



ZOLA FLEX MAX INSTALLATION AND SERVICE MANUAL

ZOLA
Power Anywhere

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Contact ZOLA Electric

For questions about FLEX MAX products or user accounts please contact ZOLA customer service at:
info@zolaelectric.com

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IMPORTANT SAFETY WARNINGS

The product is designed and tested in accordance with international safety requirements, but as with all electrical and electronic equipment, certain precautions must be observed when installing and/or operating the product. To reduce the risk of personal injury and to ensure the safe installation and operation of the product, you must carefully read and follow all instructions, cautions, and warnings in this manual.

Warning Terms in this Document




A warning describes a hazard to equipment or personnel. It calls attention to a procedure or practice, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all the ZOLA Electric equipment and/or other equipment connected to the ZOLA Electric equipment or personal injury.


The following terms are used throughout this user manual with the following meanings:

Term	Description
WARNING	WARNING indicates a hazardous situation which, if not avoided, may result in death or serious injury.
CAUTION	CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Markings on FLEX MAX

The following symbols are used as product markings with the following meanings:

	Warning / Caution, refer to documentation
	For indoor use only
	Read the instruction manual

Symbol	Reference	Description
	IEC 60417 - 5031 (2002-10)	Direct current

GENERAL SAFETY INSTRUCTIONS

- Only ZOLA Electric or ZOLA Electric Technical Partners, can conduct installation/ uninstallation/ or servicing activities described in this document.
- Do not install / uninstall / or service FLEX MAX until you have read this manual. Always execute steps in this manual in the order described.
- This system is not for use by:
 - Children
 - People with impairments (physical, sensory, mental)
 - People with insufficient knowledge and training of the product.
- Do not dispose of this manual during the lifetime of the product and ensure it is available to all current and future users.
- Improper use of the system can compromise performance and damage components.
- Do not turn the system on before all system components have been installed, repaired or replaced as necessary, and inspected by a Technical Partner authorized by ZOLA Electric.
- Do not open any components of the system unless authorized by ZOLA Electric.
- Never remove or alter any markings or symbols applied to FLEX MAX Units, Chargers, Appliances and Solar Panels.
- Only connect solar photovoltaic (PV) equipment that has been supplied by ZOLA Electric. The FLEX MAX system uses proprietary equipment and connections to ensure high system performance and reliability.
- Do not connect any power source not described in this document to the FLEX MAX system unless authorized by ZOLA Electric. Incorrectly connected devices create risk of damage to the system. The connection of any other solar or battery equipment not supplied by ZOLA Electric to FLEX MAX will void the warranty and may create a safety hazard.
- For any bodily injury, immediately seek emergency medical attention.

1. INTRODUCTION TO ZOLA FLEX MAX & CONFIGURATIONS

INTRODUCTION TO FLEX MAX & CONFIGURATIONS

ZOLA FLEX MAX is a wall mounted, "plug and play" power device that is used in the home or business. All inputs and outputs are plugged directly into the box with cables - like a PlayStation.

It contains a lithium ion battery which charges with a solar panel and a wall charger in parallel - it uses solar when available.

ZOLA FLEX MAX is sold in a number of different configurations which offer different accessories. The Core System which is common to all configurations is the POWER BOX, Solar Panel, Lights and USB phone charger.

The available accessories include ZOLA FLEX MAX INVERTER, ZOLA FLEX MAX WALL CHARGER, ZOLA BOOMBOX, ZOLA FAN, ZOLA TV (24", 32", 40"). ZOLA FLEX MAX is also designed for use with an efficient refrigerator. Please ask your point of contact at ZOLA for a list of approved refrigerator models

HARDWARE IN PICTURES



Power Box



ZOLA TV



Solar Panel



Fan



Boombox



Bulb



Inverter



Tube light



Wall Charger

2. OVERVIEW OF THE ZOLA FLEX MAX POWERBOX

ZOLA FLEX MAX OVERVIEW

Appliance Shelf

For use while charging phones, radio, or other small appliances

QR Code

Contains box DID

Box Reset

Hard reset button for critical failures

USB Ports (2)

- Top port (single bolt) includes a data connection
- The top of the two ports charges more rapidly

Auxiliary Port

Appliance Ports (3)

Light Ports (3)

Ability to chain up to
4 lights per port = 12 total

Appliance ports

Lighting ports

Auxiliary and USB ports

Security light port

LEDs (12)

- 3 Red LEDs for discharge
- 3 Green LEDs for charging
- 6 LEDs for battery

LCD Screen (1)

Information about the system,
unlock code entry, alerts and
language

Navigation Buttons (3)

Useful for paying and interacting
with the LCD screen

Wall Charger Port (1)

Solar Panel Port (2)

Security Light Port (1)

Wall charger port

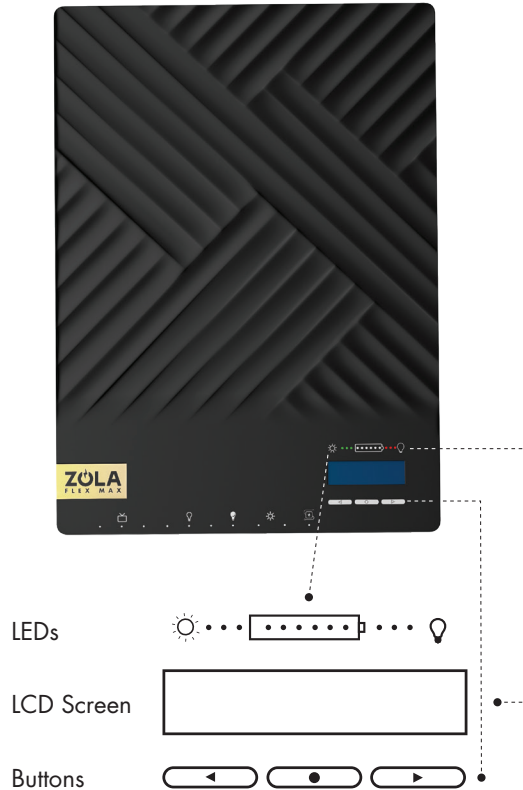
Solar panel ports

Inverter port
(RED is positive
BLACK is negative)

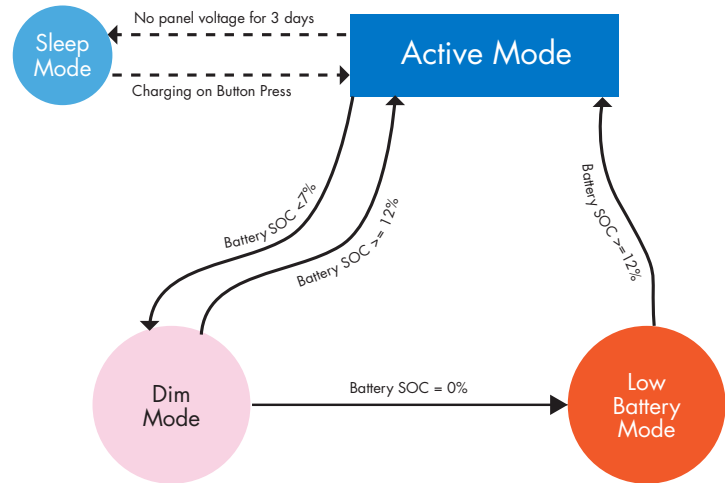
Inverter port icon

ZOLA FLEX MAX SYSTEM OVERVIEW

THE POWER BOX HAS 2 TOOLS FOR COMMUNICATING:
12 LEDs and an LCD screen controlled by 3 buttons underneath it.



SUMMARY OF FLEX OPERATIONAL MODES



1. No appliances
2. Dim lights
3. No USB

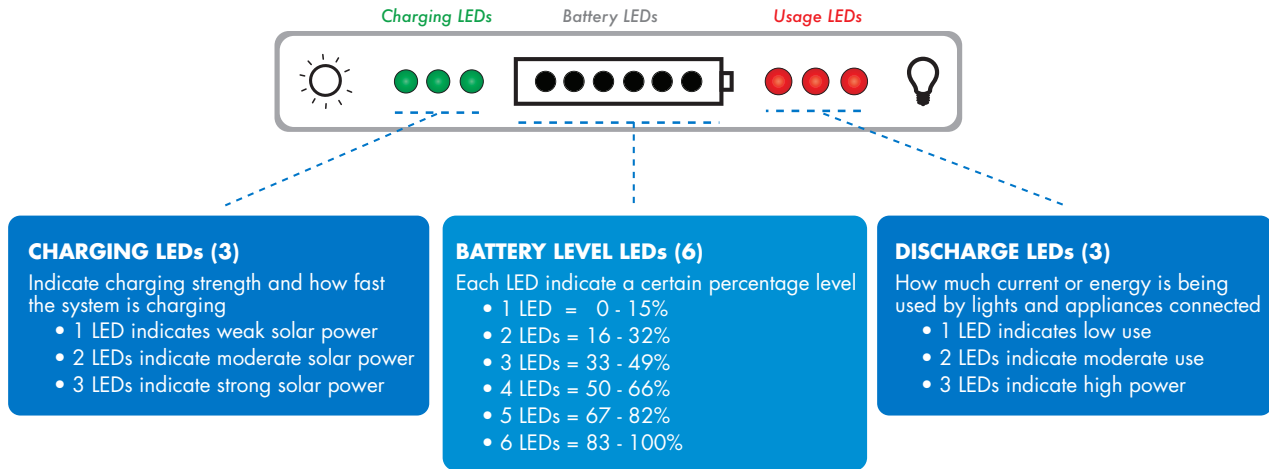
1. No appliances
2. No lights
3. No USB
4. No LCD
5. No LEDs

*All battery percentages are in SOC-D

LEDs OVERVIEW

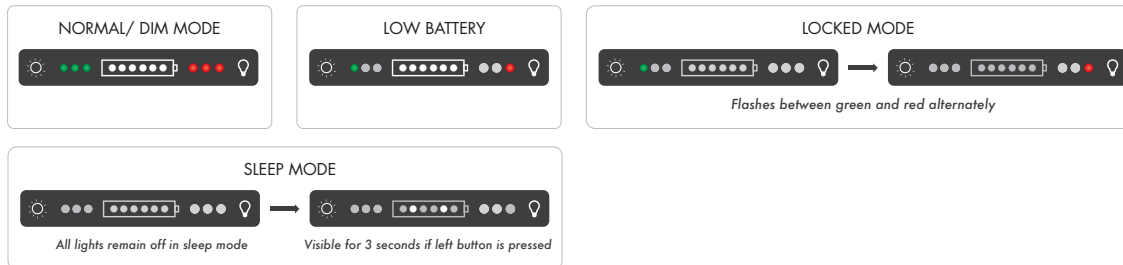
LEDs are ON when the battery level is above 0%. They relay specific information.

12 LEDs in total: 3 charging LEDs, 6 Battery level LEDs, 3 Discharge LEDs

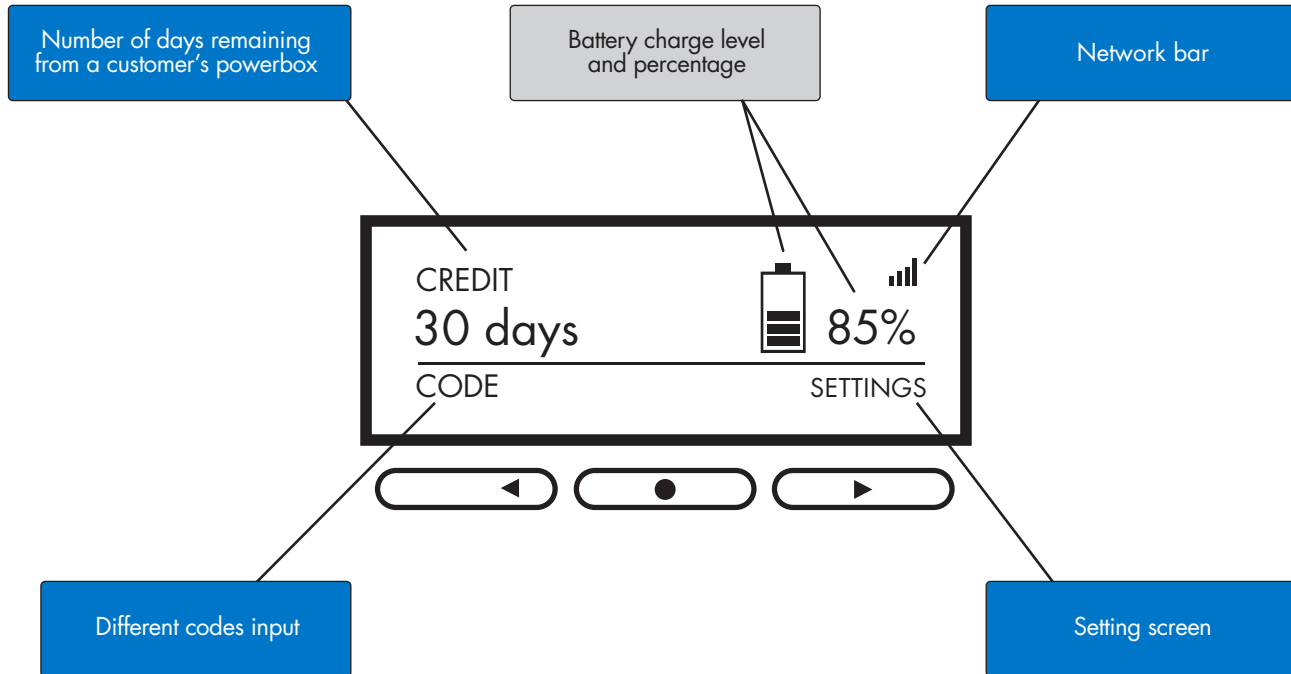


FLEX POWERBOX MODES - LEDs

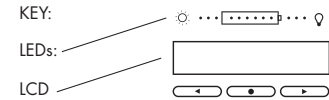
When the Powerbox enters Low Battery mode or Locked mode, the LEDs change to show this.



LCD SCREEN



ZOLA FLEX MAX SCREENS & LED_s



ZOLA FLEX MAX MODES	MODE	IMAGE	LED _s	LCD	LIGHT PORTS	APPLIANCE PORT	USB PORT	AUX PORT	INVERTER PORT
	ACTIVE MODE		<ul style="list-style-type: none"> GREEN LED_s depend on when power box is connected to power If the power box is above 95%, No Green LED White LED_s depend on battery level RED LED_s depend on the discharging level 	ON	ON	ON	ON	ON	ON
	LOW SOC		<ul style="list-style-type: none"> 1 GREEN LED 2 White LED_s 1 RED LED 	OFF	OFF	OFF	OFF	OFF	OFF
	DEAD BATTERY		OFF	OFF	OFF	OFF	OFF	OFF	OFF
	NO CREDIT		<ul style="list-style-type: none"> 1 GREEN LED 1 RED LED blink 	ON	OFF	OFF	OFF	OFF	OFF

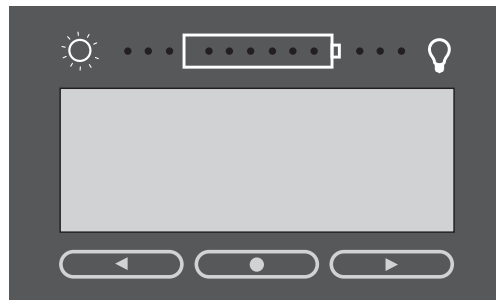
- On the active mode if the power Box is charged to 100% and starts discharging, the green LED will not be seen until the power box goes below 95%
- The screens and LED behavior might change due to firmware change

DIFFERENCE BETWEEN SLEEP MODE AND DEAD BATTERY

They both look alike at first sight

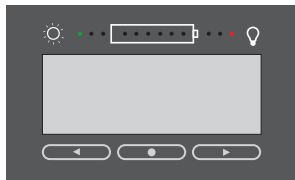
- **Sleep Mode** means the Flex system is drawing minimum power
 - If the left button is pressed, the 2nd and 5th white LEDs will appear for 3 seconds and then turn off.
 - **system can be awakened by pressing the left button, waiting for 1 second, then middle and right button.**
 - A Flex box can enter sleep mode when:
 - Entering codes manually
 - Automatically when the Flex box is not charged for 3 consecutive days
- **Dead Battery** means battery level is too low to power anything therefore
 - System can not be awakened by any button press
 - Needs to be replaced

Sleep mode & a Dead battery LCD & LEDs



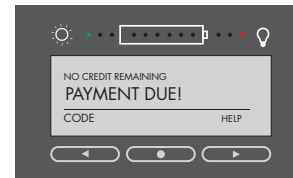
Powerbox low state of charge - (Low SOC)

- Low SOC LEDs turns ON, on button push and will turn off after 3 seconds
- Resetting the ZOLA FLEX MAX POWER BOX will not activate the lights and appliance ports
- To exit Low SOC, the power box needs to be charged.
- Credits purchased while a box is in low SOC **will not** be sent to the box automatically via GSM and will need to be entered manually.



Out of Credits

- When FLEX power box is out of credits
 - One red & one green LED lights will keep blinking
 - LCD will display "PAYMENT DUE"
- Resetting the FLEX MAX POWER BOX power box will not activate the lights and appliance ports
- Advise the customer to purchase credits to activate the POWER BOX



GSM AND ITS IMPORTANCE TO THE COMPANY

GSM - Global System for Mobile communications, As of 2014, it has become the global standard for mobile communications

GSM importance to ZOLA:

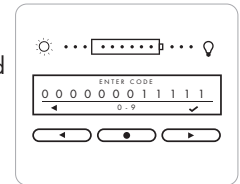
- Communication between our engineering team and the ZOLA FLEX MAX POWER BOX can be done through GSM connectivity
- Different codes can be pushed to customers powerbox remotely
- Firmware updated can be pushed to power boxes remotely
- Help the company to be proactive as our engineering team can see issues in the power box even before a customer has complained

How to reset GSM:

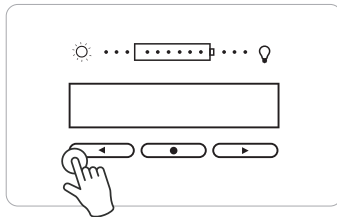
It is important to reset GSM when installing a power box into a customers home as it help it to be connected to the nearest powerful connection

NOTE:

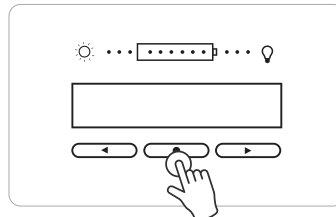
The appropriate way to reset GSM is by entering this codes **"000000011111"** and not otherwise



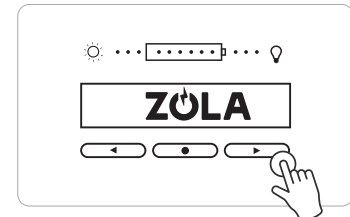
WAKING UP ZOLA FLEX MAX POWER BOX FROM SLEEP MODE



1. Press and hold the left button for 2 seconds until you see 2nd and 5th battery indicator lights turn on



2. After you see the indicator lights, release the left button and wait for 1 second, then quickly press the middle button and then the right button



3. After pressing the right button the display screen should turn on and display the ZOLA logo

3. PRODUCT: USER EXPERIENCE

ZOLA FLEX MAX TERMINOLOGY

User Interface (UI)	The visual layout and design of indicators that allow the customer to gather information from the product. For ZOLA FLEX MAX this is only the LCD screen and the 12 LEDs
User Experience (UX)	The whole multi-sensory experience the customer has while interacting with the product. This includes elements of the UI but can be expanded to other objects, sounds, or interactions related to the core system.
Active Mode	When the box is in active mode it is behaving as expected and all outputs are functioning
Sleep Mode	After the box has not received a voltage for 3 days the box enters "sleep mode". This was previously "ship/store" mode. There is no code to enter or exit sleep mode. Any button press or panel voltage will return the box to "active" mode.
Dim Mode	This mode is entered when the LCD displays 7%. In dim mode the appliance ports do not work and the light ports only operate on the dim setting. Box will return to Active mode after the LCD reads 12% battery.
Low battery Mode	Previously called "low SOC", in this state all output ports are disabled. Upon pressing a button, the LEDs flash but the LCD screen remains blank. Box will return to active at 12%.
Firmware update Mode	When the box firmware is being updated over the GSM network, the box will temporarily be disabled for 5-10 minutes as the update is completed.
SOC	State of Charge. This refers to the battery charge level, commonly referred to as a percentage.

ZOLA FLEX TERMINOLOGY

Unlocked	Box is paid for and all outputs should work according to defined operational states
Locked	Box outputs are disabled until the next payment is made
Permanent Unlocked	Box total cost has been paid for and ownership transferred to the customer. Box is unlocked permanently and all outputs continue to function according to defined operational states.
Chain	A method of linking light cables, one after another so that all lights do not have to connect into power box. This extends the distance that lights can reach from the power box
Junction Box (J-Box)	The point at which two light cables and 1 switch cable are joined.
QR Code	A visual label placed on the power box that communicates information about the box including the device identification number when scanned by a special device or smartphone and app
AC wall charger	It is AC charger that uses the grid to charge the powerbox [instead of using solar panel].
Inverter	This is a device that converts the DC voltage to an AC voltage

BOX BEHAVIORS - BY OPERATIONAL MODE

	ACTIVE MODE	DIM MODE	LOW BATTERY	SLEEP MODE	LOCKED MODE (No Credit)
LCD	Normal behavior. Turns on with notification or button press, auto off after ~30 seconds	Normal behavior. Turns on with notification or button press, auto off after ~30 seconds	OFF	OFF	Prompts payment. Cannot see normal screens
LEDs	Normal behavior. Always display state of battery, charging, and discharging strength	Normal behavior. Always display state of battery, charging, and discharging strength	Far left green LED, far right red LED, and two middle white LEDs turn on when any of 3 buttons are pressed. Otherwise off	Default: off If the left button is pressed, the 2nd and 5th white LEDs will appear for 3 seconds and then turn off.	Far left green LED and far right red LED alternate flashing (on and off) until credit is added
Outputs	All ON	Appliance ports and USB ports to not work. Lights are only on "dim" setting	All OFF	All OFF	All OFF
Trigger	Default mode when battery SOC is above 12%	Battery SOC display falls below 7%	Battery SOC reaches 0%	No panel voltage for 3 days	Credit runs out
Return to active mode	N/A	Battery SOC displays 12%	Battery SOC displays 12%	Button press or panel voltage	Credit added

Low Battery LEDs

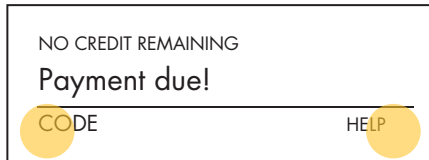
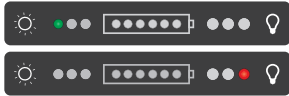


Locked mode LEDs



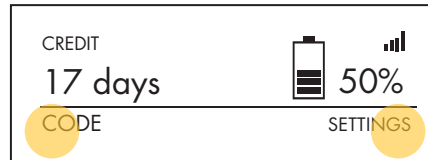
Flashes between green and red alternately

PAYMENT MODES



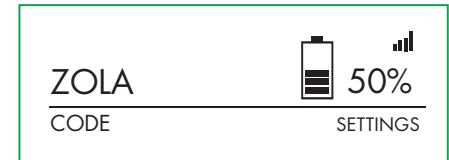
No Credit - Locked

- When credit runs out, this replaces the home screen.
- Press the left button to enter a code band to unlock box.
- Press help to view CC number and DID
- Outputs turned OFF



Unlocked - Home Screen

- After credit has been added, the LCD will return to that seen above:
- Credit remaining, battery remaining, network connection

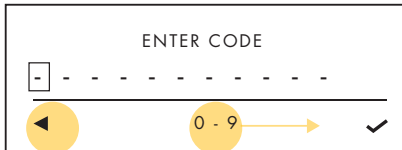


Permanent Unlock

- When the customer enters two permanent unlock codes, the home screen will display the screen above

LCD SCREENS - MAIN

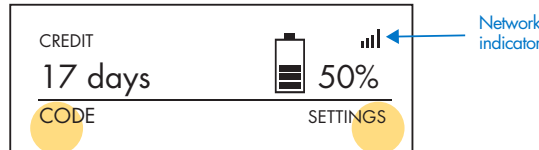
CODE ENTRY



Enter Code

- Enter code by incrementing up with middle button
- Move right to continue and enter 12 digit code

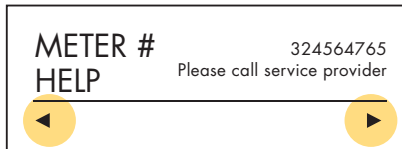
HOME



Home Screen

- Credit remaining, battery remaining, network connection
- Left button for code entry
- Right button for settings/ information

SETTINGS/INFO



Settings screen

- Device ID number
- Call center number



Security light

- Toggle between ON and OFF with middle button



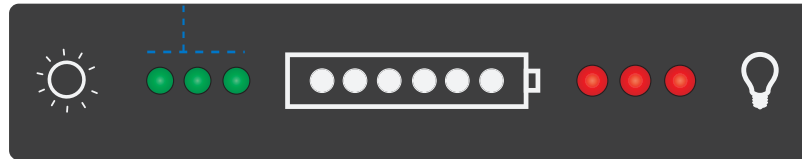
Language

- Toggle between languages with middle button middle button

CHARGING LEDs (3)

Indicate how fast the system is charging. Grid charging is always Strong

- 1 LED indicates charging weak
- 2 LEDs Indicate charging moderate
- 3 LEDs indicate charging strong



The LEDs are "**always on**" when the system has power and are designed to relay specific information at a glance from across the room

- 12 LEDs in total
- 3 Charging LEDs
- 6 Battery percentage LEDs
- 3 Discharging LEDs

BATTERY LEDs (6)

Indicate percentage of the battery

- 1 LED = 0 - 15%
- 2 LEDs = 16 - 32%
- 3 LEDs = 33 - 49%
- 4 LEDs = 50 - 66%
- 5 LEDs = 67 - 82%
- 6 LEDs = 83 - 100%

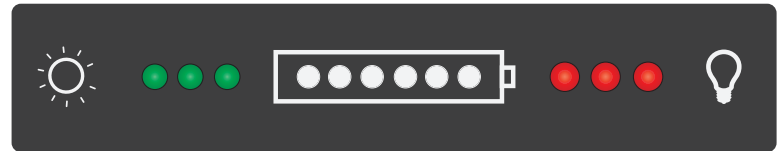
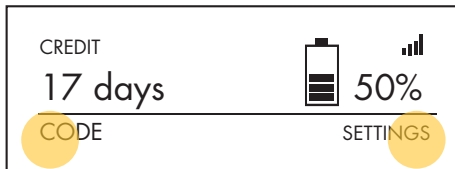
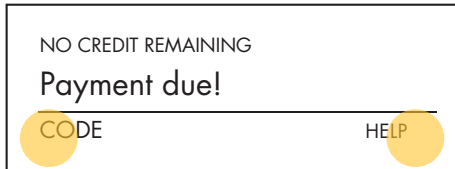
DISCHARGE LEDs (3)

How much current or energy is being used by lights and appliances connected

- 1 LED indicates low use
- 2 LEDs indicate moderate use
- 3 LEDs indicate high power

USER EXPERIENCE

"ON BOX" CREDIT AND DEVICE INFORMATION.



An LED strip provides usage information:

- Charging Status
- Battery Charge Status
- Discharge Status

The LCD and physical buttons provide device management.

LCD SCREENS - CODE ENTRY

1. START - CODE ENTRY

ENTER CODE

0 - 9

Increment with middle button to scroll through 0-9

2a. NUMBER ENTRY

ENTER CODE

0 - 9

Use middle button to increment number from 0-9. Use right arrow to select next number

2b. NUMBER ENTRY

ENTER CODE

0 - 9

3. ENTER CODE

ENTER CODE

3 4 2 7 4 6 8 2 9 3 9

0 - 9

Once finished hit the right button again to enter

4. VERIFICATION

PAYMENT ACCEPTED

Thank you!

DONE

CODE NOT VALID

Try again

TRY AGAIN CANCEL

If code is accepted press center button to return to home screen. If code is invalid press left button to try again or right to cancel

CODE ENTRY*

- Most customers (~70%) will not use this feature
- We have removed the keypad because of GSM but added a backup for code entry for customers without network
- Code entry is 4 basic steps as outlined above

SYSTEM ALERTS

The most important factors for a customer to be aware of when using his or her flex system is the **amount of credit remaining** and the **battery capacity remaining**.

General Alerts

Use combination of LCD screen and LEDs on the power box

Battery Alerts

- Use combination of LCD screen, LEDs, and ZOLA lights

Credit Alerts

- Use combination of LCD screen, LEDs, and Audio

Battery Use

- Box has limited battery remaining (25%)
- LEDs flash, **ZOLA lights flash**

Dim Mode

- Box enters dim mode at 7%
- LEDs flash, LCD message

Credit Added

- Upon adding credit
- LEDs flash, LCD message, **ascending audio tone**

Low Credit Alert

- 3 Days until payment due
- LEDs flash, LCD message, **descending audio tone**

No Credit Alert

- Box locked
- LEDs flash, LCD message, **descending audio tone**
- LED continues flashing

GENERAL SYSTEM ALERT

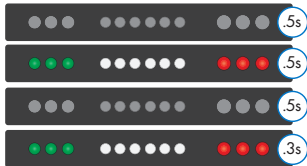
GENERAL SYSTEM ALERT

- The default alert behavior for FLEX MAX is described here
- Default alerts could apply to system malfunctions or system notifications related to battery usage or credit/ payments

Example: Hardware Malfunction

1. FLASHING LEDs

- LEDs flash **"OFF" "ON" "OFF"** then return to normal for 3 seconds (Ex. Shown here)
- Repeat until dismissed



2. LCD SCREEN

Specific message displayed related to alert. Dismissed with button press.

Please call your service provider.
There is a problem with
your system

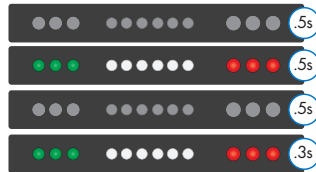
DONE

BATTERY USAGE ALERT

- When a customer's battery percentage falls below 25%, he or she will experience this behavior
- The intention is to alert the customer so that he/she might have enough time to change behavior and reduce consumption before the system enters dim mode and appliances are disabled

1. FLASHING LEDs

- All 12 LEDs flash on and off 3 times **and then stop**



2. FLASHING LIGHTS

All lights (bulbs & tubes) that are currently on will flash between **ON** and **DIM** 3 times and then stop

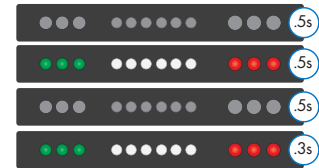


DIM MODE ALERT

- When a customer's battery percentage drops below 7% he or she will not be able to use the appliances or USB ports
- Lights will only function in dim setting
- Outputs will re-enable at 12%

1. FLASHING LEDs

- All 12 LEDs flash on and off 3 times **and then stop**



2. LCD SCREEN

Display dim mode alert screen until dismissed

SYSTEM ALERTS

CREDIT ADDED ALERT

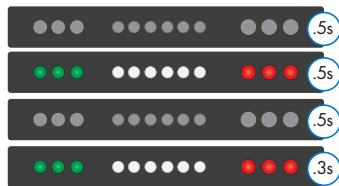
- When a customer adds credit either by GSM (remotely) or by entering codes physically, he or she will experience this behavior.

* Note difference in LCD screens in step 2

- After alert progression, system will return to active state

1. FLASHING LEDs

All 12 LEDs flash ON and OFF **until the LCD screen is dismissed.**



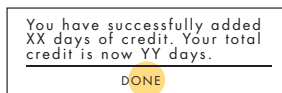
2a. LCD SCREEN - MANUAL

- Upon manual entry user sees **"Thank you"** screen
- Dismiss by pressing center button



2b. LCD SCREEN - GSM

- Upon GSM (remote) code entry user sees **"credit added"** screen
- Dismiss by pressing center button



3. AUDIO ALERTS

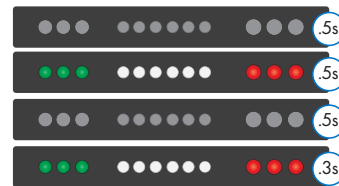
3 ascending tones indicate a successful top up

LOW CREDIT ALERT

- When remaining credit drops below 3 days (72 hours) and voltage from the panel is applied to the power box (at sunrise), alert sequence starts and repeats every hour for 3 hours.
- The customer is reminded by a combination of LCD screen message, flashing LEDs, and an audio tone

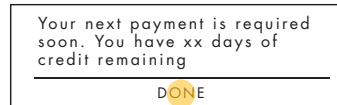
1. FLASHING LEDs

All 12 LEDs flash **ON** and **OFF** until acknowledged (Button press)



2. LCD SCREEN

Specific message displayed with days remaining



3. AUDIO ALERT

3 Low tones repeated

4. ZOLA FLEX MAX INSTALLATION

ZOLA FLEX MAX INSTALLATION

SAFETY IN INSTALLING THE ZOLA FLEX SYSTEM

Installing the Panel:

- Put on comfortable shoes ([Safety Shoes](#)) with a sole that won't easily slide on the roof.
- Avoid climbing to the roof barefooted, if you can wear hand gloves will be much more safe during sunny days.
- Climb to the top of the roof first and have someone from the ground to lever the panel towards your direction.
- Properly position the panel and install it.
- We recommend you use all the appropriate Personal Protective Equipment (PPE) like Industrial Noise Mask (*If you are climbing an asbestos roof*), [Safety Shoes](#), [Hand Gloves](#), [Fall Harness](#), etc.

Installing Lights, switches and ZOLA FLEX MAX Power box

- Be careful when using hammer to put nails through the wall
- For the houses that are connected to the National grid, it is important to wear gloves to avoid getting electrocuted by the live wires.
- If part of the installation requires you to stand on a chair or ladder make sure you have someone to hold the ladder or chair for you if necessary.

Installation Order of Operations:

Optional:

Verify that the system is in a state that is ready for installation in whatever CRM you use

1. Rough Layout
 - a. Lights
 - b. POWER BOX
 - c. Switches
2. Connect Chained lights and route cables
 1. Mount switches to wall
 2. Install solar panel
 3. Mount POWER BOX to wall
 4. Clean up cables for a neat installation
 5. Educate the customer

ACTIVATION AND INSPECTION

1. SYSTEM INSTALLATION

- a. Reset box by entering **0000-00001-1111**
(Do not press the hard reset button)
- b. The CRM you use should instruct Zola Platform via API to add operating days to the system
- c. **Check if you see the network indicator on the home screen.** If you do, the customer will receive codes automatically when you complete the top up step. If you do not, the customer will receive codes through SMS and you will assist him or her entering the codes using the keypad and LCD screen.



2. TEST LIGHTS/SWITCHES/EXTENSION CABLES

Must do this before starting installation

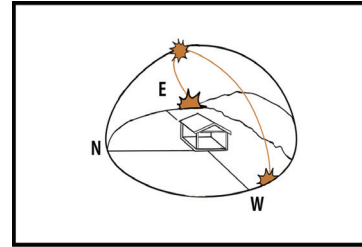
Very Important:

Test for breaks in the cables by slightly bending them close to the plugs during testing

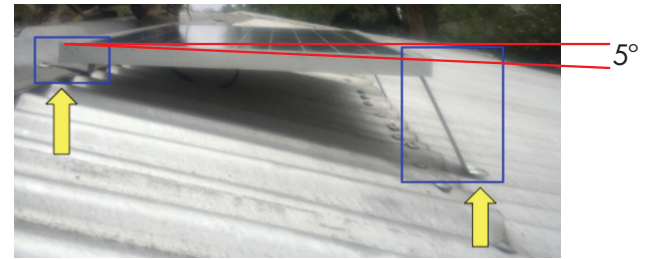


INSTALLING THE PANEL

1. Planning the panel placement:
 - a. The panel should be facing South, Southwest or West, for **Northern Hemisphere** countries.
 - b. The panel should be facing North or Northwest for **Southern Hemisphere** countries
 - c. The panel should not be covered by shade.



2. The panels should be installed with 4 total roofing nails: 2 at the front and 2 at the back panel tabs.
 - a. Depending on the roof angle, the large brackets may be place on the top or the bottom of the panel. **Most important is that the panel is not flat to collect water and dust.**
 - b. Use binding wire to hold firm the panel on the roof.



3. To absorb maximum sunlight place the panel to face the midday sunlight directly - about 5 degrees tilted.
4. Pass the panel wire through the iron sheet openings through the roof down to the box position.



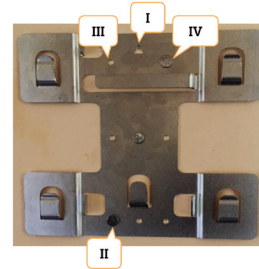
Equipments you will need for this step:

Panel, Nails, Binding wire, Hammer, Panel tabs, Ladder, Helmet & Hand Gloves

INSTALLING AND PLACING THE POWER BOX

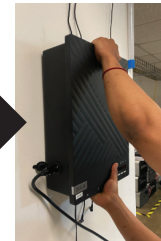
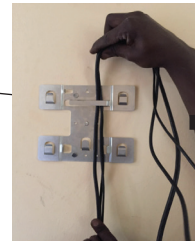
Install the power box inside customer's house by:

1. Determine height of box placement with LCD screen at eye level of customer
2. Mount the bracket by putting the nails in order of the numbers:
 - a. Nail number 1 can be nailed loosely at first to balance the bracket and help level it.
 - b. Use at least 4 nails, the rest is optional



3. Hang the cables through the bracket
4. Mount the box

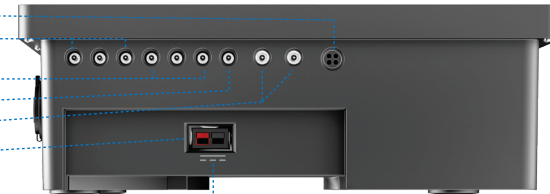
This tab can be bent inwards to help keep cables in place



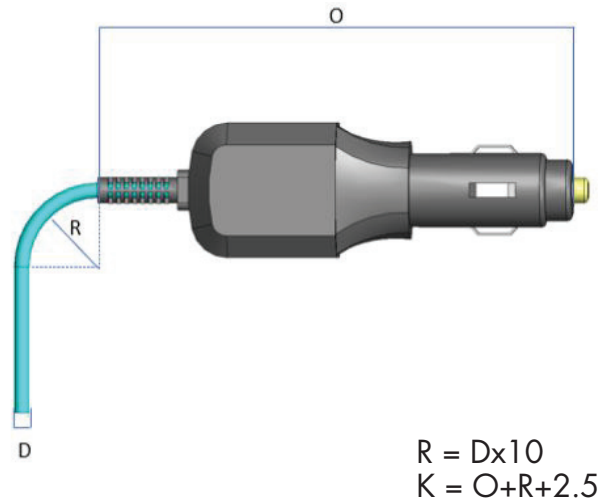
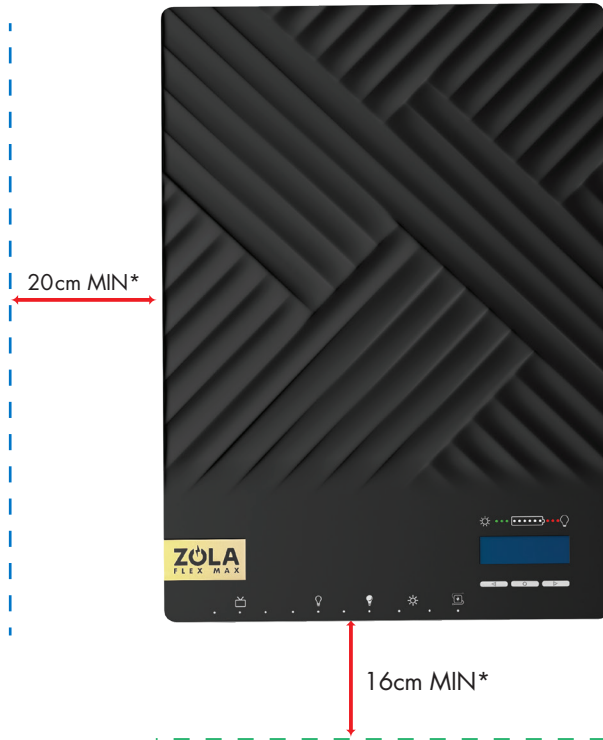
Service provider should hear and feel box click into place to confirm proper engagement with Mounting Bracket

5. Plug in the cables
6. Take up excess slack in the cables through the top.

- Wall charger port
- Appliance ports
- Lighting ports
- Security light port
- Solar panel ports
- Inverter port
(RED is positive & BLACK is negative)
- Inverter port icon



ZOLA FLEX EDGE KEEP OUT



*If K is >20cm K should be used as the keep out distance

LIGHTS PLACEMENT

BULB



- Install lights in the planned locations
- Route the light's wire to the box/chain connector.
 - a. **NOTE:** In case a light cable won't reach the box there are 3m extension cables. Only use one extension per light.
 - b. Use clips to neatly keep the wires pinned to the wall

Equipments you will need for this step:

Bulb light, Chain connector, Extension cables, Clips, Hammer & Nails

ROUGH LAYOUT OF LIGHTS & SWITCHES

1. This step is critical to visualize cable layout, clips should be used minimally at strategic locations only (and may need to be removed or re-fastened)
 - a. Mount lights in desired locations first (tube and bulb) – bracket for tube and cable clip for bulb
 - b. **PRO TIP:** Follow rafters as much as possible in open ceiling homes to keep cable routing simple, moving along and over at intersection points
2. 1st priority are lights that plug directly into meter box
 - a. Determine location of box with respect to placement of lights if cable lengths are limiting.
 - b. **PRO TIP:**
If chaining is required and cable length is limiting, position meter box end of plug approximately where it will plug into box, then begin routing cable outwards into room towards chained light to position J-box in the most ideal location.
3. 2nd priority is the chained lights
 - b. Ensure any chained lights can reach the J-box of the connecting light, connect plugs to help visualize
4. 3rd priority is switch placement
 - b. Best location is in same room as light at entrance doorway, sometimes the most ideal location for switch is not available, if excess cable is available try to move j-box towards wall where switch will be mounted
 - c. **PRO TIP:** For open ceilings place switch under rafter for easier cable routing. Switches are waterproof so outdoor mounting is OK (If possible should keep under covered area out of direct sun exposure)
5. Finishing light and switch installation
 - b. Strategic cable clip locations- (corner between wall and ceiling), directly above meter box at junction between wall and ceiling after intersection points

LIGHTS PLACEMENT

TUBE LIGHT



- Mount the tube light bracket with screws or with nails to the roof
- Snap the tube light to the metal holder
- Route the light's wire to the box/chain connector.

NOTE:

- a. In case a light cable won't reach the box there are 3m extension cables. Only use one extension per light.
- b. Use clips to neatly keep the wires pinned to the wall

Equipments you will need for this step

Tube light, Chain connector, Extension cables
Clips, Hammer & Nails

SECURITY LIGHT



1. The security light should always be the ZOLA Tube light.
2. **Note:** all lights chained to security light port will turn on and off automatically if security light setting is ON.
3. The security light can be configured to operate automatically or manually through the menu on the display.

TO ENABLE THE SECURITY LIGHT:

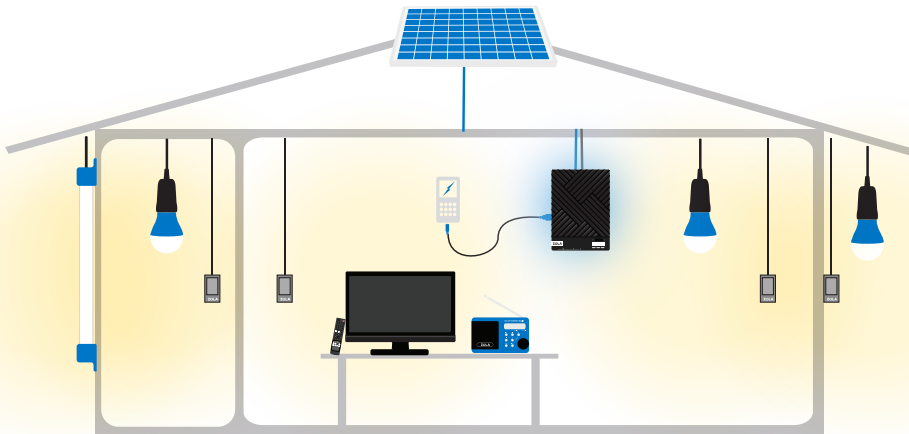
- a. Plug in the light and turn it on with the switch to bright
- b. Go to the **"settings"** on the Power Box LCD screen and turn the security light to "ON"



- c. If it is during the day (and the panel has voltage), the light should turn off automatically after 10 minutes
- d. If it is night, the light will stay on until morning

SWITCH PLACEMENT & MOUNTING

1. Plan the location of the lights
2. Two mounting methods – clip-on and mounting plate methods
 - a. **Clip-on** – only requires nail with mounting collar to be nailed directly into wall, switch is placed over then pushed down and clipped into place with a strong click feel and sound
 - b. **Mounting Plate** – rear plate of switch housing can be removed with nail or knife by prying off, collar can be placed into key way then nailed in
 - c. **PRO TIP:** For softer walls (like mud or plaster walls) use mounting plate method
3. Insert a nail using one of two mounting methods into wall
4. Place switch on to nail
5. Move on to installing chain connector. **Step by step of this summary is shown in the next page(s)**



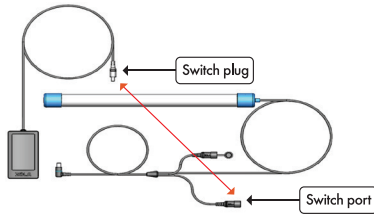
To easily install the switches in the customer's house first place the switches on the required position, and then you can go on the roof ceiling to finish up the connection.

CHAIN CONNECTOR PLACEMENT

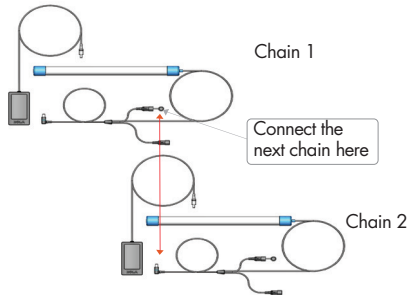
CHAIN CONNECTOR:

1. Connect lights to box and/or connectors, use extension cables where necessary. Remember not to chain more than 4 lights on a chain.

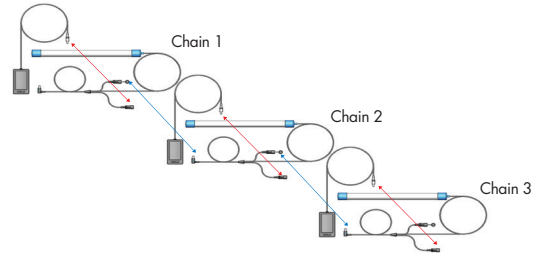
A. Connect the installed switch plug to the switch port on Chain 1



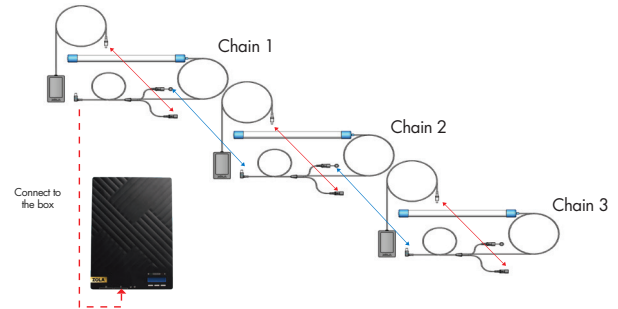
B. Then plug the next chain (Chain 2) to the Chain 1 chain port



C. Connect the switch onto Chain 2 and repeat the steps again until the process is completed



2. Connect chain 1 plug to the box's light port.

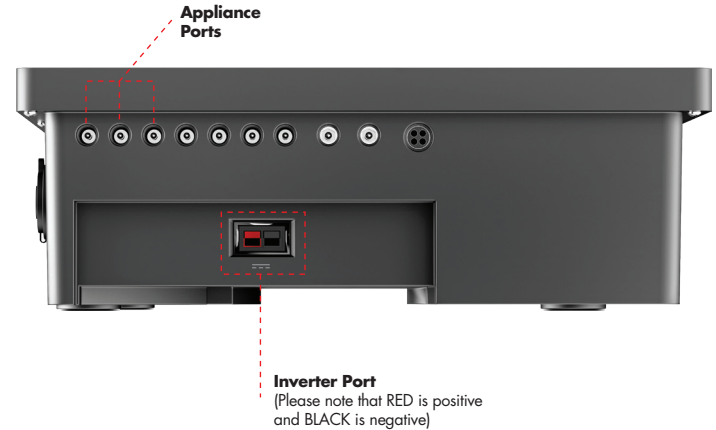


Equipments you will need for this step:

Switches, Lights, Chain connector, Extension cables, Clips, Hammer, Nails, Helmet, Ladder & Hand Gloves

INSTALLING APPLIANCES

1. The ZOLA Fan, ZOLA TV and ZOLA BOOMBOX are inserted into an appliance port and positioned for the customer.
 - a. The ZOLA TV includes a wall mount, to be installed using the same process as for the Power Box mount is a TV is chosen
2. The ZOLA FLEX MAX inverter plugs into the Inverter Port on the bottom face of the ZOLA FLEX MAX POWER BOX, The inverter has 3 sockets that will accept AC appliances.



THINGS TO DO AFTER INSTALLATION IS COMPLETE

- An installation should be neat. The wires from the panel and all lights should be clipped tight to the wall and large bundles of wire should be kept out of sight. Use clips and electrical tape where necessary for a neat installation.
- After the meter box has been installed, the customer will now be able to enter their first top-up code.

5. PRODUCT: TROUBLESHOOTING

WHY DO WE TROUBLESHOOT A ZOLA FLEX MAX POWERBOX

We only troubleshoot ZOLAFLEX MAX POWER BOX when it does not give output and when it does not charge.

Please note: ZOLA FLEX MAX must be serviced by a professional trained to service ZOLA products. Users should not service ZOLA FLEX MAX themselves or take the device to a 3rd party for service. In addition, the battery is not serviceable and the battery fuse cannot be replaced if blown.

There is a lot of reasons for why a ZOLA FLEX MAX POWER BOX will not give out output or charge below are all of them

1. ERROR 01
2. ERROR 02
3. BAD FUSE
4. ZOLA INVERTER OVERLOAD
5. BAD BATTERY
6. LOW STATE OF CHARGE
7. DEAD BATTERY
8. OUT OF CREDIT

ERROR 01

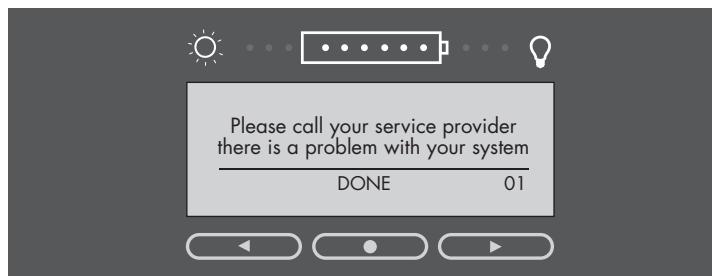
This happens when:

- **Excessive current is drawn from a ZOLA FLEX MAX power box** (possibly due to plugging in unapproved or damaged appliances)
- Short detected (possibly due to damaged cable(s) where by +ve & -ve terminals are shorted)

Latest firmware version

"Please call your service provider, there is a problem with your system:"

ERROR: 01



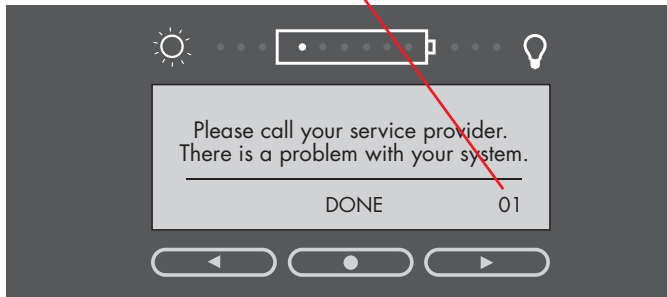
HOW TO FIX

1. Unplug all connected Lights and Appliances from the ZOLA FLEX MAX box
2. Manually enter the reset code "**000000000000**" (See image on next page)
3. Verify that the error is cleared from the LCD
4. Plug in the Solar panel cable and one light cable
5. Power one the light to make sure it is working and leave it on
6. Plug in the other lights and test to make sure they are powering ON
7. Plug in the appliances, one by one, and turn them on to make sure they are powering ON.
8. The appliance that causes Overcurrent or short circuit will make the lights flicker or turn OFF
9. Ask the customer not to plug in the faulty appliance and check the cable for short circuit
10. If the faulty appliance is from ZOLA and the customer cannot see any issues with the cable, create a service troubleshooting ticket.
11. If the faulty appliance is non-ZOLA, and the customer cannot see any issues with the cable, inform the customer the appliance is not compatible with the ZOLA FLEX MAX Box.

SHORT CIRCUIT & HOW TO FIX

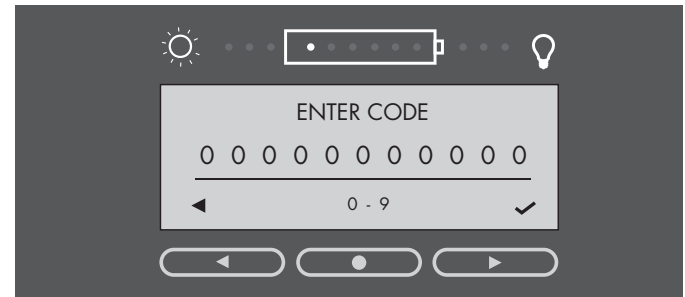
HOW DOES IT HAPPEN

- When there is over-current draw from a Power box due to plugging in a non ZOLA device that draws excessive current.
- When a short circuit is detected
- LEDs will look OK but powerbox will not give out output
- Power box will display **error 01**



HOW TO RESOLVE

- Unplug all lights & appliances
- Enter the reset code "000000000000"
- Plug in lights & appliances checking to see if the error message will reappear
- If it does, disconnect the faulty appliance

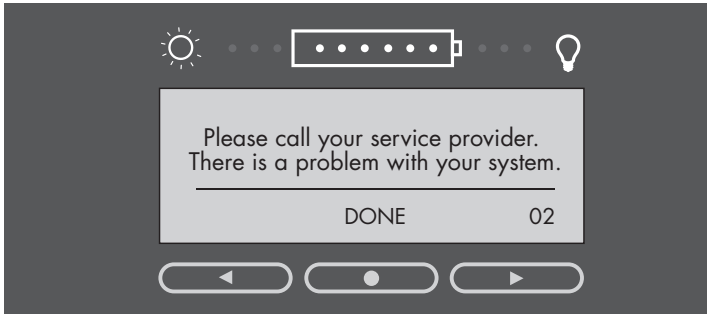


ERROR 02

This happens when the FLEX MAX Power box detects that it has been opened without authorization. **Opening a ZOLA Flex Power box should only be done at the workshop by an authorized technician.**

Latest firmware versions

Latest firmware version



HOW TO FIX

When this error occurs, it's likely that the ZOLA FLEX MAX Power Box has been opened without authorization.

Proceed as follows:

Inquire from the customer if the ZOLA FLEX MAX box has been opened or had any physical damage.

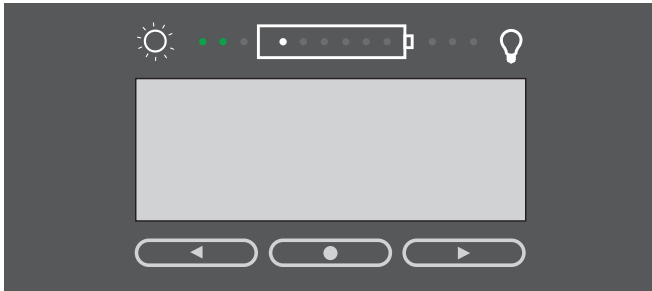
An authorized ZOLA Partner will have access to the API to clear this error, please refer to the details below:

https://offgridelectric.github.io/device_service/

BAD FUSE

OBSERVATION

- The ZOLA FLEX MAX Power Box does not provide outputs power
- The LCD stays OFF (doesn't turn on after button push)
- The LEDs remain OFF.



DIAGNOSIS:

(NOTE: All the 3 issues above have to be TRUE)

- A ZOLA FLEX MAX Box that exhibits this issue **likely** has a blown Fuse

HOW TO FIX

- This issue **cannot** be fixed in the field.
- Please note: ZOLA FLEX MAX must be serviced by a professional trained to service ZOLA products. In addition, the battery is not serviceable and the battery fuse cannot be replaced if blown.

FLEX MAX INVERTER

This is a device that is made to convert DC storage to AC power. It is a 300W inverter that is specifically made to be used with ZOLA FLEX MAX POWER BOX.



Inverter Port
(Please note that RED is positive
and BLACK is negative)

INSTRUCTION ON HOW TO INSTALL

1. Connect the inverter cable to the Inverter port on the bottom face of the ZOLA FLEX MAX POWER BOX. Please note that the polarity of the plug and the port and ensure that the negative pole of the plug is connected to the negative pole of the port (black) and the positive pole of the plug is connected to the positive pole of the port (red).
2. Turn the switch on the side of the inverter to the ON position.
3. Connect appliances up to 300W cumulative - you can look up Wattage on devices.

HOW TO POWER ON DEVICES

1. Power on ZOLA FLEX MAX and the ZOLA Inverter using switch on the back
2. Plug in appliances, that are switched OFF
3. Turn ON appliances

ZOLA INVERTER USAGE

USAGE

What happens when you connect appliances that exceed 300W ?

300W is advised limit, but the inverter will stop working immediately after more than 330W is pulled from the device. For loads at the limit of power, the device will stop delivering power to the appliances and the device will beep and momentarily turn off the screen. The inverter will try to restart and return power to the appliances until the overload is removed. This will happen a number of times before POWER BOX displays Error 01.

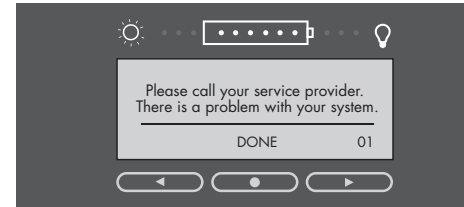
What can the customer do before contacting the distributor?

Remove the loads and wait for the screen to turn on and the beeping to stop. Insert loads one at a time and check for function. When it beeps and the screen turns off then you have exceeded the load capacity of the inverter and the user should return to the previous loads.

TROUBLESHOOTING

What happens?

- Customer overloads the inverter, however the inverter is still RED after the load has been removed.
- Power Box will display Error message "Error 1"



How to resolve?

1. Switch off the Inverter
2. Unplug everything from the Inverter
3. Clear the Error message if the ZOLA FLEX MAX power box LCD screen display error 1, Enter "00000000000" to clear the error code
4. Switch on the Inverter
5. Start to plug back appliances one by one to notice what appliance cause problems

Note:

Stop using the appliance that exceed 300W as it will cause the problem to repeat

6. CUSTOMER EDUCATION

CUSTOMER EDUCATION



After installation, it is very important to do the following with your customer:

SYSTEM USE

1. Configure system settings according to customer preferences
 - a. Security light
 - b. Language
2. Review owner's manual
 - a. Spend extra time on the LCD screen and LEDs
 - b. Explain where to find call center number and device ID
 - c. Set expectations around system performance & run-times

Help get familiar with appliances & turn on the TV

INVERTER DEEP DIVE

It is particularly important with ZOLA FLEX MAX customers to spend time explaining how to use the ZOLA Inverter. This consists of 3 things:

What can I use with the inverter?

1. Review with the customer the power rating of their devices - remind the customer that the inverter's continuous power output is only 300W.

How should I use the inverter?

1. Turn the inverter OFF using the switch on the device
2. Insert loads which are switched OFF into the inverter
3. Turn the inverter ON using the switch on the device
4. Turn loads ON

What should I do if my appliances do not work?

1. Turn OFF the inverter and remove all loads
2. Follow Step 2, one appliance at a time. This will show what is supported and what is not at the given state of the battery - NOTE that at lower states of charge devices above 300W may stop working.

7. STORAGE AND NORMAL OPERATING CONDITIONS

NORMAL APPLICATION, OPERATION & STORAGE CONDITIONS

NORMAL APPLICATIONS

- Designed for indoor application
- Use with specified solar panel (240Wp)
- Use with specified grid charger adapter:
- Inverter application not exceeding 65A

OPERATING & STORAGE CONDITIONS:

- Temp: 0 to 45C
- Relative Humidity: 0 to 85%

ENVIRONMENTAL RATINGS:

Environmental category: Indoor, Conditioned

Pollution degree: PD2

Ingress protection rating: IP20

Maximum altitude rating: Up to 2000m

ELECTRICAL RATINGS:

ZOLA

Designed in USA Made in Malaysia
Conçu aux États-Unis Fabriqué en Malaisie
ZOLA Electric International Ltd.
3130 20th st., Suite 225, San Francisco, CA 94110

Model: Z580 Part: 21863
Zola Meter Box
Solar Powered Controller Box
In: 24V DC, 10A Max
In: Solar Panel 15-23V DC, 8A x2 Max
Voc: 23V DC Max, Isc: 8A Max
Accessory Out: 12-14.5V DC, 12.8V DC Nom, 6.6A Total
Auxiliary Out: 12-14.5V DC, 12.8V DC Nom, 13A Max
Inverter Out: 12-14.5V DC, 12.8V DC Nom, 27A Max
Light Port Out: 12-14.5VDC, 12.8VDC Nom, 2A Max
USB Out: 5V DC 2.5A x2 Max
Protective class: III
Ingress protection: IP20

Modèle: Z580 Pièce: 21863
Compteur Zola
Compteur de système solaire
Entrée: 24V DC, 10A Max
Entrée: Panneau solaire 15-23V DC, 8A x2 Max
Voc: 23V DC Max, Isc: 8A Max
Sortie d'Accessoires: 12-14.5V DC, 12.8V DC Nom, 6.6A Total
Sortie Auxiliaire: 12-14.5V DC, 12.8V DC Nom, 13A Max
Sortie Onduleur: 12-14.5V DC, 12.8V DC Nom, 27A Max
Port de Lumière : 12-14.5 V CC Nom, 2 A Max
Sortie USB: 5V DC 2.5A x2 Max
Classe de Protection: III
Indice de protection: IP20

CE



CAUTION!
Lithium ion battery inside
Avertissement!
Batterie lithium-ion à l'intérieur

ZOLA
Power Anywhere



WWW.ZOLAELECTRIC.COM | CUSTOMERSERVICE@ZOLAELECTRIC.COM



ZOLA.ELECTRIC