

Request for Quotations for Works

PROCUREMENT OF INSTALLATION OF ELECTRIC METERS AT TRANS- KALAHARI BORDER POST RFA ACCOMODATION

Procurement Reference No: W/RFQ-03/2022

PARTICULARS OF BIDDER

Business Name_____

Postal Address:_____

Telephone No.:_____

Cell No.: _____

Fax No.:_____

Contact Person:_____

E-mail Address:_____

**Road Fund Administration
Head Office
Feld Street 21
Private Bag 13372
Windhoek, Namibia
Tel: +264 61 4333000
procurement@rfanam.com.na**

Letter of Invitation

To: Potential Bidders

12th September 2022

Procurement Reference Number : W/RFQ/RFA-03/2022

Dear Sir/Madam

**Request for Quotations for
PROCUREMENT OF INSTALLATION OF ELECTRIC METERS AT TRANS
KALAHARI-BORDERPOST RFA ACCOMODATION**

The **ROAD FUND ADMINISTRATION** invites you to submit your best quote for the works described in detail hereunder.

Any resulting contract shall be subject to the terms and conditions referred to in the document.

Queries, if any, should be addressed to procurement@rfanam.com.na.

Please prepare and submit your quotation in accordance with the instructions given or inform the undersigned if you will not be submitting a quotation.

Yours faithfully,



**Mr Scheifert Shigwedha
SECRETARY TO THE PROCUREMENT COMMITTEE**

SECTION I: INSTRUCTIONS TO BIDDERS

1. Rights of Public Entity

The **ROAD FUND ADMINISTRATION** reserves the right:

- (a) to split the contract as per the lowest evaluated cost per lot; and
- (b) to accept or reject any quotation or to cancel the quotation process and reject all quotations at any time prior to contract award.

2. Preparation of Quotations

You are requested to quote for the works mentioned in Section III, by completing, signing and returning:

- (a) the Quotation Letter in Section II with its annex for Bid Securing Declaration, where applicable;
- (b) the Priced Activity Schedule in Section IV;
- (c) the Specifications and Compliance Sheet in Section V; and
- (d) any other attachment as deemed appropriate

You are advised to carefully read the complete Request for Quotations document, including the Special Conditions of Contract in Section VII, before preparing your Quotation. The standard forms in this document may be retyped for completion but the Bidder is responsible for their accurate reproduction.

3. Validity of Quotations

The quotation validity period shall be 30 days from the date of bid submission deadline.

4. Eligibility Criteria

To be eligible to participate in this Quotation exercise, you should:

- (a) have a valid company Registration Certificate;
- (b) have an original valid good Standing Tax Certificate;
- (c) have an original valid good Standing Social Security Certificate;
- (d) have a valid certified copy of Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998;
- (e) Submit signed Bid-securing Declaration.
- (g) An undertaking on the part of the Bidder that the salaries and wages payable to its personnel in respect of this proposal are compliant to the relevant laws, Remuneration Order, and Award, where applicable and that it will abide to sub-clause 4.6 of the General conditions of Contract if it is awarded the contract or part thereof; and;
- (h) A certified copy of registration with Nampower, as an electrical contractor
- (i) Certified copy of a wireman's license of the person supervising the installation and proof that he/she is employed by the bidder

- (j) have experience in works similar in nature and scale to the works to be performed under this contract;

Project/Contract name and country	Name of Client, contact person & contact information	Type of work performed and year of completion	Value of contract in NAD
(a)			
(b)			
(c)			

- (k) have qualified and experienced personnel for the execution of the project.

Position	Name	Years of experience (general)	Years of experience in proposed position
(a)			
(b)			

5. Bid Securing Declaration

Bidders are required to submit a Bid Security Declaration for this procurement process

6. Works Completion Period

The completion period for works shall be 21 days after acceptance of Purchase Order. Deviation in completion period shall not be accepted/shall be considered if such deviation is reasonable by ROAD FUND ADMINISTRATION.

7. Sealing and Marking of Quotations

Quotations should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to the ROAD FUND ADMINISTRATION with the Bidder's name at the back of the envelope.

8. Submission of Quotations

Quotations should be deposited in the Quotation/Bid Box located at **Road Fund Administration Offices, Erf 21, Feld Street**, not later than **Monday, 26th September 2022 by no later than 11H00**. Quotations by courier or hand delivered should reach Road Fund Administration by the same date and time. Late quotations will be rejected. **Quotations received by e-mail will not be considered.**

9. Opening of Quotations

Quotations will be opened internally by the ROAD FUND ADMINISTRATION immediately after the closing time referred to in section 8 above. A record of the Quotation Opening stating the name of the bidders, the amount quoted, the presence or absence of a Bid Security/Bid Securing Declaration, will be posted on the website of the ROAD FUND ADMINISTRATION and available to any bidder on request within three working days of the Opening.

10. Evaluation of Quotations

The ROAD FUND ADMINISTRATION shall have the right to request for clarifications in writing during evaluation. Offers that are substantially responsive shall be compared on the basis of evaluated cost, subject to Margin of Preference where applicable, to determine the lowest evaluated quotation.

11. Technical Compliance

The Specifications and Compliance Sheet details the minimum specifications of the works to be carried out. The specifications have to be met, but no credit will be given for exceeding the specifications.

12. Prices and Currency of Payment

Prices for the execution of works shall be fixed in Namibian Dollars as quoted. Quotations shall cover all costs of labour, materials, equipment, overheads, profits and all associated costs for performing the works, and shall include all duties. The whole cost of performing the works shall be included in the items stated, and the cost of any incidental works shall be deemed to be included in the prices quoted.

13. Margin of Preference

The applicable margins of preference and their application methodology are as follows:

Not applicable

14. Award of Contract

The Bidder having submitted the lowest evaluated responsive quotation and qualified to perform the works shall be selected for award of contract. Award of contract shall be by issue of a Purchase Order/Letter of Acceptance in accordance with terms and conditions contained in Section VI: Contract Agreement and General Conditions of Contract.

15. Performance Security

Performance security is not applicable

16. Notification of Award and Debriefing

The ROAD FUND ADMINISTRATION shall after award of contract promptly inform all unsuccessful bidders in writing of the name and address of the successful bidder and the contract amount and post a notice of award on its website within 7 days. Furthermore, the ROAD FUND ADMINISTRATION attend to all requests for debriefing made in writing within 7 days of the unsuccessful bidders being informed of the award.

SECTION II: QUOTATION LETTER

(to be completed by Bidders)

*[Complete this form with all the requested details and submit it as the first page of your quotation with the Priced Activity Schedule and documents requested above. A signature and authorisation on this form will confirm that the terms and conditions of the RFQ prevail over any attachments. **If your quotation is not authorised, it will be rejected***

Quotation addressed to:	ROAD FUND ADMINISTRATION
Procurement Reference Number:	W/RFQ-03/2022
Subject matter of Procurement:	

We offer to execute the Works detailed in the Statement of Requirements, in accordance with the terms and conditions stated in your Request for Sealed Quotations referenced above.

We confirm that we are eligible to participate in this Quotation exercise and meet the eligibility criteria specified in Section 1: Instructions to Bidders

We undertake to abide by the Conduct of Bidders and Suppliers as provided under the Public Procurement Act during the procurement process and the execution of any resulting contract.

We have read and understood the content of the Bid Security/Bid Securing Declaration (BSD) attached hereto and subscribe fully to the terms and conditions contained therein. We further understand that this subscription could lead [forfeiture of the security amount / disqualification on the grounds mentioned in the BDS]

The validity period of our Quotation is _____ days [insert number of days] from the date of the bid submission deadline.

We confirm that the prices quoted in the Priced Activity Schedule are fixed and firm and will not be subject to revision or variation, if we are awarded the contract **prior to the expiry** date of the quotation validity.

Works will commence within _____ days from date of issue of Purchase Order/ Letter of Acceptance.

Works will be completed within _____ days from date of issue of Purchase Order/ Letter of acceptance.

Quotation Authorised by:

Name of Bidder		Company's Address and seal	
Contact Person			
Name of Person Authorising the Quotation:		Position:	Signature:
Date		Phone No./E-mail	

BID SECURING DECLARATION

(Section 45 of Act)

(Regulation 37(1) (b) and 37(5))

Date:

Procurement Ref No.: W/RFQ-03/2022

To: ROAD FUND ADMINISTRATION 21 FELD STREET

I/We* understand that in terms of section 45 of the Act a public entity must include in the bidding document the requirement for a declaration as an alternative form of bid security.

I/We* accept that under section 45 of the Act, I/we* may be suspended or disqualified in the event of

- (a) **a modification or withdrawal of a bid after the deadline for submission of bids during the period of validity;**
- (b) **refusal by a bidder to accept a correction of an error appearing on the face of a bid;**
- (c) **failure to sign a procurement contract in accordance with the terms and conditions set forth in the bidding document, should I/We* be successful bidder; or**
- (d) **failure to provide security for the performance of the procurement contract if required to do so by the bidding document.**

I/We* understand this bid securing declaration ceases to be valid if I am/We are* not the successful Bidder

Signed:

[insert signature of person whose name and capacity are shown]

Capacity of:

[indicate legal capacity of person(s) signing the Bid Securing Declaration]

Name:

[insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____

[insert date of signing]

Corporate Seal (where appropriate)

[Note*: In case of a joint venture, the bid securing declaration must be in the name of all partners to the joint venture that submits the bid.]

**delete if not applicable / appropriate*

NO SUBSTITUTE FOR THIS PAGE IS ALLOWED



Republic Of Namibia

Ministry of Labour, Industrial Relations and Employment Creation

Witten undertaking in terms of section 138 of the Labour Act, 2015 and section 50(2)(D) of the Public Procurement Act, 2015

1. EMPLOYERS DETAILS

Company Trade Name:.....

Registration Number :.....

Vat Number:

Industry/Sector:

Place of Business:.....

Physical Address:.....

Tell No.:.....

Fax No.:.....

Email Address:.....

Postal Address:.....

Full name of Owner/Accounting Officer:.....

.....

Email Address:.....

2. PROCUREMENT DETAILS

Procurement Reference No.:... W/RFQ-03/2022

Procurement Description:

.....

.....

Anticipated Contract Duration:

Location where work will be done, good/services will be delivered:

.....

3. UNDERTAKING

I[insert full name], owner/representative

of[insert full name of company]

hereby undertake in writing that my company will at all relevant times comply fully with the relevant provisions of the Labour Act and the Terms and Conditions of Collective Agreements as applicable.

I am fully aware that failure to abide to such shall lead to the action as stipulated in section 138 of the labour Act, 2007, which include but not limited to the cancellation of the contract/licence/grant/permit or concession.

Signature:

Date:

Seal:.....

Please take note:

1. A labour inspector may conduct unannounced inspections to assess the level of compliance
2. This undertaking must be displayed at the workplace where it will be readily accessible and visible by the employees rendering service(s) in relations to the goods and services being procured under this contract.

SECTION III: STATEMENT OF REQUIREMENTS

This text hereunder is a guidance for the preparation of the Specifications and Performance Requirements and should not form part of the final document

A. SCOPE OF WORKS, SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

SCOPE OF WORKS

The works are installation of 7 electric meters that comply with generally accepted standards. The object of the installation of the meters is to ensure that each house can account its own consumption. The total consumption of the 7 houses should be equivalent to the Nampower electric consumption.

The works can be summarised but is not limited to the following:

1. Installation
 - Cables shall be manufactured in accordance with SANS 1507, and shall be constructed as follows:
 - Single core cables / conductors: PVC insulated/unsheathed.
 - The conductors shall be of high conductivity annealed stranded copper.
 - The insulation shall be general purpose PVC, 600V/1000V grade.
 - The bedding shall consist of a continuous impermeable sheath of PVC extruded to fit the core or cores closely and in the case of multi-core cables, to fill the interstices between cores.

SPECIFICATIONS

2. Metering

The meters to be installed are Single Phase KWh Enery Meter .The energy meter shall be of the CBI brand's Ecolec 300 Series with model number: EC320CM. The meter shall be installed after the accommodation supply circuit breaker on the new DIN rail as prescribed.

3. Technical Specifications

- SANS 1799 Class-1 Electricity Meter
- Class 1: Accuracy < 1%
- DIN Rail Mounted
- Anti-tamper Terminal Protection Plugs
- LED Status and kWh Consumption Indicator
- IP45 Rating

4. General Specifications

The meters to be clearly indicated for each house for billing purposes.

B. DRAWINGS

The drawing for the above scope of work and specifications is **Wiring Diagram 1**
Ecolec 300 Rail Mount Energy Meters specifications is attached

SECTION IV: PRICED ACTIVITY SCHEDULE

Procurement Reference Number: **W/RFQ/RFA-03/2022**

[Complete the unit and total prices for each item listed below. Authorise the prices quoted in the signature block below.]

The quantities shown below are approximate and not subject to re-measurement for payment purposes.

All units should be rechecked by Contractors

	Description	Unit	Qty	Labour Rate	Material Rate	Total Rate	Total (Qty*Total Rate)

1	PRELIMINARY AND GENERAL						*****
a	General P and G's						*****
1.1	Accommodation	Item	1				
1.2	Transport	Item	1				
2	DISTRIBUTION BOARDS AND METERING						*****
2.1	SITE DISTRIBUTION KIOSK						*****
a	Distribution Kiosk (KIOSK) Existing distribution kiosk feeding 7 x existing accommodation units.						*****
2.2	METERING SECTION						*****
a	<u>Single Phase kWh Energy Meter:</u> The energy meter shall be of the CBI brand's Ecolec 300 Series with model number: EC320CM . The meter shall be installed after the accommodation supply circuit breaker on the new DIN rail as quoted for elsewhere. <u>Technical Specifications:</u> -SANS 1799 Class-1 Electricity Meter -Class 1: Accuracy < 1% -DIN Rail Mounted -Anti-tamper Terminal Protection Plugs -LED Status and kWh Consumption Indicator -IP45 Rating	No	7				
b	New 300mm long Metal DIN Rail to be installed below accommodation supply circuit breakers on wooden back board of existing distribution kiosk.	No	1				
3	CABLES / CONDUCTORS						*****
3.1	GENERAL NOTES						*****
a	Rates shall allow for supply , delivery, installation, testing and laying of copper cables.						*****
b	Cables shall be measured linearly over all lengths as laid or built-in from gland to gland.						*****
c	All cables shall be copper conductors manufactured to SABS 150.						*****
3.2	CABLES / CONDUCTORS						*****
a	10 mm² Red Insulated Cu complete installed	m	7				
b	10 mm² Black Insulated Cu complete installed	m	14				
c	6 mm² Red Insulated Cu complete installed	m	0				Rate Only
d	6 mm² Black Insulated Cu complete installed	m	0				Rate Only
	SUB TOTAL (excluding contingencies and VAT)						
	The sum provided here us under the sole control of the Project Manager and maybe deducted in whole or in part (CONTINGENCIES10%)						
	SUB TOTAL (excluding VAT)						
	15% VAT on Sub-Total						
	TOTAL INSTALLATION INCLUDING VAT						

Priced Activity Schedule Authorised By:

**Please use own quotation with detailed description on items specified at
SECTION III STATEMENT OF REQUIREMENTS**

Name:		Signature:	
Position:		Date:	
Authorised for and on behalf of:	Company		

SECTION V: SPECIFICATIONS AND COMPLIANCE SHEET

The following section should be read in conjunction with Section III above. Any deviations to the specifications should clearly be stated in column D

Procurement Reference Number: **W/RFQ/RFA-03/2022**

[Bidders should complete columns C and D with the specifications and performance of the Works offered. Also state “comply” or “not comply” and give details of any non-compliance/deviation to the specifications required. Attach detailed technical literature if required. Authorise the specifications offered in the signature block below]

Item No	Specifications and Performance Required	Compliance of Specifications and Performance Offered (circle relevant option)	Details of Non-Compliance/ Deviation (if applicable)
A*	B*	C	D
1	As listed in 1, section III.	Comply/ Not comply	
2	As listed in 2, section III.	Comply/ Not comply	
3	As listed in 3, section III	Comply/ Not comply	
4	As listed in 4, section III	Comply/ Not comply	

* Columns A and B to be completed by Public Entity.

Specifications and Compliance Sheet Authorised By:

Name:		Signature:	
Position:		Date:	
Authorised for and on behalf of:		Company	

SECTION VI: GENERAL CONDITIONS OF CONTRACT AND CONTRACT AGREEMENT

Any resulting contract shall be placed by means of a Purchase Order/Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC) for the Procurement of Goods (**Works**) available on the website of the **Road Fund Administration Offices, Erf 21, Feld Street** except where modified by the Special Conditions below

SECTION VIII SPECIAL CONDITIONS OF CONTRACT

Procurement Reference Number: **W/RFQ/RFA-03/2022**

The clause numbers given in the first column correspond to the relevant clause number of the General Conditions of Contract.

GCC Clause Reference	Special Conditions
Employer GCC 1.1(r)	ROAD FUND ADMINISTRATION
Intended Completion Date GCC	The intended completion date is: 7 calender days
Project Manager GCC 1.1(y)	The Project Manager is: Erkenwald Khiba, Engineer RFA
Site GCC 1.1(aa)	The Site is located at Trans-Kalahari Border post and is defined in Drawings No: Diagram 1
Start Date GCC 1.1(dd)	The Start Date shall be: 5 calendar days after receiving the purchase order/ letter of acceptance
The Works GCC 1.1(hh)	The Works consist as specified in Section III of this document.
Interpretation GCC 2.2	The project will be completed as a whole for completion to be achieved.
Interpretation GCC2.3	The following additional documents shall form part of the contract: Not applicable
Language and Law GCC 3.1	The language of the contract is English The law that applies to the Contract is the law of Namibia.
Project Manager's Decisions 4.1	The Project Manager shall obtain specific approval from the Employer before carrying out any of his duties under the Contract which in the Project Manager's opinion will cause the amount finally due under the Contract to exceed the Contract Price or will give entitlement to extension of time. This requirement shall be waived in an emergency affecting safety of personnel or the Works or adjacent property.
Delegation GCC 5.1	The Project Manager <i>may</i> delegate his/her duties.
Notices	Any notice shall be sent to the following addresses:

GCC Clause Reference	Special Conditions
GCC 6	<p>For the Employer:</p> <p>Road Fund Administration, Private Bag 13372, Windhoek the contact person shall be: ALI IPINGE CHEF EXECUTIVE OFFICER</p> <p>For the Contractor:</p> <p>Company Name: _____</p> <p>Contact Person: _____</p> <p>Tel. / Cell. no: _____</p> <p>Email: _____</p>
Insurance GCC 13.1	<p>Except for the cover mentioned in (d)(i) hereunder, the other insurance covers shall be in the joint names of the Contractor and the Employer and the minimum insurance amounts shall be:</p> <ul style="list-style-type: none"> (a) for the Works, Plant and Materials: <i>(for the full amount of the works including removal of debris, professional fee etc...)</i> (b) for loss or damage to Equipment: <i>(for the replacement value of the equipment that the contractor intends to use on site until the taking over by the Employer.</i> (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract <i>for an amount representing the value of the properties that are exposed to the action of the contractor in the execution of the works. It will extend to the property of the Procuring Entity as well).</i> (d) for personal injury or death: <ul style="list-style-type: none"> (i) of the Contractor's employees: <i>[The Contractor shall take an adequate insurance cover for its employees for any claim arising in the execution of the works].</i> (ii) of other people: <i>[This cover shall be for an adequate amount for Third Party extended to the Employer and its representatives].</i> (e) for loss or damage to materials on-site and for which payment have been included in the Interim Payment Certificate, where applicable. <p>The Contractor shall choose to take the insurance covers indicated above</p>

GCC Clause Reference	Special Conditions
	as separate covers or a combination of the Contractor's All Risks coupled with the Employer's liability and First Loss Burglary, after approval of the Employer. All insurance covers shall be of nil or the minimum possible deductibles at sole expense of the contractor.
Site Date GCC 14.1	The Contractor should familiarise themselves with the site conditions and may request any additional available information from the Employer.
Possession of the Site GCC 20.1	The Site Possession Date shall be within five (5) calendar days after the Contractor received the Purchase Order or Letter of Acceptance.
Procedure for Disputes GCC 24	No Adjudicator shall be appointed under the contract and arbitration shall not apply. If any dispute arises between the Employer and the Contractor in connection with or arising out of the Contract, the parties shall seek to resolve any such dispute by amicable agreement. If the parties fail to resolve such dispute by amicable agreement, within 14 days after one party has notified the other in writing of the dispute, then the dispute shall be referred to court by either party.
Program GCC 25.1	The Contractor shall submit for approval a Program for the Works within five (5) days from the date of the Letter of Acceptance or issue of Purchase Order Agreement.
GCC 25.3	Program updates shall not be required.
Defects Liability Period GCC 33.1	The Defects Liability Period is 90 days after completion of Works
Payment Certificates GCC 39.7	A single statement of the estimated value of the work executed shall be submitted on completion of the Works. The Project Manager shall check the statement and certify the amount to be paid to the Contractor".
Payments GCC 40	The amount certified by the Project Manager shall be paid in full within 30 days of receipt by the Employer of an invoice, supported by: <ul style="list-style-type: none"> (a) the payment certificate; and (b) a certificate of Completion of the Works.
Price Adjustment GCC 44.	The Contract is not subject to price adjustment.
Retention GCC 45.	2,5 % of the amount shall be retained from any payment. The 2,5% of the retention money shall be released after the Defect Liability Period subject to the Contractor making good all defects.

GCC Clause Reference	Special Conditions
Liquidated Damages GCC 46.1	<p>The liquidated damages for the whole of the Works are N\$ 500.00 per day.</p> <p>The maximum amount of liquidated damages for the whole of the Works is 2,5% of the contract amount.</p>
Bonus GCC 47.1	No Bonus shall be paid to the Contractor by the Employer.
Advance Payment GCC 48.1	No advance payment shall be made
Performance Security GCC 49.1	No Performance Security is required
GCC 56.1	No “as built” drawings or operating and maintenance manuals are required.
GCC 59.1	The percentage to apply to the value of the work not completed, representing the Employer’s additional cost for completing the Works is 10%

SCHEDULE 1**QUOTATION CHECKLIST SCHEDULE****Procurement Reference No. W/RFQ/RFA-03/2022:**

<i>Description</i>	<i>Attached</i>	<i>Not Attached</i>
Quotation letter		
Signed Bid Security Declaration		
Priced Activity Schedule		
Valid company Registration Certificate		
Original Valid Good Standing Tax Certificate		
Original Valid Good Standing Social Security Certificate		
Valid certified copy of Affirmative Action Compliance Certificate, proof from Employment Equity Commissioner that bidder is not a relevant employer, or exemption issued in terms of Section 42 of the Affirmative Action Act, 1998;		
List of similar projects completed and contact information of relevant individuals involved on the projects.		
A certified copy of registration with NamPower, as an electrical contractor		
Certified copy of a wireman's license of the person supervising the installation and proof that he/she is employed by the bidder		

Disclaimer: The list defined above is meant to assist the Bidder in submitting the relevant documents and shall not be a ground for the bidder to justify its non-submission of major documents for its quotation to be responsive. The onus remains on the Bidder to ascertain that it has submitted all the documents that have been requested and are needed for its submission to be complete and responsive.

Rail Mount Energy Meters

Ecolec 300 Rail Mount Energy Meters

The Ecolec 300 series is a rail mounted, compact, Class 1 electricity meter, available as a single or three phase meter showing the consumption of the installation. The compact rail mounted meters comply with SANS 1799 : 2004.

These meters fit on a DIN rail and the CBI Mini Rail. The DIN version is grey in colour and has a 45 mm front escutcheon. The dual (DIN and CBI Mini Rail) mount version is black in colour and has a 57 mm front escutcheon. The display is an electro-mechanical counter with a seven digit indication of energy consumed to 1 / 10 kWh. A dual colour lamp shows the rate of consumption and confirms the presence of incoming power supply and some unsafe / error conditions. They are supplied with anti-tamper terminal protection plugs.

These are compact in size and can be mounted next to incoming circuit breakers. They drastically reduce enclosure costs. The meter is reverse feedable and measures consumption correctly. It has a LIN bus terminal for communicating and requesting data remotely (up to 20 addressable meters on one bus).



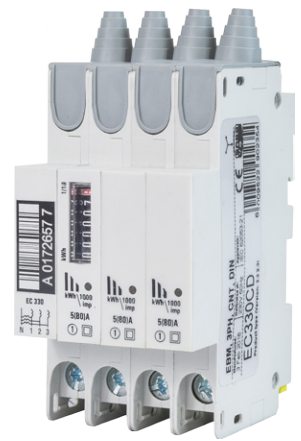
EC320CM
Dual Mount



EC330CM
Dual Mount



EC320CD
DIN Mount



EC330CD
DIN Mount

Features

- SANS 1799 class-1 electricity meters
- Class 1: accuracy < 1%
- Single and three phase alternatives
- Fits all CBI Mini and DIN rail distribution boards
- 7 Digit tamper-proof counter
- Anti-tamper terminal protection plugs
- Also available in 120V / 60 Hz
- LED status and kWh consumption indicator
- Remote monitoring: LIN bus
- IP-45 rating
- 57 mm (dual mount) and 45 mm (DIN rail) escutcheon

Applications

- Residential
- Commercial
- Rural electrification

Approvals



SANS 1799

Rail Mount Energy Meters

Technical Data

Product Type	EC320CM, EC320CD	EC330CM, EC330CD
Phase	1 + N	3 + N
Nominal Voltage (Un)	120 / 240 V	
Operational Voltage Range	60 - 320 V	
Over Voltage Withstand	480 V (\leq 48 hr)	
DC Voltage Withstand	1 kV (\leq 1 min)	
Impulse Voltage Withstand	10 kV	
ESD Withstand	15 kV	
Operational Frequency Range	50 / 60 Hz	
Basic Current (Ib)	5 A	
Maximum Rated Current (I _{max})	80 A	
Operational Current Range	0.015 - 125 A	
Overcurrent Withstand	160 A (\leq 48 hr)	
Fault Current Withstand	10 kA (\leq 40 ms)	
Voltage Circuit Burden	0.2 W	

Product Type	EC320CM, EC320CD	EC330CM, EC330CD
LED Output Flash Rate	1000 impulses per kWh	
Accuracy Class	Class 1	
Protection Class	Class 2 double insulated	
Conformity To Standards	SANS / IEC 62052-11, SANS / IEC 62052-21, SANS 1799	

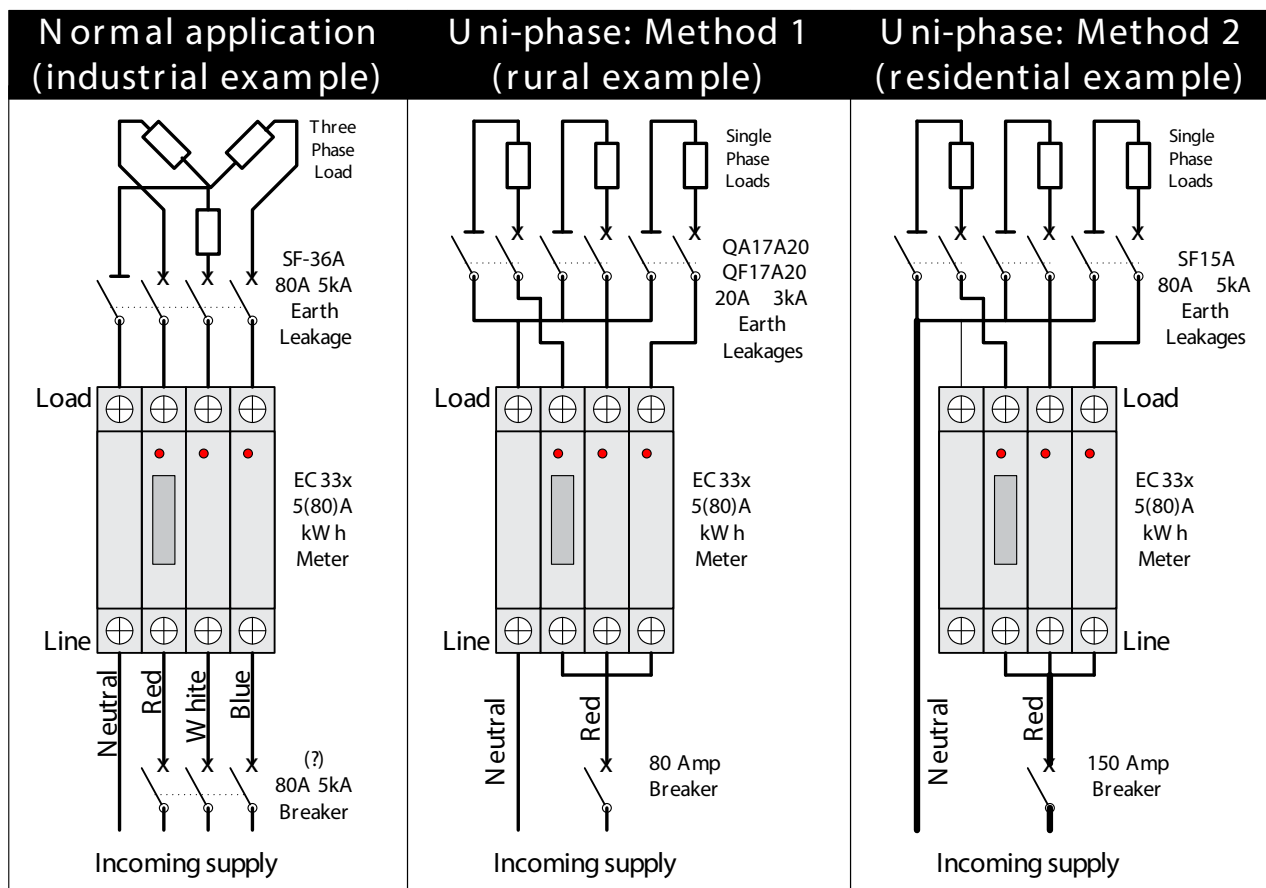
Product Type	EBM
Operating Temperature Range	-40 °C to +75 °C
Mounting Options	Dual mounting (DIN & Mini), DIN rail
Weight	158,5 g per double pole (unpacked)
Humidity	35 to 85% relative
Altitude	Certification tests done at altitude \approx 2000 metres. Will operate at higher altitudes.
Flammability	I3 - Ignition does not persist at 850 °C after glow wire is withdrawn with an oxygen index of \geq 28
Toxicity	F1 - Smoke index of \leq 20 which determines the fume class
Pollution Degree	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

Rail Mount Energy Meters

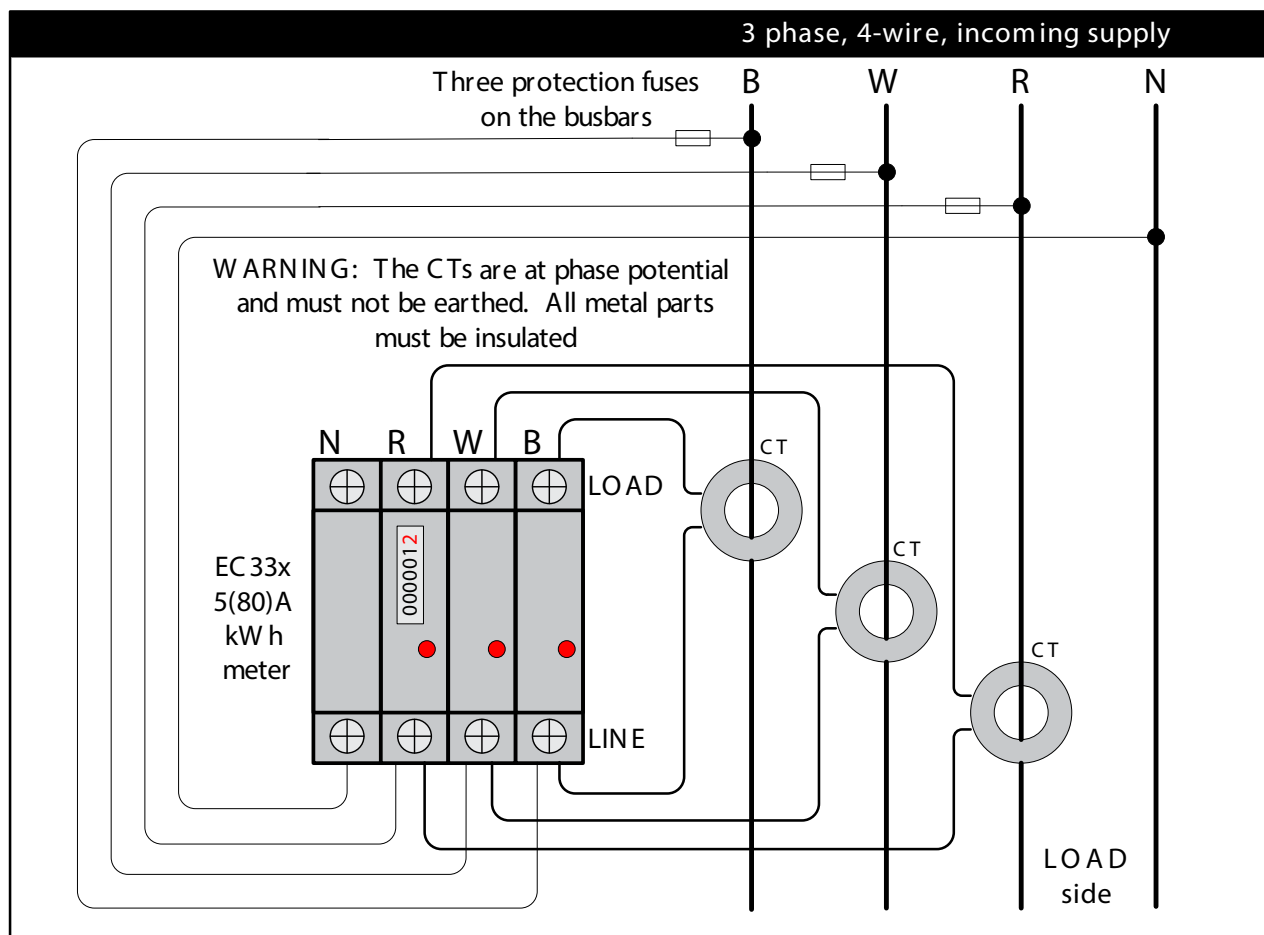
Ordering Information

Product Description	Single Phase Direct Connect	Three Phase Four Wire	Shell Colour		Escutcheon Height
Mini Rail 230 V / 50 Hz	EC320CM	EC330CM	Black		57 mm
DIN Rail 230 V / 50 Hz	EC320DM	EC330CD	Grey		45 mm
Qty per Std Pack	6	3		Shrink Wrap Carton	
Meter Width	26 mm	52 mm		Carton 178 mm wide	
Meter Height	107 mm	107 mm		Carton 68 mm high	
Meter Depth	66 mm	66 mm		Carton 110 mm high	
Mass / Std Pack	1060 g	1150 g			

Wiring diagram



Rail Mount Energy Meters



LED Indication

LED Indication	Reason/ Description
Pulses RED	Normal consumption pulses (1000 pulses per kilo watt hour)
Pulses GREEN	Low load condition (consumption is less than 30 watts)
Solid GREEN	No load (meter is powered up)
Pulses ORANGE	Abnormal load (supply voltage is between 265 - 460V or 60 - 90V AC)
Solid ORANGE	Unsafe load condition (the current being drawn is greater than 125 A or the supply voltage is greater than 460V AC)
Solid RED	Error condition (the meter's internal built in test has failed)
No LED	No LED indication (insufficient supply voltage)

Rail Mount Energy Meters

EC 300 series kWh consumption when using external CTs

There is a requirement to measure loads in excess of the metre's maximum current rating of 80 A. This can be done by using external CTs.

The actual kWh consumption per phase can be calculated as follows:

$$\text{CT Ratio} \times \Delta \text{ Counter Value}$$

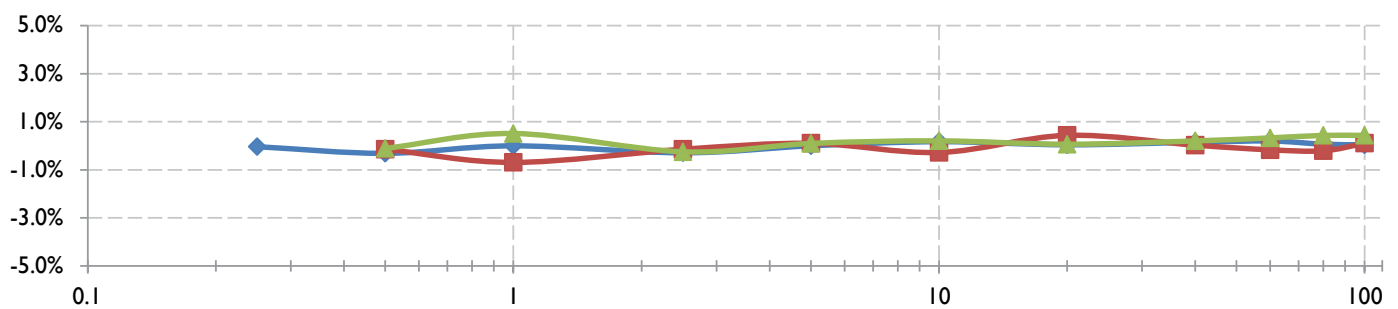
E.g.: For a 200/5 CT ratio the factor is 40.

Therefore the consumption per phase = 40 x kWh consumed.

For CT Selection, please refer to the NRS057 specification parts 1, 2 and 4.

NOTE: Do not earth CTs fitted above!

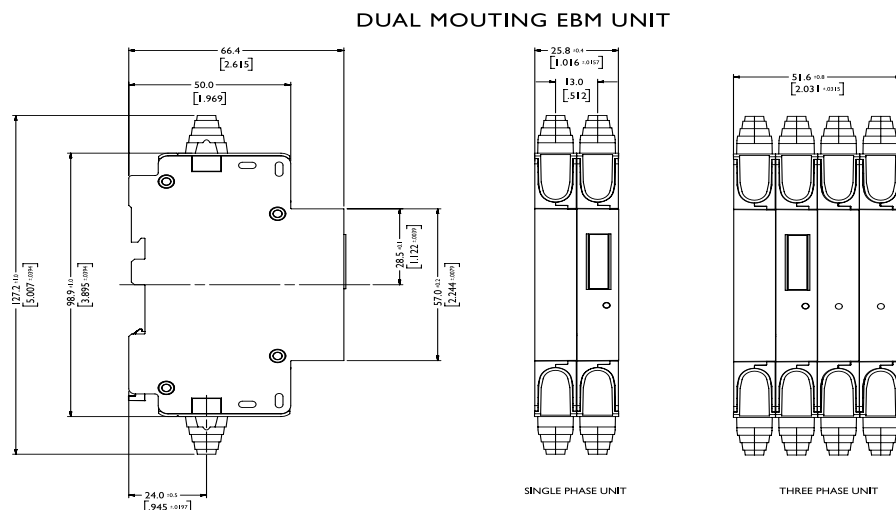
Accuracy graph



Additional influence of current variation at Un = 230 V, f = 50 Hz, t = 25 °C													
Current (A)	0.05	0.1	0.25	0.5	1	2.5	5	10	20	40	60	80	100
Resistive (I)	-1.18%	-1.86%	-0.04%	-0.31%	0.00%	-0.29%	0.00%	0.17%	0.04%	0.15%	0.20%	0.07%	0.04%
Ind. (0.5)	7.42%	2.45%	0.61%	-0.15%	-0.69%	-0.14%	0.10%	-0.28%	0.43%	0.02%	-0.17%	-0.21%	0.10%
Cap. (0.8)	-5.01%	-2.66%	-0.58%	-0.11%	0.51%	-0.25%	0.10%	0.20%	0.06%	0.20%	0.33%	0.43%	0.43%
% Ib	1%	2%	5%	10%	20%	50%	100%	200%	400%	800%	1200%	1600%	2000%

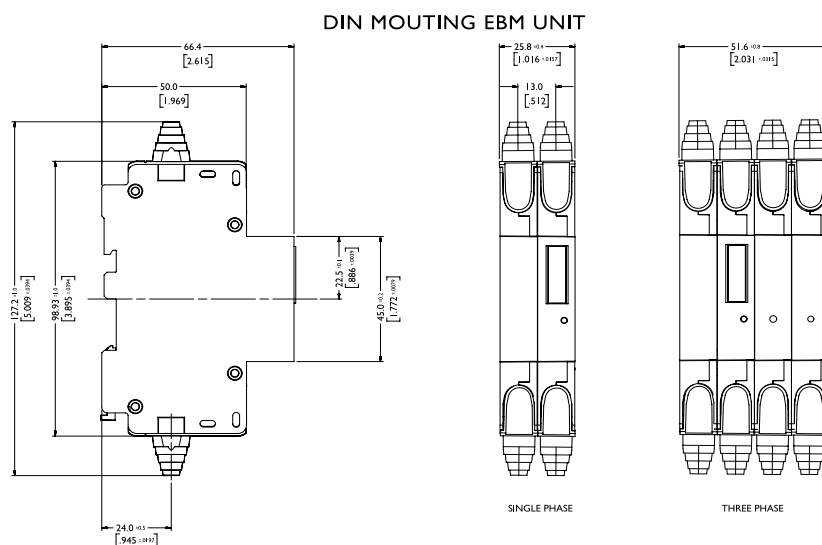
Rail Mount Energy Meters

Dimensional Drawing: Black, 57 mm Front Escutcheon



TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

Dimensional Drawing: Grey, 45 mm Front Escutcheon



TOLERANCE ± 0.4 UNLESS OTHERWISE SPECIFIED
(DIMENSION IN BRACKETS ARE IN INCH)

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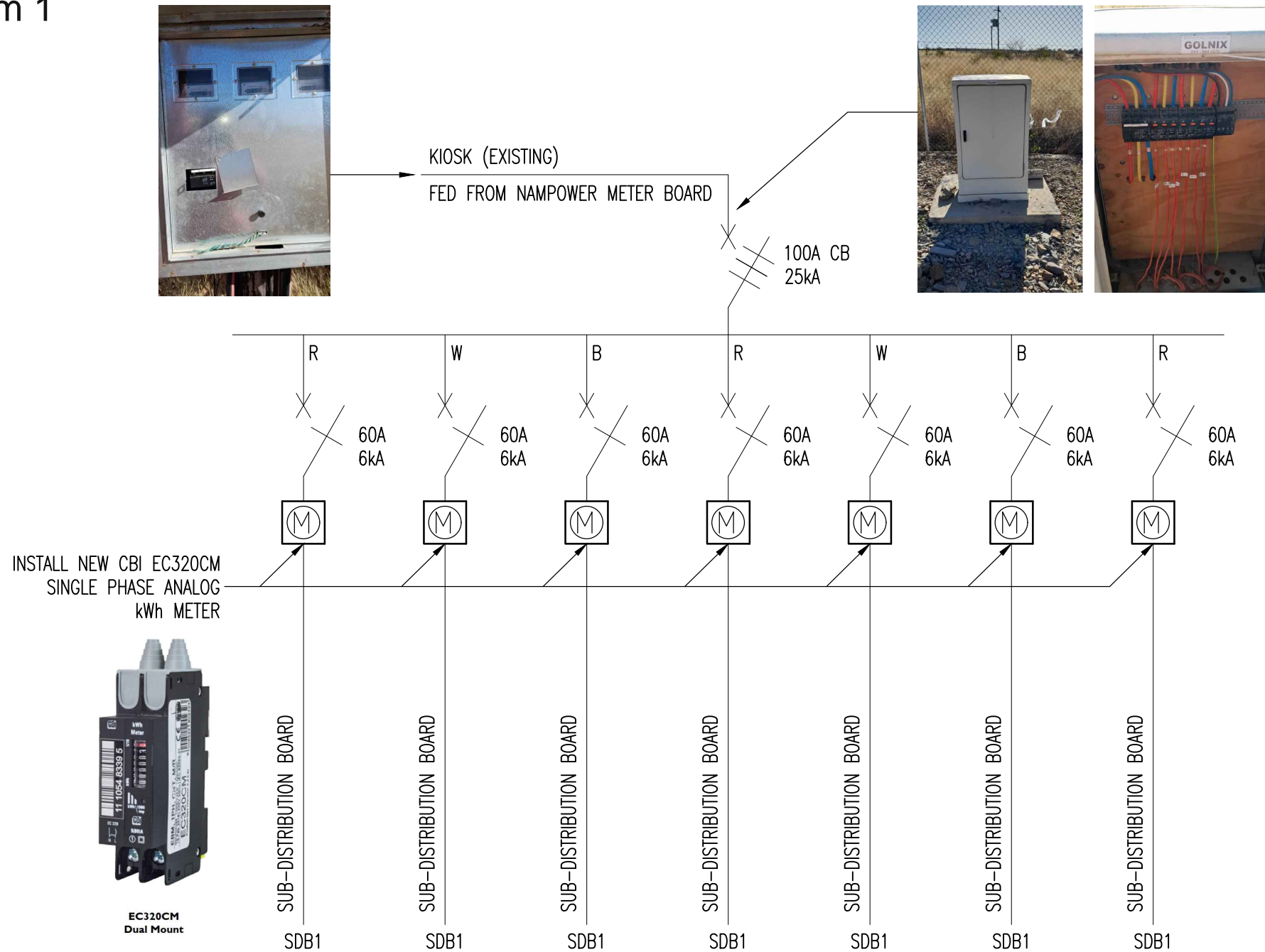
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Diagram 1



EXISTING KIOSK WIRING DIAGRAM