



**BID NUMBER: PM49/2023**

<b>TENDER DESCRIPTION:</b>	<b>APPOINTMENT OF THREE (3) SERVICE PROVIDERS TO SUPPLY AND DELIVER ELECTRICAL METERS FOR A PERIOD OF THREE (03) YEARS (RE-ADVERT)</b>
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**NAME OF BIDDER:** .....

**CSD NUMBER:** .....

**CONTACT NUMBER** .....

**EMAIL ADDRESS:** .....

**TOTAL BID AMOUNT:** \_\_\_\_\_

Document Prepared by:

Polokwane Municipality  
 Corner Landross Mare and Bodenstein Street  
 Polokwane  
 0699

**CLOSING DATE: 07 MARCH 2025 @ 10H00**

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Documents must be deposited in the bid box not later than **10:00 on 07 March 2025** when bids will be opened in public.

**Bidders must contact the following officials for any enquiries:**

- Technical enquiries: 015 290 2457/2549 Mr. Eric Matsetela/ Mr. Matsobane Molapo [mmatlouma@polokwane.gov.za](mailto:mmatlouma@polokwane.gov.za) / [MatsobaneME@polokwane.gov.za](mailto:MatsobaneME@polokwane.gov.za)
- Supply chain enquiries: Mr Tiro Pilusa: 015 290 2148 [tirp@polokwane.gov.za](mailto:tirp@polokwane.gov.za)
- **Bids will remain valid for a period of 90 days after the closing date.**

Bids received after the closing date and time will not be considered. Polokwane Municipality does not bind itself to accept the lowest or any other bid in whole or in part.

## VERY IMPORTANT NOTICE ON DISQUALIFICATIONS

A bid that does not comply with the peremptory requirements stated hereunder will be regarded as not being an “acceptable bid”, and such a bid will be rejected. An “acceptable bid”

means any bid which, in all respects, complies with the conditions of the bid and the specifications as set out in the bid documents, including the conditions as specified in the Preferential Procurement Policy Framework Act, 2000 (Act 5 of 2000) and related legislation

as published in Government Gazette 22549, dated 10 August 2001, in terms of which provision is made for this policy.

1. If any pages have been removed from the bid document and have therefore not been submitted.
2. If the bid document is completed using a pencil. Only black ink must be used to complete the bid document.
3. The bidder attempts to influence or has in fact influenced the evaluation and/or awarding of the contract.
4. The bid has been submitted after the relevant closing date and time.
5. If any bidder who, during the last five years, has failed to perform satisfactorily on a previous contract with the municipality, municipal entity or any other organ of state after written notice was given to that bidder that performance was unsatisfactory.
6. The accounting officer must ensure that, irrespective of the procurement process followed, no award may be given to a person –
  - (a) who is in the service of the state;
  - (b) if that person is not a natural person, of which any director, manager, principal shareholder or stakeholder is a person in the service of the state; or
  - (c) who is an advisor or consultant contracted to the municipality in respect of a contract that would cause a conflict of interest.
7. Bid offers will be rejected if the bidder or any of his/her directors are listed on the Register of Bid Defaulters in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act 12 of 2004) as a person prohibited from doing business with the public sector.

8. Bid offers will be rejected if the bidder has abused the Polokwane Municipality supply chain management system.

9. Failure to complete and sign the certificate of independent determination or disclosure of wrong information.

Failure to comply with the above will lead to immediate disqualification.

*“Polokwane Municipality is committed to maintaining the highest standards of honesty, integrity and ethical conduct and has adopted a zero tolerance to fraud and corruption. Thus, Polokwane municipality urges all stakeholders and potential service providers to exercise extreme caution and be vigilant of imposters in the name of the Polokwane Municipality.*

*Service Providers are reminded of the importance of verifying the authenticity of any requests for personal information and avoid engaging with unsolicited communications, particularly those involving financial matters or the promise of tenders and jobs. Any suspicious activity, including fraudulent calls or messages, should be reported immediately to the relevant authorities and the police for investigation. Polokwane Municipality does not request potential service providers to pay any gratification to individual in any way whatsoever in exchange for the appointment to render services for the Municipality.”*

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**Signed by Bidder**



**PART A  
INVITATION TO BID**

**MBD1**

<b>YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF MUNICIPALITY/ MUNICIPAL ENTITY)</b>					
BID NUMBER:	PM49/2023	CLOSING DATE:	07 March 2025	CLOSING TIME:	10H00
DESCRIPTION	<b>APPOINTMENT OF THREE (3) SERVICE PROVIDERS TO SUPPLY AND DELIVER ELECTRICAL METERS FOR A PERIOD OF THREE (03) YEARS (RE-ADVERT)</b>				
<b>THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).</b>					

BID RESPONSE DOCUMENTS MUST BE DEPOSITED IN THE BID BOX SITUATED AT Polokwane Municipality, Civic Centre, corner Bodenstein and Landdros Mare Street not later than 10:00 on 07 March 2025.

**An official and compulsory briefing session will not be applicable for this project.**

The Bid box is generally open 24 hours, 7 days a week.

Completed Bid document, fully priced and signed must be sealed in an envelope marked “ Bid number and Bid description” Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration.

**Bids documents containing the Conditions of Bid and other requirements in terms of the Supply Chain Management Policy will be downloaded from e-tender Publication Portal at [www.etenders.gov.za](http://www.etenders.gov.za) at no fee.**

**SUPPLIER INFORMATION**

NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TAX COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER PART B:3 ]	
TOTAL NUMBER OF ITEMS OFFERED			TOTAL BID PRICE	R	
SIGNATURE OF BIDDER	.....		DATE		
CAPACITY UNDER WHICH THIS BID IS SIGNED					
<b>BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:</b>			<b>TECHNICAL INFORMATION MAY BE DIRECTED TO:</b>		
DEPARTMENT	POLOKWANE		DEPARTMENT	ENERGY SERVICES	
CONTACT PERSON	Ms. Sibongile Madisha		CONTACT PERSON	Mr. Eric Matsetela/Mr Matsobane Molapo	
TELEPHONE NUMBER	015 290 2358		TELEPHONE NUMBER	015 290 2457/015 290 2471	
FACSIMILE NUMBER	N/A		FACSIMILE NUMBER	N/A	
E-MAIL ADDRESS	<a href="mailto:sibongilem@polokwane.gov.za">sibongilem@polokwane.gov.za</a>		E-MAIL ADDRESS	<a href="mailto:wimpier@polokwane.gov.za">wimpier@polokwane.gov.za</a> <a href="mailto:matsobaneme@polokwane.gov.za">matsobaneme@polokwane.gov.za</a>	

## PART B TERMS AND CONDITIONS FOR BIDDING

<b>1. BID SUBMISSION:</b>
<p>1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.</p> <p>1.2. <b>ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR ONLINE</b></p> <p>1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.</p>
<b>2. TAX COMPLIANCE REQUIREMENTS</b>
<p>2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.</p> <p>2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.</p> <p>2.3 APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.</p> <p>2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.</p> <p>2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.</p> <p>2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.</p> <p>2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.</p>
<b>3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>
<p>3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? <span style="float: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</span></p> <p>3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA? <span style="float: right;"><input type="checkbox"/> YES</span> <input type="checkbox"/> NO</p> <p>3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? <span style="float: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</span></p> <p>3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? <span style="float: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</span></p> <p>3.5. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? <span style="float: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</span></p> <p><b>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.</b></p>

**NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.  
NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.**

SIGNATURE OF BIDDER: .....

CAPACITY UNDER WHICH THIS BID IS SIGNED: .....

DATE: .....

## **SCHEDULE OF CONTENTS**

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**BID: PM49/2023**

**DIRECTORATE : BUDGET AND TREASURY UNIT**

**BUSINESS UNIT : BUDGET AND TREASURY SUPPLY CHAIN MANAGEMENT UNIT**

Bids are hereby invited for the **APPOINTMENT OF THREE (3) SERVICE PROVIDERS TO SUPPLY AND DELIVER ELECTRICAL METERS FOR A PERIOD OF THREE (03) YEARS (RE-ADVERT)**. Bidders should ensure that bids are delivered timorously to the correct address. If the bid is late, it will not be accepted for consideration

**THIS BID IS SUBJECT TO THE, PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATION, 2022, AND THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.**

The Municipality shall adjudicate and award bids in accordance with preference points of 80/20-point system, 80 points for the price and 20 points for specific goals. Prospective bidders must accept that the bid will be adjudicated, according to the said legislation. Bids will remain valid for 90 (ninety) days. The Council also reserves the right to negotiate further conditions and requirements with the successful bidder

**N.B: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE [AS DEFINED IN REGULATION 1 OF THE LOCAL GOVERNMENT: MUNICIPAL SUPPLY CHAINS MANAGEMENT REGULATIONS]**

**MS. THUSO NEMUGUMONI  
MUNICIPAL MANAGER  
CIVIC CENTRE  
LANDDROS MARE STREET**

## RESPONSIVENESS AND EVALUATION CRITERIA

### POLOKWANE MUNICIPALITY WILL CONSIDER NO BID UNLESS ITS MEETS THE FOLLOWING RESPONSIVENESS CRITERIA

- The bid must be properly received in a sealed envelope clearly indicating the description of the service and the bid number for which the bid is submitted.
- The bid must be deposited in the relevant bid box as indicated on the notice of the bid on or before the closing date and time of the bid.
- Bid forms must be completed in full and each page of the bid initialled.
- Submission of a Joint Venture Agreement, where applicable, which has been properly signed by all parties **(In case of JV all parties must submit CSD numbers)**
- Proof of payment of municipal rates and taxes.
- Complies with the requirements of the bid and technical specifications.
- Registered in the relevant professional body in the specific field
- Adheres to Pricing Instructions.
  - a) Policy, the Preferential Procurement Policy Framework Act, and other applicable legislations.
  - b) The Council reserves the right to accept all, some, or none of the bids submitted – either wholly or in part – and it is not obliged to accept the lowest bid.

**By submitting this bid, bidder authorizes the Council or its delegate(s) to carry out any investigation deemed necessary to verify the correctness of the statements and documents submitted and that such documents reasonably reflect the ability of the Bidder to provide the goods and services required by the Council.**



## PLEASE NOTE

**The Municipal Manager may reject the bid or quote of any person if that person or any of its directors has:**

- a) The person committed a corrupt or fraudulent act during the procurement process or in the execution of the contract, or
- b) An official or other role player committed any corrupt or fraudulent act during the procurement process or in the execution of the contract that benefited that person.
- c) Failed to pay municipal rates and taxes or municipal service charges and such rates, taxes and charges are in arrears for more than three months;
- d) Failed, during the last five years, to perform satisfactorily on a previous contract with the Polokwane Municipality or any other organ of State after written notice was given to that bidder that performance was unsatisfactory;
- e) Abused the supply chain management system of the Municipality or have committed any improper conduct in relation to this system;
- f) Been convicted of fraud or corruption during the past five years;
- g) Willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
- h) Been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No. 12 of 2004) or has been listed on National Treasury's database as a person prohibited from doing business with public sector.

**BID NO: PM49/2023**

I/We, the undersigned:

- a) Bid to supply and deliver to Polokwane Municipality all or any of the supplies and to render all the articles, goods, materials, services or the like described both in this and the other Scheduled to this Contract;
- b) Agree that we will be bound by the specifications, prices, terms and conditions stipulated in those Schedules attached to this bid document, regarding delivery and execution;
- c) Further agree to be bound by those conditions, set out in Forms, MBD's, SBD's and the Annexures attached hereto, should this bid be accepted in whole or in part;
- d) Confirm that this bid may only be accepted by the Polokwane Municipality by way of a duly authorized Letter of Acceptance; and,
- e) Declare that, the relevant authorized person thereto will initial each page of the bid document and amendments.
- f) Declare that all information provided in respect of the bidder as well as the bid documents submitted are true and correct.
- g) Declare that documentary proof regarding aspects of the bid process or accidental thereto will, when required, be submitted to the satisfaction of the Municipality.

Signed at .....this ..... Day of .....  
(Year)

**Signature of the Bidder:** \_\_\_\_\_

**Name of Bidder:**  
\_\_\_\_\_

**Professional Registration No, if any, attach proof)**  
\_\_\_\_\_

**Address:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**As Witness:**      1. \_\_\_\_\_  
                             2. \_\_\_\_\_

**Particular of Sole Proprietors and partners in partnerships**

<b>Name</b>	<b>Identity Number</b>	<b>Personal Income Tax Number</b>

**(Attach of identity Document, if bidder is a Sole Proprietor and/or partners in partnership)**

**State in cases where the bidder is a Company, Corporation of Firm by what authority the person signing does so, whether by Articles of Association, Resolution, Power of Attorney or otherwise.**

I/We the undersigned am/are authorized to enter into this contract of behalf of: \_\_\_\_\_

by \_\_\_\_\_ virtue \_\_\_\_\_ of \_\_\_\_\_

dated \_\_\_\_\_ a certified copy if which is attached to this bid.

**Signature of authorized person:** \_\_\_\_\_

**Name** \_\_\_\_\_ **of** \_\_\_\_\_ **Firm:** \_\_\_\_\_

**Postal Address:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**As witness:** 1. \_\_\_\_\_  
 2. \_\_\_\_\_

**Please Note:**

*The prices at which bids are prepared to supply the goods and materials or perform the services must be placed on the column on the Form provided for that purpose.*

**Failure on the part of the bidder to sign the Form of Bid and initial each page of this bid document will result in a bid being disqualified.**

**Bank account details of bidder:**

**Bank:** \_\_\_\_\_

**Branch:** \_\_\_\_\_

**Branch Code:** \_\_\_\_\_

**Accounting Number:** \_\_\_\_\_

**Type of Account:** \_\_\_\_\_

**PROOF THAT MUNICIPAL ACCOUNT IS PAID IN FULL TO BE ATTACHED  
(ARRANGEMENTS MADE WITH COUNCIL WILL BE TAKEN INTO CONSIDERATION).**

**NOTE: THE AUTHORIZED SIGNATORY MUST SIGN ANY ALTERATIONS TO THE**

**BIDDER DOCUMENT IN FULL**

**ANY COMPLETION OF THE BIDDER DOCUMENT IN ERASABLE INK WILL NOT BE  
ACCEPTED**

## **BIDDING INFORMATION**

Details of person responsible for bidding process

Name \_\_\_\_\_

Contact number \_\_\_\_\_

Address of office submitting bid \_\_\_\_\_

\_\_\_\_\_

Telephone \_\_\_\_\_

Fax no \_\_\_\_\_

E-mail address \_\_\_\_\_

VAT Registration Number \_\_\_\_\_

**AUTHORITY FOR SIGNATORY**

Signatories for close corporation and companies shall conform their authority by attaching to this form a duly signed and dated copy of the relevant resolution of their members or their board of directors, as the case may be.

An example for a company is shown below:

“By resolution of the board of directors passed on \_\_\_\_\_ 20\_\_\_\_\_

Mr/Ms. \_\_\_\_\_

Has been duly authorized to sign all documents in connection with the bid for

Contract\_\_\_\_\_ No\_\_\_\_\_

And any Contract, which may arise there from on behalf of

---

Signed on behalf of the company:

In his/her capacity as:

---

Date: \_\_\_\_\_

Signature of signatory

As witness: 1. \_\_\_\_\_

2. \_\_\_\_\_

## GENERAL UNDERTAKINGS BY THE BIDDER

### DEFINITION

1. **"Acceptable bid"** means any bid, which in all respects, complies with conditions of bid and specifications as set out in the bid document, including conditions as specified in the Preferential Procurement Regulation (of 2011).
2. **"Chairperson"** means the chairperson of the Polokwane Municipality Bid Adjudication Committee.
3. **"Municipal Manager"** means the Municipal Manager of the Municipality.
4. **Committee"** refers to the Bid Adjudication Committee.
5. **"Council"** refers to Polokwane Municipality.
6. **"Member"** means a member of the Bid Adjudication Committee.
7. **Service providers"** refers to the bidders who have been successful in being awarded Council contracts.
8. **SMMEs"**(Small, medium and Micro Enterprises) refers to separate and distinct business entities, including co- operative enterprises and NGOs, managed by one owner or more, as defined in the National Small Business (Act 102 of 1996).
9. **Contract"** refers to legally binding agreement between Polokwane Municipality and the service provider.
10. **Bid** "means a written offer in a prescribed or stipulated form in response to an invitation by the Municipality for the provision of services or goods.
11. **Contractor"** means any natural or legal person whose bid has been accepted by the Council.
12. **"Closing time"** means the date and hour specified in the bid documents for the receipt of bids.
13. **"Order"** means an official written order issued for the supply of goods or the rendering of a service in accordance of the accepted bid or price quotation.
14. **"Written" or "in writing,"** means hand written in ink or any form of mechanical writing in printed form.
15. **"Highest acceptable tender"** Means a tender that complies with all specifications and conditions of tender and that has the highest price compared to other tenders
16. **"Historically Disadvantaged Individual (HDI)"** means a South African Citizen (1) who, due to the apartheid policy that had been in place, had no franchise in national elections prior to the introduction of the Constitution of the Republic of South Africa, 1983 (Act No 110 of 1983) or the Constitution of the Republic of South Africa, 1993 (Act No 200 of 1993) ("the Interim Constitution"); and/or (2) Who is a female; and /or (3) Who has a disability; Provided that a person who obtained South African citizenship on or after the coming to effect of the Interim Constitution, is deemed not to be an HDI;
17. **"Lowest acceptable offer"** Means a tender that complies with all specifications and conditions of tender and that has lowest price compared to other tenders

18. **“Specific goals”** Means specific goals as contemplated in section 2(1)(d) of the Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation of programmes of the Reconstruction and Development Programme as published in Government Gazette No. 16085 dated 23 November 1994
19. **“Tender for income-generating contracts”** Means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions



## **INTERPRETATION:**

1. In this agreement clause headings are for convenience and shall not be used in its interpretation and, unless the context clearly indicates a contrary intention:
2. An expression which denotes:-
3. Any reference to any statute, regulation or other legislation or official policy shall be a reference to that statute, regulation or other legislation or national policy as at the signature date, and as amended or re-enacted from time to time;
4. When any number of day is prescribed, such shall be reckoned exclusively of the first and inclusively of the last day, unless the last day falls on a day which is not a business day, in which case the last day shall be the next succeeding day which is a business day;
5. Where any term is defined within a particular clause, other than the interpretation clause, that term shall bear the meaning ascribed to it in that clause wherever it is used in this agreement.

I/we hereby tender:

To supply all or any of the supplies and/or to render all or any of the services described in the attached documents {Forms, Schedule(s) and/or Annexure(s) to the Polokwane Municipality.

On the terms and conditions and accordance with the specifications stipulated in the bid documents (and which shall be taken as part of and incorporated into, this bid);

At the prices and on the terms regarding time for delivery and/or execution inserted therein.

I/we agree further that:

The offer herein shall remain binding upon me/us and open for acceptance by the Polokwane Municipality during the validity period indicated and calculated from the closing time of the bid.

This bid and its acceptance shall be subject to the terms and conditions contained in the Forms, Scheduled(s) and/or Annexure(s) attached hereto with which I am /we are fully acquitted.

Notwithstanding anything to the contrary in the Form(s), Schedule(s) and /or Annexure(s) attached hereto:

If I/we withdraw my/our bid within the period for which I/we have agreed that the bid shall remain open for acceptance, or fail to fulfill the contract when called upon to do so, the Polokwane Municipality may, without prejudice to its other rights, agree to the withdrawal of my/our tender or cancel the contract that may have been entered into between me/us and the Municipality;

In such event, I/we will then pay to the Municipality any additional expenses incurred by the Municipality for having either to accept any less favorable bid or, if new bids have to be invited, the additional expenditure incurred by the invitation of new bids and by the subsequent acceptance of any less favorable bid;

The Municipality shall also have the right in these circumstances, to recover such additional expenditure by set-off against monies which may be due or

become due to me/us under this or any other bid or contract or against any guarantee or deposit that may have been furnished by me/us or on my/our behalf for the due fulfillment of this or any other bid or contract;

Pending the ascertainment of the amount of such additional expenditure the Municipality may retain such monies, guarantee or deposit as security for any loss the Municipality may sustain, as determined hereunder, by reason of my/our default.

Any legal proceedings arising from this bid may in all respects be launched or instituted against me/us and if/we hereby

undertake to satisfy fully any sentence or judgment which may be obtained against me/us as a result of such legal proceedings and I/we undertake to pay the Polokwane Municipality legal costs on an attorney and own client;

If my/our bid is accepted that acceptance may be communicate to me/us by letter or facsimiles and that proof of delivery of such acceptance to SA Post Office Ltd or the production of a document confirming that a fax has been sent, shall be treated as delivery to me/us.

The law of the Republic of South Africa shall govern the contract created by the acceptance to this tender.

I/we have satisfied myself/ourselves as to the correctness and validity of this tender, that the price(s) and rate(s) quoted cover all the work/items(s) specified in the tender documents and that the price(s) and rate(s) cover all my/our obligations under a resulting contract and that I/we accept that any mistakes regarding price(s) and calculations will be at my/our risk.

I/we accept full responsibility for the proper execution and conditions defaulting on me/us under this agreement as the principal(s) liable for the fulfillment of this contract.

**I/we declare that I/we have participated /no participated in the submission of any other bid for the supplies/services described in the attached documents. If your answer here is yes, please state the names(s) of the other Bid(s) involved: \_\_\_\_\_**

## General Conditions of Contract

### 1 DEFINITION

The following terms shall be interpreted as indicated:

- 1.1 **"Closing time"** means the date and hour specified in the bidding documents for the receipt of bids
- 1.2 **"Contract"** means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.3 **"Contract price"** means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.
- 1.4 **"Corrupt practice"** means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- 1.5 **"Countervailing duties"** are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.
- 1.6 **"Country of origin"** means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 1.7 **"Day"** means calendar day.
- 1.8 **"Delivery"** means delivery in compliance of the conditions of the contract or order.
- 1.9 **"Delivery ex stock"** means immediate delivery directly from stock actually on hand.
- 1.10 **"Delivery into consignees store or to his site"** means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the goods are so delivered and a valid receipt is obtained.
- 1.11 **"Dumping"** occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.
- 1.12 **"Force majeure"** means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 1.13 **"Fraudulent practice"** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.
- 1.14 **"GCC"** means the General Conditions of Contract.
- 1.15 **"Goods"** means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.
- 1.16 "Imported content"** means that portion of the bidding price represented by the cost of component parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or

other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the goods covered by the bid will be manufactured.

**1.17 “Local content”** means that portion of the bidding price, which is not included in the imported content provided that local manufacture does take place.

**1.18 “Manufacture”** means the production of products in a factory using labour, materials, component and machinery and includes other related value-adding activities.

**1.19 “Order”** means an official written order issued for the supply of goods or works or the rendering of a service.

**1.20 “Project site,”** where applicable, means the place indicated in bidding documents.

**1.21 “Purchaser”** means the organization purchasing the goods.

**1.22 “Republic”** means the Republic of South Africa.

**1.23 “SCC”** means the Special Conditions of Contract.

**1.24 “Services”** means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

**1.25 “Supplier”** means the successful bidder who is awarded the contract to maintain and Administer the required and specified service(s) to the State.

**1.26 “Tort”** means in breach of contract.

**1.27 “Turnkey”** means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.

**1.28 “Written”** or “in writing” means hand-written in ink or any form of electronic or mechanical writing.

## **2. Application**

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific goods, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

## **3. General**

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a nonrefundable fee for documents may be charged.

3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

## **4. Standards**

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

## **5. Use of contract documents and information inspection**

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GC Clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

## **6. Patent Rights**

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of Patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

6.2 When a supplier developed documentation / projects for the municipality / municipal entity, the intellectual, copy and patent rights or ownership of such documents or projects will vest in the municipality / municipal entity.

## **7. Performance security**

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or

(b) a cashier's or certified cheque.

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified.

## **8. Inspections, tests and analyses**

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that goods to be produced or services to be rendered should at any stage be subject to inspections, tests and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or organization acting on behalf of the purchaser.

8.3 If there are no inspections requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the goods to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the goods or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Goods and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract goods may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with goods, which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods, purchase such goods as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 22 of GCC.

## **9. Packing**

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly With such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, and in any subsequent instructions ordered by the purchaser.

## **10. Delivery and documents**

10.1 Delivery of the goods and arrangements for shipping and clearance obligations, shall be made by the supplier in accordance with the terms specified in the contract.

## **11. Insurance**

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified.

## **12. Transportation**

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified.

## **13. Incidental Services**

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any:

- (a) Performance or supervision of on-site assembly and/or commissioning of the supplied

goods;

(b) Furnishing of tools required for assembly and/or maintenance of the supplied goods;

(c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) Training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

#### **14. Spare parts**

14.1 As specified, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier: (a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and;

(b) in the event of termination of production of the spare parts:

(i) advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

#### **15. Warranty**

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

## **16. Payment**

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the Delivery note and upon fulfillment of other obligations stipulated in the contract. 16.3

Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.3 Payment will be made in Rand unless otherwise stipulated.

## **17. Prices**

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized or in the purchaser's request for bid validity extension, as the case may be.

## **18. Variation orders**

18.1 In cases where the estimated value of the envisaged changes in purchase does not vary more than 15% of the total value of the original contract, the contractor may be instructed to deliver the goods or render the services as such. In cases of measurable quantities, the contractor may be approached to reduce the unit price, and such offers may be accepted provided that there is no escalation in price.

## **19. Assignment**

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

## **20. Subcontracts**

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

## **21. Delays in the performance**

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the goods are required, or the supplier's services are not readily available. 21.4 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of



penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of penalties.

21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase goods of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

## **22. Penalties**

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, sum calculated on the delivered price of the delayed goods or unperformed interest rate calculated for each day of the delay until actual delivery or performance.

The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

## **23. Termination for default**

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to

GCC Clause 21.2;

(b) If the supplier fails to perform any other obligation(s) under the contract; or

(c) If the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner, as it deems appropriate, goods, works or service similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years. 23.4 If a purchaser intends imposing a restriction on a supplier or any person associate time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed.

Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the supplier as having no objection and proceed with the restriction.

23.5. Any restriction imposed on any person by the purchaser will, at the discretion of the purchaser, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first- mentioned person, and with which enterprise or person the first- mentioned person, is or was in the opinion of the purchaser actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) The name and address of the supplier and / or person restricted by the purchaser;

(ii) The date of commencement of the restriction

(iii) The period of restriction; and

(iv) The reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons

prohibited from doing business with the public sector.

23.7. If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website

## **24. Antidumping and countervailing duties and rights**

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase.

When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to goods or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

## **25. Force Majeure**

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

## **26. Termination for insolvency**

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the purchaser.

## **27. Settlement of Disputes**

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may

be commenced unless such notice is given to the other party. 27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) The parties shall continue to perform their respective obligations under the contract Unless they otherwise agree; and

(b) The purchaser shall pay the supplier any monies due the supplier for goods delivered and / or services rendered according to the prescripts of the contract.

## **28. Limitation of Liability**

28.1 Except in cases of criminal negligence or willful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) The aggregate liability of the supplier to the purchaser, whether under the contract, in tort Or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

## **29. Governing language**

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

## **30. Applicable law**

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified.

## **31. Notices**

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

## **32. Taxes and duties**

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and Other such levies imposed outside the purchaser's country. 32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.

32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

### **33. Transfer of contracts**

33.1 The contractor shall not abandon, transfer, cede assign or sublet a contract or part thereof without the written permission of the purchaser

### **34. Amendment of contracts**

34.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

### **35. Prohibition of restrictive practices**

35.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is / are or a contractor(s) was / were involved in collusive bidding.

35.2 If a bidder(s) or contractor(s) based on reasonable grounds or evidence obtained by the Purchaser has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in section 59 of the Competition Act No 89 Of 1998.

35.3 If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

**GENERAL PROCEDURES**

**1 General Directives**

- 2.1 The following general procedures contained in this document have been laid down by the Council and are applicable to all bids, orders and contracts, unless otherwise approved by the Council prior to the invitation of the bids.
- 2.2 Where applicable, special conditions or procedures are also laid down by the Council to cover specific supplies or services.
- 2.3 Where such special conditions or procedures are in conflict with the general conditions and procedures, the special conditions or procedures shall apply.
- 2.4 The bidder shall satisfy himself/herself with the conditions and circumstances of the bid. By bidding, the bidder shall deem to have satisfied himself/herself as to all the conditions and circumstances of the bid.
- 2.5 Formal contract are concluded with the contractors only where this requirement is stated in the bid invitation.
- 2.6 All bids with regard to the bidding of a service e.g. materials, cleaning services; professional services, etc. shall be subject to the negotiation of a Service Level agreement between the successful contractor and the Municipality. The acceptance of this Service Level Agreement is subject to the approval by the Council of the Municipality.
- 2.7 The written acceptance of bid shall be posted to the bidder or contractor concerned by registered or certified mail.

**2 Issuing of bid documents**

On the date that the advertisement appears in the Municipality's Tender Bulletin, and or media, prospective bidders may request copies of the tender documentation.

The Supply Chain Management Unit will keep a register and potential bidders should sign for receipt of the bid documentation. If a fee is payable, an official receipt must be issued before the bid document is handed to the bidder.

No bid responses from any bidder should be accepted if sent via the Internet, e-mail or fax.

Only the Supply Chain Management Unit will have direct communication between the potential bidders and will facilitate all communication between potential bidders and the Municipality with regard to any advertised bid. No line function staff should be allowed to

communicate with potential bidders without the approval by the Manager: Supply Chain Management Unit.

The Supply Chain Management Unit will only consider request for the extension of the closing dates of advertised bid if the postponed date can be advertised in the media used to advertise before the original closing date. The closing time may be postponed only if all potential bidders can be advised of the postponed time, in writing, before the original closing time.

The decision to extend the closing date or time rests with the Manager: Supply Chain Management Unit, who must ensure compliance with all relevant rules and regulations and must confirm prior to the action being taken.

### **3 Payment of bid documents**

**Bids documents containing the Conditions of Bid and other requirements in terms of the Supply Chain Management Policy will be downloaded from e-tender Publication Portal at [www.etenders.gov.za](http://www.etenders.gov.za) at no fee.**

### **4 Public Invitation for competitive bids**

The following are procedures for the invitation of competitive bids:

4.1 Invitation to prospective providers to submit bids must be by means of a public advertisement in the national treasury publication portal [www.etenders.gov.za](http://www.etenders.gov.za), the website of the municipality or any other appropriate ways (which may include an advertisement in Polokwane Municipality Notice board)

### **5 Public advertisement must contain the following:**

The closure date for the submission of bids, which may not be less than 30 days in the case of transactions over R10 million (Vat included), or which are of a long term nature, or 14 days in any other case, from the date on which the advertisement is placed in a newspaper; subject to (iii) below; and

6 Accounting officer may determine a closure date for the submission of bids which is less than the 30 or 14 days' requirement, but only if such shorter period can be justified on the grounds of urgency or emergency or any exceptional case where it is impractical or impossible to follow the official procurement process.

7 Bids submitted must be sealed.

### **8 The following information must appear in any advertisement:**

- Bid number;
- Description of the requirements;
- The place where the bid documents can be obtained;
- The date, time and venue where site inspection/briefing session will be (if applicable);

- Closing date and time;
- The fee applicable that must be paid before the bid documents will be issued; and
- The name and telephone numbers of the contact person for any enquiries

## **9 Site meetings of briefing sessions (if applicable)**

A fully explanatory site inspection must be conducted before the close of the bids to ensure that the bidders understand the scope of the project and that they can comply with the conditions and requirements.

It should be a condition that prospective bidders attend a site inspection and non-attendance should invalidate a bid, where a site inspection/briefing session is applicable.

## **10 Handling of bids submitted in response to public invitation**

### **10.1 Closing of bids**

All bids will close at **10H00** on a date as stipulated on the advertisement, which must be reflected in the bid document.

Bids are late if they are received at the address indicated in the tender documents after the closing date and time.

A late bid should not be admitted for consideration and where practical should be returned unopened to the bidder accompanied by explanation.

### **10.2 Opening of bids**

Bids are opened in public as soon as possible after the closure in the presence of the Manager: Supply Chain Management or his/her delegate.

The official opening the bids should in each case read out the name of the bidder and the amount of the bid.

The bid should be stamped with the official stamp of the Municipality and endorsed with the signatures of the person opening it and of the person in whose presence it was opened.

Bids should be recorded in a register kept for that purpose.

### **10.3 Validity Period of the bids**

The validity periods should not exceed 90 (ninety) days and is calculated from the date of bid closure endorsed on the front cover of the bid document.

Should the validity period expires on a Saturday, Sunday or Public holiday, the bid must remain valid and open for acceptance until the closure on the following working date.

### **10.4 Consideration of bids**

- The Council takes all bids duly admitted into consideration.

- The Council reserves the right to accept the lowest or any bid received.
- The decision by the Municipality regarding the awarding of a contract must be final and binding

## **10.5 Evaluation of bids**

The following are criteria against which all bids responses will be evaluated:

### **11 Compliance with bid conditions;**

- Authority to sign filled in full
- All Pages initialed
- Certified ID Copies of All Directors/Members/Shareholders of The Company/Business (If JV, For Both)
- Valid original tax compliance status certificate (If JV, For Both)
- Joint venture agreement (Where applicable)
- Pricing schedule in black ink
- Signed for all alteration and in Pricing Schedule
- Central Supplier Database (CSD) report (If JV, For Both)
- Company certificate
- Form of offer filled in full
- Municipal rates and taxes/Lease agreement/Local tribal authority letter (**For company and all the directors**) not more than 3 months
- Completed and signed Invitation to bid (**MBD1**)
- Completed and signed declaration of interest (**MBD4**)
- Completed and signed declaration for procurement above R10 million (Including tax) (**MBD5**)
- Completed and signed preference points claim form (**MBD6.1**)
- Completed and signed declaration on past SCM practices form (**MBD8**)
- Completed and signed certificate of independent bid determination (**MBD9**)

### **12 Meeting technical specifications and comply with bid conditions;**

### **13 Financial ability to execute the contract; and**

- (i) The number of points scored for achieving specific goals and points scored for price.

### **14 Evaluation of bids on functionality and price**

14.1 All bids received will be evaluated on price and specific goals.



**15** The conditions of bid may stipulate that a bidder must score a specified minimum number of points for functionality to qualify for further evaluation.

- I. The number of points scored for achieving specific goals objectives must be calculated separately and must be added to the points scored for price.
- II. Only bid with the highest number of points will be selected.

## **16 Acceptance of bids**

Successful bidders must be notified at least by registered post of the acceptance of their bids, but that acceptance however, will only take effect after completion of the prescribed contract form.

The successful service provider will be required to sign the service level agreement.

Unsuccessful bids should not be returned to bidders, but should be placed on record for audit purposes.

A register or records should be kept of all bids accepted

## **17 Publication of bids results**

The particulars of the successful bidders should be published in the Municipality's Tender Bulletin, website as well as the newspaper on which the bid was advertised.

## **18 Cancellation and re-invitation of bids**

I. In the event that in the application of the 80/20 preference point system as stipulated in the bid documents, all bids received exceed the estimated Rand Value of R50 000 000.00, the bid invitation must be cancelled. If one or more of the acceptable bid(s) received are within the R50 000 000.00 threshold, all bids received must be evaluated on the 80/20 preference point system

II. In the event that, in the application of the 90/10 preference point system as stipulated in the bid documents, all bids received are equal to or below R50 000 000.00, the bid must be cancelled. If one or more of the acceptable bid(s) received are above the R50 million threshold, all bids received must be evaluated on the 90/10 preference point system

If a bid was cancelled as indicated above, the correct preference point system must be stipulated in the bid documents of the re-invited bid.

Municipal Manager may, prior to the award of a bid, cancel the bid if:

Due to changed circumstances, there is no longer a need for the services, works or goods requested.

Municipal Manager must ensure that only goods, services or works that are required to fulfil the needs of the institution are procured. Or

Funds are no longer available to cover the total envisaged expenditure.

Municipal Manager must ensure that the budgetary provisions exist prior to inviting bids: or

No acceptable bids are received (If all bids received are rejected, the institution must review the reasons justifying the rejection and consider making revisions to the specific conditions of contract, design and specifications, scope of the contract, or a combination of these, before inviting new bids)

**BID NUMBER: PM49/2023**

**APPOINTMENT OF THREE (3) SERVICE PROVIDERS TO SUPPLY AND DELIVER ELECTRICAL METERS FOR A PERIOD OF THREE (03) YEARS (RE-ADVERT)**

**SPECIAL CONDITIONS OF CONTRACT**

- **Delivery at the Polokwane Municipality Stores:  
106 Vermikuliet Street, Laboria  
Polokwane  
Limpopo  
RSA**
  
- Product supplied, must be SABS / SANS approved.
- Product must be supplied with manufactures warranty.
- The product shall be supplied within four (4) weeks of appointment.
- Special deliveries will not be accepted.
- Items will be supplied as and when required on a rotational basis.
- Prior to delivery, the service provider must submit a sample of the product offered.
- NB: PRICE ESCALLATION SHALL BE IN ACCORDANCE WITH CONSUMER PRICE INDEX (CPI) AT THE ANNIVERSARY OF THE CONTRACT.

BID NUMBER: PM49/2023

**APPOINTMENT OF THREE (3) SERVICE PROVIDERS TO SUPPLY AND DELIVER ELECTRICAL METERS FOR A PERIOD OF THREE (03) YEARS (RE-ADVERT)**

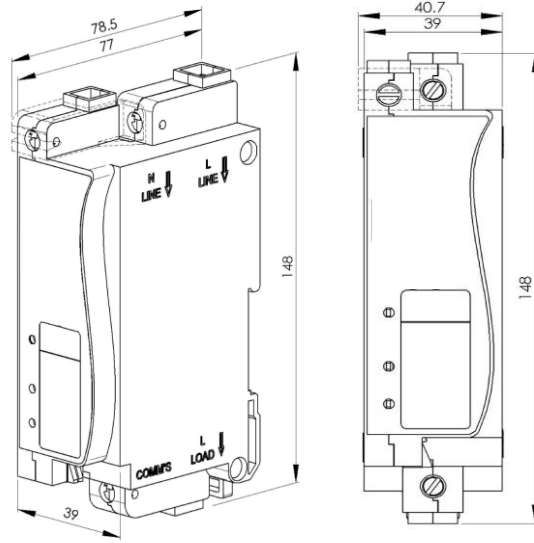
**BID SPECIFICATIONS**

**ITEM 1**

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

**1 Pre-Payment Meter Single-Phase**

- 1.1 Conlog integrated wireless Split meters units (consisting of meter and remote) will be supplied by contractor.
- 1.2 Meters to be installed in meter box by contractor.
- 1.3 Remotes to be installed in house fixed on rail next to ready board by contractor.
- 1.4 The meters must be programmed according to Polokwane Municipality specifications:
  - 1.4.1 Type of meter, example wBEC44 (SINGLE PHASE SPLIT)
  - 1.4.2 Supply Group Code: 000100
  - 1.4.3 Meter Status: Prepayment
  - 1.4.4 Tariff Index: 01
  - 1.4.5 Trip Current: 20A
  - 1.4.6 Pre-loaded Credit: 50kWh
  - 1.4.7 TID: Key Revision 2
- 1.5 wBEC44 integrated wireless meter specifications:



## Product Specifications

### Voltage ratings

Nominal voltage (-20% +15%)	110VAC - 127VAC	220VAC - 240VAC
Supply frequency (±5%)	60Hz	50Hz

### Current ratings

Base current (I <sub>b</sub> )	5A
Max current (I <sub>max</sub> )	100A
Min starting current	
Class 1	20mA
Class 2	25mA
Utilisation category	UC2

**Nominal power consumption** 1.2W / 9VA

**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

**Protection** Power overload Thermal overload  
Current overload Line / load reversal  
Over / under voltage Galvanic isolation  
Delayed reconnection

### 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  
MCU / UIU communication  
Rate LED (1000 pulses / kWh)

**Installation**

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

**Terminals**

	<b>Live</b>	<b>Neutral</b>	<b>Communication</b>
Type	Cage clamp	Cage clamp	Spring clamp
Maximum size	25mm <sup>2</sup>	16mm <sup>2</sup>	0.7mm <sup>2</sup>

**Interrogation**

Type (Optional)	MC171 direct probe USB type port Radio frequency
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**Security**

Meter housing	Security seals
Tamper protection	Tamper terminal cover Load disconnection on tamper detection

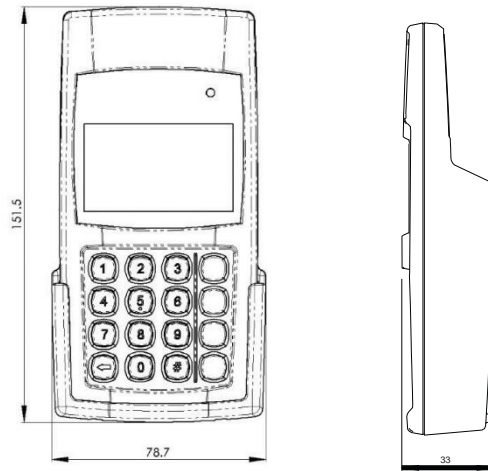
**Standards**

IEC 62052-11	IEC 62055-51	DSP 34-749
IEC 62053-21	IEC 62055-52	DSP 34-1527
IEC 62055-21	SANS 1524-1	DSP 34-1635
IEC 62055-31	SANS 15417	ISO 14001:2004
IEC 62055-41	OHSAS 18001:2007	ISO 9001:2008

**Packaging**

Units per carton	10
Carton weight (incl box)	3.12kg

1.6 wUIU integrated wireless user interface unit specifications:



**Product Specifications**

**Electrical ratings**

Battery size (Alkaline)	AA
No. of batteries required	2
Battery voltage	1.5V
Operating voltage range	1.8V to 3V
Typical battery life	3 years

**Customer displayed information**

- Status of consumer's AC supply
- Available credit
- Low credit warning
- Token accept / reject
- Previously entered STS tokens (meter dependant)
- Meter status register
- Range dependent on environment and installation

**Displays**

- Number of digits: 7 major / 2 minor
- Character height: 15mm / 7mm
- Type: Liquid crystal display
- Viewing area: 53mm x 30mm
- Enunciators: 6 icons and 10 segment bar graph

**Keypad**

- Columns x rows: 3 x 4
- Key press feedback: tactile / silicon rubber keys
- Accessibility: visually impaired friendly

**Audible feedback**

- Key presses
- Token acceptance / rejection



Low credit warning

**ICASA approval**

TA-2009/565

**Standards**

IEC 61000-4-2  
IEC 61000-4-3  
IEC 61000-4-4  
IEC 61000-4-5  
IEC 60950-1  
CISPR22 Class B

**Packaging**

Units per carton

10

Packed box dimensions

305mmx90mmx85mm

Weight

0.500kg packed weight (500g)

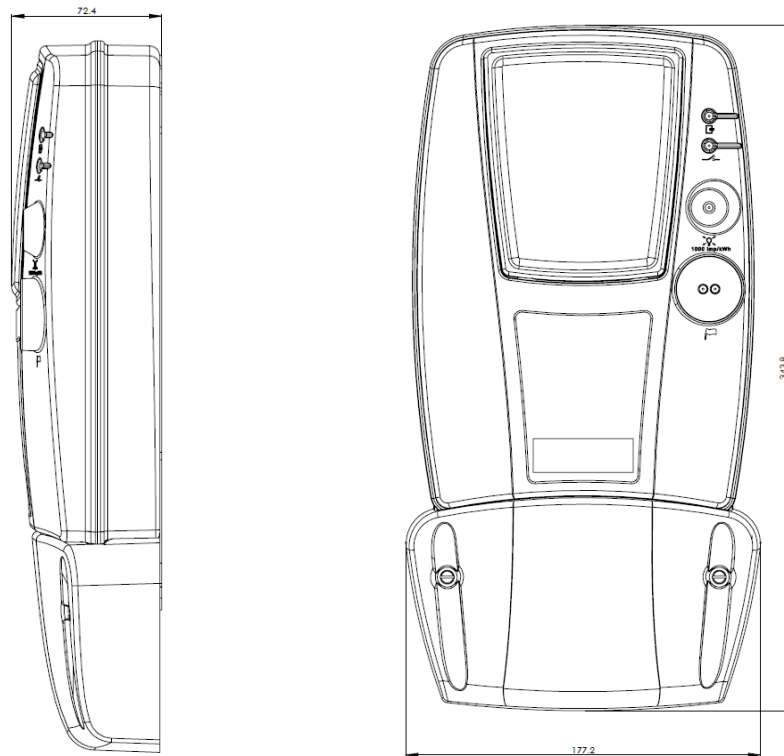
## **ITEM 2**

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

### **1 Pre-Payment Meter Three-Phase**

- 1.1 Conlog integrated wireless Split meters units (consisting of meter and remote) will be supplied by contractor.
- 1.2 Meters to be installed in meter box by contractor.
- 1.3 Remotes to be installed in house fixed on rail next to ready board by contractor.
- 1.4 The meters must be programmed according to Polokwane Municipality specifications:
  - 1.4.1 Type of meter, example wBEC62 (THREE PHASE SPLIT)
  - 1.4.2 Supply Group Code: 000100
  - 1.4.3 Meter Status: Prepayment
  - 1.4.4 Tariff Index: 01
  - 1.4.5 Trip Current: 100A
  - 1.4.6 Pre-loaded Credit: 50kWh
  - 1.4.7 TID: Key Revision 2

1.5 wBEC62 integrated wireless meter specifications:



## Product Specifications

### Voltage ratings

Nominal voltage (-20% +15%)	110VAC - 127VAC	230VAC - 240VAC
Supply frequency (±5%)	60Hz	50Hz

### Current ratings

Base current (I <sub>b</sub> )	5A
Max current (I <sub>max</sub> )	100A
Min starting current	
Class 1	40mA
Class 2	50mA
Utilisation category	UC2

**Nominal power consumption** 1.2W / 9VA

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

**Over voltage rating** 420VAC for 48 hours

**Short circuit rating** Short-circuit withstand  
3.0kA

**Protection** Power overload Thermal overload  
Current overload Line / load reversal  
Over / under voltage

### 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  
MCU / UIU communication Status  
Rate LED (1000 pulses / kWh)

### Installation

Footprint BS7856  
 Insulation class Double insulation

<b>Terminals</b>	<b>Live</b>	<b>Neutral</b>	<b>Communication</b>
Type	Cage clamp	Cage clamp	Type B (USB)
Maximum size	25mm <sup>2</sup>	16mm <sup>2</sup>	

**Security**

Meter housing	Security seals
Terminal Cover	Serialised Plastic Security Seals
Tamper protection	Tamper terminal cover Load disconnection on tamper detection No Power Tamper (Optional)

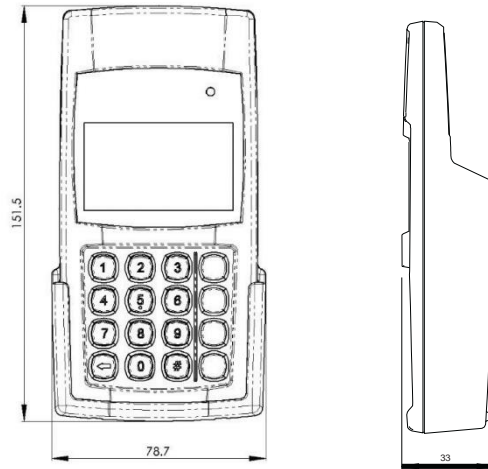
**Standards**

IEC 62051-1	SANS 1524-4	SANS 1524-1-1
IEC 62052-11	SANS 15417	SANS 1524-1-2
IEC 62053-21	STS 101-1	OHSAS 18001
IEC 62055-31	STS 201-15.1.0	ISO 14001
IEC 62055-41	DSP 34-749	ISO 9001
IEC 62055-51	DSP 34-1635	SANS 1524-1
IEC 62055-52	RES/RR/00/11740	IEC 62056-21
IEC 60950-1	ETSI EN 300 200-1	SANS 300 200-1

**Packaging**

Units per Box	1
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1.6 wUIU integrated wireless user interface unit specifications:



**Product Specifications**

**Electrical ratings**

Battery size (Alkaline)	AA
No. of batteries required	2
Battery voltage	1.5V
Operating voltage range	1.8V to 3V
Typical battery life	3 years

**Customer displayed information**

- Status of consumer's AC supply
- Available credit
- Low credit warning
- Token accept / reject
- Previously entered STS tokens (meter dependant)
- Meter status register
- Range dependent on environment and installation

**Displays**

- Number of digits: 7 major / 2 minor
- Character height: 15mm / 7mm
- Type: Liquid crystal display
- Viewing area: 53mm x 30mm
- Enunciators: 6 icons and 10 segment bar graph

**Keypad**

- Columns x rows: 3 x 4
- Key press feedback: tactile / silicon rubber keys
- Accessibility: visually impaired friendly

**Audible feedback**

- Key presses
- Token acceptance / rejection

Low credit warning

**ICASA approval**

TA-2009/565

**Standards**

IEC 61000-4-2  
IEC 61000-4-3  
IEC 61000-4-4  
IEC 61000-4-5  
IEC 60950-1  
CISPR22 Class B

**Packaging**

Units per carton

10

Packed box dimensions

305mmx90mmx85mm

Weight

0.500kg packed weight (500g)

### **ITEM 3**

#### **1 Bi-Directional Pre-Payment Metering Single-Phase with Customer User Interface**

##### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

##### 1.2 General

The Bi-directional single phase DIN-Rail Series 2 is part of the E460 family of smart prepayment meters and is an advanced single-phase, keypad-based, smart prepayment meter in a DIN- Rail housing and terminal format that complies with the mechanical requirements of the NRS049 specification. The E460 solution incorporates powerful e-metering functionality combined with STS prepayment and uses open standard OFDM G3-PLC communications between the meter, the P160 customer interface unit and a PLC Data Concentrator.

The E460 solution is one of the world's first truly open standard smart STS prepayment meters, making use of OFDM G3-PLC, dlms/COSEM and STS prepayment standards to ensure future proof open communications standards for the electricity utility for years to come.

##### 1.3 Overview

The E460 single phase DIN-Rail Series 2 split prepayment meter is based on Landis+Gyr's existing and already proven smart meter solutions and incorporates powerful smart metering functionality combined with STS prepayment.

The E460 1ph DIN-Rail Series 2 meter solution is available in two variants, the E460P and the E460S. The E460P offers only prepayment mode functionality while the E460S offers additional smart functionality such as remote disconnection and reconnection and switching to post-payment mode.

Polokwane Municipality opted for the prepayment option to accommodate the existing prepayment infrastructure.

##### 1.4 Features

- Single-phase, 2 wire DIN-Rail smart prepayment PLC meter which works with a P160 PLC Customer Interface Unit
- Integrated OFDM G3-PLC transceiver for two- way communications between the E460 meter, the P160 Customer Interface Unit and the DC450 Data Concentrator
- Data Concentrator communications via WAN to the Head-end System (HES)
- Open standards for interoperability
  - Open STS prepayment (IEC62055-41/51)
  - dlms/COSEM
  - Open International standard for PLC communications - OFDM G3-PLC
- Housing format suitable for mounting on a 35mm DIN rail or alternative hanging bracket and flush mounting facilities, with 4 terminal layout that complies with the mechanical requirements of the NRS049 specification
- IP 54 degree of protection
- Bottom connect terminals for ease of retrofit and efficient wiring layouts in pole-top enclosures or street kiosks (4 terminals with two neutral terminals, L,N,N,L format)
- Long and short terminal cover options
- Zero power tamper sensing when meter is not powered
- Event trigger and fraud logs with date and time stamps in the on-line mode
- Voltage threshold settings with events logged when thresholds are exceeded



- Remote disconnect and reconnect supported by the E460S variant in the on-line mode
- Demand supervision and power-limit capabilities
- Four quadrant measurement with separate import and export registers
- Changeable metering modes by means of dlms special command set
- Modes supported: kWh transfer STS Prepayment, Smart Prepayment TOU with STS
- Currency token transfer TOU and Post- payment
- Emergency credit
- Real Time Clock – synchronised by the Data Concentrator in the on-line configuration mode
- Time of Use, with STS currency token transfer option in the prepayment mode
- LCD display on the P160 CIU
- Various options on the P160 Customer Interface Unit for scrolling operating display list or standard display list that may be stepped through with a scroll keypress on the P160 CIU

## 1.5 Split Metering Functionality

The split metering solution consists of two parts, the E460 meter and the P160 customer interface unit.

Communication between the meter and the customer interface unit is by means of G3-PLC Power Line Carrier (PLC), using existing household wiring; no additional communication wires are required.

The P160 Customer Interface Unit is compact with a user-friendly keypad and display. It may be installed in any convenient location in the consumer's home where there is an electrical socket outlet. An easily replaceable battery is provided for communicating in the absence of AC mains power e.g. when the meter is out of credit.

The E460 meter contains all critical metering, token decryption, load control and smart meter functionality. It operates independently and is immune to any form of tampering on the Customer Interface Unit.

The E460 1ph DIN-Rail meter is typically installed in a pole-top enclosure or secure street kiosk and its small size enables a smaller street kiosk to be used. When used in conjunction with the DC450 G3-PLC Data Concentrator, the meter is able to operate in an on-line mode.

## 1.6 P160 Customer Interface Unit (CIU)

The P160 CIU is plugged into an existing mains outlet in the household. Under normal conditions when the load switch of the meter is closed and there is power in the house, the Customer Interface Unit operates directly from mains voltage. However in the event that the meter load switch opens (e.g. could be due to prepayment credit expiring), the Customer Interface Unit, which is fitted with a battery, will enter a sleep mode to save battery energy. By pressing and holding the "Enter/Power key" on the keypad, the customer is able to power up the P160 Customer Interface Unit using the battery and enable a new prepayment credit token to be entered. If there is no power in the household and the customer interface unit is woken up using the battery, the display will flash on and off, showing the user the last known status of the meter, for example prepayment credit expired.

The customer or field technician can additionally view meter parameters by accessing specific register information via the P160 Customer Interface Unit keypad or by scrolling through the available pre-configured registers, by pressing the scroll up and down buttons on the P160 keypad.

## 1.7 Advanced Metering Infrastructure (AMI)

The E460 solution is capable of “upstream” PLC communication to a Data Concentrator typically installed at a street kiosk, low-voltage distribution transformer or mini sub-station and “downstream” PLC communications to the P160 Customer Interface Unit.

When the DC450 Data Concentrator and back-end (Head-end system) is in place, the E460 meter forms parts of an end-to-end Advanced Metering Infrastructure (AMI) system and powerful e-metering and prepayment capability is able to be supported.

When the E460 is used in conjunction with a Data Concentrator and head-end system and forms part of the AMI infrastructure, it supports extensive and powerful e-metering functionality, such as:

- Two way communications
- Real time clock synchronised by the system
- Post-payment or prepayment modes supported by the E460S variant
- Standard kWh STS token transfer or smart prepayment with currency TOU STS prepayment token
- Remote disconnect and reconnect supported by the E460S variant
- Event and fraud notifications

Using a special set of dlms commands, the E460S meter modes can be switched between post-payment and prepayment modes.

## 1.8 Powerful smart e-metering functions

The meter is able to be configured both locally via the IEC 62056-21 optical interface using Landis+Gyr’s dotMAP meter configuration suite of software, and remotely via the Head-end System when in the on-line mode.

Real time clock (RTC) is remotely synchronised by the Head-end System if the meter is used in conjunction with a Data Concentrator and system.

When used in an on-line configuration, the meter supports a comprehensive set of Time of Use (TOU) configuration options including active season tables, weekly tables, daily tables and special days. This meter also supports prepayment TOU with STS currency token transfer. Up to 4 Time of Use rates are supported.

The meter supports a wide range of configurable energy registers. Twelve total energy registers are available, with a further 24 energy registers which can be configured to store available values.

The meter further supports configurable demand registers with configurable integration period.

Various fraud detection log trigger items may be selected for the fraud log, such as terminal cover sensing, strong DC magnetic field detected, event log cleared and more.

A range of power quality features are also supported such as voltage supervision with configurable over and under voltage threshold limits and changeable parameters for long duration power failures and minimum power factor threshold. The E460 also has a comprehensive list of power quality event log trigger sources that can be selected as desired, for example under and over voltage, current without voltage and power factor threshold exceeded.

Features supporting the E460S meter’s load switch control include remote disconnection and re-connection and local (using dotMAP110 meter service tool). The E460 meter also supports Demand Supervision functionality that disconnects the load switch in the event that the pre-set limiter threshold is exceeded.

The P160 Customer Interface Unit display offers seven arrow icons that are typically configured to show the current rate in use, the status of the meter terminal cover, the detection of a strong magnetic field and in the case of the E460S, the validity of the meter RTC, which is synchronised by the DC.

#### 1.9 Meter Status and Diagnostic Indicators

The meter includes a LED status indicator which allows a utility technician to view the operational status of the meter without the need to gain access to the consumer's premises. In addition, LED indicators are available to show the status of the meter's load switch and also PLC communications status.

#### 1.10 Anti-tamper Features

The meter is mechanically sealed for life against tampering and features various tamper detection options, including sensing the removal of the terminal cover with or without mains power present.

## 2 Technical Specifications

### 2.1 E460 1ph DIN Rail G3-PLC Series 2 (MCA 110 CR D1.2 00 x S2)

<b>General Overview</b>	Apparent power at $U_n$ (max)	<12VA
Compatible network	Power consumption in current circuit	
Single phase, 2-wire	Apparent power at $I_b$ (max)	<7VA
Enclosure format	<b>Environmental Influences</b>	
Rail mount, with locking clip compatible with 35mm DIN standard rail or flush mounting using keyhole slot and bottom fixing screws. Long and short terminal covers supported	Area of application	
<b>IEC Specific Data</b>	Indoor meter (according to IEC62052-11)	
Rated voltage ( $U_n$ )	Temperature range	
Wide-range: 110 to 240 Volts AC	Operation meter	-10°C to +55°C
Frequency	Storage	-40°C to +70°C
50Hz	Relative humidity	
Extended operating voltage range	Maximum	≤ 95%; Annual mean 75%
80% to 120% $U_n$	Degree of Protection (according to IEC60529)	
Base current ( $I_b$ )	IP Rating	IP54
5 Amps	Product is for indoor use and must be installed in a suitable enclosure when used outdoors	
Maximum current ( $I_{max}$ )	<b>Electromagnetic Compatibility</b>	
80 Amps	Electrostatic discharges (IEC61000-4-2)	
Short circuit current	Air discharge	15 kV
30 x $I_{max}$ (≤10 ms according to IEC 62053-21) 2.5kA r.m.s. (Utilisation Category UC2 according to IEC 62055-31)	Electromagnetic RF fields (IEC 61000-4-3)	
Meter constant (LED flash rate)	80 MHz to 2 GHz	10 V/m with load 30 V/m no load
1000 impulses / kWh, 1000 impulses / kVAh <sup>1</sup>	Fast transient burst (IEC61000-4-4)	
Measurement Accuracy	Current / voltage under load (IEC 62053-21)	4 kV
Active energy, according to IEC62052-11/62053-21 Class 1	Radio interference suppression (IEC / CISPR 22)	
Reactive energy, according to IEC62053-23 Class 2 for $I_b = 10A$ , Class 3 for $I_b = 5A$	Complies with requirements for CISPR 22 and CENELEC EN 50065-1	
Measurement behaviour	<b>Insulation Strength</b>	
Starting current	Insulation System Classification	
≤ 0.004 $I_b$ for Class 1	(According to IEC 62052-11)	Protective Class II
<b>General Data</b>		
<b>Operating Behaviour</b>		

<sup>1</sup> In kVAh mode

Power consumption in voltage circuit		Insulation Level	
Active power at Un (max)	<2W	4 kV rms @ 50Hz for 1 minute	
<b>Overvoltage withstand</b>		<b>Format (4 terminal, NRS049 compliant)</b>	
Overvoltage withstand		Type Bottom connect (Line, Neutral, Neutral, Load)	
440 Vac for 48 hours, 600 VDC for 1 minute		<b>Terminal Details</b>	
<b>Surge Immunity</b>		Material	Mild steel, RoHS compliant Passivation
Voltage impulse withstand (Differential)		Type	Single (M8) moving-cage Terminal
Meets the requirements of IEC 62052-11		Diameter	8.5 mm
Current impulse withstand		Maximum conductor cross-section <sup>2</sup>	25mm <sup>2</sup>
According to:	IEC 62052-11, SANS 61643-1	Type of screw	slotted (flat screwdriver)
With external arrestor		<b>Communication Interfaces</b>	
Withstand rating	30 kA, 8/20µs	Optical Communications Port	
Without external arrestor		According to IEC 62056-21	
Withstand rating	10 kA, 8/20µs	<b>PLC Interface</b>	
<b>Calendar Clock</b>		Type	OFDM G3-PLC
Normal operation		Narrowband Orthogonal Frequency Division Multiplexing (OFDM) for G3 networks in accordance with recommendation ITU-T G.9903 and CENELEC-A band plan Refer to-IEC61334-4-41, ISO/IEC13239/ EN 50065	
Accuracy (at +23°C)	±0.2 s/day	Range	Typically >200m
Reserve running		<b>Load Switch</b>	
Accuracy (at +23°C)	<1 s/day (EN 62054-21 requirement for time switches: 1.0s)	Contact Data	
Operational Reserve		According to IEC 62055-31 for Utilisation Category UC2	
With super-capacitor	minimum 36 hours <sup>3</sup> (RTC Synchronised by Data Concentrator)	<b>Meter Enclosure Material</b>	
<b>Outputs</b>		Material (Housing)	
Optical Test output (Active or reactive)		Type:	Polycarbonate, flame-retardant Resistance to spread of fire
Type	Visible Red LED	UL94-V0 rated @1.5mm. No toxic gases emitted: 'Green Material'	
Meter constant <sup>4</sup>	1000 pulses/kWh 1000 pulses/kVAh		
<b>Meter Faceplate Indications</b>			
Meter Status Indication			
Type	Visible Yellow LED		
Meter Load Switch Indication			
Type	Visible Red LED		

<sup>2</sup> Aluminum wires must be used with ferrules

<sup>3</sup> IEC requirements for operational reserve

<sup>4</sup> Configurable for kVarh

	<b>Material (Terminal block)</b>
<b>PLC Status Indication</b>	Type: Polycarbonate, flame-retardant, glass-filled
Type Visible Green LED	
<b>Phase Connections</b>	Resistance to heat and fire
Complies with 960°C glow-wire (IEC 60695-2-1)	Including packaging (Incl. MOV) approx.455 grams
<b>Weights &amp; Dimensions</b>	<b>Sealing</b>
<b>Dimensions</b>	<b>Type</b>
135.5mm(H) x 60mm(W) x 110mm(D) (Short cover)	Meter enclosure Factory sealed for life
165.5mm(H) x 60mm(W) x 110mm(D) (Long cover)	Terminal Cover Utility sealing wires (1 point) Long and short cover
<i>Please also refer to dimensional drawings</i>	
	<b>Specifications Compliance &amp; Approvals</b>
<b>Weight</b>	IEC 62053-21, IEC 62053-23, IEC62055-41(STS) and IEC62055-51 (STS)
Including packaging (excl. MOV) approx.450 grams	

## 2.2 P160 PLC Customer Interface Unit

<b>General Data</b>	
<b>Supply Voltage</b>	<b>Operating Environment</b>
110-240 VAC wide ranging power supply	
	<b>Temperature Range</b>
<b>Supply Frequency</b>	Operating -10°C to +55°C
50Hz	Storage -40°C to +70°C
<b>Power consumption (Burden)</b>	<b>Relative Humidity (IEC 62052-11)</b>
<1.5 W / <12 VA @ 230VAC, 50Hz	Maximum ≤ 95%; Annual mean <75%
<b>Maximum Rated Current</b>	<b>Enclosure</b>
<120mA @ 230VAC, 50Hz	
	<b>Type</b>
<b>Protective Class</b>	Wall mounted with integrated AC power cord and sliding battery compartment
Double insulated – Protective Class 2	
	<b>Degree of Protection (IP Rating)</b>
<b>Supply Connection</b>	IP 51
Mains supply by means of integrated power cord. Variants are available with various international power plugs	
	<b>Material</b>
<b>Battery</b>	UV Stable Polycarbonate/ABS blend with flame- retardant, Resistance to heat and fire.
1 x 9 Volt (6LR61 type) battery	
	Complies with 960°C glow- wire (IEC 60695- 2-1)
<b>Communications Circuitry</b>	
<b>Type</b>	Resistance to spread of fire:
Narrowband OFDM G3-PLC Power Line Carrier	UL94-V0 rated @1.5mm. No toxic gases

	emitted: 'Green Material'
<b>Protocol</b>	<b>Dimensions</b>
Device Language Message Specification (DLMS)	144mm(H) x 120mm(W) x 40.8mm(D)
<b>Specification compliance</b>	
IEC 61334-4-41, IEC 61334-5-2, and EN 50065-1	
<b>Weight</b>	<b>Compliance / Certification</b>
Including packaging <sup>5</sup> approximately 350 g	SANS / IEC60950
<b>Sealing &amp; Access Control</b>	<b>Keypad</b>
<b>Battery Compartment</b>	16-key, including 12-key standard layout as including "Information" and "Backspace" keys well as separate additional smart user keys
Type Sliding compartment for battery replacement	
	<b>Buzzer</b>
<b>Customer Interface Unit Enclosure</b>	Audible feedback on key press, token accept and reject melodies and alarms
Factory sealed- no user serviceable parts	
<b>Man-Machine Interface</b>	<b>Rate of Consumption Indicator (Rate LED)</b>
<b>Type</b>	Multi-colour rate LED (colour indicates current credit level). Not for accuracy verification
Pictographic/Numeric LCD display, keypad, multi-colour rate of consumption indicator and alert LED's and audible feedback	
	<b>Alarm Indicator</b>
<b>Liquid Crystal Display (LCD)</b>	Multi-colour LED indications for ease of use and additional audible warning of critically low credit status or other operational warnings
Size 9cm <sup>2</sup> (50mm (W) x 26mm (H)) 8 digits in value field, 6 digits in the index field Digit size: 8mm (H) x 4mm (W)	

<sup>5</sup> Also includes battery and power cord and plug

### 2.3 Product Dimensions

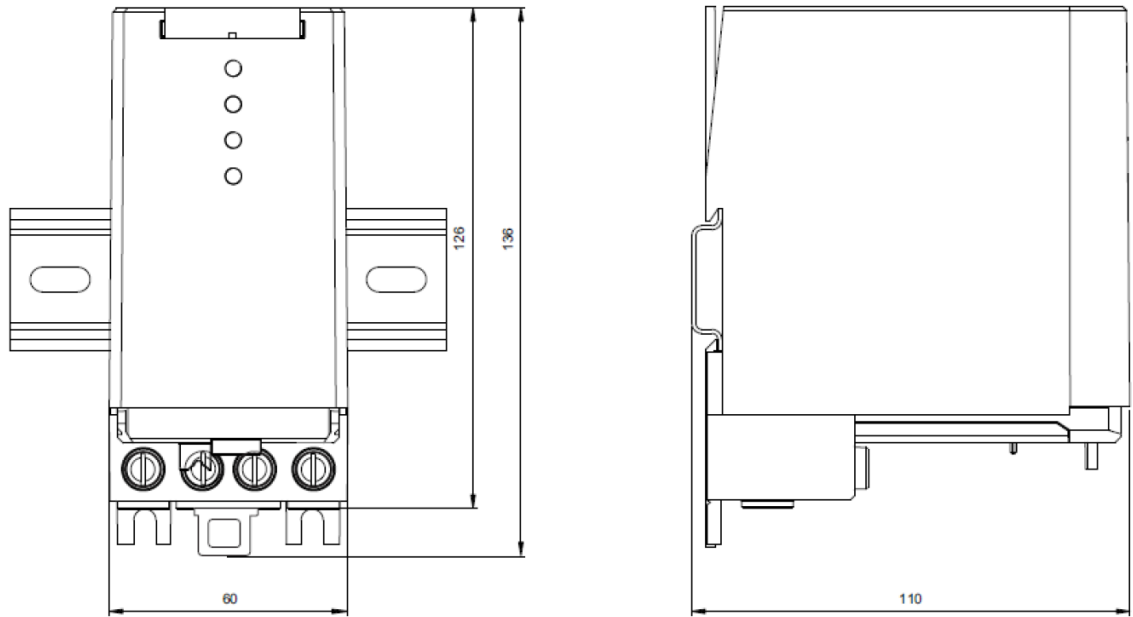


Figure 1:(Above) Dimensions of the E460 1ph DIN Rail Series 2 meter

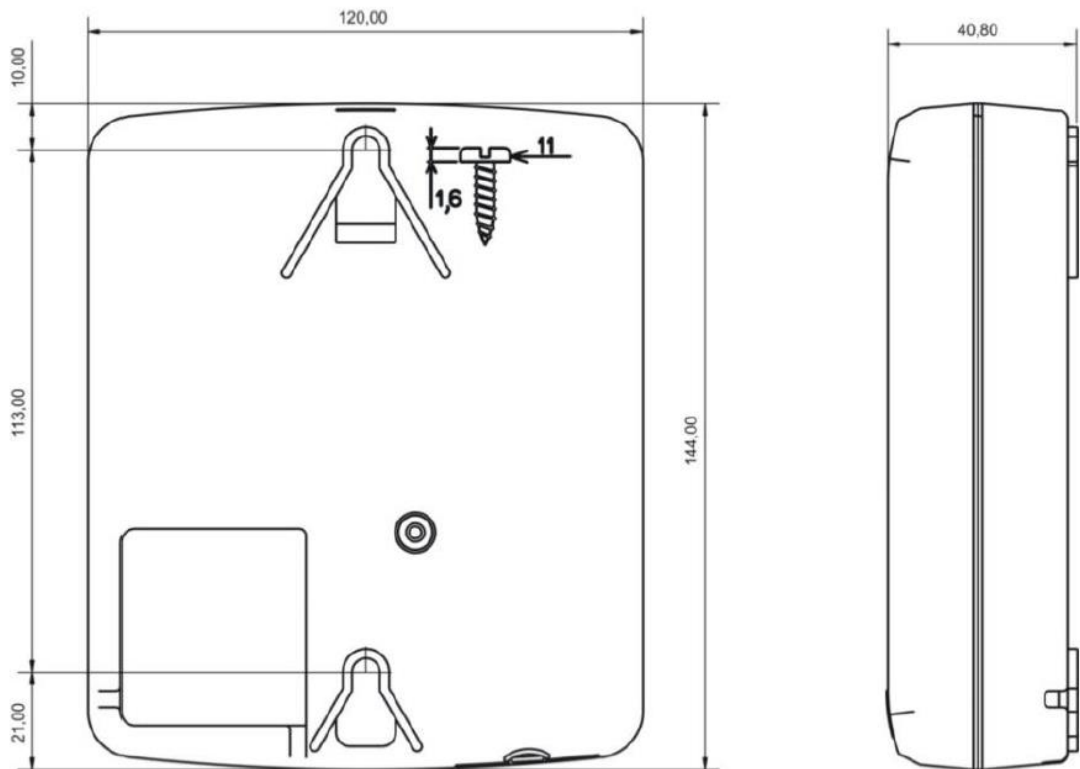


Figure 2 (Above) Dimensions of the P160 PLC Customer Interface Unit

### 3 Meter Programming

Type of meter:	E460S, G3-PLC, 1ph SMART DIN Rail Series 2 + P160 CIU
Meter Status:	Prepayment
Supply Group Code:	(SGC 000100)



Tariff Index:	(01)
Trip Current:	(100A)
Pre-loaded credit:	(50kWh)
Tamper Sensing:	Enabled
TID:	Key Revision 2

## **ITEM 4**

### **1 Bi-Directional Pre-Payment Metering Three-Phase with Customer User Interface**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 General

The Bi-directional three phase meter is part of the E460 family of smart prepayment meters and is an advanced three-phase, multi-function, keypad-based, smart prepayment. The E460 solution incorporates powerful e-metering functionality combined with STS prepayment and uses open standard OFDM G3-PLC communications between the meter, the P160 customer interface unit and a PLC Data Concentrator. The Bi-directional three-phase meter must comply with the mechanical requirements of the NRS049 specification

The E460 solution is one of the world's first truly open standard smart STS prepayment meters, making use of OFDM G3-PLC, dlms/COSEM and STS prepayment standards to ensure future proof open communications standards for the electricity utility for years to come.

#### 1.3 Overview

The E460 three phase split prepayment meter is based on Landis+Gyr's existing and already proven smart meter solutions and incorporates powerful smart metering functionality combined with STS prepayment.

The E460 solution is based on open and interoperable standards, using G3-PLC OFDM communications between the meter, P160 Customer Interface Unit and the Data Concentrator.

The E460 meter may be utilised in an off-line mode as a stand-alone split prepayment meter, or in an on-line mode as part of an end to end two way AMI smart metering solution.

Polokwane Municipality opted for the prepayment option to accommodate the existing prepayment infrastructure.

#### 1.4 Features

- Three-phase, 4 wire smart prepayment PLC meter which works with a P160 PLC Customer Interface Unit
- Integrated OFDM G3-PLC transceiver for two-way communications between the E460 meter, the P160 Customer Interface Unit and the DC450 Data Concentrator
- Data Concentrator communications via WAN to the Head-end System (HES)
- Open standards for interoperability
  - Open STS prepayment (IEC62055-41/51)
  - dlms/COSEM
  - Open International standard for PLC communications - OFDM G3-PLC
- Terminal format - 3 phase asymmetrical layout
- Long and short terminal [default] cover options
- Event trigger and fraud logs with date and time stamps in the on-line mode
- Voltage threshold settings with events logged when thresholds are exceeded
- Remote disconnect and reconnect in the on-line mode (E460S type)
- Extensive e-metering load switch control functions including fuse supervision
- Four quadrant measurement with separate import and export registers
- Changeable metering modes by means of dlms special commands

- Modes supported: kWh transfer STS Prepayment, Smart Prepayment TOU with STS Currency token transfer TOU and Post-payment (E460S type)
- Emergency credit
- Real Time Clock – synchronised by the Data Concentrator in the on-line configuration mode
- Time of Use, with STS currency token transfer option in the prepayment mode
- Meter has local LCD display
- P160 CIU has a LCD display with 8 digits for register values, 6 digit index field, prepayment credit wedge, battery indicator for the P160, currency or kWh indicator, phase and energy direction, alarm and configurable arrow indicators and load switch status
- Various options on the P160 Customer Interface Unit for scrolling operating display list or standard display list that may be stepped through with a scroll key-press on the P160

## 1.5 Split Metering Functionality

The split metering solution consists of two parts, the E460 meter and the P160 customer interface unit.

Communication between the meter and the customer interface unit is by means of G3-PLC Power Line Carrier (PLC), using existing household wiring; no additional communication wires are required.

The P160 Customer Interface Unit is compact with a user-friendly keypad and display. It may be installed in any convenient location in the consumer's home where there is an electrical socket outlet. An easily replaceable battery is provided for communicating in the absence of AC mains power e.g. when the meter is out of credit.

The E460 meter contains all critical metering, token decryption, load control and smart meter functionality. It operates independently and is immune to any form of tampering on the Customer Interface Unit.

The E460 3ph meter is typically installed in a secure street kiosk. When used in conjunction with the DC450 G3-PLC Data Concentrator, the meter is able to operate in an on-line mode.

## 1.6 P160 Customer Interface Unit (CIU)

The P160 CIU is plugged into an existing mains outlet in the household. Under normal conditions when the load switch of the meter is closed and there is power in the house, the Customer Interface Unit operates directly from mains voltage. However in the event that the meter load switch opens (e.g. could be due to prepayment credit expiring), the Customer Interface Unit, which is fitted with a battery, will enter a sleep mode to save battery energy. By pressing and holding the "Enter/Power key" on the keypad, the customer is able to power up the P160 Customer Interface Unit using the battery and enable a new prepayment credit token to be entered. If there is no power in the household and the customer interface unit is woken up using the battery, the display will flash on and off, showing the user the last known status of the meter, for example prepayment credit expired.

The customer or field technician can additionally view meter parameters by accessing specific register information via the P160 Customer Interface Unit keypad or by scrolling through the available pre-configured registers, by pressing the scroll up and down buttons on the P160 keypad.

## 1.7 Advanced Metering Infrastructure (AMI)

The E460 solution is capable of "upstream" PLC communication to a Data Concentrator typically installed at a street kiosk, low-voltage distribution transformer or mini sub-station and "downstream" PLC communications to the P160 Customer Interface Unit.

When the DC450 Data Concentrator and back-end (Head-end system) is in place, the E460 meter forms parts of an end-to-end Advanced Metering Infrastructure (AMI) system and powerful e-metering and prepayment capability is able to be supported.

When the E460 is used in conjunction with a Data Concentrator and head-end system and forms part of the AMI infrastructure, it supports extensive and powerful e-metering functionality, such as:

- Two way communications
- Real time clock synchronised by the system
- Post-payment or prepayment modes supported by the E460S variant
- Standard kWh STS token transfer or smart prepayment with currency TOU STS prepayment token
- Remote disconnect and reconnect supported by the E460S variant
- Event and fraud notifications

Using a special set of dlms commands, the E460S meter modes can be switched between post-payment and prepayment modes.

## 1.8 Powerful smart e-metering functions

The meter is able to be configured both locally via the IEC 62056-21 optical interface using Landis+Gyr's dotMAP meter configuration suite of software, and remotely via the Head-end System when in the on-line mode.

Real time clock (RTC) is remotely synchronised by the Head-end System if the meter is used in conjunction with a Data Concentrator and system.

When used in an on-line configuration, the meter supports a comprehensive set of Time of Use (TOU) configuration options including active season tables, weekly tables, daily tables and special days. This meter also supports prepayment TOU with STS currency token transfer. Up to 4 Time of Use rates are supported.

The meter supports a wide range of configurable energy registers. Twelve total energy registers are available, with a further 24 energy registers which can be configured to store available values.

The meter further supports configurable demand registers with configurable integration period.

Various fraud detection log trigger items may be selected for the fraud log, such as terminal cover sensing, strong DC magnetic field detected, event log cleared and more.

A range of power quality features are also supported such as voltage supervision with configurable over and under voltage threshold limits and changeable parameters for long duration power failures and minimum power factor threshold. The E460 also has a comprehensive list of power quality event log trigger sources that can be selected as desired, for example under and over voltage, current without voltage and power factor threshold exceeded.

Features supporting the E460S meter's load switch control include remote disconnection and re-connection and local (using dotMAP110 meter service tool). The E460 meter also supports Demand Supervision functionality that disconnects the load switch in the event that the pre-set limiter threshold is exceeded.

The P160 Customer Interface Unit display offers seven arrow icons which are individually configurable to indicate by selectable control sources. There are further options to display the arrow icons as either steady state or blinking. In addition, a configurable operating display list that is able to cycle on the P160 display, or a standard display list that may be stepped through by pressing the scroll keys on the P160 keypad.

## 1.9 Meter Status and Diagnostic Indicators

The meter includes a LED status indicator which allows a utility technician to view the operational status of the meter without the need to gain access to the consumer's premises. In addition, LED

indicators are available to show the status of the meter's load switch and also PLC communications status.

The meter also includes a dual colour LED status indicator which allows a utility technician to view the operational status of the meter without the need to gain access to the consumer's premises and to view the PLC communication status.

#### 1.10 Anti-tamper Features

The meter is mechanically sealed for life against tampering and features various tamper detection options, including sensing the removal of the terminal cover with or without mains power present.

## 2 Technical Specifications

### 2.1 E460 3ph G3-PLC (MMA 310 C A xx)

<b>General Overview</b>	Active power at Un 120V	<1.2W
	Active power at Un 230V	<1.6W
Compatible network	Apparent power at Un 120V, 50Hz	<4VA/phase
Three phase, four-wire	Apparent power at Un 230V, 50Hz	<12.5VA/phase
Enclosure format	<b>Environmental Influences</b>	
Three phase, asymmetrical terminal format. Short terminal standard, long cover optional	Area of application	
	Indoor meter (according to IEC62052-11)	
<b>IEC Specific Data</b>		
	Temperature range	
Rated voltage (Un)	Operation meter	-10°C to +55°C
Wide-range: 3 x 120 to 240 Volts AC	Storage	-40°C to +70°C
Frequency	Relative humidity	
50Hz	Maximum	≤ 95%; Annual mean 75%
Extended operating voltage range	Degree of Protection (according to IEC60529)	
Voltage (for Un = 230V), 50% to 120% Un i.e.>115V	IP Rating	IP54
Voltage (for Un = 120V), 80% to 120% Un i.e.>90V		
	Product is for indoor use and must be installed in a suitable enclosure when used outdoors	
Base current (I <sub>b</sub> )		
5 Amps	<b>Electromagnetic Compatibility</b>	
Maximum current (I <sub>max</sub> )	Electrostatic discharges (IEC61000-4-2)	
100 Amps per phase	Air discharge	15 kV
Short circuit current	Electromagnetic RF fields (IEC 61000-4-3)	
30 x I <sub>max</sub> (≤10 ms according to IEC 62053-21)	80 MHz to 2 GHz	10 V/m with load 30 V/m no load
3kA r.m.s. (Utilisation Category UC2 according to IEC 62055-31)		
	Fast transient burst (IEC61000-4-4)	
Meter constant (LED flash rate)	Current / voltage under load (IEC 62053-21)	4 kV
1000 impulses / kWh		
1000 impulses / kVAh <sup>6</sup>	Radio interference suppression (IEC / CISPR 22)	
	Complies with requirements for CISPR 22 and CENELEC EN 50065-1	
Measurement Accuracy		
Active energy, according to IEC62052-11/62053-21	<b>Insulation Strength</b>	
Class 1		
Reactive energy, according to IEC62053-23	Insulation System Classification	
Class 2 for I <sub>b</sub> = 10A, Class 3 for I <sub>b</sub> = 5A	(According to IEC 62052-11)	Protective Class II
Measurement behaviour	Insulation Level	
Starting current (Active) ≤ 0.004 I <sub>b</sub> for Class 1		4 kV rms @ 50Hz for 1 minute
Starting current (Reactive) ≤ 0.004 I <sub>b</sub> for Class 1		
<b>General Data</b>	<b>Overvoltage withstand</b>	
<b>Operating Behaviour</b>		

<sup>6</sup> In kVAh mode

Power consumption in voltage circuit (with all three phases powered up)		Overvoltage withstand	440 Vac for 48 hours, 600 VDC for 1 minute
<b>Surge Immunity</b>		<b>Terminal Details</b>	
Voltage impulse withstand (Differential)	Meets the requirements of IEC 62052-11	Material of Terminal	Brass
Current impulse withstand		Type	Terminal with two screws
According to:	IEC 62052-11, SANS 61643-1	Diameter	9.5 mm
With external arrestor		Minimum conductor cross-section	4 mm <sup>2</sup>
Withstand rating	30 kA, 8/20µs	Maximum conductor cross-section	35 mm <sup>2</sup>
Without external arrestor		For wires with small conductor cross-sections ( $\leq 6$ the mm <sup>2</sup> ), the connecting line must be placed carefully in middle of the terminal, so that it cannot move sideways when tightening the terminal screws. When tightening, ensure that the connecting line remains between the copper inside the terminal and the screw. Stranded wires must be fitted with ferrules.	
Withstand rating	10 kA, 8/20µs	<ul style="list-style-type: none"> <li>- Type of screw: <ul style="list-style-type: none"> <li>• Steel zinc-plated Pozidrive combi screws (default)</li> </ul> </li> <li>- Screw dimensions M6 x 14</li> <li>- Maximum screw head diameter <math>\leq 6.6</math> mm</li> <li>- Cross-slot type Z, size 2 (ISO4757-1983)</li> <li>- Slot width 0.8 mm</li> <li>- Slot length min. 6 mm</li> </ul>	
<b>Calendar Clock</b>		<b>Communication Interfaces</b>	
Normal operation		Optical Communications Port	
Accuracy (at +23°C)	$\pm 0.2$ s/day	According to IEC 62056-21	
Reserve running		G3-PLC Interface	
Accuracy (at +23°C)	$< 1$ s/day (EN 62054-21 requirement for time switches: 1.0s)	Frequency band CENELEC A	
Operational Reserve		OFDM G3-PLC with COSEM/DLMS communication protocol according to EN50065-1 supporting the following OSI Layers:	
With super-capacitor	minimum 36 hours <sup>7</sup> (RTC Synchronised by Data Concentrator)	<ul style="list-style-type: none"> <li>• ITU-T G.9903 physical layer for modulation, adaptive tone mapping and notching</li> <li>• MAC layer IEEE 802.15.4; time domain and collision management; CSMA/ARQ</li> <li>• 6LoWPAN adaptation sub layer Plug and Play network management to choose "Best Path" (Full Mesh Support)</li> <li>• IPv6 IETF RFC4291/4862 addressing and networking</li> <li>• DLMS application layer 62056-53</li> <li>• COSEM application model: 62056-61 (OBIS) and 62056-62 (interface classes)</li> </ul>	
<b>Rate of Use Output</b>		Range: Typically >200m with G3-PLC repeater	
Optical Test output (Active or reactive)			
Type	Visible Red LED		
Meter constant <sup>8</sup>	1 000 pulses/kWh 1 000 pulses/kVAh		
<b>Meter Faceplate Indications</b>			
Meter Status Indication			
Type	[Dual Colour] Visible Yellow LED		
PLC Status Indication			
Type	[Dual Colour] Visible Green LED		
Meter Load Switch Indication			
Type	LCD Icon		

<sup>7</sup> IEC requirements for operational reserve

<sup>8</sup> Configurable for kVarh

<b>Phase Connections</b>		functionality
Format		<b>Load Switch</b>
Type	Asymmetrical, 8 terminals	
<b>Inputs and Outputs</b>		<b>Contact Data</b>
Pulse Input		According to IEC 62055-31 for Utilisation Category UC3
Type	S0	<b>Weights &amp; Dimensions</b>
Terminals	30 (+) and 31 (-)	<b>Dimensions<sup>9</sup></b>
According to IEC 62053-31	class A	Width/Height/Depth 172.0 / 198.8 / 76.6 mm
Configurable as pulse counter or alarm input		<i>Please also refer to dimensional drawings</i>
<b>Output</b>		<b>Weight</b>
Terminals	23 and 24	Including packaging approx. 1.5kg
Type solid-state auxiliary load switch		<b>Sealing</b>
Nominal voltage	230 VAC/DC	Type
Maximum voltage	250 VAC/DC	Meter enclosure
Maximum switching current	90 mA	Terminal Cover
<b>Meter Enclosure Material</b>		Long and short (default) covers
Material (Housing)		<b>Specifications Compliance &amp; Approvals<sup>10</sup></b>
Type:	Polycarbonate, flame-retardant	
Resistance to spread of fire		IEC 62053-21, IEC62053-23, IEC62055-41 and
UL94-V0 rated @1.5mm. No toxic gases emitted:		IEC62055-51, dlms
'Green Material'		

## 2.2 P160 PLC Customer Interface Unit

<b>General Data</b>		Device Language Message Specification (DLMS)
Supply Voltage		Specification compliance
110-240 VAC wide ranging power supply		IEC 61334-4-41, IEC 61334-5-2, and EN 50065-1
<b>Supply Frequency</b>		<b>Operating Environment</b>
50Hz		<b>Temperature Range</b>
<b>Power consumption (Burden)</b>		Operating
<1.5 W / <12 VA @ 230VAC, 50Hz		-10°C to +55°C
		Storage
		-40°C to +70°C
<b>Maximum Rated Current</b>		<b>Relative Humidity (IEC 62052-11)</b>
<120mA @ 230VAC, 50Hz		Maximum ≤ 95%; Annual mean <75%
<b>Protective Class</b>		<b>Enclosure</b>
Double insulated – Protective Class 2		Type
<b>Supply Connection</b>		Wall mounted with integrated AC power cord
Mains supply by means of integrated power cord. Variants are available with various international power plugs		and sliding battery compartment
		<b>Degree of Protection (IP Rating)</b>

<sup>9</sup> With short terminal cover

<sup>10</sup> Approvals pending



		IP 51
<b>Battery</b>		
1 x 9 Volt (6LR61 type) battery		Material
		UV Stable Polycarbonate/ABS blend with flame-retardant, Resistance to heat and fire.
<b>Communications Circuitry</b>		
Type		
Narrowband OFDM G3-PLC Power Line Carrier		Complies with 960°C glow- wire (IEC 60695-2-1)
Protocol		Resistance to spread of fire:
UL94-V0 rated @1.5mm.		Liquid Crystal Display (LCD)
No toxic gases emitted: 'Green Material'		Size 9cm <sup>2</sup> (50mm (W) x 26mm (H))
		8 digits in value field, 6 digits in the index field
Dimensions		Digit size: 8mm (H) x 4mm (W)
144mm(H) x 120mm(W) x 40.8mm(D)		
		Compliance / Certification <sup>11</sup>
Weight		Designed to conform to SANS / IEC60950
Including packaging <sup>12</sup> approximately 350 g		
		Keypad
<b>Sealing &amp; Access Control</b>		16-key, including 12-key standard layout as including "Information" and "Backspace" keys well as separate additional smart user keys
<b>Battery Compartment</b>		
Type Sliding compartment for battery replacement		
		Buzzer
Customer Interface Unit Enclosure		Audible feedback on key press, token accept and reject melodies and alarms
Factory sealed- no user serviceable parts		
<b>Man-Machine Interface</b>		Rate of Consumption Indicator (Rate LED)
		Multi-colour rate LED (colour indicates current credit level). Not for accuracy verification
Type		
Pictographic/Numeric LCD display, keypad, multi-colour rate of consumption indicator and alert LED's and audible feedback		Alarm Indicator
		Multi-colour LED indications for ease of use and or additional audible warning of critically low credit status other operational warnings

<sup>11</sup> Certification pending

<sup>12</sup> Also includes battery and power cord and plug

2.3 Product Dimensions

Figure 1: (Below) Dimensions of the E460 3ph G3-PLC meter

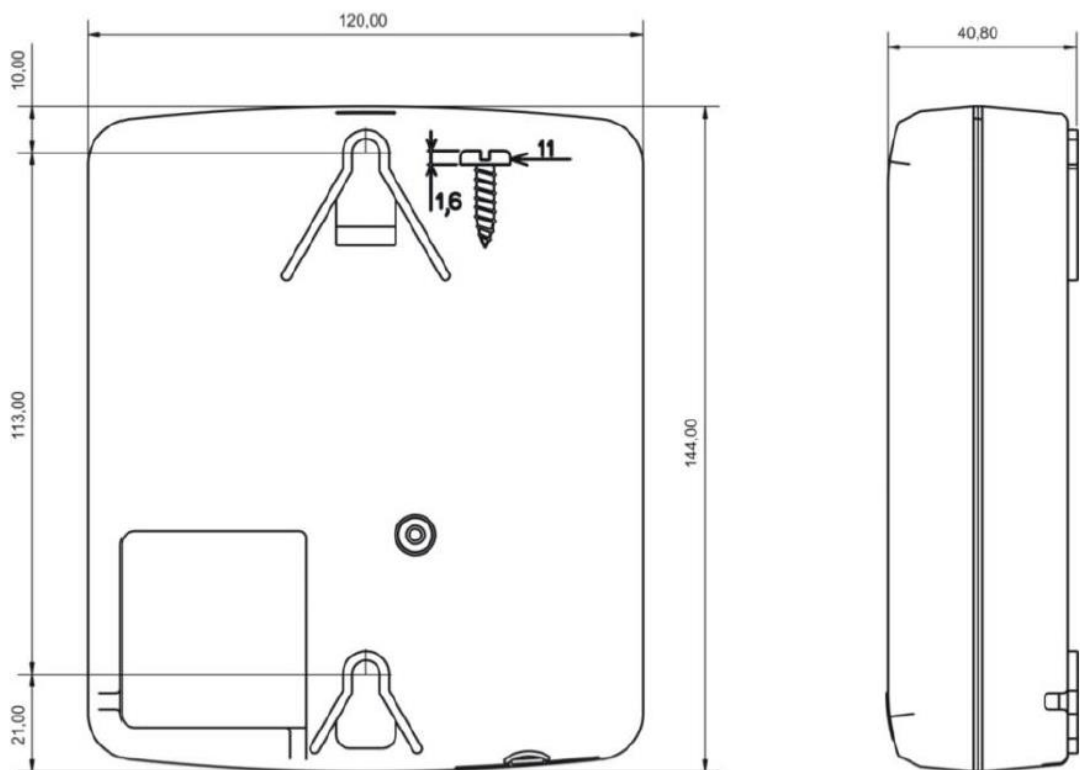
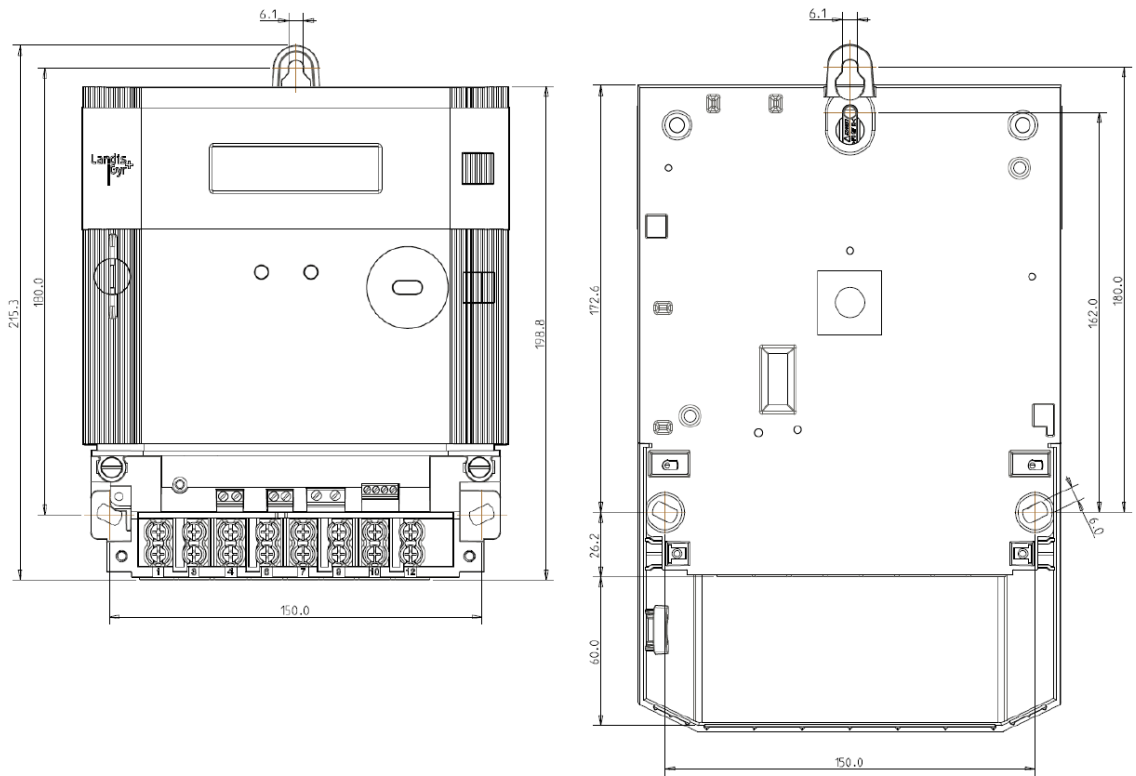


Figure 2 (Above) Dimensions of the P160 PLC Customer Interface Unit

### 3 Meter Programming

Type of meter:	E460S, G3-PLC, 3ph SMART + P160 CIU
Supply Group Code:	(SGC 000100)
Tariff Index:	(01)
Trip Current:	(100A)
Pre-loaded credit:	(50kWh)
Tamper Sensing:	Enabled
TID:	Key Revision 2

## **ITEM 5**

### **1 Maximum Demand Meter**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 Landis+Gyr E650 ZMD405C or approved equivalent, shall be supplied by service provider.

E650 is the most proven meter, which achieves maximum performance in all industrial and commercial application areas thanks to its unique modular architecture, exceptional feature set and high interoperability.

#### 1.3 The meter must offer the maximum flexibility through unique communication modularity, high interoperability and a comprehensive functionality set, which includes:

1.3.1 Maintenance-free and robust long-life design in electronics and mechanics;

1.3.2 Lowest failure rate in the market;

1.3.3 More than 30 different communication options;

1.3.4 Extensive functionality covering a broad range of applications;

1.3.5 Installation support and anti-tampering features;

1.3.6 Built-in smart grid functionality.

#### 1.4 Only complete availability of reliable metering data guarantees an efficient billing process therefore the meter must provide Enhanced communication capability through combined IEC 1107 and DLMS™ protocols.

#### 1.5 An optimal data flow must be archived through the built-in communication interface or by readily interchangeable communication units.

#### 1.6 Exceptional functionality for demanding Industrial and Commercial metering:

##### 1.6.1 Billing Data management:

1.6.1.1 Large variety of registers to track and record the measured quantities you require

1.6.1.2 High flexibility to link register values

##### 1.6.2 Network monitoring:

1.6.2.1 Monitor instantaneous values against threshold and record deviations in a snapshot event log

1.6.2.2 Monitor and record disturbances for analysis and preventive network maintenance

1.6.2.3 Protect your assets, e.g. transformers, against overload with real-time alarm information through SMS

1.6.2.4 Detect tampering attempts and trigger real-time alarms (SMS)

##### 1.6.3 Adaptation and Installation support:

1.6.3.1 Smart installation support tools to avoid errors, simplify installation and service processes

1.6.3.2 A set of powerful software tools (MAP Suite) to customise meter to your application needs, e.g. time-of-use tables, billing lists, profile memory, remote parameter modification, etc.

##### 1.6.4 Smart Grid applications:

1.6.4.1 Additional auxiliary power supply to assure data reading during power down phases

1.6.4.2 Power quality monitoring functions with alarm and log features

- 1.6.4.3 Real-time alarm system (SMS)
- 1.6.4.4 Boolean I/O control functions to link and combine measured quantities

## 1.7 Basic Functionality:

Quality and Safety: The extensive basic functionality must meet all major IEC standards applicable to the respective requirements.

### 1.7.1 Electronics:

- 1.7.1.1 Wide-voltage power supply
- 1.7.1.2 Large LCD display
- 1.7.1.3 Up and down buttons for display
- 1.7.1.4 Optical button for the display
- 1.7.1.5 Utility sealed reset button
- 1.7.1.6 Optical interface (IEC 62056)
- 1.7.1.7 Optical test output
- 1.7.1.8 Three control inputs
- 1.7.1.9 Two output contacts

### 1.7.2 Recording:

- 1.7.2.1 8 measurement channels with total register
- 1.7.2.2 24 energy registers
- 1.7.2.3 Stored values register
- 1.7.2.4 9 operating time registers
- 1.7.2.5 Event log

### 1.7.3 Functions:

- 1.7.3.1 Installation support on display
- 1.7.3.2 Set mode via buttons
- 1.7.3.3 Real-time clock with power reserve
- 1.7.3.4 Instantaneous voltage values
- 1.7.3.5 Voltage monitoring
- 1.7.3.6 Gregorian and Persian calendar
- 1.7.3.7 Remote control of output contacts

### 1.7.4 Housing:

- 1.7.4.1 Glass fiber reinforced, antistatic
- 1.7.4.2 Crystal clear, unbreakable windows
- 1.7.4.3 Wiring diagram on faceplate
- 1.7.4.4 Utility sealed battery box

## 1.8 Basic Configuration

### 1.8.1 Application

- 1.8.1.1 High voltage
- 1.8.1.2 Medium voltage
- 1.8.1.3 Low voltage

### 1.8.2 Connection Type

- 1.8.2.1 Current Transformer connected

- 1.8.3 Metering accuracy (active/reactive energy)
  - 1.8.3.1 Class 0.5/1.0 MID C
- 1.8.4 Energy Type
  - 1.8.4.1 Active energy
  - 1.8.4.2 Reactive energy
  - 1.8.4.3 Apparent energy
- 1.9 Additional Functionality
  - 1.9.1 Tariff functions
    - 1.9.1.1 Average demand
    - 1.9.1.2 Time-of-use (TOU) tables
    - 1.9.1.3 Programmable matrix-based mixes control
  - 1.9.2 Measured Values
    - 1.9.2.1 Power factor
    - 1.9.2.2 Instantaneous values for current, phase angle, frequency, power factor
  - 1.9.3 Recording
    - 1.9.3.1 24 demand registers
    - 1.9.3.2 2 power factor register
    - 1.9.3.3 2 independent load profiles (billing and power quality monitoring) with integration period from 1' up to 60' minutes
    - 1.9.3.4 26-channel profile memory
  - 1.9.4 Special functions
    - 1.9.4.1 Monitoring for power, current, power factor
    - 1.9.4.2 Backlit and LED Alert programmable display
    - 1.9.4.3 CT/VT error correction
    - 1.9.4.4 THD measurements and calculation of losses (Transformer and Line)
    - 1.9.4.5 Detection of strong magnetic fields
    - 1.9.4.6 Opening detection of terminal cover
  - 1.9.5 Extension boards (only one possible)
    - 1.9.5.1 6 outputs
    - 1.9.5.2 2 control inputs, 4 outputs
    - 1.9.5.3 4 control inputs, 2 outputs
    - 1.9.5.4 4 active inputs, 2 relay outputs 8A
    - 1.9.5.5 3 control inputs, 2 relay outputs, auxiliary power supply
    - 1.9.5.6 4 outputs, various auxiliary power supply

## **ITEM 6**

### **1 Landis+Gyr Modem Specification For E650 Maximum Demand Meter.**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 E65C CU-L52 – Technical data

##### 1.2.1 Design

##### 1.2.1.1 Product type options

Type	LTE Modem	RS-485
CU-L52	X	X

##### 1.2.1.2 Supported communication protocols

- IEC 62056-21 and DLMS
- TCP/IP
- IPT (according to DIN 43863-4)

##### 1.2.1.3 Fitting

- Directly in meter (E650 ZxD300/400xT or E850 ZxQ)
- In CU adapter CU-ADP2 (for other meters)

##### 1.2.1.4 Features

- EMC conformance for the combination of meter and modem for electrical metering equipment and industrial environments
- Two independent channels for meter access
- Configuration without additional software tools other than .MAP110 Service Tool
- Configuration using an optical head only
- Remote updatable firmware for the microcontroller

#### 1.2.2 Power consumption

##### 1.2.2.1 Maximum active/apparent power

- 4.0 W/7.3 VA

#### 1.2.3 LTE modem

##### 1.2.3.1 Operating modes

- GPRS or LTE

### 1.2.3.2 Standards and approvals

Complies with the essential requirements of the 2014/53/EC directive (Radio Equipment Directive)

- RED Article 3.2
  - ETSI EN 301 511 v9.0.2
  - ETSI EN 301 908-1 v11.1.1
  - ETSI EN 301 908-13 v11.1.1
- RED Article 3.1b
  - ETSI EN 301 489-1 v2.1.1
  - ETSI EN 301 489-52 v1.1.1
- Health RED Article 3.1a
  - EN 62311:2008
- Safety IEC 60950
  - 3GPP Release 9 compliant
  - GPRS class 10 (maximum)
  - LTE category 1

### 1.2.3.3 Functions

- Time window and time master functions
- SMS forwarding of alarm messages (only if fitted in meter)
- Modem initialisation and data flow control
- Hardware watchdog
- Communication monitoring and logging

### 1.2.3.4 LTE module

- Type Telit LE910-EU1
- Frequency bands
  - GSM/GPRS bands GSM900 and GPRS1800
  - LTE bands FDD B1 (2100), B3 (1800), B7 (2600), B8 (900), B20 (800) MHz
- Output power
  - Class 4 (2 W) at GSM 900 MHz
  - Class 1 (1 W) at GPRS (DCS) 1800 MHz
  - Class 3 (0.2 W, 23 dBm) at LTE

### 1.2.3.5 SIM card

- SIM 1.8/3 V exchangeable from outside
- Size mini-SIM (2FF)

## 1.2.4 RS-485 interface

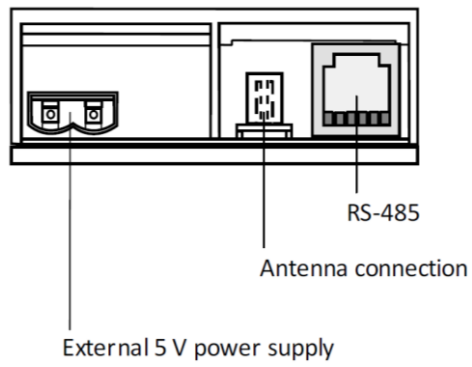
### 1.2.4.1 Characteristics

- Symmetrical, serial, asynchronous, bi-directional interface (master or slave depending on parameterisation)
- Standard ISO 8482
- Maximum number of slaves 31
- Maximum transmission rate 57.6 kbps
- Maximum line length
  - Up to 250 m at max. 57.6 kbps, max. 31 slaves
  - Up to 550 m at max. 38.4 kbps, max. 31 slaves
  - Up to 1000 m at max. 19.2 kbps, max. 15 slaves



- 1.2.5 LED displays
  - 1.2.5.1 LEDs RX and TX
    - Indication of data flow and field strength level
  - 1.2.5.2 LED CON
    - Indication of connection status
  - 1.2.5.3 LED MODE
    - Indication of operating mode (GSM, GPRS, LTE)
- 1.2.6 Environmental influences
  - 1.2.6.1 Temperature range according to IEC 62052-11
    - Operation -40°C to +70°C
    - Storage -40°C to +85°C
- 1.2.7 Insulation strength to meter
  - 1.2.7.1 Insulation strength
    - 4 kV at 50 Hz for 1 min
    - Insulation spacing at least 6.3 mm
- 1.2.8 Weight and dimensions
  - 1.2.8.1 Weight
    - Approximately 100 g
  - 1.2.8.2 Width / height / depth
    - 65 mm / 103 mm / 38 mm
- 1.2.9 Connections
  - 1.2.9.1 Connection to meter or CU adapter
    - 10-pin connector at rear of CU
  - 1.2.9.2 External 5 V power supply (for E650 meters only)
    - 2-pin connector; recommended for reliable modem operation in M circuits when the phase - neutral supply voltage to the meter is between 58 V nominal and 64 V nominal, and where there is only one phase present.
    - Landis+Gyr should be consulted, if supply voltage to the meter is between 100 V nominal and 115 V nominal, and there are only one or two phases present.
    - The maximum supply voltage must be below 150 V for both
      - phase - phase and
      - phase - neutral connections.
    - The statements above apply to E650 Series 3 meters (firmware version B31 or higher).
    - Information on previous versions can be found in the User Manual.
  - 1.2.9.3 Antenna connection
    - MCX socket
    - Tear-off strength < 390 N

### 1.2.9.4 Terminal layout



### 1.2.9.5 RS-485 interface (RJ12 socket)



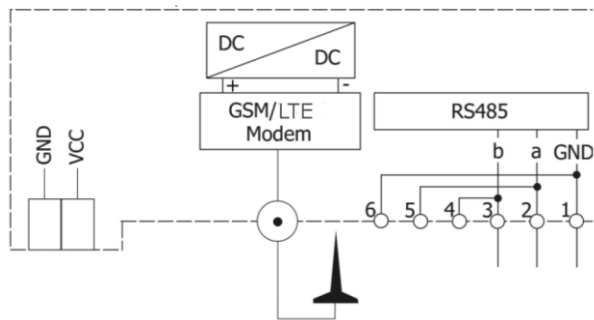
### 1.2.10 Material

#### 1.2.10.1 Case

- Polycarbonate

### 1.2.11 Connection diagram

#### 1.2.11.1 Example CU-L52



## **ITEM 7**

### **1 2S1B Elster A1140/A1160/A1700 GSM/GPRS Modems for Remote Data Applications**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 General Description

The 2S1B range of modems are custom designed for use on A1140 and A1700 energy meters from Elster. Housed in a carrier that fits under the terminal cover of the meter.

The modem powers directly from the RS232 port of the meter , or is supplied with a wide range power supply module for use with the A1700, making it compatible with LV and HV metering installation supply voltages.

Complete with programmable intelligent power management.



#### 1.3 Features

- Separate application processor (ARM7) manages GSM module.
- Automatically connects to your APN.
- Automatically switches between CSD and GPRS connections.
- Implements both TCP server and client modes
- Display of GSM signal strength.
- Remote management via SMS including modem configuration (APN parameters, etc) and modem status (signal strength, etc).
- Supervises network GPRS connection.
- Intelligent power management with additional watchdog processor to manage GSM engine (loss of coverage, locked calls, periodic reset).
- AT command set.

#### 1.4 Specification

- Housing
  - Purpose made plastic carrier (fits under terminal cover): 130 x 55 x 25 mm.
- Connections
  - Antenna: SMA (female)
  - Data: RS232 – RJ12  
RS485 – RJ12 (optional)
- Power Supply
  - A1700 (option): Universal input 90 - 260 Vac

- A1140 / A1160: Powered by meter RS232 port.
- Temperature range
  - -10 to +55 Degrees Celsius.

1.5 GSM Network Features

- GPRS Class 10 (2G)
- Dual-Band: 900/1800 MHz.
- Output power: 2W (GSM900)  
1W (GSM1800)

1.6 Antenna

- Whip Type: Magnetic Base, 5dBi Gain with 3m Cable.

1.7 Optional Antenna

- Patch Type: Pole Mount, 10dBi Gain with 0,3m Cable.  
-Extention Cable Required
- Yugi type: Pole Mount, 12dBi Gain with 9.5m Cable
- Vandal Proof Type: Panel Mount, 0dBi Gain with 3m Calbe

1.8 Software

Configuration tool with the use of flexible user defined scripts to automate/standardise modem setup.

1.9 Modem Specification Table

Meter Type	Modem Part Ref
A1700	2S1B Modem with Aux PSU
A1140	2S1B Modem
A1160	2S1B Modem (A1160)

1.10 Application

**Elster A1700**



## ITEM 8

### 1 Data Concentrator

#### 1.1 Names

Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.

#### 1.2 General

DC450v3 G3-PLC handles the communication between the Head-End System (HES) and the G3-PLC metering device. It reads metering data automatically and can send data directly to the system or store it for later retrieval by HES.

DC450v3 G3-PLC communicates with the metering device using PLC communication (G3-PLC OFDM protocol in the CENELEC A or G3-500 band). It transfers messages to and from the Head-End System using the standard TCP/IP communication protocol over an Ethernet connection or with its pluggable 2G/3G or 2G/3G/4G modem.

### 2 Technical Specifications

#### 2.1 DC450v3 G3-PLC Java

<b>Power Supply</b>	<ul style="list-style-type: none"> <li>Operating voltage: 1 x 230 V or 3 x 230/400 V</li> <li>Earthing systems (IEC 60364): TN and TT</li> <li>Voltage range: 0.8 Un to 1.15 Un</li> <li>Frequency: 50 Hz</li> <li>Power consumption in normal operation: &lt; 8 W / 40 VA</li> <li>Reserve running (accuracy at 23 °C) acc. to EN 62054-21</li> <li>Back-up time (supercapacitor) when fully charged: 7 days</li> </ul>	<ul style="list-style-type: none"> <li>Safety Extra-Low Voltage (SELV)</li> </ul>
<b>G3-PLC Interface</b>	<ul style="list-style-type: none"> <li>3-phase PLC signal injection</li> <li>PLC communication in the CENELEC A or G3-500 band</li> <li>G3-PLC as per ITU-T G.9903 (02-2014)</li> <li>Incorporates 6LoWPAN adaptation layer to transmit IPv6 packets over power line channels</li> <li>IEEE 802.15.4-based MAC layers enable interoperability</li> <li>Plug-and-play installation</li> <li>COSEM application layer 62056-5-3</li> <li>COSEM application model 62056-6-1 (OBIS) and 62056-6-2 (interface classes)</li> <li>COSEM transport layer 62056-4-7</li> </ul>	<b>Electromagnetic Compatibility and Safety</b> <ul style="list-style-type: none"> <li>EMC according to EN 50065-1, EN 50065-2-3 (PLC CENELEC A band) or EN 55032, EN 55024 (PLC G3-500 band).</li> <li>Electric strength: 3.48 kV rms (60 s) / 5.4 kV rms (5 s) (EN 61010-1)</li> <li>Electrostatic discharge: ±8 kV contact, ±8 kV air discharge (EN 61000-4-2)</li> <li>Surge: ±4 kV, 1.2/50 µs (EN 61000-4-5)</li> <li>Burst: 2 kV (EN 61000-4-4)</li> <li>Impulse voltage: 8 kV, 1.2/50 µs (EN 61010-1)</li> <li>Radio frequency electromagnetic field: 10 V/m (EN 61000-4-3)</li> <li>Safety according to IEC 61010-1</li> <li>Protection class: class II</li> <li>Overvoltage category: IV</li> </ul>
<b>External Connections</b>	<ul style="list-style-type: none"> <li>RS-485, Safety Extra-Low Voltage (SELV), max. 24 V</li> </ul>	<b>Environmental Influences</b> <ul style="list-style-type: none"> <li>Temperature range <ul style="list-style-type: none"> <li>Operation –25 to +70 °C</li> <li>Storage –40 to +85 °C</li> <li>Other temperatures possible with external housing and warming/cooling</li> </ul> </li> <li>Ingress protection according to IEC 60529: IP 51</li> <li>Max. operating altitude: 2000 m</li> <li>Humidity range (operation and storage): 0-95%</li> <li>Pollution degree: 2</li> </ul>

<ul style="list-style-type: none"> <li>• 2 x LAN (RJ45) interfaces (10/100 Base-T) acc. to IEEE 802.3 <ul style="list-style-type: none"> <li>○ LAN1 to connect to the Head-End System</li> <li>○ LAN2 for local web-interface access</li> </ul> </li> <li>• RoHS II compliant</li> </ul>	<b>Case</b> <ul style="list-style-type: none"> <li>• Material: Polycarbonate (10% glass fibre filler)</li> <li>• Installation: On wall, DIN rail or equivalent</li> <li>• Flammability class: UL94 5VB</li> <li>• Height 184 mm</li> <li>• Width 175 mm</li> <li>• Depth 72 mm (without sealing)</li> </ul>
<b>Dimensions</b> <ul style="list-style-type: none"> <li>• Weight max 760 g</li> </ul>	

## 2.2 Pluggable modules

<b>2G/3G Modem Characteristics</b> <ul style="list-style-type: none"> <li>• Dual-band UMTS: 900/2100 MHz</li> <li>• Dual-band GSM: 900/1800 MHz</li> <li>• UMTS 3GPP release 5</li> <li>• GSM release 99/release 4</li> <li>• EDGE (E-GPRS) multi-slot class 10</li> <li>• GPRS multi-slot class 10</li> <li>• SIM card interface 1.8 V and 3 V</li> <li>• SMA connector for the antenna</li> </ul>	<b>2G/3G/4G Modem Characteristics</b> <ul style="list-style-type: none"> <li>• Penta-band LTE: 800/900/1800/2100/2600 MHz</li> <li>• Dual-band UMTS: 900/2100 MHz</li> <li>• Dual-band GSM: 900/1800 MHz</li> <li>• LTE FDD, 3GPP release 9 compliant</li> <li>• GSM/EDGE and UMTS/HSPA fallback support</li> <li>• GPRS/EGPRS multi-slot class 33</li> <li>• GPRS multi-slot class 10</li> <li>• SIM card interface 1.8 V and 3 V</li> <li>• SMA connector for the antenna</li> </ul>
<b>Approved Antennas*</b> 2G/3G Antennas GSM 900/1800, UMTS 900/2100 <ul style="list-style-type: none"> <li>• 2G/3G Antenna no. P000217710 (SMA male stub antenna delivered with the module): Taoglas ref. TG.22.0111</li> <li>• Flat Antenna GSM 900/1800 no. 74 507 0097 0 (SMA male connector, cable 3.0 m): ANTENNENSYSSTEME – 700 449 402, SMA(m), 3.0 m</li> <li>• Flat Antenna GSM 900/1800 no. 74 507 0098 0 (SMA male connector, cable 10 m): ANTENNENSYSSTEME – 700 449 404, SMA(m), 10.0 m</li> </ul>	<b>Approved Antennas*</b> 2G/3G/4G Antennas (LTE bands B1, B3, B7, B8, B20 & B28) <ul style="list-style-type: none"> <li>• AMC-ANT234GTB01-A (stub antenna delivered with the module)</li> <li>• External LTE antenna no. P000348220 Smarteq LP701 with SMA(m) connector and 3.0 m cable</li> <li>• External LTE antenna no. P000348540 Smarteq LP701 with SMA(m) connector and 10.0 m cable</li> </ul>
<b>*The use of any other antenna is prohibited.</b>	<b>*The use of any other antenna is prohibited.</b>

## 2.3 DC450v3 G3-PLC Type Designation

F	E	U	J	0	0	0	v3
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2.4 Product Dimensions

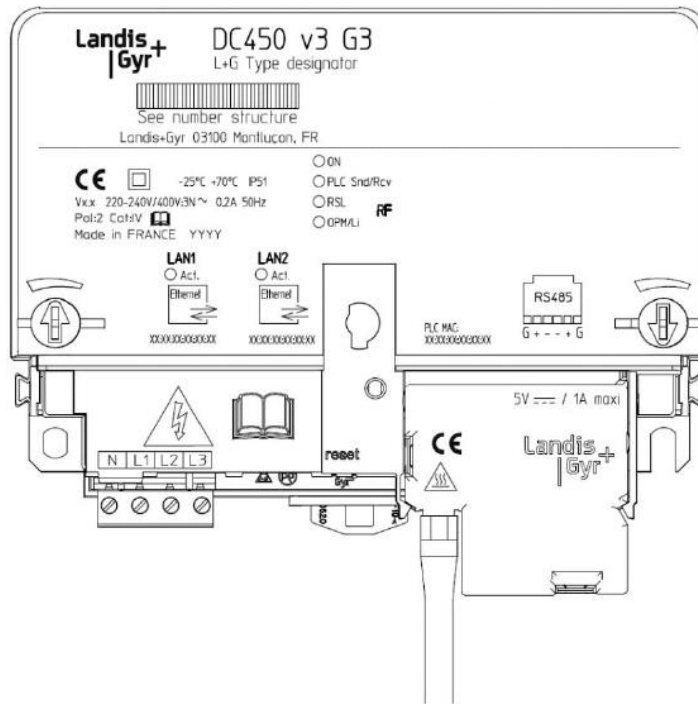


Figure 1. DC450 faceplate

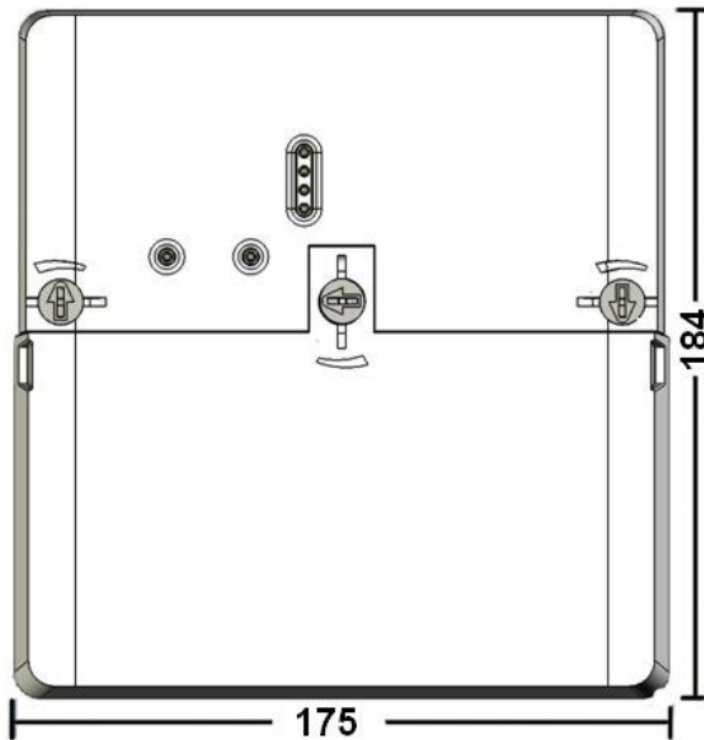


Figure 2. DC450 dimensions

## **ITEM 9**

### **1 Conventional Single-Phase meter without Customer User Interface**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 General

The single phase BS meter is part of the E460 family of smart prepayment meters and is an advanced single-phase, multi-function, keypad-based, smart prepayment meter. The E460 solution incorporates powerful e-metering functionality combined with STS prepayment and uses open standard OFDM G3-PLC communications between the meter, the P160 customer interface unit and a PLC Data Concentrator.

The E460 solution is one of the world's first truly open standard smart STS prepayment meters, making use of OFDM G3-PLC, dlms/COSEM and STS prepayment standards to ensure future proof open communications standards for the electricity utility for years to come.

#### 1.3 Overview

The E460S single phase BS split prepayment meter is based on Landis+Gyr's existing and already proven smart meter solutions and incorporates powerful smart metering functionality combined with STS prepayment.

The E460 solution is based on open standards, using G3-PLC OFDM and dlms communications between the meter, P160 Customer Interface Unit and the Data Concentrator.

The E460S 1ph BS meter may be utilised in an off-line mode as a stand-alone split prepayment meter, or in an on-line mode as part of an end to end two-way AMI smart metering solution.

#### 1.4 Features

- Single-phase, 2 wire smart prepayment PLC meter which may optionally be used with a P160 G3-PLC Customer Interface Unit
- Integrated OFDM G3-PLC transceiver for two-way communications between the E460 meter, the P160 Customer Interface Unit and the DC450 Data Concentrator
- Remote communications using G3-PLC Data Concentrator via WAN to the Device Manager of the AMI system
- Local communications using either RS485 port with external modem or Eskom Type B Interface build options, for point to point communications
- Open standards for interoperability
  - Open STS prepayment (IEC62055-41/51)
  - dlms/COSEM
  - Open International standard for PLC communications - OFDM G3-PLC
- Terminal format - 1 phase BS symmetrical
- Long and short terminal [default] cover options
- Event trigger and fraud logs with date and time stamps in the on-line mode
- Voltage threshold settings with events logged when thresholds are exceeded
- Remote disconnect and reconnect in the on-line mode (E460S type)
- Extensive load switch control functions including demand and fuse supervision
- Four quadrant measurement with separate import and export registers
- Changeable metering modes by means of dlms special commands
- Modes supported: kWh transfer STS Prepayment, Smart Prepayment TOU with STS Currency token transfer TOU and Post-payment



- Emergency credit
- Real Time Clock – synchronised by the Data Concentrator in the on-line configuration mode
- Time of Use, with STS currency token transfer option in the prepayment mode
- Meter has local keypad and backlit LCD display
- The meter's LCD display supports 8 digits for register values, 6-digit index field, prepayment credit wedge, currency or kWh indicator, phase and energy direction, alarm and configurable arrow indicators and load switch status
- The meter has LED indications for Rate, Supply Control Switch status, meter general status indicator and PLC communications status
- Meter keypad supports standard 12-key keypad as well as special smart keys for advanced functionality

### 1.5 Split Metering Functionality

The split metering solution consists of two parts, the E460S 1ph BS meter and the P160 customer interface unit.

Communication between the meter and the customer interface unit is by means of G3-PLC Power Line Carrier (PLC), using existing household wiring; no additional communication wires are required.

The E460S 1ph BS meter is typically installed in a secure street kiosk. When used in conjunction with the DC450 G3-PLC Data Concentrator or point to point communication using an external modem and the meter's RS485 port, the meter is able to operate in an on-line mode.

### 1.6 Advanced Metering Infrastructure (AMI)

The E460S 1ph BS meter is capable of “upstream” PLC communication to a Data Concentrator typically installed at a street kiosk, low-voltage distribution transformer or mini sub-station and “downstream” PLC communications to the P160 Customer Interface Unit.

When the DC450 Data Concentrator or point to point communications using an external modem and the RS485 interface and back-end (Head-end system) is in place, the E460S 1ph BS meter forms parts of an end-to-end Advanced Metering Infrastructure (AMI) system and powerful e-metering and prepayment capability is able to be supported.

When the E460S 1ph BS meter is part of the AMI infrastructure, it supports extensive and powerful e-metering functionality, such as:

- Two way communications
- Real time clock synchronised by the system
- Post-payment or prepayment modes
- Standard kWh STS token transfer or smart prepayment with currency TOU STS prepayment token
- Time of use
- Load profiles and maximum demand
- Remote disconnect and reconnect
- Quality of Supply functionality such as voltage supervision and Mains Quality profiles
- Extensive events and fraud notifications

Using a special set of dlms commands, the E460S meter modes can be switched between post-payment and prepayment modes.

## 1.7 Powerful smart e-metering functions

The meter is able to be configured both locally via the IEC 62056-21 optical interface using Landis+Gyr's dotMAP meter configuration suite of software, and remotely via the Head-end System when in the on-line mode.

The meter's Real Time Clock (RTC) is adjustable locally via the optical interface using the Landis+Gyr dotMAP110 service tool or remotely synchronised by the Head-end System if the meter is used in an on-line configuration.

The meter supports a comprehensive set of Time of Use (TOU) configuration options including active season tables, weekly tables, daily tables and special days. This smart mode supports prepayment TOU with STS currency token transfer. Up to 4 Time of Use rates may also be configured.

The meter supports a wide range of configurable energy registers. Twelve total energy registers are available, with a further 24 energy registers which can be configured to store available values.

The meter further supports configurable demand registers with configurable integration period.

Various fraud detection log trigger items may be selected for the fraud log, such as terminal cover sensing, strong DC magnetic field detected, measurement software changed, event log cleared and more.

A range of quality of supply features are also supported such as voltage supervision with configurable over and under voltage threshold limits and changeable parameters for long duration power failures and minimum power factor threshold.

The E460S 1ph BS also has a comprehensive list of power quality event log trigger sources that can be selected as desired, for example under and over voltage, current without voltage and power factor threshold exceeded.

Features supporting the E460S 1ph BS meter's supply control switch, include remote or local (using dotMAP110 service tool) meter load switch disconnection or re-connection and disconnect when demand or fuse supervision monitor thresholds exceeded.

The meters LCD offers seven arrow icons which are individually configurable to indicate by selectable control sources. There are further options to display the arrow icons as either steady state or blinking. In addition, a configurable operating display list that cycles on the meters display, or a standard display list that may be stepped through by entering the display menu on the meter keypad.

## 1.8 Anti-tamper Features

The meter supports sensing for both meter enclosure opening and meter terminal cover removal with zero power sensing for enhanced revenue protection.

The meter enclosure supports an optional factory or utility seal for the enclosure and rear sealing plugs that seal the meter for life.

## 2 Technical Specifications

### 2.1 E460S 1ph BS G3-PLC (MCA 110 C B xx)

<b>General Overview</b>	Active power at Un	<2W
	Apparent power at Un	<12VA
<b>Compatible network</b>		
Single phase, two-wire	<b>Power consumption in current circuit</b>	
	Apparent power at Ib (max)	<7VA
<b>Enclosure format</b>		
Single phase BS, symmetrical terminal format. Short terminal standard, long cover optional	<b>Environmental Influences</b>	
<b>IEC Specific Data</b>	<b>Area of application</b>	
	Indoor meter (according to IEC62052-11)	
<b>Rated voltage (Un)</b>	<b>Temperature range</b>	
Wide-range: 120 to 240 Volts AC	Operation meter	-10°C to +55°C
	Storage	-40°C to +70°C
<b>Frequency</b>		
50Hz	<b>Relative humidity</b>	
	Maximum	≤ 95%; Annual mean 75%
<b>Extended operating voltage range</b>		
Voltage (for Un = 230V), 50% to 120% Un i.e.>115V	<b>Degree of Protection (according to IEC60529)</b>	
Voltage (for Un = 120V), 80% to 120% Un i.e.>90V	IP Rating	IP54 <sup>13</sup>
<b>Base current (Ib)</b>	Product is for indoor use and must be installed in a suitable enclosure when used outdoors	
5 Amps		
	<b>Electromagnetic Compatibility</b>	
<b>Maximum current (Imax)</b>		
100 Amps	<b>Electrostatic discharges (IEC61000-4-2)</b>	
	Air discharge	15 kV
<b>Short circuit current</b>		
30 x Imax (≤10 ms according to IEC 62053-21) 3kA	<b>Electromagnetic RF fields (IEC 61000-4-3)</b>	
r.m.s. (Utilisation Category UC2 according to IEC 62055-31)	80 MHz to 2 GHz	10 V/m with load 30 V/m no load
<b>Meter constant (LED flash rate)</b>	<b>Fast transient burst (IEC61000-4-4)</b>	
1000 impulses / kWh	Current / voltage under load (IEC 62053-21)	4 kV
1000 impulses / kVAh <sup>14</sup>		
	<b>Radio interference suppression (IEC / CISPR 22)</b>	
<b>Measurement Accuracy</b>	Complies with requirements for CISPR 22 and CENELEC EN 50065-1	
Active energy, according to IEC62052-11/62053-21		
Class 1	<b>Insulation Strength</b>	
Reactive energy, according to IEC62053-23		
Class 3 for Ib = 5A	<b>Insulation System Classification</b>	
	(According to IEC 62052-11)	Protective Class II
<b>Measurement behaviour</b>		
Starting current (Active)		
≤ 0.004 Ib for Class 1	<b>Insulation Level</b>	
Starting current (Reactive)		
≤ 0.004 Ib for Class 3		4 kV rms @ 50Hz for 1 minute
<b>General Data</b>		

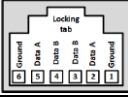
<sup>13</sup> Degree of Protection rating of IP54, is applicable with long terminal cover fitted.

<sup>14</sup> In kVAh mode

<b>Operating Behaviour</b>			
Power consumption in voltage circuit			
Overvoltage withstand		Type Symmetrical, 4 terminals	
440 Vac for 48 hours, 600 VDC for 1 minute			
<b>Surge Immunity</b>		<b>Terminal Details</b>	
Voltage impulse withstand (Differential)		Material of Terminal Mild Steel (Passivated)	
Meets the requirements of IEC 62052-11		Type Double screw (M6) cage terminal	
		Diameter 9.5 mm	
Current impulse withstand		Minimum conductor cross-section 4 mm <sup>2</sup>	
		Maximum conductor cross-section 35 mm <sup>2</sup>	
According to: IEC 62052-11, SANS 61643-1		For wires with small conductor cross-sections ( $\leq 6$ the mm <sup>2</sup> ), the connecting line must be placed carefully in middle of the terminal, so that it cannot move sideways when tightening the terminal screws. When tightening, ensure that the connecting line remains between the copper inside the terminal and the screw. Stranded wires must be fitted with ferrules.	
With external arrester		– Type of screw:	
Withstand rating 30 kA, 8/20 $\mu$ s		• Steel zinc-plated Slotted screws (default)	
Without external arrester			
Withstand rating 10 kA, 8/20 $\mu$ s			
<b>Calendar Clock</b>		<b>Communication Interfaces</b>	
Normal operation		Optical Communications Port	
Accuracy (at +23°C) $\pm 0.2$ s/day		According to IEC 62056-21 dlms/COSEM compliant	
Reserve running		G3-PLC Interface	
Accuracy (at +23°C) <1 s/day (EN 62054-21 requirement for time switches: 1.0s)		Frequency band CENELEC A OFDM G3-PLC with COSEM/DLMS communication protocol according to EN50065-1 supporting the following OSI Layers:	
Operational Reserve		<ul style="list-style-type: none"> <li>• ITU-T G.9903 physical layer for modulation, adaptive tone mapping and notching</li> <li>• MAC layer IEEE 802.15.4; time domain and collision management; CSMA/ARQ</li> <li>• 6LoWPAN adaptation sub layer Plug and Play network management to choose “Best Path” (Full Mesh Support)</li> <li>• IPv6 IETF RFC4291/4862 addressing and networking</li> <li>• DLMS application layer 62056-53</li> <li>• COSEM application model: 62056-61 (OBIS) and 62056-62 (interface classes)</li> </ul>	
With super-capacitor minimum 36 hours <sup>15</sup> (RTC Synchronised by Data Concentrator)		Range: Typically >200m with G3-PLC repeater functionality	
<b>Rate of Use Output</b>			
Optical Test output (Active or reactive)			
Type Visible Red LED			
Meter constant <sup>16</sup> 1 000 pulses/kWh			
1 000 pulses/kVAh			
<b>Meter Faceplate Indications</b>			
Meter Status Indication			
Type Visible Yellow LED			
PLC Status Indication			
Type Visible Green LED			
Meter Supply Control Switch Indication			

<sup>15</sup> IEC requirements for operational reserve

<sup>16</sup> Configurable for kVAh

Type	LCD Icon & Visible Red LED	RS485 Communications Port <sup>17</sup>
<b>Phase Connections</b>		Type: RJ11, RS485 bidirectional, asynchronous interface, galvanically isolated (Protective class II)
<b>Format</b>	connected to an external modem to perform readouts and parameterising.	Up to 32 meters can be connected to one line and then
		<b>Meter Enclosure Material</b>
<b>Supply Control Switch</b>		<b>Material (Housing)</b>
<b>Contact Data</b>	According to IEC 62055-31 for Utilisation Category UC3	Type: Polycarbonate, flame-retardant
<b>Inputs and Outputs</b>		Resistance to spread of fire
<b>Pulse Input</b>		UL94-V0 rated @1.5mm. No toxic gases emitted: 'Green Material'
Type	S0	<b>Weights &amp; Dimensions</b>
Terminals	30 (+) and 31 (-)	<b>Dimensions<sup>18</sup></b>
According to IEC 62053-31	class A	Width/Height/Depth 135 mm / 195 mm / 67 mm
Configurable as pulse counter or alarm input		<i>Please also refer to dimensional drawings</i>
<b>Output</b>		<b>Weight</b>
Terminals	23 and 24	Including packaging approx.0.8 kg
Type solid-state auxiliary load switch		<b>Sealing</b>
Nominal voltage	230 VAC/DC	Type
Maximum voltage	250 VAC/DC	Meter enclosure
Maximum switching current	90 mA	Terminal Cover
		Utility sealing wires (2 points)
		Long and short (default) covers
		<b>Specifications Compliance &amp; Approvals<sup>19</sup></b>
		IEC 62053-21, IEC62053-23, IEC62055-41 and IEC62055-51, dlms

## 2.2 Meter Type Number Specification

M	C	A	1	10	C	B	G3	RS	D1.3	11	S	00	KP	S2
---	---	---	---	----	---	---	----	----	------	----	---	----	----	----

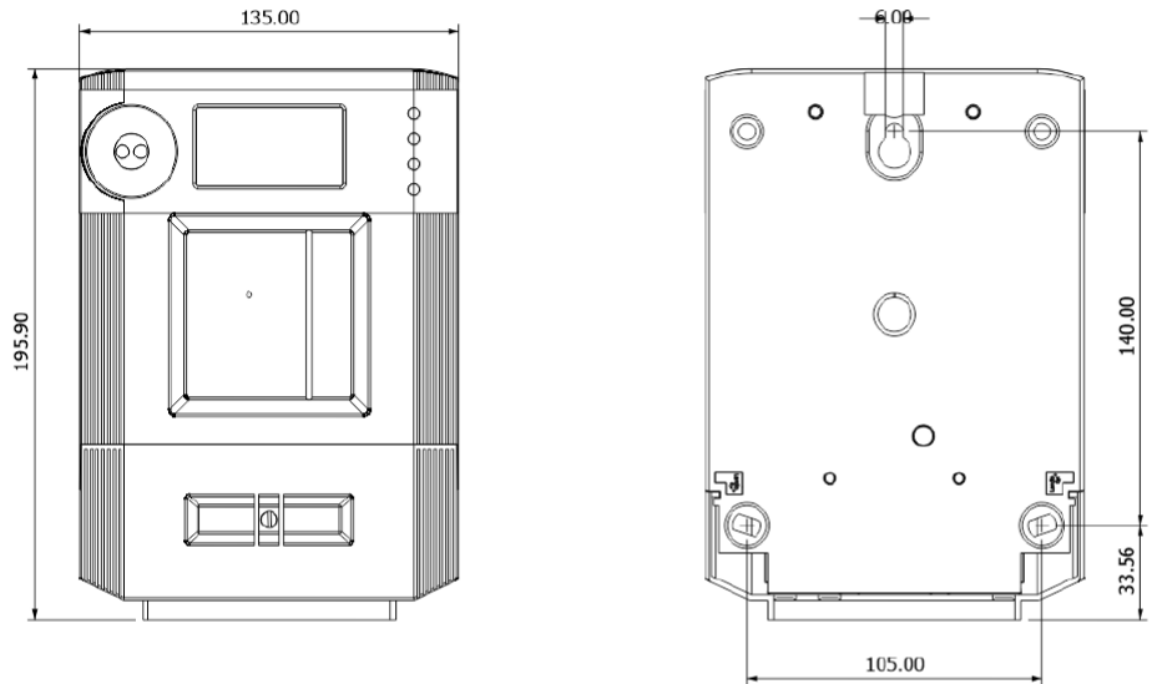
<sup>17</sup> The E460S 1ph BS meter supports either the RS485 or Eskom Type B ports – this must be specified at the time of order

<sup>18</sup> With short terminal cover

<sup>19</sup> Approvals pending

## 2.3 Product Dimensions

Figure 1: (Below) Dimensions of the E460 1ph BS G3-PLC meter



## 3 Meter Programming

Type of meter:	E460 1ph BS, G3-PLC meter
Meter Status:	Conventional / Post-Paid
Supply Group Code:	(SGC 000100)
Tariff Index:	(01)
Trip Current:	(80 A)
Pre-loaded credit:	(0 kWh)
Tamper Sensing:	Enabled
TID:	Key Revision 2

## **ITEM 10**

### **1 Conventional Three-Phase without Customer User Interface**

#### 1.1 Names

**Where names and/or product names and/or product model numbers are mentioned, note that an equivalent product can be submitted for approval.**

#### 1.2 General

The three phase meter is part of the E460 family of smart prepayment meters and is an advanced three-phase, multi-function, keypad-based, smart prepayment meter. The E460 solution incorporates powerful e-metering functionality combined with STS prepayment and uses open standard OFDM G3-PLC communications between the meter, the P160 customer interface unit and a PLC Data Concentrator. Series 2 includes RS485 port to support an under-cover modem for point-to-point communications option.

The E460 solution is one of the world's first truly open standard smart STS prepayment meters, making use of OFDM G3-PLC, dlms/COSEM and STS prepayment standards to ensure future proof open communications standards for the electricity utility for years to come.

#### 1.3 Overview

The E460 three phase SERIES 2 split prepayment meter is based on Landis+Gyr's existing and already proven E460 3ph S1 meter, but with the additional of an RS485 port for point-to-point applications with an external or internal (under cover) modem.

The E460 3ph S2 meter may be utilised in an off-line mode as a stand-alone split prepayment meter, or in an on-line mode as part of an end-to-end two-way AMI smart metering solution, using either G3-PLC communications via a Data Concentrator or point-to-point using the modem and RS485 port.

#### 1.4 Features

- Three-phase, 4 wire smart prepayment PLC meter which works with a P160 PLC Customer Interface Unit
- Integrated OFDM G3-PLC transceiver for two- way communications between the E460 meter, the P160 Customer Interface Unit and the DC450 Data Concentrator
- Local communications using RS485 port with external or under cover modem for point-to-point communications.
- Data Concentrator communications via WAN to the Head-end System (HES)
- Open standards for interoperability
  - Open STS prepayment (IEC62055-41/51)
  - dlms/COSEM
  - Open International standard for PLC communications - OFDM G3-PLC
- Terminal format - 3 phase asymmetrical layout
- Long and short terminal [default] cover options
- Event trigger and fraud logs with date and time stamps in the on-line mode
- Voltage threshold settings with events logged when thresholds are exceeded
- Remote disconnect and reconnect in the on-line mode (E460S type)
- Extensive e-metering load switch control functions including fuse supervision
- Four quadrant measurement with separate import and export registers
- Changeable metering modes by means of dlms special commands
- Modes supported: kWh transfer STS Prepayment, Smart Prepayment TOU with STS Currency token transfer TOU and Post-payment (E460S type)

- Emergency credit
- Real Time Clock – synchronised by the Data Concentrator in the on-line configuration mode
- Time of Use, with STS currency token transfer option in the prepayment mode
- Meter has local LCD display
- P160 CIU has a LCD display with 8 digits for register values, 6 digit index field, prepayment credit wedge, battery indicator for the P160, currency or kWh indicator, phase and energy direction, alarm and configurable arrow indicators and load switch status
- Various options on the P160 Customer Interface Unit for scrolling operating display list or standard display list that may be stepped through with a scroll key-press on the P160

### 1.5 Split Metering Functionality

The split metering solution consists of two parts, the E460 meter and the P160 customer interface unit.

Communication between the meter and the customer interface unit is by means of G3-PLC Power Line Carrier (PLC), using existing household wiring; no additional communication wires are required.

The P160 Customer Interface Unit is compact with a user-friendly keypad and display. It may be installed in any convenient location in the consumer's home where there is an electrical socket outlet. An easily replaceable battery is provided for communicating in the absence of AC mains power e.g. when the meter is out of credit.

The E460 meter contains all critical metering, token decryption, load control and smart meter functionality. It operates independently and is immune to any form of tampering on the Customer Interface Unit.

The E460 3ph meter is typically installed in a secure street kiosk. When used in conjunction with the DC450 G3-PLC Data Concentrator, the meter is able to operate in an on-line mode.

### 1.6 Advanced Metering Infrastructure (AMI)

The E460 solution is capable of "upstream" PLC communication to a Data Concentrator typically installed at a street kiosk, low-voltage distribution transformer or mini sub-station and "downstream" PLC communications to the P160 Customer Interface Unit. Additionally, the use of an external or undercover modem connected to the RS485 port enables point-to-point connection to the AMI system.

When the DC450 Data Concentrator and back-end (Head-end system) is in place, the E460 meter forms parts of an end-to-end Advanced Metering Infrastructure (AMI) system and powerful e-metering and prepayment capability is able to be supported.

When the E460 3ph meter forms part of the AMI infrastructure, it supports extensive and powerful e-metering functionality, such as:

- Two way communications
- Real time clock synchronised by the system
- Remote change of account modes (post-payment or prepayment with E460S)
- Post-payment or prepayment modes supported by the E460S variant
- Standard kWh STS token transfer or smart prepayment with currency TOU STS prepayment token
- Remote disconnect and reconnect supported by the E460S variant
- Event and fraud notifications

Using a special set of dlms commands, the E460S meter modes can be switched between post-payment and prepayment modes.

### 1.7 Powerful smart e-metering functions



The meter is able to be configured both locally via the IEC 62056-21 optical interface using Landis+Gyr's dotMAP meter configuration suite of software, and remotely via the Head-end System when in the on-line mode.

The meter's Real time clock (RTC) is adjustable locally via the optical interface using the Landis+Gyr dMAP110 meter management tool or remotely synchronised by the Head-end System.

The meter supports a comprehensive set of Time of Use (TOU) configuration options including active season tables, weekly tables, daily tables and special days. This smart mode supports prepayment TOU with STS currency token transfer. Four (4) Time of Use rates are the default available for configuration.

The meter supports a wide range of configurable energy registers. Twelve total energy registers are available, with a further 24 energy registers which can be configured to store available values.

The meter further supports configurable demand registers with configurable integration period.

Various fraud detection log trigger items may be selected for the fraud log, such as terminal cover sensing, strong DC magnetic field detected, event log cleared and more.

A range of quality of supply features are also supported such as voltage supervision with configurable over and under voltage threshold limits and changeable parameters for long duration power failures and minimum power factor threshold. The E460 3ph also has a comprehensive list of power quality event log trigger sources that can be selected as desired, for example under and over voltage, current without voltage and power factor threshold exceeded.

Features supporting the E460S meter's load switch control include remote disconnection and re-connection and local (using dotMAP110 meter service tool). The E460 meter also supports Demand Supervision functionality that disconnects the load switch in the event that the pre-set limiter threshold is exceeded.

The P160 Customer Interface Unit display offers seven arrow icons which are individually configurable to indicate by selectable control sources. There are further options to display the arrow icons as either steady state or blinking. In addition, a configurable operating display list that is able to cycle on the P160 display, or a standard display list that may be stepped through by pressing the scroll keys on the P160 keypad.

## 1.8 Meter Status and Diagnostic Indicators

The meter has a local LCD display with 8 digits for register values, 6-digit index field, phase and energy direction, alarm, configurable arrow indicators and load switch status.

The meter also includes a dual colour LED status indicator which allows a utility technician to view the operational status of the meter without the need to gain access to the consumer's premises and to view the PLC communication status.

## 1.9 Anti-tamper Features

The meter is sealed against tampering and features various tamper detection methods, including removal of the terminal and main meter cover.

## 2 Technical Specifications

### 2.1 E460 3ph G3-PLC (MMA 310 C A xx)

<b>General Overview</b>	
Compatible network	Three phase, four-wire
Enclosure format	Three phase, asymmetrical terminal format. Short terminal standard, long cover optional
<b>IEC Specific Data</b>	
Rated voltage ( $U_n$ )	Wide-range: 3 x 120 to 240 Volts AC
Frequency	50Hz
Extended operating voltage range	Voltage (for $U_n = 230V$ ), 50% to 120% $U_n$ i.e.>115V Voltage (for $U_n = 120V$ ), 80% to 120% $U_n$ i.e.>90V
Base current ( $I_b$ )	5 Amps
Maximum current ( $I_{max}$ )	100 Amps per phase
Short circuit current	30 x $I_{max}$ ( $\leq 10$ ms according to IEC 62053-21) 3kA r.m.s. (Utilisation Category UC2 according to IEC 62055-31)
Meter constant (LED flash rate)	1000 impulses / kWh 1000 impulses / kVAh <sup>21</sup>
Measurement Accuracy	Active energy, according to IEC62052-11/62053-21 Class 1 Reactive energy, according to IEC62053-23 Class 2 for $I_b = 10A$ , Class 3 for $I_b = 5A$
Measurement behaviour	Starting current (Active) $\leq 0.004 I_b$ for Class 1 Starting current (Reactive) $\leq 0.004 I_b$ for Class 1
<b>General Data</b>	
	phases powered up)
	Active power at $U_n$ 120V <1.2W
	Active power at $U_n$ 230V <1.6W
	Apparent power at $U_n$ 120V, 50Hz <4VA/phase
	Apparent power at $U_n$ 230V, 50Hz <12.5VA/phase
	<b>Environmental Influences</b>
	Area of application
	Indoor meter (according to IEC62052-11)
	Temperature range
	Operation meter -10°C to +55°C
	Storage -40°C to +70°C
	Relative humidity
	Maximum $\leq 95\%$ ; Annual mean 75%
	Degree of Protection (according to IEC60529)
	IP Rating IP54 <sup>20</sup>
	Product is for indoor use and must be installed in a suitable enclosure when used outdoors
	<b>Electromagnetic Compatibility</b>
	Electrostatic discharges (IEC61000-4-2)
	Air discharge 15 kV
	Electromagnetic RF fields (IEC 61000-4-3)
	80 MHz to 2 GHz 10 V/m with load 30 V/m no load
	Fast transient burst (IEC61000-4-4)
	Current / voltage under load (IEC 62053-21) 4 kV
	Radio interference suppression (IEC / CISPR 22)
	Complies with requirements for CISPR 22 and CENELEC EN 50065-1
	<b>Insulation Strength</b>
	Insulation System Classification
	(According to IEC 62052-11) Protective Class II
	Insulation Level
	4 kV rms @ 50Hz for 1 minute

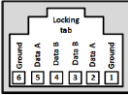
<sup>20</sup> Degree of Protection rating of IP54, is applicable with long terminal cover fitted.

<sup>21</sup> In kVAh mode

<b>Operating Behaviour</b>		<b>Overvoltage withstand</b>	
Power consumption in voltage circuit (with all three)		Terminal Details	
Overvoltage withstand		Material of Terminal Brass	
440 Vac for 48 hours, 600 VDC for 1 minute		Type Terminal with two screws	
<b>Surge Immunity</b>		Diameter 9.5 mm	
Voltage impulse withstand (Differential)		Minimum conductor cross-section 4 mm <sup>2</sup>	
Meets the requirements of IEC 62052-11		Maximum conductor cross-section 35 mm <sup>2</sup>	
Current impulse withstand		For wires with small conductor cross-sections ( $\leq 6$ the mm <sup>2</sup> ), the connecting line must be placed carefully in middle of the terminal, so that it cannot move sideways when tightening the terminal screws. When tightening, ensure that the connecting line remains between the copper inside the terminal and the screw. Stranded wires must be fitted with ferrules.	
According to: IEC 62052-11, SANS 61643-1		– Type of screw:	
With external arrestor		• Steel zinc-plated Pozidrive combi screws (default)	
Withstand rating 30 kA, 8/20 $\mu$ s		– Screw dimensions M6 x 14	
Without external arrestor		– Maximum screw head diameter $\leq 6.6$ mm	
Withstand rating 10 kA, 8/20 $\mu$ s		– Cross-slot type Z, size 2 (ISO4757-1983)	
<b>Calendar Clock</b>		– Slot width 0.8 mm	
Normal operation		– Slot length min. 6 mm	
Accuracy (at +23°C) $\pm 0.2$ s/day		<b>Communication Interfaces</b>	
Reserve running		Optical Communications Port	
Accuracy (at +23°C) $< 1$ s/day (EN 62054-21 requirement for time switches: 1.0s)		According to IEC 62056-21	
Operational Reserve		G3-PLC Interface	
With super-capacitor minimum 36 hours <sup>22</sup> (RTC Synchronised by Data Concentrator)		Frequency band CENELEC A	
<b>Rate of Use Output</b>		OFDM G3-PLC with COSEM/DLMS communication protocol according to EN50065-1 supporting the following OSI Layers:	
Optical Test output (Active or reactive)		• ITU-T G.9903 physical layer for modulation, adaptive tone mapping and notching	
Type Visible Red LED		• MAC layer IEEE 802.15.4; time domain and collision management; CSMA/ARQ	
Meter constant <sup>23</sup> 1 000 pulses/kWh		• 6LoWPAN adaptation sub layer Plug and Play network management to choose "Best Path" (Full Mesh Support)	
1 000 pulses/kVAh		• IPv6 IETF RFC4291/4862 addressing and networking	
<b>Meter Faceplate Indications</b>		• DLMS application layer 62056-53	
Meter Status Indication		• COSEM application model: 62056-61 (OBIS) and 62056-62 (interface classes)	
Type [Dual Colour] Visible Yellow LED		Range: Typically >200m with G3-PLC repeater	
PLC Status Indication			
Type [Dual Colour] Visible Green LED			
Meter Load Switch Indication			

<sup>22</sup> IEC requirements for operational reserve

<sup>23</sup> Configurable for kVAh

Type	LCD Icon	functionality
<b>Phase Connections</b>		RS485 Communications Port
Format		Type: RJ11, RS485 bidirectional, asynchronous interface, galvanically isolated (Protective class II)
Type	Asymmetrical, 8 terminals	Resistance to spread of fire
Up to 32 meters can be connected to one line and then connected to an external modem to perform readouts and parameterising.		UL94-V0 rated @1.5mm. No toxic gases emitted: 'Green Material'
		<b>Material (Terminal block)</b>
<b>Load Switch</b>		Type: Polycarbonate, flame-retardant, glass-filled
Contact Data		Resistance to heat and fire - Complies with 960°C glow-wire (IEC 60695-2-1)
According to IEC 62055-31 for Utilisation Category UC3		<b>Weights &amp; Dimensions</b>
<b>Inputs and Outputs</b>		Dimensions <sup>24</sup>
Pulse Input		Width/Height/Depth 172.0 / 198.8 / 76.6 mm
Type	S0	<i>Please also refer to dimensional drawings</i>
Terminals	30 (+) and 31 (-)	<b>Weight</b>
According to IEC 62053-31	class A	Including packaging approx. 1.5kg
Configurable as pulse counter or alarm input		<b>Sealing</b>
<b>Output</b>		Type
Terminals	23 and 24	Meter enclosure
Type	solid-state auxiliary load switch	Factory sealed
Nominal voltage	230 VAC/DC	Terminal Cover
Maximum voltage	250 VAC/DC	Utility sealing wires (2 points)
Maximum switching current	90 mA	Long and short (default) covers
<b>Meter Enclosure Material</b>		<b>Specifications Compliance &amp; Approvals<sup>25</sup></b>
Material (Housing)		IEC 62053-21, IEC62053-23, IEC62055-41 and
Type:	Polycarbonate, flame-retardant	IEC62055-51, dlms

## 2.2 Meter Type Number Specification

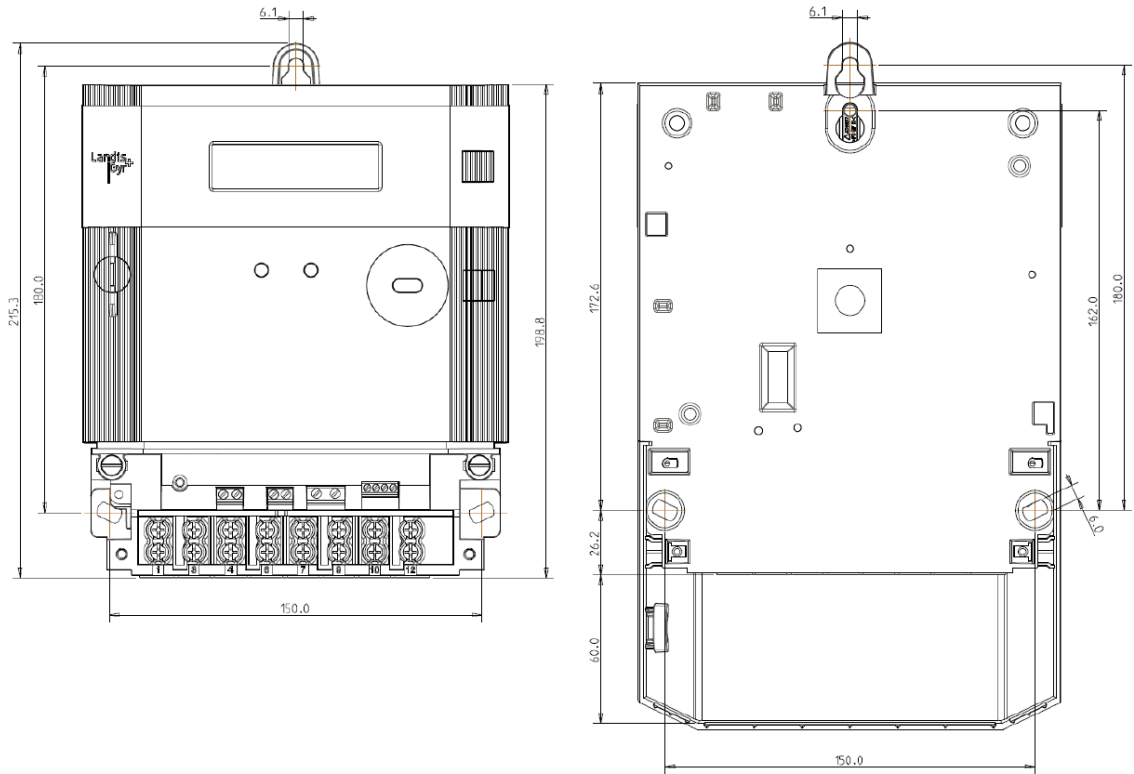
M	M	A	3	10	C	A	G3	RS	D3.3	11	S	00	S2
---	---	---	---	----	---	---	----	----	------	----	---	----	----

<sup>24</sup> With short terminal cover

<sup>25</sup> Approvals pending

## 2.3 Product Dimensions

Figure 1: (Below) Dimensions of the E460 3ph G3-PLC meter



## 3 Meter Programming

Type of meter:	E460S, G3-PLC, 3ph SMART + P160 CIU
Meter Status:	Conventional / Post-Paid
Supply Group Code:	(SGC 000100)
Tariff Index:	(01)
Trip Current:	(100 A)
Pre-loaded credit:	(0 kWh)
Tamper Sensing:	Enabled
TID:	Key Revision 2

**PRICING SCHEDULE**

<b>Name of Bidder.....</b>	<b>Bid Number: PM49/2023</b>
<b>Closing Time: 10H00</b>	<b>Closing Date: 07 March 2025</b>

**OFFER TO BE VALID FOR 90 DAYS FROM THE CLOSING DATE OF BID.**

**NB: PRICE ESCALLATION SHALL BE IN ACCORDANCE WITH CONSUMER PRICE INDEX (CPI) AT THE ANNIVERSARY OF THE CONTRACT.**

Item	Description	Quantity	Unit Price	Total	Delivery Period
1	Pre-Payment Meter Single-Phase	1			
2	Pre-Payment Meter Three-Phase	1			
3	Bi-Directional Pre-Payment Metering Single-Phase with Customer User Interface	1			
4	Bi-Directional Pre-Payment Metering Three-Phase with Customer User Interface	1			
5	Landis+Gyr E650 ZMD405C Maximum Demand Meter	1			
6	Landis+Gyr Modem For E650 Maximum Demand Meter.	1			
7	2S1B Elster A1700 GSM/GPRS Modems for Remote Data Applications	1			
8	Data Concentrator	1			
9	Conventional Single-Phase meter without Customer User Interface	1			
10	Conventional Three-Phase without Customer User Interface	1			
Sub-Total					
VAT 15%					
<b>Total Price</b>					

**PRICE SHALL INCLUDE ALL COST.**

**PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL  
PROCUREMENT REGULATIONS 2022**

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

**NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022**

**1. GENERAL CONDITIONS**

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and

**1.2 To be completed by the organ of state**

- a) The applicable preference point system for this tender is the 80/20 preference point system.
- b) 80/20 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

**1.4 To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

	POINTS
<b>PRICE</b>	80
<b>SPECIFIC GOALS</b>	20
<b>Total points for Price and SPECIFIC GOALS</b>	100

1.5 **Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.**

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

## 2. DEFINITIONS

- (a) **“tender”** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) **“price”** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) **“tender for income-generating contracts”** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) **“the Act”** means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

## 3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

### 3.1. POINTS AWARDED FOR PRICE

#### 3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

$$Ps = 80 \left( 1 - \frac{Pt - P_{min}}{P_{min}} \right) \text{ or } Ps = 90 \left( 1 - \frac{Pt - P_{min}}{P_{min}} \right)$$

Where

Ps = Points scored for price of tender under consideration



- Pt = Price of tender under consideration  
Pmin = Price of lowest acceptable tender

### 3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

#### 3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

$$Ps = 80 \left( 1 + \frac{Pt - Pmax}{Pmax} \right) \text{ or } Ps = 90 \left( 1 + \frac{Pt - Pmax}{Pmax} \right)$$

Where

- Ps = Points scored for price of tender under consideration  
Pt = Price of tender under consideration  
Pmax = Price of highest acceptable tender

## 4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—
- (a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or
  - (b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

*(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.*

*Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)*

The specific goals allocated points in terms of this tender	<b>MEANS OF VERIFICATION DOCUMENTS REQUIRED</b>	<b>Number of points allocated (80/20 system) (To be completed by the organ of state)</b>	<b>Number of points claimed (80/20 system) (To be completed by the tenderer)</b>
Ownership of 51% or more by persons who are black	CSD/Company registration copy and ID Copies of directors	5	
Ownership of 51% or more by persons who are woman	CSD/Company registration copy and ID Copies of directors	5	
Ownership of 51% or more by persons who are disable	Medical report indicating disability	4	
Ownership of 51% or more by persons who are youth	CSD/Company registration copy and ID Copies of directors	4	
Ownership by persons who are residing within jurisdiction of Polokwane Municipality	municipal rates and taxes statement of account/ signed valid leasing agreement/Letter from tribal authority	2	
<b>Total points claimed</b>		<b>20</b>	

**Table 2: Business entity ownership disclosure**

**Bidders must list all shareholders and provide ownership information in terms of the business entity registration certificate**

Full Names	Identity Number	% of ownership	South African (Yes/No)	Race	Gender	Disable (Yes/No)	Youth (Yes/No)	Local enterprise (Yes/No)

**DECLARATION WITH REGARD TO COMPANY/FIRM**

4.3. Name of company/firm.....

4.4. Company registration number:  
.....

4.5. TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One-person business/sole propriety
- Close corporation
- Public Company
- Personal Liability Company
- (Pty) Limited
- Non-Profit Company
- State Owned Company

[TICK APPLICABLE BOX]

4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –
  - (a) disqualify the person from the tendering process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person’s conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
  - (e) forward the matter for criminal prosecution, if deemed necessary.

<b>SURNAME AND NAME:</b>	..... <b>SIGNATURE(S) OF TENDERER(S)</b>
<b>DATE:</b>	.....
<b>ADDRESS:</b>	..... ..... ..... .....

## EVALUATION PROCESS AND CRITERIA

**BID NO: PM49/2023**

The following evaluation process and criteria will be used to evaluate all bids submitted:

### 1. Administrative Compliance – Phase One

1.1 All bids duly lodged will be examined to determine compliance with bidding requirements and conditions. Bids with obvious deviations from the requirements/conditions, will be eliminated from further evaluation.

#### 1.2 Critical Criteria:

The following critical criteria have been identified for this bid and any non-compliance thereto will lead to the bid being regarded as non-responsive and disqualified from further evaluation:

- Authority to sign filled in full
- All Pages initialed
- Certified ID Copies of All Directors/Members/Shareholders of The Company/Business (If JV, For Both)
- Valid original tax compliance status certificate (If JV, For Both)
- Joint venture agreement (Where applicable)
- Pricing schedule in black ink
- Signed for all alteration and in the pricing schedule
- Central Supplier Database (CSD) report (If JV, For Both)
- Company certificate
- Form of offer filled in full
- Municipal rates and taxes/Lease agreement/Local tribal authority letter (**For company and all the directors**) not older than 3 months
- Completed and signed Invitation to bid (**MBD1**)
- Completed and signed declaration of interest (**MBD4**)
- Completed and signed declaration for procurement above R10 million (Including tax) (**MBD5**)
- Completed and signed preference points claim form (**MBD6.1**)
- Completed and signed declaration on past SCM practices form (**MBD8**)
- Completed and signed certificate of independent bid determination (**MBD9**)

**NB: THE BIDDERS THAT MEET THE ABOVE ADMINISTRATIVE COMPLIANCE WILL FUTURE BE EVALUATED ON PRICE AND SPECIFIC GOALS**

**2. Price and Specific goals– Phase Two**

The evaluation will be done by using **80/20**-point system as indicated below:

<b>Preference point system</b>	<b>Points</b>
Price	80
Specific Goals	20
<b>Total Maximum Score</b>	<b>100</b>

**Notes:** *Bidders must note that points for specific goals must be claimed in terms with the percentage of ownership within their business entity. The tenderer must indicate how they claim points.)*

<b>SPECIFIC GOALS</b>	<b>POINTS ALLOCATED</b>	<b>POINTS SCORED</b>
Ownership of 51% or more by persons who are black	5	
Ownership of 51% or more by persons who are woman	5	
Ownership of 51% or more by persons who are disable	4	
Ownership of 51% or more by persons who are youth	4	
Ownership by persons who are residing within jurisdiction of Polokwane Municipality	2	

**Incase ownership of specific goals is below 51% points will be claimed in terms with the percentage of ownership within their business entity. For example:**

**An Entity that has 35% shareholding of able black man who is above age of 35 and residing outside the jurisdiction of Polokwane Municipality. Points will be claimed as follows:**

$$\begin{aligned}
 \text{Calculation} &= \frac{\text{Black Ownership}}{100} \times \text{Total number of allocated points} \\
 &= \frac{35}{100} \times 5 \\
 &= 1.75
 \end{aligned}$$

Points to be score for ownership of black person will be 1.75

OR

$$\begin{aligned}
 \text{Calculation} &= \frac{\text{Black Ownership}}{100} \times \text{Total number of allocated points} \\
 &= \frac{35}{100} \times 3 \\
 &= 1.05
 \end{aligned}$$

Points to be score for ownership of black person will be 1.05

## DECLARATION OF INTEREST

### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

### 2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest<sup>26</sup> in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....

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<sup>26</sup> the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.



.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?  
**YES/NO**

2.3.1 If so, furnish particulars:  
.....  
.....

**3 DECLARATION**

I, \_\_\_\_\_ the \_\_\_\_\_ undersigned,  
(name)..... in submitting the  
accompanying bid, do hereby make the following statements that I certify to be true  
and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>27</sup> will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious

---

<sup>27</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....  
Signature

.....  
Date

.....  
**Capacity**

.....  
**Name of Bidder**

**DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)**

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire

1 Are you by law required to prepare annual financial statements for auditing?

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

.....

.....

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

.....

.....

.....

.....

\* Delete if not applicable

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

YES / NO

3.1 If yes, furnish particulars

.....  
.....

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic? **\*YES / NO**

4.1 If yes, furnish particulars

.....  
.....

**CERTIFICATION**

I, **THE** **UNDERSIGNED** **(NAME)**  
.....

**CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS  
CORRECT.**

**I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS  
DECLARATION PROVE TO BE FALSE.**

.....  
.....

**Signature**  
**Date**

.....  
.....

**Position**

**Name of Bidder**

## DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
  - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
  - b. been convicted for fraud or corruption during the past five years;
  - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
  - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid**

Item	Question	Yes	No
4.1	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p><b>The Database of Restricted Suppliers now resides on the National Treasury's website(<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) and can be accessed by clicking on its link at the bottom of the home page.</b></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p><b>The Register for Tender Defaulters can be accessed on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) by clicking on its link at the bottom of the home page.</b></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	<p>Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	<p>Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.4.1	If so, furnish particulars:		

4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

**CERTIFICATION**

I, THE UNDERSIGNED (FULL NAME) .....

**CERTIFY THAT THE INFORMATION FURNISHED ON THIS  
DECLARATION FORM TRUE AND CORRECT.**

**I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY  
BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.**

.....  
**Signature**

.....  
**Date**

.....  
**Position**

.....  
**Name of Bidder**



**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

- 1 This Municipal Bidding Document (MBD) must form part of all bids<sup>1</sup> invited.  
 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits  
 an agreement between, or concerted practice by, firms, or a decision by an association  
 of firms, if it is between parties in a horizontal relationship and if it involves collusive  
 bidding (or bid rigging).<sup>2</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot  
 be justified under any grounds.  
 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management  
 policy must provide measures for the combating of abuse of the supply chain management  
 system, and must enable the accounting officer, among others, to:  
 a. take all reasonable steps to prevent such abuse;  
 b. reject the bid of any bidder if that bidder or any of its directors has abused the  
 supply chain management system of the municipality or municipal entity or has  
 committed any improper conduct in relation to such system; and  
 c. cancel a contract awarded to a person if the person committed any corrupt or  
 fraudulent act during the bidding process or the execution of the contract.  
 4 This MBD serves as a certificate of declaration that would be used by institutions to  
 ensure that, when bids are considered, reasonable steps are taken to prevent any form  
 of bid-rigging.  
 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD  
 6 must be completed and submitted with the bid:

<sup>1</sup> **Includes price quotations, advertised competitive bids, limited bids and proposals.**  
<sup>2</sup> **Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.**

**CERTIFICATE OF INDEPENDENT BID DETERMINATION**

I, the undersigned, in submitting the accompanying bid:

---

**(Bid Number and Description)**

in response to the invitation for the bid made by:

---

**(Name of Municipality / Municipal Entity)**

do hereby make the following statements that I certify to be true and complete in every respect:

I \_\_\_\_\_ certify, \_\_\_\_\_ on \_\_\_\_\_ behalf  
of: \_\_\_\_\_ that:  
**(Name of Bidder)**

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - (a) Has been requested to submit a bid in response to this bid invitation;
  - (b) Could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - (c) Provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

- (a) Prices;
- (b) Geographical area where product or service will be rendered (market allocation)
- (c) Methods, factors or formulas used to calculate prices;
- (d) The intention or decision to submit or not to submit, a bid;
- (e) The submission of a bid which does not meet the specifications and conditions of the bid; or
- (f) Bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

**<sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract**

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition

of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998

and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of

Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

.....  
**Signature**

.....  
**Date**

.....  
**Position**

.....  
**Name of Bidder**

**CERTIFICATE FOR MUNICIPAL SERVICES AND PAYMENTS**

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: \_\_\_\_\_(Name of Bidder)

FURTHER DETAILS OF BIDDER(S); DIRECTORS/SHAREHOLDERS/PARTNERS, ETC.

Directors/shareholders/Partner	Physical address of the Business	Municipal Account No.	Physical residential address of the Director/Shareholder/Partner	Municipal Account No.

**NB: Please attach certified copy (ies) of ID document(s)**

\_\_\_\_\_  
**Signatory** \_\_\_\_\_  
**Date**

**Witnesses**

1. \_\_\_\_\_  
**Full Names** \_\_\_\_\_  
**Signature** \_\_\_\_\_  
**Date**

2. \_\_\_\_\_  
**Full Names** \_\_\_\_\_  
**Signature** \_\_\_\_\_  
**Date**

**AUTHORISATION FOR DEDUCTION OF OUTSTANDING AMOUNTS OWED TO COUNCIL**

TO: MUNICIPAL MANAGER, POLOKWANE MUNICIPALITY

FROM: \_\_\_\_\_ (Name of the Bidder or Consortium)

I, \_\_\_\_\_ the undersigned, hereby authorise the Polokwane Municipality to deduct the full amount outstanding by the business organisation/Director/Shareholder/Partner, etc. from any payment due by us/me.

**Signed at** \_\_\_\_\_ **Date** \_\_\_\_\_ **Month** \_\_\_\_\_ **20** \_\_\_\_\_

**Print Name:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

Thus done and signed for and on behalf of the bidder/Contractor

_____	_____
<b>Signatory</b>	<b>Date</b>

**Witnesses**

1. \_\_\_\_\_

_____	_____	_____
<b>Full Names</b>	<b>Signature</b>	<b>Date</b>

2. \_\_\_\_\_

_____	_____
<b>Full Names</b>	<b>Sign</b>