

RDO DIGITAL INSTALLATION MANUAL



RDO DIGITAL

Company Profile



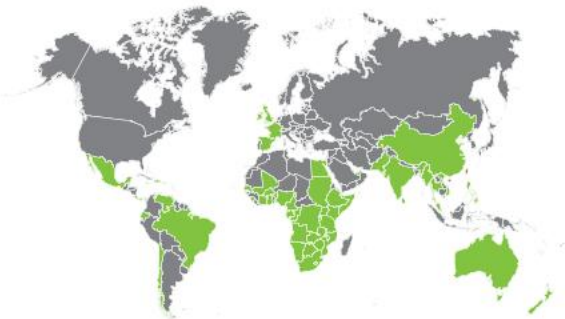
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**Saturdays
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Icons used in this manual



This icon indicates tips and other information that could be useful during the installation.



This icon denotes variations and other aspects that should be considered during installation.



This icon indicates warning, caution or attention! Please take special note of critical aspects that MUST be adhered to in order to prevent injury.

1. Important Safety Instructions



WARNING! IMPORTANT SAFETY INSTRUCTIONS

To ensure the safety of people and possessions, it is important that you read all the following instructions.

Follow all instructions since incorrect installation can lead to severe injury. Incorrect installation or incorrect use of the product could cause serious harm to people and / or property.

The installer, being either professional or DIY, is the last person on the site who can ensure that the operator is safely installed, and that the whole system can be operated safely.

Warnings for the installer

CAREFULLY READ AND FOLLOW ALL INSTRUCTIONS before beginning to install the product.

- The installation of your new Automatic Garage Door Operator (hereinafter referred to as "**RDO DIGITAL**") must be carried out by a technically qualified or licensed person. Attempting to install your new **RDO DIGITAL** without suitable technical qualification may result in severe personal injury, death and/or property damage.
- Only install the **RDO DIGITAL** on a properly-balanced and aligned, well-functioning garage door. An improperly-balanced or malfunctioning garage door could cause serious injury. Have a qualified person check, and if required, make repairs to your garage door before installing the **RDO DIGITAL**. As a general rule, your garage door is deemed to be well-balanced and aligned if it;
 - Requires an equivalent amount of applied force to manually open or close and,
 - Requires no more than 150N of applied force to either manually open or close and,
 - Does not rise or fall more than 100mm when stopped at any position between fully open or fully closed positions and,
 - Does not rub on or make contact with any supporting or surrounding structures.
- Repairs to garage doors must only be carried out by technically qualified persons. Attempting to repair the garage door without suitable technical qualification may result in severe personal injury, death and/or property damage.
- Remove or render inoperative all existing locks and ropes prior to installation of the **RDO DIGITAL**.
- The counterbalance springs on roll-up doors must be properly lubricated between all of the coils with heavy automotive bearing grease. Failure to adequately lubricate the springs may result in one or more of the following symptoms;
 - The springs will become rusty over time resulting in extra operating friction between the coils which may cause the **RDO DIGITAL** to malfunction.
 - Seasonal temperature changes may cause the garage door springs to expand and/or contract. The resultant increase and/or decrease in operating friction may cause the **RDO DIGITAL** to malfunction. Properly lubricating the springs will help to minimise the effect of seasonal temperature changes in operating friction of your garage door.

- Do not connect the **RDO DIGITAL** to the power source until this manual instructs you to do so.
- The **RDO DIGITAL** must be connected to a properly-earthed general purpose 220V outlet which has been installed by a qualified electrical contractor.
- If one remote is to be used as a wall pendant, locate it;
 - Within site of the garage door and,
 - At a minimum height of 1.5 meters above the ground so that it remains out of the reach of small children and,
 - Away from all moving parts of the door.
- Install the Entrapment Warning Label in a prominent position next to the wall-mounted remote control.
- The Manual Release Instruction Tag must remain attached to the Manual Release Cord.
- After installing and correctly adjusting the **RDO DIGITAL**, the garage door must stop and reverse direction when it comes into contact with a 35mm high solid object placed on the floor under the garage door.
- The correct function of the Safety Obstruction Reversing System should be checked on a monthly basis. Make sure that the garage door reverses when it makes contact with an obstruction.
- Never use the **RDO DIGITAL** unless the garage door is in full view and free from objects such as cars, children and/or adults.
- Never allow children to operate the **RDO DIGITAL**.
- Never operate the **RDO DIGITAL** when children/persons are under or near the path of the door. Children must be supervised at all times when near the garage door and when the **RDO DIGITAL** is in use.
- Never attempt to disengage the **RDO DIGITAL** to manual operation when there are children/persons and/or other objects including motor vehicles under or near the path of the garage door.
- Never attempt to make any repairs or remove covers from the **RDO DIGITAL** without first disconnecting the power supply cord from main power supply.
- For additional safety, we strongly recommend the fitment of Safety Beams. Although the **RDO DIGITAL** incorporates a pressure sensitive safety obstruction system, the addition of Safety Beams will greatly enhance the operating safety of the Automatic Garage Door and provide additional peace of mind. In some countries, it is a mandate of law to fit Safety Beams. It is the sole responsibility of the owner/installer to fit Safety Beams in those countries which so require.
- Removal of the **RDO DIGITAL**'s protective covers must only be performed by a technically qualified person. Attempting to remove the protective covers or repair the **RDO DIGITAL** without suitable technical qualification may result in severe personal injury, death and/or property damage.
- Always ensure that the garage door is fully open before driving into or out of the garage.
- Always ensure the garage door is fully closed before leaving the driveway.
- Adjustments to the Safety Obstruction Force settings must only be carried out by a technically qualified person. Attempting to adjust the Safety Reverse Force setting without suitable technical qualification may result in severe personal injury, death and/or property damage.

- Keep hands and loose clothing clear of the garage door and product at all times.
- In order for the Safety Obstruction Force System to function it must first encounter an object/person on to which some force MUST be exerted. As a result the object/person/door may suffer DAMAGE OR INJURY.
- The Safety Obstruction Force System is designed to work on STATIONARY objects only. If the garage door encounters a moving object during an Open or Close Cycle, serious personal injury, death and/or property damage may occur.



Tasks involving electrical work or mechanical adjustments should be performed by a qualified installer in accordance with regional and local safety regulations.

1.1. Safe Disposal of Batteries



ATTENTION!

- Do not incinerate
- Do not short the Battery terminals
- Do not charge in a gas tight container
- Do not open
- Recharge after use
- Flush with water at once if contact is made with electrolyte (acid)



2. Specifications

2.1. Physical Dimensions

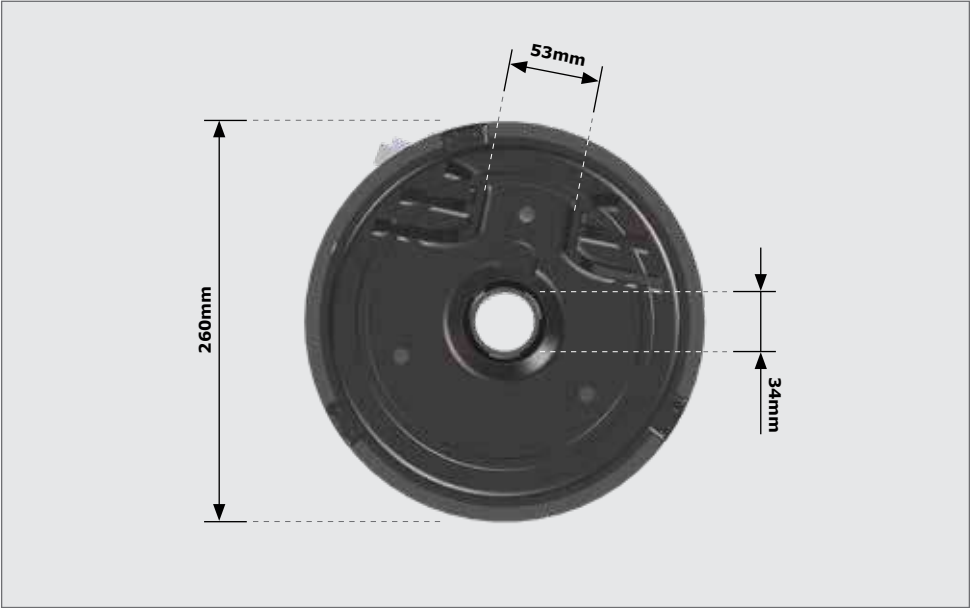


FIGURE 1. RDO DIGITAL DRIVE UNIT PHYSICAL DIMENSIONS



FIGURE 2. RDO DIGITAL CONTROL BOX PHYSICAL DIMENSIONS

2.2. Technical Specifications

Input voltage	230V AC +- 10% @50/60Hz ¹
Motor voltage	24V DC
Motor power supply - Rated	120W DC
Motor supply	Battery-powered (Standard Capacity - 2x12V 1.3Ah) 300mA Charger
Maximum door width	2.8m
Maximum door area	10 square meters
Maximum lifting capacity	20kg
Operations in standby mode	12 to 20 ²
Operator travel speed	110 to 150mm/sec, dependent on door weight
Door travel adjustment	Digitally-set limits
Safety obstruction force system	Automatic with adjustable offset
Light	LED 2W
Onboard receiver type	NOVA Code-hopping single channel receiver
Receiver code storage capacity	20 transmitters ³
Receiver frequency	433Mhz

TABLE 1

1. Can operate off a solar supply, consult your local dealer for assistance
2. Dependent on door size, weight, height and duration of power failure
3. Multiple buttons per remote can be used



Images in this Installation Manual may vary slightly, depending on the version of the **RDO Digital** used for installation.

3. Product Identification

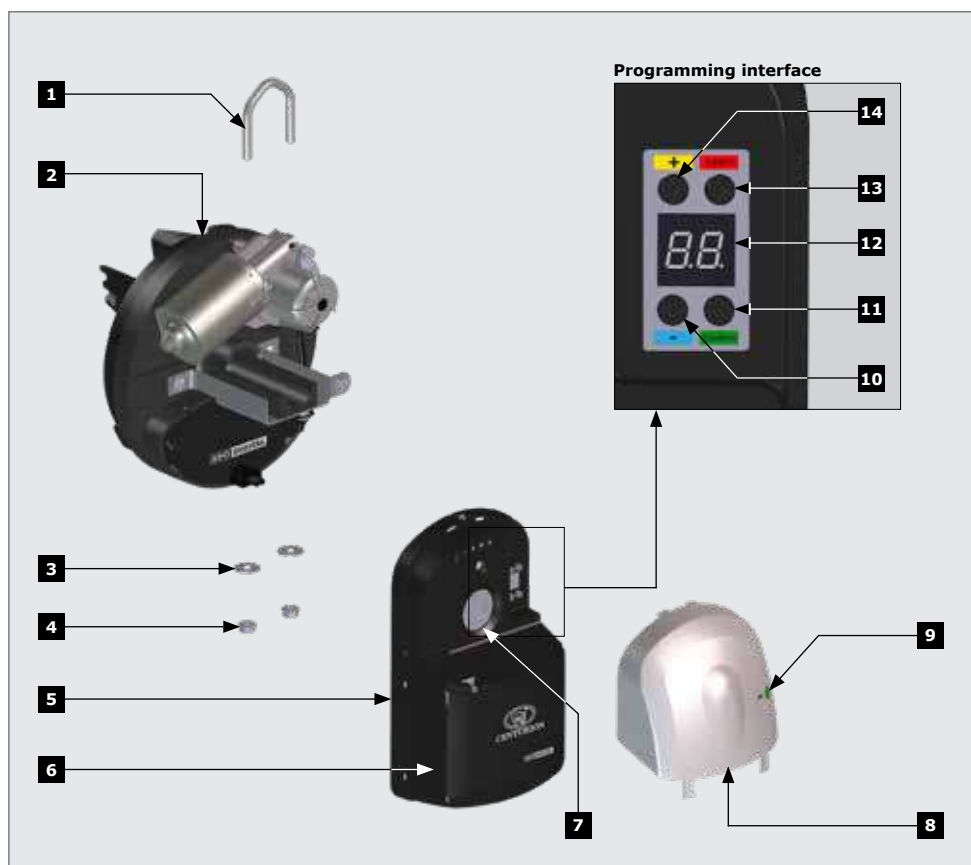


FIGURE 3. PRODUCT IDENTIFICATION

1. M10 U-Bolt
2. **RDO DIGITAL** Drive Unit
3. M10 Washer
4. M10 Nut
5. **RDO DIGITAL** Control Box
6. Battery Housing
7. LED Light
8. **RDO DIGITAL** Control Box Light Cover
9. "Run" Button
10. Navigation Button "Down or -"
11. "Confirm/Enter" Button
12. 7-Segment Display
13. "Learn" Button
14. Navigation Button "Up or +"

4. New Site Installation Preparation

4.1. Foreword

The **RDO DIGITAL** is comprised of two major individual components, namely the Drive Unit, seen in Figure 4, and Control Box, seen in Figure 5.

This section of the manual deals with the basic fitting requirements which should be met before you attempt to install your Operator. Study them carefully to ensure that your door and surroundings are suitable for such an installation.



The procedures outlined in this manual require a certain degree of technical and mechanical skill. The RDO DIGITAL should always be installed, serviced and adjusted by a technically qualified person.



FIGURE 4



FIGURE 5

4.2. Side Room Requirements

The recommended minimum and maximum door mounting bracket position as measured from the edge of the garage door curtain is depicted in Figure 6. The ideal distance should be between 85mm and 125mm as indicated.



The fixing distance may vary from garage door to garage door depending on the distance that the garage door drum wheel has been set inside the garage door curtain.

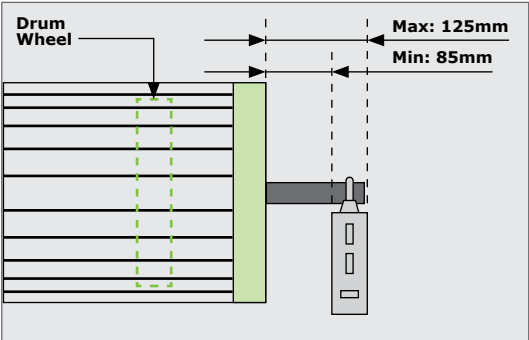


FIGURE 6



If the door drum wheel has been set too deep inside the garage door curtain, it is recommended to fit an additional drum wheel closer to the edge of the curtain, facilitating easier installation of the **RDO DIGITAL** unit. This product is available from Centurion Systems (Pty) Ltd.



The installer should verify the correct distance by actually checking the measurement prior to mounting or moving any garage door brackets

4.3. RDO DIGITAL to Garage Door Compatibility

If, for whatever reason, the plastic forks of the **RDO DIGITAL** do not fit into or align with the slots in the garage door drum, or you wish to reinforce a structurally-unsound drum, a special adaptor plate can be purchased from Centurion Systems (Pty) Ltd.

Instructions for the installation of the adaptor plate are included with the product.

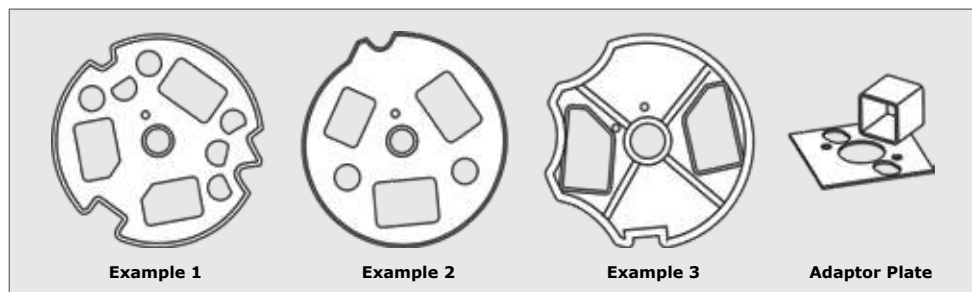


FIGURE 7

4.4. Check For Correct Function of the Door

Before beginning the installation of the **RDO DIGITAL**, check that the garage door is functioning correctly. The garage door must be well-balanced and operate smoothly and freely. When opened to between 900mm to 1200mm from the floor and released, the garage door should remain in one fixed position and not rise or fall more than 100mm.

It should not bind or stick in the side tracks. The ideal operational effort required to open or close the garage door should not exceed a force of 15kgf.



The RDO DIGITAL must not be installed on a poorly-adjusted, worn or damaged door.

4.5. Weight Bar

The main purpose of the weight bar is to eliminate the possibility of the garage door curtain "ballooning" when starting from the fully-open position. With the weight bar fitted the garage door should have a natural tendency to lightly free fall from the mid-open position.

4.6. Left- or Right-hand Installation

The **RDO DIGITAL** has been factory-set to be installed on the right-hand end of your garage door (when viewed from inside the garage looking out).

4.7. Control Box Location

Mount the Control Box on a smooth, flat surface. The area must be completely free of exposure to water, either direct (rain, garden hose, sprinklers etc) or indirect (see page either through or down the internal face of the wall).

There needs to be a 220V AC wall socket available for the battery charger.

The Control Box contains sensitive electronics which will sustain damage as a result of any water ingress.

Water-damaged electronics are not covered under the terms of the Operator warranty.



The Control Box is not waterproof!

5. Operator Installation

5.1. Mounting the Control Box

1. Establish a location at approximately chest height on the same wall face as that of the Door Mounting to which the Drive Unit will be secured. Ensure that the cable running from the Control Box is long enough to reach up to the Drive Unit for the location that has been selected.
2. Mark the location of the two Control Box mounting screws using the template provided. Note the orientation of the template (Figure 8).



Note the orientation of the Wall-mounted Control Box template.

3. Drill a 6mm hole at each of the two marked locations to an approximate depth of 75mm.
4. Insert a wall plug (provided) into each of the two holes.
5. Remove the front cover of the Control Box, and align the holes with the holes drilled into the mounting surface. Secure into position with screws (Figure 9).



Note the orientation of the Wall-mounted Control Box.

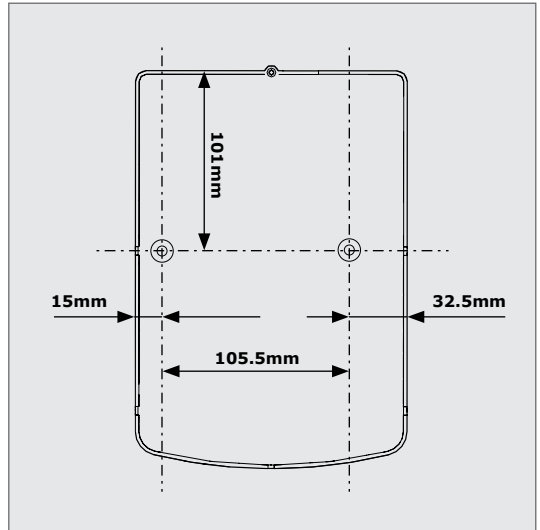


FIGURE 8

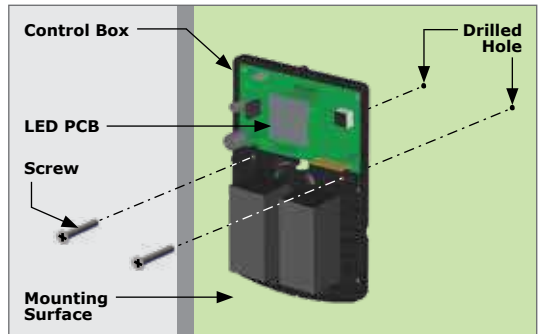


FIGURE 9



Removing the LED PCB under any circumstances may lead to irreparable damage to critical electronic components, resulting in system malfunction and the product warranty automatically being voided.

Punch out the Break-away Tab on the Front Cover to allow space for Wire Routing from the Control Box.



At this stage, **DO NOT** plug the Charger into a power socket.

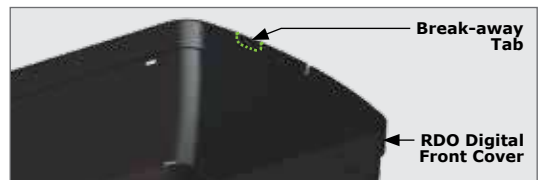


FIGURE 10

5.2. Fitting of the Drive Unit to the Door (Right-hand Installation depicted)

1. Check that the door U-bolt is securely tightened on the opposite end of the door to which the Drive Unit will be fitted. See Figure 11.
2. Open the door fully and ensure that the bottom stoppers of the garage door are engaged with the stoppers on the door guide tracks.
3. Place a suitable prop under the door as close to the edge (to which the drive unit is being fitted) as possible. The prop should be adjusted so that it sits firmly under the door. See Figure 12.



For Left-hand installations, images are reversed.

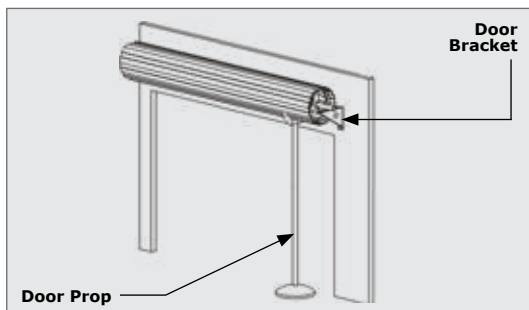


FIGURE 11. RHS CONFIGURATION

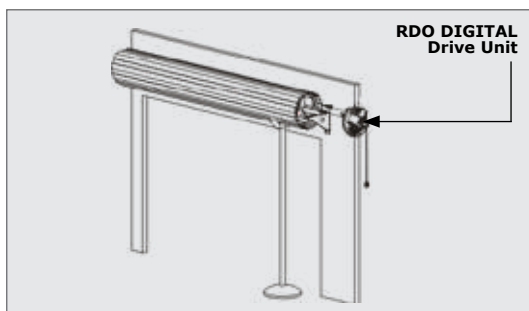


FIGURE 12. RHS CONFIGURATION

The door curtain can become damaged quite easily once the full weight of the door is imparted on the prop. The prop must be strong enough to sustain the full weight of the door but at the same time have enough padding that it will not damage the door curtain. The sustainability of the prop should be determined by a technically-qualified person. No claims for door damage will be recognised under the terms of the **RDO DIGITAL**'s guarantee when using an unsuitable prop.

4. Remove the U-bolt from the end of the garage door to which the Drive Unit will be fitted.
5. Having ensured that the prop is stable and firmly in position, remove the garage door mounting bracket from the wall.
6. If not already disengaged, disengage the **RDO DIGITAL** Drive Unit by pulling once on the release lever (Figure 21) - the forked drive gear should now rotate freely.
7. Orientate the Drive Unit as per Figure 13.
8. Slide the centre of the Drive Unit over the garage door axle. Push the Drive Unit fully into the garage door and ensure that one of the garage door drum wheel spokes slides in between the forks of the Drive Unit.
9. Refit the garage door mounting bracket to the wall. The U-Bolt slots in the door bracket must align with the U-bolt mounting slots in the Drive Unit. (Figure 14)
10. Fully insert the specially supplied U-bolt through the Drive Unit and garage door mounting bracket slots.



In some cases, the door mounting bracket may need to be repositioned in order for the U-Bolt holes align.

11. Affix and firmly tighten the U-Bolt with the two securing nuts provided.
12. Check the manual operation of the door by fully raising and lowering the door. The door should run smoothly and should not catch on any part of the Drive Unit assembly.

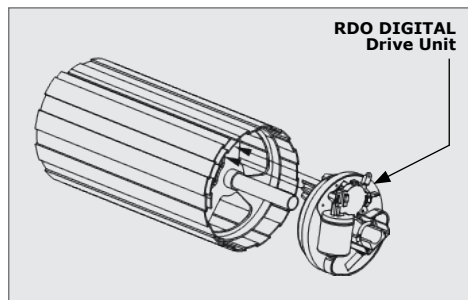


FIGURE 13

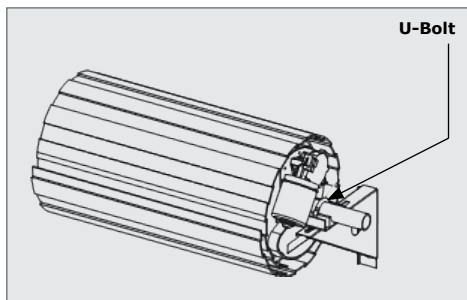


FIGURE 14

5.3. Release Cord Mounting

By default, the **RDO DIGITAL** Release Cord is set up vertically. If the site of installation requires a horizontal Release Cord set up for whatever reason, follow the instructions below to switch from the default Vertical Position to the Horizontal Position of the Release Cord.

Release Cord in the Vertical Position, by Default. Shown in Figure 15.

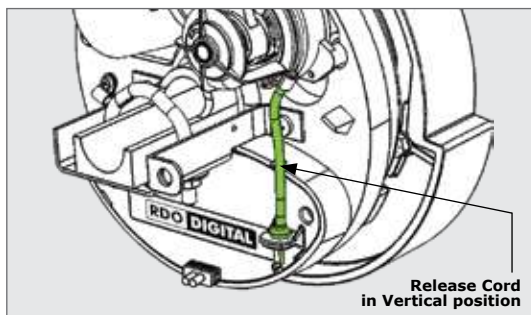


FIGURE 15

Remove the "E-Clip".

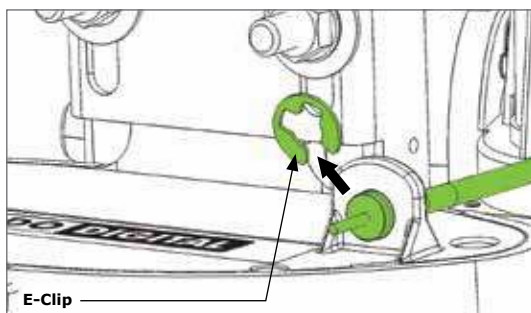


FIGURE 16

Remove the cable and Anchor as shown in Figure 17.

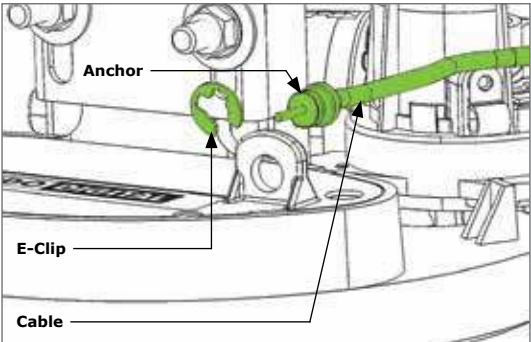


FIGURE 17

Re-insert Cable and anchor in new position as shown in Figure 18.

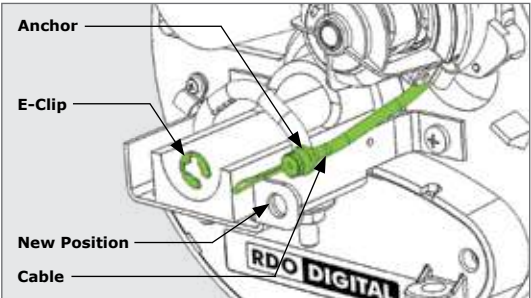


FIGURE 18

Replace the "E-Clip" into new position to secure the Cable and Anchor.

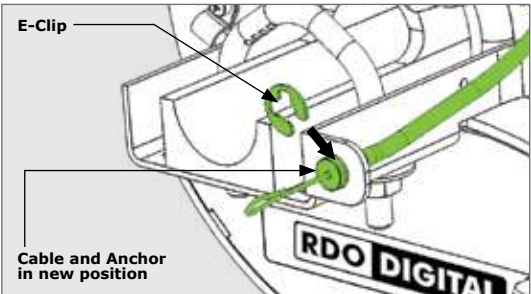


FIGURE 19

Release Cord in the new Horizontal Position. Shown in Figure 20.

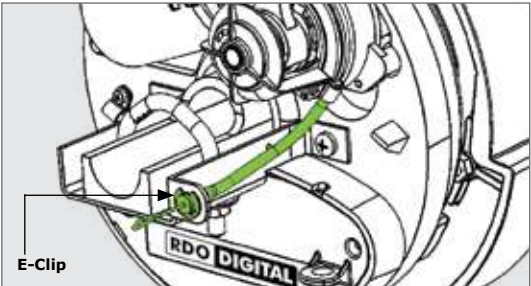


FIGURE 20

5.3.1. Adjusting the Release Cord

Unfurl the Red Disengage Cord and cut it to an appropriate length so that the end hangs approximately 1800mm above the garage floor.

Tie the other end of the Red Disengage Cord to the Steel Loop of the Release Cord.

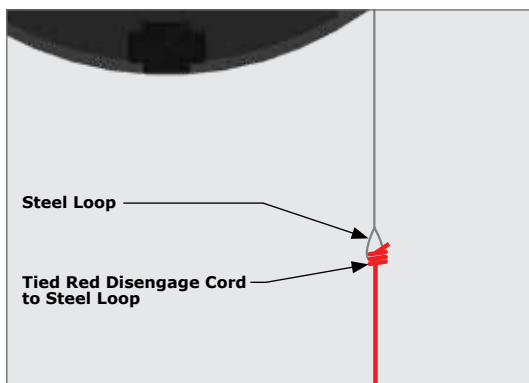


FIGURE 21

5.4. Engaging and Disengaging the RDO DIGITAL Drive Unit

1. To disengage the Drive Unit from the garage door, pull down on the Red Release Cord, and a click will be heard.
2. To engage the Drive Unit to the garage door, pull down once more on the Red Release Cord, and a click will be heard.



Always disengage the Drive Unit with the garage door in the fully-closed position.



If attempting to disengage the Drive Unit from any position other than with the garage door fully-closed, ensure that there are no persons and/or property near or directly under the path of the garage door.

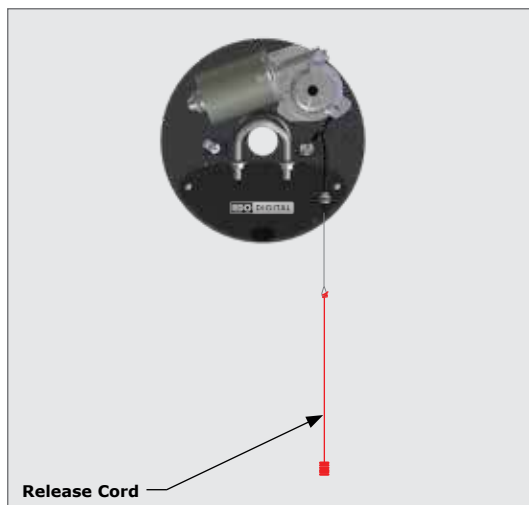


FIGURE 22

5.5. Fitting the Weight Bar

Fit the weight bar to the top edge of the garage door bottom rail.

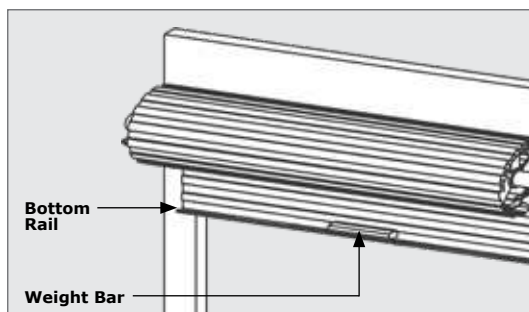


FIGURE 23

5.6. Fixing the Curtain to the Drum Wheel

1. The garage door curtain must be secured to the drum wheel with suitable fasteners such as self-drilling/TEK screws¹.
2. With the garage door in the fully-closed position, mark the curtain at points "A", "B" and "C" as depicted in Figure 24.²
3. Once marked, open the door slightly so as to have access to the marked positions. Secure the curtain to the drum wheel ensuring that the fixing points are at least 90 degrees apart.

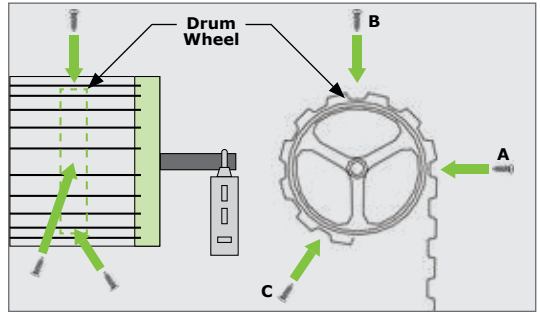


FIGURE 24

1. Pop rivets can be used, but ensure that they are made of aluminium or stainless steel for coastal areas to prevent rust and/or corrosion.
2. Additional screws may be required to fix the curtain to the drum more securely.

5.7. Battery Charger

The plug-in battery charger is provided to keep the batteries charged to an optimum voltage. A green-coloured LED, located on the charger casing, will illuminate to indicate that the charger has been connected to an active power supply.



Do not mount the charger any further away from the Control Box than the connection cable allows. Please ensure that an AC mains point is provided at the Control Box for the charger.

5.8. Battery Cable Connection

In order to conserve battery power prior to installation, the **RDO DIGITAL** is supplied with the positive (red) battery cable disconnected from the battery terminal.

Connect the red cable to the positive (+) battery terminal.

Once connected, the lid can be refitted.

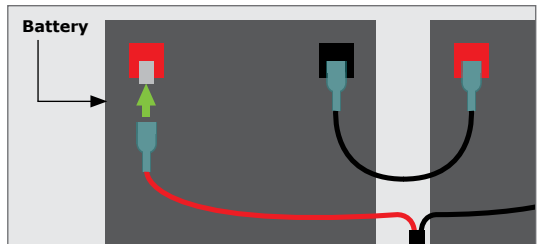


FIGURE 25

5.9. Re-fitting the Cover

Close the Cover, and secure it in position with the supplied screw.

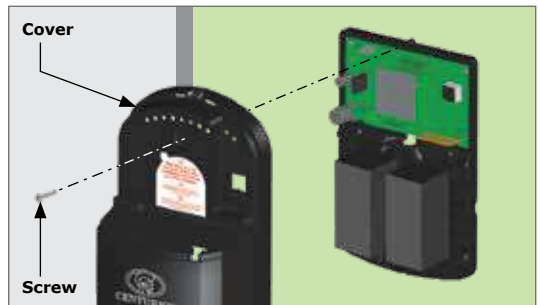


FIGURE 26

6. Settings and Adjustments

6.1. Connecting to Power Supply

1. Connect the **RDO DIGITAL** Battery Charger to a properly-earthed power supply.
2. Switch the power on at the power supply – the LED on the charger should glow green.

Do not mount the charger any further away from the control box than the connection cable allows.

6.2. Limit Learning



Start setup with the Garage Door in the half-way position and ensure that the Drive Unit is engaged before proceeding.

6.2.1. Select Installation Side

Power on the unit. By default "**dL**" (Left installation) is selected and will show on the display. Use "+" or "-" to select or change the Operator Install Direction. Either "**dL**" for left-hand installation, or "**dr**" for right-hand installation. Press "Confirm/Enter" button to confirm the selection.



If "**dL**" (Left Installation) or "**dr**" (Right Installation) does not appear on the display, but rather "**rP**" (Reference Point); press and hold the "**Learn**" button for approximately three seconds until they appear, and then use "+" or "-" to select installation side.

The display will then show "**CL**" (Close Limit) once an installation side has successfully been selected.



The first motion will be in the "**CLOSING**" direction. If it is not, please ensure that the correct installation side has been selected before proceeding.

6.2.2. Close Limit

1. The display shows "**CL**".
2. Press and hold "-" to move the door to the "**CLOSED**" position. The LED Courtesy Light will slow-flash, and the display will show the system counting as the door moves to the "**CLOSED**" position.



Fine-tune by briefly pressing either "+" or "-" for optimum closing position.

3. Momentarily press "**Confirm/Enter**" to store the closed position.

The door will move a short distance upward, and then return to set the "**CLOSE**" Limit Position. Two audible beeps will be heard to confirm that the Close Limit has been set successfully, and "**OL**" (Open Limit) will be shown on the Display.

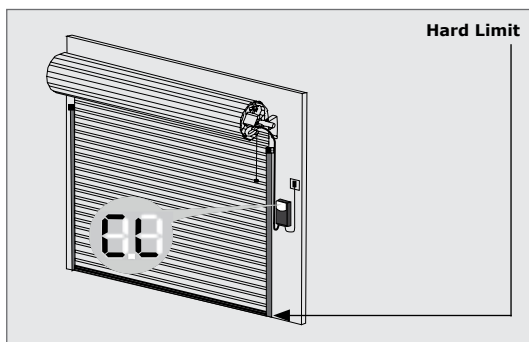


FIGURE 27

6.2.3. Open Limit

1. The display shows "**OL**".
2. Press and hold "**+**" to move the door to the "**OPEN**" position. Stop the door 100mm before the physical opening endstop or hard limit. The LED Courtesy Light will slow-flash, and the display will show the system counting as the door moves to the "**OPEN**" position.

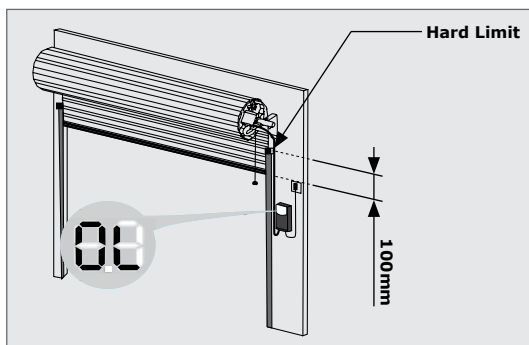


FIGURE 28

 Fine-tune by briefly pressing either "**+**" or "**-**" for optimum closing position.

3. Momentarily press "**Confirm/Enter**" to store the opened position. The door will move short distance downward, and then go back to set the "**OPEN**" Limit Position. Three audible beeps will be heard to confirm that the Open Limit has been set successfully, and "**FL**" (Force Learn) will be shown on the Display.
4. Momentarily press "**Confirm/Enter**". The door will then close to the fully-closed position while the Courtesy Light will slow-flash to confirm the "**CLOSE**" limit. The door will then proceed upward to its fully open position to confirm the "**OPEN**" limit while the Courtesy Light is permanently lit, and "." will be displayed on the display screen. Once the door has stopped, the set-up is complete.

 The Courtesy Light will stay on for the default time (One Minute) before turning off.

 If power to the Control Card is interrupted or disconnected, the door is in the fully-open position, and "**rP**" (Reference Point) is displayed; Manually move the door to the half-way position, re-engage the operator, and run the operator from this position using the "**Confirm/Enter**" button once the power is restored to re-establish the opening limit.

6.3. Testing Safety Obstruction Force

6.3.1. Open direction

- With the garage door in the fully-closed position, stand inside the garage just behind the path of the garage door close to its middle position
- Press the green "**Confirm/Enter**" Button so that the garage door begins to open
- When the garage door has opened by approximately 450mm, apply some firm downward force to one of its structural members
- If the Safety Obstruction Force Adjustment is correct, the **RDO DIGITAL** will stop the garage door upon sensing the applied force

6.3.2. Close direction

- With the garage door in the fully-open position stand inside the garage just behind the path of the garage door close to its middle position
- Ensure that the Close Limit Travel Adjustment has been set so that the bottom of the garage door is resting firmly against the ground
- Press the green "**Confirm/Enter**" Button so that the garage door begins to close
- Place a 32mm thick block of wood under the line of the garage door (approximately at the midpoint of the garage door) so that the garage door will close onto the block of wood
- If the Safety Obstruction Force Adjustment is correct the **RDO DIGITAL** will stop and reverse the direction of the garage door to the "fully-open" position upon sensing the block of wood

6.3.3. Fine-tuning the Safety Offset Value

The Safety Offset Value determines how easily the door Safety Reverses or Safety Stops when hitting an obstruction.

In order to prevent false collisions on an imbalanced or worn-out door, the Safety Value Offset needs to be set to a higher value (Maximum = **F5**).

In order to achieve a more sensitive Safety Reversing, the Safety Offset Value needs to be set to a lower value (minimum = **F1**).

The Safety Offset Values can be fine-tuned at any time when there is **NO MOTION**.

1. In Standby mode, with just a dot "." shown on the display, press "+" or "-" . The current Safety Offset Value will be shown.
2. Press "+" to increase or "-" to decrease the value, **F1** being the most sensitive and **F5** being the least sensitive value.
3. To confirm the new Safety Offset value, press "**Confirm**" - The display will flash once, and will return to Standby mode displaying "."
4. To leave without making any changes, wait 10 seconds or press "**Learn**".

7. Remote Controls

The **RDO DIGITAL** offers five menu levels pertaining to four different functions that can be activated either via a handheld remote control or via the four-button wireless wall switch. Each menu level and function has a different effect upon the controller and the load which it controls.

7.1. Entering 'Learn' Mode

7.1.1. Using the Learn button

After momentarily pressing the Learn Button, the display will show the number of already-installed remotes in its memory for 1-2 seconds. After which the display will change to '**ru**' (run mode) (or '**bu**' (bulk mode) for Operators with firmware version 29.02 or below) Press "+" or "-" to change the programming mode from "**ru**" to another.

7.2. Operating Functions

Any button can be set to control the **Run, Courtesy Light, Holiday Lockout, Autoclose Override** features.



A function can be learned to any button, provided that button has not yet been learned to another function.

7.2.1. Run Function - Open / Stop / Close.

This function is associated with opening, stopping and closing the door only.

Operation

Momentarily press the associated remote control button to open, stop or close the door.

If the door is busy closing, pressing the remote control button will cause the door to stop and a second press will reverse its direction of travel and start opening.

If, on the other hand, the door is busy opening, pressing the remote control button will cause the door to stop. Pressing the remote control button a second time will cause the door to reverse its direction of travel and start closing.

Learning procedure

Enter Learn Mode by momentarily pressing the red "**Learn**" button. '**ru**' will show on the display (or '**bu**' (bulk mode) for Operators with firmware version 29.02 or below - Use the '+' or '-' buttons to navigate to '**ru**'). Press and hold the transmitter button for 3-4 seconds. "**ru**" will flash once. The Courtesy Light will flash twice with two audible beeps to confirm that the selected function has been learned into the system on that button.

Momentarily press the "Learn" button to exit Learn Mode.

7.2.2. Courtesy Light / Remote Learning Function

Learning a button with this function, will enable that button to switch the Courtesy Light on and off, or learn in additional remotes.

Operation

- **First Operation:**
Momentarily press the associated remote control button to either switch the Courtesy Light on or off. If the light has been switched on, it will time out as per the maximum current timer of 2 minutes
- **Second Operation:**
Press and Hold the associated remote control button to enter Remote Learn Mode.

Learning procedure

Enter Learn Mode by momentarily pressing the red "**Learn**" button. Using the '+' or '-' buttons to navigate to '**Li**'. Press and hold the transmitter button for 3-4 seconds. "**Li**" will flash once. The Courtesy Light will flash four times with four audible beeps to confirm that the selected function has been learned into the system on that button.

Momentarily press the "Learn" button to exit Learn Mode.

7.2.3. Holiday Lockout Function

Electronically lock the controller for use. In other words, no transmitters or inputs, other than those learned for Holiday Lockout Mode, will be able to trigger the operator.

Operation

To engage Holiday Lockout Mode, the button learned to engage this function must be pressed for three seconds before Holiday Lockout Mode will engage. The Courtesy Light will emit a single flash and the onboard buzzer, a single beep.

When the door reaches the closed position, the Courtesy Light will remain ON, and time out as per normal. Should a button which operates a function other than any of those associated with Holiday Lockout Mode be pressed whilst the operator is locked, the onboard buzzer will emit a single beep and the Courtesy Light will triple flash.

To disengage Holiday Lockout, press any button on any transmitter that has been learned for Holiday Lockout, and will emit a double beep, and two flashes to indicate it has been disabled.

Learning procedure

Enter Learn Mode by momentarily pressing the red "**Learn**" button. Using the '+' or '-' buttons to navigate to '**ho**'. Press and hold the transmitter button for 3-4 seconds. "**ho**" will flash once. The Courtesy Light will flash three times with three audible beeps to confirm that the selected function has been learned into the system on that button.

When the door is not in the closed position and the button associated with Holiday lockout is long-pressed, the display will start blinking "**ho**" after a long-press of the button, showing that the command was accepted. If the door has not reached the closed position, all buttons on the Operator control unit will operate normally. Once the door has reached the closed position, "**ho**" will stop blinking on the display. The Operator's control unit buttons will be internally disabled.

Momentarily press the "Learn" button to exit Learn Mode.

7.2.4. Autoclose Override Function

This function will allow the associated button to override the Autoclose function if it has been selected, resulting in the door staying open.

Operation

- With the door in the closed position, the Autoclose Override button must be pressed and held for at least three seconds to engage / activate this function. The light will flash quickly a number of times and simultaneously the buzzer will emit multiple beeps to confirm the operation of this function
- The door will also operate to open and stay open without Autoclosing
- Pressing the open / close button will trigger the door to close

Learning procedure

Enter Learn Mode by momentarily pressing the red "**Learn**" button. Using the '+' or '-' buttons to navigate to '**Ao**'. Press and hold the transmitter button for 3-4 seconds. "**Ao**" will flash once. The Courtesy Light will flash five times with five audible beeps to confirm that the selected function has been learned into the system on that button.

Momentarily press the "Learn" button to exit Learn Mode.

7.2.5. Bulk-Learning Using an Existing Courtesy Light Button

The fifth menu, "**bu**" (bulk mode), can be accessed which will learn two buttons of a four-button remote control or wireless wall switch in the order described below:

Button 1 - Run Function (Open / Stop / Close)

Button 2 - Courtesy Light

Only transmitter buttons with the **Courtesy Light** function can initiate bulk remote learning. Press and hold the assigned Courtesy Light button on the remote for approximately 5 seconds. The Courtesy Light will flash and the display will show the number of already-stored remotes for 1-2 seconds, and will then change to "**bu**" (bulk mode). With this mode, all remotes can be programmed one after the other.

Momentarily press the "Learn" button to exit Learn Mode.



Should Holiday Lockout (Section 7.2.3.) or Autoclose Override (Section 7.2.4.) need to be learned in, they can be learned into the remote independantly, from their respective menus; Holiday Lockout "**ho**" and Autoclose Override "**Ao**"



For Operators with firmware version 29.02 or lower, "**bu**" (bulk mode) is the **first menu**, which will learn the all buttons of a four-button remote control or wall switch in the order described below:

Button 1 - Run Function (Open / Stop / Close)

Button 2 - Holiday Lockout

Button 3 - Courtesy Light

Button 4 - Autoclose Override

7.3. Deleting Remote Controls

- Remote controls can be deleted at any stage



Following this procedure will remove all remote controls and transmitters from the RDO DIGITAL's memory.



During the remote deletion process, the Courtesy Light will flash repeatedly. This may pose a risk for individuals with photosensitive epilepsy. Please exercise caution and ensure that anyone affected is not exposed to the rapidly flashing LED light.

- In standby mode (only a "." displayed on the LED Display), press the "**Learn**" button once.
- The number of stored remotes will be shown on the display only for 1-2 seconds¹. After that, '**ru**' (run mode) will appear (or '**bu**' (bulk mode) for Operators with firmware version 29.02 or below).
- Press and hold the "**Confirm**" button for approximately 5-6 seconds, an audible beep is heard with rapid flashing of the LED Courtesy Light; when the screen displays ".", all remotes have been successfully deleted.

1. With an empty memory, '00' will be displayed, otherwise it will display the number of remotes learned into the system.

8. Options and Features

8.1. Accessory Connections

- Four Output Terminals are provided to support the connection of the most common external accessories
- The Output Terminals can be accessed by removing the Courtesy Light and Control Box Covers

8.2. Accessory Wiring

8.2.1. CENTURION i5 Safety Beams

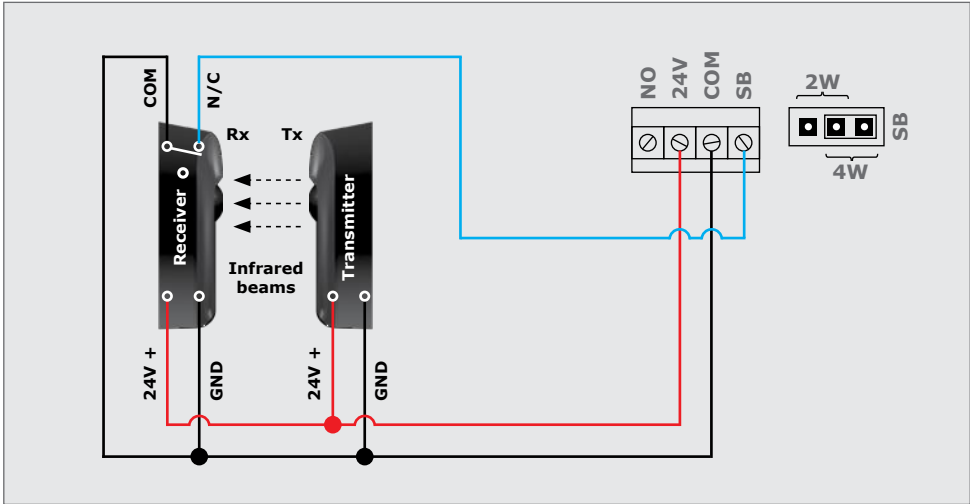


FIGURE 29. 4-WIRE SAFETY BEAMS

8.2.2. CENTURION Photon Safety Beams

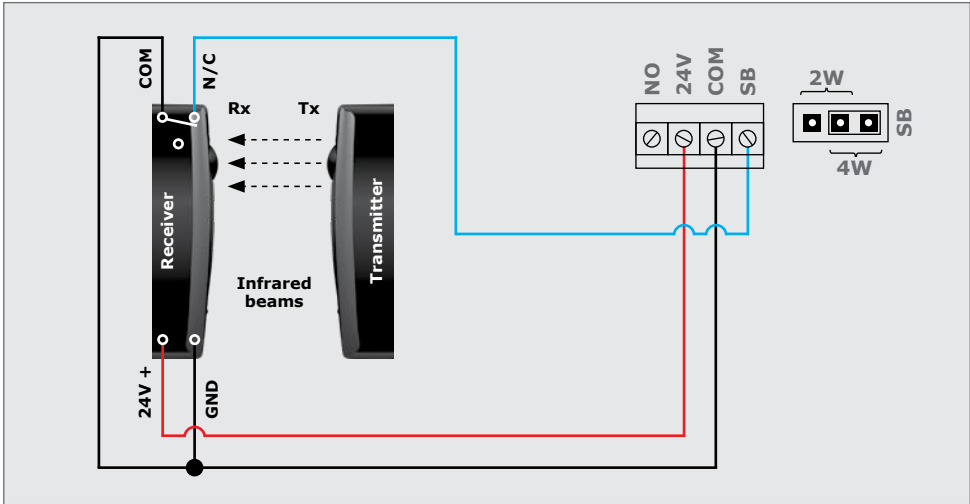


FIGURE 30. 4-WIRE SAFETY BEAMS

8.2.3. 2-Wire Safety Beams

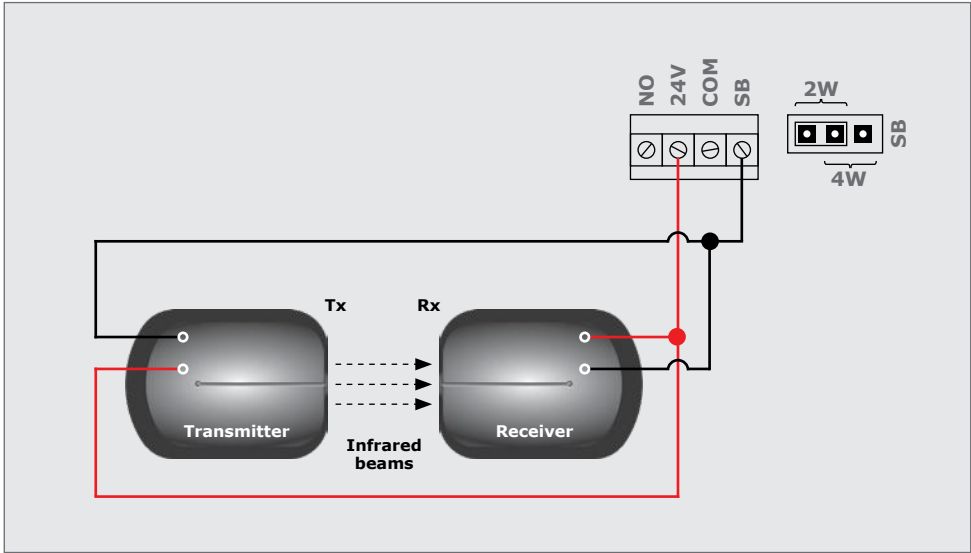


FIGURE 31. 2-WIRE SAFETY BEAMS

8.2.4. Other Accessories

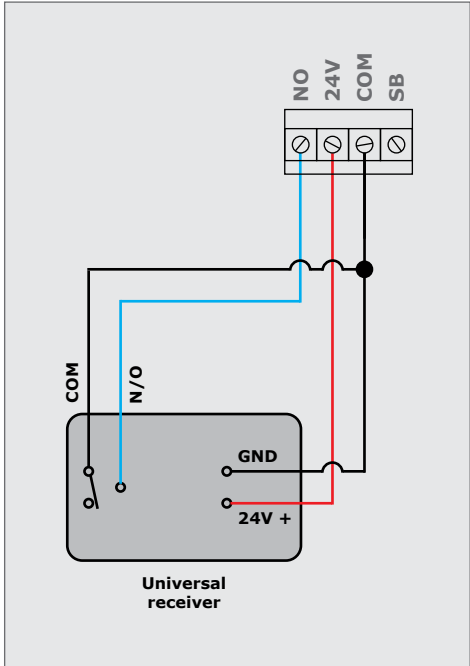


FIGURE 32. UNIVERSAL RECEIVER

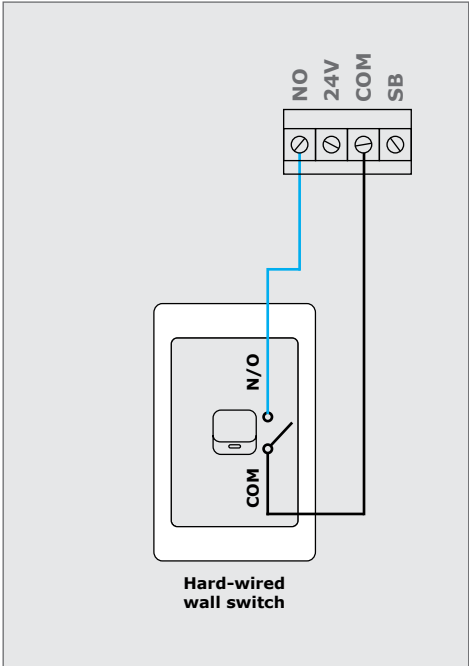


FIGURE 33. HARD-WIRED WALL SWITCH

8.3. Features

8.3.1. Autoclose

- Autoclose can enhance the security of your property by ensuring that your garage door is never unintentionally left open
- Autoclose will automatically close the garage door
- Autoclose is configurable in three different delay timings (main menu "**AC**"- 5/30, 15/90 and 30/180 second).
The Autoclose menu is only accessible, if "**Sb**" (Safety Beams) has been set to "**ON**"



Autoclose will only function when used in conjunction with Safety Beams.

8.3.2. Courtesy Light

- The built-in Courtesy Light will switch on each time the **RDO DIGITAL** is activated
- Courtesy Light can be configured to operate for 1,2 or 3 minutes using the main menu
- When activating Courtesy Light via remote control, momentarily press the respective button to activate or deactivate the Courtesy Light



The Courtesy Light will not respond to rapid pressing of the learned button. Short intervals between pressing is required to activate and deactivate the Courtesy Light.

8.3.3. Run Button

The "Run" Button is located on the light cover and serves to initiate the functions.

Function	Action
Activate RDO DIGITAL	Momentary press

TABLE 2

8.3.4. Safety Beams

- The Photon or other two- and four-wire safety beams may be connected to the **RDO DIGITAL**
- The installation of safety beams greatly enhances safety by constantly monitoring for persons or objects which may pass within the path of the moving garage door
- The **RDO DIGITAL** will safety reverse if the safety beams become momentarily or permanently interrupted during a closing cycle

8.3.4.1. Two-wire safety beams

8.3.4.1.1. Mounting

1. Locate the Safety Beam mounting brackets provided.
2. Mark the inside garage door framing so that the bottom edge of the mounting bracket sits 125mm off the floor.
3. Use the two mounting screws provided to fasten each mounting bracket to the wall.
4. Use the two screws and nuts provided to fasten the Safety Beams to the mounting brackets so that the indicator Light on each Safety Beam is facing upwards.
(Refer to installation instructions for further information)

8.3.4.1.2. Connection

1. Strip back and connect the two strands of one end of the cable to each of the two terminals located on the outer cover of each safety beam
2. Fix the cable securely up and along the wall, and run one length of each cable adjacent to the control box
3. Strip back and connect one strand of each cable to the output terminals "**SB**" and place the jumper onto "**2W**".

8.3.4.2. Four-wire safety beams

8.3.4.2.1. Mounting

1. Mark the inside garage door framing so that the bottom edge of the beam sits 125mm off the floor.
2. Using a small angle bracket, fasten each beam to the wall so that they face each other across the garage door (Refer to installation instructions for further information).

8.3.4.2.2. Connection

Follow the Safety Beam instructions and connect to the output terminals.

Use the normally-closed contacts of the beam to connect to input "**SB**" on the **RDO DIGITAL** and place the jumper on "**4W**".



The **RDO DIGITAL** provides a 24V DC output and normally-closed input for Safety Beams.



For aligning and testing the Safety Beams, please refer to the installation manual supplied with the respective Safety Beams used.

8.3.5. Partial Reverse

Partial Reverse, "**Pr**", ensures that the garage door does not open fully and thereby present an unwanted security risk

- Partial reverse is configurable in the main menu - options are "On" or "Off"
- If it is set to "**Off**" - after a collision, the door will fully open
- If it is set to "**On**" - after a collision, the door will only partially reverse

8.3.6. Signal Reverse

Signal Reverse, "**Sr**", affects how the operator responds to the Run Function being activated when the door is in a closing motion.

- If it is set to "**Off**" - the door will just stop
- If it is set to "**On**" - the door will stop and then fully open

8.3.7. Soft Start

- When commencing movement from any stationary position, the **RDO DIGITAL** will slowly ramp up to full speed. This is in order to minimise start-up load on the **RDO DIGITAL** and garage door and provide smooth and quiet operation

8.3.8. Soft Stop

- By intelligently reducing the speed of the garage door as it approaches a limit point, the **RDO DIGITAL** ensures quieter garage door closing and prolonged **RDO DIGITAL** and garage door life

8.3.9. Speed Control

- Running speed may be adjusted within the range of 70 ~ 100% of maximum speed
- Speed is configurable from the main menu - Options are "**Hi**" (High) or "**Lo**" (Slow) speed.
- After any changes are made to the speed of the door, the Operator will automatically go into Limit Learning (See Section 6.2)

8.3.10. Holiday Lockout

- During Holiday Lockout mode, all functionality is disabled and the **RDO DIGITAL** will only function upon receiving a signal from a pre-learned remote control
- Holiday Lockout Mode will not function unless at least one remote control has been previously learned with this function

9. Menu Functions, Error Codes, and Troubleshooting

9.1. Menu Functions

1. To enter the Function Setup Menu; momentarily press "+" and "-" simultaneously.
2. Use "+" or "-" to scroll up or down through the Functions.
3. Press "**Confirm/Enter**" to enter the desired function.
4. Choose a value with "+" or "-". Confirm the chosen value by pressing "**Confirm/Enter**".
5. Momentarily press "**Learn**" to exit the Function Setup Menu at any time.

Function	Description	Values
	Safety Photo Beam	 Disable Safety Beam  Enable Safety Beam in Close Direction
  Safety Beams " Sb " must be installed and enabled.	Automatic Close Function	 Safety Beam Function " Sb " not enabled  No Auto-close  5/30secs  15/90secs  30/180secs If Safety Beam is activated by passing car or person: Door automatically closes after 5/15/30sec If Safety Beam is NOT activated by passing car or person: Door automatically closes after 30/90/180sec
	Running Speed of Operator	 High Speed  Low Speed After setup, will start learning procedure
	Slow Stop Function	 Short Slow Stop  Long Slow Stop After setup, will start learning procedure
	Courtesy Light Illumination Time	 1 Min  2 Min  3 Min
	Partial reverse/ Full Reverse	 After hitting Obstruction, door will fully reverse  After hitting Obstruction, door will partial reverse
	Signal Reverse/ Signal Stop	 Pressing Transmitter in close direction - the door will stop  Pressing Transmitter in close direction - the door will reverse
	Door Service Monitor	 Off  If the door is out of balance, Light will flash while in use to warn the user
	Maximum Run-time	 Operator stops after 30sec Run Time  Operator stops after 60sec Run Time

TABLE 3

9.2. Display Functions

	Holiday Mode: Turn on by pressing Holiday Function (Button 3 on pre-coded Transmitter) for three seconds. Places Operator in a dormant state after it has closed
	Factory Reset: Initiate reset by pressing "learn" and power on at the same time, until the display shows "Fr". Previously coded Transmitter will not be deleted.
	Direction Left: Part of Learning procedure. See "6.2.1. Select Installation Side"
	Direction Right: Part of Learning procedure. See "6.2.1. Select Installation Side"
	Drive door into CLOSE position Part of Learning procedure. See "6.2.2. Close Limit"
	Drive door into OPEN position Part of Learning procedure. See "6.2.3. Open Limit"
	Force Learn: Part of Learning procedure. See "6.2.3. Open Limit"
	Reference Point: After Power ON  If power to the Control Card is interrupted or disconnected, the door is in the fully-open position, and "rP" (Reference Point) is displayed; Manually move the door to the half-way position, re-engage the operator, and run the operator from this position using the " Confirm/Enter " button once the power is restored to re-establish the opening limit.

TABLE 4

9.3. Error Codes

	Alert: Safety Beams mis-aligned, damaged or blocked Fix: Check Safety Beam pilot light to ensure that beams are aligned. Check that wiring is intact and properly connected. Note: To close door when beams are misaligned or damaged, go back to menu function " Sb " (Safety beam) and turn " Sb " " OFF ". Press " Learn " to exit the menu, and then " confirm/enter " to close the door. Once re-aligned/repaired, re-enable " Sb " from the menu function, by turning it back " ON ".
	Alert: Door Service Monitor - indicates that door is out of balance. Fix: Disengage Operator from door and manually check if door is correctly balanced. A door is correctly balanced if it does not rise or fall more than 100mm when released at any point between fully-open or fully-closed positions. An out of balance door must only be serviced by a qualified door technician. Once the door has been rebalanced, the Operator forces and limits must be relearned.

TABLE 5

	Alert: Run Time - Indicates that 30 sec Run Time limit has been reached. Fix: Refer to Menu Functions section and increase Runt Time to 60 sec. Note: Check door balance, spring tension, and the condition of the door guides and rails
	Alert: Safety Reverse during Closing Cycle. The door will reverse to the fully-open position Fix: Check Door for any obstructions. Note: On the third consecutive collision, the door will stop in this position, and not reverse.
	Alert: Safety Stop during Opening Cycle. Fix: Ensure that the batteries are connected properly. Once connected, before running the operator again. put the door in the halfway position, and then run the operator again.
	Operator Error: Blown fuse/Loose Motor Wire Fix: Replace the fuse with one of same current rating. Ensure motor wire is connected to PCB correctly. Note: This work should only be carried out by a qualified Operator technician.
	Operator Error: Hall sensor signal not present. Fix: Check that Hall sensor connector is firmly plugged into main PCB. Replace hall sensor assembly if still found to be faulty. Note: This work should only be carried out by a qualified Operator technician.

TABLE 5. CONTINUED



If the **RDO Digital** displays an Error Code that is not described in this Installation Manual, please visit or contact your nearest Centurion Systems (Pty) Ltd Branch for further assistance.

10. Installation Handover

Once the installation has been successfully completed and tested, it is important for the installer to explain the operation and safety requirements of the system.

NEVER ASSUME THE USER KNOWS HOW TO SAFELY OPERATE THE RDO DIGITAL!

Even if the user has used one before, it does not mean they know how to SAFELY operate it. Make sure that the user fully understands the following safety requirements before finally handing over the site.

The following needs to be understood by the user:

- How to operate the Manual Release mechanism.
(Show them how by demonstration)
- How the obstruction detection and all other safety features work.
(Show them how by demonstration)
- All the features and benefits of the Operator, i.e. Beams, etc.
- All the safety considerations associated with operating an automated garage door. The user should be able to pass this knowledge on to all other users of the automated system and must be made aware of this responsibility.

- Do not activate the Garage Door Operator unless you can see it and can determine that its area of travel is clear of people, pets, or other obstructions
- DO NOT CROSS THE PATH OF A MOVING GARAGE DOOR. Always keep people, pets and objects away from a moving garage door and its area of travel
- NEVER LET CHILDREN OPERATE OR PLAY WITH THE GARAGE DOOR CONTROLS, and do not allow children or pets near the garage door area
- Avoid close proximity with moving parts where fingers, hands or clothing could be pinched and caught
- Secure all easily-accessible garage door operator controls in order to prevent unauthorised use of the garage door
- Keep the automated garage door system properly maintained, and ensure that all working areas are free of debris and other objects that could affect the garage door operation and safety
- On a monthly basis, check the obstruction detection system and safety devices to ensure correct operation
- All repair and service work to this product must be done by a suitably qualified person
- This product was designed and built strictly for the use documented herein. Any other uses not included herein, could compromise the operating condition of the product and/or be a source of danger!



Centurion Systems (Pty) Ltd does not accept any liability caused by improper use of the product, or for use other than that for which the automated system was designed. **Ensure that the customer is in possession of the User Guide and that you have completed the installation details in the back of the User Guide.**

11. Warranty Information



You can register your product(s) online at www.centsys.com, which will assist you in keeping a record of your date of purchase or installation, serial numbers, etc.

All of our products are manufactured with extreme care, thoroughly inspected and tested.

The goods supplied by us shall be subject to the provisions of sections 55 to 57 of the Consumer Protection Act (68/2008) except where the provisions of the warranty contained in our product documentation are more favourable to the purchaser.

Subject to the warranty contained in our product documentation, if applicable, our products are warranted for a period of twenty-four months after delivery.

However, it is expressly noted that batteries carry a six month warranty due to the nature of these products being such that they are subject to possible misuse. Please note that warranties will be honoured on a carry-in basis; in other words, the product in question must be taken in to one of our branches, or to the authorised reseller that the product was purchased from, for assessment and, if necessary, repair. For equipment not of our manufacture, the warranty as supplied by the original manufacturer will apply if such warranty is more favourable to the purchaser than the relevant provisions of the Consumer Protection Act (Act 68/2008 of South Africa), or any other applicable law as so required in different countries in which the product was sold.

Such warranty is valid only once full payment has been received for such goods.

Any warranty may be voidable on any equipment which:

1. Has not been installed in accordance with the installation instructions provided.
2. Has been subject to misuse or which has been used for any purpose other than that designed for by the manufacturers.
3. Has damage caused as a result of handling during transit, atmospheric conditions (including lightning), corrosion of metal parts, insect infestation, power surges or other forces outside of the control of the manufacturer.
4. Has been repaired by any workshop and / or person NOT previously authorised by the manufacturer.
5. Has been repaired with components not previously tested, passed or authorised by Centurion Systems (Pty) Ltd, South Africa or one of its subsidiary companies.
6. Has had the LED PCB removed. Removing the LED PCB may lead to irreparable damage to critical electronic components, resulting in system malfunction and the product warranty automatically being voided.



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