

# OTC Electra

**Model: OTCE01**

**User Manual**

V1.3.3

**Silicon Art**

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Silicon Art Pvt. Ltd.



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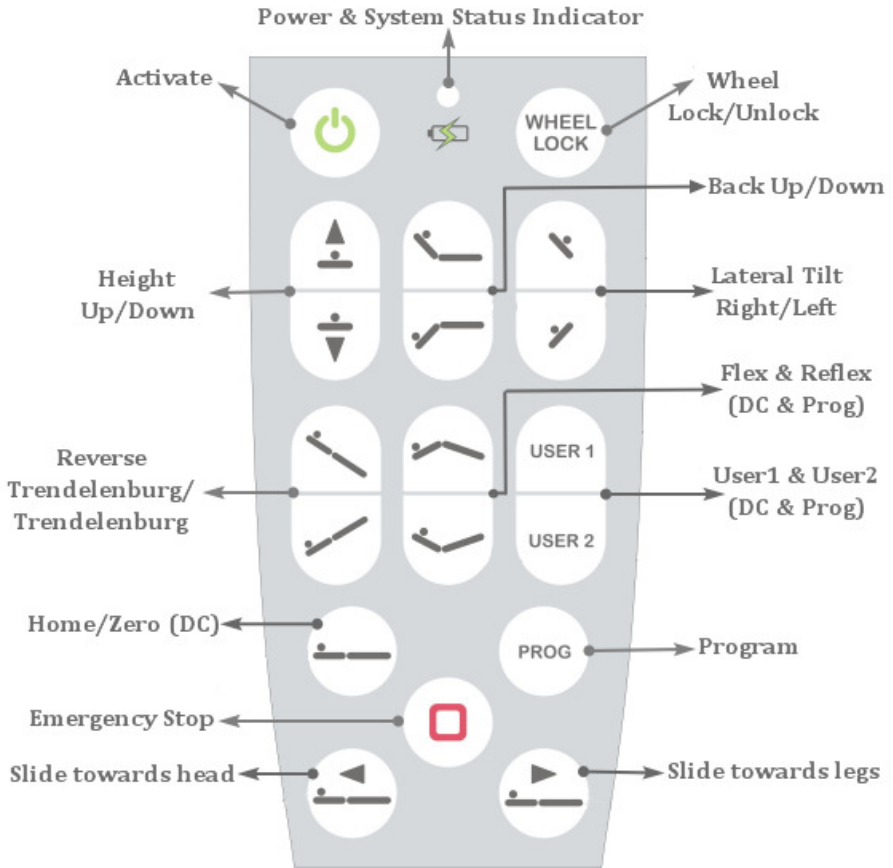
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# 1. Introduction

This OT table is equipped with an OTC Electra OTCE01 which is a microcontroller based control box and handset. It enables doctors to control the table's movements and program the most suitable OT table positions for surgeries and diagnostics. It is also intelligent enough to automatically maintain complete OT Table for you (like Battery Charge/Discharge Management, Overvoltage and Overload protections, Programs/Memories, etc.) so that you could focus on more important things at hand.

Also we have put lots of effort to make this product very intuitive and user friendly so that you'd rarely need to open this User Manual 😊.

## 2. Getting Started



**DC:** Double Click  
**Prog:** Programmable

Figure 2.1: OTC Electra Remote Handset

## Remote Handset Key Functionalities

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### **Activate:**

Press this key to activate the system. The system shuts down when not in use for more than 30 seconds to avoid any unintentional key press and to save power.

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### **Emergency Stop:**

Pressing this key will Stop any current operation immediately and shuts the system down to avoid any unintentional/dangerous movement.

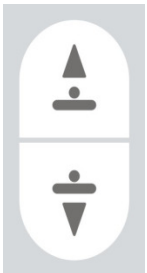
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### **Wheel Lock/Unlock:**

This key is used to lock/unlock the wheels to the floor. System remembers the last state of the wheels. So pressing this key toggles the state of the wheels. System beeps once when the designated position is reached.

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### **Height Up/Down (Double Click):**

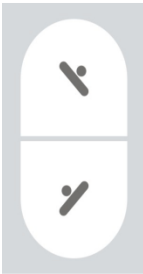
Pressing these pair of keys increases or decreases the table height. These keys are Double Click enabled. Double clicking these keys moves the height to the extreme high or low positions in one go.

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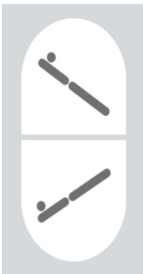
**Back Up/Down:**

Pressing these pair of keys moves the back side of the table upwards or downwards.



**Lateral Tilt Right/Left:**

Pressing these pair of keys tilts the seat of the table to right or left.



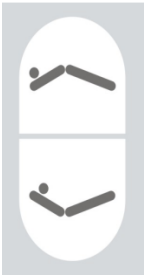
**Reverse Trendelenburg/Trendelenburg:**

Reverse Trendelenburg moves the head side upwards. Trendelenburg moves it downwards.



### Home/Zero (Double Click):

Pressing and holding or double clicking this key brings the table to the Home (also called Zero) position. For better balance, all movements are concurrent-like (3 seconds each in round-robin fashion). System beeps once when the designated position is reached. Home position is not programmable from the remote handset, it comes pre-programmed from the factory.



### Flex/Reflex (Double Click & Programmable):

Pressing and holding or double clicking these key brings the table to the Flex/Reflex position. For better balance, all movements are concurrent-like (3 seconds each in round-robin fashion). System beeps once when programmed position is reached. Flex and Reflex positions are pre-programmed from the factory, but it can be re-programmed by you, as and when needed, with the use of 'PROG' button.



### User 1/User 2 (Double Click & Programmable):

User keys are special keys. There are two of them. They allow you to program and attain the frequently used positions, as and when needed, with the use of 'PROG' button. Pressing and holding or double clicking this key brings the table to the programmed position. For better balance, all movements are concurrent-like (3 seconds each in round-robin fashion). System beeps once when programmed position is reached.



### Program:

Program key is used to program new positions to Flex, Reflex, User 1 & User 2 keys.

Steps to program:



- Set the table to the desired position.
- Press the 'PROG' key (This puts system in programming mode for 3 seconds; during this period status indicator blinks between Green and Orange).
- Press any programmable key (Flex, Reflex, User 1 and User 2) within this 3 seconds.
- Status indicator stops blinking and system gives a short beep indicating that the programming is completed successfully. Now onwards that programmable key can be used to attain this programmed position.



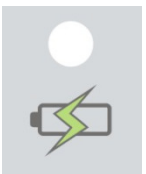
### Slide towards Head:

Pressing this key slides the seat of the table towards the head side.





### Slide towards Legs:




Pressing this key slides the seat of the table towards the legs side.



### Power & System Status Indicator:

Symbol	Colour	Power/System Status
	Green	System is operating on Mains power.
	Orange	System is operating on Battery power and the battery state is 'Normal Battery'.

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	Red	System is Operating on Battery Power and the battery state is 'Low Battery'.
	Red Blink	Indicates a 'Very Low Battery' power. Any operation is not possible in this state. Please charge the battery as soon as possible.
	Green-Orange Blink	Indicates that the system currently is in 'Programming Mode'. This happens when 'PROG' key is pressed. The 'Programming Mode' lasts for 3 seconds.

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**Note:** When 'Unattended Position Movement' (Double Click) is in progress, the status indicator would be blinking to indicate the same.

## 3. Salient Features

### 3.1 Auto Keypad Lock & Auto Shutdown

When the System is not in use for more than 30 seconds, the remote keypad gets locked automatically and the system shuts down to avoid any unintentional key press and to save power. In shutdown mode system goes in Ultra Low Power Mode, where it consumes less than 400 $\mu$ A. So that it doesn't discharge the battery in idle condition or during transportation.

### 3.2 Double Click (DC)

This is an 'Unattended Position Movement' feature for programmed positions and height Up/Down movement. Just like a mouse of a computer, you can double click these keys and leave the remote aside. Once the position is reached, the system will intimate you by giving a single short beep.

### 3.3 Automated Self Diagnosis

The system has the ability to do the self fault diagnosis. It shuts itself down immediately in an error condition to avoid any further damage and also intimates you about the source of fault by giving you an error indication. Error indications are explained in detail in [Troubleshooting](#) section.

### 3.4 Five Memory Functions

The system has five different memory functions, which are Home, Flex, Reflex, User 1 and User 2. The Home position is pre-programmed from the factory, while the other memory functions can be programmed/reprogrammed by you as and when needed. All the five memory functions are Double Click (DC) enabled.

### 3.5 Advanced Battery Charge Management

This feature allows you to plug the system in to the Mains power and forget it. The system is intelligent enough to manage the charge and discharge cycles of the battery. It uses a 4-stage charging technique which allows the battery to charge faster (70% in first 4 hours), keeps safer (least overheating and

sulphation on terminals) and well maintained (long service life). Battery should be charged at least once in every six months even if it is not used. However the longest life is obtained when the system is always connected to the Mains power, assuring that the battery is always in the fully charged condition.

### **3.6 Intelligent Overvoltage and Overload protection**

While using the system you need not worry about its safety against the odds of overvoltage, overload or short circuit conditions. It is intelligent enough to detect these issues and take appropriate actions. When the overload is detected, the system shuts down and gives you an audible alarm (2-beeps). It automatically works fine after overload is removed. You can refer [Technical Specification](#) section for more details.

### **3.7 Power & Battery status on Remote handset**

We understand that you'd feel more secure when you know how much more your battery could last. For this we have a Power & Battery status indication on remote handset. For more information, please refer 'Power and System Status Indication' under [Getting Started](#) section.

## 4. Technical Specification

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1.	Operating Voltage	180V-264V AC, 50Hz, Max 1 Amp. Breakdown Voltage: > 264V AC.
2.	Battery	24 Volt DC (2x12V), Capacity: 4.5 AH
3.	Battery Charging	70% in first 4 hours, rest in 4 more hours.
3.	Fuse	Glass Fuse F2AL, 250V AC, 2A (One extra provided in the fuse holder).
4.	Overload Limit	7.5 Amps (Auto short-circuit cut-off)
5.	Current Consumption in idle condition	< 400 $\mu$ A.

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## 5. Troubleshooting

Problem	Reason	Action to be Taken
2 beeps and the table stops working	An Overload or Power Failure condition is detected.	1: The system might have detected an overload condition. Please remove the source of overload and the system will start working normally.  2: The system might have detected a power fail condition. The battery is fully discharged. Please plug in to Mains power to charge the battery as soon as possible.
3 beeps and the table stops working	The battery is fully discharged.	Please plug in to the Mains power to charge the battery as soon as possible.
4 beeps and the table stops working	A relay card fault is detected.	Please call the Service Centre for assistance.
5 beeps and the table stops working	A Remote handset fault is detected.	Please call the service centre for assistance.
The system is plugged in to the Mains power and the Mains power is available, still the Remote	An Overvoltage condition on Mains power is detected.	Don't worry; the system has just detected an Overvoltage (> 240V AC) condition on Mains power. So the system has switched to Battery power to protect itself from Overvoltage. The system will switch back to the Mains

shows Orange (Battery) as power status.		power (indicating Green) once an overvoltage condition is removed.
The system is plugged in to the Mains power and the Mains power is available, but still it does not work.	1: The fuse might be damaged.	1: Please check the Fuse and replace if it is damaged. One extra fuse is provided in the fuse holder.
	2: There might be a loose connection.	2: Please check all the cable connections properly.
	3: Something else might have damaged.	3: Please call the Service Centre for assistance.

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