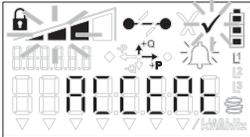


## Prepayment Mode Displays

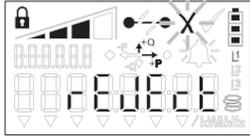
### Prepayment Token Acceptance

When the prepayment token has been accepted, the tick icon will flash, the credit wedge will scroll upwards and the CIU will play an audible token accept melody



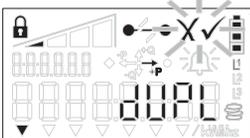
### Prepayment Token Rejection

When the prepayment token has been rejected, the cross icon will flash and the CIU will sound an audible token reject tone



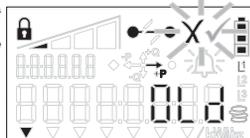
### Prepayment Token Duplicate

When the prepayment token has been previously used i.e. a duplicate token, the cross and tick icons will flash simultaneously, accompanied by an audible token reject tone



### Prepayment Token Expired

When the prepayment token has been kept unused for too long i.e. expired token, the cross and tick icons will flash alternately, accompanied by an audible token reject tone



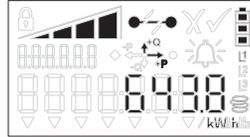
Try and use the prepayment token as soon as possible and don't store it for more than a month or two, otherwise it may be possible that your token will expire, will become unusable and will be rejected by the meter

## Remaining Prepayment Credit

### How much prepayment credit do I have left ?

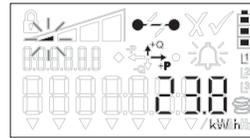
#### Credit high

Plenty of prepayment electricity credit left.



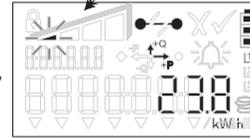
#### Credit low

Credit low. Purchase additional credit, or power to the house will be disconnected  
**Note:** If enabled, audible alert will sound



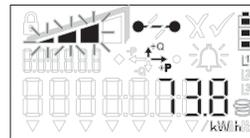
#### Smallest wedge and outline flashes

**Emergency Credit Available**  
(Confirm with your utility if this is enabled). To enable, press 2ndF key and then key 5/E-Credit



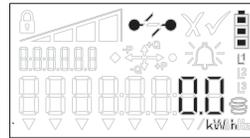
#### Emergency Credit activated

Emergency credit selected (2ndF+5) and added to the previous account balance

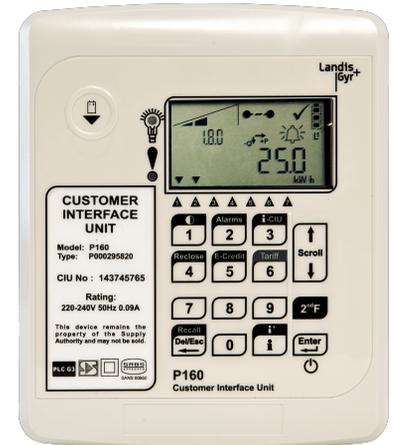


#### No credit left

Electricity disconnected. Buy more prepayment electricity and enter token



## How to use your P160 Customer Interface Unit



For general queries about electricity services please always contact your electricity utility

For further technical information about how to use your P160 Customer Interface Unit, please send your questions to:

[techinfo.za@landisgyr.com](mailto:techinfo.za@landisgyr.com)

### PLUGGABLE EQUIPMENT



THE SOCKET-OUTLET MUST BE INSTALLED NEAR THE EQUIPMENT AND MUST BE EASILY ACCESSIBLE

P000322950 rev a

## Introduction

The P160 Customer Interface Unit is your personal interface to the E460 meter, which is typically locked in a secure utility kiosk outside your home. The Customer Interface Unit communicates with the meter via the existing mains cables between your house and the meter kiosk outside.

The Customer Interface Unit (also referred to as a CIU), must always be fitted to an electrical outlet in your home and the switch of the outlet should always be ON in order to power the CIU for normal operation.

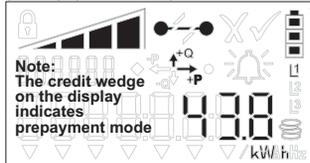
The CIU is fitted with a 9V Alkaline battery which is necessary to operate the CIU if the meter has disconnected power to your house - you may wake up the CIU by pressing the ENTER/Power ON key to check the status of your meter or to enter a new prepayment credit token (if in prepayment mode)

The E460 meter may be configured as a smart or prepayment meter. In the smart mode, the E460S supports both post-payment mode (meter automatically read and billed) or prepayment (where you buy prepayment tokens in advance and then enter the token into your meter via the CIU keypad)

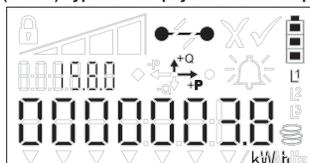
Depending on the configuration and mode of your meter, the information displayed may be different - please refer the mode descriptions below.

In order to confirm the mode of your meter, you may also contact your utility for further information.

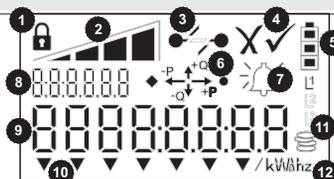
### (Below) Typical Prepayment Mode Display



### (Below) Typical Post-payment Mode Display

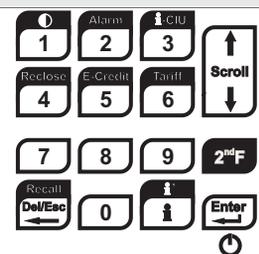


## Display Overview



- 1) **Lock icon:** When on, the keypad is locked out
- 2) **Credit wedge:** Prepayment credit remaining
- 3) **Meter load switch indicator:** Shows switch state
- 4) **Cross and tick:** Acceptance or rejection of prepayment tokens. Supported by audible tones
- 5) **CIU battery strength indicator:** Replace the battery when flat - this to ensure correct operation of your customer interface unit (CIU).
- 6) **Energy direction indicators:** +P icon is displayed for import power. -P energy indicator will show net export power (e.g. solar generated power)
- 7) **Alarm Indicator:** If flashing, the meter or CIU may have a fault or alarm. If the battery indicator is flashing with alarm icon - check or replace battery
- 8) **Index field:** Displays the selected info register selected or the default operating display. e.g. 15.8.0 in the index field indicates TOTAL ENERGY
- 9) **Value field:** Displays the value of the meter register e.g. total energy register or remaining credit register.
- 10) **Arrow Indicators:** These indicators provide a visual indication of the status of some parameters of the meter. **Arrow 1 is Rate 1 (typically peak) and Arrow 2 is Rate 2 (typically off-peak)**
- 11) **Coin Stack:** Displayed when your remaining prepayment credit is in Currency value
- 12) **Units Indicator:** Provides information about the number in the VALUE field. For example if the display reading is power, then the units indicator will show "W" for Watts.

## CIU Membrane Overview



Keys 1 thru 0 are used to enter prepayment tokens or to select the desired information register. The use of the 2ndF key provides smart functionality by selecting the keys with black function markings. When pressing 2ndF on the keypad, it is confirmed on the display index field. Press desired function, or press 2ndF again to exit the menu.

**Information Key:** For accessing information registers, press info key followed by register and then press ENTER key. Press information key again to exit menu

**Enter Key / Power ON:** Used to complete function requests and for power ON under battery conditions

**Del/Esc Key:** For backspace when entering info register number or for backspace or corrections when entering prepayment tokens.

### Special 2ndF functionality options

**2ndF + Key 2/Alarm:** To enable or disable the audible low credit alarm. Use scroll up to select ON or OFF and then press ENTER to save selection.

### 2ndF + Key 5/E-Credit (Emergency Credit)

To activate emergency credit (if available) press the 2ndF key followed by the 5-key

### 2ndF + Key 6/Tariff

To read the applicable Rates & Tariffs. The rate or tariffs will be displayed with the name and activation time in the index field. Use the scroll up and down to see activation start times. **Rate 1 is typically peak and rate 2 is typically off-peak - confirm with your utility.**

# Mounting Arrangement and Front Panel Features of the P160 Customer Interface Unit

## Mounting facility

The P160 CIU can be free standing in your household, or alternatively, you may hang the P160 CIU on the top or both of the hanging brackets provided. Please take note of the minimum screw size dimensions indicated on the rear of the CIU housing.



## Battery Release Button

To replace the battery, press the battery release button to release the battery compartment. Replace with 9V Alkaline type battery

## Rate-of-use indicator

The flash rate is proportional to the use of electricity - a fast flash indicates high usage and a slow flash indicates low usage.

In *post-payment mode*, the light always flashes red

In *prepayment mode*, the colour of the light changes according to your available credit - this is a useful visual indication of remaining credit

## Overview:

- Red flash: Low prepayment credit
- Yellow flash: Medium credit levels
- Green flash: High credit levels

## Alert Indicator

This multi-colour LED indicator flashes to alert you to various CIU alarm conditions:

- GREEN: OK / healthy conditions
- YELLOW: Low battery
- RED: Very low battery

## LCD Display

The display shows important parameters of your meter, additional information can be accessed by pressing the information key and then the relevant register number

## Scroll Key

Used for selection of some menu items or scrolling up and down through registers

## 2nd F Key

The second function key enables access to various smart features on the keypad - applies to keys marked with black 2ndF key functions

## Enter Key

When selecting a register in the information mode, press enter to execute the request. In the prepayment mode, when the meter has disconnected power to your house due to credit expiry, simply press and hold the ENTER key for a few seconds in order to wake up the CIU on battery power. You can then enter a new credit token

## Information Key

When pressed, the index field shows InF and display shows three rows of dots. Enter the desired meter register (e.g.001 for Active Power) and press the ENTER key to retrieve the information. Press info key again to exit the menu.

## Backspace Key

If necessary, press the Del/Esc key to make corrections while entering your credit token or information register number

## Battery Compartment

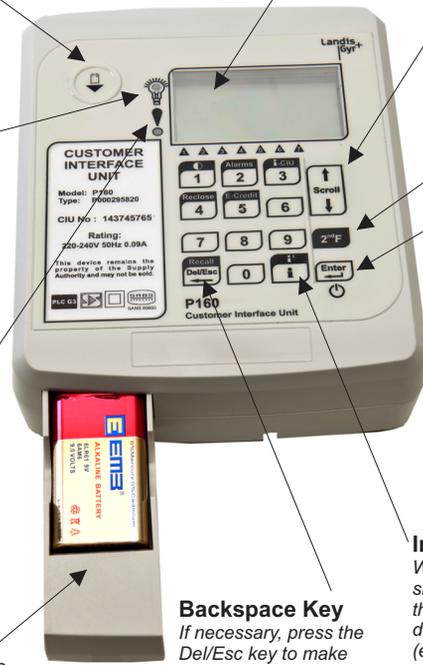
Always replace the battery with a leak proof 9V alkaline type battery, taking careful note of the polarity indications in the battery compartment



Rear view

## Power Cord

Connect the Customer Interface Unit power cord into the AC mains electrical outlet. Ensure that the socket outlet is switched on at all times to ensure that your CIU is able to communicate to the smart meter and receive energy consumption updates



P000322950 rev a

## Useful Prepayment Registers

**Enter Information Mode** **Meter Serial Number**  
Press **[i]** → **[0][0][0][0]**  
**Enter register number, then press ENTER KEY**  
To access next meter register, press SCROLL up or down keys to next desired register and press ENTER key

**Enter Information Mode** **Remaining prepayment credit**  
Press **[i]** → **[0][0][0][2]**  
**Enter register number, then press ENTER KEY**  
The display could be in Energy Value (kWh) or Currency Value (for currency, LCD display shows a coin stack) Your smart meter could be in prepayment or post-payment mode - check display information to confirm

**Enter Information Mode** **Last 20 digit prepayment token entered**  
Press **[i]** → **[3][0][0][1]**  
**Enter register number, then press ENTER KEY**  
In case you are uncertain which of your prepayment tokens are used, you can cross check the last 25 tokens by accessing registers 301 to 325. The 20 digit token is scrolled from right to left, with the date and time of the token purchase also displayed

**Enter Information Mode** **Prepayment accumulated debt**  
Press **[i]** → **[0][0][0][4]**  
**Enter register number, then press ENTER KEY**  
This is applicable if you have used Emergency Credit. Your next prepayment token must exceed the accumulated debt in order to return to a positive prepayment balance

**Enter Information Mode** **Prepayment Emergency Credit**  
Press **[i]** → **[0][0][0][5]**  
**Enter register number, then press ENTER KEY**  
Emergency Credit may be available if set by your utility. If available, it can be activated when the low credit warning is sounded or if your credit has already expired. Press 2ndF and then key 5/ E-Credit to activate Emergency Credit

## Useful Energy Registers

**Enter Information Mode** **Active Power (kW)**  
Press **[i]** → **[0][0][0][1]**  
**Enter register number, then press ENTER KEY**  
A kettle typically uses 2.5kW to 3kW

**Enter Information Mode** **Power Limit (Watts)**  
Press **[i]** → **[0][0][1][4]**  
**Enter register number, then press ENTER KEY**  
This displays how much power you can use at any time, before the meter will switch off power to your house. The initial disconnect time is 30 secs. Switch off some appliances to prevent further disconnections - if your load is not reduced and you experience more than after 5 x 30 sec disconnects, the next disconnect time is 30 minutes

**Enter Information Mode** **Active Energy Register (Import Energy)**  
Press **[i]** → **[0][0][1][5]**  
**Enter register number, then press ENTER KEY**  
This is the accumulated energy register for energy you are using from the network (also known as Import Energy)

**Enter Information Mode** **Active Energy Register (Export Energy)**  
Press **[i]** → **[0][0][1][6]**  
**Enter register number, then press ENTER KEY**  
This is the accumulated energy register for net energy you are generating from your own alternative energy source e.g. solar panels, (also known as Export Energy)

**Enter Information Mode** **Total Energy Register**  
Press **[i]** → **[0][0][1][7]**  
**Enter register number, then press ENTER KEY**  
This is the TOTAL accumulated energy register for both import and export energy

## Typical Displays

### Low Battery Indication

The battery indicator segments will show the status of the battery. When flashing in the last segment and the CIU alert indicator light is flashing red, please replace battery

### Power Limit Exceeded

During a 30 sec power limit disconnect, the load switch indicator will flash in the open state (and the lock icon will be off), during a 30 minute lockout the lock symbol is on.

**Enter Information Mode** **Switch Inhibit timer**  
Press **[i]** → **[0][0][6][6]**  
**Enter register number, then press ENTER KEY**

When you continue to exceed your prescribed power limit and you have been disconnected for more than 5 times for 30 sec periods, then the disconnect period is 30 minutes. The inhibit timer then gives an indication of how many minutes left before the load switch will close again. Try and reduce your energy usage to avoid further disconnections.

### Tariff / Rate Information

To access tariff or rate information, press 2ndF key and then 6/ Tariff  
To exit the menu, press the Del/Esc key

The index field flashes, alternating between the tariff name (i.e t002 and the start time of that rate/tariff). The value field shows the applicable rate in post-payment mode and when in prepayment mode, it will show the cost per kWh of that tariff