TITLE	**SPECIFICATION FOR SUPPLY, DELIVERY, INSTALLATION AND COMMISIONING OF LOAD CONTROL METERING TRANDUCERS**	REFERENCE **CP_TSSPEC_414**	REV **0**
		DATE:	**SEPTEMBER 2024**
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FOREWORD

Recommendations for corrections, additions or deletions shall be addressed to the:
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2016

INTRODUCTION

City power uses a ripple control system to control the Load for its customers in the Johannesburg area. The Central Controller, type Multiple Point Controllers (MPC), requires the instantaneous summated Load from the main supply substations in the City Power's Area of operation. The function of metering transducers is to quantify the energy saved during geyser control such that the business can make an informed decision when the electricity network is overloaded.

1. SCOPE OF WORK

The scope covers the supply, installation, configuration and commissioning load control transducers. The scope also covers Support, maintenance and repair of Load Management equipment and accessories for the duration of the contract.

2. NORMATIVE REFERENCES

The following documents contain provisions that, through reference in the text, constitute requirements of this standard. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions.

3. Informative References

The Contractor shall supply his standard equipment, which shall conform to IEC or British Standard Specification. Equipment conforming to other specifications shall be accepted only with the prior approval of the Engineer. The equipment must fulfil all the important requirements and regulations concerning electromagnetic compatibility EMC and safety (IEC 1010 resp. EN 61 010).
The Contractor shall indicate as to how far his internal quality control process meets the standards of ISO 9001.

4. TERMS AND ABBREVIATION

NA

5. REQUIREMENTS

5.1 GENERAL

5.1.1 kW/kVA Transducers for measuring the load in a 3-phase 3 wire unbalanced network at the Eskom incomers (intake points).

5.1.2 Isolation amplifiers and surge protection equipment required on pilot lines, such as Line Transformers and DC/DC Isolators.

5.1.3 Analog to LAN converters to send the signals via existing City Power Foxconn communications to the control center.

5.1.4 Any surge protection equipment required at the intake subs or at the Central Controller.

5.2 TRANDUCERS

5.2.1 Each transducer shall have 2 to 4 or 4 digital outputs for signalling limits or power metering. For two of the limit outputs up to three measured can be logically combined.

5.2.2 The transducers shall also be equipped with an RS-232 serial interface or Optic port to which a PC with corresponding software can be connected for programming or accessing and executing useful ancillary functions.

5.2.3 The usual modes of connection, the types of measured variables, their ratings, the transfer characteristic for each output etc. are the main parameters that shall be programmed.

5.2.4 Ancillary functions shall include a power system check, provision for displaying the measured variable on a PC monitor, the simulation of the outputs for test purposes and a facility for printing name plates

5.3 Analog to LAN convertor

5.3.1 Collaborative Workflows – the tool shall enable collaboration between the technical and non-technical stakeholders within data pipeline and create workflows between different business units to resolve data quality issues.

5.3.2 Proactive Alerting – ability to be notified immediately when problems arises to minimize the impact of data quality issues within the business

5.3.3 Auditing - being able to see when and where changes were made to a record is important for internal and external auditing and compliance concerns.

5.3.4 Dynamic - scalability and adaptability are key. The tool shall scale to increasing data volume and cardinality and enabling custom data quality indicators (DQIs) for unique business needs.

5.3.5 Change-aware – adaptive to the evolving data landscape, capturing snapshots of data statistical profile pre and post transformation

5.3.6 Self-serve – user-friendly with smart AI and ML suggestions to minimize setup and maintenance burdens while empowering the team intuitive interfaces and automated service delivery

5.3.7 Data types supported – support for various types of data – structured, unstructured and semi-structured.

5.3.8 Metadata support: ability to support metadata to avoid ‘insight gaps’ where valuable data shall be used for analysis

5.3.9 Compatibility/integration with different sources: compatibility with different data sources with lower latency

5.3.10 Batch processing capabilities – ability to process data in batches

5.4 Summation Amplifier

5.4.1 The main function of the summation amplifier is to summate the three main intake points.

5.4.2 The summated value shall be used to input into the Central controller, type MPC.

6. SUPPORT AND MAINTENANCE

6.1 The Service Provider shall provide support and Maintenance in accordance with City Power's SLA.

6.2 The Service Provider shall be responsible to provide software upgrades to resolve issues, introduce added functionality; and to keep the tool fully functional.

6.3 Upgrades shall be done onsite as and when required.

7. SERVICE LEVEL AGREEMENT

7.1 City Power will be responsible for the management of a signed Service Level Agreement (SLA) between City Power and the prospective service provider for the duration of the contract. Final SLA will be negotiated with the successful service provider during contract negotiations

7.2 The service provider shall provide City Power with the procedure to be followed to log related incidents at the service desk of the service provider.

8. DOCUMENTATION

8.1. Full technical and functional details for system deployment shall be submitted.

8.2. Manuals for all equipment offered shall be provided.

8.3 The Service Provider shall provide a copy of the training materials and user documentation to the City Power in an electronic readable format.

8.4 City Power shall be able to make copies of the material and internally distribute such material.

9. TRAINING

The Service Provider shall provide comprehensive training courses City Power employees, which includes the following,

9.1 Configuration, installation, operation and maintenance.

9.2 Technical system support

9.3 User, Functional & Support Training

9.4 Enhanced features and functionality as the system is upgraded

9.5 The Service Provider shall clearly outline the layout of the recommended training.

9.6 The associated costs for the certified training course shall be given per person and shall be fixed for the period of the contract at no cost to City Power.

10. QUALITY MANAGEMENT

A quality management system shall be set up to assure the quality of the system during design, development, production and servicing. Guidance on the requirements for a quality management system may be found in the following standards: ISO 9001; 2015. The details shall be subject to agreement between the purchaser and supplier.

11. HEALTH AND SAFETY

A health and safety plan shall be set up to ensure proper management and compliance of the system during installation, operation, maintenance, and decommissioning phases. Guidance on the requirements of a health and safety plan may be found in ISO 45001:2018 standards. The details shall be subject to agreement between City Power and the Supplier.

12. ENVIRONMENTAL MANAGEMENT

An environmental management plan shall be set up in order to ensure the proper environmental management and compliance of the system during their entire life cycle (i.e. during design, development, production, installation, operation and maintenance, decommissioning as well as disposal phases). Guidance on the requirements for an environmental management system may be found in ISO 14001:2015 standards. The details shall be subject to agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHEQ Policy.

ANNEXURE A – Bibliography

None

ANNEXURE B - Revision information

DATE	REV. NO.	NOTES
September 2024	0	First issue

Annexure C - Technical Schedules A and B

For

Schedule A: Purchaser's specific requirements
Schedule B: Guarantees and technical particulars of equipment offered

Item	Sub-clause	Description	Schedule A	Schedule B
1.		Name of manufacturer	Required	
2		Country of manufacturing	Required	
	5.1	**GENERAL**	XXXX	XXXX
3	5.1.1	kW/kVA Transducers for measuring the load in a 3-phase 3 wire unbalanced network at the Eskom incomers.	Required	
4	5.1.2	Isolation amplifiers and surge protection equipment required on pilot lines, such as Line Transformers and DC/DC Isolators.	Required	
5	5.1.3	Analog to LAN converters to send the signals as to 5.1.3	Required	
6	5.1.4	Any surge protection equipment required at the intake subs or at the Central Controller.	Required	
	5.2	**TRANDUCERS**	XXXX	XXXX
7	5.2.1	Each transducer must have 2 to 4 or 4 digital outputs for signaling limits or power metering. as to 5.2.1	Required	
8	5.2.2	The transducers must also be equipped with an RS-232 serial interface or Optic port as to 5.2.2	Required	
9	5.2.3	The main parameters that have to be programmed as to 5.2.3	Required	
10	5.2.4	Ancillary functions include a power system check, provision for displaying the measured variable as to 5.2.4	Required	

NOTE: TICKS [✓✗], ASTERISK [*], WORD [NOTED], OR TBA [TO BE ADVISED] WILL NOT BE ACCEPTED.

Tender Number: _____

Tenderer's Authorised Signatory: _____ _____
Name in block letters Signature

Full name of company: _____

Annexure C - Technical Schedules A and B

For

Schedule A: Purchaser's specific requirements
Schedule B: Guarantees and technical particulars of equipment offered

Item	Sub-clause	Description	Schedule A	Schedule B
11	5.3	Analog to LAN convertor	Required	
12	5.3.1	Collaborative Workflows – as to 5.3.1	Required	
13	5.3.2	Proactive Alerting – as to 5.3.2	Required	
14	5.3.3	Auditing - as to 5.3.3	Required	
15	5.3.4	Dynamic - scalability and adaptability are key as to 5.3.4.	Required	
16	5.3.5	Change-aware – adaptive to the evolving data landscape, as to 5.3.5	Required	
17	5.3.6	Self-serve – as to 5.3.6	Required	
18	5.3.7	Data types supported – as to 5.3.7	Required	
19	5.3.8	Metadata support: as to 5.3.8	Required	
20	5.3.9	Compatibility/integration with different sources: compatibility with different data sources with lower latency	Required	
21	5.3.10	Batch processing capabilities – ability to process data in batches	Required	
22	5.4.1	The main function of the summation amplifier to summate the main intake points from Eskom	Required	
23	5.4.2	The summated value is used to input into the Central controller, type MPC.	Required	

NOTE: TICKS [✓✗], ASTERISK [*], WORD [NOTED], OR TBA [TO BE ADVISED] SHALL NOT BE ACCEPTED.

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Annexure C - Technical Schedules A and B

For

Schedule A: Purchaser's specific requirements
Schedule B: Guarantees and technical particulars of equipment offered

Item	Sub-clause	Description	Schedule A	Schedule B
	6.	**SUPPORT AND MAINTENANCE**	XXXX	XXXX
24	6.1	The Service Provider shall provide support and Maintenance in accordance with City Power's SLA.	Required	
25	6.2	Provision of software upgrades to resolve issues as to 6.2	Required	
26	6.3	Upgrades shall be done onsite as and when required.	Required	
27	7.	**SERVICE LEVEL AGREEMENT**	XXXX	XXXX
28	7.2	Procedure to be followed to log related incidents at the service desk of the service provider.	Required	
	8	**DOCUMENTATION**	XXXX	XXXX
29		Full documentation shall be provided as to clause 8	Required	
	9	**TRAINING**	Required	
30		The Service Provider shall provide comprehensive training courses City Power employees as to clause 8	Required	
	10	**QUALITY**	XXXX	**XXXX**
31		A quality management system shall be set up to assure the quality of the system as to clause 10	Required	
	11	**HEALTH AND SAFETY**	XXXX	**XXXX**
32		A health and safety plan shall be set up to ensure proper management and compliance of the system as to clause 11	Required	
	12.	**ENVIRONMENTAL MANAGEMENT**	XXXX	**XXXX**
33		An environmental management plan shall be set up in order to ensure the proper environmental management and compliance of the system as to clause 12	Required	

NOTE: TICKS [✓✕], ASTERISK [*], WORD [NOTED], OR TBA [TO BE ADVISED] SHALL NOT BE ACCEPTED.

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Full name of company: _____

Deviation schedule

Any deviations offered to this specification shall be listed below with reasons for deviation. In addition, evidence shall be provided that the proposed deviation will at least be more cost-effective than that specified by City Power.		
Item	**Clause**	**Proposed deviation**

Tender Number: _____

Tenderer's Authorised Signatory: _____

Name in block lettersSignature

Full name of company: _____

Annexure D – PROPOSED LAYOUT