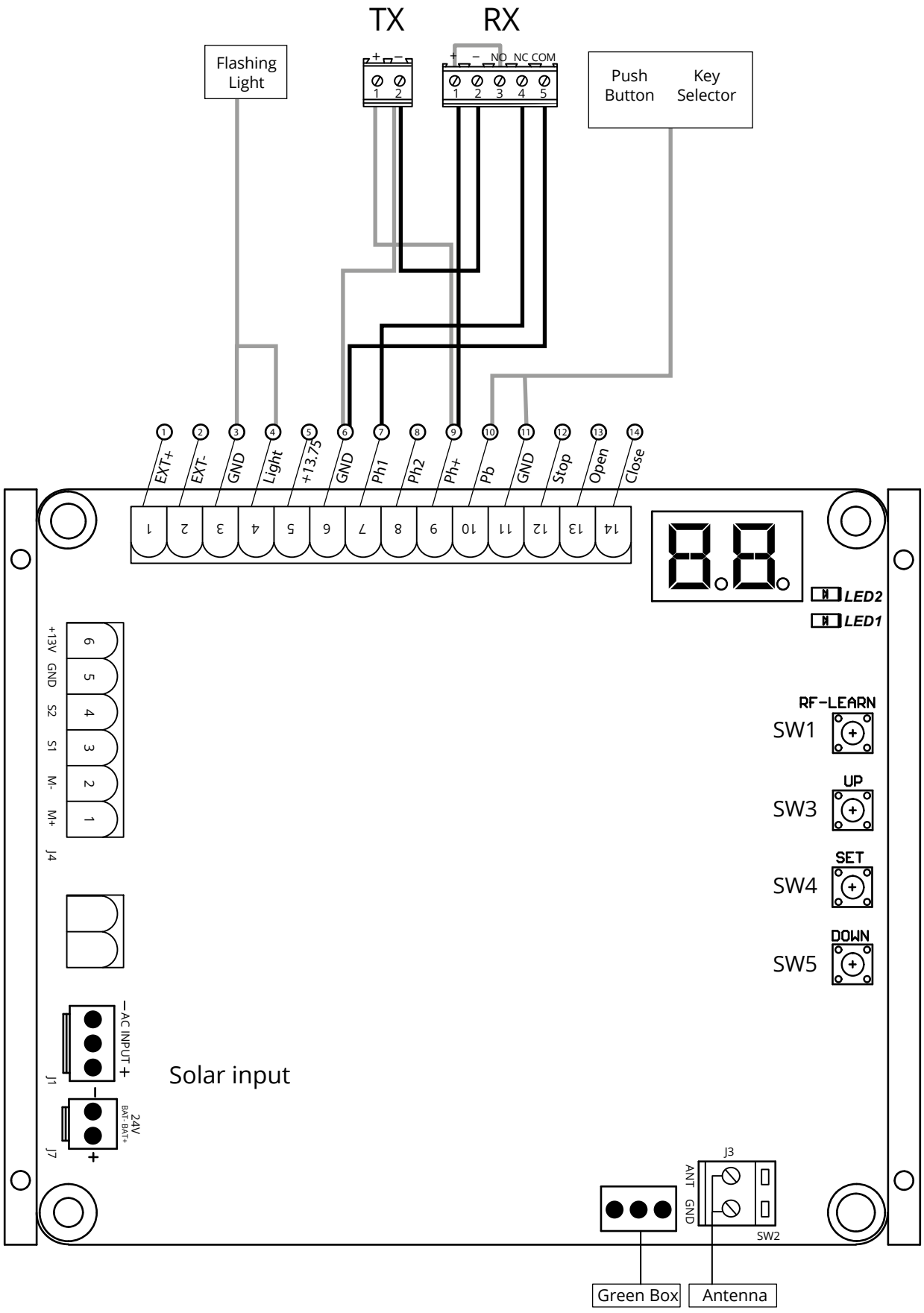
The grey plastic cover helps protect the control panel from water and insects.

Note: The cover is semi-hinged on the right side. Be careful not to dislodge the antenna wire (if fitted) at the bottom.

1. Ensure the lever is in the down position.
2. Remove using your left hand index finger to pull the tab in the left top corner back and away.

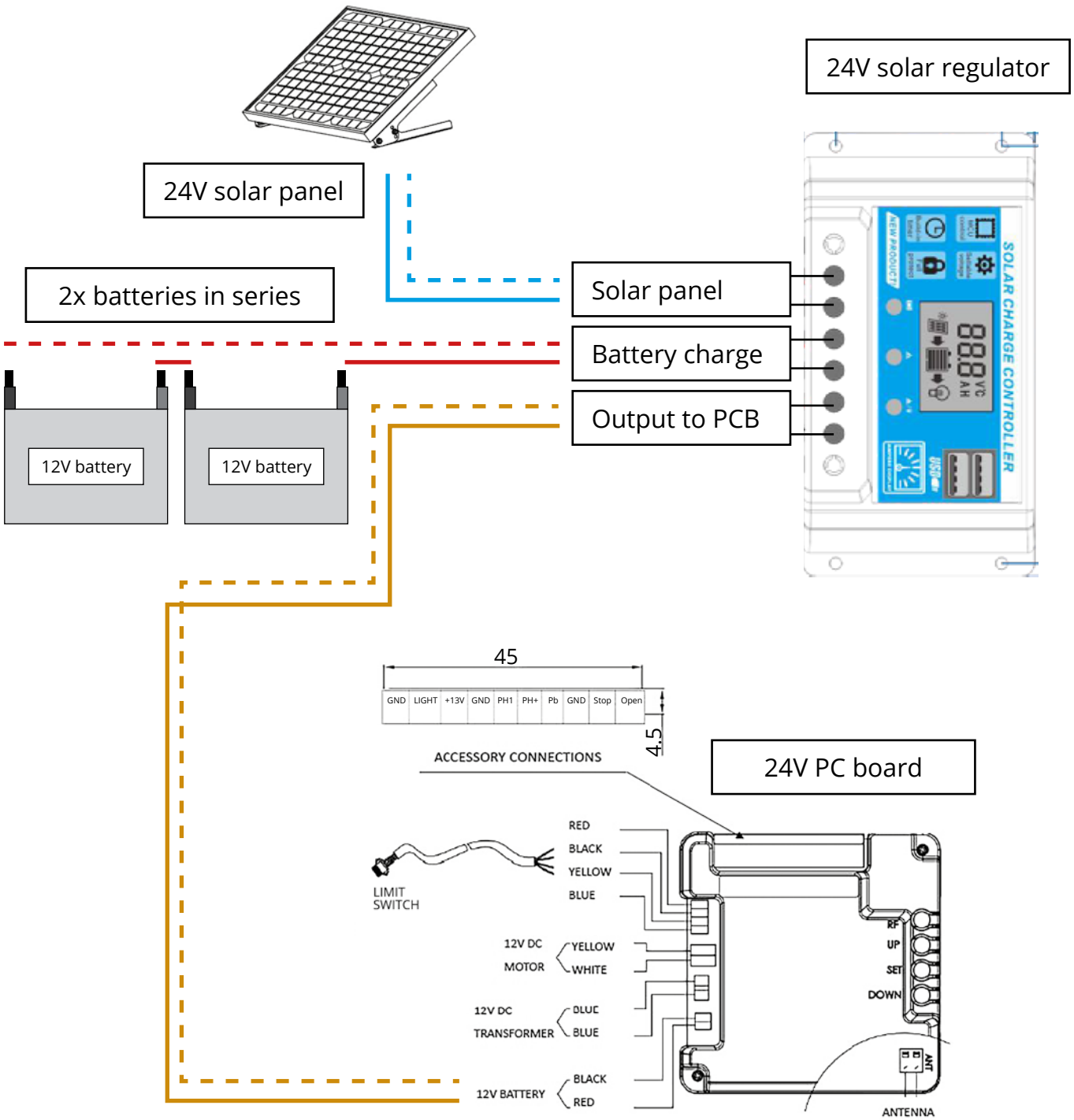
Connecting the wiring - 24V DC gate motors

Figure 16: Wiring diagram



Connecting the wiring - Solar powered motor

Figure 17: Wiring diagram



◄ Scan for our troubleshooting guide, parts or service

Open your phone's camera app, then point the camera at the code. Or, go to tiny.cc/dotbasic

Initial setup and configuration

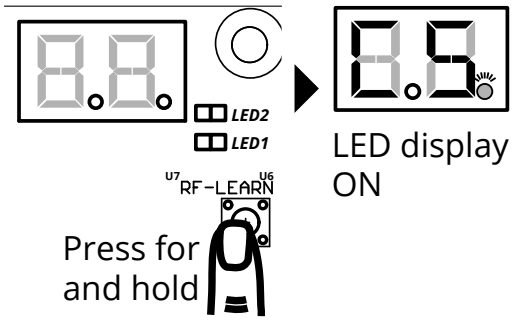
The control panel is factory programmed for a standard gate setup with the motor positioned on the left of the driveway (when looking at the gate from inside the property). If the motor is on the left of the driveway, you may only need to complete these Initial setup steps. If it is on the right, refer to "Custom configuration" on page 13 to change the direction of the motor's operation.

Remote control button configuration

Initial setup

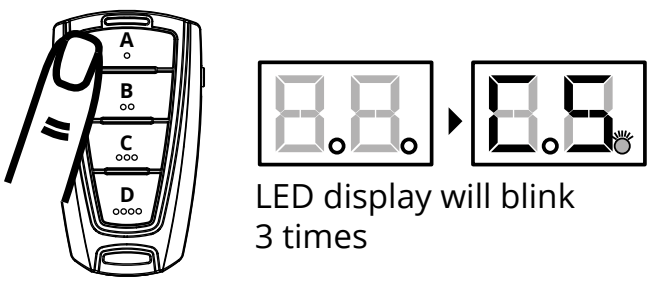
1. On the top right side of the control panel, press the RF-LEARN until the LED display shows "CS".

Figure 18



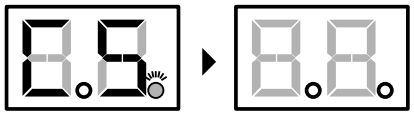
2. Press remote control button A (top left corner). The LED display will blink three times, then continue displaying "CS". The LED display will turn off if the RF-LEARN button has not been pressed again within 7 seconds.

Figure 19



3. The remote control button has been configured.

Figure 20



Deleting configuration of all remote control buttons

By following these steps, all remote control button configuration will be deleted.

1. Press and hold the RF-LEARN button until the LED display shows "CC". All remote control configuration has been deleted.

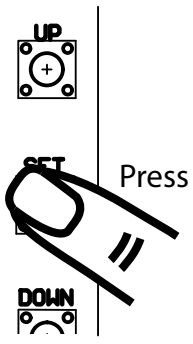
Gate motor configuration

Note: You must complete the remote control button configuration steps before configuring the gate motor.

Initial setup

1. On the control panel, press the SET button once (Figure 21).

Figure 21



2. Press and hold both the SET and DOWN buttons for 3 seconds. See Figure 22. The LED display will show “LE” (Figure 23).

Figure 22

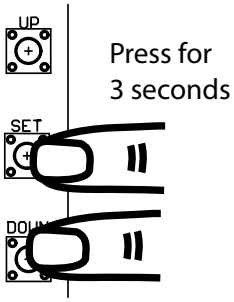


Figure 23



3. Press and hold button A for 1-3 seconds. See Figure 24. The LED display will show “LP” (Figure 25).

Figure 24

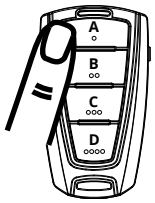
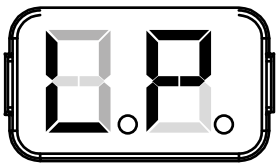


Figure 25



4. The control panel will begin automatically configuring the gate motor (Figure 26). Do not press any buttons on the control panel while the LED display is showing “LP”, as this may interrupt the automatic configuration. Once initial setup is completed, the LED display will show “CP” to confirm it has successfully configured the gate (Figure 27).

Figure 26

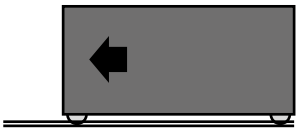
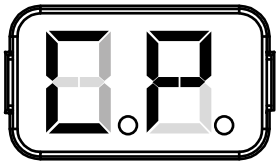


Figure 27



Restore to factory settings

1. Press and hold both the UP and DOWN buttons for 3 seconds (Figure 28). The LED display will show “CL” (Figure 29).

Figure 28

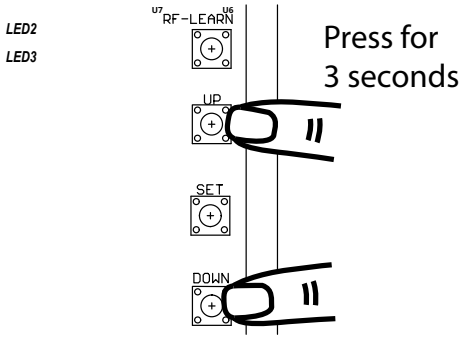
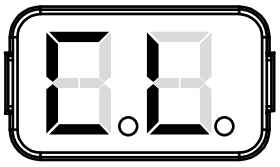


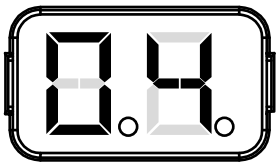
Figure 29



Automatic detection of motor current

During automatic configuration, the control panel’s LED display will automatically detect the current consumption from each motor, and indicate the resistance level of the gate while the motor is operating. For example, 0.4 (Figure 30).

Figure 30



If this reading increases immediately or remains a high reading, please check for objects in the path of the gate. Contact Duntech Automation for assistance if you are unable to resolve this yourself.

Table 1: Common LED display codes

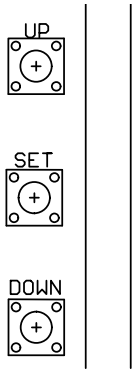
Code	Meaning
	Initial setup and configuration has not been completed and the gate motor is not yet configured.
	The system is in configuration mode and is awaiting configuration settings.
	Automatic configuration is in process. During this process, the gate will open to the end, stop, then close to the end, and stop.
	Initial setup and configuration is complete and standard configuration has been applied. See page 13 for “Custom configuration”.
	Initial setup and configuration is complete and the gate motor is operating normally.
	The gate motor and control panel has been reset to factory settings.

Custom configuration

How to change the configuration on your .Basic motor

To customise settings such as motor speed, power and auto close time, you can use the control panel and LED screen in the top right of the control panel. The LED screen will be blank while in standby mode, to save energy if the panel is running on battery power. The LED screen can be controlled using the three buttons on the right side of the panel: UP, SET and DOWN.

Figure 31



The first segment of the LED shows the function code, and the second segment shows the setting code. When power is first connected to the control panel, you will see "**-L**" on the screen for 10 seconds. This means Initial setup and configuration has not yet been completed. The screen will then turn blank, which is standby mode.

Before attempting these custom configuration steps, refer to "Available settings and corresponding codes" on page 14, and have the required custom configuration codes ready.

1. Press and hold the SET button for 3 seconds to enter custom configuration mode. The LED display will show the function code **1** (or **F1** for solar models).
2. Use the UP and DOWN buttons to browse the function codes.
3. Press the SET button to select a function code and begin browsing the setting codes. A second digit will appear on the right of the LED display, indicating the setting code.
4. Use the UP and DOWN buttons to browse the setting codes.
5. Press the SET button to save the desired setting.

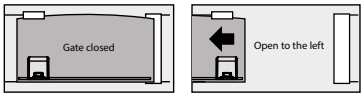
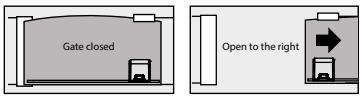
For example, to configure the auto close function F2 on the solar powered model DWSOL500:

1. Press and hold the SET button for 3 seconds. **-L** may appear on the LED screen. Release the SET button when the screen shows **1** (or **F1** for solar models).
2. To change from F1 to F2, press the DOWN button once.
3. Press SET to select F2 and begin browsing the setting codes.
4. Press the UP or DOWN buttons to navigate from setting code 20 to 28.
5. Wait about 10 seconds, or press button A on the remote control (top left). The screen will revert to standby again. Custom configuration is now complete.

Available settings and corresponding codes

24V DC gate motor settings

The following codes and settings apply.

Function code	Description	Setting code	Setting description	Explanation
1	Operating direction	11 (default)	Open to the left 	Controls the opening direction of the gate.
		12	Open to the right 	
2	Auto close	20 (default)	No auto close	Set the gate to close automatically after a time delay/pause. Duntech recommends using setting 20 (no auto close) unless optional photoelectric sensors are installed. Before activating the auto closing function, ensure the photoelectric sensors have been installed, for safety reasons. To deactivate the auto close function manually, press button D to stop the gate before it reaches the fully open position. The auto close function will be disabled temporarily. The auto close function will reactivate when the photoelectric sensors are triggered again.
		21	5 seconds	
		22	15 seconds	
		23	30 seconds	
		24	45 seconds	
		25	60 seconds	
		26	80 seconds	
		27	120 seconds	
		28	180 seconds	
3	Photoelectric sensor behaviour when an obstacle is detected	31 (default)	Refer to “Photoelectric sensor configuration” on page 18.	Configure function codes **H** and **J** before configuring function code **3**.
		32		
		33		
4	Opening speed	41	50% operating speed, 50% configuration speed	Controls the opening speed of motor. Opening speed from within the deceleration zone (i.e. up to the percentage configured using function code **6**): the motor will open at the configuration speed until it touches the limit switch. Opening speed from outside of the deceleration zone: The motor will take 1 second to reach full speed, then will continue until it touches the limit switch.
		42	70% operating speed, 50% configuration speed	
		43	85% operating speed, 50% configuration speed	
		44 (default)	100% operating speed, 50% configuration speed	

Function code	Description	Setting code	Setting description	Explanation
5	Closing speed	51	50% operating speed, 50% configuration speed	Controls the closing speed of the motor. Closing speed from within the deceleration zone (i.e. up to the percentage configured using function code **6**): the motor will open at the configuration speed until it touches the limit switch. Closing speed from outside of the deceleration zone: The motor will take 1 second to reach full operating speed, then continue until it touches the limit switch.
		52	70% operating speed, 50% configuration speed	
		53	85% operating speed, 50% configuration speed	
		54 (default)	100% operating speed, 50% configuration speed	
6	Deceleration point	61	75%	
		62	80%	
		63	85%	
		64 (default)	90%	
		65	95%	
7	Deceleration speed (% of total travel distance)	71	20%	
		72	30%	
		73 (default)	40%	
		74	50%	
8	Opening overcurrent setting	81	1A	Controls the opening power of the motor, to suit the gate's weight. WARNING: The maximum overcurrent for a 500kg motor is 10A. Use settings above 10A at your own risk.
		82	2A	
		83	3A	
		84	4A	
		85	5A	
		86	6A	
		87	7A	
		88 (default)	8A	
		89	9A	
		8A	10A	
		8C	11A	
		8E	12A	
		8F	13A	

Function code	Description	Setting code	Setting description	Explanation
9	Closing overcurrent setting	91	1A	Controls the closing power of the motor, to suit the gate's weight. WARNING: The maximum overcurrent for a 500kg motor is 10A. Use settings above 10A at your own risk.
		92	2A	
		93	3A	
		94	4A	
		95	5A	
		96	6A	
		97	7A	
		98 (default)	8A	
		99	9A	
		9A	10A	
		9C	11A	
		9E	12A	
		9F	13A	
A	Pedestrian mode auto close delay	A0 (default)	OFF	In pedestrian mode, the gate will open partially. This setting controls the time delay before the gate will automatically close again, when it is operated in pedestrian mode.
		A1	3 seconds	
		A2	6 seconds	
		A3	9 seconds	
		A4	12 seconds	
		A5	15 seconds	
		A6	18 seconds	
C	Flashing light	C0 (default)	The motor and flashing light will operate at the same time	**The flashing light accessory is not sold with any of the models in this manual.** If the motor is stopped due to current overload or touching the limit switch, the flashing light will continue blinking for 1 minute.
		C1	In addition to the C0 settings, the flashing light will continue blinking for 1 minute after the gate motor stops	
E	Current overload behaviour	E0	Stop	Controls the motor's behaviour if the current exceeds function **8 - Opening overcurrent setting** or function **9 - Closing overcurrent setting**. The reverse function will only operate 3 times before the gate stops completely. If the gate reverses, the auto close function will be cancelled.
		E1	Reverse 1 second and stop	
		E2	Reverse 3 seconds and stop	
		E3 (default)	Reverse until the gate is completely open or closed	

Function code	Description	Setting code	Setting description	Explanation
F	Main operation (open-stop-close-stop) button	F0	Not configured	
		F1 (default)	Button A	
		F2	Button B	
		F3	Button C	
		F4	Button D	
H	Pedestrian mode/partial open button	H0 (default)	Not configured	
		H1	Button A	
		H2	Button B	
		H3	Button C	
		H4	Button D	
J	External device button	J0 (default)	Not configured	
		J1	Button A	
		J2	Button B	
		J3	Button C	
		J4	Button D	
L	Photoelectric sensor 1 activation	L0 (default)	Disabled	
		L1	Enabled	
P	Photoelectric sensor 2 activation	P0 (default)	Disabled	
		P1	Enabled	
U	PCB stop terminal activation	U0 (default)	Disabled	
		U1	Enabled	
A.	Pb terminal configuration	A.1 (default)	Open-stop-close-stop	
		A.2	Open only	
		A.3	Pedestrian mode	
		A.4	Fire alarm mode	
C.	Open terminal configuration	C.1	Open-stop-close-stop	
		C.2 (default)	Open only	
		C.3	Pedestrian mode	
		C.4	Fire alarm mode	

Function code	Description	Setting code	Setting description	Explanation
E.	Overcurrent sensitivity setting	E.1	0.1 sec	
		E.2	0.2 sec	
		E.3	0.3 sec	
		E.4	0.4 sec	
		E.5 (default)	0.5 sec	
		E.6	0.6 sec	
		E.7	0.7 sec	
		E.8	0.8 sec	
		E.9	0.9 sec	
		E.A	1 sec	

Photoelectric sensor configuration

***Note:** If the automatic closing time delay restarts, the delay is controlled by function code **2 - Auto close** setting (24V DC gate motors) or **F2 - Auto close** setting (solar model). See “Available settings and corresponding codes” on page 14.

Table 2: F3-1 - Photoelectric sensor behaviour when an obstacle is detected

Position of gate	Photoelectric sensor 2	Photoelectric sensor 1 / loop
Closed	Gate will not open	No effect
Open	No effect	Automatic closing delay restarts
Stopped while moving	Gate will not open	Automatic closing delay restarts
Closing	No effect	Open
Opening	Close	No effect

Table 3: F3-2 - Photoelectric sensor behaviour when an obstacle is detected in “safety edge” mode

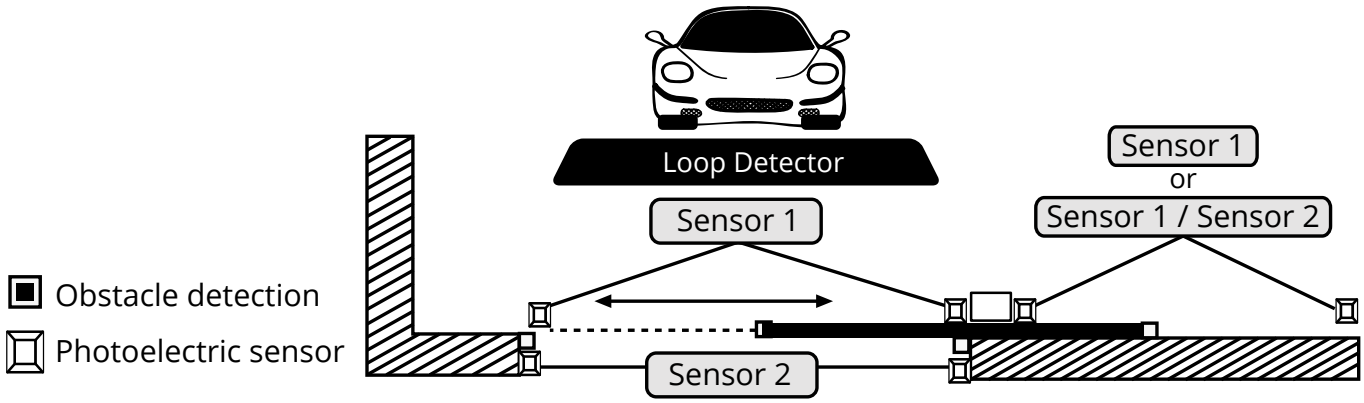
Position of gate	Safety edge	Photoelectric sensor 1
Closed	Gate will not open	No effect
Open	Reloads automatic closing time	
Stopped while moving	Gate will not open or close	Automatic closing delay restarts
Closing	Reverses to open for 2 seconds	Open
Opening	Reverses to close for 2 seconds	No effect

Table 4: F3-3 - Photoelectric sensor behaviour when an obstacle is detected in “loop detector” mode

Position of gate	Loop detector	Photoelectric sensor 1
Closed	Open	No effect
Open	Automatic closing time delay restarts	

Position of gate	Loop detector	Photoelectric sensor 1
Stopped while moving	Open	Automatic closing delay restarts
Closing	Open	Open
Opening	No effect	No effect

Figure 32



Testing and checking

1. Ensure you have read “Warning” on page 1 in full.
2. Release the gear motor with the included release key. See “Manual override” on page 5.
3. Make sure the gate can be moved manually while opening and closing, with a maximum force of 390N (approx 40kg).
4. Lock the gear motor.
5. Using the remote control, test the opening, closing and stopping of the gate and make sure that the gate is moving in the correct direction.
6. Check the photoelectric sensors one at a time, and confirm the control panel recognizes each device. See “Table 5: Photoelectric sensor connectivity”.

Table 5: Photoelectric sensor connectivity

Label on control panel	Meaning
LED1	The light labelled “LED1” on the control panel will illuminate when the first pair of photoelectric sensors are activated.
LED2	The light labelled “LED2” on the control panel will illuminate when the second pair of photoelectric sensors are activated.

Technical specifications

24V DC gate motors

Model ►	.Basic
Thrust	8000N
Motor RPM	3600RPM
Wattage	144W
Voltage	24V DC
Current	6A
Maximum gate weight	800kg
Maximum gate length	8 metres
Duty cycle	20%
Temperature	-20°C to 50°C
Dimensions	250 × 170 × 265mm
Speed	25.67cm/sec

PR-4 Transmitter data sheet

Intended use	Radio transmitter
Frequency	433.92Mhz
Coding	Rolling code
Buttons	4, for single-gate or dual-gate operation
Power Supply	3V with one CR2032 button type lithium battery
Operating Temperature	-20 to +50°C
Dimensions	71.5mm × 33mm × 14mm

Troubleshooting

All models

Our online troubleshooting guide is updated regularly, to cover the latest frequently asked questions, tips and tricks.

◄ Scan for our troubleshooting guide, parts or service

Open your phone's camera app, then point the camera at the code. Or, go to tiny.cc/dotbasic

Warranty

Australian Consumer Law

1. If you are a consumer as defined under the Australian Consumer Law ("ACL"), this product comes with guarantees that cannot be excluded under the ACL. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replace if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

2. The guarantees under the ACL are provided in sections 51 to 59 inclusive of the ACL ("Statutory Guarantees") and the remedies are provided in sections 259 to 266 of the ACL ("Statutory Remedies").

3. To the extent permitted by law, without limiting your consumer rights under the ACL, Duntech Automation expressly limits its liability under this warranty and under any other statutory guarantee imposed at law to, at its option:

a) The replacement or repair of the defective product;

b) A replacement product may not be reasonably available from Duntech Automation in the same shape, type or colour as the original .Basic product covered by this warranty. If a replacement product of the same shape, type or colour is not reasonably available, Duntech Automation reserves the right to provide a replacement product of as close a shape, type and colour match as is reasonably possible from Duntech Automation's then prevailing product range in satisfaction of its obligations under this warranty.

c) The payment of the cost of the defective product, or of repairing the defective product, or of acquiring an equivalent product.

Terms & Conditions of Limited 12 month warranty

4. This warranty only applies to .Basic product:

a) That has not been moved from their original place of installation;

b) Where that part or parts of the .Basic product is affected by the manufacturing defect, Duntech Automation will endeavour to repair to the same standard or replace with the same or substantially similar product and colour. Duntech Automation is not obliged to repair or replace any other product(s);

c) That has been designed, fabricated, installed, maintained, used and protected in the manner recommended by Duntech Automation;

d) Where Duntech Automation has received notification of any manufacturing defect within 7 days of the first person to become aware of it; and

e) Where the claim is made within the applicable Warranty Term.

5. This warranty does not cover any defect/ damage caused by:

a) Any act of God, any natural occurrence, third party act or omission or other circumstances beyond Duntech Automation's control;

b) Physical abuse, negligence, vandalism, misuse or accidents;

c) The use of solvents or inappropriate cleaning products/materials;

d) Exposure to chemical products and acidic or corrosive materials;

e) Normal 'wear and tear', including without limitation, scratches, scuffs, burns, stains, wipe marks, chipping, dents, cuts on the product;

f) General fading or discolouration due to direct or indirect UV light exposure;

g) Faulty workmanship by any person other than Duntech Automation;

h) Unauthorised modification/application.

i) Inappropriate transport, storage and handling prior to installation;

j) Failure to follow procedures/ recommendations set out in this user manual;

k) Failure to follow procedures/ recommendations set out in the fabrication and installation instructions of the product published by Duntech Automation;

l) Failure to follow any applicable product procedures/ recommendations set out in the .Basic by Duntech Automation and Installation Manual and .Basic by Duntech Automation Technical Data Sheet.

Declaration of Conformity

Built and manufactured for Duntech Automation.

Model: .Basic, PR-4 remote control

1. This D.Basic gate motor complies with the essential requirements outlined in article 3.2 of the R&TTE Directive 1999/5/EC.
2. The above product has been tested with the listed standards and in compliance with the European Directive LVD 2006/95/EC.
3. The submitted sample of the above product has been tested for CE marking according to the following European Directives: 2006/42/EC Machinery Directive.

It complies with the following standards:

EN 301489-1 V1.8.1: 2008
EN 301489-3 V1.4.1: 2002
EN 300220-1 V2.1.1: 2006
EN 300220-2V2.1.2:2007

EN 60335-1: 2002+A11:2004+A1:2004+A12:2006 +A2:2006+A13:2008
EN 60335-2-103: 2003
EN 62233: 2008

EN 12445: 2001
EN 12453: 2001

This product must not be operated until the motor, and all its components, are declared to be compliant with the above.

Taiwan, 18 Feb 2016

David Lan



Deputy managing director

CE



For more information, visit our website: **duntechmotors.com.au**