

 <b>Eskom</b>	<b>Report</b>	<b>Technology</b>
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Title: **TECHNICAL EVALUATION  
CRITERIA FOR METERING  
KIOSKS**

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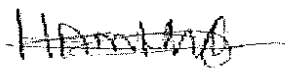
**Compiled by**



**Henri Groenewald**  
**Chief engineer**

Date: 2017-01-20

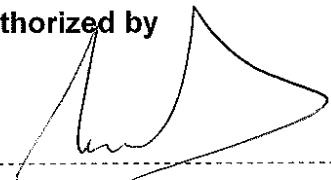
**Functional Responsibility**



**Amelia Mtshali**  
**Metering, DC and Security  
Technologies Manager**

Date: 2017-01-30

**Authorized by**



**Richard McCurrach**  
**Senior Manager PTM&C  
Engineering**

Date: 2/2/2017

## Content

	Page
1. Introduction .....	3
2. Supporting clauses .....	3
2.1 Scope .....	3
2.1.1 Purpose .....	3
2.1.2 Applicability .....	5
2.2 Normative/informative references .....	6
2.2.1 Normative .....	6
2.2.2 Informative .....	7
2.3 Definitions .....	7
2.3.1 General .....	7
2.3.2 Disclosure classification .....	7
2.4 Abbreviations .....	7
2.5 Roles and responsibilities .....	7
2.6 Process for monitoring .....	7
2.7 Related/supporting documents .....	7
3. Project Timeframes and Deliverables .....	8
3.1 Phase 1: Product A&B Schedules, Risk and Support .....	8
3.2 Phase 2: Sample Evaluation .....	8
3.3 Phase 3: Laboratory Evaluation .....	8
4. Tender Returnables (Technical phase 1) .....	9
5. Tender Evaluation (Technical) .....	9
5.1 Phase 1 – Product A&B schedules and Risk and Support .....	9
5.1.1 Phase 1- Technical Sub-Category: Product A&B Schedules .....	10
5.1.2 Phase 1 – Technical Sub-Category: Risk and Support .....	10
5.2 Phase 2 – Sample evaluations .....	11
5.3 Phase 3 – Laboratory Testing .....	11
6. Authorization .....	11
7. Revisions .....	11
8. Development team .....	11
9. Acknowledgements .....	11

## Tables

Table 1: Metering kiosks types .....	3
Table 2: Technical scoring breakdown .....	9
Table 3: Phase 1 scoring breakdown .....	10
Table 4: Scoring of items in Technical Schedules A&B .....	10

## **1. Introduction**

This document provides an overview of Eskom's technical requirements for an enquiry for the supply of metering kiosks for outdoor and indoor use. This document provides an overview of the requirements for the different metering kiosks, and acts as an index and supplement to the detailed specification which are provided per metering kiosk product type.

This document defines the technical evaluation criteria that will be used in the enquiry for metering kiosks.

## **2. Supporting clauses**

### **2.1 Scope**

#### **2.1.1 Purpose**

This document provides information relating to an enquiry for the technical evaluation, acceptance and supply of metering kiosks for use in Eskom.

##### **2.1.1.1 Manufacturing material**

The standards for the manufacturing of metering kiosks are specified for utilising 3CR12 stainless steel. However, for coastal and other high corrosive areas, kiosks are required which are manufactured from non-corrosive materials. Eskom would thus, in addition to the establishment of a contract for 3CR12 stainless steel kiosks, facilitate the introduction of kiosks manufactured from alternative non-corrosive materials. The metering kiosk contract would thus be split between kiosks manufactured from 3CR12 stainless steel and kiosks manufactured from a technically acceptable alternative non-corrosive material.

- Where kiosks are offered which are manufactured of other materials then the following additional requirements are to be met:
- The manufacturer shall list all materials and composites to be used in the manufacturing of the kiosks. (Material manufacturer and type of materials)
- The manufacturer shall provide detailed documentation of all materials, composites and manufacturing processes to be used in the manufacturing of the kiosks.

The manufacturer shall provide documentation of all certificates available and tests conducted to guarantee UV stability for a lifespan of more than 15 years. The international / national standard against which it was tested must also be documented.

##### **2.1.1.2 Metering kiosk types**

The enquiry includes the following metering kiosks types:

**Table 1: Metering kiosks types**

<b>Item</b>	<b>Meter Module Type</b>	<b>Drawing number</b>	<b>SAP number</b>
1	1PH empty	D-1004 rev 9	168611
2	1PH 10kVA	D-1004 rev 9	168866
3	1PH 16kVA	D-1004 rev 9	168580
4	3PH 25-50k VA SPU empty	D-1002 rev 10	168612
5	3PH 25kVA SPU	D-1002 rev 10	168867
6	3PH 50kVA SPU	D-1002 rev 10	168758
7	3PH 25kVA Ruraflex	D-1002 rev 10	182382
8	3PH 50kVA Ruraflex	D-1002 rev 10	182383

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Item	Meter Module Type	Drawing number	SAP number
9	3PH 25-50kVA Prepayment	D-1002 rev 10 & D-1015 rev 1	206261
10	Base 3PH 25-50 kVA SPU	D-1002 rev 10	212966
11	3PH 100kVA SPU	D-1003 rev 10	168335
12	3PH 100kVA LPU 400V	D-1003 rev 10	168620
13	Base 3PH 100kVA	D-1003 rev 10	631924
14	3PH 200kVA LPU 400V	D-1000 rev 13	168623
15	3PH 315kVA LPU 400V	D-1000 rev 13	168624
16	3PH 500kVA LPU 400V	D-1000 rev 13	168626
17	3PH 200-500 kVA LPU empty	D-1003 rev 10	168599
18	Base 3PH 200-500k VA LPU	D-1000 rev 13	168733
19	Ground mount: 3PH 100kVA 400V	D-1023 rev 1	223741
20	Ground mount: 3PH 200kVA 400V	D-1023 rev 1	223742
21	Ground mount: 3PH 315kVA 400V	D-1023 rev 1	223738
22	Ground mount: 3PH 500kVA 400V	D-1023 rev 1	223740
23	Ground mount 3PH 800kVA 400V	D-1016 rev 4	194123
24	Ground mount 3PH 1MVA 400V	D-1016 rev 4	194124
25	CT/VT unit empty	D-1001 rev 11	168600
26	CT/VT unit complete	D-1001 rev 11	168627
27	Base CT/VT unit	D-1001 rev 11	168732
28	2 way 1PH 16kVA BS footprint meters	D-1011 rev 6	186798
29	3 way 1PH 16kVA BS footprint meters	D-1011 rev 6	214975
30	2-3 way 1PH empty BS footprint meters	D-1011 rev 6	212969
31	4 way 1PH 16kVA BS footprint meters	D-1019 rev 4	212967
32	4way 1PH empty BS footprint meters	D-1019 rev 4	212970
33	6 way 1PH 16kVA BS footprint meters	D-1020 rev 4	212968
34	6 way 1PH empty BS footprint meters	D-1020 rev 4	212971
35	Base : 1PH multiway BS footprint meters	D-1020 rev 4	214976
36	Base tapered: 1PH multiway BS footprint meters	D-1020 rev 4	214977
37	2 way 3PH 25kVA BS footprint meters	D-1012 rev 6	186799
38	2 way 3PH 50kVA BS footprint meters	D-1012 rev 6	212972
39	2 way 3PH empty BS footprint meters	D-1012 rev 6	212974
40	Base: 2 way 3PH BS footprint meters	D-1012 rev 6	214978
41	Base tapered 2 way 3PH BS footprint meters	D-1012 rev 6	214980
42	4 way 3PH 25kVA BS footprint meters	D-1018 rev 5	214137
43	4 way 3PH 50kVA BS footprint meters	D-1018 rev 5	212973
44	4 way 3PH empty BS footprint meters	D-1018 rev 5	212975
45	Base: 4 way 3PH BS footprint meters	D-1018 rev 5	214979

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Item	Meter Module Type	Drawing number	SAP number
46	Base tapered: 4 way 3PH BS footprint meters	D-1018 rev 5	214991
47	Secure 2 way pole 1ph 20A	D-1030 rev 2	0569540
48	Secure 4 way pole 1ph 20A	D-1031 rev 2	0569541
49	Secure 6 way pole 1ph 20A	D-1032 rev 2	0569542
50	Secure 8 way pole 1ph 20A	D-1033 rev 2	0569543
51	Secure 2 way pole 1ph 60A	D-1030 rev 2	0569544
52	Secure 4 way pole 1ph 60A	D-1031 rev 2	0569545
53	Secure 6 way pole 1ph 60A	D-1032 rev 2	0569546
54	Secure 8 way pole 1ph 60A	D-1033 rev 2	0569547
55	Secure Remote Access Terminal (RAT)	D-1034 rev 1	0571155
56	2 way 1PH 16kVA Din-rail meters	D-1035 rev 1	615212
57	2 way 1PH empty Din-rail meters	D-1035 rev 1	TBA
58	4 way 1PH 16kVA Din-rail meters	D-1036 rev 1	615213
59	4 way 1PH empty Din-rail meters	D-1036 rev 1	TBA
60	6 way 1PH 16kVA Din-rail meters	D-1037 rev 1	615214
61	6 way 1PH empty Din-rail meters	D-1037 rev 1	TBA
62	8 way 1PH 16kVA Din-rail meters	D-1038 rev 1	615215
63	8 way 1PH empty Din-rail meters	D-1038 rev 1	TBA
64	Base : 1PH 2, 4, 6 & 8 - way Din-rail meters	D-1035 rev 1	TBA
65	Base tapered: 1PH 2, 4, 6 & 8 - way Din-rail meters	D-1035 rev 1	TBA
66	12 way 1PH 16kVA Din-rail meters	D-1039 rev 1	615216
67	12 way 1PH empty Din-rail meters	D-1039 rev 1	TBA
68	Base : 1PH 12 - way Din-rail meters	D-1039 rev 1	TBA
69	Base tapered: 1PH 12 - way Din-rail meters	D-1039 rev 1	TBA
70	Wall mount 15 way 1PH	D-1022 rev 2	0223630
71	Wall mount 400V	D-1014 rev 3	0212961
72	Wall mount 110V	D-1014 rev 3	0212962
73	Wall mount meter plate 400V	D-1021 rev 2	0212963
74	Wall mount meter plate 110V	D-1021 rev 2	0212964
75	Substation outdoor single feeder kiosk	D-5806 rev 0	0599894
76	Substation outdoor single feeder kiosk	D-5805 rev 0	0599895

Suppliers may tender for any single item, multiple items or all the above items. Preference shall be given to suppliers that can provide all / most of the items above.

### 2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Distribution and Transmission Divisions.

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## **2.2 Normative/informative references**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

### **2.2.1 Normative**

- [1] ISO 9001 Quality Management Systems.
- [2] 240-76628293 Standard for energy meter kiosks: Low-voltage for small power users (SPU).
- [3] D-1004 Manufacturing drawings for single phase SPU metering kiosks outdoor.
- [4] D-1002 Manufacturing drawings for three phase SPU 25 & 50kVA metering kiosks outdoor.
- [5] D-1003 Manufacturing drawings for three phase SPU & LPU 100kVA metering kiosks outdoor.
- [6] D-1015 Manufacturing drawings for three phase Prepayment metering kiosks – inner plate.
- [7] 240-76625427 Standard for energy meter kiosks: Low voltage multi-way for small power users (SPU) underground supply networks.
- [8] D-1011 Manufacturing drawings for 2-3 way single phase ground mount metering kiosks.
- [9] D-1019 Manufacturing drawings for 4 way single phase ground mount metering kiosks.
- [10] D-1020 Manufacturing drawings for 6 way single phase ground mount metering kiosks.
- [11] D-1012 Manufacturing drawings for 2 way three phase ground mount metering kiosks.
- [12] D-1018 Manufacturing drawings for 4 way three phase ground mount metering kiosks.
- [13] D-1035 Manufacturing drawings for 2 way single phase Din-rail meters ground mount metering kiosks.
- [14] D-1036 Manufacturing drawings for 4 way single phase Din-rail meters ground mount metering kiosks.
- [15] D-1037 Manufacturing drawings for 6 way single phase Din-rail meters ground mount metering kiosks.
- [16] D-1038 Manufacturing drawings for 8 way single phase Din-rail meters ground mount metering kiosks.
- [17] D-1039 Manufacturing drawings for 12 way single phase Din-rail meters ground mount metering kiosks.
- [18] D-1022 Manufacturing drawings for 15 way single phase wall-mount metering kiosks.
- [19] 240-76628117 Standard for energy meter kiosks: Outdoor pole- or ground mounted, low-voltage, 200kVA to 500kVA for large electrical power users (LPU).
- [20] D-1000 Manufacturing drawings for 200 – 500kVA LPU metering kiosks outdoor.
- [21] 240-76628297 Standard for energy meter kiosks: Ground mounted, low-voltage, 100kVA to 1MVA for large electrical power users (LPU).
- [22] D-1016 Manufacturing drawings for 1MVA LPU metering kiosks ground mounted.
- [23] D-1023 Manufacturing drawings for 100-500kVA LPU metering kiosks ground mounted
- [24] 240-76628667 Standard for energy meter kiosks: Medium-voltage for Current/Voltage transformers for large power users (LPU).
- [25] D-1001 Manufacturing drawings for CT/VT unit metering kiosks.
- [26] 240-55146411 Standard for energy meter kiosks: Secure pole-top multi-way metering kiosks
- [27] D-1030 Manufacturing drawings for secure pole-top single phase 2-way metering kiosks.

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- [28] D-1031 Manufacturing drawings for secure pole-top single phase 4-way metering kiosks.
- [29] D-1032 Manufacturing drawings for secure pole-top single phase 6-way metering kiosks.
- [30] D-1033 Manufacturing drawings for secure pole-top single phase 8-way metering kiosks.
- [31] D-1034 Manufacturing drawings for secure pole-top Remote Access Terminal (RAT) metering kiosks.
- [32] 240-76628295 Standard for energy meter kiosks: Indoor wall mounted meter panels (LPU)
- [33] D-1014 Manufacturing drawings for single feeder indoor wall-mount metering kiosks.
- [34] D-1023 Manufacturing drawings for single feeder indoor wall-mount metering plate.
- [35] 240-80309303 Standard for substation meter panels: Outdoor single and dual feeder.
- [36] D-5806 Manufacturing drawings for substation single feeder outdoor door metering kiosks.
- [37] D-5805 Manufacturing drawings for substation dual feeder outdoor door metering kiosks.
- [38] 240-98195962 Chemical treatment and powder coating of 3CR12 metering kiosks during manufacturing.
- [39] SANS 60439 Low-voltage switchgear and control gear assemblies Part 5: Particular requirements for assemblies for power distribution in public networks.
- [40] Technical requirements, questionnaires and deviation schedules (Microsoft Excel files):
  - Technical requirements for metering kiosks.

## **2.2.2 Informative**

None

## **2.3 Definitions**

### **2.3.1 General**

None

### **2.3.2 Disclosure classification**

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## **2.4 Abbreviations**

None

## **2.5 Roles and responsibilities**

This document defines the technical evaluation criteria that will be used by the Eskom technical evaluation team for the evaluation of metering kiosks.

## **2.6 Process for monitoring**

Not applicable.

## **2.7 Related/supporting documents**

Not applicable.

### 3. Project Timeframes and Deliverables

The technical evaluation will be conducted over three phases as follows:

#### 3.1 Phase 1: Product A&B Schedules, Risk and Support

Duration: 1 month

Suppliers / manufacturers shall be evaluated on the tender returnables (Technical schedules and Risk and Support). Suppliers / manufacturers which have passed the technical evaluations will be required to provide prototypes and these will be evaluated during phase 2.

#### 3.2 Phase 2: Sample Evaluation

Duration: 2 months

Only suppliers that meet the criteria set aside for phase 1 will move onto phase 2 of the technical evaluation.

The successful tenderers shall be required to provide samples of the following items for technical and quality evaluations:

- 1) Item 3 - 1PH 16kVA metering kiosk, D-1004 rev 9, SAP 168580
- 2) Item 11 - 3PH 100kVA SPU metering kiosk, D-1003 rev 10, SAP 168335
- 3) Item 14 - 3PH 200kVA LPU 400V metering kiosk, D-1000 rev 13, SAP 168623
- 4) Item 48 – Secure 4 way pole mount 1ph 20A, D-1031 rev 2, SAP 0569541
- 5) Item 58 – 4 way 1PH 16kVA kiosk for Din-rail meters, D-1036 rev 1

**Note:** The metering kiosks must be fully populated as per the SAP description, standard and drawings for inspection.

Supplier visits shall be conducted to evaluate the metering kiosks to design requirements and to verify the information provided in the questionnaire relating to risk and support.

Suppliers / manufacturers shall be advised of their qualification for the evaluation after phase 1 where after they need to prepare the samples. The samples must be ready for inspection a month after notification. Eskom shall notify the supplier / manufacturer of the exact date of the evaluation.

The evaluations shall be conducted at the supplier / manufacturer premises.

#### 3.3 Phase 3: Laboratory Evaluation

Duration: 2 months

Only suppliers that have passed phase 2 will move onto phase 3 of the technical evaluation.

The successful tenderers shall be required to provide samples of the following items for technical and quality evaluations within Eskom's laboratories in Rosherville:

- 1) Item 11 - 3PH 100kVA SPU metering kiosk, D-1003 rev 10, SAP 168335
- 2) Item 14 - 3PH 200kVA LPU 400V metering kiosk, D-1000 rev 13, SAP 168623
- 3) Item 48 – Secure 4 way pole mount 1ph 20A, D-1031 rev 2, SAP 0569541
- 4) Item 58 – 4 way 1PH 16kVA kiosk for Din-rail meters, D-1036 rev 1

Samples must be delivered to Eskom Rosherville by the manufacturer.

Samples shall be evaluated against the requirements of SANS 60439-5 on the following tests:



- 1) Verification of structural strength.
  - a) Verification of resistance to static load.
  - b) Verification of resistance to shock load.
  - c) Verification of resistance to torsional stress.
  - d) Verification of impact force with-stand.
  - e) Verification of mechanical strength of doors.
  - f) Verification of resistance to mechanical shock impacts induced by sharp-edged objects
- 2) Enclosure and degree of protection.
- 3) UV protection.
- 4) Verification of resistance to abnormal heat and flame.
  - a) Verification of resistance to abnormal heat (hot ball test).
  - b) Verification of category of flammability.

#### 4. Tender Returnables (Technical phase 1)

Tenderers shall supply the following information:

- 1) Completed general questionnaire as listed in the Excel files for each item.
- 2) Completed technical schedules for all items tendered as listed in the Excel files for each item.
- 3) Completed risk and support questionnaire as listed in the Excel files for each item.
- 4) Data sheets, brochures and test certificates (where applicable).

#### 5. Tender Evaluation (Technical)

Tender responses shall be evaluated using the methodology of the Preferential Procurement Policy Framework Act (05 of 2000). High level gatekeeper criteria are applicable, represented by minimum scoring thresholds.

The technical tender evaluation will comprise of a detailed technical evaluation whereby the Product A&B schedules and the Risk and Support questionnaires are evaluated, then the sample evaluations at the manufacturers manufacturing premises and lastly the laboratory testing.

The overall technical scoring shall be made up of scoring in the various sub-categories during the different phases of the technical evaluation as follows:

**Table 2: Technical scoring breakdown**

Technical Criteria	Weightings
Product A&B Schedules, Risk and Support (phase 1)	40
Sample Evaluation (phase 2)	60
Total	100
Minimum threshold for qualification	85

##### 5.1 Phase 1 – Product A&B schedules and Risk and Support

Phase 1 shall be made up of scoring in two sub-categories and shall be adjudicated a score out of 100 as follows:

Table 3: Phase 1 scoring breakdown

Phase 1 - Technical sub-category	Weightings
Product A&B Schedules	60
Risk and Support	40
Total	100
Minimum threshold for qualification	85

Only suppliers that meet the minimum threshold for phase 1 will move onto phase 2 of the technical evaluation. Tenders that do not meet the minimum threshold shall be immediately excluded from further evaluation.

### 5.1.1 Phase 1- Technical Sub-Category: Product A&B Schedules

This section shall comprise scoring of the technical schedules. Major deviations to scored items shall be addressed in Sub-category: Risk and Support.

The A&B Schedules use a default weight of 1 for each scored item. Critical items are assigned higher weights. For example, a weight of 10 indicates that the item will count the same as ten items with weight 1. Each item will be assigned a score by the Eskom evaluation team based upon the tendered response and cross-checked with the supporting documents provided.

Table 4: Scoring of items in Technical Schedules A&amp;B

Criteria	Score
<b>Fully compliant</b> (Indicated as <b>Y</b> in A&B Schedules)	3
<b>Partially compliant</b> - minor deviation (Indicated as <b>P</b> in A&B Schedules)	1
<b>Non-compliant</b> - major deviation (Indicated as <b>N</b> in A&B Schedules)	0

The score for each item will be multiplied by its weight to obtain the total score per item. All scores for the A&B Schedule will be tallied and shall be calculated based on the maximum possible score. This will be recorded as the percentage score.

### 5.1.2 Phase 1 – Technical Sub-Category: Risk and Support

The Eskom technical team will evaluate the risk and support capability of the supplier / product based on the Risk and Support Questionnaire as listed in the Excel file, deviations schedules and from the non-scored components in Sub-category: Product A&B Schedules. The evaluation of the risk and support of the product / supplier shall be adjudicated a score out of 100 made up of two areas as follows:

**Product Risk (60):** A score derived for the product risk based on the following areas and weighted as follows:

- Installed base / time that the product has been installed (weight 25)
- Deviations from standards (weight 25)
- Ability to deliver (weight 25)
- Historical performance (weight 25)

**Support (40):** A score derived for support based on the following areas and weighted as follows:

- Local expertise (weight 25)
- Link between supplier / manufacturer and sub-contractors (weight 25)

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- Maintenance support (weight 25)
- Spares holding (weight 25)

## 5.2 Phase 2 – Sample evaluations

Sample kiosks shall be evaluated and tested against the requirements of the respective specifications and allocated a score based on the criteria as listed for the individual sample kiosks. The scoring principals' applied to the Technical Schedules A&B shall apply to the sample evaluation.

The samples shall be adjudicated a score out of 100 with a ***minimum threshold for qualification of 85 on all of the required samples***. Only suppliers that meet the minimum threshold for phase 2 will move onto phase 3 of the technical evaluation.

## 5.3 Phase 3 – Laboratory Testing

The samples will be tested on the range of tests as specified in paragraph 3.3.

The samples have to pass all of the tests in order to pass the technical evaluation.

## 6. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Richard McCurrach	PTM&C Engineering Senior Manager
Amelia Mtshali	Metering, DC and Security Technologies Manager

## 7. Revisions

Date	Rev	Compiler	Remarks
March 2017	1	HPD Groenewald	Original document

## 8. Development team

The following people were involved in the development of this document:

- Mohamed Omar
- Henri Groenewald
- Wernher Schmidt
- Jacques Calitz
- Michael McDonald
- Johan le Roux
- Allen Naidoo
- Hylton Hiralal

## 9. Acknowledgements

Not applicable.