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TITLE	SPECIFICATION FOR GEYSER RIPPLE CONTROL AND RELAY	REFERENCE	REV
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## **FOREWORD**

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## **INTRODUCTION**

City Power is experiencing an ever-increasing demand for electrical power because the greater the demand (especially during peak periods), the more electricity must be generated. The National Energy Regulator of South Africa (NERSA) initiated various programs to alleviate possible future electricity shortages and the immediate need to generate more power during peak periods. To ensure that there are sufficient resources available for all the people of our country, now and in the future, we must manage our current resources efficiently and fairly. South Africa is currently facing some significant challenges with regard to meeting the demand for electricity. The good news is that by working together, we can all make a difference.

## **1. SCOPE**

This specification covers City Power's requirements for a geyser ripple relay. Geyser ripple relay are installed next or within the electrical distribution board in homes. This device then switches off the power supply to your geyser during the evening peak demand period. Peak time, that is when most electricity is consumed, is between 17:00 and 21:00. The geyser is switched off from 18:00 and 20:00 and switched on again after 20:00.

## **2. NORMATIVE REFERENCES**

The following documents contain provisions that, through reference in the text, constitute requirements of this specification. 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 specification are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

*SANS 60669-1: Switches for household and similar fixed-electrical installations Part 1: General requirements.*

*SANS 60669-2-2: Switches for household and similar fixed electrical installations Part 2-2: Requirements - Electromagnetic remote- control switches (RCS)*

*SANS 60950-1: Switches for household and similar fixed-electrical installations*

*NRS 086:2010: Centralized Load Control Systems*

*IEC 62052-21, Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 21: Tariff and load control equipment.*

*IEC 62054-11, Electricity metering (a.c.) – Tariff and load control – Part 11: Particular requirements for electronic ripple control receivers.*

*NRS 042, Guide for the protection of electronic equipment against damaging transients.*

*NRS 083-1, Code of practice for the application of electromagnetic compatibility (EMC) standards and guidelines in electricity utility networks – Part 1: Equipment standards..*

*SANS 474/NRS 057, Code of practice for electricity metering.*

*SANS 10142-1, The wiring of premises – Part 1: Low-voltage installations.*

*SANS 60529/IEC 60529, Degrees of protection provided by enclosures (IP Code).*

*SANS 61000-4-5/IEC 61000-4-5, Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test.*

## **3. DEFINITIONS AND ABBREVIATIONS**

The definitions and abbreviations in the above documents shall apply to this specification.



#### **4. REQUIREMENTS**

- 4.1 The operation of a remote-control switch (RCS) shall not be impaired when it is mounted at an angle deviating by not more than 5° from the specified position of use.
- 4.2 Switches and boxes shall be so designed and constructed that, in normal use, their performance is reliable and without danger to the user or the surroundings.

*Compliance is checked by meeting all the relevant requirements and tests specified.*

#### **5. RATINGS**

- 5.1 Switches shall preferably have rated voltages of 220-230 VAC, 50 Hz.
- 5.2 Switches shall preferably have rated currents of maximum load switching capacity of 20A.
- 5.3 Operating temperature range of -20 to +55°C.
- 5.4 Power consumption is smaller than 1W.

#### **6. MARKINGS**

Switches shall be marked with:

- rated current in amperes (A)
- rated voltages in volts;
- symbol for nature of supply;
- manufacturer's or responsible vendor's name, trade mark or identification mark;
- type reference, which may be a catalogue number;
- symbol for mini-gap construction, if applicable;
- symbol for micro-gap construction, if applicable;
- symbol for semiconductor switching device, if applicable;

#### **7. TYPE TESTS**

Type tests shall be performed as per SANS 60669 – 1: 2007.

#### **8. LABELING AND PACKAGING**

- 8.1 Packaging shall prevent damage or deterioration of the product during transport, handling and storage.
- 8.2 The box shall be labelled with the contract number, City Power SAP number, supplier name, and basic fuse details.

#### **9. DOCUMENTATION**

- 9.1 Full technical and descriptive details, relating to all the items offered in this enquiry, shall be submitted so the offer can be fully evaluated.

9.2 The information shall include:

- a) Company history
- b) Business address
- c) Contact person and details
- d) Product catalogue
- e) Copy of type test report, in English and
- f) Relevant current-time curves

9.3 City Power reserves the right to request samples of ripple control for evaluation purposes.

## **10. QUALITY MANAGEMENT**

A quality management system shall be set up in order to assure the quality during manufacture, installation, removal, transportation, and disposal. 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 an agreement between the purchaser and supplier.

## **11. HEALTH AND SAFETY**

A health and safety plan shall be set up in order to ensure proper management and compliance during manufacture, installation, removal, transportation, and disposal. Guidance on the requirements of a health and safety plan shall be found in ISO 45001:2018 standards. The details shall be subject to an 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 is adhered to during manufacture, installation, removal, transportation, and disposal. Guidance on the requirements for an environmental management system shall be found in ISO 14001:2015 standards. The details shall be subject to an agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHERQ Policy.

**ANNEXURE A - BIBLIOGRAPHY**

none

**ANNEXURE B - REVISION INFORMATION**

<b>DATE</b>	<b>REV. NO.</b>	<b>NOTES</b>
July 2017	0	First Issue
November 2023	1	Normative Reference Quality Management Health and Safety Environmental Management



**ANNEXURE C – TECHNICAL SCHEDULES A AND B**

**ITEM 1 - GEYSER RIPPLE CONTROL - SAP 3071**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

Item	Sub clause of CP_TSSPEC_255	Description	Schedule A	Schedule B
1		Manufacturer's name	XXXXXXX	
2		Product serial number	XXXXXXX	
3	5.1	Nominal voltage rating	V 230	
4	5.2	Current ratings	A 20	
5	5.3	Maximum ambient temperature at which ripple control is designed to operate	°C XXXXXX	
6	5.4	Power consumption	≤1W	
7		Ripple control width	mm XXXXXXX	
8		Mounting	DIN,Mini, Surface mount	
9		Input Protection	Thermal and 500mA self- resettable fuse	
10		Minimum lifespan	10 years	
11		Terminals	4mm <sup>2</sup> conductor, torque 0.5Nm	
12	7.2	Catalogue to be provided with tender Documentation	Yes	
13	7	Certified copy of type test to be provided with tender documentation	Yes	

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

Tender Number: \_\_\_\_\_

Tenderer's Authorised Signatory: \_\_\_\_\_  
Name in block letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 1 – GEYSER RIPPLE CONTROL - SAP 3071**

**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.**

<b>Item</b>	<b>clause</b>	<b>Proposed deviation</b>

**Tender Number:** \_\_\_\_\_

**Tenderer's Authorised Signatory:** \_\_\_\_\_  
Name in block letters Signature

**Full name of company:** \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 2 - GEYSER RIPPLE CONTROL - SAP 3072**

Schedule A: Purchaser's specific requirements

Schedule B: Guarantees and technical particulars of equipment offered

Item	Sub clause of CP_TSSPEC_255	Description	Schedule A	Schedule B
1		Manufacturer's name	XXXXXXX	
2		Product serial number	XXXXXXX	
3	5.1	Nominal voltage rating V	230	
4	5.2	Current ratings A	20	
5	5.3	Maximum ambient temperature at which ripple control is designed to operate °C	XXXXXX	
6	5.4	Power consumption	≤1W	
7		Ripple control width mm	XXXXXXX	
8		Mounting	DIN,Mini, Surface mount	
9		Input Protection	Thermal and 500mA self-resettable fuse	
10		Minimum lifespan	10 years	
11		Terminals	4mm <sup>2</sup> conductor, torque 0.5Nm	
12	7.2	Catalogue to be provided with tender Documentation	Yes	
13	7	Certified copy of type test to be provided with tender documentation	Yes	

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

Tender Number: \_\_\_\_\_

Tenderer's Authorised Signatory: \_\_\_\_\_  
Name in block letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 2 – GEYSER RIPPLE CONTROL - SAP 3072**

**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 letters Signature

Full name of company: \_\_\_\_\_



**TECHNICAL SCHEDULES A AND B**

**ITEM 3 - GEYSER RIPPLE CONTROL - SAP 3074**

Schedule A: Purchaser's specific requirements

Schedule B: Guarantees and technical particulars of equipment offered

Item	Sub clause of CP_TSSPEC_255	Description	Schedule A	Schedule B
1		Manufacturer's name	XXXXXXX	
2		Product serial number	XXXXXXX	
3	5.1	Nominal voltage rating	V 230	
4	5.2	Current ratings	A 20	
5	5.3	Maximum ambient temperature at which ripple control is designed to operate	°C XXXXXX	
6	5.4	Power consumption	≤1W	
7		Ripple control width	mm XXXXXXX	
8		Mounting	DIN,Mini, Surface mount	
9		Input Protection	Thermal and 500mA self- resettable fuse	
10		Minimum lifespan	10 years	
11		Terminals	4mm <sup>2</sup> conductor, torque 0.5Nm	
12	7.2	Catalogue to be provided with tender Documentation	Yes	
13	7	Certified copy of type test to be provided with tender documentation	Yes	

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

Tender Number: \_\_\_\_\_

Tenderer's Authorised Signatory: \_\_\_\_\_  
Name in block letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 3 – GEYSER RIPPLE CONTROL - SAP 3074**

**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 letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 4 - TIMER: ADJUSTABLE/QATRDM 24H, 230V, 16A SAP 5182**

**Schedule A: Purchaser's specific requirements**

**Schedule B: Guarantees and technical particulars of equipment offered**

Item	Sub clause of CP_TSSPEC_255	Description	Schedule A	Schedule B
1		Manufacturer's name	XXXXXXX	
2		Product serial number	XXXXXXX	
3	5.1	Nominal voltage rating	V 230	
4	5.2	Current ratings	A 16	
7		Timer: Adjustable/ QATRDM 24h	mm XXXXXXX	
8		Maximum control equipment	2000W	
9		Power relay delay closure.	Yes	
10		The potentiometer to adjust the output frequency	Yes	
11		With input power indicator	Yes	
		With the relay is energized light		
12	7.2	Catalogue to be provided with tender Documentation	Yes	
13	7	Certified copy of type test to be provided with tender documentation	Yes	

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

Tender Number: \_\_\_\_\_

Tenderer's Authorised Signatory: \_\_\_\_\_  
Name in block letters Signature

Full name of company: \_\_\_\_\_

**TECHNICAL SCHEDULES A AND B**

**ITEM 4 - TIMER: ADJUSTABLE/QATRDM 24H, 230V, 16A SAP 5182**

**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 letters Signature

Full name of company: \_\_\_\_\_



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**ANNEXURE D – STOCK ITEMS**

**Material Group: ELEC - IND**

Item	SAP No.	SAP Short Description	SAP Long Description
1	3071	GEYSER RIPPLE RELAY	GEYSER RIPPLE AND CONTROL RELAY CP_TSSPEC_255
2	3072	GEYSER RIPPLE RELAY	GEYSER RIPPLE AND CONTROL RELAY CP_TSSPEC_255
3	3074	GEYSER RIPPLE RELAY	GEYSER RIPPLE AND CONTROL RELAY CP_TSSPEC_255
4	5182	TIMER:ADJUSTABLE/QATRDM 24H,230V,16A	TIMER:ADJUSTABLE/QATRDM 24H,230V,16A CP_TSSPEC_255