



# prolift 430R

roller door opener

Installation instructions



# Important safety instructions for installation



**WARNING** It is vital for the safety of persons to follow all instructions. Save these instructions.

To prevent fire or shock hazard do not expose the opener to rain or moisture.

To avoid electrical shock do not open the cabinet without disconnecting the opener from the mains. Incorrect installation can lead to severe injury. Follow all installation instructions.

Garage doors are under great spring tension. Do not attempt to adjust spring tension. Do not loosen any brackets under spring tension. Do not remove springs from the door. Merlin does not accept responsibility for damage or injury resulting from installing this opener.

To avoid difficulty during installation, do not connect the opener to the mains or run the door opener until instructed to do so.

Do not use force sensitivity adjustments to compensate for a binding or sticking garage door. Excessive force may damage the garage door.

Before installing the drive remove all unnecessary ropes or chains and disable any equipment, such as locks, that is not needed for powered operation.

Before installing the drive check that the door is in good mechanical condition and that it is correctly balanced. Check that it opens and closes properly.

Install the actuating member for the manual release (red handle on a rope) such that it rests at a height of less than 1.8m.

Install any fixed control, wired or wireless, within sight of the door but away from moving parts and at a height of more than 1.5m.

Install the drive such that all moving parts (except the door and the manual release) are at a height of more than 1.8m.

Permanently attach the label warning against entrapment in a prominent place, or near any fixed control.

Permanently fix the label concerning the manual release adjacent to its actuating member (thread the cord through the holes in the manual release warning card).

After installation, ensure that the mechanism is properly adjusted and that the drive reverses when the door contacts a 40mm (50mm for UK) high object placed on the floor.

The appliance is not intended for use by young children or infirm persons without supervision.

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

## **CE compliance after installation (EC countries only)**

It is the responsibility of the installer of the opener to ensure that the forces measured at the leading edge of the door are within the guidelines of BSEN 60335-2-95:2001. This may require adjustment of the drive and may also require adjustment of the door. Specialised measurement equipment may be required. Contact Merlin for assistance if necessary. If the measured forces exceed the guidelines then Merlin M102 non-contact sensors must be fitted.

# Site requirements

## Electrical Power Supply

The opener is for 220-240 Volts AC - 50 Hz. There must be an earthed power point within 1.6 metres of the mounting position.

## Garage Door

This opener is designed for a residential roller door, maximum 3 metres high and 6 metres wide. Check that it is possible to raise the door by hand through the full height of the opening. The door should operate smoothly, rolling up and down level to the floor without the door curtain binding, bulging or coning. The door must not jam in the tracks. If in doubt consult Merlin.

## Clearances

This opener has been designed to fit most existing roller doors. It can be mounted on the left or right hand sides of the garage.

There must be at least 160mm between the edge of the door drum and the inside wall of the garage. If there is not then the opener will not fit at all.

There must be at least 70mm between the inside wall of the garage and the free end of the door shaft.

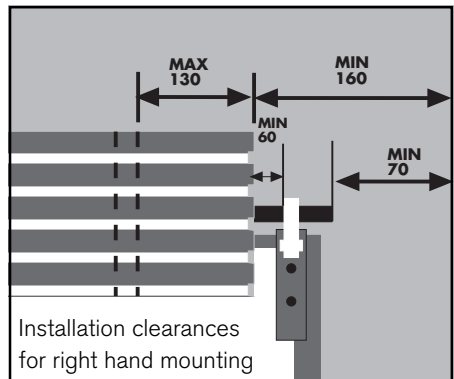
There must be at least 60mm between the edge of the door drum and the supporting wall bracket. There must be a drive spoke inside the drum closer than 130mm from the edge of the door drum. If there is not then contact Merlin for an adapter.

## Door Locks

Existing door locks must be removed or disabled. The opener or the door can be damaged if you try to use it to open a locked door.

## Installation Height

The opener must not be installed with its moving parts closer than 1.8m from the floor (2.5m for UK).



# Preparing the opener

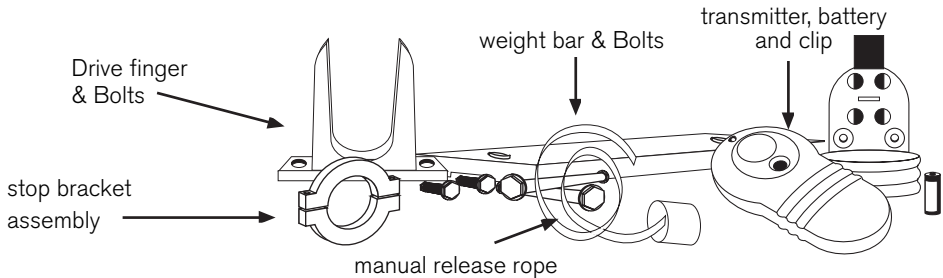


**WARNING** Do not connect to the mains power or operate the opener until instructed to do so.

## STEP 1. Check the contents of the package.

Your package should contain: this manual, a warranty sheet, black steel counter-weight bar, remote control transmitter, cast aluminium drive finger, two drive finger mounting bolts, nuts and spring washers, two screws with nuts for the weight bar, loosely bolted black plastic stop bracket assembly, red emergency release rope (with manual release warning card) and one assembled door opener.

### Contents of the package

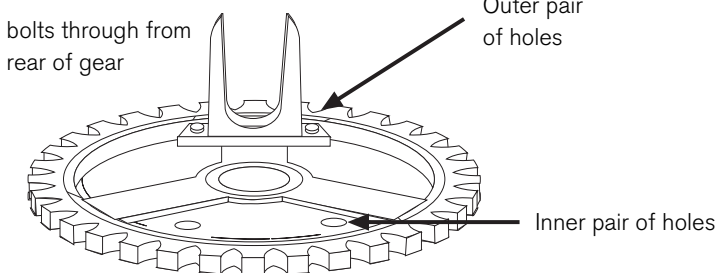


## STEP 2. Fit the drive finger to the main drive gear.

Ensure the rounded edge of the drive finger flange is in line with the curvature of the gear, that is rounded corners pointing towards the gear teeth.

**CAUTION** Bolts must be inserted from the rear of the drive gear into the drive finger, or damage will be caused to the opener.

### Drive finger on main drive gear



**WARNING** Roller doors are under great spring tension. It is important to secure the door curtain before loosening the brackets holding the door. Merlin does not accept responsibility for damage or injury resulting from installing this opener. Please read this manual fully before attempting installation.

# Preparing the roller door



**WARNING** Do not loosen both door support brackets or clamps. Loosening both door shaft clamps will expose you to the risk of serious personal injury.

## STEP 1.

Check that there is a power point available and that there is adequate clearance to mount the opener onto the door in your preferred location. Clearances are listed in the front of this manual.

## STEP 2.

Roll the door up to the fully open position.

## STEP 3.

Ensure that the U-bolt on the end of the door opposite the end to which the opener is to be fitted is tightened securely. This U-bolt holds all the spring tension on the door once the other U-bolt is released.

## STEP 4.

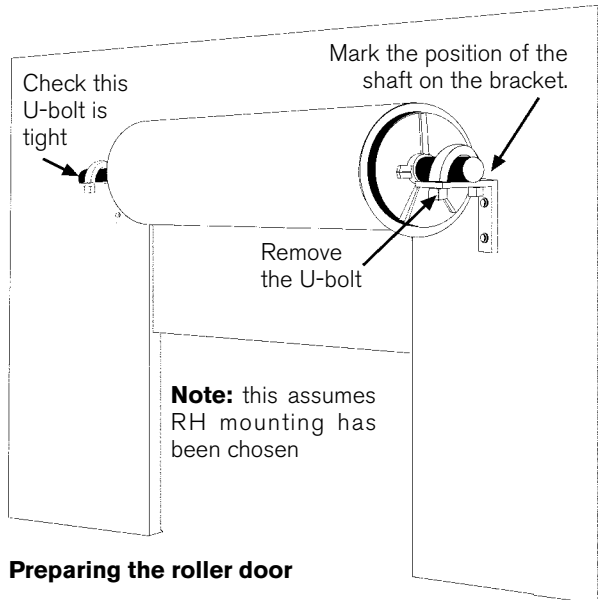
Before loosening any bolts or clamps, mark the position of the main door-shaft on the wall bracket. This will allow the door to be re-installed with correct alignment after the opener is fitted.

## STEP 5.

At the side of the door that the opener is to be fitted carefully loosen the door shaft U-clamp, checking that the spring tension inside the roller door drum is not being released.

## STEP 6.

Remove the U-clamp from the bracket. Do not allow the drum to fall by sliding the shaft off the end of the bracket.

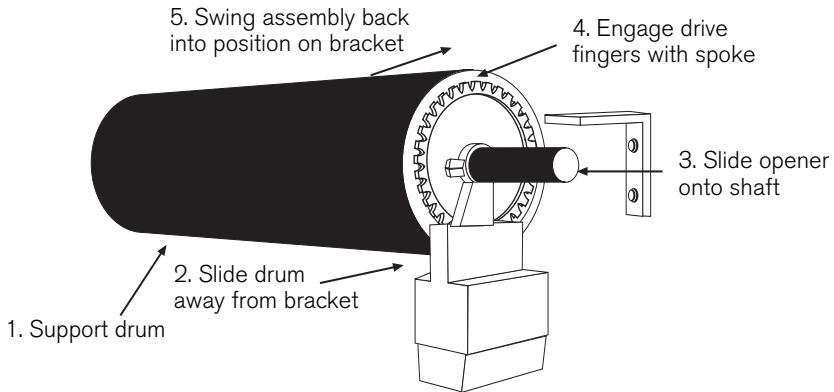


# Installing the opener

## STEP 1.

You will need assistance for this step. Slide or lift the door shaft clear of the wall bracket and slip the opener over the shaft. Turn the gear to engage the drive finger onto one of the support spokes inside the roller drum. Place the door shaft back onto the wall bracket in the position that it was originally. Refit and tighten the door shaft U-bolt.

It may be necessary to remove the wall bracket. Mark the position before removing the bracket.



## Installing the Opener

If there is between 60mm and 160mm between the end of the door shaft and the side wall of the garage:

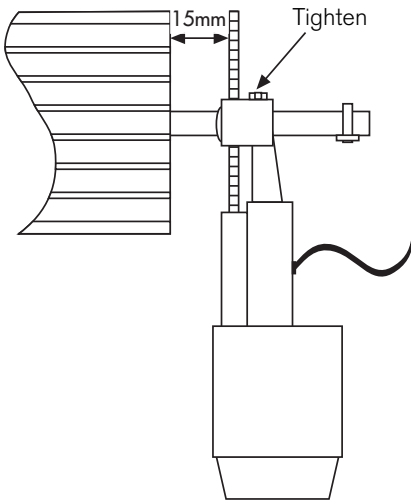
It will be difficult to install the opener onto the door shaft. To make it easier, it is possible to split the drive gear and limit assembly from the motor and controller section. This will result in two smaller items that must then be re-attached after installing the drive section first.

You will need to remove the limit switch cover, disconnect the limit wiring loom, undo two 8mm bolts and one 6mm screw. The two sections will now separate quite easily. Note the clutch stator is connected by a pin at the bottom right hand corner of the drive bracket.

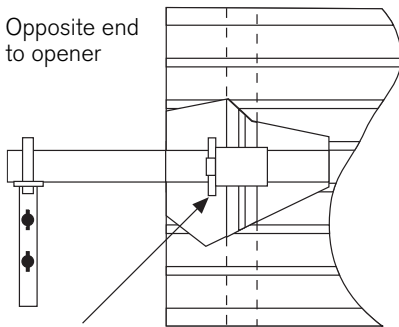
To reconnect take care to engage the clutch stator pin on the lower right hand corner of the drive bracket. Contact Merlin if you have any doubts about this.

## STEP 2.

When the drive finger is engaged on a spoke, slide the opener along the door shaft until the large main gear is approximately 15mm clear of the edge of the door curtain. Tighten the two 8mm clamping bolts facing out of the bracket to secure the opener to the door shaft.



**Drive gear to drum clearance**



Fit bracket against boss of drum spokes

**Stop Bracket Position**

**STEP 3.**

Re-check all mounting bolts to ensure door, opener and supporting wall brackets are all securely fastened.

**STEP 4.**

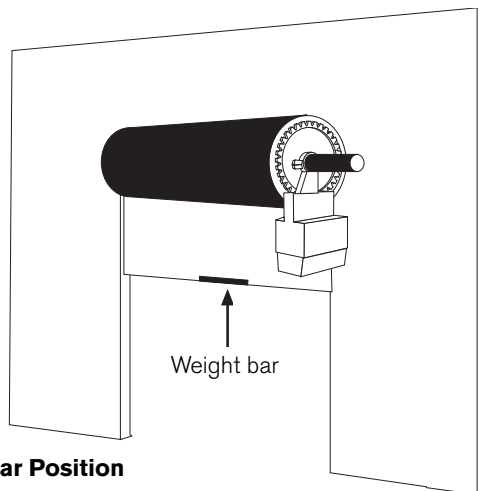
With the door in the open position fit the Stop Bracket onto the door shaft at the opposite end from the garage door opener. This bracket fits hard against the boss of the door drum spoke and helps prevent uneven rolling up of the door curtain after the opener is installed.

**STEP 5.**

Fit the black steel weight-bar to the bottom centre of the door edge using the 5mm coach bolts and nuts supplied.

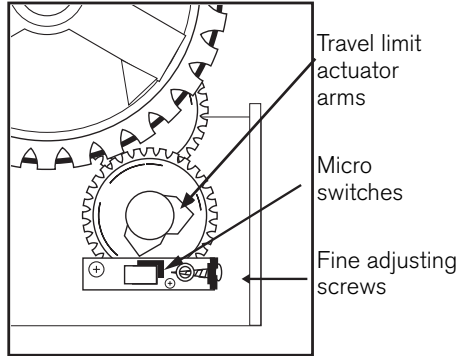
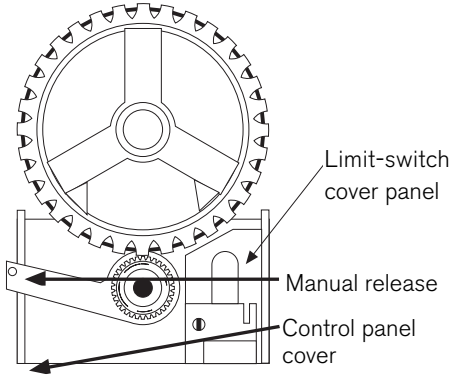
**STEP 6.**

Fit the release rope  
Tie the red release rope through the hole in the end of the release handle. Pull the red release rope to position the clutch lever in the down position. Ensure the release cord is threaded through the manual release warning card.



**Weight Bar Position**

# Setting the door travel limits



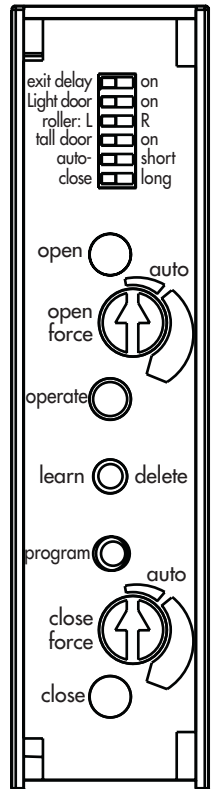
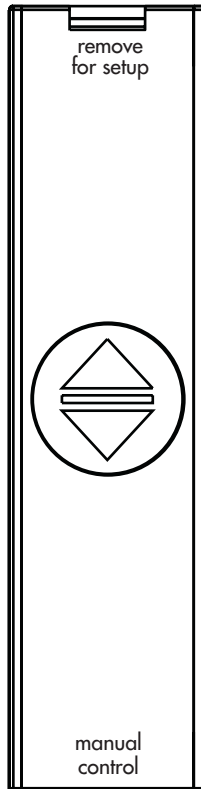
The procedure for setting the door travel limits differs depending on which side of the garage door the opener has been fitted.

## STEP 1:

Remove the black limit-switch cover panel from the right front face of the opener. (At the right of the smaller pinion gear.)  
Remove the green control panel cover from the left front face of the opener.

## STEP 2:

As viewed while looking out of the garage through the doorway, is the opener on the right-hand or left-hand side?





# Setting door travel limits for right-hand mounting only

## **STEP 1:**

Inspect the option switches on the control panel. The switch marked 'Roller L:R' should be moved to the R position.

## **STEP 2: Set the bottom limit of travel.**

Connect the mains power to the opener and switch the power on. Pull the manual release to disengage the door from the opener. Lower the door manually to the fully closed position.

Observe the red LED on the control panel. It should be flashing. (If the red LED is on continuously, rotate the front actuator arm clockwise. If the green LED is on continuously, rotate the rear actuator arm anti-clockwise.)

Rotate the front limit-actuator-arm anti-clockwise until it contacts its microswitch and the red LED stays on continuously.

## **STEP 3: Set the upper limit of travel.**

Raise the door manually to the fully open position.

Observe the green LED on the control panel. It should be flashing. (If it isn't then rotate the rear limit-actuator-arm anti-clockwise away from its microswitch.)

Rotate the rear limit-actuator-arm clockwise until it contacts its microswitch and the green LED stays on continuously.

# Setting door travel limits for left-hand mounting only

## **STEP 1:**

Inspect the option switches on the control panel. The switch marked 'Roller L:R' should be moved to the L position.

## **STEP 2: Set the bottom limit of travel.**

Connect the mains power to the opener and switch the power on. Pull the manual release to disengage the door from the opener. Lower the door manually to the fully closed position.

Observe the red LED on the control panel. It should be flashing. (If the red LED is on continuously, rotate the front actuator arm clockwise. If the green LED is on continuously, rotate the rear actuator arm anti-clockwise.)

Rotate the rear limit-actuator-arm clockwise until it contacts its microswitch and the red LED stays on continuously.

## **STEP 3: Set the upper limit of travel.**

Raise the door manually to the fully open position.

Observe the green LED on the control panel. It should be flashing. (If it isn't then rotate the rear limit-actuator-arm anti-clockwise away from its microswitch.)

Rotate the front limit-actuator-arm anti-clockwise until it contacts its microswitch and the green LED stays on continuously.

The limits are now largely set in the correct position. However the door travel can be further adjusted using the fine adjustment screws.

Each turn of the screw results in around 5mm of door travel.



**WARNING:** The door is not safe for unsupervised operation until the force sensitivity has been set.

**NOTE** Repeated operation of the opener in a short period of time during the setting of force sensitivity may trigger the thermal cutout of the motor. In this case you will have to wait for approximately five minutes for the motor to cool sufficiently to continue the installation process. If the unit has overheated you will hear the relays clicking in response to the transmitter or pushbutton but the motor will not operate. After cooling down, normal operation is able to resume.

## Improving the door security

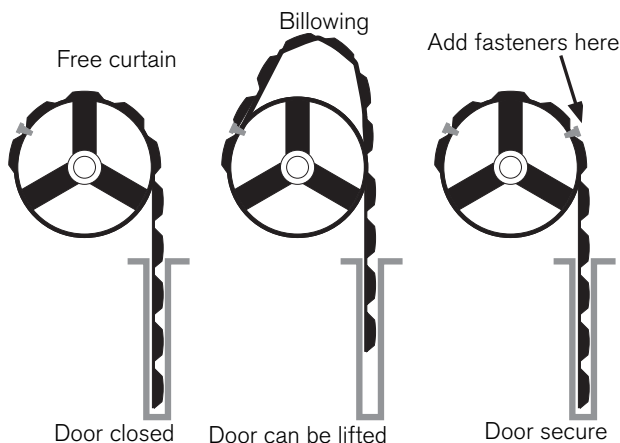
In most cases the opener acts as a lock on the door. However some doors allow the curtain to slide up in the tracks even when the drum is held stationary by the opener. In these cases we recommend the addition of bolts or pop-rivets to hold the curtain against the drum:

### STEP 1.

Pull the red rope to disengage the clutch. Close the door manually. Push the clutch lever (attached to the red rope) up.

### STEP 2.

Try to manually open the door with the opener engaged. (There will be a clunk as the opener engages its clutch.) Any excess door curtain may billow out from the top of the drum.



### Securing door curtain to drum

### STEP 3.

To remedy any billowing place gutter-bolts or pop rivets (not supplied) 75mm up from where the curtain leaves the roll. Secure these through the curtain into the spokes.

# Setting the force sensitivity

The force sensing is not preset and must be set correctly to suit your door.

## **STEP 1:**

Remove the green control panel cover from the left front face of the opener.

## **STEP 2:**

Identify the green and the red control knobs marked open-force and close-force.

Note: The opener can be set to either determine its own safe operating force level, or it can be set to allow a deliberately greater amount of force to be applied to the door.

## **STEP 3:**

To set the force levels automatically, press the program button and turn the control knobs fully anticlockwise. Ensure that the door is engaged to the opener. Then operate the opener to move the door in a single unobstructed movement from one limit position to the other. If no obstruction was sensed during this cycle then the opener will save the settings to memory. Operate the opener to move the door back to the original limit position. Again, if no obstruction is sensed, the settings will be stored in memory.

## **STEP 4:**

To set the force levels at some higher level, rotate the control knob to some position clockwise from the auto-setting point.

## **STEP 5:**

If a very light door is being operated, and if a very gentle closing force is required, then set the option switch marked 'Light door' to the ON position. Note that on a heavier door this option switch position may result in unintended detections of obstructions.

**NOTE:** To reset the adaptive and automatic force settings at any time, press the program button once.

# Setting up wireless controls

Wireless controls can operate the opener, or the opener's courtesy lamp, by sending coded radio signals. These coded signals use high-security code-hopping.

Wireless controls can be hand-held or fixed to walls, such as a wireless keypad, or a wireless wall-switch.

Up to 20 Merlin wireless controls can be learned by the opener. After this, the 20th wireless control is over-written in the opener's memory.

All wireless controls can be deleted from the opener's memory.

There is a red learn button under the red control panel cover on the front face of the opener. The small button on a Merlin M-122 wired wall-switch can also be used as the learn button.

If a setting is enabled in the opener, then it is possible to use any existing learned wireless control as a learn button. (See separate section following.)

**To learn a remote button to operate the opener:**

Press the learn button for 1-2 seconds, until the courtesy lamp begins to flash slowly. Press the desired remote button, wait 1 second, press the desired remote button again. The courtesy lamp will stop flashing once learning is complete.

**To learn one remote button to operate the opener and another to operate the lamp:**

Press the learn button for 1-2 seconds, until the courtesy lamp begins to flash slowly. Press the desired remote button for control of the opener, wait 1 second, press the desired remote button for control of the courtesy lamp. The courtesy lamp will stop flashing once learning is complete.

**To delete all remote controls from the opener's memory**

Press and hold the learn button for eleven seconds, until the courtesy lamp stops flashing. After six seconds it will flash fast as a warning. If you release the learn button during this warning period then the memory will not be wiped.

# Remote transmitter learning

Remote Transmitter Learning (RTL), when enabled, allows any existing learned wireless control to be used as a learn button for the learning of additional wireless controls. Note that this feature trades convenience for security. If it is chosen to disable RTL (the default setting at manufacture is enabled) then the level of security is increased.

**To enable or disable RTL:**

Remove the green control panel cover to expose the setup controls. Identify the red learn button and the black program button.

Hold both of these buttons down for three seconds until the courtesy lamp begins to flash. Release both buttons.

Six flashes confirms that RTL is now enabled.

Four flashes confirms that RTL is now disabled.

**To place the opener in learn mode using RTL:**

Select any two or four button Merlin hand held remote control that is already learned in to the opener. Call this the master remote.

Press the master remote's north and south buttons together for 2-3 seconds.

The courtesy lamp on the opener will begin to repeat a cycle of flashing three times and pausing. If you have several openers that operate from this master remote, then all these openers will begin to flash their courtesy lamps.

Press the button on the master remote that would normally operate the desired opener. Now that opener will go into learn mode, and any other openers that were flashing will return to their normal standby state.

The courtesy lamp on the opener that is in learn mode will begin to flash slowly. You have 20 seconds to complete the next step. If no signals are received for 20 seconds, the opener will revert to its normal standby state.

**To learn a button to operate the opener:**

Press the desired remote button, wait 1 second, press the desired remote button again. The courtesy lamp will stop flashing once learning is complete.

**To learn one remote button to operate the opener and another to operate the lamp:**

Press the learn button for 1-2 seconds, until the courtesy lamp begins to flash slowly.

Press the desired remote button for control of the opener, wait 1 second, press the desired remote button for control of the courtesy lamp. The courtesy lamp will stop flashing once learning is complete.

# Enabling auto-closing

(Optional in NZ/Aus only)

**CAUTION Additional safety features may over-ride the auto-closure feature.**

Auto-close cannot be guaranteed to always occur.

Always maintain visual contact with a closing door.

This opener requires the Merlin M102 non-contact beam sensor to be fitted before the auto-close feature will operate. If the beam is interrupted the door will not close unless the manual pushbutton is held for more than two seconds.

There is no guarantee given by Merlin that the beam will always protect property and persons from accidental injury or damage from unsupervised operation of the opener.

To enable the option, remove the green control panel. Find the option setting switch.

For a 30 second delay: autoclose short ON

For a 60 second delay: autoclose long ON

For a 90 second delay: both short + long ON

# Adding the Merlin M102 beam sensor (Optional)

Non-contact Near-Infra-Red beam sensors are optional but may be required in EC countries. Merlin strongly suggests they be fitted for increased levels of safety.

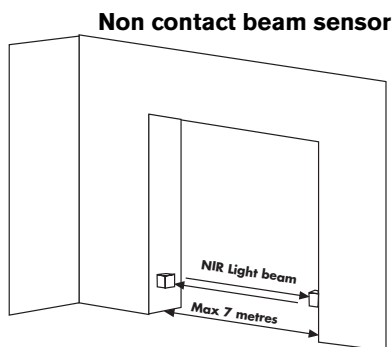
If sensors are fitted the opener will only close when the sensors are fully functional and where their beam is unobstructed.

The sensors should be placed either side of the door opening, within 300-mm of the door's opening, and within 100-mm of the floor. Choose positions that will protect the sensors from accidental impact or water. If one sensor is marked 'receiver' then do not place that sensor where it will be subjected to bright direct sunlight. The high level of Infra Red light in bright sunlight may temporarily prevent normal operation of the opener.

Switch off the power to the opener. Run the pair of cables from each sensor back to the accessory terminals on the rear of the opener.

There is no need to connect the cables with any particular polarity.

The door can open regardless of the sensor beam. Only the closing operation is affected by the state of the beam. If the beam is obstructed, or if the sensors are not functioning, then the door may still be closed by holding the manual control button down for at least two seconds, and keeping it held until the door is closed.

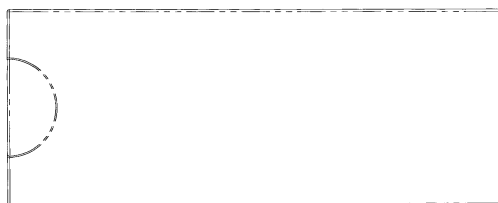
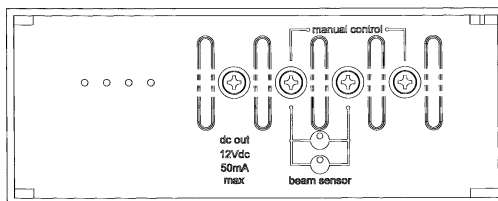


# Connecting the wall control box (Optional)

The M-122 wall control box can be wired to the accessory terminal strip.

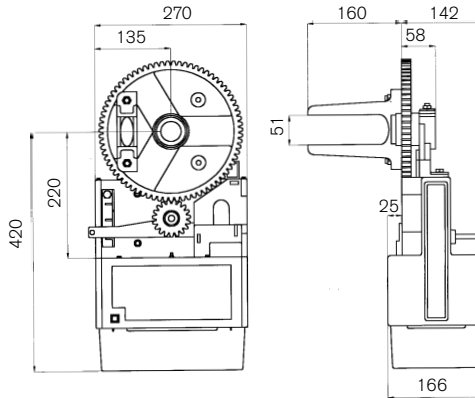
This will allow the user to control the opener and lamp by fixed wiring.

Connect to the accessory terminals marked 'manual control' under the opener, inside the lamp cover, under a panel.



# Specifications

Replacement light bulb	E27 45mm Round, 40W maximum, RC preferred
Mains power required	220V to 240 V, 50 Hz, single phase AC, earthed
Suitable for	domestic roller doors only. Not rated for shutter doors
Curtain edge speed	dependent on drum size - approximately 7-10 seconds per drum revolution
Maximum rated torque	70Nm
Maximum door height	dependent on drum size - approximately 3 metres (3 drum rotations)
Minimum door height	UK 2.5m, Aus/NZ 1.8m
Stand-by power consumption	3W maximum
Operating power consumption	900W maximum
Ambient operating temperature	+5°C to +40°C



**Overall dimensions**

# Merlin service centres

## **New Zealand**

Auckland phone 09 415 4393

Phone toll free 0800 653 667 or 0800 MERLIN

Fax toll free 0800 653 663

## **Australia**

NSW, Vic, Qld, WA

Phone toll free 1 800 638 243

Fax toll free 1 800 640 243

## **England**

Phone toll free 0800 073 0112

Fax toll free 01709 514 534

**[www.merlingo.com](http://www.merlingo.com)**

Merlin does not accept responsibility for damage or injury resulting from installing this opener. Merlin reserves the right to change the design and specification without prior notification. Some features or accessories may not be available in certain markets or areas. Please check with your distributor.