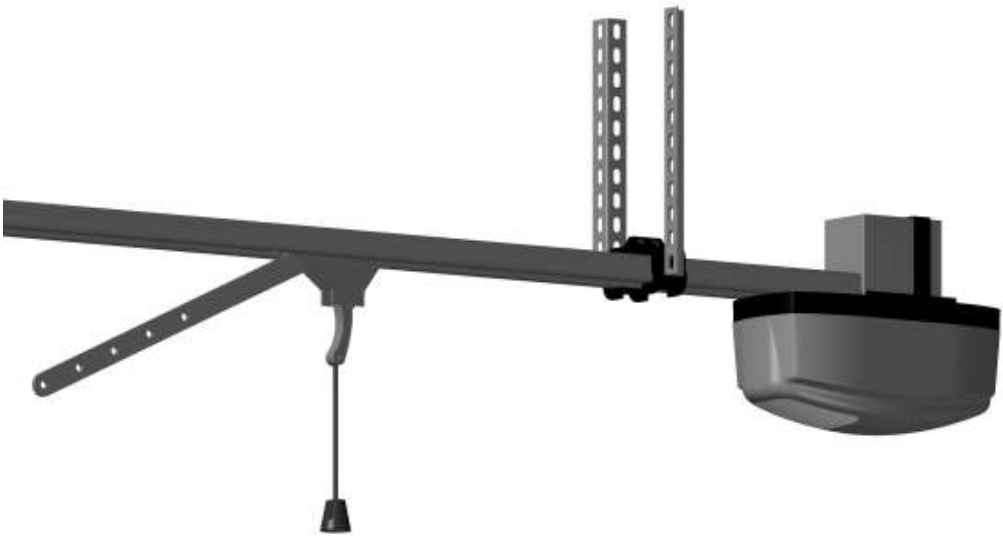
LUX DC12

Sectional

Garage Door Operator

- 12 Volt DC / 150W
- For Single or Double Sectional Garage Doors



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ACCESS CONTROL PRODUCTS

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INSTALLATION & USER MANUAL

Ver 1.01

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FOREWORD

Thank you for choosing D.A.C.E. We welcome you to the ever growing international community of DACE product owners. The advanced engineering and high-quality construction of each DACE product we build is something of which we are proud.
The LUX DC12 garage operator is packed with features to bring you convenience and enhance your security. Your owners manual will introduce you to the features and operation of your new LUX DC12. It is suggested that you read it carefully since the information it contains can contribute greatly to the satisfaction you receive from your new garage door operator. ***Please keep your owners manual safe for future reference.***

SAFETY INSTRUCTIONS

WARNING!

- **Important Safety Instructions.**
- **To ensure the safety of people and property, it is important to follow these instructions.**
- **Incorrect installation, and use of this product, could lead to serious injury.**
- **As the door is automated, it could open or close unexpectedly, it is therefore important to ensure that the area below the door is kept clear and unobstructed at all times.**
- **Save these instructions.**

- Never allow children to play with remote controls or any fixed operator controls.
- Keep remote controls out of reach of children.
- Only operate the door when it is in full view and do not allow people to approach the door while it is in motion.
- Use extreme caution when operating the manual release, as the door may fall unexpectedly due to weak or broken springs or an unbalanced door.
- Frequently inspect the installation to ensure that it is in good working order, especially the door springs; mountings and cables.
- Never operate the door if it requires any form of repair or adjustment as an unbalanced door or faulty installation could result in a serious injury or death.
- Once a month check that the operator reverses the door back open if it is closed onto a solid, 40mm high object placed on the floor. If necessary, adjust the door's closed position and sensitivity and recheck as an incorrect adjustment can be dangerous.
- Before installing the operator, turn off any powered equipment and remove all cables and chains.
- Remove all locks that are not required for the mechanizing of the garage door.

- Before installing the operator, ensure that the door is in a good mechanical condition, properly balanced and able to be opened and closed using one hand with an equal force in both directions. When released midway, the door should not move.
- Install the operator so that the manual release mechanism is no higher that 1.8m above the ground.
- Install all fixed operator controls at a minimum height of 1.5m and in full view of the the garage door but away from any moving parts.
- Securely fix the entrapment warning sticker in a conspicuous place or near any fixed operator control.
- Securely attach the manual release label to, or near, the manual release mechanism. This is supplied either already attached to the manual release rope or applied to the release mechanism.
- After the installation, ensure that the operator reverses the door back open if it closes onto a solid, 40mm high object placed on the floor.
- This operator must not be used on a door containing a wicket door.
- During installation, ensure that no part of the operator or garage door extends over a public path or doorway.
- While not legally required in all countries, it is highly recommended that safety beams be installed to reduce the risk of injury or damage to property.
- The garage operator is not waterproof and is not suitable for outdoor use.
- It is important to note that the garage operator is battery operated and, by simply switching off the mains power supply to the operator, it does not mean that the operator does not have power. It is therefore important that both the mains power supply and the battery be disconnected before working on the operator.
- If the garage does not have an interleading pedestrian door, then the garage door/s must be fitted with an emergency key release!

DISCLAIMER

Dura Access Control Equipment (trading as D.A.C.E) reserves the right to make changes to the products described in this manual without notice and without obligation to notify any persons or organisations of such revisions or changes.
Additionally, DACE makes no representations or warranties with respect to this manual.
This manual may only be copied or distributed as a whole, no alterations or subsections may be distributed or copied without the prior express consent of DACE in writing

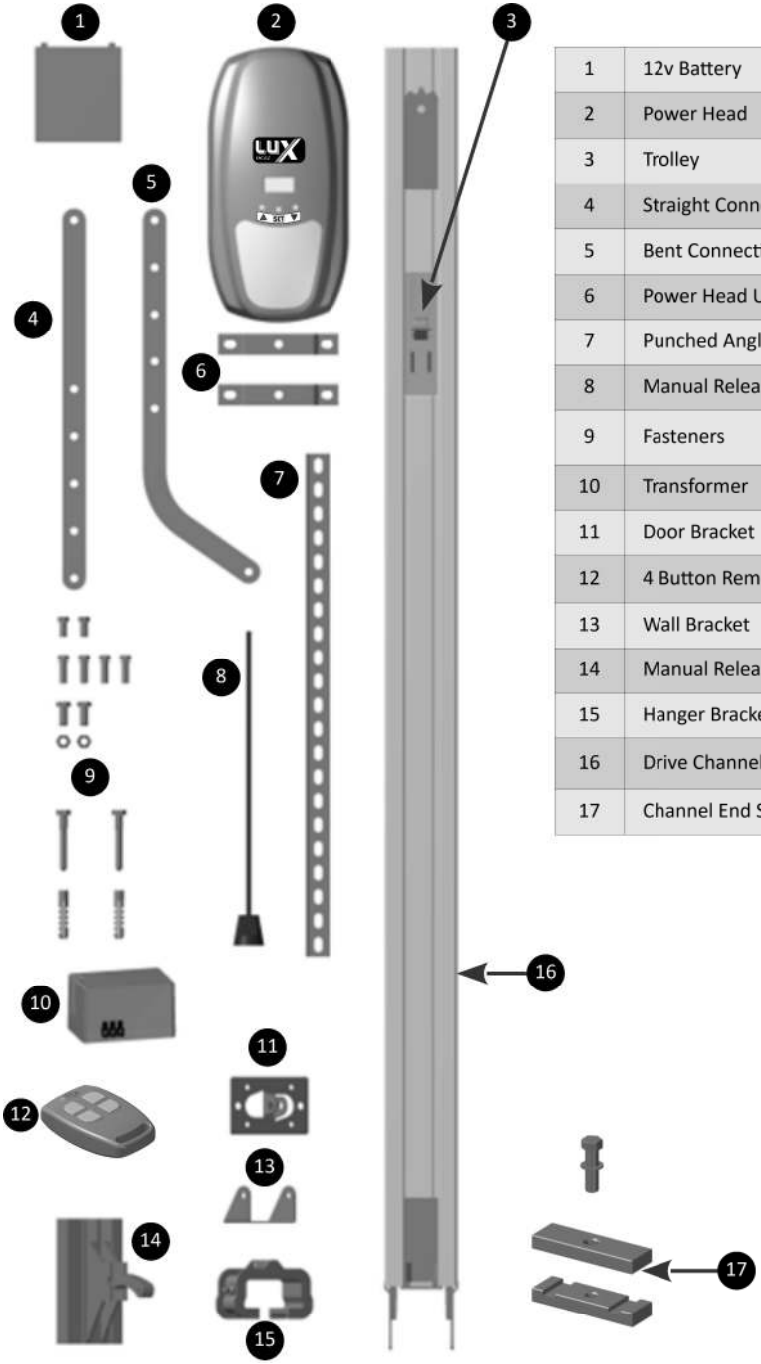
GLOSSARY

Anti-Crush Gap	This is the small section of travel near the end of the door's closing cycle. If the operator receives a trigger in this section of travel, the door will always open to prevent possible damage or injury.
Auto Close Function	When set, this function will enable automatic closing of the garage door after a set period of time.
Balanced Door	When the force required to open the garage door is equal to the force required to close the garage door.
Control Board	The main electronic circuit board housed inside the operator.
Courtesy Light	The light, built into the operator Control Board, which switches on during each door operation and can also be operated by pressing a programmed button on a remote control.
Door Balance	The even distribution of the doors opening and closing forces.
Drive Channel	The steel channel housing the Chain, Lifting Assembly and Manual Release Mechanism
Fuse	A removable electronic component on the Control Board that protects the Control Board from damage in the case of severe forces being applied.
Infrared Safety Beams	Optional electronic sensors which prevent the garage door from closing if the infrared beam, being transmitted between the sensors, is blocked, indicating an obstruction.
LED Display	Electronic alphanumeric display on the operator used to assist with programming and fault finding.
Lockout	An electronic security function that will prevent the door from receiving a trigger while the function is active.
Manual Release Mechanism	The lever assembly that is used to place the garage operator into manual mode, allowing for the garage door to be operated manually.
Obstacle Sensing	The detection of an obstacle causing the motion of the door to be impeded through the processing of algorithms in the garage door operator's software.
Onboard Receiver	An integrated part of the Control Board which receives the signal from the Remote Control to trigger the operator.
Ramp Down	Process of the operator slowing down the door's travel speed towards the end of the door's travel.
Remote Control	The hand held device used to activate the opening and closing of the operator.
Remote Button	One of several buttons on a remote control used to activate various functions.
Solar Panel	An optional device connected directly to the Control Board to make use of sun energy instead of a buildings mains supply for charging the operator's battery.
Transformer	An external device connected to the buildings mains supply via a plug point that reduces the mains voltage to a safe voltage to charge the operator's battery.
Wicket Door	Small door, or gate, built into the main door.

TECHNICAL SPECIFICATIONS

Transformer Voltage	Input Voltage: 220 - 240V AC @50Hz Output Voltage: 12 - 18V AC	
Board Input Supply	12 - 18V AC or 17 - 22V DC	
Motor Voltage	12V	
Motor Power (Rated)	150W	
Maximum Holding Capacity	1200N	
Maximum Push/Pull Force	50kgF	
Battery	12V DC (5Ah OR 7Ah)	
Maximum Daily Operations (or in standby *) * Operations in standby is dependent on charge level of battery and duration of power loss. The number of operations is calculated using a **12V 5Ah** battery. Using a bigger Ah rated battery will increase the operations in standby and standby duration but will not allow for more daily operations.	**Push/Pull Force**	**Operations (Cycles)**
	10kgF	110 (55)
	20kgF	86 (43)
	30kgF	62 (31)
	40kgF	40 (20)
	50kgF	16 (8)
	Operations: either Open **or** Close Cycles: both Open **and** Close	
Maximum Door Size	Sectional Operator: 15m^2 Drum Mount Roll Up Operator: 7.5m^2 Vertical Mount Roll Up Operator: 7.5m^2	
Travel Speed Note: Travel speed is dependent on load and battery voltage.	8.5m/min	
Outputs	Auxiliary: Adjustable to be either a light, trigger, status or low battery indicator. Lock: Adjustable to function with either an electric or magnetic lock.	
Inputs	External Trigger and Beams	
Features	Programmable Limits	Adjustable Force Settings
	Infrared Beam Input	Lock Output
	Auxiliary Output: Light, Trigger, Door Status or Battery Status	Trigger Input
	Holiday Lockout	Single Remote Erase
	Up to 64 Programmable Remotes	Remote Buttons can be set to activate the light or lockout functions individually
	Adjustable Auto Close Function	Solar Panel Auto Detection

PARTS IDENTIFICATION

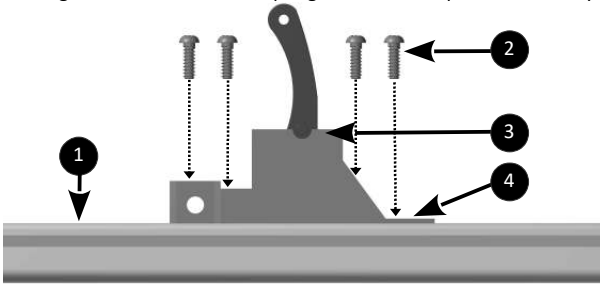


1	12v Battery
2	Power Head
3	Trolley
4	Straight Connecting Arm
5	Bent Connecting Arm
6	Power Head U-Brackets
7	Punched Angle Iron - (x2)
8	Manual Release Rope
9	Fasteners
10	Transformer
11	Door Bracket
12	4 Button Remote (x2)
13	Wall Bracket
14	Manual Release Mechanism
15	Hanger Bracket
16	Drive Channel
17	Channel End Stopper (x2)

ATTACHING MANUAL RELEASE MECHANISM TO THE TROLLEY

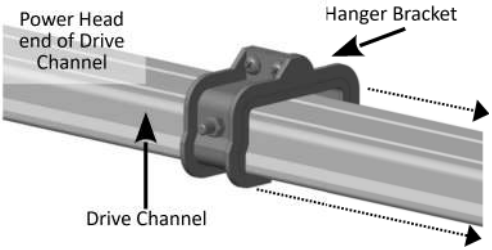
Using the four Self Tapping 6 x 20mm screws supplied, attach the Manual Release Mechanism to the Trolley. As these screws are under load when the door is moving or if the door balance spring breaks, it is important that they are screwed in securely.

1	Drive Channel
2	Self Tapping 6 x 20mm Screws
3	Manual Release Mechanism
4	Trolley



FITTING THE HANGER BRACKET TO THE DRIVE CHANNEL

The Hanger Bracket must be fitted to the Drive Channel before the Power Head is attached. Slide the Hanger Bracket onto the Drive Channel from the Power Head end of the Drive Channel. The Hanger Bracket will slide loosely on the channel to enable easy alignment with the rafters later on in the installation.

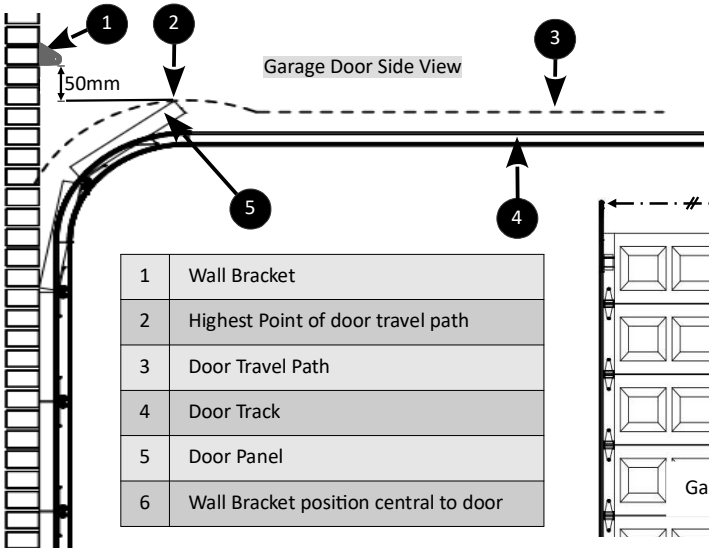


MOUNTING WALL BRACKET

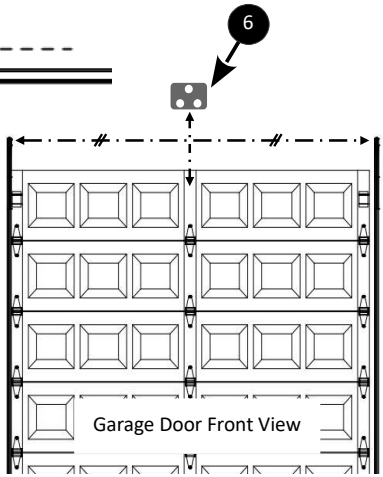
Open the door partially, until the top door panel reaches the highest point of its travel path. Measure 50mm above this point, and central to the garage door. Mount the Wall Bracket on the wall using the two M8 x 50mm Coach Screws and Wall Plugs supplied.

IMPORTANT

As all driving forces are carried by the Wall Bracket, it is very important to ensure that the Wall Bracket is fastened securely to the wall!



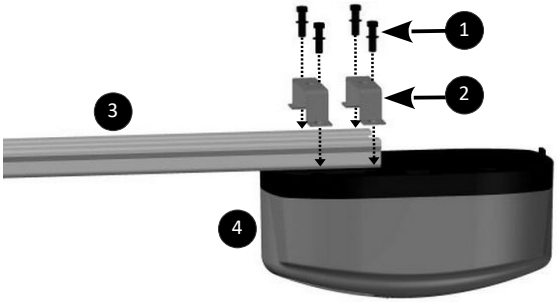
1	Wall Bracket
2	Highest Point of door travel path
3	Door Travel Path
4	Door Track
5	Door Panel
6	Wall Bracket position central to door



ATTACHING THE POWER HEAD TO THE DRIVE CHANNEL

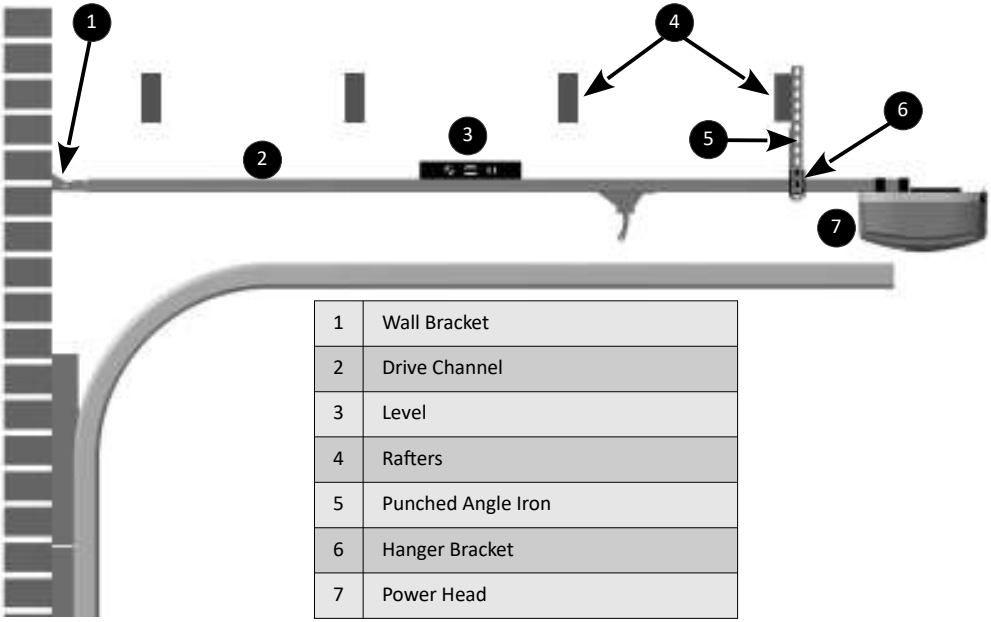
Attach the Power Head to the Drive Channel using the U-Brackets and the four M6 x 25mm hex bolts and washers provided.

1	M6 x 25mm Hex Bolts & Washers
2	U-Brackets
3	Drive Channel
4	Power Head



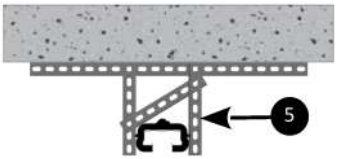
MOUNTING THE DRIVE CHANNEL

Using the two M6 x 16mm bolts supplied, connect the Drive Channel to the Wall Bracket. Raise the Power Head towards the rafters, until the Drive Channel is level. Slide the Hanger Bracket along the channel until it is aligned with a rafter and fix the Punched Angle Iron to the rafter and the Hanger Bracket.

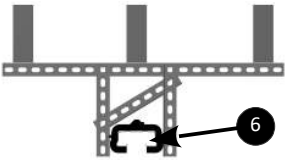


1	Wall Bracket
2	Drive Channel
3	Level
4	Rafters
5	Punched Angle Iron
6	Hanger Bracket
7	Power Head

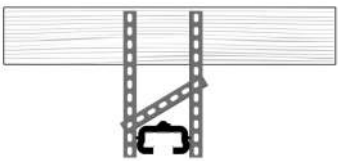
Connecting the Punched Angle Iron and Hanger Bracket to different types of rafters:



Concrete Slab



Perpendicular Rafters



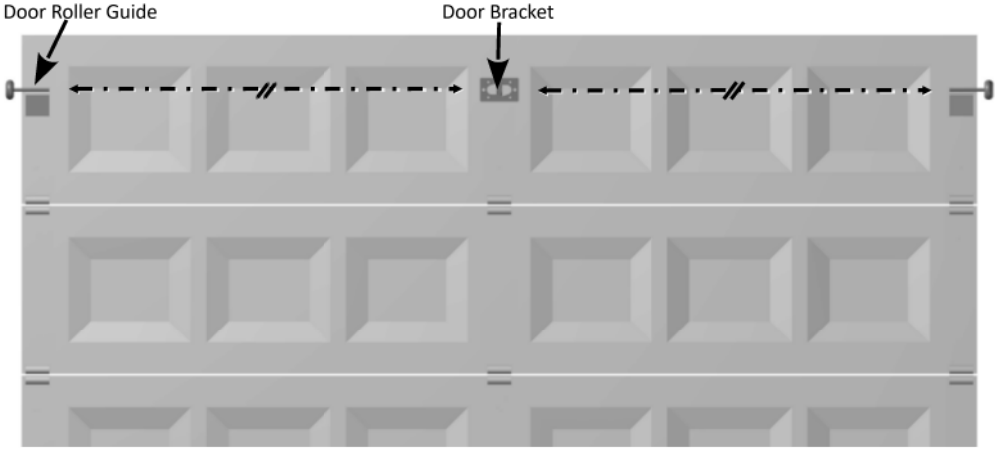
Parallel Rafters

ATTACHING THE DOOR BRACKET TO THE DOOR

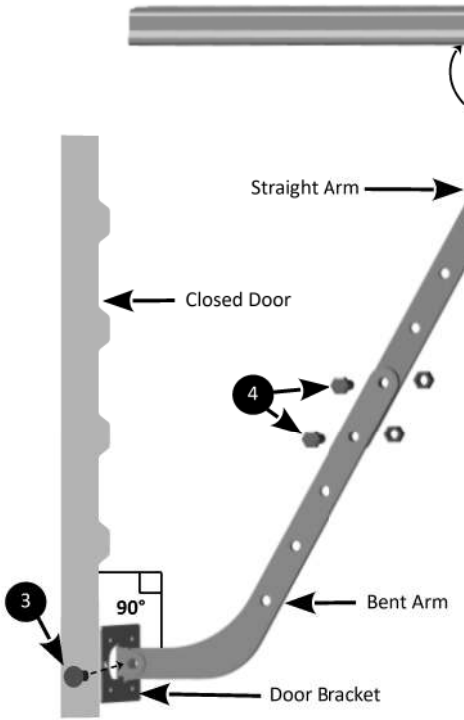
With the garage door closed , attach the Door Bracket to the middle of the door on the side that faces into the garage. To determine the height , align the Door Bracket with the two top door guide rollers.

IMPORTANT

The Door Bracket is exposed to extreme forces. All steps must be taken to ensure that the Door Bracket is firmly attached to the door. In the event that the door is weak, it will be necessary to re-enforce the door when attaching the Door Bracket to prevent the door from being damaged.

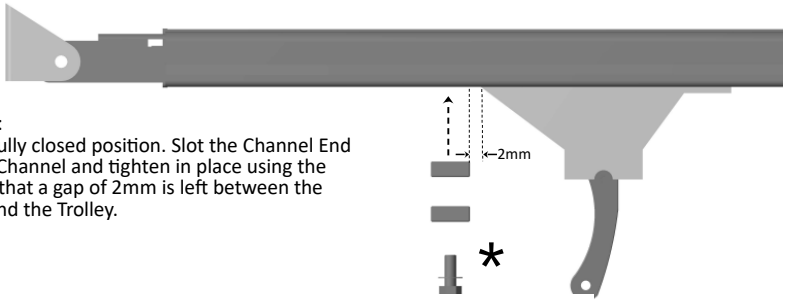


INSTALLING THE CONNECTING ARMS

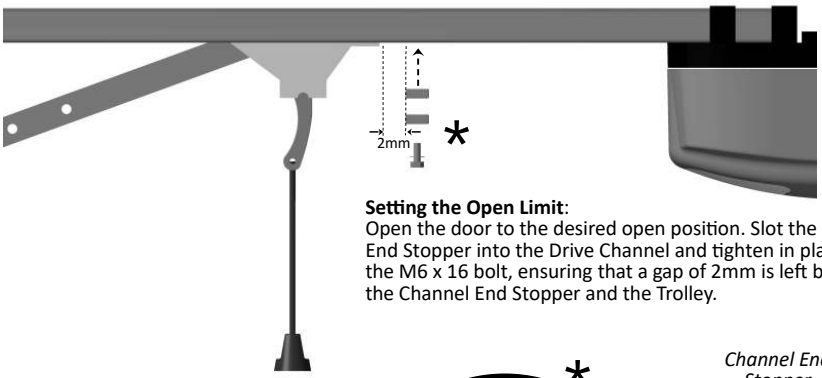


1. With the door in the fully closed position, slide the Trolley with the Manual Release Mechanism towards the door.
2. Connect the Straight Arm to the Manual Release Mechanism using a Clevis Pin.
3. Connect the Bent Arm to the Door Bracket with a Clevis Pin.
4. Using the M8 bolts and nuts, join the Straight and Bent Arms to form approximately a 60° angle at the Manual Release Mechanism and a 90° angle at the Door Bracket.

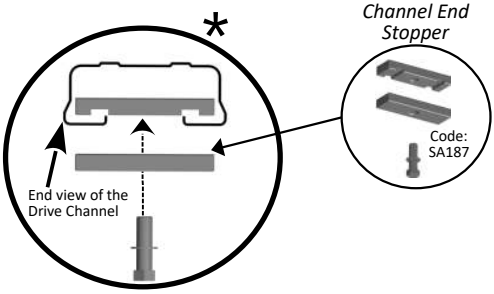
SETTING THE PHYSICAL OPEN & CLOSE END STOPS



Setting the Close Limit:
Move the door to the fully closed position. Slot the Channel End Stopper into the Drive Channel and tighten in place using the M6 x 16 bolt, ensuring that a gap of 2mm is left between the Channel End Stopper and the Trolley.



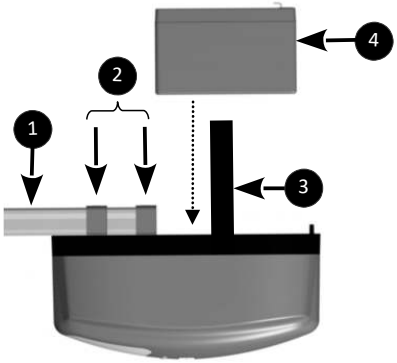
Setting the Open Limit:
Open the door to the desired open position. Slot the Channel End Stopper into the Drive Channel and tighten in place using the M6 x 16 bolt, ensuring that a gap of 2mm is left between the Channel End Stopper and the Trolley.



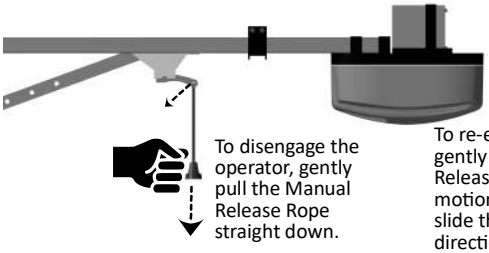
POSITIONING & SECURING THE BATTERY

Place the 12 volt battery on top of the Drive Channel on the back of the operator and secure it in place with the Velcro straps that are in place.

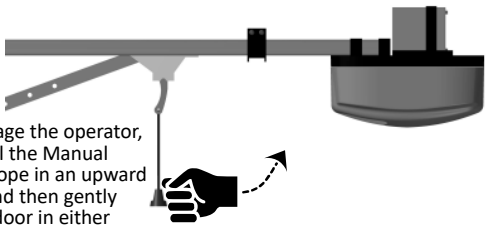
1	Drive Channel
2	Door U-Brackets
3	Velcro Straps
4	12v Battery



OPERATING THE MANUAL RELEASE MECHANISM



To disengage the operator, gently pull the Manual Release Rope straight down.



To re-engage the operator, gently pull the Manual Release Rope in an upward motion and then gently slide the door in either direction until the Trolley engages.

BEFORE PROGRAMMING &COMMISSIONING THE OPERATOR!

The LUX DC12 operator uses the 12V battery for normal operation, it is important that the battery is always connected when the operator is in use.

▶ **Setting the Open and Close limits**:

After the operator has been assembled, fastened to the wall and attached to the door (s), it must be programmed to recognise the door's Open and Close limits.

On first power up, or after a factory reset, the operator's LED display will flash **nL**. This is the indication that the door limits need to be set. The operator will not allow operation of the door until this process has been completed.

Note: Depending on the motor wiring polarity, the UP and DOWN buttons on the operator may not necessarily correspond with the actual direction that the door is moving in. The operator will automatically correct this once the Open and Close Limits have been set.

Follow 'Setting the Open and Closed Limits...Menu 1' to program the limits for the door(s).

Once the limits have been set, the door can be opened and closed using the UP or DOWN buttons on the operator.

If, after the initial setup, the limits need adjusting the Programming Menu (Pr) can be entered again by pressing the SET button and the limits can be reset. ***Refer to 'Setting the Physical Open & Close End Stops' on page 11.***

▶ **Programming Remotes**:

The Control Board has a built in receiver. The remotes, supplied as part of the operator kit, will have already been programmed to the operator at the factory. ***To add additional remotes (up to 64) refer to 'Programming Remotes' on page 16***.

In addition to triggering the operator to open and close, remotes can be programmed with the following features:

- **Additional opening & closing buttons**:

  Each remote can be programmed with multiple open and close buttons. An example of this feature is programming one button to open & close the garage door and a second button to not only operate the door but also to open and close a gate or switch on security lights.

- **Remote Holiday Lockout**:

  Any button (or multiple buttons) on a remote can be programmed to enable or disable the Holiday Lockout feature. When activated, the display on the operator will change to **LO**. Placing the Control Board into Holiday Lockout will prevent any remote from activating the operator until Holiday Lockout is deactivated. This feature is useful to prevent any members of staff or contractors from entering the garage while the owners are away or to prevent the door from being operated while work is being done on, or near, the door.

▶ **Courtesy Light Operation**:

The operator has a built in LED light and whenever the operator is activated, this Courtesy Light will switch on for a period of 5 minutes. During a power failure, however, the Courtesy Light will only remain on for a period of 1 minute.

In addition to the standard Courtesy Light operation, the built in LED light can also be switched on and off using a remote control button, without activating the operator. To achieve this, a dedicated button on the remote must be programmed to the operator. Pressing this designated button on the remote will activate the light for a period of one hour, unless it is switched off using the same button again.

During a power failure the courtesy light will switch off after one minute, even if the dedicated light button is pressed.

▶ **Anti Crush Gap**:

The Anti Crush Gap is the 30cm space towards the end of the door closing cycle, before the door is fully closed. This is a built in safety feature to prevent the entrapment of people or animals by the door.

The following will happen if the operator receives a trigger from a remote (or the buttons on the operator) while the door is already in motion:

- If the door is closing, the door will stop briefly and then reopen to the fully open position.
- If the door is opening and it is stopped within ±30cm of the fully closed position, it will continue opening when it receives the next trigger to prevent it from closing on a child or animal.
- If the door is opening, and it is stopped further than ±30cm from the closed position, the door will start to close when it receives the next trigger.

▶ **Door operation during low battery and power fail conditions**:

The operator will flash an **Lb** (Low Battery) error message due to excessive operations, long power failure or a damaged battery.

While the **Lb** condition persists, the door will not close automatically. This is to prevent a person from being locked out of the garage. The door will have to be closed manually by releasing the Manual Release Mechanism.

Note: If the door is stopped during a power failure while it is closing, it will not automatically reverse back open.

▶ **Auto Close Function**:

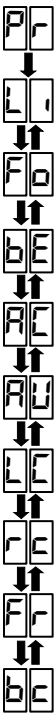
The operator can be programmed to automatically close the door after a programmed period of time. Auto Close can only be activated if Safety Beams have been installed. When enabling the Auto Close function the Safety Beam function will automatically be enabled.

PROGRAMMING MENU

Press the **SET** button to activate the Programming Menu, use the UP and DOWN buttons to navigate through the menu.

To exit the menu, arrow down to the EXIT prompt (**bc**) and press the **SET** button.

Press **SET** to enter the Programming Menu.



Programming Menu

(1) Setting the Open and Close Limits

(2) Setting the Opening & Closing Force

(3) Enable or Disable Safety Beams

(4) Setting Auto Close

(5) Setting Auxiliary Output

(6) Enable or Disable Electric/Magnetic Lock

(7) Programming Remotes

(8) Factory Reset

Exit Menu

To exit the Programming Menu, press **SET** at the **bc** prompt.

SETTING THE OPEN & CLOSE LIMITS ....Menu 1

1) Ensure the battery is connected to the operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until **Li** is visible.	⬇
4) Press the SET button. The display will change to **oL**.	**SET** →
5) Use the UP or Down buttons to move the door to the OPEN position. The Trolley must stop 2mm away from the OPEN Channel End Stopper.	⬆⬇
6) When the door is in the open position, press the SET button. The display will change to **cL.**	**SET** →
7) Use the UP or Down buttons to move the door to the CLOSE position. The Trolley must stop 2mm away from the CLOSE Channel End Stopper.	⬆⬇
8) When the door is in the closed position, press the SET button. The display will change to **CL**.	**SET** →
9) The open and closed limits are now set.	

SETTING THE OPENING & CLOSING FORCE ....Menu 2

1) Ensure the battery is connected to the operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Force Limit Menu (**Fo**) is visible.	⬇
4) Press the SET button to enter the Force Limit Menu. The display will change to the current Force Limit value **F3** (this is the default setting).	**SET** →
5) Press the UP or DOWN buttons to scroll through the Force Limit values. **F0** (minimum force) to **F9** (maximum force). ***	⬆⬇
6) Press the SET button on the chosen Force Limit value to accept.	**SET**
*** ***Caution****: too high a force setting could cause injury or damage!!*	

ENABLE OR DISABLE SAFETY BEAMS ....Menu 3

1) Ensure the battery is connected to the operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Beams Menu (**bE**) is visible.	⬇
4) Press the SET button to enter the Beams Menu. The display will change to (**by**)	**SET** →
5) Press the UP or DOWN buttons to toggle between ENABLE (**by**) and DISABLE (**bn**).	⬆⬇
6) Press the SET button on either ENABLE (**by**) or DISABLE (**bn**) to select.	**SET**

SETTING AUTO CLOSE ....Menu 4

1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Auto Close Menu (**AC**) is visible.	⬇
4) Press the SET button to enter the Auto Close Menu. The display will change to the number **A0** (Auto Close Time value).	**SET** →
5) Press the UP or DOWN buttons to scroll through the Auto Close time values. **A0** (or DISABLE Auto Close) to **A9** (90 seconds). This is in increments of 10 seconds.	⬆⬇
6) Press the SET button on the desired Auto Close time value to select.	**SET**

Important: Auto Close can only be activated if Safety Beams have been installed. It should be noted that the Safety Beam function will automatically be enabled when setting the Auto Close function.

SETTING THE AUXILIARY OUTPUT ....Menu 5

1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Auxiliary Output Menu (**AU**) is visible.	⬇
4) Press the SET button to enter the Auxiliary Output Menu. The display will change to the currently selected auxiliary function (default **AL**).	**SET** →
5) Press the UP or DOWN buttons to scroll through the Auxiliary Output Menu options. ***Note**: Auxiliary Output is a single connector and only one option can be selected.*	⬆⬇

Output options available:

a) Auxiliary Light (**AL**):

This is an adjustable pulsed output, ranging from 0,25 seconds (**T0**) to 9 minutes (**T9**), in increments of 1 minute.

This output will activate when the door is opened and can be used to temporarily switch on lights or bypass alarm passives when entering the garage.

Press the SET button to enter the **AL** menu. Press the UP or DOWN buttons to scroll through the time options (**T0** to **T9**). Press the SET button to select the desired time.

b) Low Battery Warning (**Ab**):

This output will activate when there is a low battery condition.

This output, which can be connected to a buzzer, light or external GSM, will activate to indicate that the operator battery is low.

From the Auxiliary Output Menu (**AU**), press the UP or DOWN buttons until reaching **Ab**. Press SET to select.

c) Auxiliary Trigger (**At**):

This output gives a pulsed trigger output every time the door is activated **when it is in the fully closed position**. It can be connected to a wired remote to activate other devices or to pulse stretching devices to switch lights on, bypass beams or passives etc.

From the Auxiliary Output Menu (**AU**), press the UP or DOWN buttons until reaching **At**. Press SET to select.

.....***Continued on next page***

.....***Output options available (continued)***: **a) Auxiliary Status** (**AS**): This output indicates the 'door status'. * It can be connected to an external LED to indicate if the door is open or closed and if the battery is charging. It can also be connected to a GSM device for remote monitoring. From the Auxiliary Output Menu (**AU**), press the UP or DOWN buttons until reaching **AS**. Press SET to select.	

* *This is an indication of the motor status and not the physical door. If the door is in override or disconnected, regardless of it's physical position, the* **AS** *will indicate the status of the operator.*

*Auxiliary Output (***AU***) is a single connector and only one Auxiliary Output option can be selected.*

ENABLE or DISABLE ELECTRIC/MAGNETIC LOCK ....Menu 6

1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Lock Menu (**LC**) is visible.	⬇
4) Press the SET button to enter the Lock Menu.	**SET**
5) Press the UP or DOWN buttons to select the lock type. **PL** - Magnetic / Power Lock **EL** - Electric / Strike Lock or **OF** - Disable the Lock output	⬆⬇
6) Press the SET button to select the lock type (**PL** or **EL**) or to disable the lock output (**OF**).	**SET**

PROGRAMMING REMOTES ....Menu 7

PROGRAMMING A REMOTE BUTTON TO TRIGGER THE OPERATOR	
1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	**SET** →
3) Press the DOWN button until the Remote Menu (**rc**) is visible.	⬇
4) Press the SET button to enter the Remote Menu. The display will change to **LE** (Learn).	**SET** →
5) To program a remote, press and hold the remote button that is to be used to trigger the operator.	
6) While holding the remote button, press the SET button on the operator. The display will indicate the stored position that the newly programmed remote holds (01 to 64). The remote button has now been programmed.	
7) To continue programming remotes, repeat steps 5 and 6 while the menu remains on **LE**.	
8) To exit **LE**, use the UP or DOWN buttons to scroll to **bc** and press the SET button. This will return you to the Programming Menu (**Pr**).	→ **SET**
9) To exit the Programming Menu (**Pr**), scroll again to **bc** and press the SET button.	→ **SET**

PROGRAMMING A REMOTE BUTTON TO TURN THE OPERATOR LIGHT ON and OFF	
1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	SET →
3) Press the DOWN button until the Remote Menu (**rc**) is visible.	⬇
4) Press the SET button to enter the Remote Menu. The display will change to **LE** (Learn).	SET →
5) Press the DOWN button until **Lt** (Light) is visible.	⬇
6) Press and hold the remote button that is to be used to turn the operator light on and off. Do not use the same button that was programmed to trigger the operator.	
7) While holding the remote button, press the SET button on the operator. The display will indicate the stored position of the remote being programmed (01 to 64). The button has now been programmed.	**SET**
8) To exit the Light Menu (**Lt**)**,** use the UP or DOWN buttons to scroll to **bc** and press the SET button. This will return you to the Programming Menu (**Pr**).	→ **SET**
9) To exit the Programming Menu (**Pr**), scroll again to **bc** and press the SET button.	→ **SET**

ERASING A SINGLE REMOTE and ITS BUTTONS FROM THE OPERATOR	
To erase a single remote from the operator it is necessary that you know the stored position of the particular remote (01 to 64).	
1) Ensure that the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	SET →
3) Press the DOWN button until the Remote Menu (**rc**) is visible.	⬇
4) Press the SET button to enter the Remote Menu. The display will change to **LE** (Learn).	SET →
5) Press the DOWN button until **Cl** is visible.	⬇
6) Press SET button	**SET**
7) To erase the remote, press the UP or DOWN buttons to select the position that the remote was in (01 to 64) and press SET. The remote and all its buttons have been erased from the operator.	
8) To exit **Cl,** use the UP or DOWN buttons to scroll to **bc** and press the SET button. This will return you to the Programming Menu (**Pr**).	→ **SET**
9) To exit the Programming Menu (**Pr**), scroll again to **bc** and press the SET button.	→ **SET**

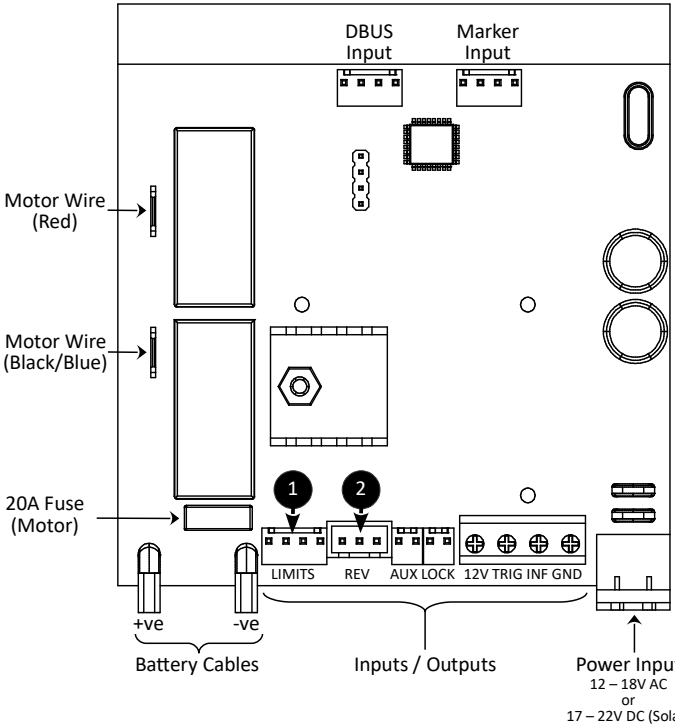
ERASING ALL REMOTES and THEIR BUTTONS FROM THE OPERATOR	
1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	SET →
3) Press the DOWN button until the Remote Menu (**rc**) is visible.	⬇
4) Press the SET button to enter the Remote Menu. The display will change to **LE** (Learn).	SET →
5) Press the DOWN button until **Er** is visible.	⬇
6) Press the SET button. While holding the SET button, press either the UP or DOWN button. Continue to hold the two buttons until the visible countdown on the LED display is complete (E5 to E0). All remotes have now been erased from the operator.	
7) Exit the Programming Menu by scrolling to **bc** and pressing the SET button.	→ SET

PROGRAMMING A REMOTE BUTTON TO SET THE HOLIDAY LOCKOUT FEATURE	
1) Ensure the battery is connected to the Operator.	
2) Press the SET button to activate the Programming Menu (**Pr**).	SET →
3) Press the DOWN button until the Remote Menu (**rc**) is visible.	⬇
4) Press the SET button to enter the Remote Menu. The display will change to **LE** (Learn).	SET →
5) Press the DOWN button until **Lo** is visible.	⬇
6) Press and hold the remote button that will be used to activate the Holiday Lockout feature.	
7) While holding the remote button, press the SET button on the operator. The display will indicate the stored position of the remote being programmed (01 to 64). The button has now been programmed.	SET
8) To exit the Holiday Lockout Menu (**Lo**), use the UP or DOWN buttons to scroll to **bc** and press the SET button. This will return you to the Programming Menu (**Pr**).	→ SET

FACTORY RESET ....Menu 8

1) Ensure the battery is connected to the Operator.	
2) Press the SET button to enter the Programming Menu (**Pr**).	SET →
3) Press the DOWN button until the Factory Reset (**Fr**) is visible.	⬇
4) Press the SET button. While holding the SET button, press either the UP or DOWN button. Continue to hold the two buttons until the visible countdown on the LED display is complete (F9 to F0). Factory Reset is complete.	
5) The screen will return to the Programming Menu (**Pr**).	
6) Press the DOWN button until **Li** is visible and proceed to reprogram the doors limits.	⬇
7) Reprogram all remotes and operator settings.	

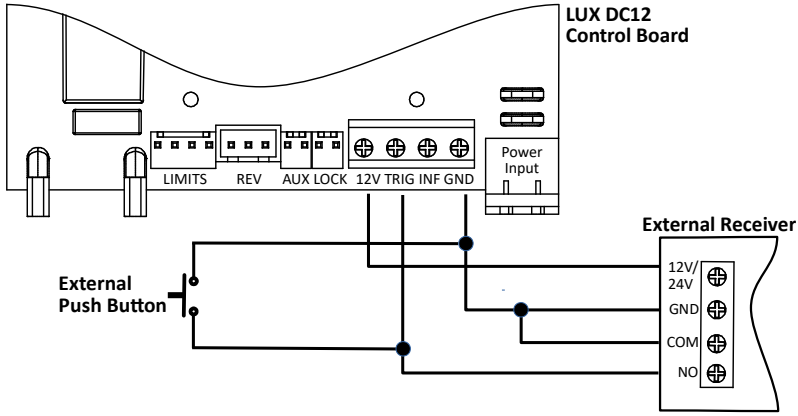
CONTROL BOARD LAYOUT



1	**LIMITS**: Connect the 4 pin plug from the Drum Mount Operator (***this is not used on Sectional or Vertical Mount Operators***).
2	**REV**: Connect the 3 pin plug from the motor to the connector. (***this is not used on Drum Mount Operators***).

ADVANCED CONTROLLER PROGRAMMING OPTIONS

1. External trigger:
The LUX operator can be activated using other external devices such as Push Buttons, external Receivers or GSM Receivers.

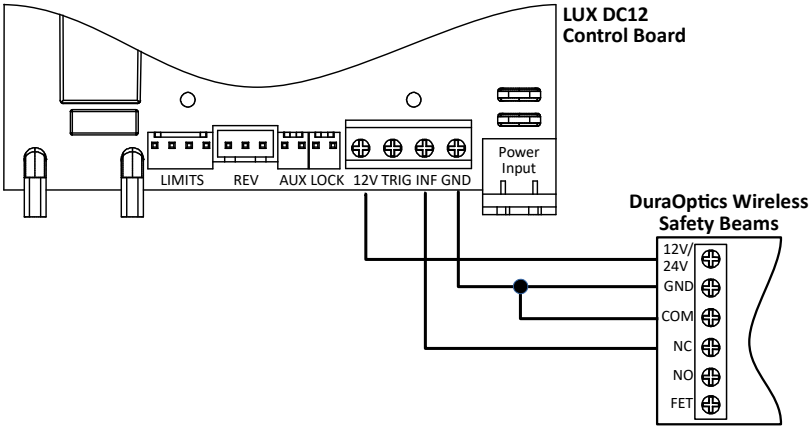


2. Safety Beams

Safety Beams are used for the early detection of an object obstructing the closing door that could result in damage or injury. While Safety Beams will detect most obstructions including cars, people and pets, it may not necessarily detect all obstacles but will greatly reduce the risk. It is highly recommended that Safety Beams are fitted when automating a garage door.

For the purposes of the wiring diagram DuraOptics Wireless Safety Beams (code DOPT03) are shown.

Refer to 'Enable or Disable Safety Beams....Menu 3' for programming.

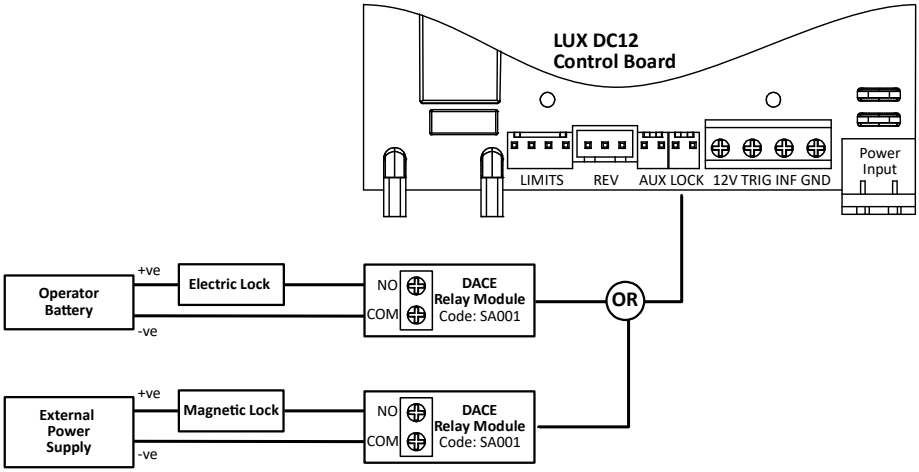


3. Electric and Magnetic Locks

An automated door must not be locked using a padlock as both the door and the operator could be damaged should the operator be triggered while the door is locked.

If extra security is required the door can be locked using either an Electric Lock (strike lock) or a Magnetic Lock (power lock) and controlled by the operator.

Refer to 'Enable or Disable Electric/Magnetic Lock....Menu 6' for programming.



After connecting the lock, it is important to select the correct lock type in the operator's Programming Menu, as selecting the wrong lock type may cause damage to the lock or cause the lock to function incorrectly.

PL - Magnetic / Power Lock

EL - Electric / Strike Lock

***Caution*:**

When fitting a Magnetic Lock to the door, do NOT use the power from the operator as the lock will drain the operator's battery power.

Only use an external source to power the Magnetic Lock.

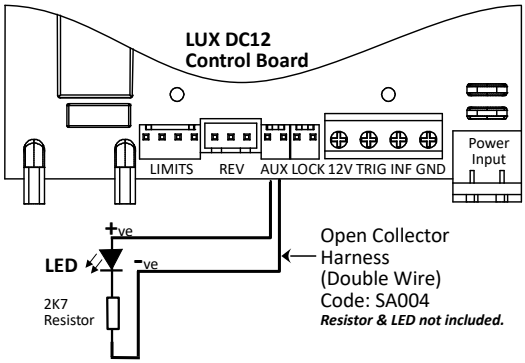
4. Status Output (auxiliary)

The Status output is used to provide feedback from the operator on the current position of the Trolley on the Drive Channel and the mains supply status. Most commonly used for the Status Output is an LED, connected to the operator. The LED can be placed in a convenient location for ease of use.

It is important to understand that the Status Output only indicates the operational status of the operator and not the door. To explain, imagine the door is closed and the LED indicates that the operator is closed. The door is then placed in manual mode and opened manually, however the Trolley has not moved and remains in the closed position, the LED will continue to indicate that the status of the operator as closed. When the door is reconnected to the Manual Release Mechanism (placed back in automatic mode), the status of both the door and operator will be closed.

Refer to 'Setting Auxiliary Output....Menu 5' for programming.

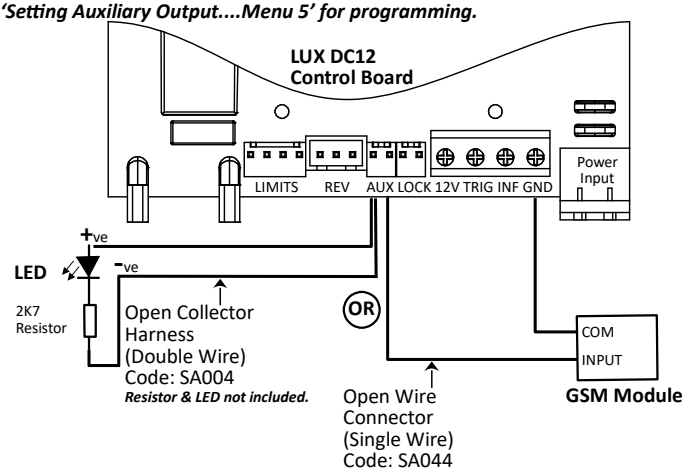
LED	OPERATOR & MAINS STATUS
ON	The operator/door is open
OFF	The operator/door is closed and the mains is off.
BLINK	The operator/door is closed and the mains is on.



5. Low Battery Output (auxiliary)

This output will provide indication when the battery is low. An LED or a GSM transmitter can be used.

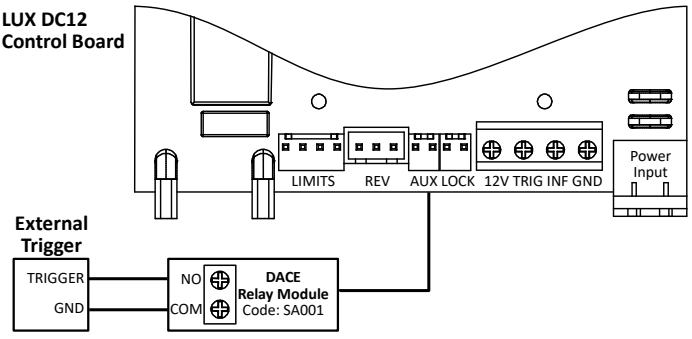
Refer to 'Setting Auxiliary Output....Menu 5' for programming.



6. Trigger Output (auxiliary)

The Trigger Output is used to trigger other external devices at the same time that the door operator is triggered. These devices can include buzzers inside the house which sound when the garage door is triggered. Another example is the switching on of lights or the deactivation of the home alarm by triggering a Pulse Stretcher.

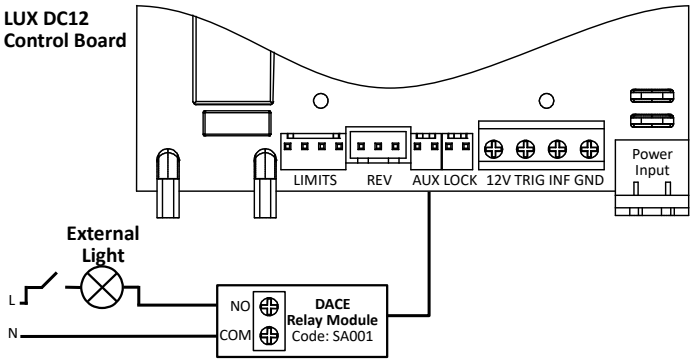
Refer to 'Setting Auxiliary Output....Menu 5' for programming.



7. Auxiliary Light

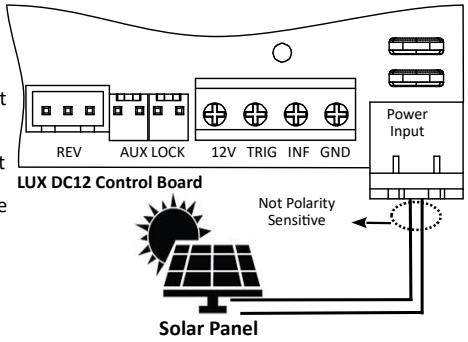
The Auxiliary Light output is used to connect an external light to the operator. The external light can be switched on when the operator is triggered for a preselected period of time (up to 9 minutes) or the light can be activated via a dedicated remote button, without triggering the operator. If switched on by a dedicated button, it will remain on for a period of 1 hour but can be switched off before 1 hour is up by pressing the same button again.

Refer to 'Setting Auxiliary Output....Menu 5' for programming.



CONNECTING A SOLAR PANEL

- Solar panels must be mounted in direct sunlight and the panel angle alignment should be adjusted for optimal conditions for the location. It is very important to ensure that no shadows will cross the panel during the day.
- It is recommended that a battery with a capacity of at least **7Ah** is used.
- The operator will automatically detect that it is connected to a solar supply once the panel voltage exceeds 17V DC. It will then no longer indicate a power fail message but will only display a single bar "_" when the panel output voltage is too low for charging.
- When connecting a solar panel directly to the controller the transformer must be removed from the input.



Solar Panel specs:

Power Rating:	20W min
Min Voltage output:	17V DC
Max Voltage Output:	22V DC.

ERROR CODES

ERROR CODE	MEANING	CAUSE & REMEDY
Lb	Low Battery	**Cause**: Low battery voltage. The battery may be faulty or an excessive number of operations, or devices, may have drained the battery.
		Remedy: Ensure the operator is plugged in and switched on. Fully charging a 5Ah 12V battery will take 24hrs if the operator is not in use and if no other devices, such as locks; receivers & lights, are connected. Check that connected devices are not drawing excessive currents. Additional devices will reduce the number of daily operations and standby operations.
PF	Power Fail	**Cause**: The operator is not detecting an input supply voltage.
		Remedy: If using a transformer, ensure that the transformer is plugged in and switched on. The output voltage should be between 12VAC – 18VAC, if not the transformer may need to be replaced. If using a solar panel, ensure the output voltage is between 17VDC - 22VDC. When a solar panel is connected to the operator it is necessary for the DC voltage to be higher than 17V for the operator to switch to DC Solar Operation after which the operator will stop showing the Power Fail message.

ERROR CODE	MEANING	CAUSE & REMEDY
bb	Beams Blocked	**Cause**: The infrared beam between the two Safety Beam sensors are blocked, indicating an obstruction or the batteries in the transmitter beam are low.
		Remedy: Remove anything that may be obstructing the doorway. If there is no obstruction, check that the Beam's wiring is correct. Test the beams to ensure they are in fact operational. Check for possible ant infestations in the beams. If no beams have been installed, ensure that the beams setting in the operator menu is set to bn.
LO	Lockout	**Cause**: The operator has been placed in 'Holiday Lockout' mode.
		Remedy: To deactivate Holiday Lockout, press the button on the remote that was assigned to activate Holiday Lockout. To prevent accidental activation, is it recommended that the function is assigned to a remote/s by pressing two of the remote buttons simultaneously. This will reduce the risk of accidentally activating the Lockout function.
ES	Encoder Stop (Fault/Obstruction)	**Cause**: The operator has 'stalled'. This could be as a result of the door hitting an obstruction, the limits being set incorrectly, an incorrect force limit setting or a faulty Encoder.
		Remedy: 1) Remove any physical obstruction. If no obstruction....2. 2) Check that the limits have been set correctly and that the door is not stopping hard against the floor or any other physical stop. If the limits are set correctly.....3. 3) Check the Door Balance. To do this, disengage the door via the Manual Release Mechanism. Be sure to support the door before doing so to ensure that the door does not drop after being released. Manually open and close the door. The door should open and close easily, requiring the same amount of force in both directions. If the door is difficult to move in either or both directions, and the open and closing forces are not within the operating parameters, the door will need to be balanced and serviced. If the Door Balance is correct.....4. 4) The Force Level settings on the Control Board may need to be adjusted. This may happen if the door is ageing. 5) If all the previous checks are in order the Encoder may be faulty and the garage operator will need to be serviced.
Er	Error Programming Remote	**Cause**: All 64 remote slots are occupied.
		Remedy: No further remotes can be programmed to the controller. In order to add new remotes it will be necessary to delete some to make space or add an external receiver.
HL	Heavy Load	**Cause**: The operator has detected that the lifting force is greater than the allowed maximum. This could be as a result of an increase in the door's friction, incorrect door specs or possibly a broken door spring.
		Remedy: *Caution: This error message indicates that the door is too heavy and that the operator is unable to lift it. Disengaging the door via the Manual Release Mechanism could result in the door dropping fast and could cause damage or injury!* Disengage the door slowly and with great caution. Manually open and close the door to establish the weight. If it is difficult to lift, the door will need to be repaired before reconnecting it to the operator.
Cb	Check Balance	**Cause**: The door has gone out of balance, usually as a result of either one or both of the door torsion springs being broken.
		Remedy: Disconnect the door from the operator and open and close it manually. If moving the door in one direction is more difficult than the other direction then the door will need to be repaired before reconnecting it to the operator.

ERROR CODE	MEANING	CAUSE & REMEDY
E1, E4	Drive Error	**Cause:** The Control Board is potentially damaged/faulty.
		Remedy: Try activating the door again. If the fault persists, return the Control board for repair/replacement.
Fu	Fuse Blown	**Cause**: The 20A fuse on the Control Board has blown.
		Remedy: The fuse may have blown due to excessive forces being applied during the door operation. Ensure that the door is moving easily and is balanced and replace the fuse with a new 20A fuse. If the fault persists, return the Control Board for repair/replacement.
d1	Motor Disconnect	**Cause**: The Control Board has detected a motor disconnection.
		Remedy: Check that the motor wires are correctly connected to the Control Board. If the fault persists, return the Control Board for repair/replacement.
nL	No Limits	**Cause:** Limits not programmed.
		Remedy: Program the limits.

WARRANTY

DACE warrants that LUX DC12 operators will be free from defects in material and workmanship for a period of 24 months of operation. Where operational data is not available, the warranty claim must be accompanied by the original invoice. In the event that both operational data and the original invoice are not available the warranty will be deemed to have been in effect from the date of manufacture. This warranty only covers the gearbox and onboard controller, it excludes any other products that might have been supplied with the operator such as a transformer, battery or beams (warranty information regarding products may be found in the installation guide pertaining to each product). This warranty explicitly only covers the repair, components and labour carried out at DACE, all other costs will be for the account of the purchaser.

This warranty does not apply if:

- the operator was subjected to misuse,
- the operator was installed contrary to the specifications provided in this manual,
- any attempt has been made to repair the goods by any workshop and/or person not authorised to do so by DACE or
- if goods have been repaired using components not tested, passed or authorised by DACE

This warranty does not cover:

- any Acts of God, including lightning, hail, water, power surge, insect damage, corrosion,
- the transport, or costs associated with the transport, of the defective product to a designated DACE repair centre,
- contractor or other third party costs
- any other costs that may have been incurred by the purchaser or any other party or
- on site repairs.

This warranty is a factory warranty, all goods will be repaired at the factory or one of the DACE designated repair centres.
In the case of international customers, the defective product must be returned to the supplier from where the product was purchased WITH PROOF OF PURCHASE FROM THAT SUPPLIER.

PROOF OF PURCHASE IS REQUIRED FOR WARRANTY PURPOSES!

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