The	Tata	Power	Company	Ltd
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OPEN TENDER NOTIFICATION

The Tata Power Company Limited Invites Tender through E-Tender Two

The Tata Power Company Limited Invites Tender through E-Tender Two-Part Bidding Process from interested bidders for the following package: -

A. Summary of the tendered package:

Sr. No.			Description	Tender Reference no.	Bid Guarantee Fee / EMD (Rs.)	Tender Fee (Rs.)	Last Date and Time for payment of Tender Participation fee		
			g package please send Rameshkumar P N (<u>pn</u>			ak.shinde	@tatapower.com)		
1.	Outline Agreement for supply of								
	B. Procedure to Participate in Tender.								
			ving steps to be dou pation Fee" as mentione		date and time	for Payn	nent of Tender		
	1.	Non-R	efundable Tender Fee,	as indicated in tab	ble above, to be	submitted	in the form of		
			osit in the following ban icating the Tender Refe		mit the receipt a	along with a	a covering letter		
			Beneficiary Name - Th	ne Tata Power Co.	Ltd.				
			Bank Name – HDFC B	ank Ltd.					
			Branch Name – Fort B	ranch, Mumbai					
			Address – Maneckji W	adia Building, Nar	nik Motwani Mar	g, Fort, M	umbai 400023.		
			Branch Code – 60						
			Bank & Branch Code -	- 400240015					
			Account No - 0060011	0000763					
			Account type – CC						
			IFSC Code – HDFC00	00060					
	2.		e and Interested Bidde ead indicating	rs to submit duly	signed and st	amped let	tter on Bidder's		
			Tender Enquiry number	er					
	Name of authorized person								
			Contact number						
			e-mail id						
			Details of submission of	of Tender Participa	ation Fee				

The Tata Power Company Ltd		OPEN TENDER NOTIFICATION
Tender Reference: CC24VJS065	TATA POWER	Document Date: 20 th Jan 2024

E-mail with necessary attachment of 1 and 2 above to be send to <u>vinayak.shinde@tatapower.com</u> with copy to <u>pnramesh@tatapower.com</u>before "Last date and time for Payment of Tender Participation Fee"

Interested bidders to submit Tender Participation Fee and Authorization Letter before Last date and time as indicated above after which link from Tata Power E-Tender system (Ariba) will be shared for further communication and bid submission.

Please note all future correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc. will happen only through Tata Power E-Tender system (Ariba).

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Also it may be strictly noted that once date of "Last date and time for Payment of Tender Participation Fee" is lapsed no Bidder will be sent link from Tata Power E-Tender System (Ariba). Without this link vendor will not be able to participate in the tender. Any last moment request to participate in tender will not be entertained.

Any payment of Tender Participation Fee by Bidder who have not done the pre-requisite will not be refunded.

Also all future corrigendum's to the said tender will be informed on Tender section on website <u>https://www.tatapower.com only.</u>





OPEN TENDER NOTIFICATION

Tender Reference: CC24VJS065

OPEN TENDER NOTIFICATION

FOR

Outline Agreement for supply of LT Panels for Mumbai Distribution

The Tata Power Company Limited (Tata Power) Smart Center of Procurement Excellence,2nd Floor, Sahar Receiving Station, Near Hotel Leela, Sahar Airport Road, Andheri East, Mumbai-400059

The	Tata	Power	Company	Ltd
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Document Date: 20th Jan 2024

Section A : Tender Notice including Instruction to Bidders

- 1. Tender Details
- **1.1 Key Tender Specific Details**

Reference Number	CC24VJS065				
Description	Outline Agreement for supply of LT Panels for Mumbai Distribution				
Type of Tender	Out Line Agreement				
Estimated Period	One Year				
Tender Fee	Rs 2000/-				
Earnest Money Deposit (EMD)	Rs 2,50,000/- Rs. Two Lakhs Fifty Thousand Only PLEASE NOT THAT IT IS MANDATORY TO SUBMIT EMD IN BANK GUARANTEE FORMAT ONLY				
Price Basis	On Firm Basis				
Executive Handling this Tender*	Name: Mr. Vinayak Shinde E-Mail ID: <u>vinayak.shinde@tatapower.com</u>				
Technical Query *	Name: Mr. Ajay Potdar E-Mail ID: <u>avpotdar@tatapower.com</u>				

*You may contact the above personnel from Monday to Friday during office hours only.





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1.2 Calendar of Events

(a)	Payment of Tender Fee and Submission of letter nominating authorized person by Interested Bidder indicating their intent to Buy Tender	Till 29 th January 2024
(b)	Access to Tender Documents through E- Tender system to authorized person of Interested Bidder	29 th January 2024
(c)	Last Date of receipt of pre-bid queries, if any.	By 5 th February 2024
(d)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	10 th February 2024
(e)	Last date and time of receipt of Bids	19 th February 2024

Note:- * These date and time are as planned and tentative. In case of change the same shall be intimated to Authorized Person of Interested Bidder through E-Tender System.

Please note post submission of Bids relevant communication will be done with Authorized Person of Interested Bidder through E-Tender System

1.3 Mandatory documents required along with the Bid

- 1.3.1 Bid Guarantee Fee (EMD) of requisite value and validity. PLEASE NOTE THAT BID GUARANTEE ONLY IN FORM OF BANK GUARANTEE WILL BE ACCEPTED.
- 1.3.2 Requisite Documents to ascertain fulfilling of Technical and Commercial Pre-Qualification Requirement as detailed in Tender Enquiry.
- 1.3.3 Technical Submission including Drawings, Type Test details etc as detailed in Technical Specification.
- 1.3.4 Required Commercial Submission as detailed in Tender Document
- 1.3.5 Technical and Commercial Clarification and Deviations as per the format attached in the Tender Enquiry
- 1.3.6 Proper authorization letter to sign the tender and participate in Tata Power E-Tender system on the behalf of bidder.
- 1.3.7 For vendor not registered with Tata Power, Duly filled Vendor Registration form with all supporting documents is mandatory to participate in the Tender.

Please note that in absence of any of the above documents, the bid submitted by a bidder shall be liable for rejection.

Also please note that whenever editable format are shared it is requested that data be filled in relevant cells. No formatting or addition / deletion of rows / columns to be done. Wherever editable Excel submission are requested the file should be free from references, macros etc.



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Checklist of Document Submission

Stage of Tendering	Document	Type of Format	Mode of submission			
Before last date of Pre-Bid Query	Query / Clarification / Deviation (QCD) Format. (F1) Technical and Commercial	Editable Excel Format	Through message in E- tender system			
Bid Submission Envelope 1 (First Part)	Earnest Money Deposit	Original Bank Guarantee	In Sealed Envelope			
Bid Submission Envelope 2 (Second Part)	Documents to be uploaded in Ariba only. In case of multiple files, a zipped folder can be attached for the same (size limit of 100MB per zipped file)					
To be submitted Under Tab 2.1 in Ariba	Duly filled PQR and supporting documents					
	Duly filled PQR format	Editable Excel Format	E-Tender System			
	Backup documents for Technical and Commercial PQR	Signed and Scanned documents	E-Tender System			
To be submitted under Tab 2.2 in Ariba	Technical Submission and	Supporting Documents				
6	Duly filled Unpriced Bid Format. Signed copy of Technical Specifications indicating your acceptance of the same	Signed and scanned copy of document	E-Tender System			
To be submitted under Tab 2.3 in Ariba	Commercial Submission a	nd supporting document				



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	Letter of Undertaking (FOR VENDORS NOT REGISTERED WITH TATA POWER)		E-Tender System
	E-auction Undertaking form	Scanned Copy of letter of undertaking duly filled, stamped and signed	E-Tender System
Bid Submission Envelope 3 (Third Part)	Duly filled Priced Bid Format	Hard copy in original duly signed and stamped	Sealed Envelope
	Duly filled Priced Bid Format	To be entered in E- Tender System	E-Tender System

1.4 Deviation from Tender

Normally, the deviations to tender terms are not admissible and the bids with deviation are liable for rejection. Hence, the bidders are advised to refrain from taking any deviations on this Tender. Still in case of any deviations, all such deviations shall be set out by the Bidders, clause by clause in the Query / Clarification / Deviation (QCD) Format. Deviations have to be mandatorily submitted in editable Excel sheet.

Technical or Commercial Deviation should be mentioned in Deviation Format only. Deviation in any other document or Format will not be considered.

1.5 Right of Acceptance/Rejection

1.5.1 Bids are liable for rejection in absence of following:-

1.5.2 Mandatory Documents as listed in 1.3 above

1.5.3 Price Bid as per the Price Schedule mentioned in Tender Document

1.5.4 Receipt of Bid and Response to queries within the due date and time

Tata Power reserves the right to accept/reject any or all the bids without assigning any reason thereof.

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POWER

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1.6 Qualification Criteria

Sr no	Parameter	Tata Power Requirement	Documents required
1	Infrastructure	Bidder must be an OEM of Equipment with manufacturing facility / assembly in India. The bidder must have in-house routine and acceptance testing facilities for acceptance as per relevant IS/IEC	Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.
2	Supply and Experience	The bidder must have supplied for same or higher size and voltage a) A minimum of 50 nos during last 3 years or b) A single order of 25 nos or c) Two orders of 15 nos last 3 years. Indian Subsidiaries of global companies having plant in India are also eligible to bid if the qualification requirements stated above are met independently or in combination with the parent company. Declaration from parent company needs to be submitted.	Purchase Order Copies and Completion Certificates. Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.
3	Performance	The bidder should have performance certificates for 2 year satisfactory performance from at least 2 reputed Distribution Utilities for equipments of similar or higher rating. The work against these issued certificates should be completed in last seven years from the date of bid submission. In case the bidder has a previous association with any of Tata Power Groups for similar products and services, the performance feedback for that bidder by Tata Power User Group shall only be considered irrespective of performance certificates issued by any third organization.	Supply List & Performance Certificates from the utilities
4	Commercial Capability	Average Annual turnover of the bidder for last three years shall not be less than Rs 4 Crs	Copy of audited Balance Sheet and P&L Account to be submitted in this regard.

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			Type Test Report.
		The bidder shall submit Type test reports obtained from NABL/ International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design.	Undertaking that there is no change in design / material of construction (MOC) if Type Test Report older than 5 years.
5	Type Test	The type tests should have been conducted within 5 years prior to the date of bid opening. Time period for type test can be extended by another 5 years as a special case, if there is no	Undertaking that type test shall be carried out for the offered
5		change in design / material of construction (MOC).	equipment / material from NABL / International Accredited Lab without any cost implication to the
		In case the type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, then type test shall be	owner and the Type Test reports shall be submitted before dispatch of the equipment / material, in case type test reports furnished
		carried out for the offered equipment / material from NABL / International Accredited Lab without any cost implication to the owner and the Type	are not for the quoted equipment / material but for the equipment / material with higher voltage class
		Test reports shall be submitted before dispatch of the equipment / material.	and/or different capacity, (if applicable)

1.7 Pre-Bid Queries

Technical or Commercial Pre-Bid Queries if any has to be sent through message in E-Tender System. Pre-Bid Query has to be sent only in the Query / Clarification / Deviation (QCD) Format. Pre-Bid Queries sent in any other format or send through any other communication channel will not be accepted and answered. Pre-Bid Query have to be sent in the stipulated timeline as defined in the Tender Document. No Pre-Bid Query will be accepted after the due time and date as specified as "Last Date of receipt of pre-bid queries, if any"

1.8 Marketing Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts and other parts of Tender Documents. Bidders must agree to these rules prior to participating. In addition to other remedies available, Tata Power reserves the right to exclude a bidder from participating in future markets due to the bidder's violation of any of the rules or obligations contained in the General Condition of Contracts or other part of the Tender Documents. A bidder who violates the market place rules or engages in behavior that disrupts the fair execution of the marketplace, may result in restriction of a bidder from further participation in the marketplace for a length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

• Failure to honor prices submitted to the marketplace



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- Breach of terms as published in TENDER
- Submit irrelevant documents or frequently cases of missing documents as part of compliance to Qualifying, Technical or Commercial Requirements causing unnecessary delay in Tender Evaluation

1.9 Supplier Confidentiality

All information contained in this tender is confidential and shall not be disclosed, published or advertised in any manner without written authorization from Tata Power. This includes all bidding information submitted to Tata Power. All tender documents remain the property of Tata Power and all suppliers are required to return these documents to Tata Power upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

1.10 Payment Terms

100% payment shall be made within **60 days** from the receipt and acceptance of the material at the Consignee Stores/Site/Location as per the Contractual Terms and Conditions.

2. Evaluation Criteria

- The bids will be evaluated technically on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ / each line item as calculated in Schedule of Items. Tata Power however, reserves right to split the order line item wise and/or quantity wise among more than one Bidder. Hence all bidders are advised to quote their most competitive rates against each line item.
- Bidder has to mandatorily quote against each item of Schedule of Items. Failing to do so, Tata Power may reject the bids.

NOTE: In case of a new bidder not registered with Tata Power, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However Tata Power reserves the right to carry out factory inspection and evaluation for any bidder prior to technical qualification. In case a bidder is found as Disqualified in the factory evaluation, their bid shall not be evaluated any further and shall be summarily rejected. The decision of Tata Power shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause and Cap: Not Applicable (On Firm basis)

3. Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document. Bids shall be submitted in 3 (three) parts:

FIRST PART: "EMD – BANK GUARANTEE" of Value detailed in 1.1 valid for 180 days from the due date of bid submission in the form of Bank Guarantee favoring 'The Tata Power Company Limited'. The EMD has to be strictly in the format as mentioned in Tender Document, failing which it shall not be accepted by Tata Power and the bid as submitted shall be liable for rejection.



Note : BG of 180 days and further claim period of 180 days is needed. In case the same cannot be issued by your bank then BG valid for 365 days can be provided.

Tata Power Bank details for EMD BG / NEFT:

Beneficiary Name – The Tata Power Co. Ltd.

Bank Name – HDFC Bank Ltd.

Branch Name – Fort Branch, Mumbai

Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

Branch Code – 60

Bank & Branch Code – 400240015

Account No - 00600110000763

Account type – CC

IFSC Code – HDFC000060

The hard copy of EMD in a sealed envelope should be sent on address mentioned in Tender document. Pls mail the UTR details in case of NEFT for verification.

First Part has to be submitted in Sealed Envelope.

SECOND PART: "TECHNICAL / UN-PRICED COMMERCIAL BID" shall contain the following documents:

- a) Documentary evidence in support of Technical, Commercial qualifying criteria
- b) Technical literature/GTP/Type test report/Details of Qualified Manpower Available/ Testing Facility available etc. (complete in all respect as desired and detailed in Technical Specification and Technical Requirement Section)
- c) Duly filled Technical and Commercial Deviation Sheets
- d) Duly filled formats like Authorization affidavit form
- e) Unpriced Commercial Bid

The technical / un-priced commercial bid shall be properly indexed and is to be submitted in Soft Copy though E-Tender system of Tata Power. <u>Hard Copy of Technical Bids need not be submitted</u>.

Second Part has to be submitted through E-Tender System Only

THIRD PART: "PRICE BID" shall contain only the price details and strictly in Price Bid format along with explicit break up of basic prices and applicable GST. Basic price should include packaging forwarding, freight, transit insurance and any other cost envisaged by the bidder.

Third part has to be submitted through E-Tender System (ARIBA) only.

FOR BIDS INVITED THROUGH E-TENDER SYSTEM (TECHNICAL AND UN-PRICED COMMERCIAL BID) :

In response to advertisement Bidder has to provide details of person authorized to Bid on behalf of the Bidder. An e-mail will be generated by E-Tender System and the authorized person can download the Tender Documents from the system.

SECOND and THIRD PART of the Bid have to be submitted in E-Tender System.





Bidders have to mandatorily submit SECOND PART (Technical and Un-priced commercial Bid) only through E-Tender system of Tata Power. Bids submitted through any other form/ route shall not be admissible.

EMD BG to be sent in a sealed envelope which shall be clearly marked as below to the below address.

EMD "Please mention Tender Reference No"

The Tata Power Company Limited, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Near Hotel Leela, Sahar Airport Road, Andheri East, Mumbai-400059

Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to Tata Power to collect the proposals from Courier/Airlines/Cargo Agents etc. shall be entertained.

SIGNING OF BID DOCUMENTS:

The bid must contain the name, residence and place of business of the person or persons making the bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.

The Bid being submitted must be signed by a person holding a Power of Attorney authorizing him to do so, certified copies of which shall be enclosed.

The Bid submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Bid on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Bid on behalf of the Company. Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the bid.

A bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent' or other designation without disclosing his principal will be rejected.

The Bidder's name stated on the Proposal shall be the exact legal name of the firm.

3.2 Contact Information

Communication Details: Detailed in 1.1

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply/ work with a break up of prices for individual items and Taxes & duties. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various sites of Tata Power. The all-inclusive prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during the execution of the supply work, breakup of price constituents.

The quantity break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications/ Scope of Work/ SLA mentioned in the tender, shall be deemed to be included in prices quoted.



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3.4 Bid Currencies

Prices shall be quoted in Indian Rupees Only. It also may be noted that the denomination of Purchase Order / Outline Agreement / Rate Contract and associated Payment to Successful Bidder shall also be in Indian Rupees Only. In case Bidder intends to import any equipment, part etc and supply to Tata Power then all liability and costs related to import will rest with the Bidder. All statutory compliances, payments, expenditure etc related to importing of equipment will be responsibility of the bidder.

3.5 Period of Validity of Bids

Bids shall remain valid for 180 days from the due date of submission of the bid.

Notwithstanding clause above, Tata Power may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and responses thereto shall be made in writing.

3.6 Alternative Bids

Bidders shall submit Bids, which comply with the Bidding documents. Alternative bids will not be considered. The attention of Bidders is drawn to the provisions regarding the rejection of Bids in the terms and conditions, which are not substantially responsive to the requirements of the bidding documents.

3.7 Modifications and Withdrawal of Bids

The bidder is not allowed to modify or withdraw its bid after the Bid's submission. The EMD as submitted along with the bid shall be liable for forfeiture in such event.

3.8 Earnest Money Deposit (EMD)

The bidder shall furnish, as part of its bid, an EMD amounting as specified in the tender. The EMD is required to protect the Tata Power against the risk of bidder's conduct which would warrant forfeiture.

The EMD shall be in following form:

Bank Guarantee valid for 180 days after due date of submission.

The EMD shall be forfeited in case of:

a) The bidder withdraws its bid during the period of specified bid validity.

Or

- b) In case of a successful bidder, if the Bidder, within 15 days, does not
- i) accept the purchase order, or
- ii) furnish the required Contract Performance Bank Guarantee (CPBG)

Original Bank Guarantee submitted as EMD shall be returned only after completion of award process for unsuccessful bidders and issue of Contract Performance Bank Guarantee (CPBG) for successful bidder.

4. Bid Opening & Evaluation process

4.1 Process to be confidential

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons



not officially concerned with such process. Any effort by a Bidder to influence Tata Powers processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

4.2 Technical Bid Opening

Bids will be opened at Corporate Office of Tata Power as per our standard Process. The bids shall be opened internally by Tata Power. Technical bid must not contain any cost information whatsoever.

First the envelope marked "EMD" will be opened. Bids without EMD of required amount/ validity in prescribed format, shall be rejected.

Next, the technical bid of the bidders who have furnished the requisite EMD will be opened in E-Tender system.

4.3 Preliminary Examination of Bids/Responsiveness

Tata Power will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order. Tata Power may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

Prior to the detailed evaluation, Tata Power will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.

Bid determined as not substantially responsive will be rejected by the Tata Power and/or the Tata Power and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

4.4 Techno Commercial Clarifications

Bidders need to ensure that the bids submitted by them are complete in all respects. To assist in the examination, evaluation and comparison of Bids, Tata Power may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the Tata Power specifications and attempt will be made to bring all bids on a common footing. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted owing to any clarifications sought by Tata Power.

4.5 Price Bid Opening

The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of Tata Power without any further correspondence in this regard.

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.



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4.6 Reverse Auction and Price Matching Option

Tata Power reserves the right to go for Reverse Auction (RA) for price negotiation and discover the most competitive price on ARIBA portal, Tata Power's official e-tendering platform. This will be decided after techno-commercial evaluation of the bids. Bidders need to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case Tata Power decides to go for RA.

Only those bidders who are techno-commercially qualified shall be eligible to participate further in RA process. However, the original H1 bidder (whose price bid is the highest post techno-commercial evaluation) shall not be allowed to participate in further RA process provided minimum three techno-commercially qualified bids are available.

For case where more than one bidders have to be awarded (including Rate Contract / Outline Agreement) Price Matching Option will be exercised. Volume of job allocated to original competitive bidder will be more than bidder who is chosen through Price Matching Option. Tata Power decision regarding work sharing shall be final and no explanation OR clarification shall be given regarding the same.

5.0 Award Decision

Tata Power will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 2.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by bidder in Priced Bid Format subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order/Outline Agreement/ Rate Contact solely depends on Tata Power on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Tata Power may deem relevant.

Tata Power reserves all the rights to award the contract to one or more bidders so as to meet the delivery requirement or nullify the award decision without assigning any reason thereof.

In case any supplier is found unsatisfactory during the delivery process, the award will be cancelled and Tata Power reserves the right to award other suppliers who are found fit.

5.1 Rate Contract / Outline Agreement

Rate Contract / Outline Agreement does not guarantee any assured business volume in Rupees or Quantity. Quantities are only indicative and specified for the purpose of readiness as per the request from Purchaser. Supplies shall be only against Firm Purchase Orders placed as per the agreed terms and conditions of Rate Contract / Outline Agreement. Purchaser shall be entitled at its discretion to place firm order for such supplies on "As and When Required Basis" without minimum take-off guarantee.

Rate Contract / Outline Agreement will have list of Items with Unit Rate and applicable Taxes and Duties. There will be a cap on value for which order which can be placed against the Rate Contract / Outline Agreement. Actual quantity ordered for each line item may differ significantly from the tentative quantity indicated in the Tender Document. One / few / all items of Rate Contract / Outline Agreement can be ordered till the Cap Value is reached.





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6.0 Order of Preference/Contradiction:

In case of contradiction in any part of various documents in tender, following shall prevail in order of preference:

- 1. Outline Agreement/Purchase Order (with Commercial conditions)
- 2. Special Terms and conditions (if applicable)
- 3. General Terms and conditions
- 4. Technical Specifications

In case there is a discrepancy in the BOQ mentioned in tender (to the extent modified through subsequent Corrigendum, if any) and the bid submitted by any bidder, the description as mentioned in the tender (to the extent modified through subsequent Corrigendum, if any) shall prevail.

7.0 Ethics

Tata Power is an ethical organization and as a policy Tata Power lays emphasis on ethical practices across its entire domain. Bidder should ensure that they should abide by all the ethical norms and in no form either directly or indirectly be involved in unethical practice.

Tata Power work practices are governed by the Tata Code of Conduct. Bidder is request to refer Tata Code of Conduct Clause in General Terms and Conditions.

8.0 General Condition of Contract and Special Condition of Contracts

Any condition not mentioned above shall be applicable as per General Terms and Conditions and Special Condition of Contracts attached along with this tender.

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Annexure 1

Schedule Of Items

Sr. no.	Material / Service Short Text (as per SAP)	Quantity	UoM	Unit Rate (Basic)	Total
1	LTP 3200A, 415V, 8W-800A O/G FUSE	3	nos.		-
2	LTP 2000A, 415V, 6W-630A O/G FUSE	89	nos.		-
3	LTP 1250A, 415V, 6W-630A O/G FUSE	15	nos.		-
4	LTP 2500A, 415V, 2MCCB & 3Fuse	3	nos.		-
5	LTP 3200A,2-1200A MCCB,2-630A&2-800 FUSE	4	nos.		-
6	LTP 2500A, 415V, 6W-630A O/G FUSE	15	nos.		-
7	LTP 2500A, 415V, 8W-630A O/G FUSE	15	nos.		-
8	Type test Charges (Temp rise on LV panels) - LT	1	nos.		-
	Sub Total				-
	GST @18%				-
	Total with taxes				-

ENSE-DS-2028-R00



Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION

2500 A LT Panel with MCCB & Fuse

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra



ENSE-DS-2028-R00

Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2028-R00

Document Title: Technical SPECIFICATION OF 2500 A LT Panels with MCCB & Fuse

R00	ENSE-DS- 2028-R00 (For Tendering Purpose)	11/01/2024	YMM	¥.	AVP	¥.	RMB	Ref.
R0	D-NPCE- SPEC-07	21/08/2019	ND	-sd-	NK	-sd-	NCP	-sd-
Rev	Danala	Dete	Initials	Sign	Initials	Sign	Initials	Sign
No.	Kemarks	Remarks Date		ared By	Review	ed By	Approve	d & Issued By

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	11/01/2024	11/01/2024	11/01/2024

	The Tata Power Company Limited		TECHNICAL SPECIFICATI 2500 A LT Panel with MCCE	
	ENSE-DS-2028-R00	TATA POWER	Date of Issue: 11/01/2024	
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	ENSE-DS-	-2028-R00	TATA POWER	Date of Issue: 11/01/2024
1.0	SCOPE	painting, packing, an nos 800 A HRC Fue trouble-free operation Mumbai. It is not our intent to equipment. However Engineering design acceptable to the p specification and sha not in full accordance	d supply of 415V, 2500 A l se Outgoing Feeders com on of the distribution netwood specify completely herein a r, the equipment shall com and workmanship and sha purchaser (TPC) who will all be entitled to reject any e therewith.	g, manufacture; shop testing, inspection, T Panel with 2 no's 3P 1000 A MCCB & 3 plete with all accessories for efficient and ork for Tata Power Company Limited at all details of design and construction of the form in all respects to high standards of all be capable of performing in a manner interpret the meaning of drawings and work or material which in his judgement is
		PURCHASER (TPC)	after award of contract.	ke and shall be subject to approval by the n and latest revision of following codes with
2.0	APPLICABLE STANDARDS	all amendments. Title 1 IS 8623 2 IS 12063/ IE 3 IS 5 4 IS 5082 5 IS 2705 6 IS 2551 7 IS 13703-2 8 IEC 255 9 IEC 801 10 IEC 60947-2 11 IEC 60269 In case of any co	Specification f C 60529 Classification Enclosures of Color of ready Wrought Alum electrical appli Current Trans Danger Notice Low voltage fu AC or 1500 V persons Protection Rel Control and m 2/IS 13947-2 Low Voltage S	Indian standard or low voltage switchgear of degrees of protection provided by Electrical equipment mixed paints inium & Al alloy plates & sheets for cation formers plates uses for voltage not exceeding 1000 V DC. Part 2 Fuses for use by authorized ays onitoring Switchgear & control gear fuses

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3.0	CLIMATIC CONDITIONS OF THE INSTALLATION	2Max. Da3Min Amb4Maximu5Minimun6Average annum7Average 88Average 99Rainy m10Altitude 11AverageAtmosphere is ge subjected to fog	above MSL not exceeding Air Pressure enerally laden with mild acid a in cold months. The design o	43 deg.C 35 deg.C 07 deg.C 100% 40% 50 2380mm 115 June to Oct. 300 meters 29.6-inch Hg
		Sr. No 1 Manu	Item Description	Tata Power Requirement Name Manufacturer Address Contact telephone no
	GENERAL TECHNICAL	Break	er Rating (ACB)	2500A Manual Fixed Type without any microprocessor relay. 230V AC Shunt tripping coil to be provided.
4.0		2 Mode	l of ACB	The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)
	REQUIREMENTS	Appro	oved Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton
		Main	bus bar rating	2500 A
		3 Bus b Neutr	ar Size for Phase & al	3600 sq.mm for Phase & Neutral
		Earth	Bus	1 x 50 x 10 mm GI
		4 Туре	of Installation	Indoor / Outdoor Type
		5 No of	Incoming feeders	Qnty -1no. of 2500A ACB with 8 Nos of 4CX300 sq.mm AI Ar XLPE cables
		6 No of MCCI	outgoing feeders – 1000 A B	Quantity - 2 Nos of 1000A each with 4 no's of 4CX300 sq.mm Al Ar XLPE cables per O/G

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			No of out Fuse	going feeders – HRC	Quantity - 3 Nos of 800A each With 3 no's of 4CX300 sq.mm Al Ar XLPE cables per O/G
		7	Panel co	nstruction	CRCA sheet steel of thickness 3 mm
		8	Panel en	closure class	IP54 - ingress protection
		9	Sheet ste	eel thickness	Doors & Covers - 2.5mm, FRAME - 3mm
		10	Door type access	e for front & rear	Double door with rear door bolted
		11	Door hing	ges	Minimum three anti-theft type hinges self-locking type
		12	Padlockir	ng facility	For front door
		13	Master ke	ey for all doors	Identical for all panels, 1 no./ panel to be provided
		14	Hardware & Fasteners		All Nuts, Bolts, Washers shall be Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.
		14a	Current Carrying part hardware		Each bolt on Bus Bar and Fuse terminal shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided
			Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082
			Bus bar s	size in mm for 2500 A O/G	3600 sq.mm for Phase & Neutral
		15	2500A A	CB Incoming	3600 sq.mm for Phase & Neutral
			ACB O/G	LINKS	3600 sq.mm for Phase & Neutral (Dimensions as per feasibility with Breaker palm connection)
		16	Bus bar o neutral	colour coding for R, Y, B &	Heat shrinkable sleeves with colour Red, Yellow, Blue & Black respectively
		16 a	Bus Bar I	Heat shrinkable sleeves	Cross-linked Polyolefin (Bidder to specify thickness)
	\mathbf{X}	17		bar short circuit I capacity	Above 50kA for 1 sec
<	18			ble maximum temperature e ambient of 50°C	Busbar: 45 deg C
	-			ble maximum temperature re ambient of 50°C	Terminals: 65 deg C
		19	Bus bar s	support insulators	As per IS13410 SMC / DMC, 1100V grade
		20	Incoming	Cable Size	4C 300 Sq.mm AI Ar XLPE
		21	Outgoing	Cable Size	4C 300 Sq.mm AI Ar XLPE

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		22	Gland pla	ate at panel bottom	HRC	CA MS 3mm thickness	
		23	Cable te	rmination clearance	600 & AC	mm minimum from gland plate CB	
			Fuse Ba	se	800	A	
		24	Approve	d Make		/ Siemens / Schneider / GE Power trol / Jean Muller /Bussmann / ABB	
			Fuses (8	00 A)		C plug-in type gG (General Purpose, acting fuse)	
		25	Approve	d Make	L&T	/ Siemens / Schneider / GE Power trol / Jean Muller /Bussmann / ABB	
		26	1000 A N	ИССВ 3Р	Base The Phas	CB shall be with Micro Processor ed Release having LSIG Protections. MCCB shall have Spreader Links & se Barriers.	
						roved Make - neider/L&T/ABB/Siemens/Eaton	
	27 CT's for Feeder			2500A Incoming	a) b) c) Reco	 bs. Single resin cast. 3 no's dual core CT's of ratio 2500/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay 3 no's single core CTs of ratio 2500/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) 1 no single core CT of ratio 2500/5A, 5P20 & 15 VA for Neutral unbalance protection roved Make of CTs: D/Newtek/Pragati/Kappa/ECS/Adcon- nt connection, Screw Type 3 	
		28	TTB for I	Metering	Pha: mak	se 4 Wire, 4SF, 50 A, DAV/IMP e	
		29	Wiring co	onvention for TTB	Outg	ming from Bottom Side & going to Meter from Top side	
		30	Multifund	ction Digital meter		Should be communicable on Modbus RS 485 Alstom make CDG11 self-powered. Relay type is normal inverse with 3 Sec with E/F setting of 0.5 to 2 A	
		31	Earth Fa	ult protection relay (NEF)	Rela		
	32		Earthing	Hardware	b) W Galv or Al	 a) Earthing Nut and Bolt shall be M12 SS b) Washers shall be with Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating. 	
32a		Panel Ea	arthing	side	hing provision to be provided on both s with 50 mm extension of main h Bus Bar.		
		33	Clearanc parts	ce between live		se - phase -Minimum 25 mm & se - earth - Minimum 20 mm	
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	34	Distance outlet	between each fuse	Centre to Centre - 150mm (Minimum)	
	35	Distance panel sur	between fuse outlet & rface	125 mm (Minimum)	
	36	Distance between 2 MCCBs		80 mm (Minimum)	
	37	Distance panel sur	between MCCB outlet & face	125 mm (Minimum)	
	38	Control te	erminals for CTs	Stud type with disconnecting facilities	
	39	Control te other circ	erminals for Voltage & cuits	Stud type	
	40	Illuminati	on and Indicating Bulb	LED	
	41	Continuo voltage	us rated operating	440 volt +/- 10%	
	42	High volt	age withstand capacity	2000 volt at 50 Hz for 1minute	
	43	Insulation & ph-ear	n resistance ph-ph th	Minimum 10MOhm with 500V Megger	
	44	Labels &	name plates	As per Specifications	
	45	Surface p	preparation for painting	Sand blasting or 7 tank process	
	46	Painting	0	Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron	
	47	Power St	upply Socket	5A/15A Plug point socket to be provided	
	48	Breaker I	Barrier	Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.	
	49	Branding	Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power or the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches.	
\frown	50	Panel Dir 900 mm)	mensions (Min depth of	LXDXH	
	51	Numerica	al Relay	Ashida (ADR 241S) with 4 Element For E/F and O/C Protection on ACB.	
	52		phase barriers/ Phase rs (R-Y & Y-B)	FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus-bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)	

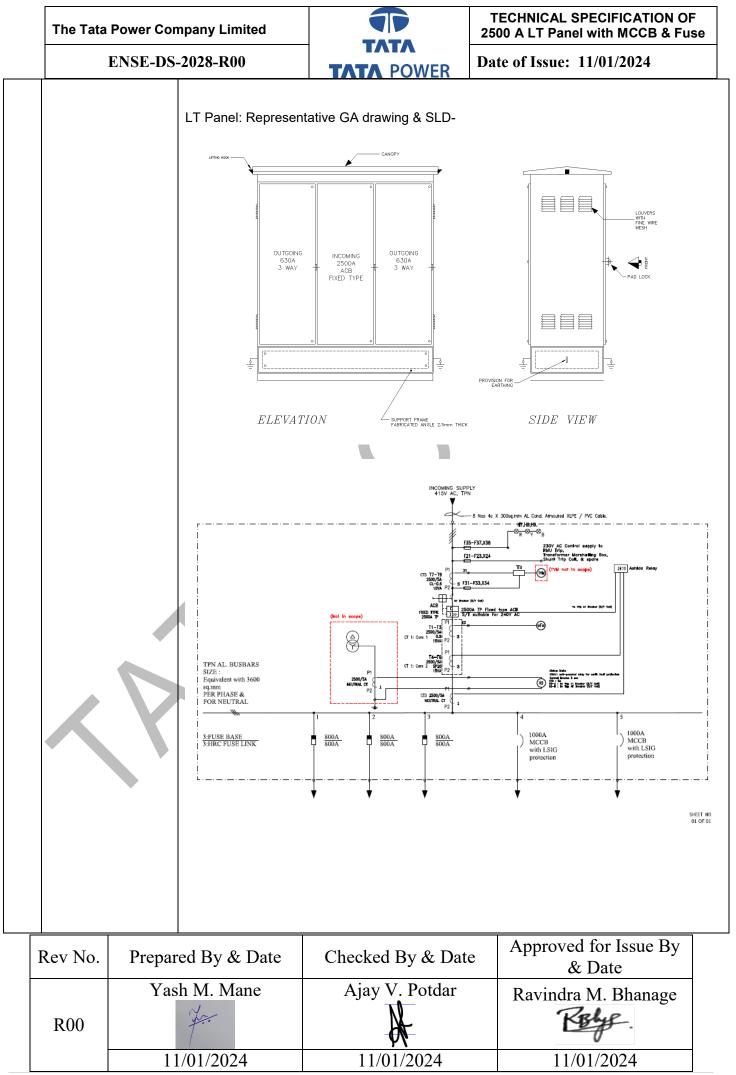
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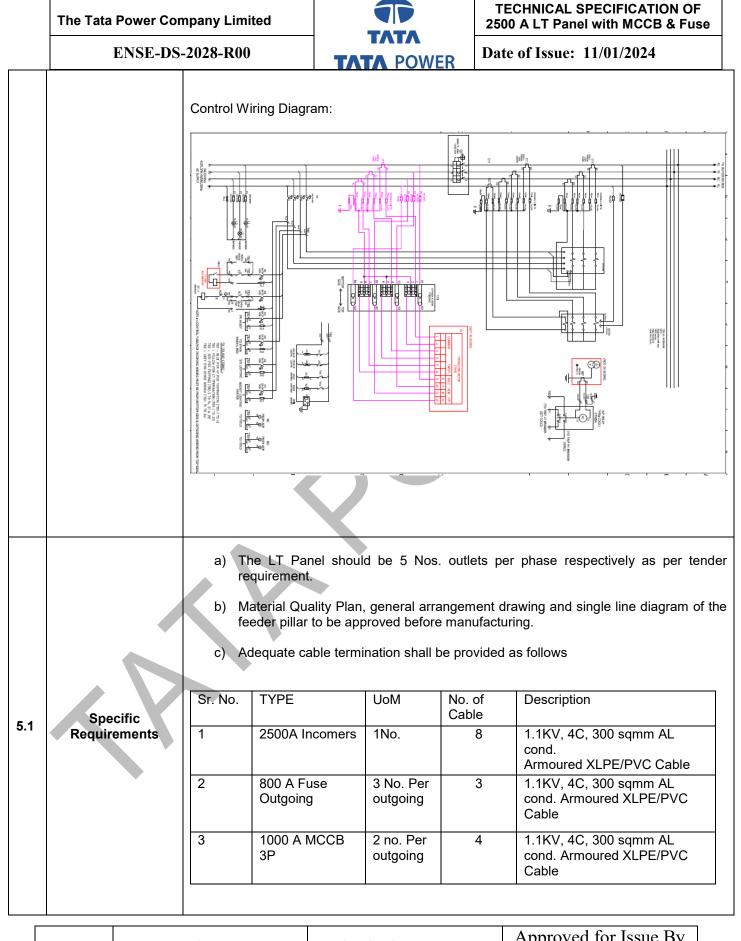
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	ENSE-DS-	-2028-R	.00	TATA POWER	Date of Issue: 11/01/2024	
		1)	section or pr	The feeder pillar frame shall be fabricated using suitable mild steel struection or pressed and shaped Cold Rolled Closed Annealed (CRCA) sh hickness 3 mm.		
		2)	levelled and thickness no Gland plates than 3 mm.	free from flaws. Doors an t less than 2.5mm. Stiffene shall be of Hot Rolled Clo alternatively gland can also	neet of thickness 3mm, smoothly finished, d cover shall be made of CRCA sheet of ers shall be provided, wherever necessary. osed Annealed (HRCA) thickness not less o be provided between two angles so that n of base frame should be 75mm X 40mm	
		3)		anopy of adequate slope	and outdoor type, support frame mounted to avoid water accumulation. Degree of	
		4)	sheet; the sa currents gene breaker com	me should be split suitably erated by three phase bus l	artment should be separated by metallic in order to avoid local heating due to eddy bars crossing through the same sheet. The ter of panel & Outgoings shall be on both	
		5)	with adequat	e louvers on sides and top	roof construction and of self-cooled design portion. The louvers shall have fine wire th of panel shall be 900 mm.	
5.0	GENERAL CONSTRUCTION	6)	danger signs		the panel designation, phase marking and e Line Diagram & feeder details shall be	
		7)			cal languages on the Hylam sheet below ed background and with white letters.	
		8)	captive screw of door hinge doors shall b inter-change	vs shall be provided on the es shall be provided and sh e provided with padlocking ability. The back-side doors s shall be connected to th	ncealed type with brass type hinges and front side & Back side. Adequate numbers nould be durable and easy in operation. All facility. The design of doors should permit s shall have nut and bolt arrangement. All ne earth terminal with 2.5 Sq.mm braided	
	$\langle \cdot \rangle$	9)	suitable to a		nel and removable gland plates of size utgoing cables of sizes, 4 Core 300 Sq mm t required locations.	
		10)	Distance bet be minimum		le termination of Air Circuit Breaker should	
		11)		nall be provided with gaske vable covers and doors.	t all around the perimeter of covers, gland	
		12)			d copper or tinned aluminium Bus Bar. to be provide, if bare copper terminal is	

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rr	ENSE-DS-2	2028-R00	TATA POWER	Date of Issue: 11/01/2024
		sec and sh current. Ma	all have adequate cross section ain Bus bar should be continuo shall be PVC taped. Neutral bu	elite shrouding, rated for 2500A, 50 kA for 1 n to carry the rated continuous and short time bus/ without any joint. All bus bars, bus taps is bar shall be provided on read side & rated
		without ar be provide	y microprocessor protection	ted fixed type 3 Pole with shunt trip coil n release. Ashida make (ADR41S) relay to with Overcurrent & earth faut protection. Ild be provided.
			nall be of the HRC cartridge typ ve current of not less than 80 k	e mounted on plug-in type fuse bases having A.
			II be with Micro Processor Ba I have Spreader Links & Phase	ased Release having LSIG Protections. The Barriers,
			hase clearance of 25mm and ovided in the panel.	Phase to Neutral / Earth clearance of 20mm
		outlet and between 2	125mm between fuse outlet a	ld be minimum 150mm between each fuse nd body of panel to be maintained. Distance n 80 mm, & between MCCB outlet & panel
		19) The panel bus.	shall be provided with two se	parate earthing terminals connected to earth
		insulated 2		the earth terminal using 650V grade PVC per earthing conductor. All Earthing should be
		the help o		hall be connected to the earth terminal, with of adequate size. Flat earth bus should be arth.
		22) Eyebolt of	suitable sizes shall be provided	for lifting arrangements.
			shall be carried out with 65 of adequate sizes to suit the ra	OV grade PVC insulated stranded copper ated circuit current.
		24) The panel	shall be powder coated with lig	nt shade grade no 631 of IS 5.
		25) Required n	umber of foundation bolts shall	be supplied with the panel.
			ses with control terminals for amber only.	external cable connections shall be in the
	27) The control terminals shall be as follows: Stud type with disconnecting facilities for CT circuits Stud type for voltage and other circuits.			
			s shall have adequate contact al heating takes place.	surface with the bus bars provided to ensure
		29) Lighting Sy	stem in Feeder Pillar should be	ELED based.
				Approved for Issue By

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	ENSE-DS-2028-H	R00	ТАТА		Da	te of Issue: 11	/01/2024	
	d)	2500A Inco & protection	mer shall be p			cast CTs of ratio	2500/5A for met	erin
		3 no's dual MFM.	core CT 2500	A/5A, Core	1: 0.5 C	I, Core 2: 5P20,	15 VA, to be use	ed fo
		3 no's single	e core CT 250	00A/5A, 0.5,	15 VA,	to be used for E	nergy metering.	
		1 no single protection.	core CT 250)0A/5A, 5P:	20, 15 \	/A, to be used	for neutral unbal	and
	e)	All CT term provided. (A		d be round	plug typ	e. No CT shorti	ng arrangement	to b
	f)	copper cond	wiring shall b ductor of 2.5 wires will be c	Sq. mm for	CT circ	1.1KV grade P\ uits and 2.5 Sq.	/C insulated stra mm for PT and	nde oth
	Sr. N	lo. Equipm	nent	Colour	Nomer	nclature of TBs	Types of TBs	
	1.	TBs of Termin	4 Pole MCB ation	Blue	TB2	-	Droppable	
	2.	TBs for Termin		Yellow	TB1		Droppable	
	3.		r Tripping	Red	TB2		Droppable	
	4.	All othe	ers	Default	TB2		Normal	
	 relay for earth fault protection. The relay type is normal inverse with 3 sec with 8 setting of 0.5 to 2 A. h) Test terminal box for Energy Metering should be Front Connection, Screw Ty (4SF), 50A to be provided and the convention of the wiring in the TTB should Incoming from the bottom side and outgoing to Meter from top side. There m not be any partition between Relay & metering box in LV compartment. It sho be single door compartment. No lugs shall be provided for wires to meter, TT and Fuses (PT secondary). Sealing arrangement to be provided for Energy Meters. Inspection glass (Transparent Toughened Glass) to be provided viewing of meter. 				Typ Id b mu nou TTI nerg			
	i)			U U		n LV compartme		
 j) Provision to be provided for mounting the energy meter with max dimensions as L x B x D: 360 x 200 x 200 mm (Energy meter will be supplied by TPC). The relay and energy meter shall be installed in the breaker compartment with suitable partitions. The relays shall be supplied by the vendor. 								
	k)		n thermostat,				i condensation s A metal clad ger	
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	Yash M. N	Mane	Ajay	V. Potda	r	Ravindra I	M. Bhanage	
R00	¥.			-		KB	HF.	

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		I)	for purchaser	separate control circuit 20	DA, 4 pole MCB duly wired up to terminal block efore the circuit breaker in feeder pillars leading Il links (refer SLD):
	Phas Phas Phas Sepa			e and neutral for external e and neutral for FPI rese arate 16A, DP MCB duly ving purpose, Phase and neutral for Phase and neutral for	oply to Transformer marshalling box. (6A) shunt trip coil (6A)
		 m) The following separate control fuses with neutral links duly wired out to a set of set type link terminals for purchaser's use shall be provided before the circuit breake feeder pillars Control fuse Incoming wiring must be from bottom side & Outgoing wiring from top side. (refer SLD): Three phase and neutral for metering circuit. Three Phase and neutral for indication lamp 			shall be provided before the circuit breaker in ng must be from bottom side & Outgoing wiring etering circuit.
		n)			thing jumpers to be provided for all the doors. o be provided on body side and cover plate.
		o)	Makes of vari	ous bought out items shall	be limited to the following:
		Sr.	No. Items		Approved Make
		1	ACB		L&T/Siemens/Schneider/ABB/Eaton
		2.	СТ		Reco/Newtek/Pragati/Kappa/ECS/Adcon
	 connected wi should be lea available on Lamp. q) The fuses pro of fuse puller puller. 		th earth bus. All control ca ss than or equal to 5. Clo SCADA through spare au ovide should be of knife typ	provided on the doors. Neutral bus shall be ble should be multi stranded and FRLS. CT ISF use and Open status of the breaker should be uxiliary contact and on LT panel through LED be and same should be removable with the help ction during removal of outgoing fuses by fuse	
4				cking facility to be provided	for putting three nos. of safety locks.
		r) s)	-	m width in mm: 900 mm	To putting three host of safety looks.
		t)	The breaker	ne complete support in terms of training; hand The breaker manufacturer to give the support	
		u)	The robust is	plating arrangement in the	OG fuse compartment to be made.

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	ENSE-DS	-2028-R00	028-R00 TATA POWER	Date of Issue: 11/01/2024			
		 6.1 Name plate- On f 1) Purchaser name & 2) Manufacturer nam 3) Month / year of ma 4) 'Property of Tata F 	e anufacturing	ing			
6.0	NAME PLATE AND MARKING	6.3 Danger board in		on riveted Al label reted on doors- White colour background			
		with red lettering on 6.4 SLD shall be end	1.6mm thick AI plate. raved & pasted on inside of	door.			
				e written on doors with marker pen.			
		6.6 Separate metallic clear font as shown i		er Logo of Dimension 12*12 Inches in			
7.0	TESTS	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. Following tests shall be necessarily conducted on the 'Feeder Pillar' in addition to others specified in IS/IEC standards.					
		*In case of any conflict on any technical particular, the stricter requirement mentioned in the relevant standard shall be valid.					
			tested components – ACBs blowing type test shall be ca	s, Fuses, Insulators & aluminium bus bar arried out on the assembly.			
7.1	Type test	b) Verification of dielec) Verification of shore	perature-rise limits – Clause ectric properties – Clause 8 rt-circuits strength – Clause tinuity of the protective circu	.2.2 of IS 8623			
		 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of mechanical operation – Clause 8.2.6 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 					
		Acceptance & routine Assurance Plan)	e test- (Inspection test witne	ess by purchaser as per approved Quality			
	\sim	 Visual inspection, dimension checks & paint thickness checks. Bill of material check Insulation resistance test 					
7.2	Routine test	4) High voltage test5) Operational check6) Verification of dielectric properties					
	 7) Tolerances on panel dimensions- Maximum +/- 5mm 8) No negative tolerance on bus bar dimensions & bus bar clearances 9) Stability test shall be conducted on all Panels, to ensure there shall be r case of unbalance current on earth fault function. 						

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7.3	Acceptance test	 Visual inspection & dimensional check Verification of clearance and creepage distance Paint thickness check Wiring checks Insulation resistance test HV test Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function. 1 unit from 1st lot shall be tested for Temperature rise test with ACB, MCCB and fuses (Bidder to arrange for the same, either in factory or in external lab) 			
8.0	TYPE TEST CERTIFICATE	The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER.			
9.0	PRE-DISPATCH INSPECTION	The Material shall be subject to inspection by a duly authorized representative of the TATA POWER COMPANY. Inspection may be made at any stage of manufacture at the discretion of the Purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall always grant free access to the places of manufacture to TATA POWER COMPANY 's representatives when the work is in progress. Inspection by the TATA POWER COMPANY or its authorized representatives shall not relieve the Bidder of his obligation of furnishing equipment in accordance with the specifications. TATA POWER COMPANY authorized representatives shall have the right to inspect the design, materials and workmanship and to report thereon, at any stage of manufacture, if found necessary. All facilities shall be extended to our representatives for witnessing the tests. Due notice shall be given to us to enable us to depute our representatives for stage inspection. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TATA POWER COMPANY. Five certified copies of all test certificates including type tests, sample test certificates shall be sent to us for our approval prior to dispatch of materials. Following documents shall be sent along with material a) Test reports b) MDCC issued by TATA POWER COMPANY c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Delivery Challan g) Other Documents (as applicable).			

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	INSPECTION	The material received at TPC, Mumbai store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection or any other parameters observed after delivery. The material should be delivered at TPC, Mumbai stores within 45 days from the date of manufacturing, same shall be checked during delivery and overdue material shall not be				
10.0	AFTER RECEIPT AT STORE	Bidders to attend and rectify the same at his own cost. The material shall be accepted in stores only after rectification of any observed flaw. The delay in rectification shall lead to any contractual penalty.				
		Billing shall be proce	ssed only after acceptance	of the material.		
11.0	GUARANTEE	 Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a period of at least 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract whichever is later, (the time scale of 12/24 months could be enhanced subject to mutual agreements) Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Purchaser, failing which the TATA POWER COMPANY will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be. In case of GP failure, BA shall report at site within 48 hours from intimation and arrange for rectification of fault within a mutually agreed time. In case rectification at site is not possible then alternative arrangement (replacement) to be made by BA within 15 days of intimation of failure. Bidder shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Burdence. 				
12.0	PACKING AND TRANSPORT	 by the Purchaser. Bidder shall ensure that the item covered under this specification shall be packaged for rail/road transport in a manner so as to protect the equipment from damage in transit. 1) Packing protection- Against shocks, vibration & corrosion, damages during transportation 2) Packing identification labels, to show purchaser name, PO number, quantity of panels, Panel type, Manufacturer serial number 3) Handling instruction- To be marked on packing boxes. 4) Bidders should prefer to use recyclable & environmentally friendly materials for packing. 5) No single use plastic to be used. 6) Packing should be done with environment friendly recyclable materials. 				
13.0	TENDER SAMPLE	Not Applicable				
13.0						

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QUALITY CONTROL of inspection, the tests and checks which will be carried out on the material of construction components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. 14.0 QUALITY CONTROL TATA POWER COMPANY shall reserve the sole rights for the type test of a random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have free access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidder liable to perform the same without cost implication.		The Tata Power Con	npany Limited		TECHNICAL SPECIFICATION OF 2500 A LT Panel with MCCB & Fuse	
14.0 QUALITY CONTROL of inspection, the tests and checks which will be carried out on the material of construction components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. 14.0 TATA POWER COMPANY shall reserve the sole rights for the type test of a random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have free access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidder liable to perform the same without cost implication. 15.0 MINIMUM TESTING Bidder shall have adequate in-house testing facilities for carrying out all routine tests		ENSE-DS-	-2028-R00	TATA POWER	Date of Issue: 11/01/2024	
	14.0	-	The Bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TATA POWER COMPANY shall reserve the sole rights for the type test of a random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have free access to the Bidder's works to carry out inspections.			
	15.0		Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards and as specified above.			
MANUFACTURING of outline agreement for approval and complete the approval process within 14 days of	16.0		The successful bidder will have to submit first GTP & Drawing with 7 days from placement of outline agreement for approval and complete the approval process within 14 days of outline agreement. The date of Code -2/ Code-1 approval given by TATA Power will be treated as first day for assessment of LD (if applicable).			
SPARES, ACCESSORIES, AND TOOLS Keys of door	17.0	ACCESSORIES,	Keys of door			
 18.0 DRAWING AND DOCUMENTS POROUMENTS Following drawings and documents shall be prepared based on TATA POWER COMPAN specifications and statutory requirements and shall be submitted with the bid. All the documents & drawings shall be in English language a) Completely filled in Technical Particulars b) General description of the equipment and all components including brochures. c) General arrangement drawing. d) Bill of material e) Experience List f) Type test certificates g) Any other technical document, if required 	18.0		 documents & drawings shall be in English language a) Completely filled in Technical Particulars b) General description of the equipment and all components including brochures. c) General arrangement drawing. d) Bill of material e) Experience List f) Type test certificates 			
19.0 SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS Bidders to comply for all above requirement of specifications clauses & submit signed an stamp copy as technical compliance document.	19.0	GUARANTEED TECHNICAL			specifications clauses & submit signed and	

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		schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from th	et out all ecifically er's specif WITH TH his specifi s specific	deviations from the mentioned in this ications. HE BID) fication shall be se ally mentioned in t	is specification, Clause by Clause in this schedule, the tender shall be deemed to et out by the bidders, clause by Clause in his Schedule, the tender shall be deemed Details of deviation with justifications
20.0	SCHEDULE B"DEVIATIONS	We confirm that there Seal of the Company		Sign	m those detailed above.

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Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB, MCCB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

Approved for Issue By Rev No. Prepared By & Date Checked By & Date & Date Ajay V. Potdar Yash M. Mane Ravindra M. Bhanage **R00** 11/01/2024 11/01/2024 11/01/2024



TECHNICAL SPECIFICATION OF 2500 A LT Panel with MCCB & Fuse

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Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.

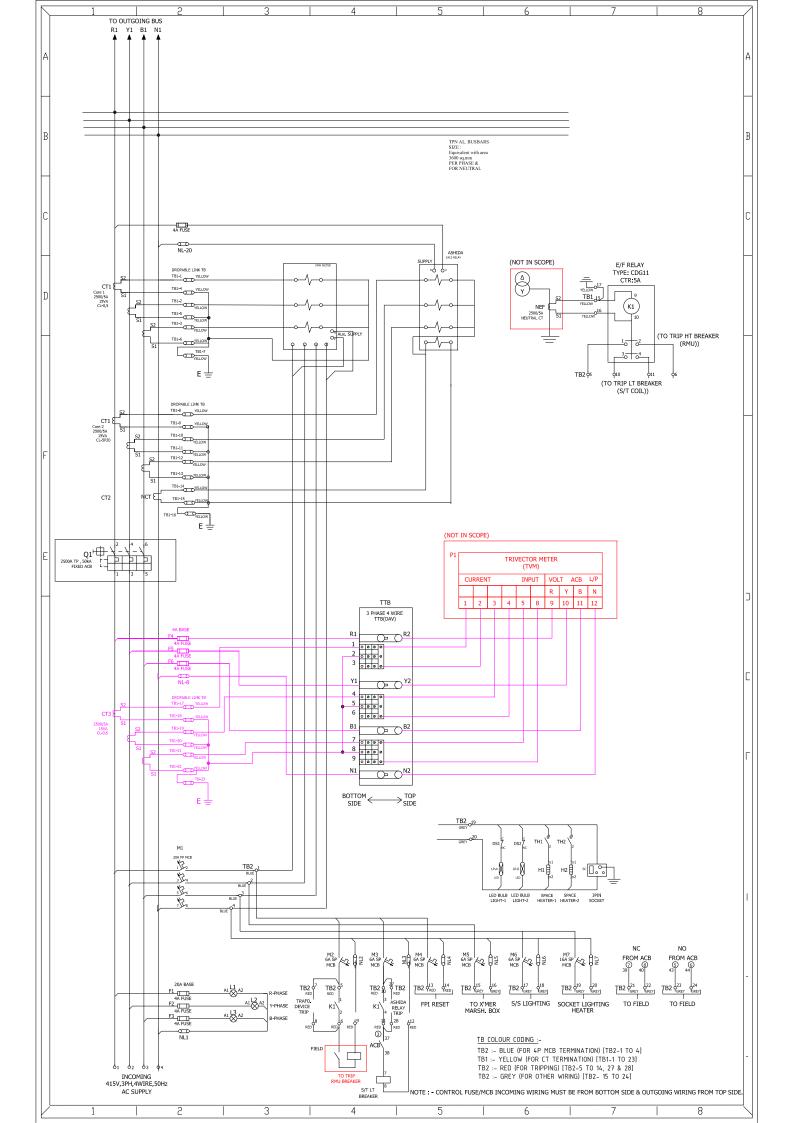


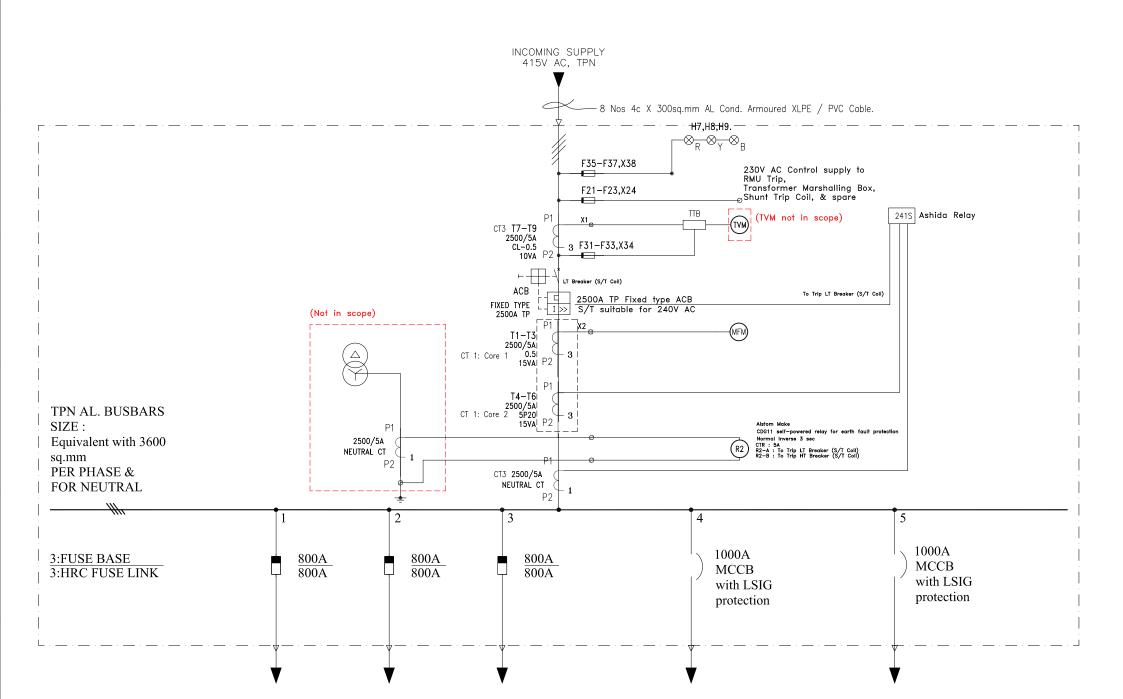
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Annexure – 3					

Reference drawings

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TECHNICAL SPECIFICATION

3200 A LT Panel with MCCB & Fuse

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra The Tata Power Company Limited

ENSE-DS-2029-R00



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TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2029-R00

Document Tit	le: Technical SP	ECIFICATIO	ON OF 3200) A LT Pane	ls with MCC	CB & Fuse	e	
R00	ENSE-DS- 2029-R00 (for Tendering Purpose)	11/01/2024	YMM	ys:	AVP	X	RMB	Ref.
Rev			Initials	Sign	Initials	Sign	Initials	Sign
No.	Remarks	Date	Prepa	red By	Review	ed By	Approved	& Issued By

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TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse

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1.0 SCOPEThis specification covers design, engineering, manufacture; shop testing, painting, packing, and supply of 415V, 3200 A LT Panel with 2 no's 3P 1200 A no's 630 A HRC Fuse & 2 no's 800 A HRC Fuse Outgoing Feeders comple accessories for efficient and trouble-free operation of the distribution netword Power Company Limited at Mumbai. 1.0 SCOPEIt is not our intent to specify completely herein all details of design and construct equipment. However, the equipment shall conform in all respects to high st Engineering design and workmanship and shall be capable of performing in acceptable to the purchaser (TPC) who will interpret the meaning of dra specification and shall be entitled to reject any work or material which in his juin not in full accordance therewith.All the bought-out items shall be of reputed make and shall be subject to approprint award of contract.				LT Panel with 2 no's 3P 1200 A MCCB, 2 Fuse Outgoing Feeders complete with all ation of the distribution network for Tata all details of design and construction of the form in all respects to high standards of all be capable of performing in a manner interpret the meaning of drawings and work or material which in his judgement is		
2.0	APPLICABLE STANDARDS	all ame 1 2 3 4 5 6 7 6 7 8 9 10 11 In cas	Title IS 8623 IS 12063/ IE IS 5 IS 5082 IS 2705 IS 2551 IS 13703-2 IEC 255 IEC 801 IEC 60947-2 IEC 60269 e of any col	C 60529	Specification f Classification of Enclosures of Color of ready Wrought Alum electrical appli Current Transf Danger Notice Low voltage fu AC or 1500 V persons Protection Rel Control and m Low Voltage S Low Voltage F	inium & Al alloy plates & sheets for cation formers plates uses for voltage not exceeding 1000 V DC. Part 2 Fuses for use by authorized ays onitoring switchgear & control gear fuses

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3.0	CLIMATIC CONDITIONS OF THE INSTALLATION	2N3M4M5M6A7A8A9R10A11AAtmosphersubjected	lax. Daily a lin Ambien laximum R linimum R verage N nnum verage An verage No lainy month lititude abo verage Air re is gener to fog in c	ve MSL not exceeding Pressure ally laden with mild acid a old months. The design o	43 deg.C 35 deg.C 07 deg.C 100% 40% 50 2380mm 115 June to Oct. 300 meters 29.6-inch Hg and dust suspended during dry months and of the equipment and accessories shall be ing to an acceleration of 0.1g.	
		Sr. No		Item Description	Tata Power Requirement	
	1 Manufacturer		ırer	Manufacturer Address Contact telephone no		
			Breaker R	Michaeler Contact telephone no Breaker Rating (ACB) 3200A Manual Fixed Type without any microprocessor relay. 230V AC Shunt tripping coil to be provided. Model of ACB The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention		
		2	Model of	АСВ	tripping coil to be provided.The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)	
			Approved	Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton	
4.0	GENERAL TECHNICAL		Main bus	bar rating	3200 A	
	REQUIREMENTS	3	Bus bar S Neutral	ize for Phase &	4000 sq.mm for Phase & Neutral	
			Earth Bus		1 x 50 x 10 mm Gl	
		4	Type of In	stallation	Indoor / Outdoor Type	
		5	No of Inco	oming feeders	Qnty -1no. of 3200A ACB with 10 Nos of 4CX300 sq.mm Al Ar XLPE cables	
			No of outo MCCB	going feeders – 1200 A	Quantity - 2 Nos of 1200A each with 4 no's of 4CX300 sq.mm AI Ar XLPE cables per O/G	
		6	No of outo	going feeders – HRC Fuse	Quantity – 2 Nos of 800A each With 3 no's of 4CX300 sq.mm Al Ar XLPE cables per O/G 2 Nos of 630A each With 2 no's of 4CX300 sq.mm Al Ar XLPE cables per O/G	

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	7 Panel cons 8 Panel enclo			nstruction	CRCA sheet steel of thickness 3 mm	
				closure class	IP54 - ingress protection	
		9 Sheet stee		el thickness	Doors & Covers - 2.5mm, FRAME - 3mm	
		10	Door type access	e for front & rear	Double door with rear door bolted	
		11	Door hing	jes	Minimum three anti-theft type hinges self locking type	
		12	Padlockir	ng facility	For front door	
		13		ey for all doors	Identical for all panels, 1 no./ panel to be provided	
		14	Hardware	e & Fasteners	All Nuts, Bolts, Washers shall be Hot D Galvanized with 80 micron Galvanisatio or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.	
		14a	Current (Carrying part hardware	Each bolt on Bus Bar and Fuse termina shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided	
			Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082	
			Bus bar s	ize in mm for 3200 A O/G	4000 sq.mm for Phase & Neutral	
		15	3200A A0	CB Incoming	4000 sq.mm for Phase & Neutral	
			ACB O/G	LINKS	4000 sq.mm for Phase & Neut (Dimensions as per feasibility with Break palm connection)	
		16	Bus bar c neutral	colour coding for R, Y, B &	Heat shrinkable sleeves with colour Red, Yellow, Blue & Black respectively Cross-linked Polyolefin (Bidder to specify thickness)	
		16 a	Bus Bar I	Heat shrinkable sleeves		
		17	Main bus withstand	bar short circuit capacity	Above 50kA for 1 sec	
		18		ble maximum temperature e ambient of 50°C	Busbar: 45 deg C	
		10		ble maximum temperature e ambient of 50°C	Terminals: 65 deg C	
		19	Bus bar s	upport insulators	As per IS13410 SMC / DMC, 1100V grade	

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		20	Incoming	Cable Size	4C 3	300 Sq.mm AI Ar XLPE	
		21	Outgoing	Cable Size	4C 3	300 Sq.mm AI Ar XLPE	
	22		Gland pla	ate at panel bottom	HRC	CA MS 3mm thickness	
			Cable ter	mination clearance	600 & AC	mm minimum from gland plate CB	
			Fuse Bas	se	800	A	
		24	Approved	l Make		/ Siemens / Schneider / GE Power trol / Jean Muller /Bussmann / ABB	
		25	Fuses (80	00 A & 630 A)	Fast	C plug-in type gG (General Purpose, t acting fuse)	
		23	Approved	l Make	Con	/ Siemens / Schneider / GE Power trol / Jean Muller /Bussmann / ABB	
		26	1200 A M	1200 A MCCB 3P		MCCB shall be with Micro Processo Based Release having LSIG Protections. The MCCB shall have Spreader Links Phase Barriers. Approved Make -	
						Schneider/L&T/ABB/Siemens/Eaton 7 Nos. Single resin cast.	
		27	CT's for 3 Feeder	3200A Incoming	a) b) c) Appr	 s. Single resin cast. 3 no's dual core CT's of ratio 3200/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay 3 no's single core CTs of ratio 3200/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) 1 no single core CT of ratio 3200/5A, 5P20 & 15 VA for Neutral unbalance protection roved Make of CTs: D/Newtek/Pragati/Kappa/ECS/Adcon 	
		28	TTB for M	<i>l</i> letering		it connection, Screw Type 3 se 4 Wire, 4SF, 50 A, DAV/IMP Make	
		29	Wiring co	nvention for TTB		ming from Bottom Side & going to Meter from Top side	
		30	Multifunc	tion Digital meter		uld be communicable on bus RS 485	
		31	Earth Fau	ult protection relay (NEF)	Rela	om make CDG11 self-powered. y type is normal inverse with 3 with E/F setting of 0.5 to 2 A	
		32	Earthing	Hardware	b) W Galv or A	arthing Nut and Bolt shall be M12 SS /ashers shall be with Hot Dip /anized with 80 micron Galvanisation lu-Zinc coating.	
		32a	Panel Ea	arthing	side	hing provision to be provided on both s with 50 mm extension of main h Bus Bar.	
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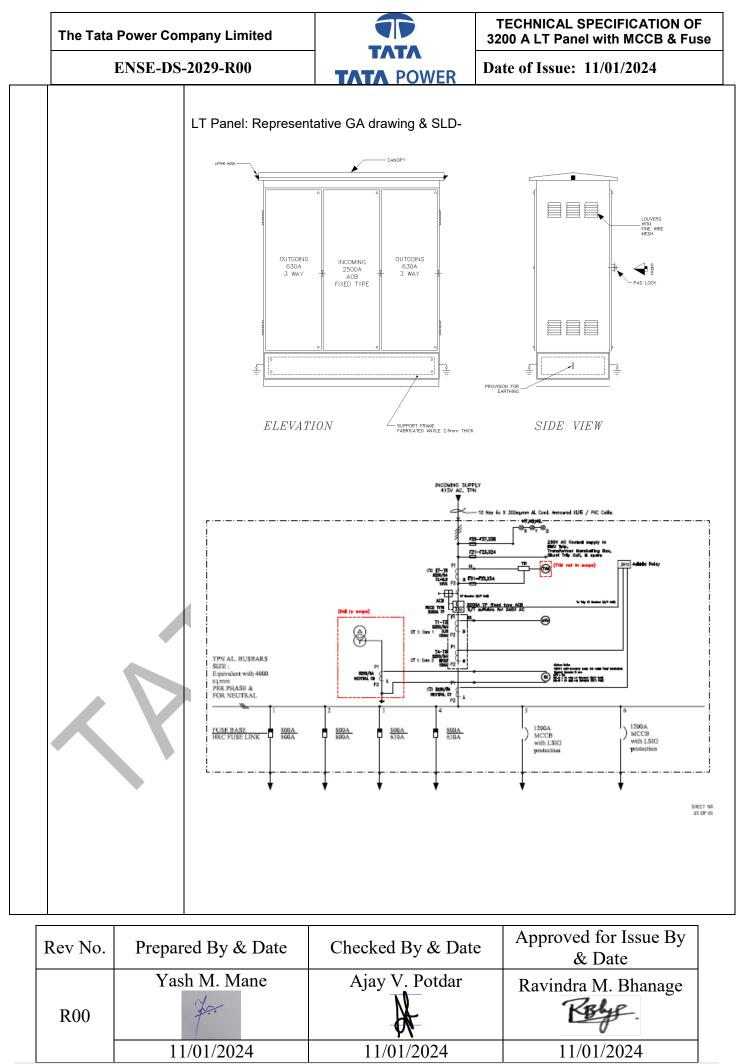
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	33	Clearance parts	e between live	Phase - phase -Minimum 25 mm & Phase - earth - Minimum 20 mm
	34	Distance outlet	between each fuse	Centre to Centre - 150mm (Minimum)
	35	Distance surface	between fuse outlet & panel	125 mm (Minimum)
	36	Distance	between 2 MCCBs	80 mm (Minimum)
	37	Distance panel sur	between MCCB outlet & face	125 mm (Minimum)
	38	Control te	erminals for CTs	Stud type with disconnecting facilities
	39	Control te other circ	rminals for Voltage & uits	Stud type
	40	Illuminati	on and Indicating Bulb	LED
	41	Continuou voltage	us rated operating	440 volt +/- 10%
	42	High volta	age withstand capacity	2000 volt at 50 Hz for 1minute
	43	Insulation & ph-eart	resistance ph-ph h	Minimum 10MOhm with 500V Megger
	44	Labels &	name plates	As per Specifications
	45	Surface p	reparation for painting	Sand blasting or 7 tank process
	46	Painting		Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron
	47	Power Su	pply Socket	5A/15A Plug point socket to be provided
	48	Breaker E	Barrier	Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.
$\times \nabla$	49	Branding	Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power on the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches. * Refer Annexure 2
	50	Panel Din mm)	nensions (Min depth of 900	LXDXH
	51	Numerica	l Relay	Ashida (ADR 241S) with 4 Element
	52		hase barriers/ Phase s (R-Y & Y-B)	FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus- bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)

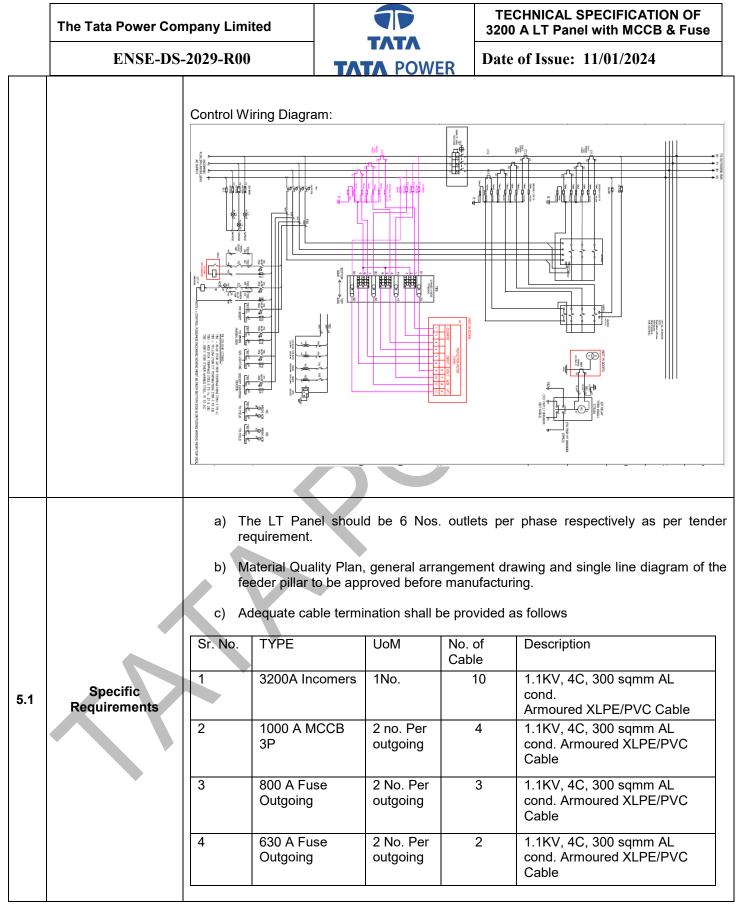
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	The Tata	Power Cor	npany L	imited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse
		ENSE-DS	-2029-R	200	TATA POWER	Date of Issue: 11/01/2024
			1)		pressed and shaped Cold F	cated using suitable mild steel structural Rolled Closed Annealed (CRCA) sheet of
				levelled and thickness no Gland plates than 3 mm.	l free from flaws. Doors an ot less than 2.5mm. Stiffene s shall be of Hot Rolled Clo alternatively gland can also	neet of thickness 3mm, smoothly finished, d cover shall be made of CRCA sheet of ers shall be provided, wherever necessary. osed Annealed (HRCA) thickness not less o be provided between two angles so that n of base frame should be 75mm X 40mm
			3)	type with c		and outdoor type, support frame mounted to avoid water accumulation. Degree of
				sheet; the sa currents ger breaker con	ame should be split suitably herated by three phase bus I	artment should be separated by metallic in order to avoid local heating due to eddy bars crossing through the same sheet. The ter of panel & Outgoings shall be on both
			5)	with adequa	te louvers on sides and top	roof construction and of self-cooled design p portion. The louvers shall have fine wire th of panel shall be 900 mm.
5.0	-	GENERAL CONSTRUCTION6) Labels on the front and rear indicating the panel designation danger signs shall be provided. Single Line Diagram & engraved and pasted on inside of panel.				
			7)			cal languages on the Hylam sheet below ed background and with white letters.
			8)	screws shall hinges shall be provided changeability	be provided on the front sid be provided and should be d with padlocking facility. T y. The back-side doors shall	led type with brass type hinges and captive de & Back side. Adequate numbers of door urable and easy in operation. All doors shall he design of doors should permit inter- have nut and bolt arrangement. All Hinged inal with 2.5 Sq.mm braided copper wires.
	$\boldsymbol{\boldsymbol{\wedge}}$	$\times X$		suitable to a		nel and removable gland plates of size Itgoing cables of sizes, 4 Core 300 Sq mm t required locations.
			10)) Distance be be minimum		e termination of Air Circuit Breaker should
			11)		hall be provided with gaske wable covers and doors.	t all around the perimeter of covers, gland
						oper or tinned aluminium Bus Bar. be provide, if bare copper terminal is
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The Tata	Power Company Li	mited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse
 -	ENSE-DS-2029-R	00	TATA POWER	Date of Issue: 11/01/2024
		sec and shal current. Mair	I have adequate cross section n Bus bar should be continuo all be PVC taped. Neutral bu	lite shrouding, rated for 3200 A, 50 kA for 1 n to carry the rated continuous and short time bus/ without any joint. All bus bars, bus taps s bar shall be provided on read side & rated
		without any be provided	microprocessor protection	ed fixed type 3 Pole with shunt trip coil release. Ashida make (ADR41S) relay to with Overcurrent & earth faut protection. Id be provided.
			ll be of the HRC cartridge typ e current of not less than 80 k	e mounted on plug-in type fuse bases having A.
			be with Micro Processor Ba have Spreader Links & Phase	sed Release having LSIG Protections. The Barriers,
			ase clearance of 25mm and ided in the panel.	Phase to Neutral / Earth clearance of 20mm
		outlet and 12 between 2 n	25mm between fuse outlet ar	ld be minimum 150mm between each fuse nd body of panel to be maintained. Distance n 80 mm, & between MCCB outlet & panel
	19)	The panel sl bus.	hall be provided with two sep	parate earthing terminals connected to earth
	,	insulated 2.5		he earth terminal using 650V grade PVC er earthing conductor. All Earthing should be
		the help of		hall be connected to the earth terminal, with of adequate size. Flat earth bus should be arth.
	22)	Eyebolt of su	itable sizes shall be provided	for lifting arrangements.
			hall be carried out with 65 f adequate sizes to suit the ra	0V grade PVC insulated stranded copper ted circuit current.
	24)	The panel sh	all be powder coated with ligh	nt shade grade no 631 of IS 5.
	25)	Required nur	mber of foundation bolts shall	be supplied with the panel.
		Control fuse breaker chan		external cable connections shall be in the
	27)	a. Stuc	erminals shall be as follows: I type with disconnecting facil I type for voltage and other ci	
			shall have adequate contact s heating takes place.	surface with the bus bars provided to ensure
	29)	Lighting Syst	tem in Feeder Pillar should be	LED based.
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The Tata	Power Com	pany Limit	ed				TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse		
	ENSE-DS-2	2029-R00		ΤΛΤΛ	POWER	Date of I	ssue: 11/01/2	024	
			00A Incor		provided with	n resin cast C ⁻	Ts of ratio 3200	/5A for meterir	
		3 n MF		core CT 3200	A/5A, Core	1: 0.5 Cl, Core	e 2: 5P20, 15 V/	A, to be used f	
		3 n	o's single	core CT 320	0A/5A, 0.5,	15 VA, to be u	used for Energy	metering.	
			no single otection.	core CT 320	0A/5A, 5P2	20, 15 VA, to	be used for ne	eutral unbaland	
				nation should s per SLD)	l be round	olug type. No	CT shorting arr	angement to b	
		cop	oper cond		Sq. mm for	CT circuits an	grade PVC ins d 2.5 Sq. mm f		
		Sr. No.	Equipm	ent	Colour	Nomenclature	e of TBs Type	es of TBs	
		1.	TBs of a Termina	4 Pole MCB ation	Blue	TB2	Drop	pable	
		2.	TBs for Termina		Yellow	TB1	Drop	pable	
		3.	TBs for	Tripping	Red	TB2	Drop	pable	
		4.	All othe	rs	Default	TB2	Norn	nal	
		h) Tes (45) Inc not be and Me	ting of 0.5 st termina SF), 50 A oming fro be any p single do d Fuses	to 2 A. al box for En- to be provide om the botton partition betw oor compartm (PT second pection glass	ergy Meteri ed and the c n side and een Relay ent. No lug ary). Sealin	ng should be convention of to outgoing to M & metering bo s shall be pro g arrangeme	Front Connection the wiring in the eter from top s x in LV compare provided for wires nt to be provided ed Glass) to be	on, Screw Typ TTB should b ide. There mu tment. It shou to meter, TT ded for Energ	
		i) All	Protection	n/ control wiri	ng must teri	minate in LV c	ompartment.		
		x E and	3 x D: 360 d energy	0 x 200 x 200 meter shall) mm (Ener be installe	gy meter will I	neter with max o be supplied by ker compartme br.	TPC). The rela	
		hea		thermostat,			type anti cond & 5A/15A met		
Rev No.	Prepare	d By & I	Date	Checkee	d By & D	ate Apj	proved for Is & Date	ssue By	
	Yash	M. Man	e	Ajay	V. Potda	r Ra	vindra M. Bl	hanage	
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The Ta	The Tata Power Compa		mited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse
	ENSE-DS-20	29-R	.00	TATA POWER	Date of Issue: 11/01/2024
			for purchaser		OA, 4 pole MCB duly wired up to terminal block fore the circuit breaker in feeder pillars leading Il links (refer SLD):
			Phas Phas Phas Sepa	e and neutral for external e and neutral for FPI rese rate 16A, DP MCB duly ving purpose, Phase and neutral for Phase and neutral for	oply to Transformer marshalling box. (6A) shunt trip coil (6A)
		 m) The following separate control fuses with neutral links duly wired out to a set of set type link terminals for purchaser's use shall be provided before the circuit breaker feeder pillars Control fuse Incoming wiring must be from bottom side & Outgoing wir from top side. (refer SLD): Three phase and neutral for metering circuit. Three Phase and neutral for indication lamp 			shall be provided before the circuit breaker in ng must be from bottom side & Outgoing wiring etering circuit.
					thing jumpers to be provided for all the doors. o be provided on body side and cover plate.
		o)	Makes of vari	ous bought out items shall	be limited to the following:
		Sr. I	No. Items		Approved Make
		1	ACB	X	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton
		2.	СТ		Reco/Newtek/Pragati/Kappa/ECS/Adcon
		p)	connected wi should be les	th earth bus. All control ca is than or equal to 5. Clo	provided on the doors. Neutral bus shall be ble should be multi stranded and FRLS. CT ISF use and Open status of the breaker should be uxiliary contact and on LT panel through LED
		q)			be and same should be removable with the help ction during removal of outgoing fuses by fuse
		r)	The safety loo	king facility to be provided	for putting three nos. of safety locks.
		s)	Panel minimu	m width in mm: 900 mm	
		t)		r Testing and O&M staff.	ne complete support in terms of training; hand The breaker manufacturer to give the support
		u)	The robust is	plating arrangement in the	OG fuse compartment to be made.

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r.0 TESTS with red lettering on 1.6mm thick AI plate. with red lettering on 1.6mm thick AI plate. 6.4 SLD shall be engraved & pasted on inside of door. 6.5 CT Serial Nos., Ratio & ACB Serial Nos. to be written on doors with marker pen. 6.6 Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown in Annexure-2. All routine, acceptance & type tests shall be carried out in accordance with the released others specified in IS/IEC standards.		The Tata Power Cor	npany Limited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse
6.0 NAME PLATE AND MARKING 1) Purchaser name & PO number. 2) Manufacturer name 3) Month / year of manufacturing 4) 'Property of Tata Power' 6.0 NAME PLATE AND MARKING 6.2 Marking for panel earth stud- Black letter 'E', on riveted Al label 6.1 6.2 Marking for panel earth stud- Black letter 'E', on riveted Al label 6.3 Danger board in English &local language, riveted on doors- White colour backgrouw with red lettering on 1.6mm thick Al plate. 6.4 SLD shall be engraved & pasted on inside of door. 6.5 CT Serial Nos., Ratio & ACB Serial Nos. to be written on doors with marker pen. 6.6 Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown in Annexure-2. 7.0 TESTS 7.1 Type test 7.2 Type test 7.3 Tests 7.4 Type test 7.5 Tests 7.6 Tests 7.7 Tests 7.8 Type test - Only type tests shall be carried out in accordance with the relear IS/IEC. Following type test shall be carried out on the assembly. 8.1 Type test - Only type tested components – ACBs, Fuses, Insulators & aluminium bus b shall be accepted. Following type test shall be carried out on the assembly. 9. Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of co		ENSE-DS	2029-R00		Date of Issue: 11/01/2024
7.0 TESTS IS/IEC. Following tests shall be necessarily conducted on the 'Feeder Pillar' in addition others specified in IS/IEC standards. *In case of any conflict on any technical particular, the stricter requirement mentioned the relevant standard shall be valid *In case of any conflict on any technical particular, the stricter requirement mentioned the relevant standard shall be valid 7.1 Type test Type test - Only type tested components – ACBs, Fuses, Insulators & aluminium bus be shall be accepted. Following type test shall be carried out on the assembly. a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 c) Verification of clearance and creepage distances – Clause 8.2.4 of IS 8623 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of degree of protection – Clause 8.2.6 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623	6.0		 Purchaser name & PO number. Manufacturer name Month / year of manufacturing 'Property of Tata Power' A manufacturing for panel earth stud- Black letter 'E', on riveted Al label Danger board in English &local language, riveted on doors- White colour background with red lettering on 1.6mm thick Al plate. S LD shall be engraved & pasted on inside of door. S CT Serial Nos., Ratio & ACB Serial Nos. to be written on doors with marker pen. Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in 		
7.1Type testshall be accepted. Following type test shall be carried out on the assembly.a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 d) Verification of continuity of the protective circuit – Clause 8.2.4 of IS 8623 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of mechanical operation – Clause 8.2.6 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623Acceptance & routine test- (Inspection test witness by purchaser as per approved Qua	7.0	TESTS	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. Following tests shall be necessarily conducted on the 'Feeder Pillar' in addition to others specified in IS/IEC standards. *In case of any conflict on any technical particular, the stricter requirement mentioned in		
	7.1Type testshall be accepted. Following type test shall be carried out on the assembly.a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 d) Verification of continuity of the protective circuit – Clause 8.2.4 of IS 8623 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of mechanical operation – Clause 8.2.6 of IS 8623			arried out on the assembly. e 8.2.1 of IS 8623 .2.2 of IS 8623 8.2.3 of IS 8623 uit – Clause 8.2.4 of IS 8623 ces – Clause 8.2.5 of IS 8623 8.2.6 of IS 8623	
 7.2 Routine test 1) Visual inspection, dimension checks & paint thickness checks. 2) Bill of material check 3) Insulation resistance test 4) High voltage test 5) Operational check 6) Verification of dielectric properties 7) Tolerances on panel dimensions- Maximum +/- 5mm 8) No negative tolerance on bus bar dimensions & bus bar clearances 9) Stability test shall be conducted on all Panels, to ensure there shall be no trippir case of unbalance current on earth fault function. 	7.2	Routine test	Assurance Plan) 1) Visual inspection, 2) Bill of material che 3) Insulation resistan 4) High voltage test 5) Operational check 6) Verification of diele 7) Tolerances on par 8) No negative tolera 9) Stability test shall	dimension checks & paint theck ce test ectric properties nel dimensions- Maximum + nce on bus bar dimensions be conducted on all Pane	hickness checks. -/- 5mm & bus bar clearances els, to ensure there shall be no tripping in

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	The Tata Power Company Limited			TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse	
	ENSE-DS	2029-R00		Date of Issue: 11/01/2024	
7.3	Acceptance test	 Visual inspection & dimensional check Verification of clearance and creepage distance Paint thickness check Wiring checks Insulation resistance test HV test Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function. 1 unit from 1st lot shall be tested for Temperature rise test with ACB, MCCB and fuses (Bidder to arrange for the same, either in factory or in external lab) 			
8.0	TYPE TEST CERTIFICATE	The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER.			
9.0	PRE-DISPATCH INSPECTION	POWER COMPANY discretion of the Purior or material, the sam places of manufactur progress. Inspection shall not relieve the f specifications. TATA to inspect the design manufacture, if found witnessing the tests representatives for st Material shall be disp is issued by TATA PO Five certified copies be sent to us for our Following documents a) Test reports b) MDCC issue c) Invoice in du d) Packing list e) Drawings & f) Delivery Chal	rial shall be subject to inspection by a duly authorized representative of the TATA COMPANY. Inspection may be made at any stage of manufacture at the of the Purchaser and the equipment, if found unsatisfactory as to workmanship al, the same is liable to rejection. Bidder shall always grant free access to the manufacture to TATA POWER COMPANY 's representatives when the work is in Inspection by the TATA POWER COMPANY or its authorized representatives relieve the Bidder of his obligation of furnishing equipment in accordance with the ions. TATA POWER COMPANY authorized representatives shall have the right t the design, materials and workmanship and to report thereon, at any stage of ure, if found necessary. All facilities shall be extended to our representatives for g the tests. Due notice shall be given to us to enable us to depute our atives for stage inspection. shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) by TATA POWER COMPANY. fied copies of all test certificates including type tests, sample test certificates shall o us for our approval prior to dispatch of materials. documents shall be sent along with material rest reports //DCC issued by TATA POWER COMPANY nvoice in duplicate Packing list Drawings & catalogue		

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	The Tata Power Cor ENSE-DS		npany Limited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse
			-2029-R00	TATA POWER	Date of Issue: 11/01/2024
10.0	AFTER I	CTION RECEIPT TORE	be liable for rejection any other parameter The material should manufacturing, same	n, if found different from the s observed after delivery. be delivered at TPC, Mum	hall be inspected for acceptance and shall e reports of the pre-dispatch inspection or bai stores within 45 days from the date of delivery and overdue material shall not be ly.
	AIS	IORE		tification of any observed fl	vn cost. The material shall be accepted in aw. The delay in rectification shall lead to
			Billing shall be proce	essed only after acceptance	of the material.
			/ manufacturing of		aterials, workmanship & quality of process or due and intended performance of the this contract.
11.0	GUAR	GUARANTEE GUARANTEE GUARANTEE I the event any defect is found by the TATA POWER COMPANY up to a period of 12 months from the date of commissioning or 24 months from the date of last s made under the contract whichever is later, (the time scale of 12/24 months c enhanced subject to mutual agreements) Bidder shall be liable to under replace/rectify such defects at its own costs, within mutually agreed time frame, an entire satisfaction of the Purchaser, failing which the TATA POWER COMPANY w liberty to get it replaced/rectified at Bidder's risks and costs and recover all such explus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder the " Security cum Performance Deposit" as the case may be.			
			rectification of fault w then alternative array of failure. Bidder shall further	vithin a mutually agreed time ngement (replacement) to b be responsible for 'free re	in 48 hours from intimation and arrange for e. In case rectification at site is not possible e made by BA within 15 days of intimation placement' for another period of THREE any 'Latent Defects' if noticed and reported
12.0	PACKING AND TRANSPORT		 rail/road transport in 1) Packing prot transportatio 2) Packing ider panels, Pane 3) Handling ins 4) Bidders show packing. 5) No single us 	a manner so as to protect the fection- Against shocks, vibr on ntification labels, to show pu el type, Manufacturer serial truction- To be marked on p uld prefer to use recyclable a e plastic to be used.	
13.0	TENDER	SAMPLE	Not Applicable		
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	The Tata	Power Cor	mpany Limited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse	
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14.0	QUAI CONT		 The Bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TATA POWER COMPANY shall reserve the sole rights for the type test of a random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have free access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidder is liable to perform the same without cost implication. 			
15.0	MINIMUM FACIL		Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards and as specified above.			
16.0	MANUFAC ACTIV		The successful bidder will have to submit first GTP & Drawing with 7 days from placement of outline agreement for approval and complete the approval process within 14 days of outline agreement. The date of Code -2/ Code-1 approval given by TATA Power will be treated as first day for assessment of LD (if applicable).			
17.0	SPAF ACCESS AND T	ORIES,	Keys of door			
18.0	DRAWIN DOCUN SCHEDL GUARA TECHN	IG AND IENTS ILE "A" NTEED IICAL	specifications and sta documents & drawing a) Completely filled in b) General description c) General arrangem d) Bill of material e) Experience List f) Type test certificate g) Any other technica	tes cal document, if required or all above requirement of specifications clauses & submit signed and		
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	The Tata Power Cor	npany Limited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse	
	ENSE-DS	-2029-R00	TATA POWER	Date of Issue: 11/01/2024	
20.0		-2029-R00 The bidders shall se schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from th	et out all deviations from the ecifically mentioned in this r's specifications. WITH THE BID) his specification shall be se s specifically mentioned in		с П
		We confirm that there Seal of the Company	_	om those detailed above. nature : signation :	

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Annexure – 1

Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB, MCCB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

Approved for Issue By Rev No. Prepared By & Date Checked By & Date & Date Ajay V. Potdar Yash M. Mane Ravindra M. Bhanage R00 11/01/2024 11/01/2024 11/01/2024



TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse

Date of Issue: 11/01/2024

Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

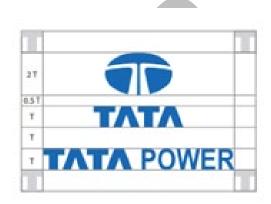
Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.

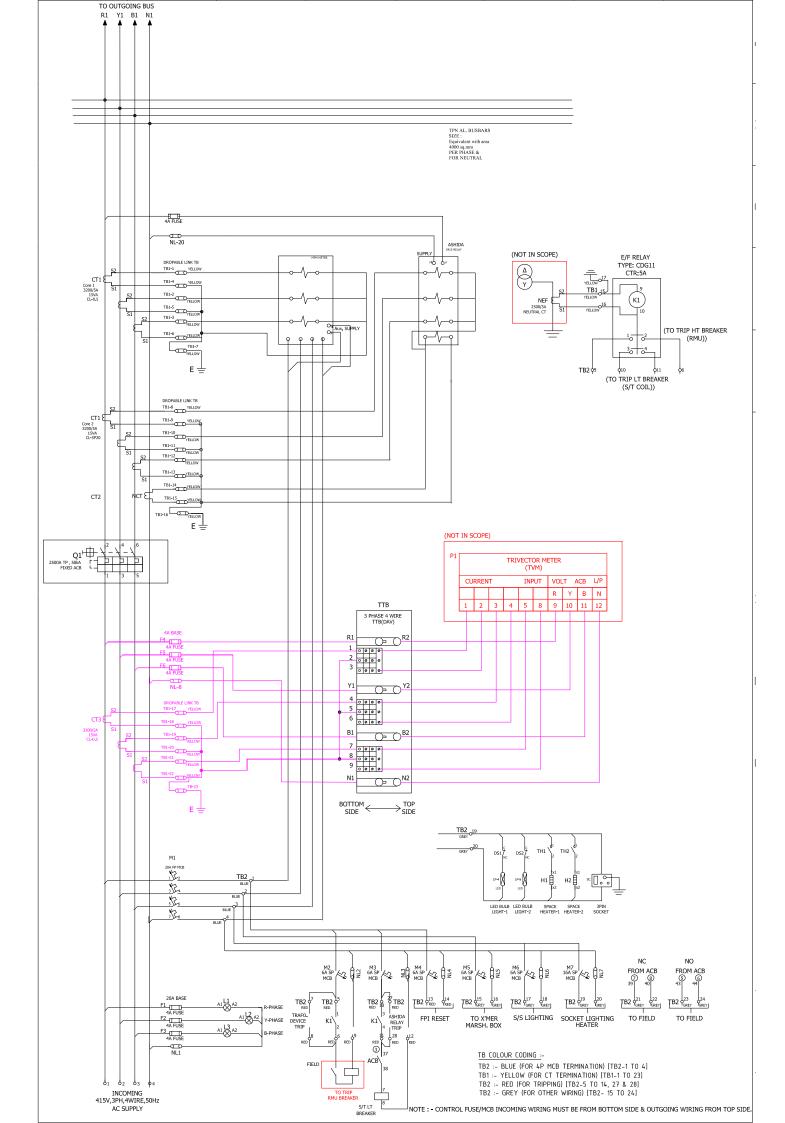


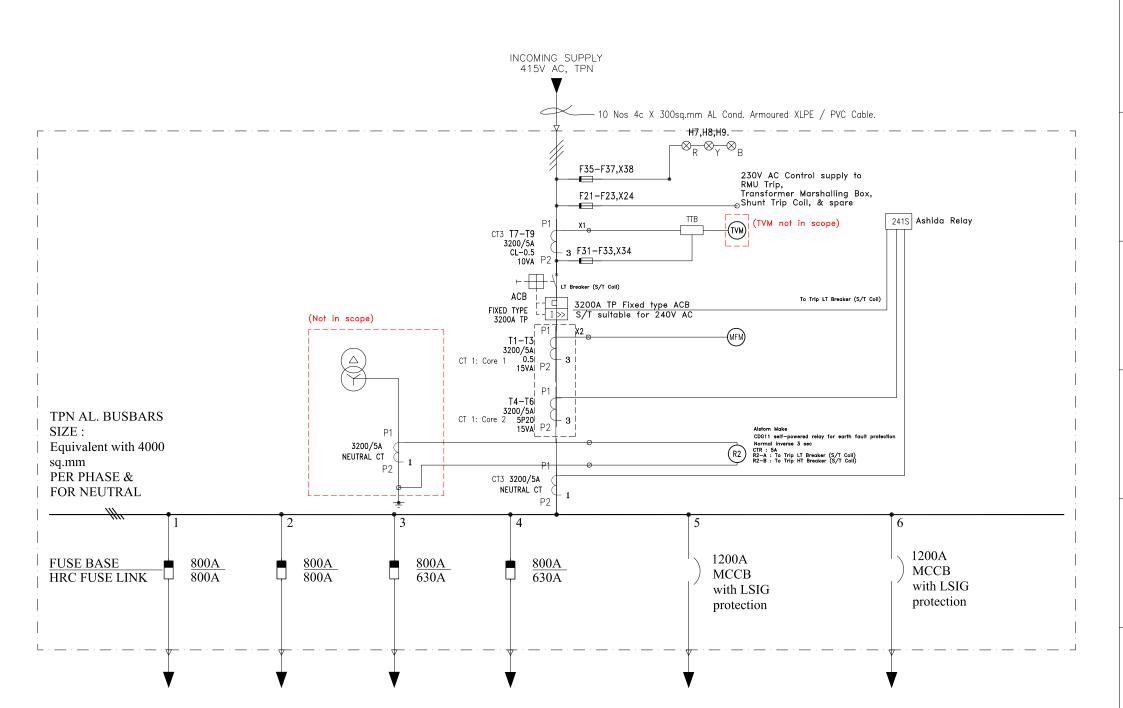
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	11/01/2024	11/01/2024	11/01/2024

The Tata Power Company Limited		TECHNICAL SPECIFICATION OF 3200 A LT Panel with MCCB & Fuse				
ENSE-DS-2029-R00	TATA TATA POWER	Date of Issue: 11/01/2024				
Annexure – 3						

Reference drawings

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SHEET NO. 01 OF 01

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ENSE-DS-2030-R00



Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION

6 Way & 8 Way 2500 A LT Panel

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra The Tata Power Company Limited

ENSE-DS-2030-R00



Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2030-R00

Document Title: Technical SPECIFICATION OF 6 Way & 8 Way 2500 A LT Panels

R00	ENSE-DS- 2030-R00 (For Tendering Purpose)	11/01/2024	YMM	¥.	AVP	X	RMB	Rely.
Rev			Initials	Sign	Initials	Sign	Initials	Sign
No.	Remarks	Date	Prepa	ared By	Review	ed By	Approved	d & Issued By

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	11/01/2024	11/01/2024	11/01/2024

	The Tata Power Company Limited		TECHNICAL SPECIFICATION Way & 8 Way 2500 A LT Par	
	ENSE-DS-2030-R00	TATA TATA POWER	Date of Issue: 11/01/2024	
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1.0	SCOPE	This specification covers design, engineering, manufacture; shop testing, inspection, painting, packing, and supply of 415V, 2500 A LT Panel with 6 or 8 no Outgoing Feeders complete with all accessories for efficient and trouble-free operation of the distribution network for Tata Power Company Limited at Mumbai. It is not our intent to specify completely herein all details of design and construction of the equipment. However, the equipment shall conform in all respects to high standards of Engineering design and workmanship and shall be capable of performing in a manner acceptable to the purchaser (TPC) who will interpret the meaning of drawings and specification and shall be entitled to reject any work or material which in his judgement is not in full accordance therewith. All the bought-out items shall be of reputed make and shall be subject to approval by the PURCHASER (TPC) after award of contract.						
			quipment shall conform to endments. Title IS 8623 IS 12063/ IEC 60529 IS 5 IS 5082	Indian standard Indian standard Specification for low voltage switchgear Classification of degrees of protection provided by Enclosures of Electrical equipment Color of ready mixed paints Wrought Aluminium & Al alloy plates & sheets for				
	APPLICABLE STANDARDS		IEC 60269 se of any conflict on a	electrical application Current Transformers Danger Notice plates Low voltage fuses for voltage not exceeding 1000 V AC or 1500 V DC. Part 2 Fuses for use by authorized persons Protection Relays Control and monitoring 2 Low Voltage Switchgear & control gear Low Voltage Fuses				

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	The Tata Power Company Limited		ted		TECHNICAL SPECIFICATION OF 6 Way & 8 Way 2500 A LT Panel
	ENSE-DS-	-2030-R00		TATA POWER	Date of Issue: 11/01/2024
3.0	CLIMATIC CONDITIONS OF THE INSTALLATION	2M3M4M5M6A7A8A9R10A11AAtmosphersubjected	Iax. Daily a Iin Ambien Iaximum R Iinimum R Iverage N Iverage An Iverage An Iverage No Rainy month Ititude abo Iverage Air Ititude abo Iverage Air Ititude abo	ve MSL not exceeding Pressure ally laden with mild acid a cold months. The design c	43 deg.C 35 deg.C 07 deg.C 100% 40% 50 2380mm 115 June to Oct. 300 meters 29.6-inch Hg nd dust suspended during dry months and of the equipment and accessories shall being to an acceleration of 0.1g.
		Sr. No		tem Description	Tata Power Requirement
					Name
		1 Manufac		acturer	Manufacturer Address
					Contact telephone no
		Breaker		Rating (ACB)	2500A Manual Fixed Type without any microprocessor relay. 230V AC Shunt tripping coil to be provided.
		2	Model of	ACB	The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)
4.0	GENERAL TECHNICAL		Approved	l Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton
	REQUIREMENTS		Main bus	bar rating	2500 A
		3	Bus bar S Neutral	Size for Phase &	3600 sq.mm (2x150mmx12mm or equivalent) for Phase & Neutral
			Earth Bu	s	1 x 50 x 10 mm GI
		4	Type of I	nstallation	Indoor / Outdoor Type
		5	No of Inc	oming feeders	Qnty -1no. of 2500A ACB with 8 Nos of 4CX300 sq.mm Al Ar XLPE cables
		6	No of out	tgoing feeders (8 Way)	Quantity -8 Nos of 630A each with 2 nos of 4CX300 sq.mm Al Ar XLPE cables per O/G
			No of out	tgoing feeders (6 Way)	Quantity -6 Nos of 630A each with 2 nos of 4CX300 sq.mm Al Ar XLPE cables per O/G

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Th	ne Tata	Tata Power Company Limite		ted		TECHNICAL SPECIFICATION OF Way & 8 Way 2500 A LT Panel	
]	ENSE-DS-	2030-R00		TATA POWER	Date of Issue: 11/01/2024	
			7	Panel co	onstruction	CRCA sheet steel of thickness 3 mm	
			8	Panel er	nclosure class	IP54 - ingress protection	
			9	Sheet st	eel thickness	Doors & Covers - 2.5mm, FRAME - 3mm	
			10	Door typ access	e for front & rear	Double door with rear door bolted	
			11	Door hin	iges	Minimum three anti-theft type hinges self-locking type	
			12	Padlocki	ing facility	For front door	
			13	Master k	key for all doors	Identical for all panels, 1 no./ panel to be provided	
			14	Hardward	e & Fasteners	All Nuts, Bolts, Washers shall be Hot Di Galvanized with 80 micron Galvanisatio or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.	
			14a	Current (Carrying part hardware	Each bolt on Bus Bar and Fuse terminal shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided	
				Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082	
				Bus bar O/G	size in mm for 2500 A	3600 sq.mm for Phase & Neutral	
			15 2500A A	CB Incoming	3600 sq.mm for Phase & Neutral		
				ACB O/0	G LINKS	3600 sq.mm for Phase & Neutra (Dimensions as per feasibility with Breaker palm connection)	
			16	Bus bar neutral	color coding for R, Y, B &	Heat shrinkable sleeves with color Red, Yellow, Blue & Black respectivel	
			16 a	Bus Bar	Heat shrinkable sleeves	Cross-linked Polyolefin (Bidder to specif thickness)	
			17		s bar short circuit d capacity	Above 50kA for 1 sec	
				Permiss	ible maximum ture rise above ambient	Busbar: 45 deg C	
		18			ible maximum ture rise above ambient	Terminals: 65 deg C	
		19	Bus bar	support insulators	As per IS13410 SMC / DMC, 1100V grade		
		20	Incoming	g Cable Size	4C 300 Sq.mm Al Ar XLPE		
	21 Ou		Outgoin	g Cable Size	4C 300 Sq.mm Al Ar XLPE		
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ENSE-DS-	2030-R00		TATA POWER	Date of Issue: 11/01/2024
	22	Gland pla	ate at panel bottom	HRCA MS 3mm thickness
	23	Cable ter	mination clearance	600 mm minimum from gland plate & ACB
		Fuse Bas	se	800 A
	24	Approved	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABB
	25	Fuses (6	30 A)	HRC plug-in type gG (General Purpose, Fast acting fuse)
	23	Approved	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABB
	26	CT's for 2 Feeder	2500A Incoming	 7 Nos. Single resin cast. a) 3 nos dual core CT's of ratio 2500/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay b) 3 nos single core CTs of ratio 2500/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) c) 1 no single core CT of ratio 2500/5A, 5P20 & 15 VA for Neutral unbalance protection Approved Make of CTs: Reco/Newtek/Pragati/Kappa/ECS/Adcon Front connection, Screw Type 3
	27	TTB for N	Metering	Phase 4 Wire, 4SF, 50 A, DAV/IMP make
	28	Wiring co	onvention for TTB	Incoming from Bottom Side & Outgoing to Meter from Top side
	29	Multifunc	tion Digital meter	Should be communicable on Modbus RS 485
	30	Earth Fa	ult protection relay (NEF)	Alstom make CDG11 self-powered. Relay type is normal inverse with 3 Sec with E/F setting of 0.5 to 2 A
	31 Earthing		Hardware	a) Earthing Nut and Bolt shall be M12 SS b) Washers shall be with Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating.
	31a	Panel Ea	rthing	Earthing provision to be provided on both sides with 50 mm extension of main Earth Bus Bar.
	32	Clearanc parts	e between live	Phase - phase -Minimum 25 mm & Phase - earth - Minimum 20 mm
	33	Distance outlet	between each fuse	Centre to Centre - 150mm (Minimum)

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	34	Distance panel su	between fuse outlet & rface	125 mm (Minimum)
	35	Control t	erminals for CTs	Stud type with disconnecting facilities
	36	Control to other circ	erminals for Voltage & cuits	Stud type
	37	Illuminati	on and Indicating Bulb	LED
	38	Continuc voltage	ous rated operating	440 volt +/- 10%
	39	High volt	age withstand capacity	2000 volt at 50 Hz for 1minute
	40	Insulation & ph-ear	n resistance ph-ph th	Minimum 10MOhm with 500V Megger
	41	Labels &	name plates	As per Specifications
	42	Surface	preparation for painting	Sand blasting or 7 tank process
	43	Painting		Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron
	44	Power S	upply Socket	5A/15A Plug point socket to be provided
	45	Breaker	Barrier	Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.
	46	Branding) Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power on the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches. * Refer Annexure 2
	47	Panel Di 900 mm)	mensions (Min depth of)	L X D X H (For 6 W & 8W)
	48	Numeric	al Relay	Ashida (ADR 241S) with 4 Element
	49		phase barriers/ Phase rs (R-Y & Y-B)	FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus-bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)

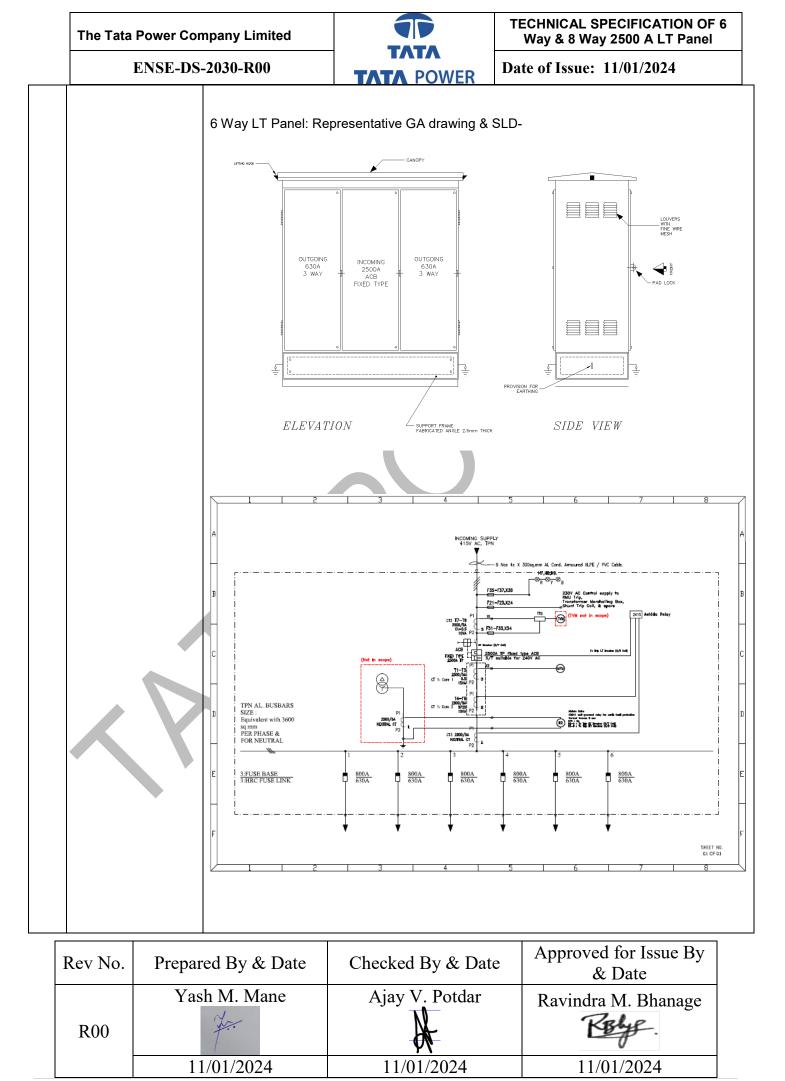
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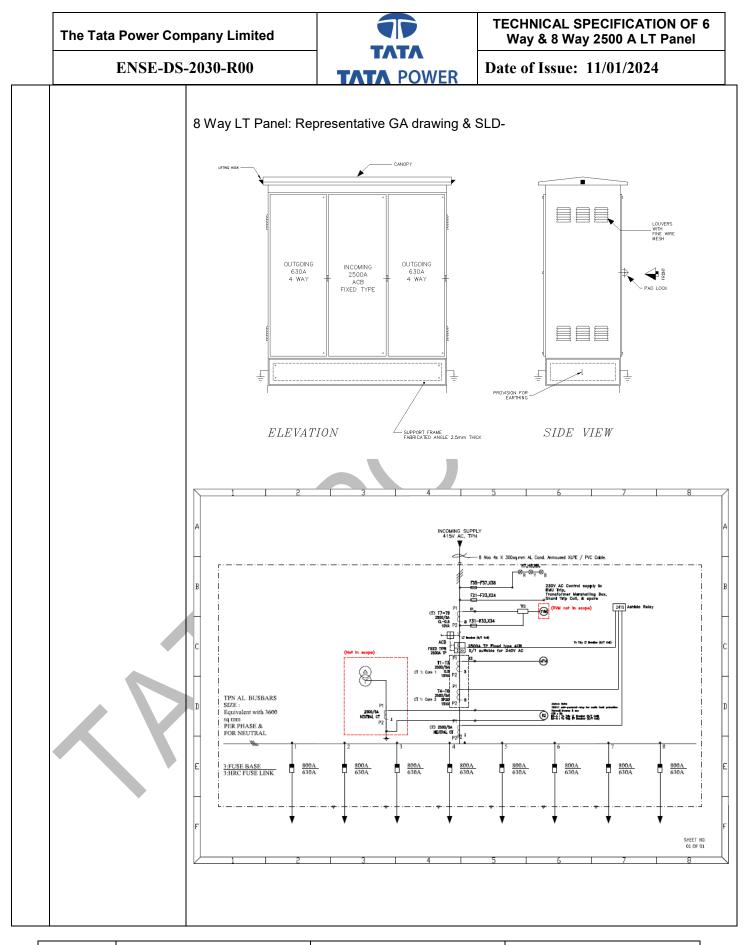
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		1)		ressed and shaped Cold F	cated using suitable mild steel structural Rolled Closed Annealed (CRCA) sheet of
		2) Frames shall be enclosed by CRCA sheet of thickness 3mm, levelled and free from flaws. Doors and cover shall be made thickness not less than 2.5mm. Stiffeners shall be provided, wh Gland plates shall be of Hot Rolled Closed Annealed (HRCA) than 3 mm. alternatively gland can also be provided between t removal of gland is easy. The dimension of base frame should to X 5 mm.			d cover shall be made of CRCA sheet of ers shall be provided, wherever necessary. osed Annealed (HRCA) thickness not less o be provided between two angles so that
		3)		anopy of adequate slope	and outdoor type, support frame mounted to avoid water accumulation. Degree of
		4)	sheet; the sa currents gene breaker com	me should be split suitably erated by three phase bus	artment should be separated by metallic in order to avoid local heating due to eddy bars crossing through the same sheet. The ter of panel & Outgoings shall be on both
		5)	with adequat	e louvers on sides and to	roof construction and of self-cooled design o portion. The louvers shall have fine wire th of panel shall be 900 mm.
5.0	GENERAL CONSTRUCTION	6)	danger signs		the panel designation, phase marking and e Line Diagram & feeder details shall be
		7)			cal languages on the Hylam sheet below ed background and with white letters.
		8)	captive screw of door hinge doors shall b inter-change	vs shall be provided on the es shall be provided and sh e provided with padlocking ability. The back-side door s shall be connected to th	ncealed type with brass type hinges and front side & Back side. Adequate numbers nould be durable and easy in operation. All facility. The design of doors should permit s shall have nut and bolt arrangement. All he earth terminal with 2.5 Sq.mm braided
	9)		suitable to a		inel and removable gland plates of size itgoing cables of sizes, 4 Core 300 Sq mm t required locations.
			Distance bet be minimum		le termination of Air Circuit Breaker should
		11)		nall be provided with gaske vable covers and doors.	t all around the perimeter of covers, gland
		12)			oper or tinned aluminium Bus Bar. be provide, if bare copper terminal is

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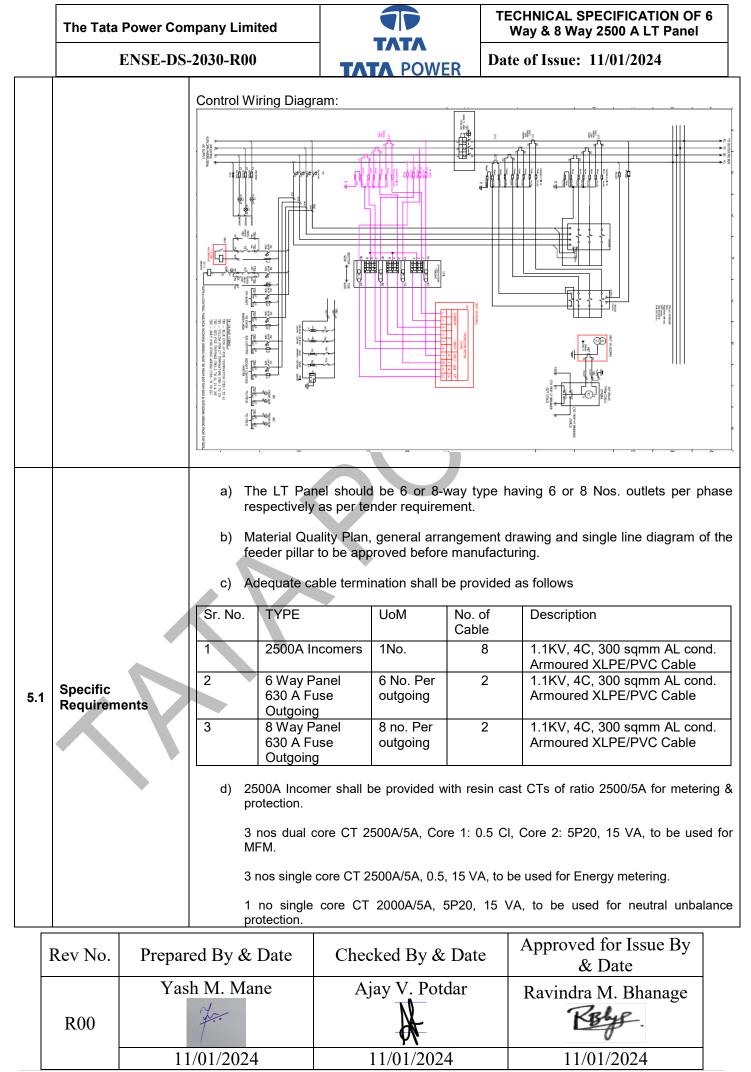
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	1 sec and s short time cu bars, bus tap	hall have adequate cross : urrent. Main Bus bar should	elite shrouding, rated for 2500 A, 50 kA for section to carry the rated continuous and d be continuous/ without any joint. All bus aped. Neutral bus bar shall be provided on
	without any to be prov	microprocessor protection ided for tripping the bit	ted fixed type 3 Pole with shunt trip coil on release. Ashida make (ADR41S) relay reaker with Overcurrent & earth faut nunt trip should be provided.
		all be of the HRC cartridge spective current of not less	type mounted on plug-in type fuse bases than 80 kA.
		ase clearance of 25mm and period provided in the panel.	nd Phase to Neutral / Earth clearance of
			ould be minimum 150 mm between each utlet and body of panel to be maintained.
	18) The panel s earth bus.	hall be provided with two	separate earthing terminals connected to
	insulated 2.5		he earth terminal using 650V grade PVC copper earthing conductor. All Earthing dy of panel.
	with the help		shall be connected to the earth terminal, ors of adequate size. Flat earth bus should nal earth
	21) Eyebolt of su	iitable sizes shall be provide	ed for lifting arrangements.
	, .	all be carried out with 650 f adequate sizes to suit the	OV grade PVC insulated stranded copper rated circuit current.
	23) The panel sh	all be powder coated with li	ght shade grade no 631 of IS 5.
	24) Required nur	mber of foundation bolts sha	all be supplied with the panel.
X X	25) Control fuses breaker chan		external cable connections shall be in the
	a. Stud	erminals shall be as follows type with disconnecting fac type for voltage and other o	ilities for CT circuits
		shall have adequate conta no local heating takes place	act surface with the bus bars provided to
	28) Lighting Syst	em in Feeder Pillar should l	be LED based.

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		e) All CT termination should be round plug type. No CT shorting arrangement to be provided. (As per SLD)								
			cop	oper cond		Sq. mm for	CT circ		PVC insulated stra q. mm for PT and	
			Sr. No.	Equipm	nent	Color	Nome	nclature of TBs	Types of TBs	
			1.	TBs of Termin	4 Pole MCB	Blue	TB2		Droppable	
			2.	TBs for Termin	CT	Yellow	TB1		Droppable	
			3.		^r Tripping	Red	TB2		Droppable	
			4.	All othe		Default	TB2		Normal	
			4.	All Othe	15	Delault	IDZ		INOIMAI	
			set h) Te	ting of 0.	5 to 2 A. al box for En	ergy Meteri	ing sho	uld be Front C	erse with 3 sec wit Connection, Screw	Туре
	(4SF), 50 A to be provided and the convention of the wiring in the TTB should Incoming from the bottom side and outgoing to Meter from top side. There is not be any partition between Relay & metering box in LV compartment. It sho be single door compartment. No lugs shall be provided for wires to meter, T and Fuses (PT secondary). Sealing arrangement to be provided for Ene Meters. Inspection glass (Transparent Toughened Glass) to be provided viewing of meter.					must hould TTB, nergy				
						•		in LV compartr		
			x E	3 x D: 36 d energy	0 x 200 x 200) mm (Ener be installe	gy meto d in the	er will be supp e breaker con	th max dimensions lied by TPC). The npartment with su	relay
		0	hea	aters with					nti condensation s 5A metal clad ger	
			blo	ck for pu	urchaser's us	e shall be	provide		uly wired up to ter ircuit breaker in fo s (refer SLD):	
	Phase and neutral for 230V supply to RMU. (6A) Phase and neutral for 230V supply to Transformer marshalling box. (6A) Phase and neutral for external shunt trip coil (6A) Phase and neutral for FPI reset (6A) Separate 16A, DP MCB duly wired for Auxiliary supply for LT panel for following purpose, Phase and neutral for substation lighting (6A) Phase and neutral for Socket (15A)/ Heater circuit Phase and neutral for Ashida overcurrent relay (4A)									
F	Rev No.	Prepar	ed By & I	Date	Checke	d By & D	Date		l for Issue By Date	

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ENSE-DS-2030-R00		TATA POWER	Date of Issue: 11/01/2024
	 m) The following stud type line breaker in fee Outgoing wire Three Three Three n) Locking sho doors. Louve cover plate. o) Makes of val Sr. No. Items 1 ACB 2. CT p) Flexible cop connected we ISF should should be a through LED q) The fuses prohelp of fuse by fuse pulle r) The safety loc s) Panel minim t) The breaker hand holding support server 	g separate control fuses wask terminals for purchaser's eder pillars Control fuse In ting from top side. (refer SL ee phase and neutral for mease Phase and neutral for indexe Phase and neutral for indexe Phase and neutral for indexe Phase and neutral for mease ers with stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall and the stainless steel wire rious bought out items shall be root and be less than or equal to a vailable on SCADA throug the less than or equal to a vailable on SCADA throug the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of which items and the should be should be for the should be root and the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller. There shall be no of the should be of knife type puller.	ith neutral links duly wired out to a set of s use shall be provided before the circuit coming wiring must be from bottom side & D): tering circuit. lication lamp arthing jumpers to be provided for all the re mesh to be provided on body side and

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		 6.1 Name plate- On f 1) Purchaser name & 2) Manufacturer name 3) Month / year of ma 4) 'Property of Tata F 	e anufacturing	ving
6.0	NAME PLATE AND MARKING			on riveted AI label veted on doors- White colour background
		6.4 SLD shall be eng	raved & pasted on inside of	f door.
		6.5 CT Serial Nos., F	Ratio & ACB Serial Nos. to b	be written on doors with marker pen.
		6.6 Separate metallic clear font as shown i	-	er Logo of Dimension 12*12 Inches in
7.0	TESTS		sts shall be necessarily cor	arried out in accordance with the relevant inducted on the 'Feeder Pillar' in addition to
		*In case of any conf the relevant standard		ular, the stricter requirement mentioned in
				s, Fuses, Insulators & aluminium bus bar arried out on the assembly.
7.1	Type test	b) Verification of dielectionb) Verification of shore	perature-rise limits – Clause ectric properties – Clause 8 rt-circuits strength – Clause tinuity of the protective circu	.2.2 of IS 8623
		e) Verification of clear f) Verification of mec		ces – Clause 8.2.5 of IS 8623 8.2.6 of IS 8623
		Acceptance & routine Assurance Plan)	e test- (Inspection test witne	ess by purchaser as per approved Quality
7.2	Routine test	 2) Bill of material che 3) Insulation resistan 4) High voltage test 5) Operational check 6) Verification of diele 7) Tolerances on par 	ce test	-/- 5mm
		9) Stability test shall		els, to ensure there shall be no tripping in

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	ENSE-DS-	-2030-R00	TATA POWER	Date of Issue: 11/01/2024		
7.3	Acceptance test	 Visual inspection & dimensional check Verification of clearance and creepage distance Paint thickness check Wiring checks Insulation resistance test HV test Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab) 				
8.0	TYPE TEST CERTIFICATE	 The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER. 				
9.0	PRE-DISPATCH INSPECTION	POWER COMPANY discretion of the Purior or material, the sam places of manufactur progress. Inspection shall not relieve the B specifications. TATA to inspect the design manufacture, if found witnessing the tests representatives for standard Material shall be disp is issued by TATA PO Five certified copies of be sent to us for our Following documents a) Test reports b) MDCC issue c) Invoice in du d) Packing list e) Drawings & G f) Delivery Chall	A Inspection may be main chaser and the equipment, is is liable to rejection. Bid is to TATA POWER COMPLe by the TATA POWER COMPANY authors of the to TATA POWER COMPANY authors. POWER COMPANY authors, materials and workmans of necessary. All facilities shall be compared after specific MDCC DWER COMPANY. The provide after specific MDCC DWER COMPANY. The shall be sent along with materials and so the shall be sent along with materials and so the shall be sent along with materials and by TATA POWER COMPANY authors. The shall be sent along with materials and so the shall be sent along with materials and by TATA POWER COMPANY.	aterial		

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		be liable for rejectior		nall be inspected for acceptance and shall e reports of the pre-dispatch inspection or		
10.0	INSPECTION AFTER RECEIPT AT STORE	manufacturing, same		bai stores within 45 days from the date of delivery and overdue material shall not be ly.		
			tification of any observed fl	wn cost. The material shall be accepted in aw. The delay in rectification shall lead to		
		Billing shall be proce	ssed only after acceptance	of the material.		
		/ manufacturing of i		aterials, workmanship & quality of process for due and intended performance of the this contract.		
11.0	GUARANTEE	12 months from the made under the cor enhanced subject replace/rectify such of entire satisfaction of liberty to get it replace plus the Purchaser's	date of commissioning or ntract whichever is later, (i to mutual agreements) E defects at its own costs, wit the Purchaser, failing whic ed/rectified at Bidder's risks	WER COMPANY up to a period of at least 24 months from the date of last supplies the time scale of 12/24 months could be Bidder shall be liable to undertake to hin mutually agreed time frame, and to the h the TATA POWER COMPANY will be at s and costs and recover all such expenses xpenses incurred), from the Bidder or from case may be.		
		In case of GP failure, BA shall report at site within 48 hours from intimation and arrange for rectification of fault within a mutually agreed time. In case rectification at site is not possible then alternative arrangement (replacement) to be made by BA within 15 days of intimation of failure.				
				placement' for another period of THREE any 'Latent Defects' if noticed and reported		
12.0	PACKING AND TRANSPORT	 Bidder shall ensure that the item covered under this specification shall be packaged for rail/road transport in a manner so as to protect the equipment from damage in transit. 1) Packing protection- Against shocks, vibration & corrosion, damages during transportation 2) Packing identification labels, to show purchaser name, PO number, quantity of panels, Panel type, Manufacturer serial number 3) Handling instruction- To be marked on packing boxes. 4) Bidders should prefer to use recyclable & environmentally friendly materials for packing. 5) No single use plastic to be used. 6) Packing should be done with environment friendly recyclable materials. 				
13.0	TENDER SAMPLE	Not Applicable				

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14.0	QUALITY CONTRO	L	of inspection, the test components during and equipment after within the parameter TATA POWER COI sample from the lo certificates submitted TATA POWER COM	sts and checks which will be manufacture and bought o finishing. As part of the plar is of the delivery schedule sh MPANY shall reserve the s t and in case of any disc d along with the Bid; the com	sole rights for the type test of a random repancy or deviation from the Type test aplete Lot shall be rejected.		
			access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidder is liable to perform the same without cost implication.				
15.0	5.0 MINIMUM TESTING Bidder shall have adequate in-house testing facilities for carrying out all routine te acceptance tests as per relevant International / Indian standards and as specified abo						
16.0		CTURING ES	The successful bidder will have to submit first GTP & Drawing with 7 days from placement of outline agreement for approval and complete the approval process within 14 days of outline agreement. The date of Code -2/ Code-1 approval given by TATA Power will be treated as first day for assessment of LD (if applicable).				
17.0	SPARES, ACCESSO AND TOC	ORIES,	Keys of door				
18.0	Following drawings and documents shall be prepared based on TATA POWER COM specifications and statutory requirements and shall be submitted with the bid. All the documents & drawings shall be in English language a) Completely filled in Technical Particulars				all be submitted with the bid. I language		
19.0	9.0 SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS Bidders to comply for all above requirement of specifications clauses & submit sig			pecifications clauses & submit signed and			
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	ENSE-DS	-2030-R00	ΤΛΤ	A POWER	Date of Issue: 11/01/2024	
		The bidders shall se schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from th	et out all o ecifically i er's specifi WITH TH his specifi s specifica aser's speci	deviations from the mentioned in this cations. E BID) cation shall be se ally mentioned in t	is specification, Clause by Clause schedule, the tender shall be deer at out by the bidders, clause by Cla his Schedule, the tender shall be de Details of deviation wit justifications	ned to ause in eemed
20.0	SCHEDULE "B"DEVIATIONS					
				eviations apart fro	m those detailed above.	
		Seal of the Company	/	-	ature :	
				Des	ignation :	

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Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

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TECHNICAL SPECIFICATION OF 6 Way & 8 Way 2500 A LT Panel

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Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.

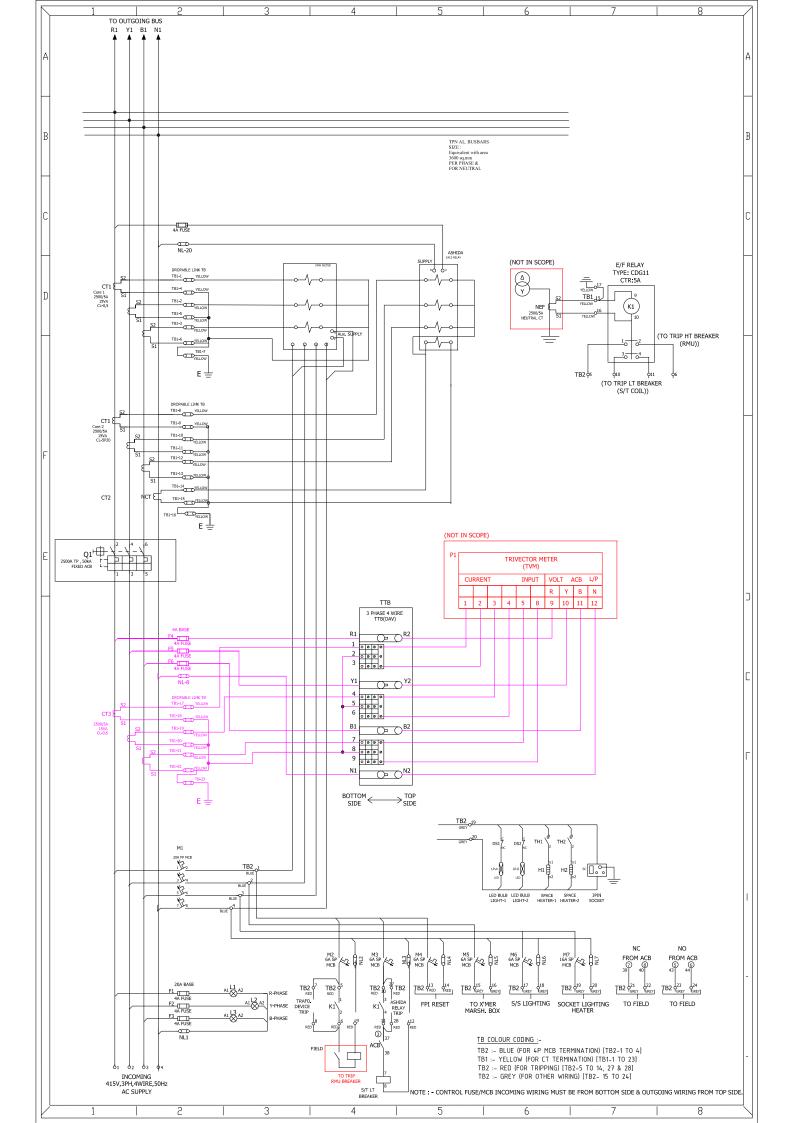


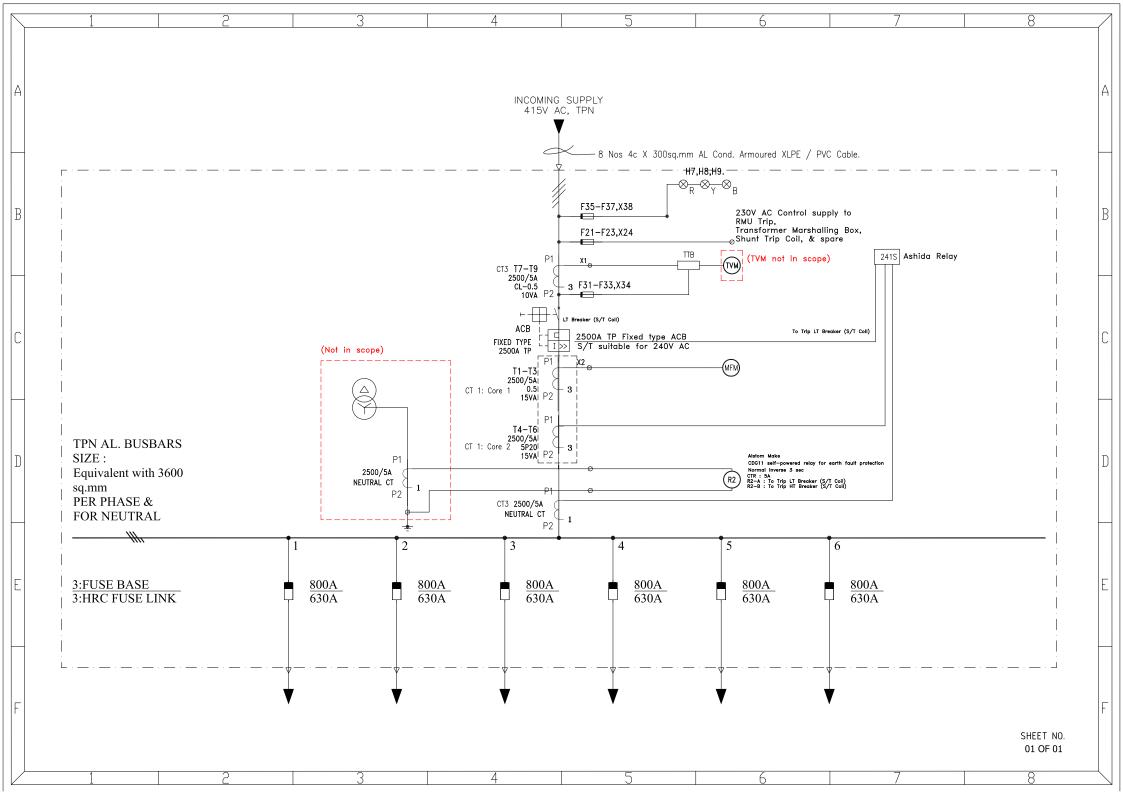
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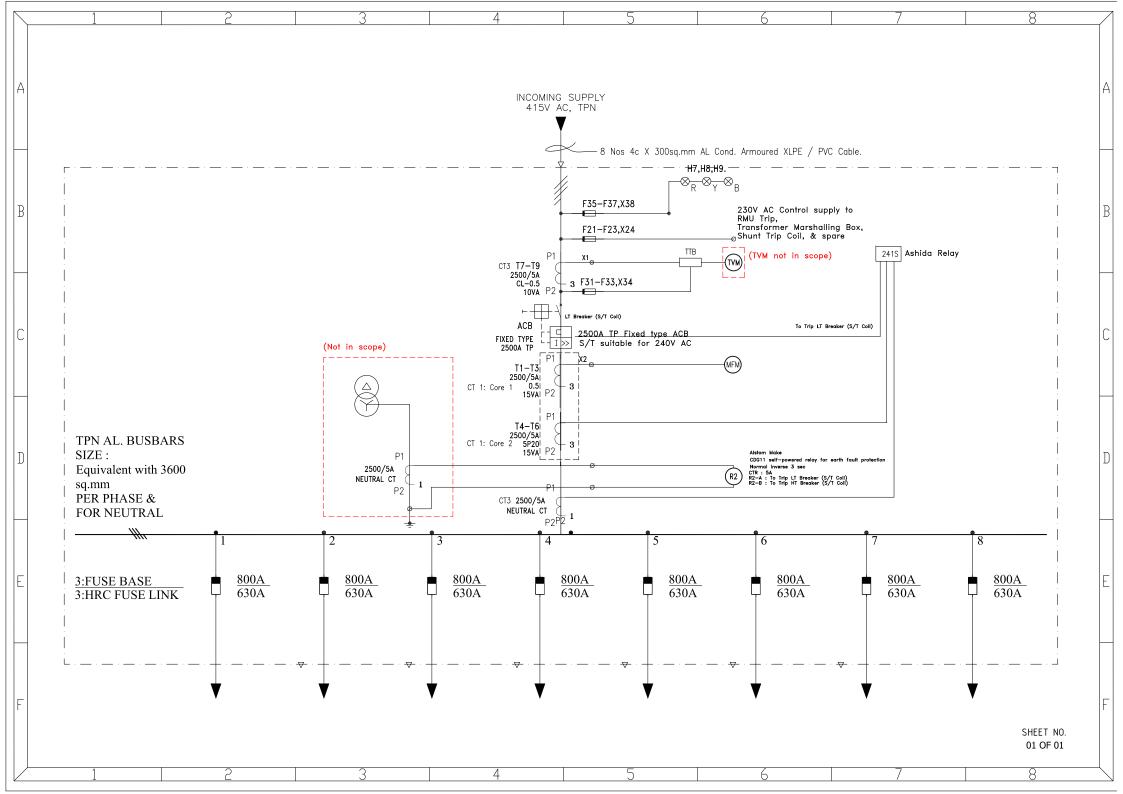
The Tata Power Company Limited		TECHNICAL SPECIFICATION OF 6 Way & 8 Way 2500 A LT Panel			
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Annexure – 3					

Reference drawings

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TECHNICAL SPECIFICATION OF 6 Way 1250 A LT Panel

Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION

6 Way 1250 A LT Panel

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra The Tata Power Company Limited



ENSE-DS-2031-R00

Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2031-R00

Document Title: Technical SPECIFICATION OF 6 Way 1250 A LT Panels

R00	ENSE-DS- 2031-R00 (For Tendering Purpose)	11/01/2024	YMM	Y.	AVP	X	RMB	Reefer.
R0	SPEC-NET- Feeder Pillar- 1250A	17/09/21	MY	-sd-	AVP	-sd-	RK	-sd-
Rev			Initials	Sign	Initials	Sign	Initials	Sign
No.	Remarks	Date	Prepa	ared By	Review	ed By	Approved	& Issued By

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l			<u> </u>
			PAGE NO
1.0	Scope		4
2.0	APPLICABLE STANDARDS		4
3.0	CLIMATIC CONDITIONS OF THE INSTAL	LATION	5
4.0	GENERAL TECHNICAL REQUIREMENT	S	5
5.0	GENERAL CONSTRUCTIONS		9
6.0	NAME PLATE & MARKINGS		15
7.0	TESTS, ROUTINE & ACCEPTANCE TES	тѕ	15
8.0	TYPE TEST CERIFICATES		16
9.0	PRE-DISPATCH INSPECTION		16
10.0	INSPECTION AFTER RECEIPT AT STOR	E	17
11.0	GUARANTEE	\sim	17
12.0	PACKING AND TRANSPORT		17
13.0	TENDER SAMPLE		17
14.0	QUALITY CONTROL		18
15.0	MINIMUM TESTING FACILITIES	~	18
16.0	MANUFACTURING ACTIVITIES		18
17.0	SPARES, ACCESSORIES AND TOOLS		18
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19.0	SCHEDULE "A" GUARANTEED TECHNI	CAL PARTICULARS	18
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+ ANNEXURE <u>1</u>, <u>2</u> & <u>3</u>

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painting, packing, complete with all a network for Tata Po It is not our intent t equipment. Howev Engineering design acceptable to the specification and sl not in full accordance All the bought-out i PURCHASER (TPO	and supply of 415V, 125 accessories for efficient a ower Company Limited at M to specify completely hereiver, the equipment shall c n and workmanship and s e purchaser (TPC) who we shall be entitled to reject an ince therewith. items shall be of reputed r C) after award of contract. all conform to this specification IEC 60529 Classification	Date of Issue: 11/01/2024 ing, manufacture; shop testing, inspection, 0 A LT Panel with 6 no Outgoing Feeders and trouble-free operation of the distribution Mumbai. n all details of design and construction of the conform in all respects to high standards of shall be capable of performing in a manner will interpret the meaning of drawings and make and shall be subject to approval by the make and shall be subject to approval by the Indian standard n for low voltage switchgear on of degrees of protection provided by of Electrical equipment
painting, packing, complete with all a network for Tata PoIt is not our intent t equipment. Howev Engineering design acceptable to the specification and si not in full accordanceAll the bought-out i PURCHASER (TPO)The equipment sha all amendments.Title 11IS 8623 22IS 12063/ I	and supply of 415V, 125 accessories for efficient a ower Company Limited at M to specify completely hereiver, the equipment shall c n and workmanship and s e purchaser (TPC) who we shall be entitled to reject an ince therewith. items shall be of reputed r C) after award of contract. all conform to this specification IEC 60529 Classification	0 A LT Panel with 6 no Outgoing Feeders and trouble-free operation of the distribution Mumbai. n all details of design and construction of the conform in all respects to high standards of shall be capable of performing in a manner vill interpret the meaning of drawings and ny work or material which in his judgement is make and shall be subject to approval by the tion and latest revision of following codes with Indian standard n for low voltage switchgear on of degrees of protection provided by
all amendments. Title 1 IS 8623 2 IS 12063/ I	Specification IEC 60529 Classification	Indian standard n for low voltage switchgear on of degrees of protection provided by
1 IS 8623 2 IS 12063/ I	IEC 60529 Classificatio	n for low voltage switchgear on of degrees of protection provided by
2 IS 12063/ I	IEC 60529 Classificatio	on of degrees of protection provided by
3 IS 5	Enclocation	
		dy mixed paints
4 IS 5082		uminium & AI alloy plates & sheets for
	electrical ap	• •
5 IS 2705	Current Trai	
6 IS 2551	Danger Noti	
7 IS 13703-2	5	b fuses for voltage not exceeding 1000 V
	5	V DC. Part 2 Fuses for use by authorized
	persons	-
8 IEC 255	Protection F	Relays
9 IEC 801	Control and	monitoring
10 IEC 60947-	-2 /IS 13947-2 Low Voltage	e Switchgear & control gear
11 IEC 60269	Description Low Voltage	e Fuses
	9 IEC 801 10 IEC 60947 11 IEC 60269 In case of any o	persons8IEC 2559IEC 80110IEC 60947-2 /IS 13947-2Low Voltage

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	The Tata	The Tata Power Com		ted		TECHNICAL SPECIFICATION OF 6 Way 1250 A LT Panel	
		ENSE-DS-	-2031-R00		TATA TATA POWER	Date of Issue: 11/01/2024	
3.0	CLIMATIC CONDITIC THE INSTALL	ONS OF	1Maximum2Max. Daily3Min Ambie4Maximum5Minimum F6Average N7Average A8Average N9Rainy mon10Altitude ab11Average AAtmosphere is genesubjected to fog in		ove MSL not exceeding ir Pressure erally laden with mild acid a cold months. The design c	43 deg.C 35 deg.C 07 deg.C 100% 40% 50 2380mm 115 June to Oct. 300 meters 29.6-inch Hg and dust suspended during dry months and of the equipment and accessories shall being to an acceleration of 0.1g.	
			Sr. No		Item Description	Tata Power Requirement	
			1	Manufa	cturer	Name Manufacturer Address	
		2	Breaker	Rating (ACB)	Contact telephone no 1250A Manual Fixed Type without any microprocessor relay. 230V AC Shunt tripping coil to be provided.		
			Model o	f ACB	The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)		
	GENERA			Approve	ed Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton	
4.0	TECHNICAL REQUIREMENTS				is bar rating	1250 A	
			3	Bus bar Neutral	Size for Phase &	2000 sq.mm for Phase & Neutral	
				Earth B	us	1 x 50 x 10 mm GI	
			4	Type of	Installation	Indoor / Outdoor Type	
			5	No of In	coming feeders	Qnty -1no. of 1250A ACB with 7 Nos of 4CX300 sq.mm Al Ar XLPE cables	
				6	No of o	utgoing feeders (6 Way)	Quantity - 5 Nos of 630A each with 2 no's of 4CX300 sq.mm Al Ar XLPE cables per O/G
			7	Panel c	onstruction	CRCA sheet steel of thickness 3 mm	
			8	Panel e	nclosure class	IP54 - ingress protection	
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The Tata Power Company Limite		ted		TECHNICAL SPECIFICATION OF 6 Way 1250 A LT Panel
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	9	Sheet ste	eel thickness	Doors & Covers - 2.5mm, FRAME - 3mm
	10	Door typ access	e for front & rear	Double door with rear door bolted
	11	Door hin	ges	Minimum three anti-theft type hinges self-locking type
	12	Padlocki	ng facility	For front door
	13	Master k	ey for all doors	Identical for all panels, 1 no./ panel to be provided
	14	Hardware	e & Fasteners	All Nuts, Bolts, Washers shall be Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.
14a	14a	Current C	Carrying part hardware	Each bolt on Bus Bar and Fuse terminal shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided
	Pha	Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082
		Bus bar : O/G	size in mm for 1250 A	2000 sq.mm for Phase & Neutral
	15	1250A A	CB Incoming	2000 sq.mm for Phase & Neutral
		ACB O/C	GLINKS	2000 sq.mm for Phase & Neutral (Dimensions as per feasibility with Breaker palm connection)
	16	Bus bar & neutra	colour coding for R, Y, B I	Heat shrinkable sleeves with colour Red, Yellow, Blue & Black respectively
	16 a	Bus Bar	Heat shrinkable sleeves	Cross-linked Polyolefin (Bidder to specify thickness)
	17		s bar short circuit d capacity	Above 50kA for 1 sec
	18		ble maximum ture rise above ambient	Busbar: 45 deg C
$\langle \langle \rangle$	Permissi		ble maximum ture rise above ambient	Terminals: 65 deg C
	19	Bus bar support insulators		As per IS13410 SMC / DMC, 1100V grade
	20	Incoming	g Cable Size	4C 300 Sq.mm Al Ar XLPE
	21	Outgoing	g Cable Size	4C 300 Sq.mm Al Ar XLPE
	22	Gland pla	ate at panel bottom	HRCA MS 3mm thickness

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	23	Cable te	rmination clearance	600 mm minimum from gland plate & ACB
		Fuse Ba	se	800 A
	24	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABB
				HRC plug-in type gG (General Purpose, Fast acting fuse)
	25	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABB
	26	Feeder	1250A Incoming	 7 Nos. Single resin cast. a) 3 no's dual core CT's of ratio 1250/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay b) 3 no's single core CTs of ratio 1250/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) c) 1 no single core CT of ratio 1250/5A, 5P20 & 15 VA for Neutral unbalance protection Approved Make of CTs: Reco/Newtek/Pragati/Kappa/ECS/Adcon Front connection, Screw Type 3 Phase 4 Wire, 4SF, 50 A, DAV/IMP
	28	Wiring co	onvention for TTB	make Incoming from Bottom Side & Outgoing to Meter from Top side
	29	Multifund	ction Digital meter	Should be communicable on Modbus RS 485
	30	Earth Fa	ult protection relay (NEF)	Alstom make CDG11 self-powered. Relay type is normal inverse with 3 Sec with E/F setting of 0.5 to 2 A
	31	Earthing	Hardware	a) Earthing Nut and Bolt shall be M12 SS b) Washers shall be with Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating.
	31a Panel		Inthing	Earthing provision to be provided on both sides with 50 mm extension of main Earth Bus Bar.
	32	Clearanc parts	ce between live	Phase - phase -Minimum 25 mm & Phase - earth - Minimum 20 mm
	33	Distance outlet	e between each fuse	Centre to Centre - 150mm (Minimum)

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	34	Distance panel su	between fuse outlet & rface	125 mm (Minimum)
	35	Control to	erminals for CTs	Stud type with disconnecting facilities
	36	Control to other circ	erminals for Voltage & cuits	Stud type
	37	Illuminati	on and Indicating Bulb	LED
	38	Continuc voltage	ous rated operating	440 volt +/- 10%
	39	High volt	age withstand capacity	2000 volt at 50 Hz for 1minute
	40	Insulation & ph-ear	n resistance ph-ph th	Minimum 10MOhm with 500V Megger
	41	Labels &	name plates	As per Specifications
	42	Surface	preparation for painting	Sand blasting or 7 tank process
	43	Painting		Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron
	44	Power Supply Socket		5A/15A Plug point socket to be provided
	45	Breaker Barrier		Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.
	46	Branding	l Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power on the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches. * Refer Annexure 2
$\langle \langle \rangle$	47	Panel Dimensions (Min depth of 900 mm)		LXDXH
	48	Numerica	al Relay	Ashida (ADR 241S) with 4 Element
	49	Bus-bar phase barriers/ Phase separators (R-Y & Y-B)		FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus-bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)

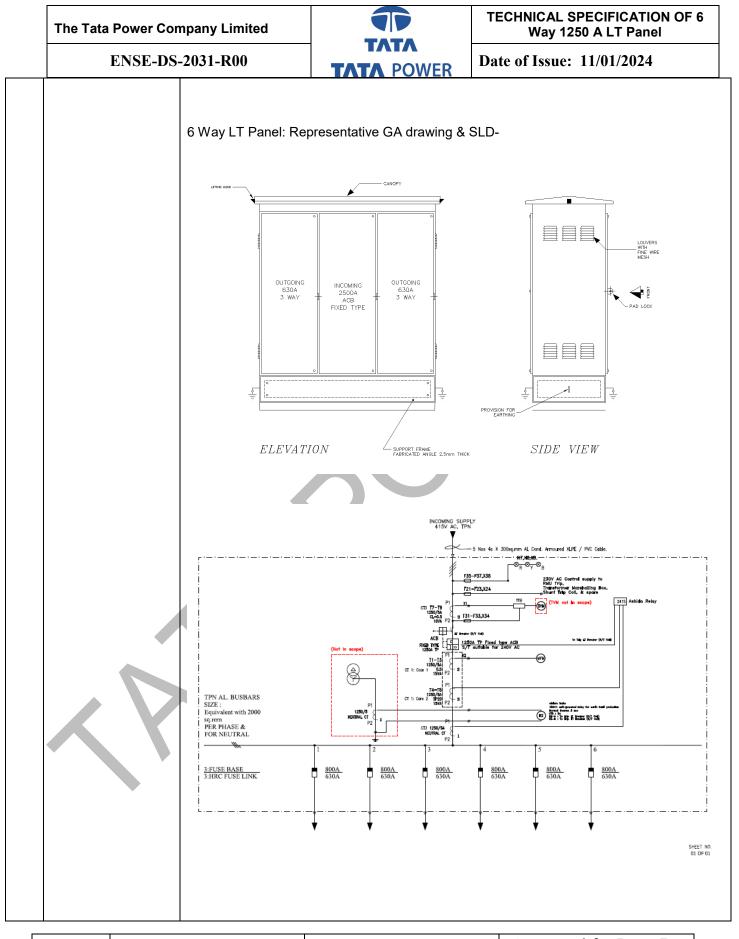
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ENSE-DS-2031-R00 The feeder pillar frame shall be fabricated using suitable mild steel structure section or pressed and shaped Cold Rolled Closed Annealed (CRCA) sheet of thickness 3 mm. 2) Frames shall be enclosed by CRCA sheet of thickness 3 mm, smoothly finished leveled and free from flaws. Doors and cover shall be made of CRCA sheet of thickness or tess than 2.5mm. Stiffeners shall be provided, wherever necessare Gland plates shall be of Hot Rolled Closed Annealed (HRCA) thickness not tess than 2.5mm. Stiffeners shall be provided thetween two angles so the tremoval of gland is easy. The dimension of base frame should be 75mm X 40mm X 5 mm. 3) The panel shall be of metal enclosed and outdoor type, support frame mounte type with canopy of adequate slope to avoid water accumulation. Degree or protection shall be IP 54. 4) Breaker compartment and fuse compartment should be separated by metalli sheet; the same should be to treaker compartment. 5.0 GENERAL CONSTRUCTION 6.1 The panel shall be of dust and vermin proof construction and of self-cooled design with adequate louvers on sides and top portion. The louvers shall have fine wir mesh made of breaker compartment. 6.1 The panel shall be provided in local languages on the Hylam sheet below threaker should be durated and with while letters. 7.0 Danger boards shall be provided on the front size & Back side. Adequate number wir mesh made of breaker and on front & rear cover with red background and with while letters. 8.1 Haged doors of lift off type, with concealed type with brass type hinges an captive screws		The Tata Power Con	npany Limited		TECHNICAL SPECIFICATION OF 6 Way 1250 A LT Panel
 5.0 GENERAL CONSTRUCTION 5.0 GENERAL CONSTRUCTION 5.0 CENERAL CONSTRUCTION 5.1 CENERAL CONSTRUCTION 5.2 CENERAL CONSTRUCTION <		ENSE-DS-	-2031-R00	TATA POWER	Date of Issue: 11/01/2024
 5.0 GENERAL CONSTRUCTION 5.0 CENERAL CONSTRUCTION <			section of	or pressed and shaped Cold	
 type with canopy of adequate slope to avoid water accumulation. Degree of protection shall be IP 54. Breaker compartment and fuse compartment should be separated by metalli sheet; the same should be split suitably in order to avoid local heating due to edd currents generated by three phase bus bars crossing through the same sheet. Th breaker compartment should be in center of panel & Outgoings shall be on bot the sides of breaker compartment. The panel shall be of dust and vermin proof construction and of self-cooled desig with adequate louvers on sides and top portion. The louvers shall have fine wir mesh made of brass. The minimum depth of panel shall be 900 mm. Labels on the front and rear indicating the panel designation, phase marking an danger signs shall be provided. Single Line Diagram & feeder details shall b engraved and pasted on inside of panel. Danger boards shall be provided in local languages on the Hylam sheet below breaker and on front & rear cover with red background and with white letters. Hinged doors of lift off type, with concealed type with brass type hinges an captive screws shall be provided and should be durable and easy in operation. A doors shall be provided to the earth terminal with 2.5 Sq.mm braide copper wires. Cable entry facilities at bottom of panel and removable gland plates of siz suitable to accommodate incoming & outgoing cables of sizes, 4 Core 300 Sq mr 1.1 KV XLPE Cable, shall be provided at required locations. 			levelled thickness Gland pl than 3 m removal	and free from flaws. Doors a not less than 2.5mm. Stiffe ates shall be of Hot Rolled (m. alternatively gland can a	and cover shall be made of CRCA sheet of ners shall be provided, wherever necessary. Closed Annealed (HRCA) thickness not less so be provided between two angles so that
 5.0 GENERAL CONSTRUCTION 5.0 GENERAL CONSTRUCTION 5.0 GENERAL CONSTRUCTION 5.0 GENERAL CONSTRUCTION 5.0 CADE DE D			type with	n canopy of adequate slope	and outdoor type, support frame mounted to avoid water accumulation. Degree of
 5.0 GENERAL CONSTRUCTION 6) Labels on the front and rear indicating the panel designation, phase marking an danger signs shall be provided. Single Line Diagram & feeder details shall be engraved and pasted on inside of panel. 7) Danger boards shall be provided in local languages on the Hylam sheet below breaker and on front & rear cover with red background and with white letters. 8) Hinged doors of lift off type, with concealed type with brass type hinges an captive screws shall be provided and should be durable and easy in operation. A doors shall be provided with padlocking facility. The design of doors should perminter-changeability. The back-side doors shall have nut and bolt arrangement. A Hinged doors shall be connected to the earth terminal with 2.5 Sq.mm braide copper wires. 9) Cable entry facilities at bottom of panel and removable gland plates of siz suitable to accommodate incoming & outgoing cables of sizes, 4 Core 300 Sq mr 1.1 KV XLPE Cable, shall be provided at required locations. 			sheet; th currents breaker	e same should be split suitab generated by three phase bu compartment should be in ce	ly in order to avoid local heating due to eddy s bars crossing through the same sheet. The
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 breaker and on front & rear cover with red background and with white letters. 8) Hinged doors of lift off type, with concealed type with brass type hinges an captive screws shall be provided on the front side & Back side. Adequate number of door hinges shall be provided and should be durable and easy in operation. A doors shall be provided with padlocking facility. The design of doors should perminter-changeability. The back-side doors shall have nut and bolt arrangement. A Hinged doors shall be connected to the earth terminal with 2.5 Sq.mm braide copper wires. 9) Cable entry facilities at bottom of panel and removable gland plates of siz suitable to accommodate incoming & outgoing cables of sizes, 4 Core 300 Sq mr 1.1 KV XLPE Cable, shall be provided at required locations. 	5.0		danger s	igns shall be provided. Sing	gle Line Diagram & feeder details shall be
 captive screws shall be provided on the front side & Back side. Adequate number of door hinges shall be provided and should be durable and easy in operation. A doors shall be provided with padlocking facility. The design of doors should perminter-changeability. The back-side doors shall have nut and bolt arrangement. A Hinged doors shall be connected to the earth terminal with 2.5 Sq.mm braide copper wires. 9) Cable entry facilities at bottom of panel and removable gland plates of siz suitable to accommodate incoming & outgoing cables of sizes, 4 Core 300 Sq mr 1.1 KV XLPE Cable, shall be provided at required locations. 					
suitable to accommodate incoming & outgoing cables of sizes, 4 Core 300 Sq mr 1.1 KV XLPE Cable, shall be provided at required locations.			captive s of door h doors sh inter-cha Hinged o	crews shall be provided on the inges shall be provided and all be provided with padlocking ngeability. The back-side dow loors shall be connected to	e front side & Back side. Adequate numbers should be durable and easy in operation. All ng facility. The design of doors should permit ors shall have nut and bolt arrangement. All
10) Distance between Gland plate and cable termination of Air Circuit Breaker shoul		$\langle \rangle$	suitable t	o accommodate incoming &	outgoing cables of sizes, 4 Core 300 Sq mm
be minimum 600mm.					ble termination of Air Circuit Breaker should
11) The panel shall be provided with gasket all around the perimeter of covers, glan plates, removable covers and doors.					ket all around the perimeter of covers, gland
12) ACB termination shall be with tinned copper or tinned aluminium Bus Bar. Wherever required bimetallic washer to be provide, if bare copper terminal is provided.			Whereve	r required bimetallic washer t	

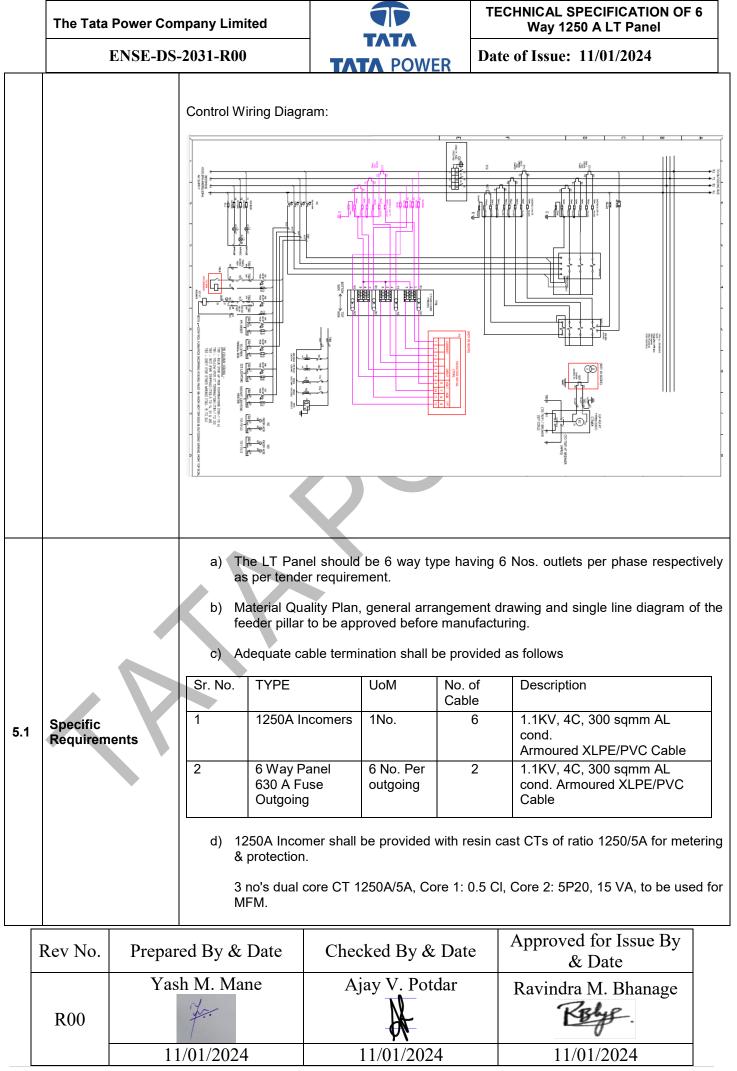
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	1 sec and s short time cu bars, bus tap	hall have adequate cross urrent. Main Bus bar shoul	elite shrouding, rated for 1250 A, 50 kA for section to carry the rated continuous and d be continuous/ without any joint. All bus aped. Neutral bus bar shall be provided on
	without any to be prov	microprocessor protection ided for tripping the b	ted fixed type 3 Pole with shunt trip coil on release. Ashida make (ADR41S) relay reaker with Overcurrent & earth faut hunt trip should be provided.
	,	all be of the HRC cartridge spective current of not less	type mounted on plug-in type fuse bases than 80 kA.
		ase clearance of 25mm a be provided in the panel.	nd Phase to Neutral / Earth clearance of
			ould be minimum 150 mm between each utlet and body of panel to be maintained.
	18) The panel s earth bus.	hall be provided with two	separate earthing terminals connected to
	insulated 2.		the earth terminal using 650V grade PVC copper earthing conductor. All Earthing dy of panel.
	with the help		s shall be connected to the earth terminal, ors of adequate size. Flat earth bus should nal earth
	21) Eyebolt of su	uitable sizes shall be provide	ed for lifting arrangements.
		all be carried out with 650 of adequate sizes to suit the	0V grade PVC insulated stranded copper rated circuit current.
	23) The panel sh	nall be powder coated with l	ight shade grade no 631 of IS 5.
	24) Required nu	mber of foundation bolts sha	all be supplied with the panel.
	25) Control fuse breaker char		external cable connections shall be in the
	ُa. Stud	erminals shall be as follows type with disconnecting fac type for voltage and other	cilities for CT circuits
		shall have adequate contant no local heating takes place	act surface with the bus bars provided to
	28) Lighting Syst	tem in Feeder Pillar should	be LED based.

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		1 n pro e) All pro f) Sec cop	o single tection. CT termi vided. (A: condary v per cond	core CT 125 nation should s per SLD) viring shall b	50A/5A, 5P d be round e carried c Sq. mm for	20, 1 plug out wi CT c	type. No CT short th 1.1KV grade P	Energy metering. for neutral unbal ing arrangement t VC insulated strat , mm for PT and o	to b nde
		Sr. No.	Equipm	ent	Colour	Non	nenclature of TBs	Types of TBs	
		1.	TBs of 4 Termina	4 Pole MCB ation	Blue	TB2	2	Droppable	
		2.	TBs for Termina		Yellow	тв1		Droppable	
		3.	TBs for	Tripping	Red	ТВ2	2	Droppable	
		4.	All othe	rs	Default	TB2	2	Normal	
		(4S Inco not be and Met	F), 50 A oming fro be any p single do I Fuses	to be provide om the bottor partition betw por compartm (PT second poection glass	ed and the n side and een Relay nent. No lu ary). Sealii	conve outge & me gs sh ng ar	ention of the wiring bing to Meter from etering box in LV of all be provided fo rangement to be	onnection, Screw g in the TTB shoul n top side. There compartment. It sh r wires to meter, provided for En s) to be provided	ld b mu: noul TTE nerg
		i) All I	Protectio	n/ control wiri	ng must ter	minat	te in LV compartm	ent.	
 j) Provision to be provided for mounting the energy meter with max dimensions as L x B x D: 360 x 200 x 200 mm (Energy meter will be supplied by TPC). The relay and energy meter shall be installed in the breaker compartment with suitable partitions. The relays shall be supplied by the vendor. 									
		hea		thermostat,				ti condensation s A metal clad gen	
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R00	Yasl	n M. Man	e	Ajay	V. Potda	r		M. Bhanage	
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		for pure	hasei ving s Phas	's use shall be provided be ingle pole MCB with neutra se and neutral for 230V sup	efore the al links (pply to F	, RMU. (6A)	
			Phas Phas Sepa	se and neutral for external se and neutral for FPI reset	shunt tr t (6A) / wired substati Socket	for Auxiliary supply for LT pane on lighting (6A) (15A)/ Heater circuit	el f
	 m) The following separate control fuses with neutral links duly wired out to a set of study type link terminals for purchaser's use shall be provided before the circuit breaker feeder pillars Control fuse Incoming wiring must be from bottom side & Outgoing wiring from top side. (refer SLD): Three phase and neutral for metering circuit. Three Phase and neutral for indication lamp 			ker			
						mpers to be provided for all the d ovided on body side and cover plate	
				ious bought out items shall		-	
			ems			ed Make	
			СВ		Eaton	der/ L&T/ Siemens/ C&S/ ABB/	
		2. 0	т		Reco/N	lewtek/Pragati/Kappa/ECS/Adcon	
 p) Flexible copper braiding should be provided on the doors. Neutral bus shall connected with earth bus. All control cable should be multi stranded and FRLS. CT should be less than or equal to 5. Close and Open status of the breaker should available on SCADA through spare auxiliary contact and on LT panel through Lamp. q) The fuses provide should be of knife type and same should be removable with the h of fuse puller. There shall be no obstruction during removal of outgoing fuses by f 				T IS Id k LE			
		puller.					
			•	cking facility to be provided um width in mm: 900 mm	a for put	ting three nos. of safety locks.	
t) The breaker manufacturer to provide the complete support in terms of training; hand holding to our Testing and O&M staff. The breaker manufacturer to give the support service for next 10 years.							
u) The robust isolating arrangement in the OG fuse compartment to be made as per the							
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		 6.1 Name plate- On f 1) Purchaser name & 2) Manufacturer name 3) Month / year of ma 4) 'Property of Tata F 	ie anufacturing	ving		
6.0	NAME PLATE AND MARKING			, on riveted AI label veted on doors- White colour background		
		6.4 SLD shall be eng	raved & pasted on inside o	f door.		
		6.5 CT Serial Nos., F	Ratio & ACB Serial Nos. to b	be written on doors with marker pen.		
		6.6 Separate metallic clear font as shown i		er Logo of Dimension 12*12 Inches in		
7.0	TESTS	IS/IEC. Following test others specified in IS	sts shall be necessarily cor /IEC standards.	arried out in accordance with the relevant inducted on the 'Feeder Pillar' in addition to ular, the stricter requirement mentioned in		
		the relevant standard shall be valid.				
7.1	Type test	 Type test - Only type tested components – ACBs, Fuses, Insulators & aluminium bus bar shall be accepted. Following type test shall be carried out on the assembly. a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 d) Verification of continuity of the protective circuit – Clause 8.2.4 of IS 8623 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of mechanical operation – Clause 8.2.6 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623 				
7.2	Provide a structure Acceptance & routing a structure Acceptance & routing a structure Assurance Plan) 1) Visual inspection 2) Bill of material c 2) Bill of material c 3) Insulation resistat 4) High voltage test 5) Operational che 6) Verification of di 7) Tolerances on p 8) No negative tole 9) Stability test sh		dimension checks & paint t eck ce test ectric properties nel dimensions- Maximum + ince on bus bar dimensions	-/- 5mm s & bus bar clearances els, to ensure there shall be no tripping in		
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7.3	Acceptance test	 Visual inspection & dimensional check Verification of clearance and creepage distance Paint thickness check Wiring checks Insulation resistance test HV test Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (B to arrange for the same, either in factory or in external lab) 			
8.0	TYPE TEST CERTIFICATE	The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER.			
9.0	PRE-DISPATCH INSPECTION	The Material shall be subject to inspection by a duly authorized representative of the TATA POWER COMPANY. Inspection may be made at any stage of manufacture at the discretion of the Purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall always grant free access to the places of manufacture to TATA POWER COMPANY 's representatives when the work is in progress. Inspection by the TATA POWER COMPANY or its authorized representatives shall not relieve the Bidder of his obligation of furnishing equipment in accordance with the specifications. TATA POWER COMPANY authorized representatives shall have the right to inspect the design, materials and workmanship and to report thereon, at any stage of manufacture, if found necessary. All facilities shall be extended to our representatives for witnessing the tests. Due notice shall be given to us to enable us to depute our representatives for stage inspection. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TATA POWER COMPANY. Five certified copies of all test certificates including type tests, sample test certificates shall be sent to us for our approval prior to dispatch of materials. Pollowing documents shall be sent along with material a) Test reports b) MDCC issued by TATA POWER COMPANY c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Delivery Challan g) Other Documents (as applicable).			

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	INSPECTION AFTER RECEIPT AT STORE	The material received at TPC, Mumbai store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection or any other parameters observed after delivery. The material should be delivered at TPC, Mumbai stores within 45 days from the date of			
10.0		manufacturing, same shall be checked during delivery and overdue material shall not be accepted. Bidders to plan the delivery accordingly.Bidders to attend and rectify the same at his own cost. The material shall be accepted in stores only after rectification of any observed flaw. The delay in rectification shall lead to any contractual penalty.			
		Billing shall be proce	ssed only after acceptance	of the material.	
	GUARANTEE	 Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a period of at least 12 months from the date of commissioning or 24 months from the date of last supplies made under the contract whichever is later, (the time scale of 12/24 months could be 			
11.0		 enhanced subject to mutual agreements) Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Purchaser, failing which the TATA POWER COMPANY will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the Purchaser's own charges (@ 20% of expenses incurred), from the Bidder or from the " Security cum Performance Deposit" as the case may be. In case of GP failure, BA shall report at site within 48 hours from intimation and arrange for 			
		rectification of fault within a mutually agreed time. In case rectification at site is not possible then alternative arrangement (replacement) to be made by BA within 15 days of intimation of failure.			
		Bidder shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Purchaser.			
12.0	PACKING AND TRANSPORT	rail/road transport in 1) Packing prot transportatio 2) Packing iden	a manner so as to protect tl ection- Against shocks, vibr n tification labels, to show pu	this specification shall be packaged for ne equipment from damage in transit. ation & corrosion, damages during rchaser name, PO number, quantity of	
12.0		 Handling inst 4) Bidders shou packing. No single use 	e plastic to be used.		
13.0	TENDER SAMPLE	Not Applicable			

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14.0	QUALITY CONTROL	The Bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. TATA POWER COMPANY shall reserve the sole rights for the type test of a random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have free access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidder is liable to perform the same without cost implication.			
15.0	MINIMUM TESTING FACILITIES	Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards and as specified above.			
16.0	MANUFACTURING ACTIVITIES	The successful bidder will have to submit first GTP & Drawing with 7 days from placement of outline agreement for approval and complete the approval process within 14 days of outline agreement. The date of Code -2/ Code-1 approval given by TATA Power will be treated as first day for assessment of LD (if applicable).			
17.0	SPARES, ACCESSORIES, AND TOOLS	Keys of door			
18.0	DRAWING AND DOCUMENTS	 Following drawings and documents shall be prepared based on TATA POWER COMPANY specifications and statutory requirements and shall be submitted with the bid. All the documents & drawings shall be in English language a) Completely filled in Technical Particulars b) General description of the equipment and all components including brochures. c) General arrangement drawing. d) Bill of material e) Experience List f) Type test certificates 			
19.0	SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS		r all above requirement of s ical compliance document.	specifications clauses & submit signed and	

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20.0	ENSE-DS	The bidders shall se schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from th	et out all deviations from the becifically mentioned in this er's specifications. WITH THE BID) this specification shall be se s specifically mentioned in t	Date of Issue: 11/01/2024 his specification, Clause by Clause in this schedule, the tender shall be deemed to at out by the bidders, clause by Clause in this Schedule, the tender shall be deemed Details of deviation with justifications
		We confirm that there Seal of the Company	e are no deviations apart fro v Sign	om those detailed above. ature :
			-	signation :

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Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

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Annexure – 2

Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.

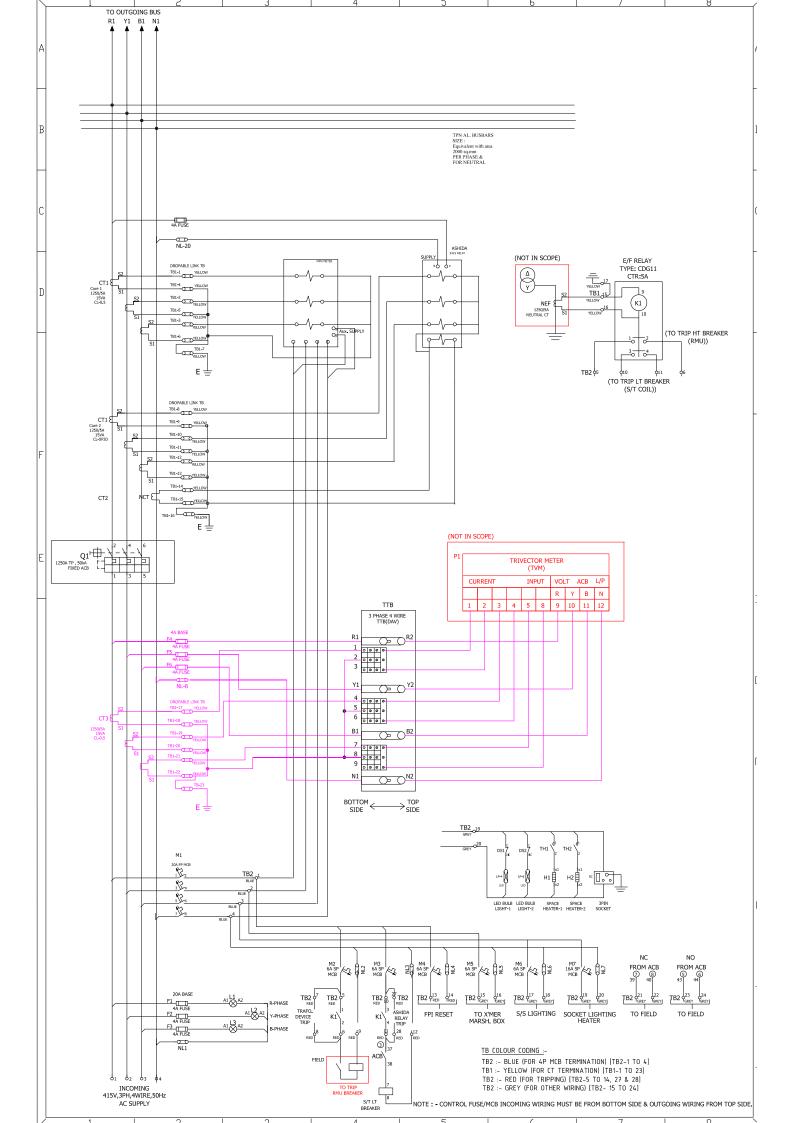


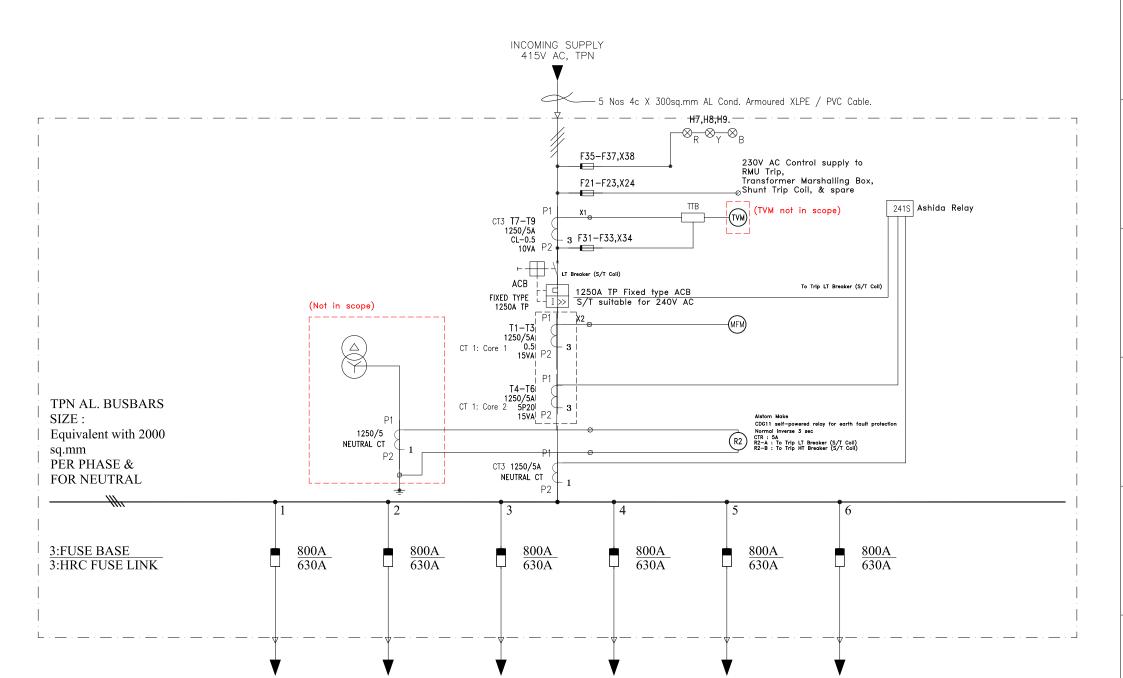
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The Tata Power Company Limited		TECHNICAL SPECIFICATION OF 6 Way 1250 A LT Panel	
ENSE-DS-2031-R00	TATA TATA POWER	Date of Issue: 11/01/2024	
Annexure – 3			

Reference drawings

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SHEET NO. 01 OF 01 ENSE-DS-2032-R00



Date of Issue: 03/01/2024

TECHNICAL SPECIFICATION

6 Way 2000 A LT Panel

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra The Tata Power Company Limited

ENSE-DS-2032-R00



Date of Issue: 11/01/2024

TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2032-R00

Document Title: Technical SPECIFICATION OF 6 Way 2000 A LT Panels

				1		1		
R00	ENSE-DS- 2032-R00 (For Tendering Purpose)	11/01/2024	YMM	Y.	AVP	X	RMB	Reye.
R2	SPEC-NET- Feeder Pillar- 2000A	14/7/17	ND	-sd-	SBK	-sd-	скс	-sd-
R1	SPEC-NET- Feeder Pillar- 2000A	13/10/16	ND	-sd-	SBK	-sd-	скс	-sd-
R0	SPEC-NET- Feeder Pillar- 2000A	10/06/16	AP	-sd-	SBK	-sd-	СКС	-sd-
Rev			Initials	Sign	Initials	Sign	Initials	Sign
No.	Remarks	Date	Prepa	ared By	Review	ed By	Approved	d & Issued By

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	ENSE-DS-2032-R00	TATA TATA POWER	Date of Issue: 11/01/2024	
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The Tata Power Company Limited

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ENSE-DS-2032-R00 TATA POWER

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TECHNICAL SPECIFICATION OF 6 Way 2000 A LT Panel

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Date of Issue: 11/01/2024

1.0	SCOPE	 This specification covers design, engineering, manufacture; shop testing, inspection, painting, packing, and supply of 415V, 2000 A LT Panel with 6 no Outgoing Feeders complete with all accessories for efficient and trouble-free operation of the distribution network for Tata Power Company Limited at Mumbai. It is not our intent to specify completely herein all details of design and construction of the equipment. However, the equipment shall conform in all respects to high standards of Engineering design and workmanship and shall be capable of performing in a manner acceptable to the purchaser (TPC) who will interpret the meaning of drawings and specification and shall be entitled to reject any work or material which in his judgement is not in full accordance therewith. All the bought-out items shall be of reputed make and shall be subject to approval by the PURCHASER (TPC) after award of contract. 		
2.0	APPLICABLE STANDARDS	all amer 1 2 3 4 5 6 7 8 9 10 11 In case	Title IS 8623 IS 12063/ IEC 60529 IS 5 IS 5082 IS 2705 IS 2551 IS 13703-2 IEC 255 IEC 801 IEC 60947-2 /IS 13947-2 IEC 60269 e of any conflict on an	his specification and latest revision of following codes with Indian standard Specification for low voltage switchgear Classification of degrees of protection provided by Enclosures of Electrical equipment Color of ready mixed paints Wrought Aluminium & AI alloy plates & sheets for electrical application Current Transformers Danger Notice plates Low voltage fuses for voltage not exceeding 1000 V AC or 1500 V DC. Part 2 Fuses for use by authorized persons Protection Relays Control and monitoring Low Voltage Fuses y technical particular in the specification, the stricter event standard shall be valid.

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	ENSE-DS-2032-R00		TATA POWER	Date of Issue: 11/01/2024	
3.0	CLIMATIC CONDITIONS OF THE INSTALLATION	2M3M4M5M6A7A8A9R10A11AAtmospheredsubjected	Aax. Daily a Ain Ambien Aaximum F Ainimum R Average N Average An Average An Average An Average An Average Air Atitude abc Average Air Are is gener to fog in d	ve MSL not exceeding Pressure ally laden with mild acid a cold months. The design c	43 deg.C 35 deg.C 07 deg.C 100% 40% 50 2380mm 115 June to Oct. 300 meters 29.6-inch Hg nd dust suspended during dry months and of the equipment and accessories shall being to an acceleration of 0.1g.
		Sr. No	1	tem Description	Tata Power Requirement
					Name
		1 Manufac		ıfacturer	Manufacturer Address
					Contact telephone no
		Br	Breaker	Rating (ACB)	2000A Manual Fixed Type without any microprocessor relay. 230V AC Shunt tripping coil to be provided.
		2	Model of	ACB	The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)
4.0	GENERAL TECHNICAL		Approved	l Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton
	REQUIREMENTS		Main bus	s bar rating	2000 A
		3	Bus bar Neutral	Size for Phase &	3000 sq.mm for Phase & Neutral
			Earth Bu	s	1 x 50 x 10 mm Gl
		4	Type of I	nstallation	Indoor / Outdoor Type
		5	No of Inc	coming feeders	Qnty -1no. of 2000A ACB with 7 Nos of 4CX300 sq.mm Al Ar XLPE cables
		6	No of ou	tgoing feeders (6 Way)	Quantity - 6 Nos of 630A each with 2 nos of 4CX300 sq.mm Al Ar XLPE cables per O/G
		7	Panel co	nstruction	CRCA sheet steel of thickness 3 mm

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		8	Panel er	nclosure class	IP54 - ingress protection	
		9	Sheet st	eel thickness	Doors & Covers - 2.5mm, FRAME - 3mm	
		10	Door typ access	e for front & rear	Double door with rear door bolted	
		11	Door hin	ges	Minimum three anti-theft type hinges self-locking type	
		12	Padlocki	ng facility	For front door	
		13	Master k	ey for all doors	Identical for all panels, 1 no./ panel to be provided	
		14	Hardware	e & Fasteners	All Nuts, Bolts, Washers shall be Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.	
		14a	Current (Carrying part hardware	Each bolt on Bus Bar and Fuse terminal shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided	
			Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082	
		15	Bus bar O/G	size in mm for 2000 A	3000 sq.mm for Phase & Neutral	
			2000A A	CB Incoming	3000 sq.mm for Phase & Neutral	
			ACB O/O	GLINKS	3000 sq.mm for Phase & Neutral (Dimensions as per feasibility with Breaker palm connection)	
		16	Bus bar neutral	color coding for R, Y, B &	Heat shrinkable sleeves with color Red, Yellow, Blue & Black respectively	
		16 a	Bus Bar	Heat shrinkable sleeves	Cross-linked Polyolefin (Bidder to specify thickness)	
		17		s bar short circuit d capacity	Above 50kA for 1 sec	
		18	Permissi	ible maximum ture rise above ambient	Busbar: 45 deg C	
				ible maximum ture rise above ambient	Terminals: 65 deg C	
		19	Bus bar	support insulators	As per IS13410 SMC / DMC, 1100V grade	
		20	Incoming	g Cable Size	4C 300 Sq.mm AI Ar XLPE	
		21	Outgoing	g Cable Size	4C 300 Sq.mm Al Ar XLPE	

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			22	Gland pl	ate at panel bottom	HRCA MS 3mm thickness
			23	Cable te	rmination clearance	600 mm minimum from gland plate & ACB
				Fuse Ba	se	800 A
			24	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABE
				Fuses (6	630 A)	HRC plug-in type gG (General Purpose, Fast acting fuse)
			25	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller /Bussmann / ABE
		26	CT's for Feeder	2000A Incoming	 7 Nos. Single resin cast. a) 3 nos dual core CT's of ratio 2000/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay b) 3 nos single core CTs of ratio 2000/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) c) 1 no single core CT of ratio 2000/5A, 5P20 & 15 VA for Neutral unbalance protection Approved Make of CTs: Reco/Newtek/Pragati/Kappa/ECS/Adcon 	
			27	TTB for	Metering	Front connection, Screw Type 3 Phase 4 Wire, 4SF, 50 A, DAV/IMP make
			28	Wiring c	onvention for TTB	Incoming from Bottom Side & Outgoing to Meter from Top side
			29	Multifund	ction Digital meter	Should be communicable on Modbus RS 485
	$\boldsymbol{\lambda}$	V	30	Earth Fa	ult protection relay (NEF)	Alstom make CDG11 self-powered. Relay type is normal inverse with 3 Sec with E/F setting of 0.5 to 2 A
		31 Ea		Earthing	Hardware	 a) Earthing Nut and Bolt shall be M12 SS b) Washers shall be with Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating.
		31a	Panel Ea	arthing	Earthing provision to be provided on both sides with 50 mm extension of main Earth Bus Bar.	
		32	Clearand parts	ce between live	Phase - phase -Minimum 25 mm & Phase - earth - Minimum 20 mm	
		33	Distance outlet	e between each fuse	Centre to Centre - 150mm (Minimum)	
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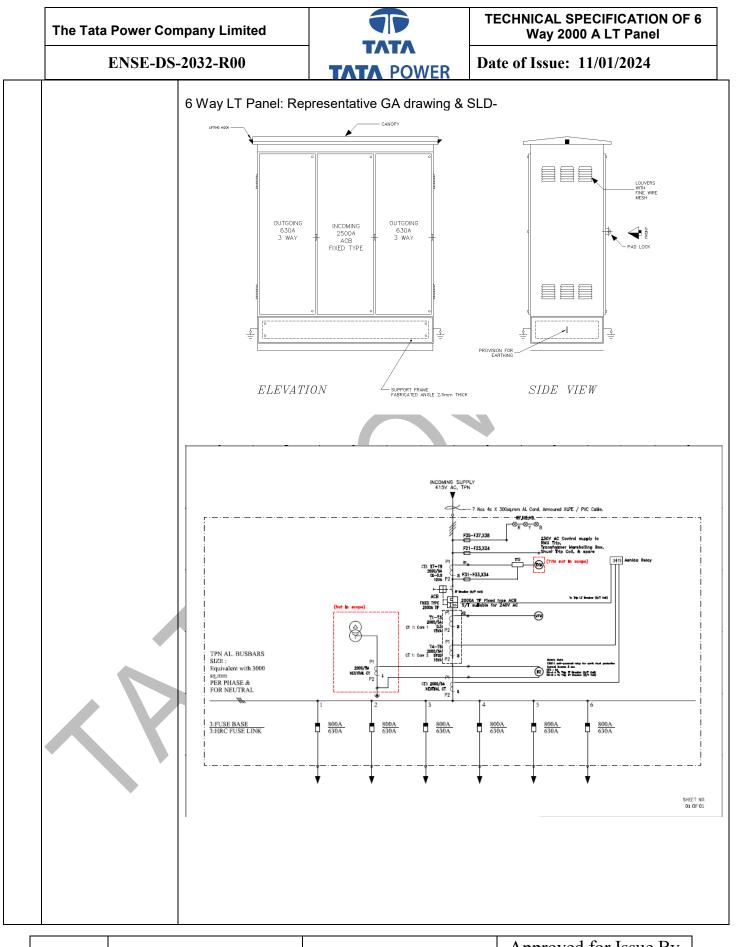
ŀ	The Tata I	Power Com	pany Limit	ed		TECHNICAL SPECIFICATION OF 6 Way 2000 A LT Panel
	F	ENSE-DS-2	2032-R00		TATA POWER	Date of Issue: 11/01/2024
			34	Distance panel su	e between fuse outlet &	125 mm (Minimum)
			35		erminals for CTs	Stud type with disconnecting facilities
			36	Control t	terminals for Voltage &	Stud type
			37	Illuminati	ion and Indicating Bulb	LED
			38	Continuo voltage	ous rated operating	440 volt +/- 10%
			39	-	tage withstand capacity	2000 volt at 50 Hz for 1minute
			40	Insulatio & ph-ear	n resistance ph-ph rth	Minimum 10MOhm with 500V Megger
			41	•	a name plates	As per Specifications
			42	Surface	preparation for painting	Sand blasting or 7 tank process
			43	Painting		Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron
			44	Power S	Supply Socket	5A/15A Plug point socket to be provided
			45	Breaker	Barrier	Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.
		46	Branding	g Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power on the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches. * Refer Annexure 2	
	\frown		47	Panel Di 900 mm	imensions (Min depth of)	LXDXH
			48	Numeric	al Relay	Ashida (ADR 241S) with 4 Element
			49		phase barriers/ Phase ors (R-Y & Y-B)	FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus-bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)
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		1)		ressed and shaped Cold F	cated using suitable mild steel structural Rolled Closed Annealed (CRCA) sheet of
		2)	levelled and thickness no Gland plates than 3 mm.	free from flaws. Doors an t less than 2.5mm. Stiffene shall be of Hot Rolled Clo alternatively gland can also	neet of thickness 3mm, smoothly finished, d cover shall be made of CRCA sheet of ers shall be provided, wherever necessary. osed Annealed (HRCA) thickness not less o be provided between two angles so that n of base frame should be 75mm X 40mm
		3)		anopy of adequate slope	and outdoor type, support frame mounted to avoid water accumulation. Degree of
		4)	sheet; the sa currents gene breaker com	me should be split suitably erated by three phase bus l	artment should be separated by metallic in order to avoid local heating due to eddy bars crossing through the same sheet. The ter of panel & Outgoings shall be on both
		5)	with adequat	e louvers on sides and top	roof construction and of self-cooled design o portion. The louvers shall have fine wire th of panel shall be 900 mm.
5.0	GENERAL CONSTRUCTION	6)	danger signs		the panel designation, phase marking and e Line Diagram & feeder details shall be
		7)			cal languages on the Hylam sheet below ed background and with white letters.
		8)	captive screw of door hinge doors shall b inter-change	vs shall be provided on the es shall be provided and sh e provided with padlocking ability. The back-side doors s shall be connected to th	acealed type with brass type hinges and front side & Back side. Adequate numbers would be durable and easy in operation. All facility. The design of doors should permit s shall have nut and bolt arrangement. All he earth terminal with 2.5 Sq.mm braided
	$\langle \rangle$	9)	suitable to a		nel and removable gland plates of size Itgoing cables of sizes, 4 Core 300 Sq mm t required locations.
		10)	Distance bet be minimum		e termination of Air Circuit Breaker should
		11)		nall be provided with gaske vable covers and doors.	t all around the perimeter of covers, gland
		12)			oper or tinned aluminium Bus Bar. be provide, if bare copper terminal is

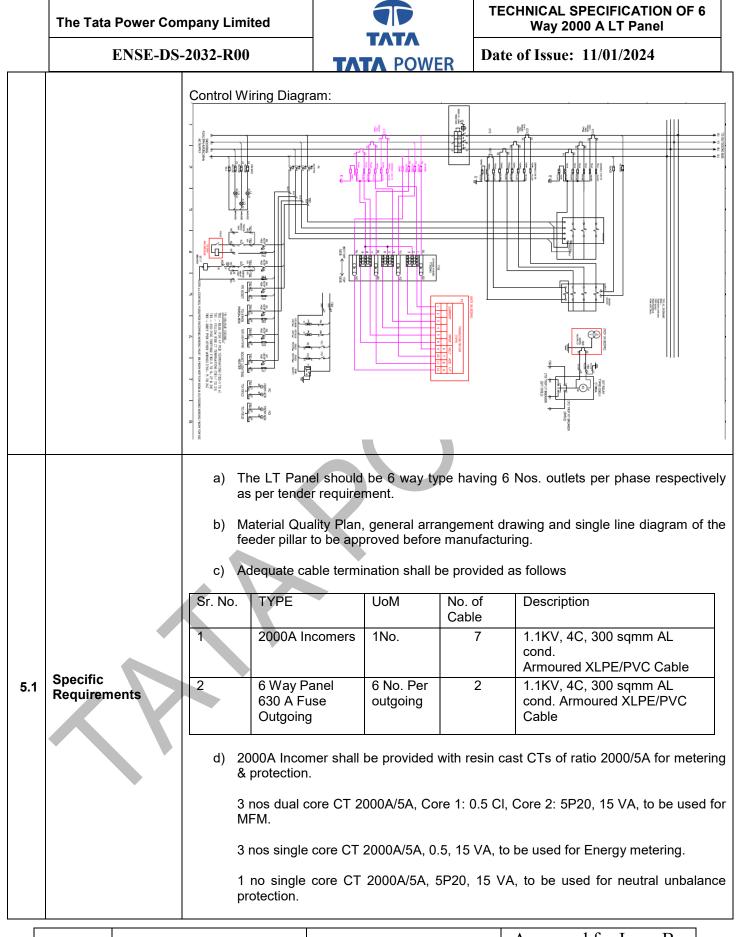
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	1 sec and s short time cu bars, bus tap	hall have adequate cross : urrent. Main Bus bar should	elite shrouding, rated for 2000 A, 50 kA for section to carry the rated continuous and d be continuous/ without any joint. All bus aped. Neutral bus bar shall be provided on
	without any to be prov	microprocessor protection ided for tripping the bit	ted fixed type 3 Pole with shunt trip coil on release. Ashida make (ADR41S) relay reaker with Overcurrent & earth faut nunt trip should be provided.
		all be of the HRC cartridge spective current of not less	type mounted on plug-in type fuse bases than 80 kA.
		ase clearance of 25mm a be provided in the panel.	nd Phase to Neutral / Earth clearance of
			ould be minimum 150 mm between each utlet and body of panel to be maintained.
	18) The panel s earth bus.	hall be provided with two	separate earthing terminals connected to
	insulated 2.5		he earth terminal using 650V grade PVC copper earthing conductor. All Earthing dy of panel.
	with the help		shall be connected to the earth terminal, ors of adequate size. Flat earth bus should nal earth
	21) Eyebolt of su	iitable sizes shall be provide	ed for lifting arrangements.
	, .	all be carried out with 650 f adequate sizes to suit the	OV grade PVC insulated stranded copper rated circuit current.
	23) The panel sh	all be powder coated with li	ght shade grade no 631 of IS 5.
	24) Required nur	mber of foundation bolts sha	all be supplied with the panel.
X X	25) Control fuses breaker chan		external cable connections shall be in the
	a. Stud	erminals shall be as follows type with disconnecting fac type for voltage and other o	ilities for CT circuits
		shall have adequate conta no local heating takes place	act surface with the bus bars provided to
	28) Lighting Syst	em in Feeder Pillar should l	be LED based.

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e) All CT termination should be round plug type. No CT shorting arrangement to be provided. (As per SLD) Secondary wiring shall be carried out with 1.1KV grade PVC insulated stranded f) copper conductor of 2.5 Sq. mm for CT circuits and 2.5 Sq. mm for PT and other circuits. All wires will be colour coded. Sr. No. Color Equipment Nomenclature of TBs Types of TBs TBs of 4 Pole MCB Blue TB2 Droppable 1. Termination 2. TBs for CT Yellow TB1 Droppable Termination 3. TBs for Tripping Red TB2 Droppable 4. All others Default TB2 Normal g) The feeder pillar panel shall be provided with Alstom Make CDG11 self-powered relay for earth fault protection. The relay type is normal inverse with 3 sec with E/F setting of 0.5 to 2 A. h) Test terminal box for Energy Metering should be Front Connection, Screw Type (4SF), 50 A to be provided and the convention of the wiring in the TTB should be Incoming from the bottom side and outgoing to Meter from top side. There must not be any partition between Relay & metering box in LV compartment. It should be single door compartment. No lugs shall be provided for wires to meter, TTB, and Fuses (PT secondary). Sealing arrangement to be provided for Energy Meters. Inspection glass (Transparent Toughened Glass) to be provided for viewing of meter. All Protection/ control wiring must terminate in LV compartment. i) Provision to be provided for mounting the energy meter with max dimensions as L i) x B x D: 360 x 200 x 200 mm (Energy meter will be supplied by TPC). The relay and energy meter shall be installed in the breaker compartment with suitable partitions. The relays shall be supplied by the vendor. The LT panel shall be equipped with shrouded type anti condensation space heaters with thermostat, internal light with switch & 5A/15A metal clad generalpurpose plug socket. I) The following separate control circuit 20A, 4 pole MCB duly wired up to terminal block for purchaser's use shall be provided before the circuit breaker in feeder pillars leading to following single pole MCB with neutral links (refer SLD): Phase and neutral for 230V supply to RMU. (6A) Phase and neutral for 230V supply to Transformer marshalling box. (6A) Phase and neutral for external shunt trip coil (6A) Phase and neutral for FPI reset (6A) Separate 16A, DP MCB duly wired for Auxiliary supply for LT panel for following purpose, Phase and neutral for substation lighting (6A) Phase and neutral for Socket (15A)/ Heater circuit Phase and neutral for Ashida overcurrent relay (4A) Approved for Issue By Rev No. Prepared By & Date Checked By & Date & Date Yash M. Mane Ajay V. Potdar Ravindra M. Bhanage

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ENSE-DS-2032-R00 Date of Issue: 11/01/2024 m) The following separate control fuses with neutral links duly wired out to a s stud type link terminals for purchaser's use shall be provided before the c breaker in feeder pillars Control fuse Incoming wiring must be from bottom si Outgoing wiring from top side. (refer SLD): Three phase and neutral for metering circuit. Three Phase and neutral for indication lamp n) Locking should be of welded type. Earthing jumpers to be provided on body side cover plate. o) Makes of various bought out items shall be limited to the following: Sr. No. Items Approved Make 1 ACB Schneider/L&T/Siemens/C&S/ABB/Eaton 2. CT Reco/Newtek/Pragati/Kappa/ECS/Adcon p) Flexible copper braiding should be provided on the doors. Neutral bus shal connected with earth bus. All control cable should be multi stranded and FRLS ISF should be less than or equal to 5. Close and Open status of the bre should be available on SCADA through spare auxiliary contact and on LT p through LED Lamp. q) The fuses provide should be of knife type and same should be removable with help of fuse puller. There shall be no obstruction during removal of outgoing for the provide should be not be fused be removable with help of fuse puller. There shall be no obstruction during removal of outgoing for the provide should be not be fused be removable with help of fuse puller.
stud type link terminals for purchaser's use shall be provided before the corrected in feeder pillars Control fuse Incoming wiring must be from bottom site Outgoing wiring from top side. (refer SLD): Three phase and neutral for metering circuit. Three Phase and neutral for indication lamp n) Locking should be of welded type. Earthing jumpers to be provided for all doors. Louvers with stainless steel wire mesh to be provided on body side cover plate. o) Makes of various bought out items shall be limited to the following: Sr. No. Items Approved Make 1 ACB Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton CT Reco/Newtek/Pragati/Kappa/ECS/Adcon p) Flexible copper braiding should be provided on the doors. Neutral bus shal connected with earth bus. All control cable should be multi stranded and FRLS ISF should be less than or equal to 5. Close and Open status of the bre should be available on SCADA through spare auxiliary contact and on LT p through LED Lamp. q) The fuses provide should be of knife type and same should be removable witt
 r) The safety locking facility to be provided for putting three nos. of safety locks. s) Panel minimum width in mm: 900 mm t) The breaker manufacturer to provide the complete support in terms of trai hand holding to our Testing and O&M staff. The breaker manufacturer to give support service for next 10 years. u) The robust isolating arrangement in the OG fuse compartment to be made.

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		 6.1 Name plate- On f 1) Purchaser name & 2) Manufacturer nam 3) Month / year of ma 4) 'Property of Tata F 	ne anufacturing	ring
6.0	NAME PLATE AND MARKING	6.3 Danger board in	l earth stud- Black letter 'E', English &local language, riv 1.6mm thick Al plate.	on riveted AI label veted on doors- White colour background
		6.4 SLD shall be eng	raved & pasted on inside of	f door.
		6.5 CT Serial Nos., F	Ratio & ACB Serial Nos. to b	be written on doors with marker pen.
		6.6 Separate metallic clear font as shown i	-	er Logo of Dimension 12*12 Inches in
7.0	TESTS		sts shall be necessarily cor	arried out in accordance with the relevant nducted on the 'Feeder Pillar' in addition to
*In case of any conflict on any technical particular, the stricter re the relevant standard shall be valid.				ular, the stricter requirement mentioned in
			e tested components – ACB ollowing type test shall be c	s, Fuses, Insulators & aluminium bus bar arried out on the assembly.
7.1	 7.1 Type test a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 d) Verification of continuity of the protective circuit – Clause 8.2.4 of IS 8623 			
		e) Verification of clear f) Verification of mec		ces – Clause 8.2.5 of IS 8623 8.2.6 of IS 8623
		Acceptance & routine Assurance Plan)	e test- (Inspection test witne	ess by purchaser as per approved Quality
7.2	Routine test	 2) Bill of material che 3) Insulation resistan 4) High voltage test 5) Operational check 6) Verification of diele 	ice test	
		8) No negative tolera9) Stability test shall	ance on bus bar dimensions	& bus bar clearances els, to ensure there shall be no tripping in
				Approved for Issue By

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7.3	Acceptance test	 Visual inspection & dimensional check Verification of clearance and creepage distance Paint thickness check Wiring checks Insulation resistance test HV test Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab) 		
8.0	TYPE TEST CERTIFICATE	The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER.		
9.0	PRE-DISPATCH INSPECTION	 carried out without any cost implication to TATA POWER. The Material shall be subject to inspection by a duly authorized representative of the TATA POWER COMPANY. Inspection may be made at any stage of manufacture at the discretion of the Purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall always grant free access to the places of manufacture to TATA POWER COMPANY 's representatives when the work is in progress. Inspection by the TATA POWER COMPANY or its authorized representatives shall not relieve the Bidder of his obligation of furnishing equipment in accordance with the specifications. TATA POWER COMPANY authorized representatives shall have the right to inspect the design, materials and workmanship and to report thereon, at any stage of manufacture, if found necessary. All facilities shall be extended to our representatives for witnessing the tests. Due notice shall be given to us to enable us to depute our representatives for stage inspection. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TATA POWER COMPANY. Five certified copies of all test certificates including type tests, sample test certificates shall be sent to us for our approval prior to dispatch of materials. Following documents shall be sent along with material a) Test reports b) MDCC issued by TATA POWER COMPANY c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Delivery Challan g) Other Documents (as applicable). 		

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	ince and shall inspection or om the date of			
 INSPECTION AFTER RECEIPT AT STORE INSPECTION GUARANTEE GUARANTEE BUARANTEE INSPECTION BURGED INSPECTION AFTER RECEIPT AT STORE INSPECTION BE liable for rejection, if found different from the reports of the pre-dispatch any other parameters observed after delivery. The material should be delivered at TPC, Mumbai stores within 45 days from manufacturing, same shall be checked during delivery and overdue material accepted. Bidders to plan the delivery accordingly. Bidders to attend and rectify the same at his own cost. The material shall the stores only after rectification of any observed flaw. The delay in rectification any contractual penalty. Billing shall be processed only after acceptance of the material. Bidder shall stand guarantee towards design, materials, workmanship & qua / manufacturing of items under this contract for due and intended perfor same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a pe 12 months from the date of commissioning or 24 months from the date o made under the contract whichever is later, (the time scale of 12/24 mo enhanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time fra entire satisfaction of the Purchaser, failing which the TATA POWER COMPI liberty to get it replaced/rectified at Bidder's risks and costs and recover all s plus the Purchaser's own charges (@ 20% of expenses incurred), from the 	inspection or m the date of			
10.0 AFTER RECEIPT AT STORE manufacturing, same shall be checked during delivery and overdue material accepted. Bidders to plan the delivery accordingly. Bidders to attend and rectify the same at his own cost. The material shall be stores only after rectification of any observed flaw. The delay in rectification any contractual penalty. Billing shall be processed only after acceptance of the material. Bidder shall stand guarantee towards design, materials, workmanship & qua / manufacturing of items under this contract for due and intended perfor same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a pe 12 months from the date of commissioning or 24 months from the date on made under the contract whichever is later, (the time scale of 12/24 monthanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time frail entire satisfaction of the Purchaser, failing which the TATA POWER COMP liberty to get it replaced/rectified at Bidder's risks and costs and recover all s plus the Purchaser's own charges (@ 20% of expenses incurred), from the				
III.0 GUARANTEE Stores only after rectification of any observed flaw. The delay in rectification any contractual penalty. Billing shall be processed only after acceptance of the material. Bidder shall stand guarantee towards design, materials, workmanship & qual / manufacturing of items under this contract for due and intended perfor same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a performance under the contract whichever is later, (the time scale of 12/24 more nhanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time frame entire satisfaction of the Purchaser, failing which the TATA POWER COMPANY is get it replaced/rectified at Bidder's risks and costs and recover all s plus the Purchaser's own charges (@ 20% of expenses incurred), from the	ai shali not be			
Bidder shall stand guarantee towards design, materials, workmanship & quaterials / manufacturing of items under this contract for due and intended perfor same, as an integrated product delivered under this contract.In the event any defect is found by the TATA POWER COMPANY up to a performance 12 months from the date of commissioning or 24 months from the date of made under the contract whichever is later, (the time scale of 12/24 months enhanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time frame entire satisfaction of the Purchaser, failing which the TATA POWER COMP liberty to get it replaced/rectified at Bidder's risks and costs and recover all splus the Purchaser's own charges (@ 20% of expenses incurred), from the				
 In the event any defect is found by the TATA POWER COMPANY up to a performance same, as an integrated product delivered under this contract. In the event any defect is found by the TATA POWER COMPANY up to a performance subject to make under the contract whichever is later, (the time scale of 12/24 more enhanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time framentire satisfaction of the Purchaser, failing which the TATA POWER COMPANY is plus the Purchaser's own charges (@ 20% of expenses incurred), from the date of the purchaser's own charges (@ 20% of expenses incurred). 				
 I2 months from the date of commissioning or 24 months from the date of made under the contract whichever is later, (the time scale of 12/24 months enhanced subject to mutual agreements) Bidder shall be liable to replace/rectify such defects at its own costs, within mutually agreed time fragenties satisfaction of the Purchaser, failing which the TATA POWER COMP. liberty to get it replaced/rectified at Bidder's risks and costs and recover all splus the Purchaser's own charges (@ 20% of expenses incurred), from the 	Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract.			
the Security cum renormance Deposit as the case may be.	f last supplies nths could be undertake to ne, and to the ANY will be at uch expenses			
In case of GP failure, BA shall report at site within 48 hours from intimation a rectification of fault within a mutually agreed time. In case rectification at site then alternative arrangement (replacement) to be made by BA within 15 day of failure.	s not possible			
Bidder shall further be responsible for 'free replacement' for another peri years from the end of the guarantee period for any 'Latent Defects' if noticed by the Purchaser.				
 PACKING AND TRANSPORT Packing protection- Against shocks, vibration & corrosion, damages is transportation Packing identification labels, to show purchaser name, PO number, or panels, Panel type, Manufacturer serial number Handling instruction- To be marked on packing boxes. Bidders should prefer to use recyclable & environmentally friendly mapacking. No single use plastic to be used. 	 transportation 2) Packing identification labels, to show purchaser name, PO number, quantity of panels, Panel type, Manufacturer serial number 3) Handling instruction- To be marked on packing boxes. 4) Bidders should prefer to use recyclable & environmentally friendly materials for packing. 5) No single use plastic to be used. 			
I3.0 TENDER SAMPLE Not Applicable				

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14.0	4.0 QUALITY CONTROL		of inspection, the test components during and equipment after within the parameter TATA POWER COM sample from the lot	ts and checks which will be manufacture and bought o finishing. As part of the plan s of the delivery schedule sh MPANY shall reserve the s t and in case of any disc	sole rights for the type test of a random repancy or deviation from the Type test
	certificates submitted along with the Bid; the complete Lot shall be rejected. TATA POWER COMPANY representative or its nominated representative shall have access to the Bidder's works to carry out inspections. If anything missing in QAP and required as per other clauses of this document, bidd liable to perform the same without cost implication.				nominated representative shall have free ions. other clauses of this document, bidder is
15.0	MINIMUM FACILITIE	TESTING ES			
16.0	MANUFACTURING ACTIVITIESThe successful bidder will have to submit first GTP & Drawing with 7 days from placen of outline agreement for approval and complete the approval process within 14 day outline agreement. The date of Code -2/ Code-1 approval given by TATA Power will treated as first day for assessment of LD (if applicable).			e the approval process within 14 days of -1 approval given by TATA Power will be	
17.0	17.0 SPARES, ACCESSORIES, AND TOOLS Keys of door				
18.0	 Following drawings and documents shall be prepared based on TATA POWER COMIS specifications and statutory requirements and shall be submitted with the bid. All the documents & drawings shall be in English language a) Completely filled in Technical Particulars b) General description of the equipment and all components including brochures. c) General arrangement drawing. d) Bill of material e) Experience List f) Type test certificates g) Any other technical document, if required 		all be submitted with the bid. Ianguage		
19.0	19.0 SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS			r all above requirement of s ical compliance document.	pecifications clauses & submit signed and
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20.0		-2032-R00 The bidders shall se schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from t	et out all deviations from becifically mentioned in this er's specifications. WITH THE BID) his specification shall be s s specifically mentioned in		כ
		We confirm that there Seal of the Company	-	rom those detailed above. nature : esignation :	

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Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

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Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.

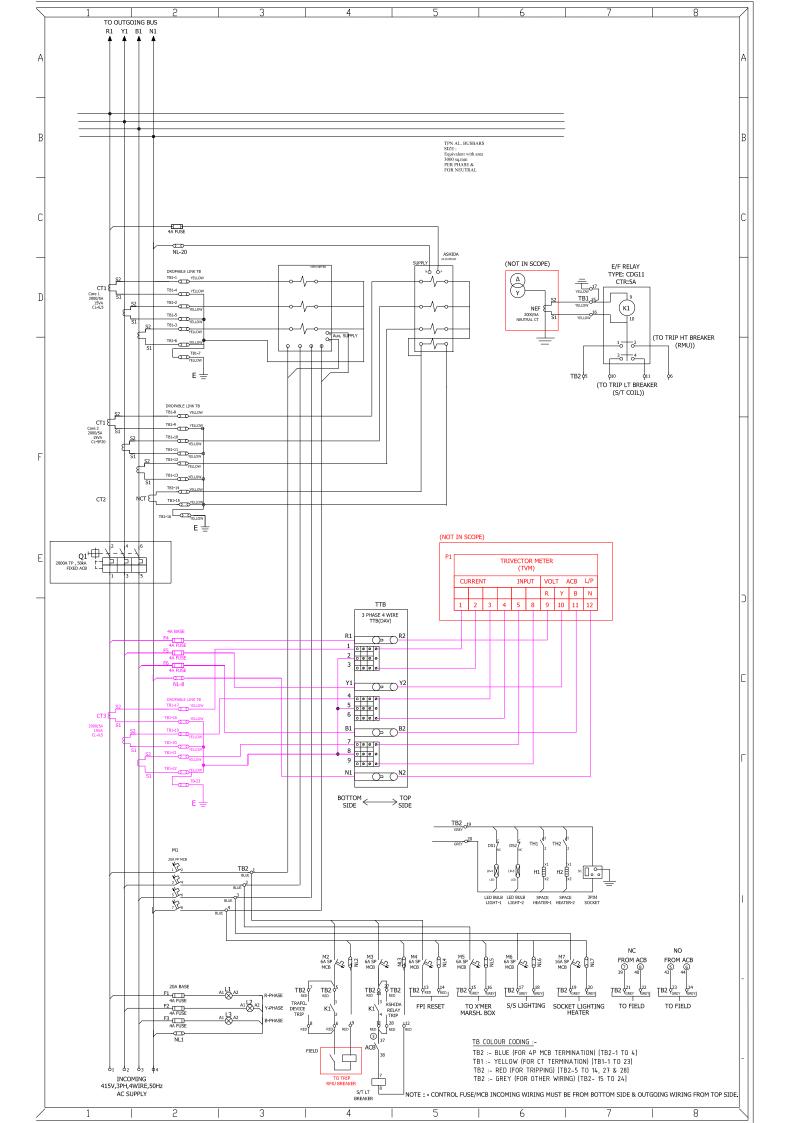


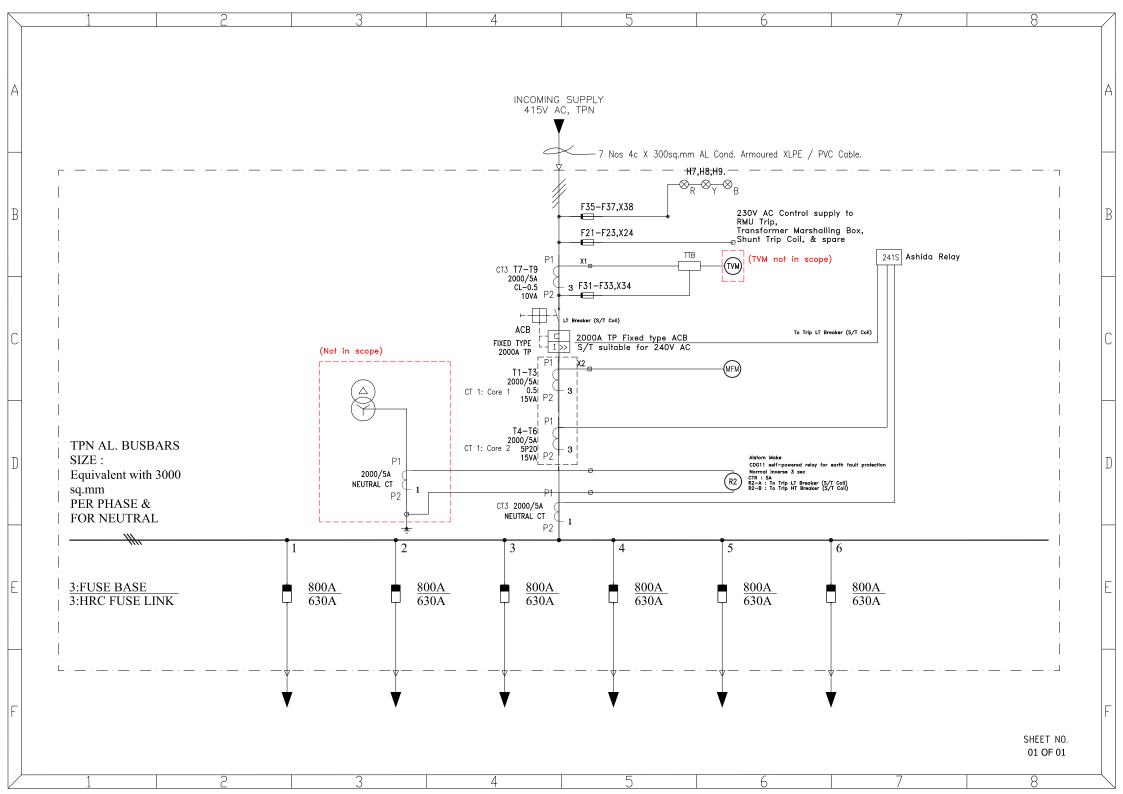
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Annexure – 3					

Reference drawings

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TECHNICAL SPECIFICATION

8 Way 3200 A LT Panel

The Tata Power Company Ltd. Engineering Services (ENSE), Distribution Division, Senapati Bapat Marg, Lower Parel, Mumbai – 400013 Maharashtra The Tata Power Company Limited

ENSE-DS-2033-R00



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TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2033-R00

Document Title: Technical SPECIFICATION OF 8 Way 3200 A LT Panels

R00	ENSE-DS- 2033-R00 (For Tendering Purpose)	11/01/2024	YMM	Yr.	AVP		RMB	Reye.
R2	SPEC-NET- Feeder Pillar- 3200A	02/03/23	МҮ	-sd-	VK	-sd-	SBM	-sd-
Rev			Initials	Sign	Initials	Sign	Initials	Sign
No.	Remarks	Date	Prepa	ared By	Review	ed By	Approved	& Issued By

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•		<u>CONTENTS</u>				
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2.0	APPLICABLE STANDARDS			4		
3.0	CLIMATIC CONDITIONS OF THE INSTAL	LATION		5		
4.0	GENERAL TECHNICAL REQUIREMENT	S		5		
5.0	GENERAL CONSTRUCTIONS			9		
6.0	0 NAME PLATE & MARKINGS					
7.0	0 TESTS, ROUTINE & ACCEPTANCE TESTS 1					
8.0	TYPE TEST CERIFICATES			16		
9.0	PRE-DISPATCH INSPECTION			16		
10.0	INSPECTION AFTER RECEIPT AT STOR	E		17		
11.0	GUARANTEE	\sim		17		
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1.0	SCOPE	paintin comple networ It is no equipn Engine accept specific not in f	g, packing, ar ete with all ac to for Tata Pow to our intent to nent. However eering design able to the p cation and sha full accordance	nd supply of ccessories for ver Company specify com r, the equipr and workma purchaser (T all be entitled therewith. ems shall be	f 415V, 3200 or efficient and r Limited at Mun pletely herein a ment shall con inship and sha PC) who will f to reject any of reputed ma	, manufacture; shop testing, inspection, A LT Panel with 8 no Outgoing Feeders trouble-free operation of the distribution mbai. All details of design and construction of the form in all respects to high standards of ill be capable of performing in a manner interpret the meaning of drawings and work or material which in his judgement is ke and shall be subject to approval by the
2.0	APPLICABLE STANDARDS	all ame 1 2 3 4 5 6 7 6 7 8 9 10 11 In case	Title IS 8623 IS 12063/ IE IS 5 IS 5082 IS 2705 IS 2551 IS 13703-2 IEC 255 IEC 801 IEC 60947-2 IEC 60269 ie of any col	C 60529	Specification for Classification of Enclosures of Color of ready Wrought Alum electrical applie Current Transf Danger Notice Low voltage fur AC or 1500 V persons Protection Relat Control and more Low Voltage S Low Voltage F	inium & AI alloy plates & sheets for cation ormers plates ses for voltage not exceeding 1000 V DC. Part 2 Fuses for use by authorized ays onitoring witchgear & control gear uses

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			timum ambient temperature Daily average ambient temp	43 deg.C 35 deg.C	
			Ambient Temperature	07 deg.C	
			kimum Relative Humidity	100%	
		imum Relative Humidity	40%		
		rage No. of thunderstorm per	50		
	CLIMATIC CONDITIONS OF	7 Ave	rage Annual Rainfall	2380mm	
)	THE		rage No. of rainy days per annum	115	
	INSTALLATION		ny months	June to Oct.	
			ude above MSL not exceeding	300 meters	
			rage Air Pressure	29.6-inch Hg	
		Sr. No	thstand seismic forces correspond	Tata Power Requirement	
				Name	
	1 Manufad	Nanufacturer	Manufacturer Address		
				Contact telephone no	
				3200A Manual Fixed Type without any	
		В	Breaker Rating (ACB)	microprocessor relay. 230V AC Shunt	
				tripping coil to be provided.	
		2 N	Nodel of ACB	The Model shall be such that current density in current carrying part shall be less than 3 A/sq.mm. (Bidder to mention the model)	
	GENERAL		approved Make	Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton	
)					
	REQUIREMENTS	N	lain bus bar rating	3200 A	
	REQUIREMENTS	3 B	<i>I</i> ain bus bar rating Bus bar Size for Phase & Jeutral	3200 A 4000 sq.mm for Phase & Neutral	
	REQUIREMENTS	3 B	Bus bar Size for Phase &		
	REQUIREMENTS	3 B E	Bus bar Size for Phase & Neutral	4000 sq.mm for Phase & Neutral	
	REQUIREMENTS	3 B N E 4 T	Bus bar Size for Phase & Neutral Earth Bus	4000 sq.mm for Phase & Neutral 1 x 50 x 10 mm Gl	
	REQUIREMENTS	3 B N E 4 T 5 N	Bus bar Size for Phase & Neutral Earth Bus Type of Installation	4000 sq.mm for Phase & Neutral 1 x 50 x 10 mm GI Indoor / Outdoor Type Qnty -1no. of 3200A ACB with 10 Nos	
	REQUIREMENTS	3 B N E 4 T 5 N 6 N	Bus bar Size for Phase & Neutral Earth Bus Type of Installation No of Incoming feeders	4000 sq.mm for Phase & Neutral 1 x 50 x 10 mm GI Indoor / Outdoor Type Qnty -1no. of 3200A ACB with 10 Nos of 4CX300 sq.mm Al Ar XLPE cables Quantity -8 Nos of 630A each with 3 nos of 4CX300 sq.mm Al Ar	

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		9	Sheet ste	eel thickness	Doors & Covers - 2.5mm, FRAME - 3mm
		10	Door typ access	e for front & rear	Double door with rear door bolted
		11	Door hin	ges	Minimum three anti-theft type hinges self-locking type
		12	Padlocki	ng facility	For front door
		13		ey for all doors	Identical for all panels, 1 no./ panel to be provided
		14	Hardwar	e & Fasteners	All Nuts, Bolts, Washers shall be Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating. Bolts below 12 mm size shall be SS material.
		14a	Current (Carrying part hardware	Each bolt on Bus Bar and Fuse terminal shall be provided with Belleville washer and plain washer. Wherever required bimetallic washers to be provided
			Phase &	neutral Bus bar	Aluminium grade 19501 (H2) as per IS 5082
			Bus bar : O/G	size in mm for 3200 A	4000 sq.mm for Phase & Neutral
		15	3200A A	CB Incoming	4000 sq.mm for Phase & Neutral
			ACB O/C	G LINKS	4000 sq.mm for Phase & Neutral (Dimensions as per feasibility with Breaker palm connection)
		16	Bus bar neutral	color coding for R, Y, B &	Heat shrinkable sleeves with color Red, Yellow, Blue & Black respectively
		16 a	Bus Bar	Heat shrinkable sleeves	Cross-linked Polyolefin (Bidder to specify thickness)
		17	w in the second s	s bar short circuit d capacity	Above 50kA for 1 sec
		18		ble maximum ture rise above ambient	Busbar: 45 deg C
	\sim			ble maximum ture rise above ambient	Terminals: 65 deg C
		19 Bus ba		support insulators	As per IS13410 SMC / DMC, 1100V grade
		20	Incoming	g Cable Size	4C 300 Sq.mm AI Ar XLPE
		21	Outgoing	g Cable Size	4C 300 Sq.mm Al Ar XLPE
		22	Gland pla	ate at panel bottom	HRCA MS 3mm thickness

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	23	Cable te	rmination clearance	600 mm minimum from gland plate & ACB	
		Fuse Ba	se	800 A	
	24	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller / Bussmann / ABB	
	25	Fuses (6	30 A)	HRC plug-in type gG (General Purpose, Fast acting fuse)	
	23	Approve	d Make	L&T / Siemens / Schneider / GE Power Control / Jean Muller / Bussmann / ABB	
	26	CT's for Feeder TTB for I		 7 Nos. Single resin cast. a) 3 nos dual core CT's of ratio 3200/5A Core 1: Class 0.5 & 15VA burden – For MFM Core 2: 5P20 & 15VA – For Ashida make O/C+E/F relay b) 3 nos single core CTs of ratio 3200/5 A, Class 0.5 & 15 VA for Energy meter (Energy meter is not in bidder scope) c) 1 no single core CT of ratio 3200/5A, 5P20 & 15 VA for Neutral unbalance protection Approved Make of CTs: Reco/Newtek/Pragati/Kappa/ECS/Adcon Front connection, Screw Type 3 Phase 4 Wire, 4SF, 50 A, DAV/IMP Make Incoming from Bottom Side & 	
	28	Wiring co	onvention for TTB	Outgoing to Meter from Top side	
	29	Multifund	ction Digital meter	Should be communicable on Modbus RS 485	
	30	Earth Fa	ult protection relay (NEF)	Alstom make CDG11 self-powered. Relay type is normal inverse with 3 Sec with E/F setting of 0.5 to 2 A	
	31	Earthing	Hardware	a) Earthing Nut and Bolt shall be M12 SS b) Washers shall be with Hot Dip Galvanized with 80 micron Galvanisation or Alu-Zinc coating.	
	31a	Panel Ea	arthing	Earthing provision to be provided on both sides with 50 mm extension of main Earth Bus Bar.	
	32	Clearanc parts	ce between live	Phase - phase -Minimum 25 mm & Phase - earth - Minimum 20 mm	
	33	Distance outlet	between each fuse	Centre to Centre - 150mm (Minimum)	

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		34	Distance panel su	between fuse outlet & face	125 mm (Minimum)
		35	Control to	erminals for CTs	Stud type with disconnecting facilities
		36	Control to other circ	erminals for Voltage & cuits	Stud type
		37	Illuminati	on and Indicating Bulb	LED
		38	Continuo voltage	us rated operating	440 volt +/- 10%
		39	-	age withstand capacity	2000 volt at 50 Hz for 1minute
		40	Insulation & ph-ear	n resistance ph-ph th	Minimum 10MOhm with 500V Megger
		41	Labels &	name plates	As per Specifications
		42	Surface	preparation for painting	Sand blasting or 7 tank process
		43	Painting		Sand blasting or 7 tank process. Light grey shade No 631 of IS-5 Powder coated epoxy paint min thickness 120 micron
		44	Power S	upply Socket	5A/15A Plug point socket to be provided
		45	Breaker	Barrier	Breaker must have a metallic removable sheet from the front side which will act as a barrier between operator and the breaker. Provision must be given for breaker operation to be done through this barrier.
		46	Branding	Plate	All supplied Units shall be fitted with engraved metallic logo of Tata Power on the front side. The Tata Power Co Ltd to be mentioned below the logo with clear font and Dimension 12*12 Inches. * Refer Annexure 2
4	\boldsymbol{X}	47	Panel Di 900 mm)	mensions (Min depth of	LXDXH
		48	Numerica	al Relay	Ashida (ADR 241S) with 4 Element
	Ÿ	49		ohase barriers/ Phase rs (R-Y & Y-B)	FRP insulating sheet - (to be placed near to the phase bus-bar) (min 3 mm thickness) shall be provided between bus-bars, so as to ensure that there is no accidental contact with any live parts. (65 mm width)

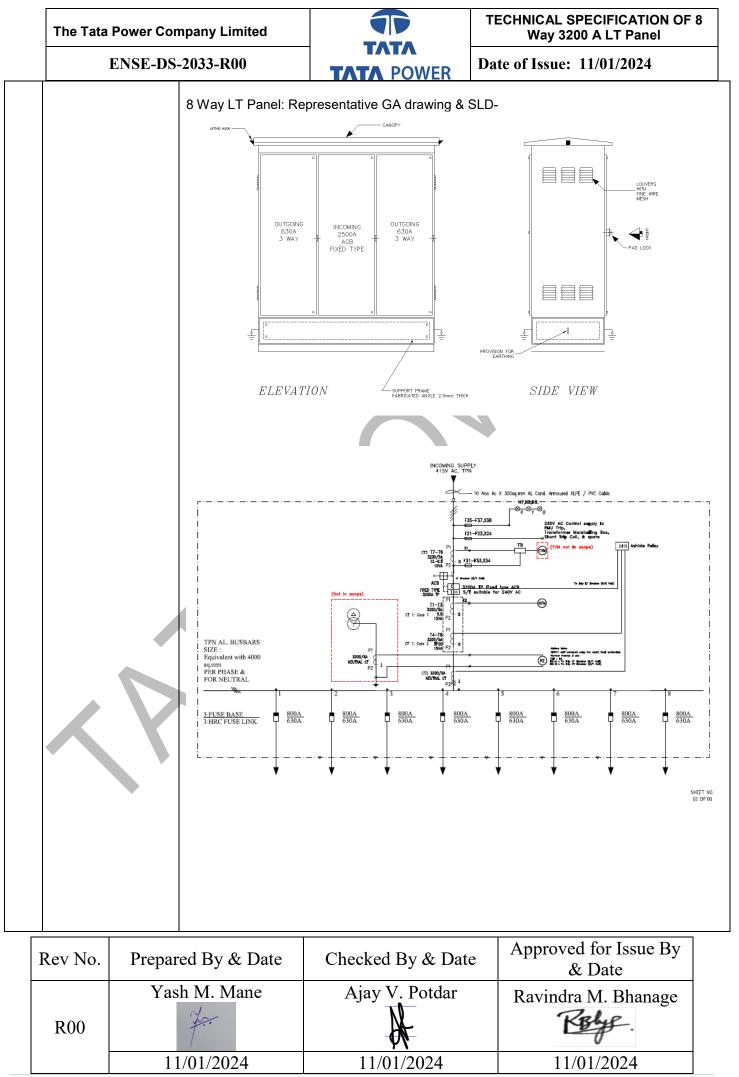
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		1)		ressed and shaped Cold F	cated using suitable mild steel structural Rolled Closed Annealed (CRCA) sheet of
		2)	levelled and thickness no Gland plates than 3 mm.	free from flaws. Doors an t less than 2.5mm. Stiffene shall be of Hot Rolled Clo alternatively gland can also	neet of thickness 3mm, smoothly finished, d cover shall be made of CRCA sheet of ers shall be provided, wherever necessary. osed Annealed (HRCA) thickness not less o be provided between two angles so that n of base frame should be 75mm X 40mm
		3)		anopy of adequate slope	and outdoor type, support frame mounted to avoid water accumulation. Degree of
		4)	sheet; the sa currents gene breaker com	me should be split suitably erated by three phase bus l	artment should be separated by metallic in order to avoid local heating due to eddy pars crossing through the same sheet. The ter of panel & Outgoings shall be on both
		5)	with adequat	e louvers on sides and top	roof construction and of self-cooled design o portion. The louvers shall have fine wire th of panel shall be 900 mm.
5.0	GENERAL CONSTRUCTION	6)	danger signs		the panel designation, phase marking and e Line Diagram & feeder details shall be
		7)			cal languages on the Hylam sheet below ed background and with white letters.
		8)	captive screw of door hinge doors shall b inter-change	vs shall be provided on the es shall be provided and sh e provided with padlocking ability. The back-side doors s shall be connected to th	acealed type with brass type hinges and front side & Back side. Adequate numbers would be durable and easy in operation. All facility. The design of doors should permit s shall have nut and bolt arrangement. All he earth terminal with 2.5 Sq.mm braided
		9)	suitable to a		nel and removable gland plates of size Itgoing cables of sizes, 4 Core 300 Sq mm t required locations.
		10)	Distance bet be minimum		e termination of Air Circuit Breaker should
		11)		nall be provided with gaske vable covers and doors.	t all around the perimeter of covers, gland
		12)			d copper or tinned aluminium Bus Bar. to be provide, if bare copper terminal is

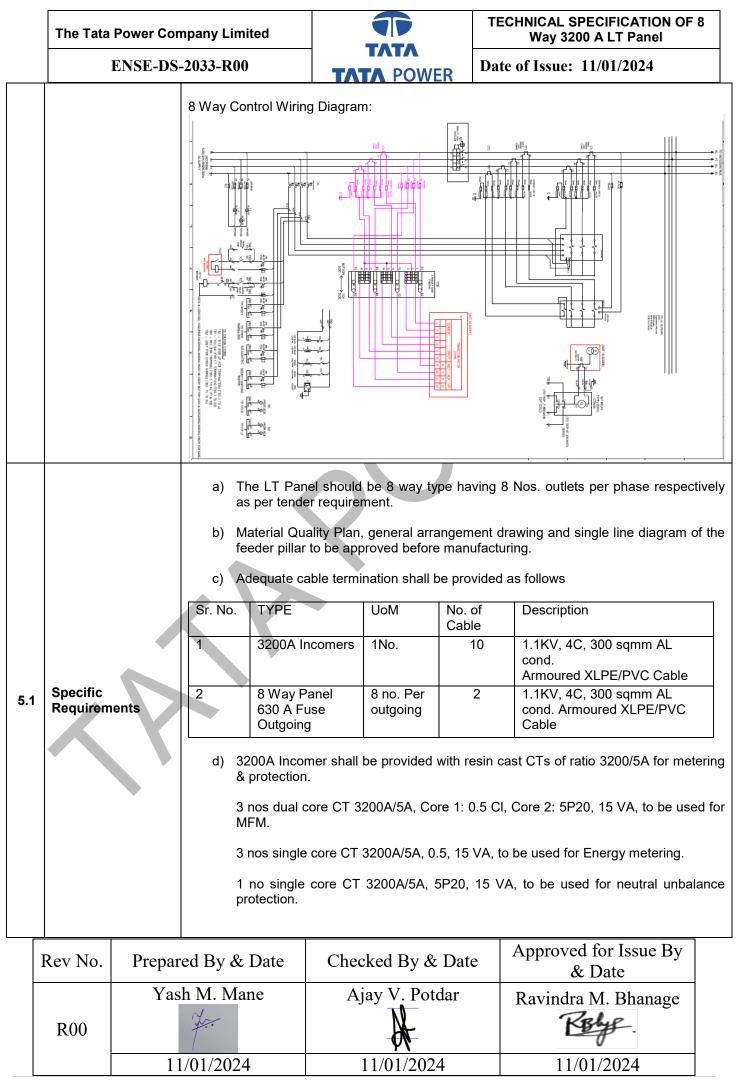
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		1 sec and s short time cu bars, bus tap	hall have adequate cross : urrent. Main Bus bar should	elite shrouding, rated for 3200 A, 50 kA for section to carry the rated continuous and d be continuous/ without any joint. All bus aped. Neutral bus bar shall be provided on
		without any to be prov	microprocessor protection ided for tripping the bit	ted fixed type 3 Pole with shunt trip coil on release. Ashida make (ADR41S) relay reaker with Overcurrent & earth faut nunt trip should be provided.
			all be of the HRC cartridge spective current of not less	type mounted on plug-in type fuse bases than 80 kA.
			ase clearance of 25mm and provided in the panel.	nd Phase to Neutral / Earth clearance of
				ld be minimum 150mm between each fuse nd body of panel to be maintained.
		18) The panel s earth bus.	hall be provided with two	separate earthing terminals connected to
		insulated 2.5		he earth terminal using 650V grade PVC copper earthing conductor. All Earthing dy of panel.
		with the help		shall be connected to the earth terminal, ors of adequate size. Flat earth bus should nal earth
		21) Eyebolt of su	uitable sizes shall be provide	ed for lifting arrangements.
			all be carried out with 650 f adequate sizes to suit the	OV grade PVC insulated stranded copper rated circuit current.
		23) The panel sh	all be powder coated with li	ght shade grade no 631 of IS 5.
		24) Required nu	mber of foundation bolts sha	all be supplied with the panel.
	X X	25) Control fuses breaker char		external cable connections shall be in the
		Stud type	erminals shall be as follows with disconnecting facilities for voltage and other circuit	for CT circuits
			shall have adequate contant no local heating takes place	act surface with the bus bars provided to
		28) Lighting Syst	tem in Feeder Pillar should l	be LED based.

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e) All CT termination should be round plug type. No CT shorting arrangement to be provided. (As per SLD) Secondary wiring shall be carried out with 1.1KV grade PVC insulated stranded f) copper conductor of 2.5 Sq. mm for CT circuits and 2.5 Sq. mm for PT and other circuits. All wires will be colour coded. Sr. No. Equipment Color Nomenclature of TBs Types of TBs 1. TBs of 4 Pole MCB Blue TB2 Droppable Termination 2. TBs for CT Yellow TB1 Droppable Termination 3. TBs for Tripping Red TB2 Droppable 4. All others Default TB2 Normal The feeder pillar panel shall be provided with Alstom Make CDG11 self-powered g) relay for earth fault protection. The relay type is normal inverse with 3 sec with E/F setting of 0.5 to 2 A. h) Test terminal box for Energy Metering should be Front Connection, Screw Type (4SF), 50 A to be provided and the convention of the wiring in the TTB should be Incoming from the bottom side and outgoing to Meter from top side. There must not be any partition between Relay & metering box in LV compartment. It should be single door compartment. No lugs shall be provided for wires to meter, TTB, and Fuses (PT secondary). Sealing arrangement to be provided for Energy Meters. Inspection glass (Transparent Toughened Glass) to be provided for viewing of meter. All Protection/ control wiring must terminate in LV compartment. i) Provision to be provided for mounting the energy meter with max dimensions as L i) x B x D: 360 x 200 x 200 mm (Energy meter will be supplied by TPC). The relay and energy meter shall be installed in the breaker compartment with suitable partitions. The relays shall be supplied by the vendor. The LT panel shall be equipped with shrouded type anti condensation space heaters with thermostat, internal light with switch & 5A/15A metal clad generalpurpose plug socket. The following separate control circuit 20A, 4 pole MCB duly wired up to terminal block for purchaser's use shall be provided before the circuit breaker in feeder pillars leading to following single pole MCB with neutral links (refer SLD): Phase and neutral for 230V supply to RMU. (6A) Phase and neutral for 230V supply to Transformer marshalling box. (6A) Phase and neutral for external shunt trip coil (6A) Phase and neutral for FPI reset (6A) Separate 16A, DP MCB duly wired for Auxiliary supply for LT panel for following purpose, Phase and neutral for substation lighting (6A) Phase and neutral for Socket (15A)/ Heater circuit Phase and neutral for Ashida overcurrent relay (4A)

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			stud breal	type lir ker in fe oing wir Thre	nk terminals for purchase	etering circuit.	
			doors cove	s. Louve r plate.	ers with stainless steel w	Earthing jumpers to be provided for all the vire mesh to be provided on body side and all be limited to the following:	
			,		5		
			Sr. No.	Items		Approved Make	
			1	ACB CT		Schneider/ L&T/ Siemens/ C&S/ ABB/ Eaton Reco/Newtek/Pragati/Kappa/ECS/Adcon	
			2.	01			
			 p) Flexible copper braiding should be provided on the doors. Neutral bus shall be connected with earth bus. All control cable should be multi stranded and FRLS. C ISF should be less than or equal to 5. Close and Open status of the breake should be available on SCADA through spare auxiliary contact and on LT pane through LED Lamp. q) The fuses provide should be of knife type and same should be removable with the provided of the statement of the				
				of fuse se pulle		obstruction during removal of outgoing fuses	
			r) The s	safety lo	ocking facility to be provide	ed for putting three nos. of safety locks.	
			s) Pane	el minim	um width in mm: 900 mm		
4	$\langle \rangle$		hand	holding	-	the complete support in terms of training staff. The breaker manufacturer to give the	
			u) The the	robust i	solating arrangement in th	ne OG fuse compartment to be made as per	
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		 Purchaser name 8 Manufacturer nam Month / year of ma 'Property of Tata F 	e anufacturing Power'	
6.0	NAME PLATE AND MARKING			veted on doors- White colour background
		6.4 SLD shall be eng	raved & pasted on inside of	f door.
		6.5 CT Serial Nos., F	atio & ACB Serial Nos. to b	e written on doors with marker pen.
		6.6 Separate metallic clear font as shown i	•	er Logo of Dimension 12*12 Inches in
7.0	TESTS	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC. Following tests shall be necessarily conducted on the 'Feeder Pillar' in addition to others specified in IS/IEC standards. *In case of any conflict on any technical particular, the stricter requirement mentioned in the relevant standard shall be valid.		
7.1	Type testType test - Only type tested components – ACBs, Fuses, Insulators & aluminium bus shall be accepted. Following type test shall be carried out on the assembly.a) Verification of temperature-rise limits – Clause 8.2.1 of IS 8623 b) Verification of dielectric properties – Clause 8.2.2 of IS 8623 c) Verification of short-circuits strength – Clause 8.2.3 of IS 8623 d) Verification of continuity of the protective circuit – Clause 8.2.4 of IS 8623 e) Verification of clearance and creepage distances – Clause 8.2.5 of IS 8623 f) Verification of mechanical operation – Clause 8.2.6 of IS 8623 f) Verification of degree of protection – Clause 8.2.7 of IS 8623			arried out on the assembly. e 8.2.1 of IS 8623 .2.2 of IS 8623 8.2.3 of IS 8623 uit – Clause 8.2.4 of IS 8623 ces – Clause 8.2.5 of IS 8623 8.2.6 of IS 8623
7.2	 7.2 Routine test 7.2 Routine test Assurance Plan) 1) Visual inspection, 2) Bill of material che 3) Insulation resistar 4) High voltage test 5) Operational check 6) Verification of die 7) Tolerances on pa 8) No negative tolera 9) Stability test sha 		dimension checks & paint theck ce test ectric properties nel dimensions- Maximum + nce on bus bar dimensions	/- 5mm & bus bar clearances els, to ensure there shall be no tripping in
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7.3	 7.3 Acceptance test Acceptance test Acceptance test Acceptance test Acceptance test Builtion resistant HV test Stability test on a current on earth f 1 unit from 1st lot 		ince test all Panels, to ensure there s fault function.	hall be no tripping in case of unbalance rature rise test with ACB and fuses. (Bidder
8.0	TYPE TEST CERTIFICATE	The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. Type Test to be conducted on similar Design/ rating panel. All the tests shall be conducted at CPRI / ERDA/ NABL as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 10 years from the date of opening the bid. Type tests shall have been conducted in certified Test laboratories during the period not exceeding 10 years from the date of opening the bid. In case if type test conducted beyond 10 years then bidder to certify on letter head of parent OEM that no design change & no manufacturing plant change occurred from type tested product. In the event of any discrepancy in the test reports, i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be		
9.0	PRE-DISPATCH INSPECTION	carried out without any cost implication to TATA POWER. The Material shall be subject to inspection by a duly authorized representative of the TATA POWER COMPANY. Inspection may be made at any stage of manufacture at the discretion of the Purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall always grant free access to the places of manufacture to TATA POWER COMPANY 's representatives when the work is in progress. Inspection by the TATA POWER COMPANY or its authorized representatives shall not relieve the Bidder of his obligation of furnishing equipment in accordance with the specifications. TATA POWER COMPANY authorized representatives shall have the right to inspect the design, materials and workmanship and to report thereon, at any stage of manufacture, if found necessary. All facilities shall be extended to our representatives for witnessing the tests. Due notice shall be given to us to enable us to depute our representatives for stage inspection. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TATA POWER COMPANY. Five certified copies of all test certificates including type tests, sample test certificates shall be sent to us for our approval prior to dispatch of materials. Following documents shall be sent along with material a) Test reports b) MDCC issued by TATA POWER COMPANY c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Delivery Challan g) Other Documents (as applicable).		

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		be liable for rejection		nall be inspected for acceptance and shall e reports of the pre-dispatch inspection or
10.0	INSPECTION AFTER RECEIPT AT STORE	manufacturing, same		bai stores within 45 days from the date of delivery and overdue material shall not be ly.
			tification of any observed fl	wn cost. The material shall be accepted in aw. The delay in rectification shall lead to
		Billing shall be proce	ssed only after acceptance	of the material.
		/ manufacturing of i		aterials, workmanship & quality of process for due and intended performance of the this contract.
11.0	GUARANTEE	12 months from the made under the cor enhanced subject replace/rectify such of entire satisfaction of liberty to get it replac plus the Purchaser's the "Security cum Per	date of commissioning or ntract whichever is later, (to to mutual agreements) He defects at its own costs, wit the Purchaser, failing whic ced/rectified at Bidder's risk own charges (@ 20% of e erformance Deposit" as the	
		rectification of fault w	vithin a mutually agreed time	in 48 hours from intimation and arrange for e. In case rectification at site is not possible e made by BA within 15 days of intimation
				placement' for another period of THREE any 'Latent Defects' if noticed and reported
 12.0 PACKING AND TRANSPORT Bidder shall ensure that the item covered under this specification shall be package rail/road transport in a manner so as to protect the equipment from damage in transportation 1) Packing protection- Against shocks, vibration & corrosion, damages durin transportation 2) Packing identification labels, to show purchaser name, PO number, quan panels, Panel type, Manufacturer serial number 3) Handling instruction- To be marked on packing boxes. 4) Bidders should prefer to use recyclable & environmentally friendly materi packing. 5) No single use plastic to be used. 6) Packing should be done with environment friendly recyclable materials. 			ne equipment from damage in transit. Tation & corrosion, damages during rchaser name, PO number, quantity of number acking boxes. & environmentally friendly materials for	
13.0	TENDER SAMPLE	Not Applicable		
I				

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14.0	QUALITY CONTROL		of inspection, the test components during and equipment after within the parameter TATA POWER COI sample from the lo certificates submittee TATA POWER CON	sts and checks which will be manufacture and bought of finishing. As part of the plan is of the delivery schedule sl MPANY shall reserve the s t and in case of any disc d along with the Bid; the con	sole rights for the type test of a random repancy or deviation from the Type test nplete Lot shall be rejected. s nominated representative shall have free
			If anything missing i	's works to carry out inspect n QAP and required as per same without cost implication	other clauses of this document, bidder is
15.0	MINIMUM FACILITIE	TESTING			acilities for carrying out all routine tests & ndian standards and as specified above.
16.0	MANUFA	CTURING ES	of outline agreemen outline agreement.	t for approval and complet	TP & Drawing with 7 days from placement te the approval process within 14 days of -1 approval given by TATA Power will be icable).
17.0	SPARES, ACCESSO AND TOC	ORIES,	Keys of door		
18.0	DRAWING AND DOCUMENTS		 specifications and st All the documents & a) Completely filled i b) General description c) General arrangement d) Bill of material e) Experience List f) Type test certificat 	atutory requirements and sh drawings shall be in English n Technical Particulars on of the equipment and all o nent drawing.	pared based on TATA POWER COMPANY nall be submitted with the bid. n language
19.0	0 SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS			or all above requirement of s ical compliance document.	specifications clauses & submit signed and
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20.0		-2033-R00 The bidders shall se schedule. Unless sp confirm the purchase (TO BE ENCLOSED All deviations from th	et out all ecifically er's specif WITH TH his specific s specific	deviations from the mentioned in this fications. HE BID) fication shall be se cally mentioned in the		
		We confirm that there Seal of the Company		Sign	om those detailed above. ature :	

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Inspection Testing Plan

- 1. Visual inspection & dimensional check
- 2. Verification of clearance and creepage distance
- 3. Paint thickness check
- 4. Wiring checks
- 5. Insulation resistance test
- 6. HV test
- 7. Stability test on all Panels, to ensure there shall be no tripping in case of unbalance current on earth fault function
- 8. 1 unit from 1st lot shall be tested for Temperature rise test with ACB and fuses. (Bidder to arrange for the same, either in factory or in external lab)

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Tata power Branding Name plate -

Separate metallic name plate with Tata Power Logo of Dimension 12*12 Inches in clear font as shown below.

Relationship between the two marks- size

The Tata and Tata Power Marks are always used in conjunction with each other, never appearing in isolation on Tata Power communication.

The height of the letter T of Tata (T-height) is the basic measure for all sizes and proportions.

The rounded measure 2T in height, is separated from the Tata lettering by a distance of 1/2T.

The T height of both, the Tata and the Tata Power Marks is to be the same, except in exceptional cases on approval from the Corporate Communications team.



Centre aligned - Stacked (Preferred)

Relationship between the two marks- positioning

The two marks can appear stacked, which is the preferred placement, or linear, by the side of one another.



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Reference drawings

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