



TRANSMISSION CORPORATION OF TELANGANA STATE LIMITED

VIDYUT SOUDHA :: HYDERABAD

(Website:TSTRansco.in. CIN No.U40102TG20148SGC094248)

From
The Chief Engineer/P&MM,
TSTRansco,
VidyutSoudha,
Hyderabad – 500 082
e-mail: ce.pmm@tstransco.in

To
M/s. Switchgear & Structural
(India) Pvt Ltd.,
Plot No. 132 & 133, Phase-V,
IDA, Jeedimetla,
Hyderabad- 500 055.
Mob.No.92466349335
e-mail:Switchgear@switchgearindia.com

SAP.PO.No.4500003137/Web PO No.757/CE(P&MM)/SE(P&MM)/DE11/TSPMM11-23/2022/
D.No.98/2022,Dt:21.09.2022.

Sirs,

Sub: Supply of 2Nos- 132kV, 1600A Isolator metallics without earth switch and 50Nos- 132kV, 800A Isolator metallics without earth switch against Tender Specification No. TSPMM11-23/2022 - Detailed Purchase Order - Issued – Reg.

Ref: 1. Tender Specification No. TSPMM11-23/2022 on e-procurement platform.
2. LOI No. CE(P&MM)/SE(P&MM)/DE11/TSPMM11-23/2022/F:132kV Isolators/D.No.85/22,Dt:26.08.2022.
3. Your LOI confirmation Lr No.S-Gear/M-1742/TSTRANSCO/22.23 dt:05.09.2022.

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LIMITED (herein after called the 'TSTRansco), accept your offer against Tender Specification under ref (1) cited, for supply of 2Nos- 132kV, 1600A Isolator metallics without earth switch and 50Nos- 132kV, 800A Isolator metallics without earth switch detailed in clause (2) below, with the terms and conditions as per the Tender Specification No TSPMM11-23/2022, set out in this order. This Purchase Order is in confirmation of Letter of Intent issued vide ref (2) cited, accepted by you vide ref (3) cited.

1. SCOPE OF CONTRACT:

This contract relates to the supply of 2Nos- 132kV, 1600A Isolator metallics without earth switch and 50Nos- 132kV, 800A Isolator metallics without earth switch in clause (2) below and covers design, manufacture, testing before dispatch and delivery free at destination substations/ stores (FADS) as detailed in this order.

2. SCHEDULE OF EQUIPMENT & PRICES:

Supply of the following 3 pole outdoor type Horizontal Double Break Isolators, 3 phases 50 c/s and fault level of 31.5kA per second, auxiliary equipment, all fittings & accessories, clamps & connectors, bolts & nuts, other essentials including terminal connectors and components/switches/ modules/contacts required to be provided with Isolators for interfacing with SCADA, automation system etc., conforming to the latest issue of IS:9921 and as per the Technical Specification.

The price break-up details are as below:

Sl. No.	Description	Amount in Rs.	
		132kV, 1600A Isolator metallics without earth switch (HSN Code: 85353090)	132kV, 800A Isolator metallics without earth switch (HSN Code: 85353090)
1	Ex-Works	1,71,000.00	1,17,000.00
2	Freight & Insurance	3,024.00	3,024.00
3	Total Taxable Unit Price	1,74,024.00	1,20,024.00
4	SGST@9%+ CGST @ 9% on (Ex-Works + Freight + Insurance)	31,324.32	21,604.32
5	Unit FADS Price including Taxes	2,05,348.32	1,41,628.32
6	Quantity (Nos.)	2	50
7	Total Amount	4,10,696.64	70,81,416.00
	Grand Total		74,92,112.64
Rupees Seventy Four Lakhs Ninety Two Thousand One Hundred Twelve and Paise Sixty Four Only.			

- a. The prices of equipment accepted are **FIRM** and FOR delivery destination stores/ site.
- b. The price is inclusive of all incidental charges such as Packing, Forwarding, Handling, Loading, Unloading and other incidentals.
- c. Freight & Insurance will be reimbursed on submission of documentary proofs only.
- d. The dispatch of equipment is by road only. The transit insurance shall be at least for an amount equal to 100% of the cost of the goods and include storage cover for 45 days at stores/site.
- e. It is to note that the prices are with the present rate of GST @ 18% on the total of Ex- Works, Freight and Insurance.
- f. The TSTransco shall have the right to vary the ordered quantity by $\pm 50\%$ at any time during the execution of the order.
- g. TCS at prevailing rates is applicable on any payment made, if company's aggregate sales consideration during the relevant financial year exceeds Rs.50 Lakhs and total sales, gross receipts or total turnover including GST if any exceeds Rs.10 Crores in the financial year immediately preceding the financial year of subject sales.
The payment of TCS shall be subjected to furnishing of necessary documents. The stipulated conditions are to be verified by the DDOs while processing the bills.
The PAN No. of TS TRANSCO is AAFCT0166J.
- h. If any payment is made erroneously, TSTransco reserves the right to recover the same from your future bills/ BGs.

3. DELIVERY:

- 132kV, 1600A Isolator metallics without earth switch: To supply the total quantity within three months from the date of Letter of Intent
- 132kV, 800A Isolator metallics without earth switch: To supply the 50% quantity within three months from the date of Letter of Intent and balance 50% in the next month thereafter.

4. PERFORMANCE SECURITY:

Performance Security shall be furnished in the name of TSTransco for an amount of 10% of the contract value (i.e.) **Rs.7,49,212.00** for proper fulfillment of the contract, which will include the warranty period and completion of performance obligations including Warranty obligations. The Performance security will cover 60 days beyond the date of completion of performance obligations including Warranty obligations.

In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material will be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value will be extended 60 days over and above the extended warranty period. The proceeds of the performance security will be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

The performance security will be...

- (a) A Bank Guarantee issued by State Bank of India or its associate Banks/ Nationalised Banks acceptable to the Purchaser, in the form provided in the bidding documents.
- (b) A banker's cheque or crossed DD or Pay Order payable at the head quarter of the Purchaser in favour of the Pay officer drawn on any scheduled Bank.

It is entirely your responsibility to extend the validity of this Bank Guarantee to cover the period of guarantee well before its expiry.

5. PAYMENT:

- a) 100% payment will be arranged through PFC/REC/Banks/TSTRANSCO/Bulk Load funds within 45 days reckoned from the check-measurement date in Form-13.
- b) For payment through Real Time Gross Settlement (RTGS) the details of Bank Account are as below:

i)	Name of the Bank	State Bank of India
ii)	Branch Address	Sanathnagar Branch, Hyderabad
iii)	Branch Code	20076
iv)	City	Hyderabad
v)	Account No.	52087819625
vi)	MICR Code	500002352
vii)	IFSC Code	SBIN0020076
viii)	PAN No.	AADCS7818Q

- c) The 100% payment mentioned above is subject to submission of performance security by the supplier as per clause (4) above.
- d) The supplier should invariably submit acceptance and routine test certificates and other documents the purchaser specifies before the dispatch is made so that they can be checked and approved well in advance.
- e) The performance guarantee to be executed in accordance with this specification will be furnished on a stamp paper of value Rs.100/-. The Bank Guarantee will be extended if required suitably in accordance with the provisions of Performance Security clause of the specification.
- f) If the supplier has received any over payments by oversight or if any amounts are due to the TSTransco due to any other reasons, when it is not possible to recover such amounts under the contract resulting out of this specification, TSTransco reserves the right to collect the same from any other amount due to the supplier and / or Bank Guarantees given by the company due to or with TSTransco.
- g) When the supplier does not at any time, fulfill his obligations in replacing / rectifying etc. the damaged / defective materials in part or whole promptly to the satisfaction of the TSTransco Officers, TSTransco reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damage occurring to the consignments so dispatched.
- h) Any incidental charge such as stamp duty, bank charges etc., shall be to the Supplier's account and any charges in relation there to shall not be included in the bills submitted to TSTransco's Paying Officer through Banks.
- i) All payments will be made in non-convertible Indian Rupees.
- j) The Bank details as above are final and shall not be revoked under any circumstances.

6. RESPONSIBILITY OF THE SUPPLIER FOR LOSS/DAMAGE:

- a) The supplier is responsible for the safe delivery of the goods in good condition at the destination. He should acquaint himself of the conditions for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.
- b) External damages or shortages that are prima facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight of the receipt of the materials. Internal defects, damages or shortages of any internal parts which cannot ordinarily be detected on a superficial visual examination will be intimated subsequently.

In either case, the defective or damaged materials should be replaced by the supplier free of cost to the TSTransco. If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the TSTransco may deem proper to afford, TSTransco may without prejudice to its other rights and remedies cause to be repaired or rectified the defective material or replace the same and recover the expenditure incurred there for from the deposit such as Earnest Money, Security and Performance or other monies available with TSTransco or by resorting to legal action.

- c) For the purpose of any legal construction, the material shall be deemed to pass into TSTransco's ownership only at the final destination where they are delivered and accepted.

7. PENALTY FOR LATE DELIVERY:

- a) The delivery period as per agreed delivery schedule shall be deemed to be the essence of the contract. In case of delay in delivery of materials beyond the agreed delivery schedule or to perform the services within the period specified in the contract whatever be the reason the TSTransco may at its option, demand and recover from the supplier from the contract price, as liquidated damages, a sum equivalent to 0.5% per week or part thereof on the value of the undelivered portion subject to a maximum of 5% of total value of contract.
- b) For penalty, the number of days of delay would be rounded off to the nearest week and penalty calculated accordingly.
- c) Equipment which is not of acceptable quality (or) not confirming to specification would be deemed to be not delivered.
- d) The penalty specified will be levied and would be adjusted against subsequent pending bills.
- e) The check measurement date in Form-13 i.e., the date of receipt of equipment at the destination stores in good condition will be taken as date of delivery.

8. FORCE MAJEURE:

- a) The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- b) For the purpose of this clause 'Force Majeure' means an event beyond the control of the Supplier and not involving the Suppliers' fault or negligence and not foreseeable. Such events may include but are not restricted to wars or revolutions, fires, floods, epidemics, earth quakes, Tsunami, quarantine restrictions and freight embargoes.

- c) If the Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonably possible, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

9. TERMINATION FOR DEFAULT :

- a) The Purchaser without prejudice to any other remedy for breach of Contract, by written notices of default sent to the Supplier, may terminate this Contract in whole or part:
 - i) If the Supplier fails to deliver any or all of the Materials/equipment within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
 - ii) If the supplier fails to perform any other obligations under the contract.
 - iii) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- b) In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Materials/equipment or services similar to those undelivered and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials/equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

10. TERMINATION FOR CONVENIENCE:

- a) The Purchaser, by written notice sent to the supplier may terminate the contract, in whole or in part, at any time for its convenience. The notice of termination is for the Purchaser's convenience, the extent to which performance of the supplier under the contract is terminated, and date upon which termination becomes effective.
- b) However the materials/equipment that are complete and ready for shipment within thirty (30) days after the supplier's receipt of notice of termination will be accepted by the Purchaser at the contract terms and prices.

11. TERMINATION FOR INSOLVENCY:

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or not affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

12. WARRANTY:

The equipment/ material shall be guaranteed for satisfactory performance for a period of 18 months from the date of receipt of material/equipment at destination site/ TLC stores in good condition against defects proved to be due to faulty design of material/ workmanship. If during this period, any of the material is found defective they shall be repaired or replaced by you free of all costs to the TSTransco. To and fro freight charges shall also be to your account only.

13. TAXES:

Taxes as indicated in the price schedule at paragraph (2) are applicable. You shall agree, that if, at any time, any GST reported to have been paid has not been paid, or a lesser amount has been paid, or on subsequent adjudication or appeal or revision it is decided that a lesser amount is payable, you shall refund such amounts irrespective of time lag.

14. STATUTORY VARIATIONS:

Any variation up or down in statutory levy or new levies introduced after signing of the contract under this specification will be to the account of TSTransco, provided that in cases where delivery schedule is not adhered to by the supplier and there are upward variation/ revision after the agreed delivered date, the supplier will bear the impact of such levies and if there is downward variation / revision the TSTransco will be given credit to that extent. Statutory variation if any allowed, it is allowed only once during delivery period, i.e. at the time of delivery of goods at factory. In case of sub-vendor items, taxes & duties are inclusive in tender price and no statutory variation is applicable.

In cases where the bidder assumes less tax rates and become lowest, upward variation of taxes will not be considered. In case of the bought out items for which the prices are quoted all inclusive of taxes, statutory variation shall not be applicable.

15. DISPATCH INSTRUCTIONS:

The dispatch instructions for the equipment will be furnished separately on satisfactory scrutiny of acceptance test certificates. The prices indicated in clause (2) above shall remain unaltered whatever be the destination.

16. INSPECTION:

After completion of manufacture of the equipment/ material, routine tests shall be performed as per relevant standards and requisite copies of test certificates shall be furnished to the purchaser. Various components of the equipment shall be routine tested in accordance with approved standards and manufacture standards.

As soon as the material/ equipment are ready the supplier will duly send intimation to TSTransco by post/fax and carry out the tests in the presence of the representative of TSTransco. The Supplier shall give at least 15 days advance intimation to enable the Purchaser to depute his representative for witnessing acceptance and routine tests. All charges in connection with inspection shall be borne by the supplier.

The equipment should not be dispatched without final inspection of the tests, approval of test certificates and issue of specific dispatch instructions or specific waiver thereof from this office. The equipment shall reach the destination store/site within three weeks of issue of Dispatch Instructions.

17. CONTRACT DRAWINGS:

Approval by TSTransco to the supplier's drawings shall not relieve the supplier of his responsibility for correctness thereof or from results arising out of error or omission therein or from any obligation or liability under the contract. Any supplementary drawings necessary to permit the complete design of the installation prior to receiving the equipment shall also be supplied. Within two weeks of approval, six sets of all approved drawings and soft copy of drawings shall be furnished. One set of drawings and instruction manuals along with soft copy shall be sent along with each equipment at the time of dispatch. Copies of the drawings and manuals shall also be sent to other offices as indicated below.

Consignee	:	One set of approved drawings per consignee
Concerned Executive Engineer	:	Two Sets
To this office	:	Six sets.

18. ERECTION, OPERATION & MAINTENANCE MANUALS:

Erection, operation and maintenance manuals along with soft copy shall be supplied as per distributions given below giving detailed instructions with illustrations along with the equipment. They shall contain clear recommended schedule of maintenance for the guidance of the operating staff. Any items requiring the special attention of the operation engineer should be highlighted.

Consignee	:	One set per consignment
Concerned Executive Engineer	:	Two sets
To this office	:	Six sets

These shall be sent to the Divisional Engineers / Executive Engineers concerned.

19. COMPLETENESS OF CONTRACT:

All minor accessories that are normally necessary for satisfactory and efficient operation of the equipment shall be supplied by you free of cost to the TSTransco whether these are specifically mentioned or not in the specification, your tender schedules or in this purchase order and the equipment shall be complete in itself.

20. GENERAL CONDITIONS OF CONTRACT:

Except in so far as it is provided otherwise in this contract, you shall abide by the terms and conditions appended to the specification. Except as specifically accepted in this order the terms and conditions mentioned in your quotation under reference are not accepted.

21. RISK:

The risk in the property is entirely yours till the goods are received in good condition at the destination.

22. PACKING:

Each of the material/equipment shall be securely packed separately in such a manner as to withstand rough handling during rail and road transit up to site and as per latest IS/BSS/IEC.

23. TESTS & TEST CERTIFICATES:

All routine tests in accordance with relevant ISS/BSS/IEC specifications shall be conducted on the equipment. You shall intimate this office at least 15 days in advance as to the date when you propose to conduct the acceptance tests for deputing TSTransco's representative to witness the tests. Three copies of the test certificates containing the results of all the acceptance tests along with routine tests carried out shall be furnished for approval.

The test certificates shall be submitted immediately after the tests are conducted and got approved before the equipment is dispatched.

24. MATERIAL & WORKMANSHIP:

All the materials shall be of the best class and shall be capable of satisfactory operation in the tropics under service conditions without distortion or deterioration. No welding or filling or plugging of defective parts shall be permitted, unless otherwise specified they shall conform to the requirement of the appropriate Indian, British or American standards (where a standard specification covering the material in question has not been published the standards of the American society for testing of materials should be followed).

The entire design and construction shall be capable of withstanding the several stresses likely to occur in actual services and of resisting rough handling during transport.

25. INSURANCE:

The Materials / equipment supplied under the Contract will be fully insured against loss or damage incidental to manufacture or acquisition, transportation and delivery and also storage for 45 days at destination stores/site.

The insurance will be in an amount equal to 100% FADS value of material/equipment on all risks basis. The policy will have a provision for extension to cover further storage if necessary at destination stores / site at TSTransco cost. The insurance beneficiary shall be TSTransco.

The supplier shall a) Initiate and pursue insurance claim till settlement, and b) Promptly arrange for repair and or replacement of any damaged items in full irrespective of settlement of insurance claim by the under writers, c) All costs because of insurance liabilities covered under the contract will be to supplier's account. The supplier shall provide the Purchaser with a copy of all insurance policies and documents taken out by him in pursuance of 'Contract'. Such copies of documents shall be submitted to the purchaser immediately after such insurance coverage. The supplier shall also inform the Purchaser in writing at least sixty (60) days in advance, regarding the expiry, cancellation and /or change in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time.

The risks that are to be covered under the insurance shall be comprehensive and shall include but not limited to, the loss or damage in transit, storage, due to theft, pilferage riot, civil commotion, weather conditions, accident of all kinds, fire, flood, war risk (during ocean transportation) bad or rough handling etc., The scope of such insurance shall cover the entire contract value.

All costs on account of insurance liabilities covered under the contract will be on supplier's account and will be deemed to have been included in the bid price.

The documentary proof towards insurance shall be submitted while transporting the material/equipment to the purchaser's destination.

26. INTERCHANGEABILITY :

All similar equipment and removable parts of similar equipment shall be interchangeable with each other.

27. SPARES:

You shall supply any spares required for the equipment that will be supplied under this order, whenever called upon to do so at fair prices and at the TSTransco's standard terms of payment within a period not exceeding the deliveries accepted therein.

28. PROGRESS REPORTS:

You shall furnish the program of works and progress reports on the manufacture of equipment to this office every month in triplicate till the supplies are completed.

29. CORRESPONDENCE:

a) Your acknowledgement of this order and all correspondence of general or technical nature shall be addressed to the Chief Engineer/P&MM, TSTransco, Vidhut Soudha, Hyderabad –500 082.

- b) All correspondence regarding dispatches, payments and any other field matters shall be addressed to the concerned paying officer. Copies of such correspondence shall be marked to the concerned Superintending Engineer and to the Chief Engineer/P&MM, TSTransco, Vidyut Soudha, Hyderabad – 500 082. Copies of the correspondence regarding payments should also be marked to the Executive Director/Finance, TSTransco, Vidyut Soudha, Hyderabad – 500 082.

30. JURISDICTION:

All and any disputes or differences arising out of or touching this order shall be decided only by courts or tribunals situated in Hyderabad or Secunderabad cities. No suit or other legal proceedings shall be instituted elsewhere.

31. SUPERVISION OF ERECTION, TESTING AND COMMISSIONING:

You have to provide services of qualified personnel for supervision of erection, testing at site and commissioning of the equipment wherever required. The above services should be provided free of cost as per the tender specification.

32. ACKNOWLEDGEMENT:

Please acknowledge the receipt of this purchase order with your confirmation of its acceptance by you and the extra copy enclosed may please be returned with your signature in token of your acceptance.

Encl: GTP

Yours faithfully,

Chief Engineer/P&MM
(Acting for and on behalf of TSTRANSCO)

WE ACCEPT THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER

SIGNATURE OF THE CONTRACTOR
WITH SEAL AND DATE

Copies to:

The Executive Director/Finance/ TSTransco /Vidyut Soudha/Hyderabad.

The Chief Engineer/Transmission/TSTransco/Vidyut Soudha/Hyderabad.

The Superintending Engineer/Transmission/ TSTransco /Vidyut Soudha/Hyderabad.

The SAO/Pay & accounts/ TSTransco /Vidyut Soudha/Hyderabad along with Form-40.

The Superintending Engineer/OMC/Metro-Central/ TSTransco /2nd Floor,132kV NIMS GIS SS premises/ Erramanzil/Panjagutta/Hyderabad -82

The SAO/Metro-Central /TSTransco /2nd Floor, 132kV NIMS GIS SS premises/ Erramanzil/ Panjagutta/Hyderabad -82.

The Divisional Engineer/Transmission &Stores/Metro/Erragadda/ Hyderabad, 500 045.

Copy of this PO is available on <http://tgto.telangana.gov.in/>

This order is placed against the indents indicated below:

Sl. No.	CE/Transmission Reference UO.No.	Required for RMI/Augmentation/	132kV 1600A Isolator metallics without earth switch	132kV 800A Isolator metallics without earth switch
1	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE-2/F.TR.SS.A2.6884/19/D.No.11/20, Dt:06.04.2020	Augmentation of PTR capacities at 132kV SS Thirumalaipally & 132kV SS Geesukonda.	---	1
2	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE-2/F.TR.SS.A2.2174/19/D.No.157/20, Dt:23.06.2020	Augmentation of PTR capacity at 220kV SS Manthini.	---	1
3	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE-2/F.TR.SS.A2.2174/19/D.No.173/20, Dt:30.06.2020	Augmentation of PTR capacity at 400kV Narsapur.	1	---
4	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE1/F.RMI 20-21/D.No.282/20, Dt:21.09.2020.	RMI	---	10
5	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.1759/D.No.345/20, Dt:14.10.2020.	Augmentation of PTR capacities at 132kV SS Pudur, 132kV SS Dharmaram, 132kV SS Kathlapur & 132kV SS Chipalapally.	---	4
6	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.TR.SS.A2.199/20/D.No.344/20, Dt:08.02.2021.	Augmentation of PTR capacity at 132kV SS Mylardevpally.	---	1
7	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.TR.SS.A2.4804/21/D.No.344/21, Dt:19.04.2021.	Augmentation of PTR capacity at 132kV SS Pashamailaram.	---	1
8	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.TR.SS.A2.6240/21/D.No.91/21, Dt:11.05.2021.	Augmentation of PTR capacity at 132kV SS Mamidipally.	---	1
9	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE1/F.Rolling stock 21-22/D.No.203/21, Dt:07.07.2021.	Rolling Stock FY:2021-2022	---	30
10	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.TR.SS.A2.5666/D.No.328/21, Dt:19.08.2021.	Augmentation of PTR capacity at 220kV SS Huzurabad.	---	1
11	U.O.No.CE(Tr)/SE(Tr)/DE-SS/ADE2/F.220/132kV Aug/D.No.581/21, Dt:08.12.2021.	Augmentation of PTR capacity at 220kV SS Jagityal.	1	---

GUARANTEED TECHNICAL PARTICULARS
132kV, 1600A Isolator metallics without earth switch
and 132kV, 800A Isolator metallics without earth switch.

Sl No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
1)	Manufacturer's Name & Address of manufacture & GSTN Number		Switchgears & Structures (India) Pvt Ltd., Hyd, GST No. 36AADCS7818Q1ZL	
2)	Type Designation & HSN (8 Digit code)		Horizontal Double Break, DBR & HSN Code No. 85353090	
3)	Applicable Standards		IS:9921(Part I to V)/IEC: 62271-102	
4)	Rated Voltage	kV	145	
5)	Rated Frequency	Hz	50	
6)	Outdoor/ Indoor	kV	Outdoor	
7)	Whether all three poles are ganged together mechanically/electrically		Mechanically ganged	
8)	Rated Normal Current			
a)	Under Normal conditions (as per IS/ IEC)	A	1600	800
b)	Under Site conditions	A	1600	800
9)	Rated short time withstand current for 1 sec. for Isolator & Earth switch	kA rms	31.5kA rms	
10)	Rated peak withstand short circuit current for Isolator & Earth switch	kAp	78.75kAp	
11)	Rated short circuit making current	kA	NA	
12)	Rated magnetising current/ capacitive current make/ break capacity at 0.15% p.f.	A	0.7A at 0.15pf	
13)	Temperature rise over ambient temperature 50 deg.C at site corresponding to			
a)	Max. continuous current	°C	within 55°C	within 55°C
b)	Short time current	°C		
14)	Rated Insulation Levels			
a)	1.2/50 μ sec. lightning impulse withstand voltage (+ve or -ve polarity)			
	i) to earth	kVp	650	
	ii) across the open Isolator			

Sl No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
	- One terminal lightning impulse	kVp	750	
b)	One minute power frequency withstand voltage			
	i) to earth	kV	275	
	ii) across the terminal of open Isolator	kV	315	
15)	Corona extinction voltage	kV	105	
16)	Maximum Radio Interference Voltage at 0.5 MHz, 1.0 MHz, 1.5 MHz & 2 MHz at kV (μ V & corresponding kV-rms)	μ V	500 μ V	
17)	Rated mechanical terminal load			
a)	Longitudinal (or straight)	N	500	
b)	Transverse (or cross)	N	170	
c)	Min Cantilever strength (Upright)	kg	Insulator are not in scope	
18)	Total Operating Time			
a)	Opening time	sec	NA	
b)	Closing time	sec	NA	
19)	Main Contacts (Fixed & Moving) of Isolator switch & earth switch			
a)	Type		Main Switch: High pressure, Reverse loop, pressure relieving Type with Turn & Twist Design	
b)	Material		Hard Drawn Electrolytic copper(HDEC)	
c)	Whether contacts are Silver plated		Yes (Contact surface silver plated)	
d)	Thickness of silver coating	microns	25 microns	
e)	Contact		Line contact	
f)	Contact pressure	Kg/mm ²	4kg/ cm ² per finger	
	Current density			
g)	(at minimum cross section of switch blade)			
	i) Moving blade	A/mm ²	1.7	1.6
	ii) Terminal Pad	A/mm ²	0.8	0.8
	iii) Contacts	A/mm ²	1.7	1.6
	iv) Terminal Connectors	A/mm ²	1	1

Sl No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
h)	Fixed Contacts:			
	Cross-sectional area	mm ²	3Nos(Jaws) 32mm × 5mm	2Nos(Jaws) 32mm × 4mm
	Moving Blades:			
	ii) Cross-sectional area	mm ²	OD-50mm, ID- 36mm, Length- 2260mm	OD-38mm, ID- 28mm, Length- 2240mm
i)	Number of operations which the Isolator can withstand without deterioration of contacts	Nos.	1000	1000
j)	Jumper Plate/ Aluminium Flat with current density 0.8A/Sqmm	mm ²	100mm ×20 mm	100mm ×12 mm
20)	Auxiliary contacts			
a)	Main Isolator			
	i) Total number of 'NO' (for purchaser's use)	Nos.	12	
	ii) Total number of 'NC' (for purchaser's use)	Nos.	12	
	iii) Rate Voltage	V	200V DC	
	iv) Rated continuous current	A	10A	
	v) Rated breaking current	A	2A DC	
b)	Earth switch			
	i) Total number of 'NO' (for purchaser's use)	Nos.	NA	
	ii) Total number of 'NC' (for purchaser's use)	Nos.	NA	
	iii) Rate Voltage	V	NA	
	iv) Rated continuous current	A	NA	
	v) Rated breaking current	A	NA	
c)	Whether arcing contacts provided, If so, type and material used		Yes, M.S Rod Hot dip Galvanized	
21)	Minimum clearance in air:			
a)	Phase to phase clearance	mm	3000mm (Center to Center)	
b)	Phase to Ground clearance	mm	Equal to height of insulator selected.	
c)	Between phases when Isolator is open:	mm	3000 (Center to Center)	
d)	Center to Center distance of outer distance of outer poles in each phase(min)	mm	2135	
22)	Base Channel	mm	125×65mm Length: 2500mm	

SI No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
23)	Bearings -			
a)	Type of bearings		Double ball bearing	
b)	Location of bearings		Below the rotating post insulator	
c)	Type of lubricant for bearings		Heavy Duty Grease	
24)	Terminal Clamp & Connectors			
a)	Suitable for		Twin Moose	Single Moose
b)	Manufacturer's Name		Kelmman, Legion or Mega	
c)	Applicable Standard		IS:5561-1970	
d)	Material			
i	Clamp body		Al.Alloy grade 4600(A6) of IS: 617-1970	
ii	Bolts & Nuts		MS Hot dip galvanized	
iii	Spring washers		MS Electro galvanized	
e)	Rated Current	A	1600A	800A
f)	Rated terminal Load	kg	As per IS	
g)	Weight of clamp complete with hardware	kg	3.0kgs (Approx)	1 to 2 Kgs(approx)
h)	Radio interference voltage	μ V	500	
i)	Corona extinction voltage	kV	105	
25)	Operating Mechanism			
a)	Name & address of Manufacturer		Switchgears & structurals India Pvt Ltd., Hyd	
b)	Type of operating mechanism		Main switch: manual (With reduction gear).	
c)	Whether separate operating mechanism provided for operation of Isolator pole and earth switch		yes	
d)	Type of manual operating mechanism for Isolator pole & earth switch		Main switch: Manual Earth switch: Not applicable.	
e)	Force required to operate		25kg-m	
f)	Whether padlocking are included as per the specification		Padlocking included	
g)	Type of manual device		Torsional	
h)	Weight of operating mechanism	kg	30kgs(approx)	
26)	Type of interlocking between Isolator and Earthing switch			
a)	Resistance of operating and interlocking coils	k Ω	Negligible	

Sl No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
b)	Details of following interlocks provided as per specification:			
i)	mechanical interlock between Isolator and earth switch			NA
ii)	electrical interlock between Isolator and earth switch			NA
iii)	electrical interlocking in association with Circuit Breaker			Yes
Iv)	electrical interlock to bring back all three poles to open position in case any pole fails to close within specified time			NA
v)	provision to cut-off supply to motor during manual operation and provision for de-coupling the motor			NA
vi)	electrical scheme to provide remote alarm for pole discrepancy			No
vii)	Arrangement provided to prevent electrical or manual operation unless interlocks are satisfied.			Yes
27)	Control Cabinet/ Marshalling box/ MOM Panel			
a)	Name & address of Manufacturer		Switchgears & Structural India Pvt Ltd., Hyd/ Eqv	
b)	Applicable standard		IS:5039/ IS:8623; IEC:60439	
c)	Sheet thickness Top/ bottom/ side/ back/ door leaf	mm	Aluminium, 3mm thick	
d)	Degree of protection provided		IP-55	
e)	Colour of finish paint –			
	i) Out side		Light Admiral grey in accordance with shade No. 631 of IS:5	
	ii) In side		Glossy white	
f)	Control Wiring			
	i) Current & Voltage ratings	A, V	10A & 1100V	
	ii) Control Wiring – Size & material of conductor		2.5Sqmm, Stranded copper wires	
g)	Terminal Blocks			
	i) Name & address of manufacturer		Elmex	
	ii) Current & Voltage ratings	A, V	10A & 1100V	

Sl No	Description	Unit	132kV, 1600A Isolator w/o ES	132kV, 800A Isolator w/o ES
h)	Space heater rating at 240 V	W	NA	
i)	Provision of lock with keys	Yes/ No	Yes	
j)	Control Cabinet/ Marshalling box internal lighting & Door switch for controlling		NA	
k)	Weight	kg	30kgs	
l)	Plinth mounted/ structure mounted		Structure mounted	
28)	a) Tandem Pipe			
	i) Size		32mm NB	
	ii) Class		Class B	
	iii) Material		GI pipe	
	iv) Applicable standard		IS:1239(Part I), 1990& IS:4736, 1986	
	v) weight of zinc		360 gm/Sqmm	
	b) Down Pipe			
	i) Size (Internal & External dia.)	mm	50mm NB	
	ii) Class		Class B	
	iii) Material		GI Pipe	
	iv) Applicable standard		IS:1239(Part I), 1990& IS:4736, 1986	
	v) weight of zinc	gm/ mm ²	360 gm/Sqmm	
29)	Size & Weight			
a)	Weight of each pole	kg	135kgs(approx)	
b)	Space requirement i.e. Length		6500mm	
c)	Dimensions			
	3 phase Isolator		6500×2500×4600 mm	
d)	Size of largest part		Tandem pipe- 7meters	

Chief Engineer/P&MM