Corrigendum- I

TPNODL/OT/2021-2022/104 Dtd.19.11.21

PO for supply of CT-PT Error tester in TPNODL Area.

Dated 30th Nov 2021

Following changes in Calendar of Events of tender document is made;

Annexure-II (Technical Specification)
Page no 70-76
Revised Technical Specification is hereby attached.

Page number: 5

(a)	Last Date of receipt of Tender Fee	08.12.2021 ; 15:00 Hrs
(e)	Last date and time of receipt of Bids	10.12.2021 up to 15:00 Hrs
(f)	Date & Time of opening technical bids & EMD	10.12.2021 up to 15:30 Hrs

Note :- In the event of last date specified for submission of bids and date of opening of bids is declared as a closed holiday for TPNODL, the last date of submission of bids and date of opening of bids will be the following working day at appointed times.

All other terms and conditions of the above tender shall remain unaltered.

Yours faithfully,
-sd-

HoD - Contracts
TPNODL, Balasore

TP NORTHERN ODISHA DISTRIBUTION LIMITED
(A Tata Power & Odisha Government Joint Venture)
Registered & Corporate Office: Januganj, Remuna Golei, Balasore – 756 019, Odisha, India
Phone: +91 6782 244865, Email: contactus@tpnodl.com, Website: www.tpnodl.com
CIN: U40106OR2021SGC035951

1. SCOPE : CT/PT TESTER is mainly used for field testing of Metering Cubical / Metering Unit , it can finish the measurements (M) and protection (P) class CT, PT and TYP class CT. Adopt LCD, self-equipped mini type printer supporting field printing supporting to use USB flash disk to dump data, with simple and convenient operation .
It is used for many routine workshop tests, as well as field testing, to an accuracy of 0.02%. It is optimised for testing me- tering C.T.s, but can also test protection C.T.s for current and phase error at normal burden.

2. GENERAL REQUIREMENT :

Testing P.T.s and C.T.s TO 0.02% accuracy offline in the field with primary side voltage/ current out of service. Both 50hz and 60hz versions.

Tests for CT current and phase error from 2.5/5 up to 75,000/5 or 15,000/1.

Tests PT turns ratio and phase error from 2.2kv/110v up to 300 kv/110 V.

Calculates overall CT errors under load from admittance measurement on secondary winding. (does not require expensive primary current injection testing.)

Calculates offline admittance at 1.6khz. this can provide a blueprint to be used as a reference for future routine live CT tests and carries out live Admittance tests rapidly during normal operation with the Does not interrupt supply.

Measures the burden of CT and PT secondary circuits to ensure CT & PT not overloaded

User shall be able to create their own set of injection and burden test points.

CT batch testing shall be possible.

It shall be able at least to store up to 1000 CT and PT records each.

It shall be able to provide intelligent class (pass or fail) results assessment and also provide best class fit determination.

It shall be able to up-load and down-load information to a pc via usb interface.

It shall be works with intuitive pc results software

3. HARDWARE FEATURES :

3.1. Power Source : It shall have its own internal solid state voltage source to test P.T.s and C.T.s. The source can generate up to 160V at 50Hz or 60Hz, and 2V at 1.6kHz. To avoid spurious results caused by 50Hz pickup from nearby equipment, the tests are carried out at 51Hz and the micro-processor control locks on to the 51Hz signal only. The software extrapolates the 51Hz test results for an actual 50Hz performance.

3.2. Interface : The keyboard shall be alphanumeric on the panel can be used to enter information about the item to be tested. The keyboard shall be at least 6 inch graphic LCD screen which displays the keyed information and final test results.

3.3. Weight : The weight of transit case shall more than 7 kG and weight of Test leads & accessories 3kgs .

3 OPERATING RANGES :

3.1 P.T. Measurable Test ranges

No load voltage ratio only
Maximum ratio 510kV / 110V
Minimum ratio 2.5kV / 100V
VA rating from 1 to 300VA.

3.2 C.T. Measurable Test ranges

Maximum ratio 75,000/5 or 15,000/1
Minimum ratio 2.5/5 or 10/1 VA RATING 1A Secondary Typically 150VA
VA RATING 5A Secondary Typically 300VA
Selectable % Primary I 1% to 400%.
Selectable % BURDEN 10% to 100%
Selectable PF 0.5 to 1.0
Mains Supply 85 - 264 VAC, 50/60Hz
Computes the C.T. performance at the selected PF.
C.T. TYPES: Single and multiple primary turn, parallel winding compensation, composite core.

3.3. Admittance measurement range

Admittance measurement range
1.6kHz 100uS to 50mS. + 0.5%

3.4 C.T. Burden measurement range

C.T. Burden measurement range
5A Type 0 to 12 Ohms / 300VA

3.5. P.T. Secondary burden range

100V / 110V 0 to 300VA

4.0. MEASUREMENT ACCURACY

4.1. C.T. Ratio accuracy:

Ratio Range Ratio Accuracy
2.5/5 to 20,000/5 0.02%. Typical
20,000/5 to 75.000/5 0.05%. Typical

%Injection Range Ratio Accuracy
5% to 120% 0.02%
120% to 200% 0.03% to 0.05%
200% to 400% 0.05% to 0.1%

4.2. C.T. Phase error accuracy

5 to 120% Primary I: 1 min

4.3. Winding Resistance Accuracy

Resolution to 1 mΩ + 0.2 %

4.4. External Burden

Resolution to 1 mΩ + 0.2 %

4.5. P.T. Turns ratio measurement accuracy

To 0.02% from 1.5kV/100V to 500kV/110V.
To 0.03% from 500kV/110V to 1000kV/110V

4.6. P.T. Phase error resolution

To 1min

5.0. PROTECTION FEATURES

Fuses for Mains input, 12V battery supply and internal power amplifier.
Flashing LED when terminals are live
Buzzer to indicate error conditions

6.0. POWER SUPPLY & CONSUMPTION

Mains Supply 85 - 264 VAC, 50/60Hz
Power Rating Min 20VA
Power Rating Max 50VA
Auxiliary Supply 12V DC car battery

Aux supply and battery monitoring feature
Standby current consumption: 1.1A
Maximum current consumption: 6.0A
Includes a low battery shutdown feature

Test Report software shall be the easy to understand results
Sample

8.0 COMPLIANCE & CERTIFICATIONS

CE Compliance Assessed against **EN 61010-1:2001**

In accordance with: **LVD 2006/95/EC**

EMC Compliance Assessed against
EN 61326-1:2006
EN 61326-2-2:2006
EN 61000-3-2:2006
EN 61000-3-3:2008

In accordance with: **EMC 2004/108/EC**

9. ACCESSORIES

9.1 Secondary C.T. cable and accessories

Cable

1 x Secondary cable : 8m (Minimum Length)
2 x Male to Female cables 150mm (Minimum Size)
2 x Female to spade cables 150mm (Minimum Size)

9.2 Primary C.T. cable and accessories

Cable	Length
1 x Primary cable :	8m (Min)
1 x Interconnection cable	350mm (Min)
2 x Female to spade cables	150mm (Min)
Other cables included	5m (Min)
1 x Battery cable & clamps	
1 x USB cable	1.8m (Min)

Existing accessory cables are also used for testing P.T.s. or require addition accessory cables for P.T. testing

FUNCTION :

I. Current Transformer (CT)	II. Voltage Transformer (PT)
1. Magnetization curve	1. Excitation characteristic test
2. Transformation ratio test	2. Transformation ratio test
3. Polarity	3. Polarity
4. 5% and 10% error curve	4. Ratio error, phases
5. Current Injecting	5. Degauss
6. Degauss	6. Calculation of knee point value
7. Ratio error, phases	7. Actual secondary load (burden), test (burden)
8. Automatic calculation of excitation knee point value	8. Resistance test
9. Actual secondary load test (burden) (load test)	
10. Resistance test	
11. Secondary winding time constant (Ts)	
12. Remanence coefficient (Kr)	
13. Transient dimensioning factor (Ktd)	
14. Peak instantaneous error (Er)	
15. Magnetizing inductance (LU)	

Standards	
Reference standards	GB1207-2006, GB1208-2006, GB16847-1997 IEC60044-1, IEC60044-6, IEC61869-2-2012
Safety standards	GB 4793.1-2007
EMC	EMC standard 89/336/EEC
	FCC Subpart B of Part 15 Class A
	IEC 1000-4-2/3/4/6

MAIN FUNCTIONS

The test items mainly include	
Steady	**Transient**
excitation characteristic	secondary winding time constant (Ts)
transformation ratio	Remanence coefficient (Kr)
polarity	transient dimensioning factor (Ktd)
ratio error	peak instantaneous error (Er)
phases	magnetizing inductance (LU)
5% and 10% error curves	other parameters
resistance	
secondary load	