TRANSNET

freight rail

CHANGE TO / TENDER RFQ

Tender No: CRAC-18309

Vendor No: 11001386

BOARD LIST
BOARD LIST
TRANSNET FREIGHT RAIL
PROCUREMENT DEPARTMENT
2000

Purchaser : Mpho Sito
Telephone : 011 584 1068
Fax Number:

Please quote reference:
D06/6000614971

Deliver to:
TFR Head Office
Supply Chain Services
2000 Johannesburg

Closing Date :21.07.2015
Validity Date :21.10.2015
RFQ No :6000614971

SINGLE PHASE RELAY TESTER WITH BLUETOOTH , INTERNATIONAL POWER CORD AND TEST LEADS, INCLUDING SMART TOUCH VIEW INTERFACE AND HARD TOP CARRYING CASE FOR TESTING OF THE PROTECTA DISTANCE PROTECTION RELAY

CONTACT PERSON: EVANS SWANEPOEL 011 583 0138
DELIVERY ADDRESS: Inyanda House 3,12a St Andrews Road,
Parktown, Johannesburg

*EXT NAME: RFQ 9 STANDARD H

1. RETURN OF QUOTATION/S:

PLEASE SEND TO FAX NUMBER:011 774-9129, 011 774 9186
EMAIL:thuli.mathebula@transnet.net,lolo.sokhela@tranenet.net

1.1 QUOTATION/S MUST BE SUBMITTED PUNCTUALLY AT 10:00 ON THE CLOSING DATE AND LATE QUOTATIONS WILL NOT BE CONSIDERED.

1.2 IF POSTED:

EXECUTIVE MANAGER (TRANSNET FREIGHT RAIL, SUPPLY CHAIN SERVICES)
PO BOX 8617
JOHANNESBURG
2000

1.3 ,IF DELIVERED BY HAND:

TRANSNET FREIGHT RAIL
INYANDA HOUSE 1
21 WILLINGTON ROAD
PARKTOWN
JOHANNESBURG

DATE: ..... SIGNATURE OF TENDERER(S): ....

CONTACT PERSON: ..... TEL No: .....

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2001

2. CONDITIONS:

2.2 ANY PURCHASE ORDER PLACED AS A RESULT OF YOUR QUOTATION WILL BE SUBJECT TO THE STANDARD TERMS AND CONDITIONS OF CONTRACT, FORM US7, (LATEST), GENERAL TENDER CONDITIONS, FORM CSS (LATEST) AND CONDITIONS MENTIONED HEREIN.

2.3 TENDERERS MAY OFFER AN EARLIER VALIDITY DATE, BUT THEIR QUOTATION MAY, IN THAT EVENT, BE DISREGARDED FOR THIS REASON.

2.4 TENDERERS ARE REQUIRED TO OFFER ONLY FIRM PRICES. PRICES SUBJECT TO REVIEW IN TERMS OF CLAUSE 32 OF FORM US7 WILL ONLY BE CONSIDERED SHOULD THE DELIVERY PERIOD REQUIRED EXCEED 6 MONTHS.

2.5 BEST DELIVERY TIME MUST BE OFFERED.

2.6 DISCOUNT (TRADE DISCOUNT) CASH DISCOUNT (CONDITONAL DISCOUNT) VALUE ADDED TAX (VAT) MUST BE SHOWN SEPARATELY.

2.7 TRANSNET RESERVES THE RIGHT TO NEGOTIATE PRICES AND COMMERCIAL ASPECTS AFTER THE CLOSING DATE OF THE QUOTATION.

DATE: ..... SIGNATURE OF TENDERER(S): ....

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2.8 DIRECT DELIVERY INTIMATES DELIVERY BEING EFFECTED INTO THE WAREHOUSE OR THE ACTUAL POINT OF SUPPLY AND SHOULD THEREFORE INCLUDE ANY TRANSPORTATION MODE DEEMED NECESSARY IN EXECUTING THIS METHOD OF DELIVERY BASIS IN ORDER TO MEET THE REQUIRED DELIVERY DATE.

TAX CLEARANCE CERTIFICATES:
The Regulations in terms of the Public Finance Management Act, 1999: Framework for Supply Chain Management as published in Government Gazette No. 25767 dated 5 December 2003, Clause 9 (1) (d), stipulates that the accounting officer or accounting authority of an institution to which these regulations apply must reject any bid from a supplier who fails to provide written proof from the South African Revenue that the supplier either has no outstanding tax obligations or has made arrangements to meet outstanding tax obligations.
Tenderers will be disqualified if a valid tax clearance certificate or written proof from the South African Revenue Service that supplier has made arrangements to meet outstanding tax obligations is not submitted with the tender.

COMPANY DETAILS:
NAME OF COMPANY: _____
CONTACT PERSON: _____
TEL. NO. _____ **FAX NO:** _____
REG. NO. _____

BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE)

Transnet fully endorses and supports the Government's Broad-based Black Economic Empowerment Programme and it is strongly of the opinion that all South African Business Enterprises have an equal obligation to redress the imbalances of the past.
Transnet will therefore prefer to do business with local business enterprises who share these same values. Transnet will endeavour to do business with local business enterprises that possess a BBBEE "recognition level" of at least a level 5. Transnet urges Tenderers (large enterprises and QSE's - see below) to have themselves accredited by any one of the various Accreditation Agencies available, who do their BBBEE ratings in accordance with the latest Codes (i.e. those promulgated on 9 February 2007) and whose names appear on the present ABVA (Association of BEE Verification Agencies) - "List of Full Members" as displayed on the ABVA website (www.abva.co.za).
Although no agencies have as yet been accredited by SANAS (SA National Accreditation System), Transnet will, in the interim, accept rating certificates of tenderers who have been verified by any of the listed agencies.

Enterprises will be rated by such agency based on the following:
1. Large Enterprises (i.e. annual turnover >R35million:
" Rating level based on all seven elements of the BBBEE scorecard.

2. Qualifying Small Enterprises - (QSE) (i.e. annual turnover >R5million but <R35million:
" Rating based on any four elements of the BBBEE scorecard.

NB:
3. Emerging Micro Enterprises - (EME) (i.e. annual turnover <R5m) are exempted from being rated/verified:
" Automatic rating of Level 4 BBBEE irrespective of race of ownership, i.e. 100% BBBEE recognition
" Black ownership >50% or Black Women ownership >30% automatically qualifies as Level 3 BBBEE, i.e. 110% BBBEE recognition
" EME's should provide certified documentary proof of annual turnover (i.e. audited financials) plus proof of Black ownership if Black ownership >50% or Black Women ownership >30% from the EME's Auditor/Accounting Officer.

4. In addition to the above, Tenderers who wish to enter into a Joint Venture or subcontract portions of the contract to BBBEE companies, must state in their tenders the percentage of the total contract value that will be allocated to such BBBEE companies, should they be successful in being awarded any business. A rating certificate in respect of such BBBEE JV-partners and / or sub-contractor/s, as well as a breakdown of

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the distribution of the aforementioned percentage must also be furnished

In view of the high emphasis which Transnet places on Broad-based Black Economic Empowerment, Transnet will allow certain preference points for BBBEE in the evaluation of all responses. Depending upon the value of the ensuing business award (i.e. below or in excess of R2m), the 80/20 or 90/10 point preference systems will be utilized where BBBEE will count out of 20 or 10 respectively in the evaluation process.

EACH RESPONDENT IS REQUIRED TO FURNISH PROOF OF THE ABOVE TO TRANSNET. FAILURE TO DO SO WILL RESULT IN A SCORE OF ZERO BEING ALLOCATED FOR BBBEE.

Turnover: Kindly indicate your company's annual turnover for the past year R_____

" If annual turnover <R5m, please attach certified confirmation from your Auditor/Accounting Officer
" If annual turnover >R5m please attach original or certified copy of accreditation certificate and detailed scorecard by an ABVA accreditation agency (registered as a "Full Member")

PAYMENT TERMS

The following payment terms will apply as from 1 October 2015.
" **All suppliers will be paid 30 days from receipt of month end statement, i.e. payment term F055.**

CONDITIONS:
This quotation is subject to the provisions of the Standard Terms and Conditions of Contract, Form US7, (Latest) and the General Tender Conditions, Form CSS5 (Latest) and any other standard or special conditions mentioned and/or embodied in the quotation request.

SCHEDULE OF REQUIREMENTS
PRICES TENDERED ARE TO BE "DIRECT" AND EXCLUDE VAT.

IN THIS REGARD THE TENDERER'S ATTENTION IS DIRECTED TO PARAGRAPH 16 OF FORM CSS5 (LATEST).

DATE: ..... SIGNATURE OF TENDERER(S): ....

RFQ / TENDER

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TRANSNET INSISTS ON HONESTY AND INTEGRITY BEYOND REPROACH AT ALL TIMES AND WILL NOT TOLERATE ANY FORM OF IMPROPER INFLUENCING, BRIBERY, CORRUPTION, FRAUD, OR ANY OTHER UNETHICAL CONDUCT ON THE PART OF BIDDERS/ TRANSNET EMPLOYEES. IF, IN THE OPINION OF TRANSNET'S CHIEF OPERATING OFFICER, A TENDERER / CONTRACTOR / SUPPLIER HAS OR HAS CAUSED TO BE PROMISED, OFFERED OR GIVEN TO ANY TRANSNET EMPLOYEE, ANY BRIBE, COMMISSION, GIFT, LOAN, ADVANTAGE OR OTHER COSIDERATION, TRANSNET SHALL BE ENTITLED TO REVOKE THE TENDER / CONTRACT BY FOLLOWING ITS INTERNAL POLICIES THAT GOVERN THE ECLUSION PROCESS. IN SUCH AN EVENT TRANSNET WILL BE ENTITLED TO PLACE ANY TENDERER / CONTRACTOR / SUPPLIER WHO HAS CONTRAVENED THE PROVISIONS OF TRANSNET'S BUSINESS ETHICS ON ITS LIST OF EXCLUDED TENDERERS. THIS LIST WILL ALSO BE DISTRIBUTED TO ALL OTHER STATE OWNED ENTERPRISES AND GOVERNMENT DEPARTMENTS.

TRANSNET INVITES ITS VALUED SUPPLIERS TO REPORT ANY ALLEGATIONS OF FRAUD CORRUPTION OR OTHER UNETHICAL ACTIVITIES TO TRANSNET TIP-OFFS ANONYMOUS,AT ANY OF THE FOLLOWING ADDRESSES / CONTACT NUMBERS:-

TOLL-FREE ANONYMOUS HOTLINE - 0800 003 056
EMAIL - Transnet@tip-offs.com
FAX NUMBER - 0800 007 788
FREEPOST DN 298, UMHLANGA ROCKS, 4320

CONFIDENTIALITY IS QUARANTEED

Item	Qty	Material	Description
00010	1	[redacted]	SINGLE PHASE RELAY TESTER

R.....
Each

Delivery Date: 07.09.2015

FULL DETAILS OF DESCRIPTION

DATE: ..... SIGNATURE OF TENDERER(S): .....

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3. ADDITIONAL INFORMATION REQUIRED: (WHERE APPLICABLE)

3.1 THE FOLLOWING ADDITIONAL INFORMATION IS REQUIRED:

(A) DISCOUNT: .....

(B) SETTLEMENT DISCOUNT: .....

(C) PRICE/S FIRM: .....

(D) PRICE/S FIRM UNTIL ..... THEREAFTER SUBJECT TO REVIEW.

(E) PRICE/S NOT FIRM: .....

(F) SABS MARK: .....

(G) SABS PERMIT NO: .....

(H) BRAND/MAKE/TYPE: .....

(I) FULL NAME AND ADDRESS OF MANUFACTURER.:

.....

.....

.....

(J) FULL NAME AND ADDRESS OF INSPECTION POINT:

.....

.....

.....

(K) COUNTRY OF ORIGIN: .....

Comply :_____ Does not Comply :_____Not applicable :_____

Justification : .....

(L) SURPLUS MATERIAL:

TENDERERS MUST INDICATE IF THEY WILL BE PREPARED TO PURCHASE BACK FROM TRANSNET ANY SURPLUS MATERIAL WHICH MAY BECOME AVAILABLE FROM ANY RESULTING PURCHASE ORDER/CONTRACT ORIGINATED FROM THE QUOTATION SUBMITTED:

.....

(M) PAYMENT OVERSEAS:

ONLY IF TRANSNET LIMITED IS REQUESTED BY THE TENDERER TO EFFECT PAYMENT OVERSEAS DIRECT TO THE TENDERER'S PRINCIPAL/SUPPLIER THE FOLLOWING INFORMATION IS REQUIRED:

* EXCHANGE RATE ON WHICH THE QUOTATION PRICE IS BASED: R1,00 (S.A. CURRENCY) BEING EQUAL TO ..... (FOREIGN CURRENCY)
* PERCENTAGE IN RELATION TO THE QUOTATION PRICE TO BE REMITTED OVERSEAS:

.....

* NAME OF COUNTRY TO WHICH PAYMENT IS TO BE MADE:

.....

.....

* APPLICABLE DATE OF EXCHANGE RATE:

.....

* BENEFICIARY'S NAME AND FULL ADDRESS:

.....

.....

DATE: ..... SIGNATURE OF TENDERER(S): ....

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.....

* BENEFICIARY'S BANKERS AND FULL ADDRESS:

.....

.....

.....

* APPLICABLE ACCOUNT NUMBER:

.....

(N) DELIVERY DATE:

TENDERERS MUST FURNISH THEIR ACTUAL DELIVERY AND MANUFACTURING PERIOD HEREUNDER NOTWITHSTANDING THE DELIVERY DATES SPECIFIED BY TRANSNET

THE FOLLOWING MUST ALSO BE FURNISHED IN REGARD TO THE ABOVE:

1. PERIOD REQUIRED TO OBTAIN RAW MATERIAL. ....(DAYS)
2. MANUFACTURING PERIOD. ....(DAYS)
3. PERIOD TO TRANSPORT MATERIAL TO DESTINATION. ....(DAYS)

MATERIAL NO.	1.(PERIOD)	2.(PERIOD)	3.(PERIOD)

INDICATE THE PERCENTAGE (%) OF THE PRICE THAT IS SUBJECT TO THE VARIABLE COPPER FEE: ----------%.

DATE: ..... SIGNATURE OF TENDERER(S): ....

EVALUATION CRITERIA

Transnet will utilise the following criteria [not necessarily in this order] in choosing a Supplier/Service Provider, if so required:

Criterion/Criteria	Explanation
Administrative responsiveness	Completeness of response and returnable documents All the returnable documents
Substantive responsiveness (Mandatory)	• Compliance To Specification
Performance Prequalifying (Mandatory)	• Product Testing
Category: Commercial (Scoring Matrix) B-BBEE(Scoring Matrix) 80/20	• Competitive Pricing • B-BBE Certificate and scorecard

COMMERCIAL (80/20 in respect of price and preference claimed points)

Pricing and price basis [firm] - whilst not the sole factor for consideration, competitive pricing and overall level of unconditional discounts[1] will be critical

B-BBEE status of company

Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	16
4	[illegible]
5	8
6	6
7	[illegible]
8	2
Non-compliant contributor	0

[1] *Only unconditional discounts will be taken into account during evaluation. A discount which has been offered conditionally will, despite not being taken into account for evaluation purposes, be implemented when payment is effected.*

SINGLE PHASE RELAY TESTER WITH BLUETOOTH, INTERNATIONAL POWER CORD AND TEST LEADS, INCLUDING SMART TOUCH VIEW INTERFACE AND HARD TOP CARRYING CASE FOR THE TESTING OF THE PROTECTA DISTANCE PROTECTION RELAY.

NB The successful tenderer must have the instrument available for a practical demonstration to the Transnet personnel, testing the protecta relay before he will be consider for this tender.

General Description

The set will consist of single phase regulated voltage and current sources. The test set will have digital timing and contact monitoring facilities. The test set will be manually controlled, and will not require a PC to manually operate the unit. The set will also be provided with communication ports for possible automated testing using a computer and software.

Specifications

Input Voltage: 115 to 230 Volts AC ±10% single-phase, 50/60 Hz

Single Phase Output Voltage:

The test set will provide single phase voltage of 0 to 300 volts AC at 150 VA rms. To test DC relays the voltage source will also be able to provide 0 to 300 volts DC at 150 Watts. The voltage source will be convertible to a 5 Ampere continuous current source or 15 Amperes for 5 seconds. Using software, the voltage channel will be able to generate waveforms from digital fault recorders that are in the IEEE C37.111 COMTRADE file format. For accurate COMTRADE playback, the voltage amplifier will have a minimum bandwidth of DC to 10 kHz.

Duty Cycle: Minimum on time 30 minutes at full output power

Resolution: 0.00 to 300.00 Volts

Ranges: 30, 150, 300

Amplitude Accuracy: ± 0.2% of Range or better

Frequency: The voltage channel will be able to provide a variable frequency output, with the following resolution and accuracy.

10.000 to 999.999 Hz

Frequency Accuracy: ±0.002 Hz or better at 50/60 Hz

Phase Angle:

Range: 0 to 359.9°
Resolution: 0.1°
Accuracy: ± 0.25° or better

Total Harmonic Distortion: Less than 1% or better

Single Phase Output Current:

The test set will provide single phase current of 0-30 Amperes AC at 200 VA $_{rms}$ for 30 minutes, or up to 60 Amperes at 300 VA $_{rms}$ for 1.5 seconds. When the voltage channel is converted to current (see Single Phase Voltage Output) the unit will provide two currents to test single phase current differential relays, or both output currents can be run in parallel to provide a single phase current up to a maximum of 75 Amperes for a maximum operating time of 1.5 seconds. Using software, the current channel will be able to generate waveforms from digital fault recorders that are in the IEEE C37.111 COMTRADE file format. For accurate COMTRADE playback, the current amplifier will have a minimum bandwidth of DC to 10 kHz.

Required output currents and minimum compliance voltage/VA rating

Amperes (RMS)		Volts (RMS)	VA (RMS)
3 A	at	50 Volts	200 VA
6 A	at	33.3 V	200 VA
15 A	at	13.4 V	200 VA
30 A	at	6.67 V	200 VA
60 A	at	5.00 V	300 VA

Duty Cycle:

Current	Max Time On
30 Amps	30 min.
60 Amps	1.5 sec.

DC Current Output Power:
30 ADC at 200 Watts

Ranges: 30, 60

Resolution: 0.001 to 60.000

Amplitude Accuracy: ± 0.2% of Range or better

Frequency: Each current channel will be able to provide a variable frequency output, with the following resolution and

accuracy.

10.000 to 999.999 Hz

Frequency Accuracy: ±0.002 Hz or better at 50/60 Hz

Phase Angle:
Range: 0 to 359.9°
Resolution: 0.1°
Accuracy: ± 0.25° or better

Total Harmonic Distortion: Less than 1% or better

Display: A digital display will be provided, which will show the measured output for each voltage and current channel, phase angle, frequency, and output status (on or off) for manual operation.

PC Communication and Control

Ethernet port- For automated relay testing a 10/100BaseT Ethernet port will be provided. The unit will have the capability of upgrading the internal firmware remotely via the internet or from a PC through the Ethernet port. Bluetooth Communication - For wireless control Bluetooth interface is required.

Manual Control: The test set will come with a hand held controller. When using the hand held controller, in order to maintain maximum compliance voltage to load at all times, with outputs on and manually ramping current(s) up or down, the current amplifier(s) will change ranges on-the-fly, under load. It will not require the operator to turn outputs off, change range and back on again. The hand-held controller will have a color touch-screen display. Test set will not require a personal computer to manually operate the unit. As a minimum requirement the manual controls will provide the following functions,

1. Individual or simultaneous control of single or multiple outputs. The test technician will be able to vary single phase voltage, current, phase angle relationships or frequency output with the touch of the screen, and the turn of a control knob. It is a requirement that the controller will have internal non-volatile memory capable of storing user defined test settings, test files and test results from the manual operation of the test set.

2. The test technician will be able to perform dynamic tests on relays under pre-fault to fault conditions, by a step change in amplitude, phase angle and/or frequency. Manual dynamic testing will include ability to set pre-fault values and duration time, fault values and duration time, breaker trip/reclose simulation (includes 52a or 52b contact operation simulation) and post fault reclose values. Both trip and reclose times will be displayed for up to a total of 9 trip and reclose operations to include lockout.

3. Test values will be input through the touch-screen via a touch-screen numeric keypad. A control knob will be provided for fine adjustment of amplitude, phase angle and/or frequency. Manual individual increment adjustment is most desired (adjustment of the output in user selectable increments of 10, 1, 0.1, 0.01, 0.001, where one click of the control knob equals the selected increment). To test solid-state frequency relays, the frequency needs to be varied in 0.001 Hz increments.

4. The controller will have built-in tests for automatic testing of overcurrent, voltage, and frequency relays, and will not require an external PC to execute and save test results. The controller will have time curves for electromechanical relays, and time curve algorithms for microprocessor based relays programmed in (a list of time curves available shall be supplied with tender). The set controller will automatically evaluate the timing test results against the manufacturer's time curves and provide Pass/Fail information to the user. Time curves and timing results will be displayed in real time on the controller display. Test results may be saved to internal memory and down loaded later into the PowerDB Database.

5. Control the timing functions. The test technician will be able start the timer with initiation of selected output(s) (see timer specifications).

Timer and Relay Contact Monitor Requirements

Description:

The Timer will be used to measure high-speed operation of electro-mechanical, solid-state and microprocessor-based protection relays. It should incorporate at least one set of banana plug receptacles, which can be programmed to be; Start, Stop Gates and Monitor.

Specifications:

Display: The Timer should have a minimum of six digits.

Range and Resolution: Timer will be able to display in either seconds or cycles, with the following auto-range and resolution,

Seconds: 000.001 to 9999.99 or better

Accuracy: ± 2 least significant digit ± .005% of reading (whichever is greater), or better.

Start/Stop/Monitor Gate: Minimum of one, independent, programmable Start, Stop or Monitor Gate circuits will be provided. To monitor operation of relay contacts or trip SCR, a continuity light will be provided. The gate circuit will be isolated for voltage sensing. Upon sensing continuity or a voltage signal the continuity lamp will glow and a tone generator will sound. The following modes will be provided for the Start/Stop/Monitor Gate:

1. Timer will start, stop or continuity indicator darkens at the opening of normally closed contacts or when conduction through a semiconductor device such as a triac or transistor is interrupted.

2. Timer will start, stop or continuity indicator glows at the closing of normally open contacts or upon conduction through a semiconductor device such as a triac or transistor.

3. Timer will start, stop or continuity indicator glows or darkens upon the application or removal of either an AC or DC voltage. The minimum voltage applied will be 5 Volts AC or DC. The maximum voltage to be applied is 300 Volts AC or DC.

4. Starting or Stopping with any selected output. The Timer can be started or stopped when turning on or off any (or all) selected voltage or current outputs.

5. The Timer can be started simultaneously with a change

in Amplitude, Phase Angle, or Frequency.

Start/Stop Gate De-Bounce:

To eliminate false triggering and contact bounce errors, the timer will be programmable to ignore temporary state changes that are less than a programmable duration. The desired period and resolution are as follows,

De-Bounce Period: 0.1 to 99.9 ms
Resolution: 0.1 ms

Programmable Output Contact:

As a minimum the test set will incorporate one set of banana plug receptacles, which can be programmed to be; Normally Open (N.O.) or Normally Closed (N.C.) contacts. The contacts may be opened or closed by software command, or through manual operation (see Manual Controls, item 2) to dynamically change state to simulate circuit breaker operation. The contact may also be used to switch up to 300 Volts AC or DC, with currents up to 8 amps.

Environmental

Operating Temperature: 0 to 50° C
Storage Temperature: -25° C to 70° C
Humidity: up to 90% RH, non-condensing

Enclosure

The relay test set will come housed in a rugged enclosure suitable for daily field use. The unit should be small and light enough that one person can easily transport it. The total carry weight should not exceed 20 lbs (9 kg).

Transit Case

To hand carry the unit a soft-sided transit case shall be provided. The case shall be water and dust resistant.

Safety:

The test set should be certified to the international safety standard IEC-61010-1.

Quality Set:

Manufacturer will be certified to ISO-9001, International Total Quality Set Standards.

Calibration Certification

Manufacturer must provide Calibration Certification.

Training

The manufacturer will demonstrate the ability to provide training courses for both the hardware and software applications (relay testing and maintenance). Course outline, instructor qualifications and a list of training facilities will be provided. Bidder will include in their proposal pricing for training for one person either on-site or at the bidders training facility.

Warranty

A one year warranty or better required.

Software Requirements

This specification describes the software needed to control the Relay Test Set. The software will run under Microsoft Windows XP/VISTA/7. The intent of this section is to establish the overall minimum needs to automate relay testing using the Relay Test Set. Bidders will provide descriptions of proposed software related to meet these minimum needs.

Functional Description

The software will provide the capability for the relay technician to select from a list of relays, of different manufacture, a specific relay to test. The user would then select a screen where the relay settings could be input, i.e., Tap setting, Time Dial setting etc. The user would then select an information screen where he could review information specific to that relay, such as test connections etc. From a test menu, the user would then select which test he wants to conduct, and execute the test. During the test, should the relay fail to operate in a predetermined period of time, the test will automatically abort, or the user can

selective abort the test prior to time expiration. If the test is successful, then a results screen will show if the relay operated within the accuracy limits. After completion of the selected tests, the technician will save the results to a built-in Microsoft Access compatible database. At a later time and place the technician can select to review and or print the results of the selected relays tested. The software will have the capability to export the test results to Microsoft Word for printing and storage as a word document, or as an attachment to an e-mail message.

Detail Software Specifications

The following specifications are intended to specifically outline those functions and features needed to insure that the software has the ability to perform and support the intended testing and record keeping functions.

Test Options:

Loading a test: From a menu the technician selects a specific relay to test.

Create a test: From a menu, the technician selects from a list a specific test to perform. By clicking on the test(s) the technician can build up a test module for new relays (like building blocks). If a test wizard is available in the software, the bidder should indicate and give examples. The software should have the capability to use Windows copy and paste functions, where the user can copy and paste selected tests from one relay specific test file to help create another new test file.

Delete a test: Should a relay become obsolete, the test module for that relay can be removed from the active list of relays in the database.

Database Options:
The technician should be able to select from different databases for record keeping of both the test files and the results. In addition, the user should have other database functions such as Back up, Merge, Index, Initialize, and Pack the database. The database will be compatible with PowerDB.

Report Options:
The technician should be able to select from a list of different report generators. This allows the user to generate reports of the type, model, date tested, and other relay specific data such as relay settings etc. It is also desired that the test results can be exported to Microsoft Word for editing and printing as a Word document.

Relay Operation Characteristics:
The user will be able to create graphic displays of any characteristic type either mathematically or from images of electro-mechanical devices and perform tests of compliance to these characteristics. Examples will be provided, if applicable, by the manufacturer.

COMTRADE Files:
The software will be able to download IEEE Standard C37.111 COMTRADE files to the test equipment for playback. The COMTRADE files to be downloaded will be able to be viewed graphically for examination from within the software. Zoom and Overlay are to be within the capability of the software when viewing the graphical files. Due to the limited prefault data, the software should also have the capability to extend the prefault data for up to at least 90 cycles.

Create Waveforms:
The user will have the ability to create a waveform using an easy to use formula and downloading the formulated waveform to the test equipment for playback. The user will have the ability to digitize a waveform from a fault record or a waveform created by the user in a graphic software such as Microsoft Paint or from a scanned image. These waveforms will be able to be made into COMTRADE files by the software.

Real-Time Control:
From within the software, the user should have the capability to perform tests directly as if there were an interface to the test equipment for manual control of the test equipment. This would include the functions of:

Ramping of any variable parameter(s) in the test equipment;

Performing sets of vector states of the variable parameters one after the other to simulate various stages of power set activities and capture relay activity;

Setting a timer to start on any Vector state and to stop by a relay or other input;

Individual Voltage and Current vectors will be displayed to provide a visual representation of the phase angle relationships. Individual or gang control of the vectors will be provided so that the user may increase or decrease outputs in real time by clicking on the vector(s) and drag the selected vector(s) to the desired amplitude(s) and/or

SINGLE-PHASE PROTECTION RELAY TEST SET

The set will consist of single phase regulated voltage and current sources. The test set will have digital timing and contact monitoring facilities. The test set will be manually controlled, and will not require a PC to manually operate the unit. The set will also be provided with communication ports for possible automated testing using a computer and software.

Requirements	Comply Yes	Comply No	Variation
Input Voltage: 90 to 264 VAC ..... VAC Mains: 47 - 63 Hz, 1ϕ..... Max Current or VA Input: 15 A Max.....			
Manual Control via Front Panel or Hand Held Controller: Touch screen provides function buttons. Output ramp control with single control knob or with PC or Laptop with Software supplied.			
All amplitudes, phase angles and frequency are displayed.			
Color Display on Handheld unit or Laptop / PC			
AC Voltage Outputs # of Phases : 1 Phase Three Ranges ..... Voltage Output Max current/VA: 0-30 V @ 5 A ..... 0-150 V 150 VA..... 0 –300 V 150 VA.....			
DC Voltage: 1 Output ..... Three Ranges 0-30 V – 150 Watts..... 0-150 V – 150 Watts..... 0-300 V - 150 Watts.....			
Battery Simulator Voltage Power: Voltage channel to be used to power up Relay			
Variable Output ..... Frequency Range: DC to 999.999 Hz..... Resolution: 0.001Hz ..... Accuracy 2.5 ppm Typical			
AC Current Outputs # of Phases: 2 Phases when voltage channel converts to 5A Channel.....			

Requirements	Comply Yes	Comply No	Variation
Current Output Maximum VA: 0 – 30 Amps at 200VA..... 0 – 60 Amps at 300VA			
Voltage Source converted to current: 0- 5Amps at 150VA..... 0 -15Amp at 120VA.....			
DC Current: 1 Output ..... Max Current and Watts: 0-30Amps , 200Watts.....			
AC Current output Duty cycle: Continuous.....			
Variable Phase Angle: 0 to +/-360 or +/-180..... Resolution: 0.1 Degree..... Accuracy: +/-0.02 Degree, typical +/-0.25 Degree Max....			
Transient Testing:			
Output Bandwidth: DC to 1 kHz			
Maximum # of Samples Playback: 256 000 Samples per Channel			
Timer / Binary Inputs			
Contact Sensing: N.O / N. C..... Voltage Sensing : up to 300V AC/DC			
Boolean Logic:			
Timing Range: 0 to 99999.9			
Seconds Cycle: 0.01 to 99999.9			
Cycles Resolution: 0.0001			
Programmable Debounce:			

Requirements	Comply Yes	Comply No	Variation
Switch Voltage: ..... Contact Rating: 400V AC, 300V DC, 8Amps Max, 2000VA or 80 Watts DC.....			
Ethernet Ports: 2.....			
Capable of Testing IEC61850 (Optional on order)			
Bluetooth Capability (Optional on order)			
Dimensions: 33.75 x 6 x 16.88cm			
Weight: 4kg			
Enclosure: Metal			
Can Connect three units together to have a 3 phase test system			
Can connect up to nine units together to achieve 18 currents.			

COMPLIANCE WITH THE REQUIREMENTS OF THE SCOPE OF WORK (page 1 of 2)

I, _____ *(insert name of Director or as per Authority Resolution from Board of Directors)*

of _____ *(Insert name of Company)*

Hereby acknowledges having read, understood and agree to the requirements of the scope of work described in this tender document.

Signed this on day_____at

_____

_____
Signature

Pricing Schedule

Item	Description Of Items	Quantity	Price per unit Excluding Vat
1.	Single Phase Relay Tester with Bluetooth, International power cord And Test leads, Including Smart touch view interface And Hard Top Carrying case.	1 Each	R
			VAT: R..... TOTAL PRICE INCLUDING VAT: R.....