

Easy vending for sub-metering

Citiq Prepaid Products
Pocketbook for installers





EMPOWERING YOU

Through the Citiq Installation Club (CIC)

The CIC rewards installers for buying, installing and registering Citiq Prepaid meters.

Join the CIC:

South Africa's largest loyalty programme for prepaid sub-meter installers.

WON NIOL

Sign up in-store, call **087 55 111 87** or go to **www.citigprepaid.co.za**













Letter from our Managing Director

MICHAEL FRANZE

We are delighted to share this third edition of the Citiq Prepaid Pocketbook with you. Our initial hope that this pocketbook would become an indispensable tool to help you work faster and better has been borne out by your continuous requests for an update and reprints.

We have resisted the temptation to move with the times and rather provide you with an electronic version of this book. Our feeling is that this book best serves you in a paper format, kept in your toolbox or the cubby of your car - ever ready to assist with the little details of the next job. We still provide space for notes too!

We are proud to include the relevant information for our first Citiq Prepaid branded meter that has seen massive acceptance and support by yourselves and the market. The meter is very functional, visually striking and reliable - all the attributes you would expect from Citiq Prepaid.

We are already planning the next version of this pocket book and would appreciate all your feedback on how we could improve on this book for you: content, layout, etc. We appreciate all suggestions and criticism: talktomichael@citiqprepaid.co.za

Michael Franze

MICHAEL FRANZE
MANAGING DIRECTOR

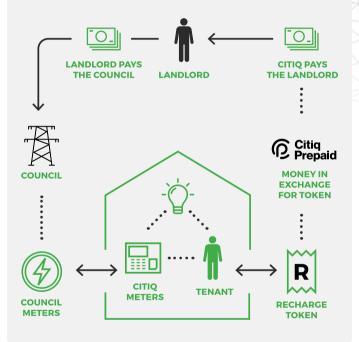
About Citiq Prepaid

Started in 2010, Citiq Prepaid has become the biggest and fastest growing prepaid meter and utility vending system provider for landlords, property managers and developers. To date, the company has sold 850 GWh of electricity (equivalent to 25 years of the output of one 4MWh power station) through hundreds of thousands of active meters across South Africa.

An ongoing pioneer in the prepaid sub-metering vending industry, Citiq Prepaid's proprietary vending system enables property owners and landlords, as well as their tenants, to access detailed reports to efficiently track and manage electricity and water consumption.

This helps eliminate unexpected costs, quickly resolve disputes, and take the hassle out of payments, so utilities can stay on.

How it works



Why Sub-Metering?

Landlords, managing agents, developers and body corporates face ever-increasing exposure to utilities. Utility suppliers (such as Eskom or local municipalities) demand payment based on usage, while tenants dispute these amounts and refuse to pay their electricity accounts. This can result in a serious problem for you.

Citiq Prepaid can offer a real solution to this problem.

As an electricity and water sub-metering company, Citiq Prepaid assists with the collection of utilities. By removing the payment gap between utility suppliers and tenants, Citiq Prepaid simplifies the relationship between landlords and their tenants.

Once Citiq Prepaid's meters are installed, your tenants will be able to buy prepaid electricity and water recharge tokens for their specific residential units both online and at a large number of different stores. Tenants using electricity on a 'pay as you go' basis dramatically reduces your exposure to electricity utilities. Furthermore, all funds collected on your behalf are held in a trust account. At the beginning of each month these funds will be paid over to the account that you have specified.

OUR PREPAID METERS ARE SUITED FOR:

- + Apartment blocks
- + Residential sub-let buildings
- + Sectional title developments
- + Workers accommodation
- + Light industrial parks
- + Commercial offices

What does Citiq Prepaid do?

We bring convenience, innovation and reliability to utility submetering by solving the problem of recovering monthly water and electricity costs from tenants. We offer more than just a clever device, we connect owners and tenants to a Meter Management System, which includes access to the largest network of online and real world token recharge points in the country and an online portal to understand and manage usage.

The online portal demonstrates our commitment to transparency in all areas of our business as you can access your properties' utility information and your tenant can check on past purchases as well. Costs are disclosed upfront so there are never any hidden surprises whether you are installing a meter or buying a token.

Citiq Prepaid benefits

- No more arguing with tenants tenants pay for their electricity usage upfront
- Minimise unexpected post-payment issues
- Reduced admin costs; no need to distribute bills
- Reduced risk for owners upfront money collection
- Conveniently recharge 24 hours a day, country-wide
- More than one meter can be installed per property
- More control/transparency for developers, landlords, managing agents and tenants
- · Reduced risk to uncollected utilities
- Call centre assistance for consumers' queries
- Dedicated account manager for large key accounts

Installation

CITIQ PREPAID REGISTERED METERS MUST BE:

- used for sub-metering only (these are not Council/ Eskom meters)
- connected after or "down-stream" of a Council/ Eskom meter
- must be protected by a distribution board
- must be installed by a technically competent person according to wiring codes

NOTE: THESE SUB-METERS ARE CODED FOR USE ON THE CITIQ PREPAID NETWORK ONLY

Registration

QUICK AND EASY WITH NO APPLICATION FORMS!

Citiq Prepaid registers each meter to the owner of the property where it is installed. Join thousands of property owners that register sub-meters with us every month. Registration can be done telephonically with our Help Desk in as little as 10 minutes!

WHAT YOU'LL NEED:

- the property address
- property owner's name, ID and contact numbers
- nominated bank account
- · a copy of a recent council bill

Installation options

A SINGLE TENANT INSTALLATION

If you have a single tenant in a building, house or a sectional title unit a meter can be installed. The prepaid meter needs to be installed between the municipal bulk meter and the distribution board of the building, house or sectional title scheme.

A HOUSE WITH A COTTAGE

A prepaid meter can be installed inside the cottage seperate from your main house. There needs to be an isolator switch for the cottage and the prepaid meter will be installed in-between the isolator switch and the cottage distribution board.

SECTIONAL TITLE INSTALLATION

If you have an existing sectional title scheme or new development (building, complex or sub-divided erven) prepaid meters can be installed in the sectional title scheme. The prepaid meters will be installed in close proximity to each unit, preferably after an isolator switch per unit. It's not a problem if you want to keep your existing meters, because our prepaid meters are installed after the existing analogue meters. No analogue meters are required for new developments.

AN OFFICE OR APARTMENT BLOCK

If you have an office block or building, the prepaid meters can be installed per floor or office. An isolator switch will be needed for each floor or office space.

Citiq Prepaid meter Installation Guide

Citiq Prepaid meters should only be installed by a qualified electrician according to wiring codes. Registered meters must be installed after or "down-stream" of a Council/Eskom meter (either prepaid or monthly account) and must be protected by overload and earth leakage.

- STEP 1
 Finalise position and mount the meter on the wall.
- 3/3/3/
- STEP 2
 Unscrew and open the lid to do the wiring.
- STEP 3
 Wire the meter and ensure screws are tightened correctly to prevent hot connections.
- STEP 4
 Close and tighten tamper cover to prevent the meter going into tamper mode.
- STEP 5
 Seal the meter and introduce power to the meter from utility company or main house

NEED HELP? GET IN TOUCH

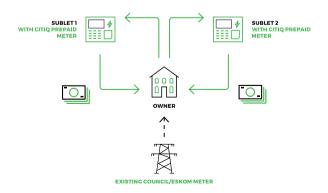
Should the meter not supply power to the unit, please contact the Citiq Prepaid call centre on 087 55 111 55 and one of our consultants can assist with troubleshooting. They can provide you with a tamper token or advise on the warranty procedure (also found at the back of the Pocketbook).

CALL CENTRE HOURS:

Monday to Friday: 7:00am to 19:00pm Weekends and Public Holidays: 8:00am to 17:00pm

INSTALLATION INFOGRAPHIC

Install as many sub-meters as you require per property, whilst retaining your Council meter to pay for your main supply. Meters can be installed by any technically competent person according to codes. Citiq Prepaid registered meters must be installed after or "down-stream" of a Council meter (either prepaid or monthly account) and must be protected by overload and earth leakage.



The perfect utility management solution for student accommodation

Students never spend more than they budgeted: No unexpected bills turn up at the end of the month.

Perfect utility collection and payment: Property owners and managers always receive exactly what was used.

No Admin: No need to split bills, distribute invoices, chase payment and work with disputes.

Easy allocation of monthly utility allowance: Our system enables property owners and managers to allocate utility allowances and distribute youcher codes to students.

Easy cost tracking: In addition to the detailed statements which are emailed each month, the online portal offers 24/7 access to real-time payment and usage information.

National network of recharge points: Citiq Prepaid has the largest national network of over 80 000 recharge points.

Mobile recharge options: Students can purchase tokens online via many mobile options such as online banking apps and the Citiq Prepaid portal.

Call centre support: Citiq Prepaid's call centre agents are available seven days a week to support students with any utility issues they have.

Where can I buy tokens?

Electricity purchasing needs to be quick, easy and instant.

Our network of real world and digital recharge points means you can buy tokens any time of the day or night, anywhere in SA. Merchant fees apply to a maximum of 3.45% plus VAT.



ENTER YOUR 20 DIGIT CODE FROM YOUR SLIP/SMS TO RECHARGE YOUR METER

Our contact details

WE'RE COMMITTED TO SERVING OUR CLIENTS!

CALL CENTRE DETAILS

087 55 111 55

086 111 5566

Our call centre assists clients on weekdays between 7:00am and 19:00pm, and weekends and public holidays between 8:00am and 17:00pm.

EMAIL SUPPORT

help@citiqprepaid.co.za

FOR NEWS & TIPS, VISIT US ON FACEBOOK:



WWW.CITIQPREPAID.CO.ZA

How we supply

Citiq Prepaid meters can be purchased at most wholesalers, hardware stores, DIY stores and retail outlets across South Africa.





SALES CHANNELS



Wholesalers



Hardware Stores



DIY Suppliers



Retail Outlets

Notes

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Our Products

Clou

CITIQ PREPAID SINGLE PHASE METER



Landis+Gyr

- GEM LITE
- GEMINI HMI
- DIN RAIL
- THREE PHASE

Landis₊ |Gyr⁺

HEXING

Hexing

- HXE115-KP
- DIN RAIL PLC (HXP100DI)
- THREE PHASE PLC (HXE310-P)
- THREE PHASE (HXE310-KP)

Conlog

- BEC66
- WBEC44 (09) TU230
- BEC 23 (09) PLT + WB

CONLOG

Utility Systems

- AMANZI WATER METER
- USER INTERFACE UNIT (KEYPAD)



SECTION 2: CLOU SINGLE PHASE METER



THE CITIQ PREPAID METER IS A SINGLE PHASE INTEGRATED METER PRODUCED IN PARTNER-SHIP WITH CLOU ELECTRONICS.

THIS METER IS USED AS AN INTEGRATED METER AND IS STS COMPLIANT.

PRODUCT CODE: C018

2.1 Short codes

The following information can be viewed by entering these digit codes on the unit's keypad, followed by Enter:

Short code	FUNCTION		
ا + + 260	Meter Number		
لى + 12345	Commissioning Meter		
ل + + 070	SGC Number		
ل← + 007	Credit Balance Check		
لے + 180	Current 30-Day Consumption		
لے + 190	Previous 30-Day Consumption		
ل ہ + 130	Total Credits Consumed		
ل+ + 800	Instantaneous Power		
230-234+ ←	Last 1-5 Token Number		
	(Only available on certain versions)		

SECTION 3: LANDIS+GYR

Landis |Gyr⁺

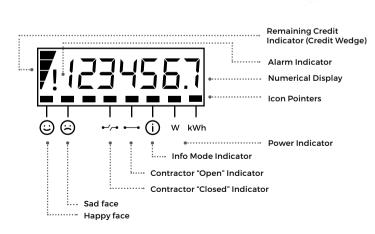
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3.3	Landis+Gyr Din Rail		
3.4	Landis+Gvr Three Phase		

3.0.1 ERROR CODES



Number expired - call for service



3.0.2 METERINFORMATION REGISTER CODES

Press [i] and

058

FUNCTION identify: Meter number 000 001 Instantaneous power 015 3 phase Instantaneous power (Red phase) 016 3 phase Instantaneous power (Yellow/White phase) 017 3 phase Instantaneous power (Blue phase) 002 Current credit register (Avail, Units on meter) 003 Total units counter (Units since meter started) 006 Current 24 hour consumption Previous 24 hour consumption 007 008 Current 30 day consumption Previous 30 day consumption 009 Low credit level 012 013 High credit level Power limit level 014 024 Extended meter number (STS only) 025 Scrolling meter number 031 Meter status checker 048 Software version number 050 Power-fail counter 053 Last token ID in time format (STS only) 054 Last token ID in date format (STS only) Last credit token ID 055 056 Value of last credit token entered Key revision and key type 057

Tariff index

060 301 -350 SGC register (STS only)

Last to 50th last, 20 digit voucher entered into meter (Only available on certain versions)

3.0.3 FOR PLC & WIRED METERS

Press [i] 037 and identify:

FUNCTION

1000 0000

Tamper button on meter is in and correct,

1001 0000

Tamper switch on meter is out and incorrect, meter WON'T WORK

Press [i] 031 and identify:

FUNCTION

0000 0000

Meter status clear, correct working order.

1000 0000

Power limit Lockout (Power limit exceeded

several times, meter locked)

0100 0000

Significant reverse energy (SRE) detected, Live and Neutral connected incorrectly.

0010 0000

N/A on this test

0001 0000

Meter in sleep mode, requires Commissioning

Token: 1268 2136 5508 1001 3746

00001000

Meter on a Default Supply Group code (SGC 999907); key change required to correct SGC.

0000 0100

In power limit trip (Power limit exceeded),

Decrease load.

0000 0010

Out of credit. Recharge with new voucher.

0000 0001

Meter in tamper mode. Use tamper

reset code.

TECHNICAL INFORMATION SUPPLIED BY LANDIS+GYR

3.0.4 TESTS TO CONFIRM CORRECT INSTALLATION

Press [i] 037 and identify:

FUNCTION

1000

Tamper button on meter is in and correct,

meter WILL WORK

1001

Tamper switch on meter is out and incorrect,

meter WON'T WORK

Press [i] 031 and identify:

FUNCTION

0000

Meter status clear, correct working order.

1000

Power limit Lockout (Power limit exceeded

several times, meter locked)

0100

Significant reverse energy (SRE) detected, Live and Neutral connected incorrectly.

0010

N/A on this test

0001

Meter in sleep mode, requires Commission-

ing Token: 1268 2136 5508 1001 3746

Then press 031 & check screen:

0000

Meter status clear, correct working order.

0000

Meter is on a Default Supply Group code (SGC 999907). Key change required -

contact service provider.

0100

Limit exceeded. Decrease load.

0010

No credit, recharge with new voucher.

0001

Meter in tamper mode; reset code required- **contact service provider**.

TECHNICAL INFORMATION SUPPLIED BY LANDIS+GYR

3.1 Landis+Gyr Gem Lite

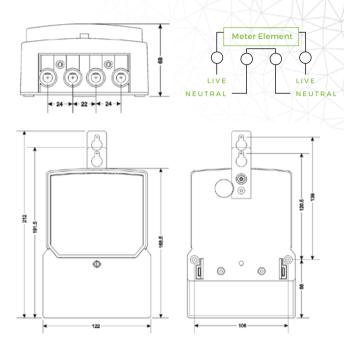


THE GEM LITE IS A SINGLE PHASE INTEGRATED METER WITH KEYPAD.

THIS 80A METER IS USED AS AN INTEGRATED METER AND IS STS COMPLIANT.

PRODUCT CODE: G009

GEM LITE SINGLE PHASE DIMENSIONS



3.2 Landis+Gyr Gemini HMI

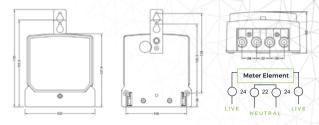


THE GEMINI HMI IS A SINGLE PHASE INTEGRATED METER WITH ADDITIONAL OPTIONAL KEYPAD.

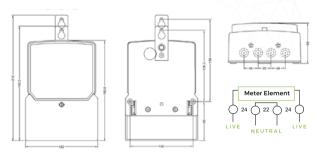
THIS 80A METER IS USED AS AN INTEGRATED OR SPLIT METER, IS STS COMPLIANT AND FEATURES TAMPER PROTECTION.

PRODUCT CODE: G003
OPTIONAL KEYPAD: K001

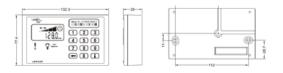
GEMINI HMI METER DIMENSIONS SHORT COVER



METER DIMENSIONS LONG COVER



METER DIMENSIONS INTERFACE UNIT



3.3 Landis+Gyr Din Rail

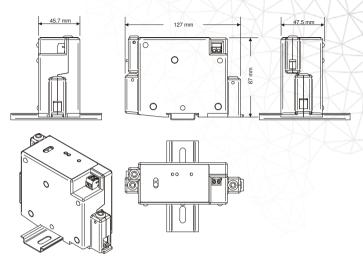


THE DIN RAIL IS A SINGLE PHASE WIRED SPLIT METER THAT WORKS WITH THE CIU WIRED KEYPAD.

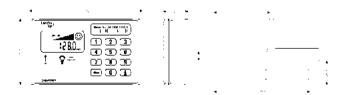
THIS 80A METER IS USED AS A SPLIT METER, IS MOUNTED ON A DIN RAIL, IS STS COMPLIANT AND FEATURES EXTENSIVE TAMPER PROTECTION.

PRODUCT CODE: G002 OPTIONAL KEYPAD: K001

POWER RAIL DIMENSIONS



INTERFACE UNIT DIMENSIONS



3.4 Landis+Gyr Three Phase

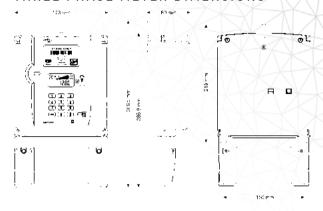


THE THREE PHASE IS AN INTEGRATED METER
WITH OPTIONAL KEYPAD.

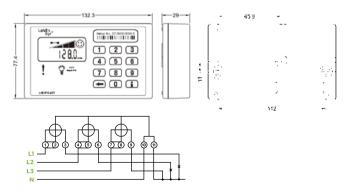
THIS 100A METER IS USED AS AN INTEGRATED OR SPLIT METER, IS STS COMPLIANT AND FEATURES TAMPER PROTECTION.

PRODUCT CODE: G005
OPTIONAL KEYPAD: K001

THREE PHASE METER DIMENSIONS



INTERFACE UNIT DIMENSIONS



Useful Information



Full with many electricity units remaining.



Low units left with alarm indicator.



No units left with the unit disconnected.



Sad face flashing: code error, please re-enter code.



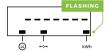
Happy and sad flashing: code has been used before.



Sad permanent: fault/meter error; contact for help.



Happy face permanently on: normal condition.



Over using power: meter will disconnect for 30 minutes.

INFORMATION CODES

Press (i) to enter information mode to enter the codes below:

① 009 Display electricity units used in the last 30 days (in kWh)

① 001 Display amount of power used right now (in W), one unit translates to using 1 000W for 1 hour

① 014 Display remaining power before being disconnected (in W)

© 301 Check which vouchers have been entered (will display a 20 digit code as well as the date and time entered)

SECTION 4: HEXING

HEXING

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4.0 ERROR CODES

PREPAID METERS

kw h 55

Successfully key in 20 digit number on meter.

EE HEJECH

Key in wrong 20 digit number on meter.

USEd

Key in previously used 20 digit number on meter.

4.0.1 Meter installation

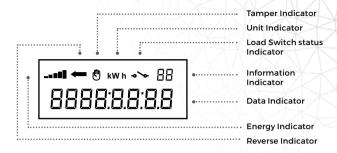
- 1) Position meter in required position
- 2) Use 3 x 8mm mounting screws to mount the meter
- 3) Complete wiring, insert front clear terminal cover
- 4) Secure cover with terminal cover screw until sealed
- Commission meter: Insert short code 865# to activate meter and ensure anti-tampering is activated

WARNING:



- INSTALL WITH QUALIFIED ELECTRICIAN
- ENERGISE AFTER TERMINAL COVER IS SEALED
- ENSURE TAMPER IS ACTIVATED

4.0.2 LCD Display



4.0.3 Energy status

STATUS INDICATOR	DESCRIPTION	VALUES (PROGRAMMABLE)
Green LED on	Sufficient energy	More than 30kWh
Red	Energy low	Between 30kWh
LED on	(1st alarm)	and 15kWh
Red LED	Energy low	Less than
flashing	(2nd alarm)	15kWh
Buzzer	Energy too low	Less than
alarm	(3rd alarm)	5kWh

4.0.4 Short codes

The following information can be viewed by entering these 3-digit codes on the unit's keypad, followed by ENTER

804	Meter Number	808	Total Instantaneous Power
805	SGC Number	816	Last Token Time
865	Commissioning Meter	815	Last Token Date
801	Credit Balance Check	817	Last token Value
813	Total Active Energy	830-839	Last 10 Token Numbers
814	of Yesterday Total Active Energy of Current Month	807	Meter Status
		812	Cancel Alarm
800	Total Active Forward Energy		

4.0.5 How to recharge

- · Customer pays for energy at a point-of-sale outlet
- Energy information is encrypted into a 20 digit number, typically printed on a voucher
- Customer enters the 20 digit number into meter and then presses ENTER ↓
- Energy is transferred into the meter and shown on the unit's display
- When the unit's energy runs out, the meter will disconnect the power to the dwelling
- Customers must recharge the unit with a new 20 digit voucher

4.0.6 LCD Display

CUSTOMER INTERFACE UNIT

ON DISPLAY	DESCRIPTION
8888:8.8:8.8	Data display field
CREDIT kVArhz	Unit display field
	Contact switching on
~ ~	Contact switching out
☺	Charge success
\odot	Charge failure

4.0.7 Installation

- Fix mounting clip to wall with suitable sized screws
- · Slide Customer Interface Unit (CIU) onto clip
- Insert the connector of the Mbus cable connected to meter into the receptacle of the CIU

4.0.8 Credit status

INDICATOR	DESCRIPTION	VALUES
Green LED on	Sufficient credit	Balance credit is more than 30kWh

INDICATOR	DESCRIPTION	VALUES
Red	Low credit warning	Balance credit is under
LED on	ALARM LEVEL 1	30kWh but over 15 kWh
Red LED	Low credit warning	Balance credit is under
flashing	ALARM LEVEL 2	15kWh but over 5 kWh
Red LED flashing with alarm	Low credit warning ALARM LEVEL 3	Balance credit is less than 5 kWh

4.0.9 Charging the meter

- User notices the credit balance indicator alarm informing of a low credit balance
- A recharge voucher code is bought from a pointof-sale and needs to be loaded to the unit
- If successful, the unit's display will recharge with an "SS" symbol in the top left corner
- If a token is entered incorrectly, the reason will be shown on the display:



ENTERED INCORRECTLY

PREUSED CODE

4.0.10 Communication & Pairing

Entering a token or short code will make the CIU communicate with the meter:



FRILEd

LED IE SUCCESSEUL

LED IF UNSUCCESSEUL

To pair the MCU and CIU, input the 11 digit meter number and press enter. Once success is shown, enter 865 to commission the meter.

SUCCESS

FRILEd

IF SUCCESSFULLY PAIRED

IF UNSUCCESSFULLY PAIRED

4.1 Hexing HXE115-KP



THE HXE115-KP IS A SINGLE PHASE INTEGRATED METER WITH A KEYPAD.

THIS 80A METER IS USED AS AN INTEGRATED METER AND IS STS COMPLIANT.

PRODUCT CODE: H007

ACCURACY

NOMINAL VOLTAGE

Nominal voltage

NOMINAL CURRENT

lb/ref

Imax

STARTING CURRENT

FREQUENCY

TEMPERATURE RANGE

Operation range

Limit range for storage and transport

HUMIDITY

POWER CONSUMPTION

Power consumption in voltage circuit (active)

Power consumption in voltage circuit (apparent)

Power consumption in current circuit

INSULATION STRENGTH

AC voltage test

Impulse voltage test

ЕМС

Electrostatic discharges(Contact discharges) Electrostatic discharges(Air discharges)

Surge immunity test Fast transient burst test

Electromagnetic RF fields (80MHz to 2000MHz)

CONNECTION TERMINALS

HOUS

Protection degree

Meter cover

Terminal cover

DISPLAY

Digit size

Number of digits

COMMUNICATION INTERFACE

Optical port

WEIGHT

Net weight Package

220V, 230V, 240V

5A.10A

60A, 80A <0.4% lb

50Hz or 60Hz

-25°C to +55°C -40°C to +70°C

Up to 95%

≤2 W

≤10 VA ≤1 VA

4kV during 1min

1.2/50us mains connections 6kV

8kV

15kV

4kV

10V/m(with current), 30V/m(without current)

Ø: 8mm

IP54

Transparent PC

Opaque PC+ fiber glass

8.0mm x 4.0mm

8

DLMS/COMSE, IEC62056-21 C mode alternative

Approx.0.51kg

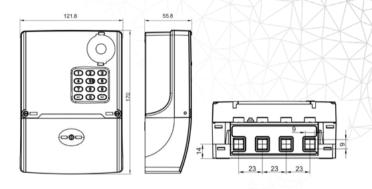
approx.0.04kg

186mm×126mm×57mm

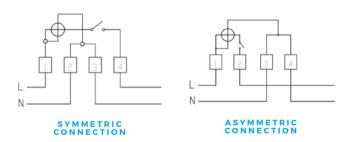
STANDARD

Electricity metering equipment (a.c.) General requirements, tests and test conditions – Part 11: Metering equipment
Electricity metering equipment (a.c.) Particular requirements –Part 21:Static meters for active energy(classes 1 and 2)
Electricity metering - Payment systems - Part 41: Standard transfer specification (STS) - Application layer protocol for one-way token carrier systems
Electricity metering - Payment systems - Part 51: Standard transfer specification (STS) - Physical layer protocol for one-way numeric and magnetic card token carriers
Electricity metering – Data exchange for meter reading, tariff and load control – Part 21:Direct local data exchange
Electricity metering – Data exchange for meter reading, tariff and load control – Part 53:COSEM Application layer
Electricity metering – Data exchange for meter reading, tariff and load control – Part 61:OBIS Object identification system
Electricity metering – Data exchange for meter reading, tariff and load control – Part 62:Interface classes
Electricity metering equipment (a.c.) —Part 1: General requirements, tests and test conditions — Metering equipment(class indexes A, B and C)
Electricity metering equipment (a.c.) —Part 3: Particular requirements —Static meters for active energy (class indexes A, B and C)

HXE115-KP DIMENSIONS



CONNECTION DIAGRAM



4.2 Hexing Din Rail PLC (HXP100DI)



THE DIN RAIL PLC HXP100DI IS A SPLIT PLC
METER WITH A KEYPAD.

THIS 80A METER IS USED AS A SPLIT METER, IS MOUNTED ON A DIN RAIL, IS STS COMPLIANT AND FEATURES EXTENSIVE TAMPER PROTECTION.

PRODUCT CODE: H001 REQUIRED KEYPAD: H006 DIMENSIONS

138mm × 83mm × 48mm for MCU

158mm x 110mm x 55mm for UIU

STANDARDS COMPLY

IEC62053-21,IEC62053-31

RATED VOLTAGE

RATED FREQUENCY

50Hz

ACCURACY CLASS

CI 1 0

BASIC CURRENT (LB)

5A

MAX CURRENT (LMAX)

80A

STARTING CURRENT

0.4%lb

VOLTAGE CIRCUIT

< 2W/10VA per phase

USER INTERFACE

LCD display on UIU

LOW CREDIT ALARM

LED, buzzer

RATE INDICATOR LED

1000 pulses/kWh

COMMUNICATION

Optical Port with IEC62056-21 PLC/M-BUS

TEMPERATURE RANGE

-25C to + 55C

STORAGE TEMPERATURE

-40C to + 80C

HUMIDITY RANGE

95% RH

DEGREE OF PROTECTION

IP51

WEIGH

0.39kg (MCU)

0.56kg (UIU)

48 hours under 420V

40 Hours drider 420 V

METER CASE MATERIAL

UV stable/Reinforced polycarbonate

TERMINAL MATERIAL

UV stable/Radiation resistant polycarbonate

CONTACTOR

Internal latch relay

DATA TRANSFER

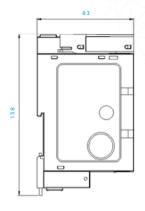
STS compliant, Numeric token

DATA RETENTION

>15 years

TECHNICAL INFORMATION SUPPLIED BY HEXING

MCU DIMENSIONS

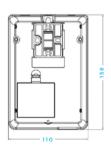




UIU DIMENSIONS







4.3 Hexing Three Phase PLC (HXE310-P)



THE THREE PHASE METER IS A SPLIT PLC
METER WITH KEYPAD.

THIS 100A METER IS USED AS A SPLIT METER, IS STS COMPLIANT AND FEATURES EXTENSIVE TAMPER PROTECTION.

PRODUCT CODE: H003 REQUIRED KEYPAD: H006

ACCURACY

....

Reference voltage
Operating voltage range

CURRENT

Basic current

Maximum current

Starting current

TEMPERATURE
Operation range

Limit range for storage and transport

Humidity

POWER CONSUMPTION

Power consumption in voltage circuit (active)

Power consumption in voltage circuit (apparent)

Power consumption in current circuit

INSULATION STRENGTH

AC voltage test

Impulse voltage test

ЕМС

Electrostatic discharges(Contact discharges)

Electrostatic discharges(Air discharges)

Surge immunity test

Fast transient burst test

Electromagnetic RF fields (80MHz to 2000MHz)

HOUSING

Protection degree

Meter cove

Meter base Terminal cover

DIEDL

Digit size

Number of digits

COMMUNICATION INTERFACE

Optical communication PLC/MBUS alternative

.....

DIMENSION

Class 1 or 2 (IEC), Class A or B (MID)

3×220/380V-3×240/415V

70%-120%Un

5A.10A

40A, 60A, 80A, 100A

≤ 0.4%lb

50Hz or 60Hz

-25℃ to +60℃

-40℃ to +75℃

Up to 95%

≤2 W

≤10 VA

≤1 VA

4kV during 1min

1,2/50µs mains connections 6kV

8kV

15kV 4kV 4kV

10V/m(with current), 30V/m(without current)

IP54 (with long terminal cover)

Opaque PC+ fiber glass with a transparent window

Opaque PC+ fiber glass

Opaque PC+ fiber glass

4.5mm x 8.8mm

8

DLMS/COSEM

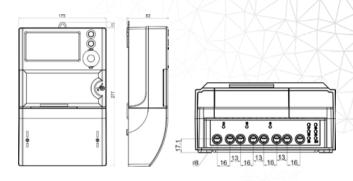
Approx.1.61kg (Extended terminal cover)

Approx.1.57kg(Short terminal cover)

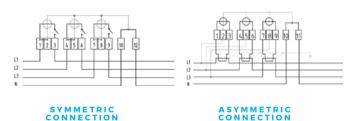
277mm x 175mm x 82mm (Extended terminal cover)

224mm x 175mm x 82mm (Short terminal cover)

HXE310-P DIMENSIONS



CONNECTION DIAGRAM



4.4 Hexing Three Phase (HXE310-KP)



THE THREE PHASE HXE310-KP IS AN INTEGRATED METER WITH OPTIONAL KEYPAD.

THIS 100A METER IS USED AS AN INTEGRATED OR SPLIT METER, IS STS COMPLIANT AN FEATURES TAMPER PROTECTION.

PRODUCT CODE: H010

PARAMATER	Specification
REFERENCE VOLTAGE	3x230/400V
WORKING VOLTAGE	70%Un~120%Un
REFERENCE CURRENT	5A
MAXIUMUM CURRENT	100A
ACCURACY CLASS	Class 1 (Active)
PULSE CONSTANT	Active: 1000 imp/kWh
FREQUENCY	(50±5)Hz
TEMPERATURE	Working temperature range -25°C +60°C Store temperature: -40°C +70°C
HUMIDITY	≤95%
VOLTAGE CIRCUIT CONSUMPTION	≤2W 10VA
CURRENT CIRCUIT	≤1VA
STARTING CURRENT	4%lb
PROTECTION CLASS	IP54
FAST TRANSIENT BURST	4kV
ELECTROSTATIC DISCHARGE (ESD)	Contact discharge ±8 kV. Air-gap discharge ±15 kV

INSULATION

IMPULSE VOLTAGE

SURG

OVER VOLTAGE

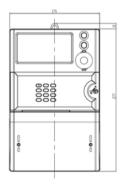
4kV, 50Hz, 1min.

6kV

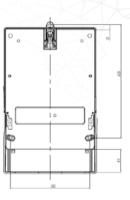
4kV

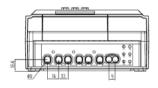
440VAC, 48hrs

HXE310-KP DIMENSIONS

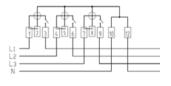








TERMINAL BLOCK



CONNECTION DIAGRAM

SECTION 5: CONLOG



Table of Contents

5.0	ERROR CODES
5.1	Conlog Nano Meter
5.2	Conlog wBEC44 (09)
5.3	Conlog BEC 23 (09) PLT + WB

5.0 ERROR CODES

Meter Error Code	DESCRIPTION
E03	Internal error - contact Conlog
E04	No supply voltage present
E07	Communication error between meter and the UIU
E08	Wireless user interface error - contact Conlog
E09	Incompatibility between the meter and the UIU
E20	Remote disconnection initiated

Token errors

INVALID TOKEN

This occurs when authentication of a token fails



TOKEN PROCESSING FAILED

The token is accepted by the meter but cannot be processed



EXPIRED TOKEN

The entered token is older than the oldest token loaded on the meter



DUPLICATE OR USED TOKEN

This occurs when a token has the same ID as a token entered previously



5.1 Conlog Nano Meter



THE BEC66 IS A THREE PHASE SPLIT METER THAT WORKS WITH UIU OR WUIU KEYPAD.

THIS 250A METER IS USED IN BOTH
A WIRED OR RADIO FREQUENCY WIRELESS
ENABLED ENVIRONMENT AND FEATURES
EXTENSIVE TAMPER PROTECTION.

PRODUCT CODE: C014

Features & Interface

- Active power measurement
- Power overload protection
- Current overload protection
- Thermal overload protection
- Configurable tamper detection
- Pre-paid and Post-paid mode
- Under and over voltage protection
- Reverse line/load protection
- Configurable low credit alarm threshold
- Operates in extreme supply conditions

Product Specifications

VOLTAGE RATINGS

Nominal voltage (-20% +±5%) 110VAC - 127VAC 220VAC - 240VAC Supply frequency (±5%) 60Hz 50Hz

CURRENT RATINGS

Utilisation category UC2
Transient Current (Itr) 0.5A

NOMINAL POWER CONSUMPTION

2W/10VA

ACCURACY

Class 1 (maintained throughout life cycle of product)

OVER VOLTAGE RATING

440VAC for 48 hours

SHORT CIRCUIT RATING

Short-circuit withstand 2.5 KVA

PULSE VOLTAGE PROTECTION

6kV

PROTECTION

Power overload Current overload Over / under voltage Delayed reconnection Thermal overload Line / load reversal

ENVIRONMENTAL

Operating temperature -10°C to $+55^{\circ}\text{C}$ Storage temperature -25°C to $+70^{\circ}\text{C}$

Humidity 95% non-condensing IP rating IP 54
RF immunity 30V/m

STATUS INDICATORS

Load / power status

Rate LED (1000 pulses / kWh)

INSTALLATION

Footprint DIN rail mounted (35mm)
Insulation class Double insulation

TERMINALS

Maximum size

Live	Neutral	Load
Cage clamp	Cage clamp	Cage clamp
16mm²	16mm²	16mm²

INTERROGATION

Type

Type (Optional) Radio frequency

SECURITY

Meter housing Security seals

Tamper protection Tamper terminal cover

Load disconnection on tamper detection

TESTED STANDARDS

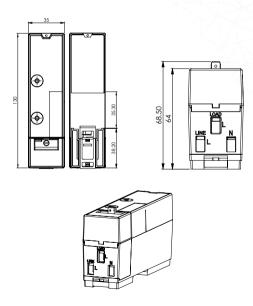
| IEC 62052-11 | IEC 62055-52 | IEC 62053-21 | IEC 62056-21 | IEC 62055-21 | SANS 1524-1 | IEC 62055-41 | IEC 62055-41 | IEC 62055-51 | IEC 62055-52 | IEC 62055-51 | IEC 62055-52 | IEC 62056-21 | IEC 62055-31 | IEC 6

UNIT PACKAGING

Units per carton 10

Packed weight (incl. box) 2.2kg

Packing box dimensions 225mm x 150mm x 145mm



5.2 Conlog wBEC 44 (09)



THE DIN RAIL RADIO FREQUENCY
(RF) WIRELESS WBEC44 IS A SINGLE PHASE
SPLIT METER THAT WORKS WITH THE
WUIU KEYPAD.

THIS 100A ELECTRICITY METER IS USED AS A SPLIT RF METER, IS MOUNTED ON A DIN RAIL, IS STS COMPLIANT AND FEATURES EXTENSIVE TAMPER PROTECTION.

PRODUCT CODE: C005

Security & features

Remote and manual disconnect/reconnect:

- Detection of bypass and illegal connections
- Management of unpaid post paid accounts
- Activate and test meter disconnection device

Entry lockout: Protection against fraudulent entry

Delayed reconnection protects appliances from surges due to loadshedding

METER FEATURES

- Active power measurement
- Renewable energy management
- Power overload protection
- Current overload protection
- Thermal overload protection
- Configurable tamper detection
- Prepaid and post-paid mode
- Under and over voltage protection
- Reverse line/load protection
- Emergency and lifeline support
- Configurable low credit alarm threshold
- Operates in extreme supply conditions
- Communication status LED

VOLTAGE RATINGS

Nominal voltage (-20% +15%) Supply frequency (±5%) 110VAC - 127VAC 60Hz

220VAC - 240VAC 50Hz

CURRENT RATINGS

Base current (IA) 5A

Max current (Imax) 100A

Min starting current Class 1

Class 2

UC2 Utilisation category

NOMINAL POWER CONSUMPTION

Transient Current (ltr)

1.2W / 9VA

20mA 25mA

0.5A

ACCURACY

Class 1 and 2 (maintained throughout life cycle of product)

OVER VOLTAGE RATING 440VAC for 48 hours

SHORT CIRCUIT RATING

Short-circuit withstand 3.0kA

PULSE VOLTAGE PROTECTION

6kV

PROTECTION

Power overload Current overload Over / under voltage Delayed reconnection Thermal overload Line / load reversal

ENVIRONMENTAL

Operating temperature -10°C to +55°C

Storage temperature -25°C to +70°C

Humidity 95% non-condensing

IP rating IP 54 (Meter and user interface unit)

RF immunity 30V/m

STATUS INDICATORS

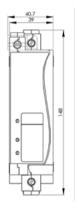
Load / power status Rate LED (1000 pulses / kWh) Communication

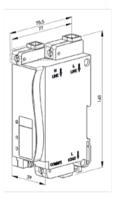
INSTALLATIONS

Footprint Insulation class DIN rail mounted (35mm) Double insulation

TERMINALS

Type Maximum size Live Neutral
Cage clamp
Cage clamp
25mm²
16mm²





5.3 Conlog BEC 23 (09) PLT + WB



THE BEC23 IS A SINGLE PHASE (WITH KEYPAD)
METER WITH A REMOVABLE WALLBASE.

THIS 80A ELECTRICITY METER IS USED AS AN INTEGRATED METER AND IS STS COMPLIANT.

PRODUCT CODE: C008

Security & features

Token Entry lockout: Protection against fraudulent token entries

METER FEATURES

- Active power measurement
- Power factor measurement
- Renewable energy management
- Power overload protection
- Current overload protection
- Prepaid and postpaid modes
- Under and over voltage protection
- Reverse line/load protection
- Configurable tamper protection
- Low base current measurement
- Programmable overload
- List of last 10 meter specific tokens
- Common wallbase mounting
- Configurable low credit alarm threshold

VOLTAGE RATINGS

Nominal voltage (-20% +15%) Supply frequency (±2%)

220VAC - 240VAC

50Hz

CURRENT RATINGS

Base current(Ib) 5A

Max current (I_{max}) 80A

Min starting current

Class 2 25mA

Utilisation category UC2

NOMINAL POWER CONSUMPTION

1.6W / 9VA

ACCURACY

Class 2 (maintained throughout life cycle of product)

OVER VOLTAGE RATING

420VAC for 48 hours

SHORT CIRCUIT RATING

Short-circuit withstand 2.5kA

PROTECTION

Power overload

Over / under voltage Line / load reversal

ENVIRONMENTAL

Operating temperature -10°C to +55°C

Storage temperature -25°C to +70°C

Humidity 95% non-condensing

IP rating PL - IP54

RF immunity 30V/m

STATUS INDICATORS

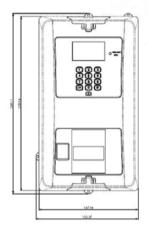
Rate LED (1000 pulses / kWh)

INSTALLATIONS

Footprint Common wallbase sulation class Double insulation

Insulation class Double insulation

Live Bus bars Bus bars





Neutral

SECTION 6: UTILITY SYSTEMS



Table of Contents

6.0.1	ERROR	CODES

6.0.2 Installation

6.1 Prepaid water meter

6.2 Cold water meter

6.3 User Interface Unit

6.0.1 ERROR CODES



If there's beeping, this indicates that there is water running: if taps are closed there's a leak



Indicates the unit's battery life

250.₀₀L

Indicates how much water is available

000000.₁₄₅₇^{m³}

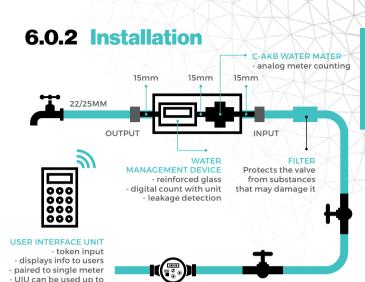
Indicates how much water was used in Kiloliters

CLOSE 1254

Indicates that water is available: valve is closed

CLOSE 0000L

Indicates no water is available; valve is closed



COUNCIL METER

SHUT OFF VALVE

PAIRING PROCEDURE

Step 1: Select to power the UIU on

Step 2: #999#

100m away, however

closer is recommended

Step 3: Enter the 11 digit serial number

(Eg: #999#41142356847

Step 4: Select #

Step 5: Select ##

Please note that this operation must be done for full functionality of the UIU.

6.1 Prepaid Water Meter



THE UTILITY SYSTEMS WATER MANAGEMENT DEVICE, THE WMD, IS THE ORIGINAL, REMOTE COMMUNICATING ELECTRONIC WATER CONTROL VALVE AND STANDARD TRANSFER SPECIFICATION (STS) PREPAYMENT WATER DEVICE.

PRODUCT CODE: W005

METROLOGICAL & MECHANICAL DATA

Nominal Diameters DN20mm, DN25mm

Connection Thread BSP
Material PA6 Glass Filled Nylon / EPDM Valve components

Maximum Flow Rate 3000L/hr* Dependant on external meter specification
Dependant on external meter specification

Protection Class IP68

TEMPERATURE AND PRESSURE

Storage Temperature Range -10°C to +60°C

Water Temperature Range (Operation) 1°C to +60°C (Unfrozen Water)
Nominal Water Pressure 16 Bar (PN16)

Normal Working Water Pressure 3-9 Bar

VALVE OPERATION

Minimum Valve operating Pressure 0.25Bar @ 15L/hr
Maximum Valve operating Pressure 16 Bar

COMMUNICATION

Radio Frequency 433MHz, bi-birectional, ISM free band Infrared Using Utility Systems IR Probe

Protocol USC Proprietary Protocol

BATTERY & DISPLAY

Battery Life 433MHz - Up to 10 years dependant on use

(With in-field replaceable slimline battery pack (IP68 Sealed)

Display LCD

CONFORMITY STS, ICASA, CE, NRCS, JASWIC

6.2 Cold Water Meter

TECHNICAL COMPONENT



6.3 User Interface Unit

UIU OPERATIONAL MODES

The UIU can be used in 1 of 5 operating modes:

- Active
- Sleep
- Menu
- Interrogation
- Housekeeping

OPERATIONS

Status & Alarms: The UIU supports the following STATUS and ALARM displays which are active in the STANDBY, INTERROGATION and MENU modes:

DESCRIPTION	ON DISPLAY
VALVE OPEN	Water drop permanently displayed
VALVE CLOSED	Water drop not displayed
POSSIBLE LEAK	Water drop flashes
ALLOCATION BELOW THRESHOLD	Entire display flashes

MENU

UIU supports a menu structure based on a numeric key entry:

- Initiate menu mode by pressing the # key.
 The cursor will start flashing at the 1st digit to confirm menu mode
- Enter the corresponding code of the desired menu item.

CODE DESCRIPTION

986 User Pin Update:

- Enter the change WMD PIN command #986#
- You will not be prompted to enter the existing PIN
- You will not be prompted to enter the new PIN
- You will not be prompted to confirm the new PIN
- If the PINs entered match, the UIU will display a tick mark indicating success

994 Display Serial Number

From the home screen enter command #994#

The serial number of the WMD that the unit is paired with will be displayed and scrolled across the screen. Once the whole serial number passes through the display it will wrap around. This will continue for 60 seconds. The UIU can be taken out of this mode simply by pressing the i key.

This feature can be used when a user needs to know the serial number of the WMD that it is paired with so that credit can be bought.

995 Valve Toggle Function

VALVE CURRENTLY IN OPEN STATE

From the home screen enter command #995#. Once this is done a number representing the duration that the valve should remain in its open state after an allocation time has been reached will be displayed.

The default value is 1 minute although this can vary between 1 to 59 minutes. If you are happy with the default value, simply input the # key afterwards.

995 VALVE CURRENTLY IN CLOSED STATE

If the Valve is already in a closed state, this command can be used to open the valve again. From the home screen enter command #995#

Once it has successfully opened, a 'S' will now be displayed.

EMERGENCY WATER ENABLE/DISABLE

911 Enable Emergency Water

- From the home screen enter command #911#
- Emergency Water may be invoked on a WMD with emergency water feature enabled. The emergency water allocation is only used when the normal free allocation has run out.
- Initiate emergency water using command #911#
- Disable emergency water using command #911# again

LIFELINE WATER DISPLAY

From the home screen enter command #971# to request Lifeline Water

006 Total Lifeline Allocation: Use command #006# to display
the total lifeline allocation. Press back to exit, or wait for

the display to time out.

007 Lifeline Remaining Days: Use command #007# to display

the lifeline remaining days. Press back to exit, or wait for

the display to time out.

008 **Lifeline Daily Limit:** User command #008# to display total

to date. Press back to exit, or wait for the display to time out.



Thank you for purchasing a Citiq Prepaid Meter!

CITIQ PREPAID METER WARRANTY

Citig Prepaid will honour the Warranty of the meter manufacturer within 12 months, starting on the date of meter registration on the Citig Prepaid Vending system.

For more information on the respective meters, please visit the manufacturer website:

For Landis+Gvr meters: www.landisgvr.com For Hexina meters: www.hxgroup.cn For Conlog meters: www.conlog.com

For Utility Systems meters: www.utility-systems.co.za For Clou meters: www.clouglobal.com

How to claim a product replacement under warranty:

- DO NOT DISCONNECT THE METER (to enable correct trouble shooting)
- Failure to follow this warranty process may result in your claim being rejected
 - Please note the store/wholesaler T&C's may impact your warranty claim



Call 087 55 111 55 or contact us online at www.citiqprepaid. co.za to get help with vour claim.



If the meter is under warranty, the Call Centre will issue a reference number



number, accessories, meter card and proof of purchase must be returned.

The store/wholesaler will contact Citiq Prepaid to validate the return reference number.



If all accessories, cards, slips and reference numbers are in order, the meter can be replaced.

Return reference number does not guarantee replacement.



www.citiqprepaid.co.za



087 55 111 55



087 55 11 11 7





087 55 111 11



help@citiqprepaid.co.za www.citiqprepaid.co.za