



# Operation Manual



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## Operation

Your SOSEC 600 Barrier system is equipped with a 5m rigid boom. Accessorised with either a red/green light kit or a drop skirt, the length will have been set for your site by the engineer when the barrier was commissioned.

This barrier system is designed to operate at an entranceway which is manned, with the cabin providing shelter for the operative.

If you buy your barrier, rather than hire from us, you will have been given a Handover Pack on the day of delivery. This is a very important document and acts as the legal point at which responsibility for the barrier, maintenance and operation changes from Solar Gates UK Ltd to you, the customer. The document outlines the legal responsibilities under BSEN13241-1 for a moving machine in a public place, including periodic maintenance. It contains the Machinery File and Declaration of Conformity for the machine you have purchased. Please contact Solar Gates UK Ltd should you require any assistance with this.

### Switch on and first use

Each time the barrier is switched on, it must first calibrate its movement before normal operation can occur. Switch on the barrier as shown, using the rotary switch on the side of the cabinet. Wait 5 seconds and then click and release the button on the remote. In most cases the barrier will have been paired to button 1 (see section on pairing your remote). Operating at half speed, the barrier will rise to the vertical position and stop.



Ensure there is nothing within the arc of the barrier which may be detected by the laser sensor and then press the remote button once again. The barrier will attempt to move to the horizontal, or closed, position. Assuming the movements are successful the barrier is now ready to run, and subsequent operations will be at normal speed.



*During the calibration phase, the barrier is measuring the limits of the arc of movement, understanding the force that is required to move. It is equipped with an encoder within the motor which will monitor this during normal operation and cease operations if it detects deviation from the norm. This is a safety feature allowing the barrier to stop and reverse direction in the event that the barrier arm comes into contact with something during operation. Sometimes, this system can prevent the*

*barrier from moving, if it “thinks” it has detected something. This can sometimes be caused by a change in boom movement caused by environmental factors or sensitivity to the balance of the counterweight spring. If you experience inconsistent boom movements, please make contact with our Service Team.*

## Modes of operation

Ordinarily, the barrier will remain closed by default during operation, returning to the horizontal position automatically after each “Open” operation unless set up otherwise.

### Hold Open switch

Inside the cabin on the bench, there is a switch to operate the barrier. Rotate the switch to the BOOM UP AND HOLD position and the barrier will open. The barrier will stay open while the switch remains in this position. Once the switch is moved to the DOWN position, the barrier will wait a pre-defined delay time (see set up options) before closing. If the safety laser sensor is interrupted before the barrier closes, it will return to the upright, open position and re-set the wait time delay before trying to close once again. The barrier will not respond to the fob while being held open by this control.



### Remote fob

Alternatively, the operator can trigger the barrier to open through the use of the rugged long-range remote. In this scenario, close attention must be paid to the traffic situation around the barrier, since the auto-close time delay will start from the moment the barrier reaches the vertical, open position.

### Auto close

The barrier will close automatically after a defined period of time from 2 to 120 seconds. Your installation engineer can set this for you when commissioning the barrier. If you wish to alter this in the future, please contact our Service Team to arrange an engineer callout.

## Safety Systems

There are two safety systems in your SOSEC 600 barrier. To avoid contact by the boom with anything, a laser sensor is fitted which scans the area under the boom for obstructions. This will scan along a line 30cm out from the cabinet up to a defined position set by the installation engineer. If the laser beam is broken between these points *while moving to the horizontal position*, the barrier will revert to the vertical, open position. Objects closer than 30cm will not be detected.



Should the closing barrier arm make contact with an obstruction not detected by the laser sensor, the previously described encoder in the motor will detect this. The motor will stop, reverse direction and return to the vertical open position. The barrier will exert a maximum force of 178N, less than the maximum force of 400N detailed in the BS-EN12445 and BS-EN12453 British Safety Standards.

## Accessories

The SOSEC 600 includes some accessories as standard and can also be fitted with some optional accessories, selected to suit your site operation.

### Interior lights and USB charge outlet

Included as standard is an interior LED light and a USB charger outlet. While they are low power components, extended use will affect the battery consumption of the system. The USB outlet can also display the system voltage to give an indication of

charge condition. *Please refer to the section on solar performance and battery management.*

## Access control options

The SOSEC 600 can be specified with access control devices to assist with times when the barrier is not manned. This will often include an intercom device so that people arriving to site can make contact with the appropriate personnel. The following features are possible:

### Callpoint

A button on the intercom will place a call to appropriate site personnel. Those answering the call can permit entry to site by remotely triggering the barrier using the dial pad on the mobile device. If the first person is unable to answer it is possible to cascade the call to two other numbers.

### PIN Number

Personal PIN numbers can be set to trigger the barrier. This can be changed remotely to manage site security.

### Dial-to-open

The barrier intercom can be dialled from user mobile devices and will permit access to site if their number has been set on a whitelist of approved numbers. This can be particularly useful for site personnel arriving to site on a daily basis.

It is possible to programme these features yourself if you wish using a mobile app. Please contact Solar Gates UK Ltd for assistance with programming to suit your site.

## ANPR – Automatic number plate recognition

If specified, your barrier will have been fitted with a connected camera, capable of reading vehicle number plates. The data is then referenced against an internal database which will permit or prevent entry for specific vehicles. Contact Solar Gates UK Ltd for assistance in remote managing the vehicle database to suit your site.

## Telematics

The barrier can be fitted with a remote telematics device to offer important information to the user. This can be very useful on a large or busy site, or when the customer owns or hires a lot of plant. The device can report the following information:

- GPS Position
- Time of last update
- Position of boom arm
- Battery voltage

In addition it is possible to remote control the barrier through the telematics device.

The telematics platform can be access from the Solar Gates website at this link:

[https://www.solargates.co.uk/resources/tracker\\_login](https://www.solargates.co.uk/resources/tracker_login)

Please contact Solar Gates UK Ltd for your log on or if you would like to learn more about telematics on your barrier.

## Delivery and commissioning for use

When your barrier was delivered, the installing engineer will have commissioned it for use on your worksite. It is, however a mobile piece of plant and you may wish to re-position it yourself. If you elect to move or adjust it, you will need to bear in mind the following:

### Barrier boom arm length

The SOSEC 600 is compatible with the INSTABOOM collapsible boom as well as both the SOSEC boom with a drop skirt, and the SOSEC boom with Red/Green LED lights. If the length of the boom is adjusted, either by using fewer sections of INSTABOOM boom or by cutting the SOSEC boom shorter, the counterweight spring will need to be adjusted to ensure the system is still balanced. The process for this must be followed and is safety critical. The barrier must be switched off and then re-calibrated afterwards.




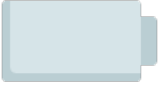
*Follow the guides in the appendices to this document to balance the boom and then follow the initial setup procedure. Please contact Solar Gates UK should you need any assistance with this safety critical procedure.*

Once the boom length has been adjusted, it is critical to similarly adjust the settings on the safety laser sensor. If this is scanning beyond the reach of the boom arm it may detect obstructions which do not impeded the arc of the boom and so prevent movement unnecessarily.

## Power, Solar and Battery Management

The SOSEC 600 is designed to offer performance 24/7 365, running from the installed battery store and charging from its solar panels. However, unlike other products in the SOSEC range, the solar panels are bonded to the body of the cabin and cannot be re-oriented to face south, towards the sun. This, and the effect of any shade created by the install environment may have an effect on the battery performance of the barrier.

Battery Condition	Voltage readout	Barrier Status
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	<p>26.7V</p>	<p>Fully Charged</p>
	<p>23.7V</p>	<p>Empty</p>

## Trouble shooting/FAQ

<p>My barrier has come down on a vehicle – why? Isn't this supposed to not happen?</p>	<p>To understand why a vehicle strike has occurred it helps to consider first the safety systems that are designed to prevent this.</p> <p>Firstly the laser sensor positioned under the barrier scans a perfect line from 300mm out from the cabinet until the programmed maximum range, usually pre-set to the length of the boom. This line has to be broken for 0.1s before the switch engages and the safety circuit cuts in. Once this happens the barrier movement has to stop and then reverse direction to move the arm back to the vertical. If the vehicle is moving at a reasonable pace, it is possible that the barrier arm will not move out of the way quickly enough to avoid the top surface of a high vehicle such as a HGV, and this is exacerbated when the boom arm is fitted with a drop skirt. <i>Vehicles should not proceed through the barrier once it starts moving.</i> If the barrier does not give arriving drivers sufficient time to return to their vehicles and proceed through the barrier, please contact Solar Gates UK to arrange an engineer visit to adjust the delay time on your barrier.</p> <p>Vehicles with a high ground clearance between the axles, such as ADV's, will not break this laser line if they stop with a wheel either side of the sensor; the laser will look clear under the vehicle and see no obstruction. It is advisable to discourage vehicles from stopping under the arc of the barrier.</p> <p>Neither of these eventualities are, particularly, failures of the design of the barrier, but limitations of the nature of a solar powered, and mobile, device.</p>
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<p>My barrier tries to come down but goes back up to the vertical position</p>	<p>This is most often caused by the barrier detecting something with the safety laser as the barrier arm comes down. Very often this is the barrier's own skirt which has become bent or distorted and which the sensor can "see" as the arm come down.</p> <p>Other things that can cause this behaviour are loose site elements such as storage wrappings or pieces of hoardings which move around in a breeze and, again, are detected by the sensors on the barrier, including the exit sensor (SOSEC 100 and 200 only). Observe and check the sensor areas for anything which could be picked up.</p> <p>This behaviour can sometimes be caused by excessive play in the fitment of the boom mounting onto the gearbox axle. This can happen if the barrier sees a high number of usage cycles or is used in an area with very high winds, or is often stored in the upright position. As the barrier moves, the play is detected by the motor encoder and the barrier interprets this as a safety concern. This should be addressed by periodic servicing as detailed in the Handover Pack and Machinery File. Contact Solar Gates UK to arrange a service visit by our engineering team.</p>
<p>My barrier won't come down</p>	<p>There are only a few scenarios in which the barrier will not attempt to come down to the horizontal, closed position.</p> <p>The most obvious thing to verify is that the barrier is switched on at the power switch on the side.</p> <p>Verify there is sufficient battery power, as described in <b>Power, Solar and Battery Management</b>.</p> <p>Ensure that the Hold Open switch is in the Normal Operation position.</p> <p>If the above has been addressed and the barrier still does not move, the most likely reason is that the safety systems are preventing motion. Check that there is nothing being detected by the safety laser sensor. You can isolate the safety systems to check this, by opening the barrier cabinet and sliding the <b>SAFETY</b> switch to off.</p>

	<p><b>PLEASE NOTE: This is a safety critical procedure. Always verify that it is safe to undertake any tests before requesting the barrier to move. This mode operates the barrier with NO SAFETY SYSTEMS.</b></p> <p>If the barrier moves in this mode, the barrier movement is being prevented by the laser safety sensor. Re-engage the safety switch on the control board and verify the operation of the safety laser. Call Solar Gates UK for advice and an engineer callout if required.</p>
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## Appendices:

A number of one page guides exist on our website to assist with regular tasks in the SOSEC and INSTABOOM range.

How to charge the SOSEC 600:

[https://www.solargates.co.uk/resource/128/How\\_to\\_charge.pdf](https://www.solargates.co.uk/resource/128/How_to_charge.pdf)

How to change batteries:

<https://www.solargates.co.uk/resource/121/Battery%20Charge%20and%20Change.pdf>

How to pair remote fob:

[https://www.solargates.co.uk/resource/127/TRAP\\_T4\\_Pairing\\_guide\\_v2.pdf](https://www.solargates.co.uk/resource/127/TRAP_T4_Pairing_guide_v2.pdf)

How to change batteries in remote fob:

[https://www.solargates.co.uk/resource/126/T4\\_Remote\\_Battery\\_Exchange.pdf](https://www.solargates.co.uk/resource/126/T4_Remote_Battery_Exchange.pdf)

Manual release: <https://www.solargates.co.uk/resource/123/Manual%20Release.pdf>

## Service Plans

In line with the Machinery Directives, we recommend your barrier is regularly serviced. Solar Gates offers a range of Service Plans to cover your equipment. Details can be found on our website (<https://www.solargates.co.uk/service/maintenance>). Callouts to site are not charged but any part replacements will be charged. Repairs to damage (i.e. that caused by a vehicle strike) will be charged including the callout.

## How to get help

Your barrier is fitted with a metal rating plate on the outside of the barrier cabinet. This is usually on the door or the front face of the cabinet enclosure, inside the cabin of your SOSEC 600. This will tell you the manufacture date of your product and its serial number. This serial number is very important, and you will need to quote this to us in any communications with us.

Our website has many useful resources for our products including one page guides and video content. Please check this resource first as your question may be answered more quickly than you expect.

Should you need to get assistance, please contact our engineering technical support team on 01622 534000 or alternatively email [support@solargates.co.uk](mailto:support@solargates.co.uk). You will need to quote your barrier's serial number. Our first line support will always be to offer you telephone assistance as this is by far the most expedient way to resolve your problem.

Should telephone support fail to resolve your problem we will endeavour to send an engineer to your site.

Those hiring our barriers receive a fully managed service including proactive maintenance. Breakdown parts will not be charged at all but cost of repairs to damaged products will be the responsibility of the hirer.