



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

BHARAT HEAVY ELECTRICALS LIMITED

क्षेत्रीय परिचालन प्रभाग, मुम्बई

REGIONAL OPERATIONS DIVISION, MUMBAI

14th Floor, World Trade Centre-1, Cuffe Parade, Colaba, Mumbai -400005.

Phone:022-22171376/ 350/ 372/ 301/ 345/ 344/ 373 Email : mssea@bhel.in, msair@bhel.in

Ref No.: RE/MUM/IMP/BP/IA-2230

Date: 17.10.2022

To

M/S. _____,

Dear Sirs,

विषय : EXW स्विट्जरलैंड से मुंबई एयरपोर्ट तक EXW आधार पर नॉन-स्टैकेबल कार्गो की एयर फ्रेटिंग के लिए निविदा।

Sub: Tender for Air Freight of Non-stackable cargo from EXW Switzerland to Mumbai Airport on EXW Basis.

बीएचईएल, भारत सरकार का उपक्रम, एक "महारत्न" कंपनी है जो भारतीय अर्थव्यवस्था के मुख्य क्षेत्रों जैसे बिजली, उद्योग, बुनियादी ढांचे आदि को पूरा करती है। आपको उपरोक्त निविदा में भाग लेने के लिए आमंत्रित करती है।

BHEL, a Govt. of India Undertaking, a "Maharatna" Company catering to the core sectors of the Indian economy viz. Power, Industry, infrastructure etc. invites you to participate in the above tender.

ईप्रोक्योरमेंट सिस्टम के माध्यम से ऑनलाइन निविदा आयोजित-, मूल्यांकन और अंतिम रूप दिया जाएगा। बोलीदाता अपनी प्रतिक्रिया ई-प्रोक्योरमेंट प्लेटफॉर्म <https://eprocurebhel.co.in> पर निविदा में जमा करके अपनी प्रतिक्रिया प्रस्तुत करें।

The tender will be conducted, evaluated and finalized online through e-Procurement System. The bidder shall submit his response through bid submission to the tender on e-Procurement platform at <https://eprocurebhel.co.in>.

ईनिविदा प्रणाली के संबंध में सहायता के लिए-, बोलीदाता निम्नलिखित से संपर्क कर सकते हैं:

For support regarding e-tendering system, bidders may contact following:

eprocurebhel customer support team/ Tele No: 0120-4001002 , 0120-4001005, 0120-6277 787 Email ID : support-eproc@nic.in

बोलीदाता पंजीकरण नि:शुल्क है और प्रक्रिया पोर्टल में उपलब्ध कराई गई है।

Bidder registration is for free and the procedures are provided in the portal.

<https://eprocurebhel.co.in/nicgep/app?page=BiddersManualKit&service=page>

कृपया अंतिम समय की हलचल से बचने के लिए ईनिविदा पोर्टल में- नियत तारीख से पहले अपना सबसे अधिक प्रतिस्पर्धी प्रस्ताव जमा करना सुनिश्चित करें।

Please ensure the submission of your most competitive offer before the due date in the E-Tendering Portal to avoid last minute hustle.

भेल कार्यालय में निविदा दस्तावेजों की कोई हार्ड कॉपी स्वीकार नहीं की जाएगी।

NO Hard copies of Tender Documents will be accepted at BHEL Office.

GENERAL INFORMATION

BHEL intends to appoint Contractor for **Air Freighting of Non-stackable cargo from EXW Switzerland to Mumbai Airport on EXW Basis. Tender shall be finalized through price bid opening and reverse auction shall be conducted.** Details of which are given below. The cargo will be handed over on **EXW** basis. Detailed specifications and scope are covered in Section –I

Names addresses of the Contact Persons for this tender are

Sl. No.	Name and Address	Phone Nos. & Email
1	BHEL ROD Mumbai Ms Asa M Angelina Khalkho Regional Operations Division BHARAT HEAVY ELECTRICALS LTD., 14/15 th Floors, World Trade Center, Cuffe Parade, Mumbai	Ph. No. 022 22171376, 9997092528 Email: asamanin@bhel.in
2	Details of Supplier	SAFRAM SA- Depot KAMMACHER QUAIS/ DOCKS 14 TO 17 1A RUE EMMA- KAMMACHER CH 1217 MEYRIN Contact person Laurent LAHAEYE Tel: +41 79 89 353 06
3	Terms of Delivery	EXW Switzerland
4	Last date of Tender Submission	20.10.2022, 15.00 HRS

SECTION – I
SCOPE OF WORK

Details of Cargo:

Item description –PO 4615E43– DC CIRCUIT BREAKER

Packing list

Packag e no.	L (Mts)	B (Mts)	H (Mts)	CBM	GW KGS.	Type of package	Description	stackability (yes/ no)	Tiltability (yes/ no)	Type of cargo
4	1.22	1.03	1	1.2566	1280	PALLET	SINGLE POLE HIGH SPEED DC CIRCUIT BREAKER	NO	NO	GENERAL
1	1.03	0.68	1	0.7004	270	PALLET	SINGLE POLE HIGH SPEED DC CIRCUIT BREAKER	NO	NO	GENERAL

(Variation in weight and/or dimension +/- 10%)

Total Gross Weight: 1550 Kg

No. of AWB required - 1 Nos.

Cargo is Non-stackable.

Discharge / Destination Port: Mumbai Airport

Cargo Readiness: Ready

Details of Work (As per Incoterm **EXW Switzerland**):

1. To contact the Supplier and receive cargo from them.
2. Ensure that the cargo / contents are securely packed and fit for air freight.
3. Air freighting of cargo as per Incoterms
4. Safe discharge of cargo at destination airport.

Description of work mentioned above is illustrative and not exhaustive and contractor will have to consider all incidental works if involved while conducting the job in giving their rates. No incidental/additional charges will be payable for any other miscellaneous works connected with the handling of above jobs.

The Contractor while executing the work should consider the shortest, most economical and reliable logistics to be adopted for transportation of cargo.

Note: Time is of the essence and hence the Cargo is required to be airfreighted immediately.

Detailed Instructions, terms & conditions are covered in Section II, III & IV of this Tender document. Bidders are requested to carefully read these sections.

SECTION II

INSTRUCTIONS TO BIDDERS

1. Bidders are advised to go through the tender document fully before submitting their offers online on E-Tendering Portal <https://eprocurebhel.co.in>
2. The bidder while submitting the offer should consider the shortest, most economical and reliable logistics to be adopted for transportation of cargo.
3. **The price offer is to be submitted online on E-Tendering Portal at the web address mentioned above.**
4. The offers shall be kept valid for a period of 30 days from the date of opening of the tender.
5. BHEL reserves the right to accept any tender or part of tender or to reject all tenders without assigning any reasons thereof.
6. The offers shall include:-
 - 1) **EMD: The EMD of Rs.6100/- to be submitted through NEFT/RTGS. The fund may be transferred to the following account.**

BHEL Bank Account details:

NAME : Bharat Heavy Electricals Limited
Bank & Branch: State Bank of India,Cuffe Parade Branch
Account No : 10783155482
IFSC Code: SBIN0005345

The EMD should be submitted latest by 1500 Hrs on due date of tender. The offers without EMD will not be considered for evaluation in the E-Tendering system

2) Techno Commercial Bid:

The techno commercial bid is to be filled and submitted online on E-Tendering Portal of BHEL at web address <https://eprocurebhel.co.in> latest by **due date and time of tender submission**. The techno commercial offers shall be opened on **the same day of tender submission at 1500 Hrs**. Hard copies of techno commercial offers shall not be accepted for evaluation.

3) Reverse Auction:

RA will be conducted for technically qualified parties by separate service provider.

7. Evaluation Criteria:

- 7.1. The offers will be evaluated on the basis of Total Cost to BHEL in INR. For Tender evaluation, **SBI TT Selling rate between INR - Foreign currency on the date of opening of the technical bid will be considered** In case this date is holiday then rate of previous working day will be considered.

- 7.2. Price Bid of technically qualified bidders will only be considered for evaluation.

Instruction for MSE Suppliers (Micro and Small Enterprises)

MSE suppliers: The bidder to be a Micro and Small Enterprises (MSE) vendor registered as per MSE act. As per the public procurement policy notified by the Central government.

"MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM, II) or valid NSIC certificate or EM II certificate with due validity, along with attested copy of a CA certificate (where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiencies in the above required documents are not submitted before price bid opening. If the tender is to be submitted through E-procurement then the documents above required Documents should be notarized or attested by a Gazetted officer for consideration of MSE certificate. "

Copy of valid Udyam Registration certificate will also be considered for MSMEs. In case any improper / lack of documents is there vendor on their own interest may submit all the relevant documents as stated above, before price bid opening.

Definitions of MSEs owned by Women is under:

- i. In case of proprietorship firm, proprietor must be woman.
- ii. In case of partnership firm, the women partners must be holding at least 51% shares in the unit.
- iii. In case of private limited companies, at least 51% share must be held by women promoters.

Definitions of MSEs owned by SC/ST is under:

- i. In case of proprietorship firm, proprietor must be SC/ST.
- ii. In case of partnership firm, the SC/ST partners must be holding at least 51% shares in the unit.
- iii. In case of private limited companies, at least 51% share must be held by SC/ST promoters
- iv. Authorized Offices to Issue SC/ST certificate. The caste/Tribe/Community certificate issued by the following authorities in the prescribed form for SCs/STs can be considered.
- v. District Magistrate / Additional District Magistrate / Collector / Deputy commissioner / Additional Deputy commissioner / Deputy collector/ 1st class stipendiary magistrate/ Sub divisional Magistrate/ Taluka Magistrate/ Executive magistrate/ Extra Assistant commissioner.
- vi. Chief Presidency magistrate/ Additional chief presidency magistrate/ Presidency magistrate.
- vii. Revenue Officer not below the rank of tahsildar.
- viii. Sub-Divisional officer of the area where the individual and/ or his family normally resides.
- ix. To avail the benefits of MSE under SC/ST category, the related documents as stated above should be submitted along with tender documents.

For MSE vendors getting award-

Payment for MSE Indigenous eligible vendors will be as per MSMED Act 2007 subject to fulfillment of above procedure.

Note: MSME vendors need to go through Special conditions of the tender also for any special instruction & deviation from above.

SECTION III

SPECIAL CONDITIONS

1. The contractor shall coordinate with foreign supplier and receive the cargo. Upon receipt of cargo the contractor shall send PRE-ALERT indicating the BHEL Purchase Order No, HAWB No. & MAWB No., Port of Loading, No of pkgs., weight and flight details immediately after receipt of the cargo at the port of origin.
2. The House Airway Bills shall be prepared as per contracted freight rates of this tender and indicate the details as required by IATA Rules and Regulations viz. Departure Airport, Suppliers' name and address, Purchase Order No. and date, Import License No. and date, Case Markings, Commodity descriptions, actual measurements and weights, freight payment terms stipulated in Purchase order etc. The AWB must be submitted to BHEL for checking and approval.

3. Transit Time

Total Transit time permitted = 14 Days

Start of Transit time will be the date of readiness of cargo or shipper intimation or BHEL intimation whichever is later.

End of Transit time will be the date to final IGM (inward) at Mumbai AirPort

4. Transit Penalty

The penalty shall be 1 % of the freight value (SI No 1 of Price Bid) per day or part thereof subject to maximum of 10% of the freight value (SI No 1 of Price Bid) for the shipment.

Important: In case the initiation of the execution of contract is delayed beyond the maximum transit penalty condition then BHEL can invoke Risk Purchase Clause.

5. The contractor should ship the entire cargo in single lot as per the cargo readiness date. In the event of shipment coming in parts (in different flights) the air warehousing charges due to delay in receipt of complete cargo shall be recovered from the freight bills.
6. The Contractor shall send the **PRE-ALERT, at least 24 hrs prior the arrival without fail**, indicating the Purchase Order No., MAWB No., House Airway Bill & Port of Loading, No. of Pkgs., weight, freight (including freight and CC charges along with exchange rate with date) and flight details immediately after receipt of the cargo at the port of origin. For all such services, all charges shall be borne by the Air Console Agents. Any charge (demurrage, fine for late filing of BoE etc) incurred due to delay in receiving pre-alert shall be deducted from freight bills.

7. The contractor shall on receipt of cargo at destination shall promptly notify the designated officer of BHEL, Mumbai about the arrival of cargo at the destination and handover all related documents (HAWB, Cargo Arrival Notice, Manifest copy, suppliers invoice, packing list etc.) to BHEL Mumbai or their clearing agents for effecting speedy customs clearance of the of cargo at Mumbai Airport. In case of any change (postpone / prepone) in flight schedule, the same shall be informed immediately with updated flight details, revised documents (if applicable) and expected arrival date. **If Contractor fails to deliver the documents as above, the penalty/interest/demurrage/additional warehouse charges incurred by BHEL on account of such delay shall be recovered from the Contractor.**
8. The contractor shall hand over the delivery order (DO) to BHEL Mumbai within 24 hours after arrival of aircraft (including Sundays and holidays). If the Contractor fails to deliver the same then demurrage charges for the delayed period shall be recovered from the contractor.
9. Billing by contractor should be done as per the work order rates, payment terms and conditions. In case of excess freight declaration apart from agreed contract rate, **differential customs duty shall also be recovered from the contractor.** However if the contractor is able to get the customs refund finalized in that case the amount withheld shall be reimbursed to the contractor (corresponding follow up of case with customs will be contractors responsibility).
10. The bidder will be required to provide the names and address of their offices or names and address of the offices of associates at the Load Port and in Mumbai.
11. **Two consecutive delays, for reasons of delay attributed to the Contractor, in execution of the contracts where delay occurred is such that**
 - a) **Prescribed maximum transit time limit of the contract is reached/exceeded or**
 - b) **Delay period has equaled/exceeded the original transit time period specified in the contracts****Whichever among the above is earlier may result in the Contractor being put on hold for future enquiries. Bids of such bidders will not be considered.**

12. PAYMENT TERMS:

- 12.1. The Air Freight charges will be calculated in Indian Rupees by applying the SBI TT Selling rate of SBI for the specified foreign currency (refer Price Bid) and INR prevailing on the date of landing of cargo (final IGM-inward date) at the Port of discharge. In case the date of landing of cargo is holiday (TT selling rates not available), TT Selling rates of previous working day shall be considered.
- 12.2. 100% payment of the Contract value in Indian Rupees will be made by **BHEL, Mumbai** after adjustment of penalty, if any, on safe discharge of cargo at the destination airport (**Mumbai**).

- 12.3. Payment will be made within 30 working days after the receipt of clear and complete Bill in all respects as per the terms of the contract.
- 12.4. Payment shall be made based on the actual chargeable weight of the cargo in case of variation of dimensions from the dimensions given in tender ((Variation in weight and/or dimension +/- 10%), else the chargeable wt. given in the technical bid will be considered.
- 12.5. All the Bills should be in the name of BHEL, ROD, Mumbai having GSTN 27AAACB4146P1ZF.
- 12.6. **GST shall be paid only on reflection in GSTR 2A of BHEL GSTIN: 27AAACB4146P1ZF. Contractor to comply with GST law and its requirement. If any penalty or interest is incurred by BHEL due to non-compliance by contractor, the penalty/interest incurred would be recovered from the contractor.**
- 12.7. **The following documents to be submitted along with invoice**
1. Supplier Invoice and Packing list
 2. Proof of date of cargo readiness from Supplier (Email from overseas agent or confirmation email from BHEL officials / supplier or any other document with date)
 3. Signed copy of AWB.
 4. Pre-alert email.

(Note: The invoice of contractor will not be processed without above documents)

SECTION IV

GENERAL TERMS AND CONDITIONS

The following terms shall have the meaning hereby assigned to them except where the context requires otherwise:-

1. "Company" BHEL (or B.H.E. Ltd.) shall mean Bharat Heavy Electricals Limited, a Company registered under Indian Companies Act 1956, with its Registered Office at BHEL House, Siri Fort, New Delhi-110 049, India or its Authorized Officers or its Engineer or other Employees authorized to deal with this contract.
2. "CONTRACTOR" shall mean the individual, or Company who enters into this Contract with BHEL and shall include their executors, administrators, successors and assigns. "CONTRACTOR" shall also mean "AGENT" or "CARRIER" or "TRANSPORTER" or "MTO" where the context so requires.
3. "CONTRACT " or " CONTRACT DOCUMENT" shall mean and include the agreement, LOI, the work order, the accepted appendices of rates, Schedules of Quantities (if any),

General Terms and Conditions of Contract, Special Conditions of Contract, Instructions to Bidder, the drawings, the Technical Specifications, the Special Specifications (if any) and all correspondences.

4. Any conditions or terms stipulated by the bidder in the tender documents or subsequent letters shall not form part of the Contract unless specifically accepted in writing by BHEL and incorporated in the Agreement.
5. "TENDER SPECIFICATIONS" shall mean the Scope of Work, Special Instructions / Conditions, Technical specifications/requirement , Appendices, Site Information and drawings pertaining to the work and any other relevant reference in the Tender Document for which the Bidder are required to submit their offer.
6. "APPROVED" "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.
7. "SINGULAR AND PLURAL" etc. words carrying singular number shall also include plural and vice versa, where the context so requires. Words imparting masculine gender shall be taken to include the feminine gender and words imparting persons shall include any Company or Association or Body or Individuals, whether incorporated or not.
8. "VALIDITY OF THE CONTRACT" **The contract will be valid for 2 months from date of LOA**
9. "COMPLETION OF THE CONTRACT" The contract will be treated as complete on full and final settlement of all Bills / invoices raised under the contract with no claim on either side.

10. ISSUE OF NOTICE:

10.1 The Contractor shall furnish the name, designation and addresses of his authorized agents/associates at Mumbai (India), at the Load Port and at the discharge Port. All complaints, notices, communications and references shall be deemed to have been duly given to the Contractor, if delivered to the Contractor or his authorized agent/representative.

11. COMMENCEMENT OF WORK:

11.1 The Contractor shall commence the work on specific intimation from BHEL in writing or the time indicated in the LOI and shall proceed with the same with due expedition without delay. If the contractor fails to commence the work as per the terms of Order/Contract, BHEL, at its sole discretion will have the right to cancel the Order/Contract. His Earnest Money and/or Security Deposit will stand forfeited without prejudice to any and all of BHEL's other rights and remedies in this regard.

12. INVOICES AND PAYMENTS

12.1 The Contractor will be required to raise the Invoice for the services rendered within 3 months of such service. The Company may accept some bills beyond the specified period as exception with satisfactory reason for delay. Any loss of GST to BHEL due to late submission of bills by agent shall be recovered from agent's bills.

The Invoices will have to be raised according to the explicitly agreed rates and payment terms of the contract.

12.2 The GST element (if applicable) even though included in the total price of the contractor, to be shown separately in the invoice.

GST shall be paid only on reflection in GSTR 2A of BHEL GSTIN: 27AAACB4146P1ZF. Contractor to comply with GST law and its requirement. If any penalty or interest is incurred by BHEL due to non-compliance by contractor, the penalty/interest incurred would be recovered from the contractor

13. RISK PURCHASE:

BHEL reserves to itself the following rights in respect of this Contract without entitling the Contractor for any compensation.

13.1 If at any time during the currency of the contract, the contractor fails to render all or any of the services required under the scope of work of the contract satisfactorily in the opinion of BHEL, whose decision shall be final and binding on the contractor, BHEL reserves the right to get the work done by other parties or departmentally at the cost and risk of the contractor and also forfeit the Security deposit.

13.2 To recover any moneys due from the Contractor, from any moneys due to the Contractor under this or any other contract or from the Security Deposit.

13.3 To claim compensation for losses sustained including BHEL's supervision charges & overheads in case of termination of Contract.

13.4 In case of Risk Purchase is enforced, The contractor will hand over the clean cargo along with all related documents, NOC etc without any financial bearing to BHEL, enabling BHEL/BHEL nominated freight forwarder to carry out the work further.

14. OBSERVANCE OF LOCAL LAWS :

14.1 The Contractor shall comply with all Laws, Statutory Rules, and Regulations etc. The Contractor shall obtain all necessary permits/approval from the local Governing Body, Police and other concerned Authorities as may be required under law.

14.2 The Contractor shall pay all taxes, fees, license charges, deposits, duties, tolls, royalty, commissions or other charges that may be Leviable on account of any of the operations connected with the execution of this contract.

14.3 The Contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed.

15. SAFETY OF MEN, EQUIPMENT, MATERIAL & ENVIRONMENT:

15.1 All safety rules, codes applied by BHEL/its customer at site shall be observed by the Contractor and his workmen without exception. The Contractor shall be responsible for the safety of the equipment/materials and work to be performed by him.

16. INSURANCE:

16.1 BHEL shall arrange for insuring the project materials/properties of BHEL covering the risks during transit and material handling at port(s).

16.2 The Contractor shall during the performance of the contract take a suitable insurance to cover against bodily injury, death or damage to property of the Contractor or his employees.

16.3 The Contractor shall during the performance of the contract take out a Third Party insurance cover against bodily injury or death suffered by any third party/parties or damage to property occurring during the course of execution of this contract in accordance with appropriate statutory requirements.

16.4 If due to Contractor's carelessness, negligence, non-observance of safety precautions, improper security arrangements or due to non-compliance of paper work needed for lodging insurance claim, damage to BHEL/its Customer's property, and if BHEL is unable to recover its claim from the Insurance Company, the deficit will be recovered from the Contractor.

17. FORCE MAJEURE:

17.1 Acts of God, Act of any Government, war, blockades, Sabotage, riots, civil Commotion, insurrection, terrorist acts, acts of Public enemy, Flood, Storms, Washouts, Fire, Explosion, landslides, lightning, Cyclone, Earthquake, epidemics, quarantine restrictions, arrest and restraints of the government, necessity for compliance with any court order, law ordinance or regulations promulgated by any governmental authority having jurisdiction, either federal /state /civil or military, strikes or other industrial disturbances, lockouts and other similar causes / events over which the Contractor has no control.

17.2 If the Contractor suffers delay in the due execution of the contract, due to delays caused by force majeure conditions, as defined above, the agreed time of completion of the work covered by this contract may be extended by a reasonable period of time provided notice of the happening of any such cause / event is given by the contractor to BHEL within 14 days from the date of occurrence thereof.

17.3 The Contractor by the reason of such events shall neither be entitled to terminate this contract nor shall have any claim for damages against BHEL in respect of such non-performance or delay in performance and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of BHEL as to whether the deliveries have been so resumed or not shall be final and conclusive.

17.4 Force Majeure conditions will apply on both sides.

As the shipments have to be done in the prevailing COVID 19 situation, invocation of FM on grounds of generalized COVID 19 will not be acceptable, unless proofs of specific delays (closure of ports/ infection of crew, Quarantine Restrictions etc is provided along with the Notice of invocation of FM)

18. Prevention Of Corruption

18.1 Canvassing in any form or any attempt to influence directly or indirectly any official of BHEL will lead to rejection of the bid and forfeiture of the Earnest Money Deposit.

18.2 BHEL shall be entitled to cancel the contract and to recover from the Contractor the amount of any loss resulting from such cancellation, if the contractor has offered or given any person any gift or consideration of any kind as an inducement or reward for doing or intending to do any action in relation to the obtaining or the execution of the contract or any other contract with BHEL or for showing or intending to show favour or disfavor to any person in relation to the contract with BHEL, if the like acts shall have been done by any persons employed by him or acting on his behalf whether with or without the knowledge of the Contractor in relation to this or any other contract with BHEL.

19. ARBITRATION & CONCILIATION

19.1 ARBITRATION:

19.1.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Conciliation Clause herein below or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall be addressed to the Head of the ROD issuing the Contract and shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. Within 60 days of receipt of the complete Notice, the Head of the BHEL ROD issuing the Contract shall offer names of three proposed Arbitrators to the invoking Party advising to choose any one of the three names to be appointed as Sole Arbitrator. On getting confirmation from the invoking Party regarding the Arbitrator chosen from among the names so offered, the Head of the BHEL ROD issuing the Contract, shall appoint such chosen person as the Sole Arbitrator for conducting the arbitration. The language of arbitration shall be English.

19.1.2 The Arbitrator shall pass a reasoned award.

19.1.3 Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Mumbai. The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 17.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.

19.1.4 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism

for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.

19.1.5 The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.

19.1.6 Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.

19.2 CONCILIATION:

If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.

2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

19.3 The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Annexure-C (will be shared by BHEL as and when required). The Annexure-C together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein.

19.4 The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Annexure-C from time to time and confirms that it shall be bound by such amended or modified provisions of the Annexure-C with effect from the date as intimated by BHEL to it.

20. LAWS GOVERNING THE CONTRACT:

20.1 The contract shall be governed by the Indian Laws for the time being in force and only courts in Mumbai, India shall have jurisdiction over this contract.

21. INDEMNITY:

21.1 The Contractor shall indemnify and keep indemnified BHEL all losses, claims etc. arising out of any of his acts or out of the acts of his agents or associates or servants during the currency of the contract.

22 Security Deposit

22.1 Successful bidder shall submit 5% of the total contract value as security deposit within 05 working days (excluding bank holidays) days of issue of LOA for the contract.

22.2 EMD of the successful tenderer can be converted and adjusted towards the required amount of Security Deposit

22.3 Security deposit may be made in any of the following ways:

i) Only Electronic Fund Transfer in favor of BHEL

ii) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL

iii) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)

iv) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)

- 22.4 If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.
- 22.5 The security deposit shall not carry any interest. (Note: Acceptance of Security Deposit against Sl. No. (iii) and (iv) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)
- 22.6 Bidder to submit Security deposit required for execution of the contract within the 5 working days of the LOA (excluding bank holidays). In case of delay in submission of security deposit, enhanced security deposit which would include interest (SBI rate + 6%) for the **delayed period**, shall be submitted by the bidder. Further, if security deposit is not submitted till such time the first bill becomes due, the amount of security deposit due shall be recovered, from the bills along with due interest.
- 22.7 Securities / BG's shall be released after three **(3) months** of successful execution, completion of the contract and upon fulfillment of contractual obligations as per terms of the contract.

23. EARNEST MONEY DEPOSIT:

- 23.1 The offers from the bidders shall enclose a EMD as per Techno commercial Bid in following form: Electronic Fund Transfer credited in BHEL account (before tender opening)
EMD of the Bidder will be forfeited if:
- 23.2 After opening the tender and within the offer validity period, the Bidder revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
- 23.3 The Bidder fails to deposit the required Security deposit or commence the work within the period as per LOA/ Contract
- 23.4 If the bidder declines to accept the LOA or is unable to accept the work which has been awarded on the basis of the offer received from the bidder or revokes the offer within the validity period of the offer, the earnest money shall stand forfeited
- 23.5 EMD by the Bidder shall be withheld in case any action on the Bidder is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ Bidders" and forfeited/ released based on the action as determined under these guidelines.
- 23.6 EMD of successful bidder will be adjusted towards part of the security deposit.
- 23.7 EMD of all unsuccessful bidders shall be returned normally within fifteen days of placement of LOA/Work Order on successful bidder.
- 23.8 EMD shall not carry any interest.

24. REQUIREMENTS OF PERFORMANCE

24.1 All permissions / Clearances or any other relevant authorization from competent authority shall be obtained by the Contractor at his own cost. Any contingency arising in this respect shall be the responsibility of the Contractor. Also the Contractor shall be responsible

for any mishap, accident en route and consequences therefore including legal complications, if any.

24.2 The contract as entered into between BHEL and the contractor shall in no way, nullify, reduce, mitigate or absolve the parties of any responsibility, obligation or liability that may devolve upon them under the acts or laws governing such activity.

24.3 The Contractor shall take all due care for protecting the consignments from rains and be responsible for their safe and sound condition during his possession and the vehicles carrying such consignments shall be suitably equipped for the same. The contractor shall take all due care of consignments while loading / unloading. During transshipment he shall provide all packing and lashing at his own cost.

24.4 All the safety precautions required in transportation such as lashing and securing the consignments, providing pilots/escort (if necessary) shall be the responsibility of the Contractor at his own cost.

25. SHORT- LANDED OR DAMAGED GOODS

25.1 It shall be the responsibility of Contractor to give notice of loss (damages or short landing of cargo) as per the relevant rules to the Carriers, Port authorities and Underwriters for non-delivery/short delivery/losses/damages. Under no circumstances, the intimation be time barred. In case of time barred cases, the loss sustained by BHEL shall be to the account of the Contractor.

25.2 In case of goods specified by BHEL and in case of apparent damages, the Contractor will apply for survey by Carriers, Port authorities, Underwriters etc. (including Insurance survey) within 48 hours of landing of goods. If any loss or damage is apparent, the Contractor shall lodge claim with the appropriate authorities.

26. Subletting Not Allowed

26.1 The contractor shall not sublet, transfer, or assign the contract or any part thereof. In case the contractor contravenes this condition, BHEL shall be entitled to place the contract elsewhere at the risk and cost of the contractor and all expenses borne on this account shall be recovered from him.

The contractor shall not split or transfer to any other party any part of the contract during the currency of the contract

27. Guidelines for suspension of business dealings with suppliers/ contractors' :The contractor will be binding to the "Guidelines for suspension of business dealings with suppliers/ Contractors" which is available at bhel website www.bhel.com. The link for the same is available at

<https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors>

28. BHEL Fraud prevention policy

"The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL web site <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice. "

29. REVERSE AUCTION:

BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking

For detailed information regarding Reverse Auction procedure, please refer BHEL Reverse auction Policy available at <https://www.bhel.com/guidelines-reverse-auction-2021>

30. Confidentiality, Use of Contract Documents and Information

- 30.1 Bidder shall not, without Company's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing pattern, sample or information furnished by or on behalf of Company in connection therewith, to any person other than a person employed by Bidder in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance
- 30.2 Bidder shall not, without Company's prior written consent, make use of any document or information provided by the Company except for purposes of performing the contract
- 30.3 Any document supplied to the Bidder in relation to the contract other than the Contract itself remain the property of Company and shall be returned (in all copies) to Company on completion of Bidder's performance under the Contract if so required by Company. All information obtained by Bidder in the conduct of operations and the information/drawings/documents provided to the Bidder shall be considered confidential and shall not be divulged by Bidder or its employees to anyone other than the Company's personnel. This obligation of Bidder shall be in force even after the termination of the contract.
- 31.0 **Integrity commitment, performance of the contract and punitive action thereof:**
- 31.1 Commitment by BHEL:
 - 31.1.1 BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.
- 31.2 Commitment by Bidder/ Supplier/ contractor:
 - 31.2.1 The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
 - 31.2.2 The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
 - 31.2.3 The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL
 - 31.2.4 If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence

punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ Bidder as per extant guidelines of the company available on www. bhel.com and/or under applicable legal provisions”.

32.0 STACKING AND TILTABILITY OF CARGO/PACKAGES:

32.1 The cargo is non-stackable.

33.0 E- PROCUREMENT:

33.1 This tender will be conducted, evaluated and finalized online through e-Procurement System. The bidder shall submit his response through bid submission to the tender on e-Procurement platform website as given in the General Information table.

33.2 Neither the Organization (Bharat Heavy Electricals Ltd.) nor the eProcurement service provider (as given General Information table) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems /uploading of corrupted unreadable bids or any reasons thereof. If E-Offers found unreadable/corrupted files while decrypting the same will be ignored for further evaluation purpose.

34.0 Packing List: The approximate weight and dimension is enclosed in packing list as they are based on engineering design. Please note that the weights and sizes given are indicative and for guiding the contractor. The actual Dispatch particulars may vary and shall be known at an appropriate stage. (Variation in weight and/or dimension +/- 10%)

35. The bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non- submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

36. Due to the nature of the work. Tender shall be awarded to 1 party only.

347. VERIFICATION OF DOCUMENTS: BHEL reserves the right to verify any documents submitted by the Bidder. Any supporting documents in line with contract copy and completion certificate like invoices, Packing list, Billing details in original may be asked and BHEL reserves the right to reject the bid if verification from customer/ or supporting documents is not forthcoming.

SECTION V

FORMAT FOR TECHNO- COMMERCIAL BID

SR No	Description	Confirmation by Tenderer
1	Bidder must have an average annual turnover (revenue from operations) of the company of not less than Rs 0.92 Lakhs for the last 3 years. (i.e. for year, 2019-2020, 2020-21 & 2021-22).	Copy of CA certificate with UDIN OR copy of audited financial statement to be submitted
2	<p>Bidders must submit proof of having have successfully executed International air freight contracts last 7 years (ending last day of month previous to the one in which the tender was due for opening) as per following</p> <p>(i) Three contracts of value not less than Rs 1.22 Lakhs each OR (ii) Two contracts of value not less than Rs 1.53 Lakhs each OR (iii) One Contract of value not less than Rs 2.44 Lakhs</p> <p>NOTES: Details of the customer with email, contact details and office address are also required for verification. In case completion certificate are not verifiable due to any reason then such bids are liable to be rejected.</p>	<p align="center">Copies of satisfactory completion certificate/ Work Order from customer must be attached and customer contact details for verification of documents must be attached</p>
3	Valid IATA Certificate of bidder	To be provided
4	Details of Load port agent	To be provided
5	EMD Details	To be provided
6	<p><u>CANCELLATION OF THE CONTRACT:</u> <u>1.BHEL reserves the right to cancel the contract at any point of time without assigning any reason whatsoever. The contractor shall not be entitled for any compensation as a result of such a cancellation.</u> <u>2. BHEL reserve the right to forfeit security deposit of the contractor in case of unsatisfactory performance/ cancellation.</u> <u>3.If the CONTRACTOR fails or neglects or refuses to observe / perform any of the terms and conditions / obligation of or under the contract BHEL may without prejudice to any other rights terminate the contract without any notice in writing and recover from the Contractor any damage suffered by on account of the failure, negligence, refusal, violation or breach of contract or any part thereof including the amount by which the cost of completion of the work done by any other agency shall exceed the amount payable to the CONTRACTOR under the contract.</u></p>	<p align="center">Agreed</p>
7	<u>RISK PURCHASE:</u> As Specified in General Terms & Conditions.	Agreed

8	<u>It shall be sole responsibility of contractor to coordinate with supplier for receiving goods and making booking accordingly. Under no circumstances, dead freight shall be payable by BHEL.</u>	Agreed
9	The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com.	A self-certification should be submitted by the bidder indicating compliances. Date to be mentioned on certificate.
10	The Bidder should NOT have been referred to BIFR and Interim Resolution Professional (IRP) is not appointed for initiating insolvency by NCLT proceedings against the bidder.	A self-certification should be submitted by the bidder indicating compliances. Date to be mentioned on certificate.
11	Tender Documents: Entire tender document including forwarding letter of the tender document along with blank price bid duly signed and stamped on each page is to be submitted.	To be submitted
12	Compliance Letter: The compliance letter duly signed and stamped on letter head is to be submitted	On letter head to be submitted
13	Payment Terms as per Section III	Agreed
14	PAN CARD of the company GST registration Certificate of the company Registered address with name , email id and contact no. of the owner of the company	Copies to be submitted
15	GST shall be paid only on reflection in GSTR2A of BHEL GSTIN: 27AAACB4146P1ZF. Contractor to comply with GST law and its requirement. if any penalty or interest is incurred by BHEL due to non-compliance by contractor, the penalty/interest incurred would be recovered from the contractor	Agreed
16	Electronic Clearing Service Credit clearing/ RTGS/ NEFT Mandate Form certified from Bank.	To be provided
17	Transit Penalty as per Section III	Agreed
18	Offer Validity: The offer of bidders will be valid for 30 days for acceptance from due date of tender. Validity of the contract : The contract will be valid for 2 month from date of LOA	Agreed
19	i) The Bidder is required to state whether he is a relative of any Director of the Company or the Bidder is a firm in which any Director of the Company or his relative is a partner or any other partners of such a firm or alternately the Bidder is a private company in which Director of the Company is a member or Director. Note - Latest list is available in the company web site. Bidder may check for any changes in the list of directors at the time of submission. https://www.bhel.com/board-of-directors	1] provide Name of the Bidder and his relations with the Director in the Company 2]Provide Name of the Director of the Company who is related to the Bidder 3]Provide Name of the Director of the Company who is a member or a Director of the firm

20	Reverse Auction As per general terms and conditions. The final price break up after the RA will be in proportion to the initial weightage given in sealed Price bid. The final price break up to be provided on the same day after RA is concluded.	Agreed
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SIGNATURE AND SEAL OF TENDERER

SECTION VI

FORMAT FOR PRICE BID

Sr. No	Description	Unit	Currency	Gr Wt (kg)	Chargeable Weight (kg)	Rate (exc. GST)
1	Freight Rate/Chargeable Wt (kg) As per scope of work	Rate per KG	CHF	1550	To be filled by bidder	
2	Origin Charges including Ex works charges , Handling, Airline, Documentation, Custom Clearance etc as per scope of work	Lumpsum	CHF	N.A.	N.A	
3	Destination Charges including Charge Collect Cartage Charges, Delivery Order Charges, and IGM Charges, etc. as per scope of work	Lumpsum	INR	N.A	N.A	
4	Total Price					

Note:

1. Weight and dimensions given are indicative and may vary. Payment shall be considered based on actual chargeable weight of the cargo in case of variation of dimensions and weight (variation in weight and/or dimension +/- 10%), else the chargeable weight given in the price bid will be considered.
2. Charges mentioned in above Price Bid only will be payable. No other additional charges will be considered for payment.
3. Taxes if applicable will be payable as per the Law of Indian Government
4. The Party Quoted the lowest Total Cost in INR will be considered as L1 Party.
5. Reverse Auction will be conducted on Total Price.
6. For Tender evaluation, SBI TT Selling between INR/ CHF exchange rate will be taken as on the date of opening of the technical bid.
7. No. of AWBs required as per scope of work.
8. Description of work mentioned above is illustrative and not exhaustive and contractor will have to consider all incidental works if involved while conducting the job in giving their rates. No incidental/additional charges will be payable for any other miscellaneous works connected with the handling of above jobs.

SIGNATURE AND SEAL OF TENDERER

SECTION -VII

(Letter of compliance in Company's Letter Head)

Ref No:

Date:

To,

M/s Bharat Heavy Electricals Limited,
15th Floor, World Trade Centre-1,
Cuffe Parade, Mumbai –5

Sub: Your Tender no RE/MUM/IMP/BP/IA-2230

Dear Sir,

With reference to your above tender, we have carefully read and understood the tender terms & conditions and hereby confirm that all the terms and conditions of your above tender are acceptable to us and our offer is based on the same.

In view of the above confirmation, any deviation mentioned by us anywhere in the tender is not valid and is to be ignored by BHEL while finalising the Tender.

Further, it is also confirmed that we have submitted the price bid in your price bid format only without any deviations / conditions.

In case, any deviation is observed in the financial bid the same is not be entertained / considered by BHEL.

I/We agree to furnish any other information / produce any record for inspection as may be required by the competent authority or an officer duly authorized by the competent authority of Bharat Heavy electrical Limited.

I / We also give the undertaking that all the statutory acts, rules & regulations applicable to International Business and to central /state Govt. in load port and discharge port country are being and will be followed by us in course of our operations/ execution of the contract.

I/ We are aware and now conversant with site conditions / Weather conditions / Route feasibility to site/Local social issues/Local labor issues/Local political issues/ Geo-political situation/ Work Culture/ Weekly holidays/ festivals Holidays, etc both at load port and discharge port.

The above information is true and correct and we will not raise any claim of any nature due to lack of knowledge of conditions both in load port country / discharge country and enroute.

I affirm that the particulars given are true to best of my knowledge and belief.

Thanking you,

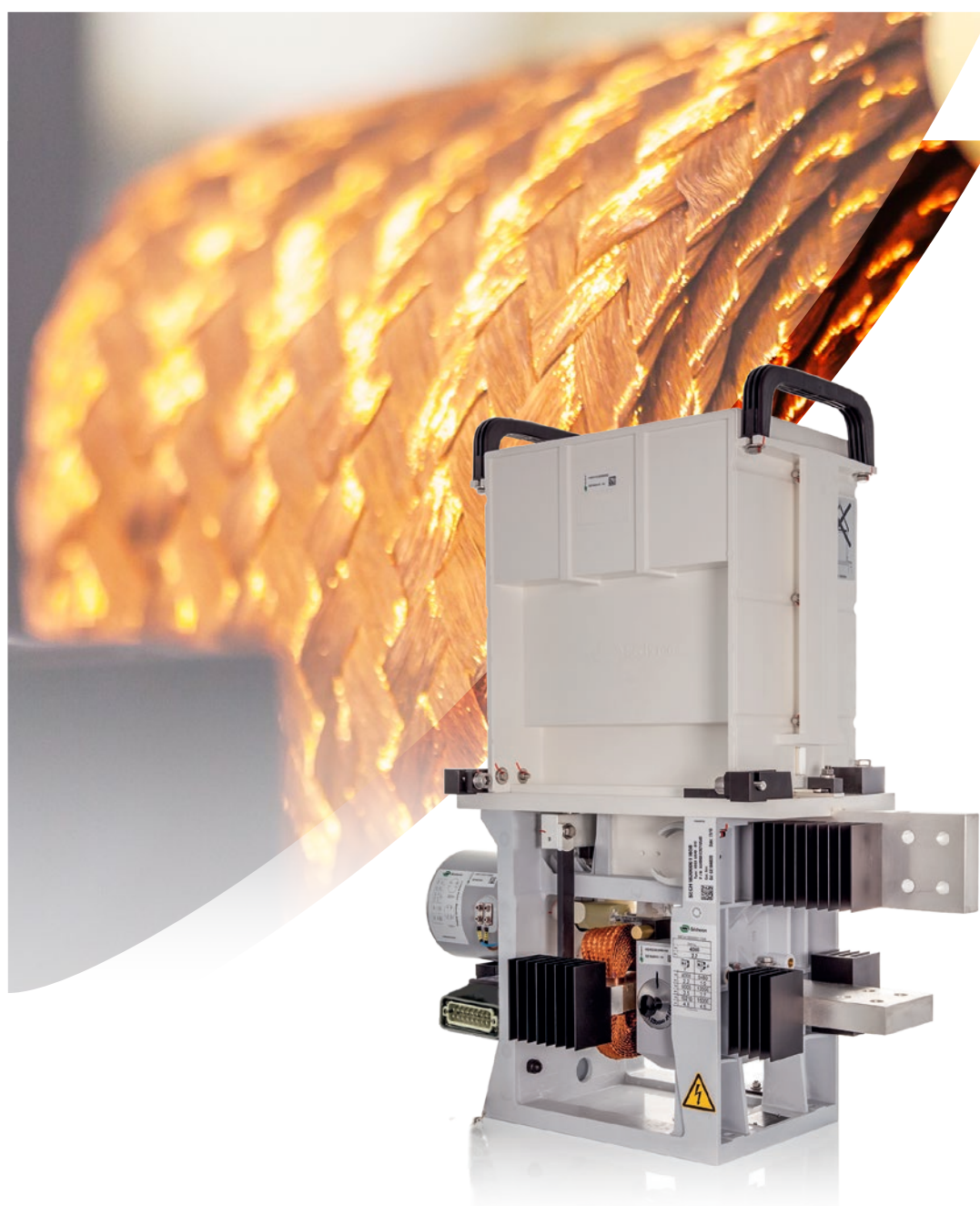
Yours faithfully,

SIGNATURE AND SEAL OF BIDDER

ELECTRICAL SAFETY SOLUTIONS /

HIGH-SPEED DC CIRCUIT BREAKERS FOR FIXED INSTALLATIONS (EN / IEC) Type **UR**

DC TRACTION SUBSTATIONS

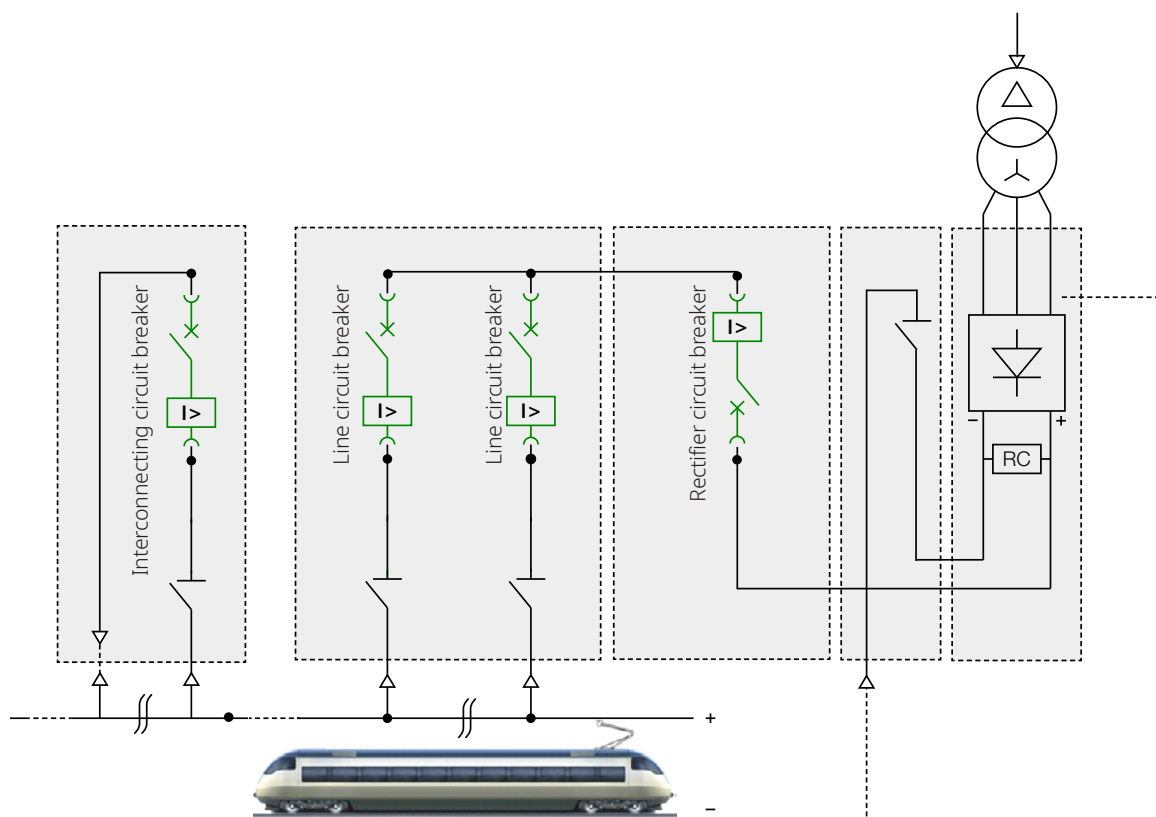


GENERAL INFORMATION

The **UR** range of DC circuit breakers has achieved worldwide acceptance as a well proven design for use in fixed installations. It has been regularly upgraded and adapted to new standard requirements and for different applications over the years, continuously improving the level of performance and functionality.

These have led to an impressive service track record throughout the world for the UR product range. Combining a compact design with a high making and breaking capacity, the **UR** range, with its low number of parts also guarantees high reliability and low maintenance requirements.

APPLICATIONS (FOR DC TRACTION POWER SUBSTATIONS)

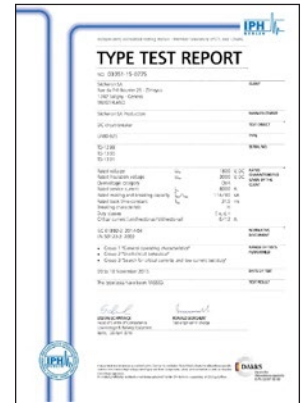


MAIN BENEFITS

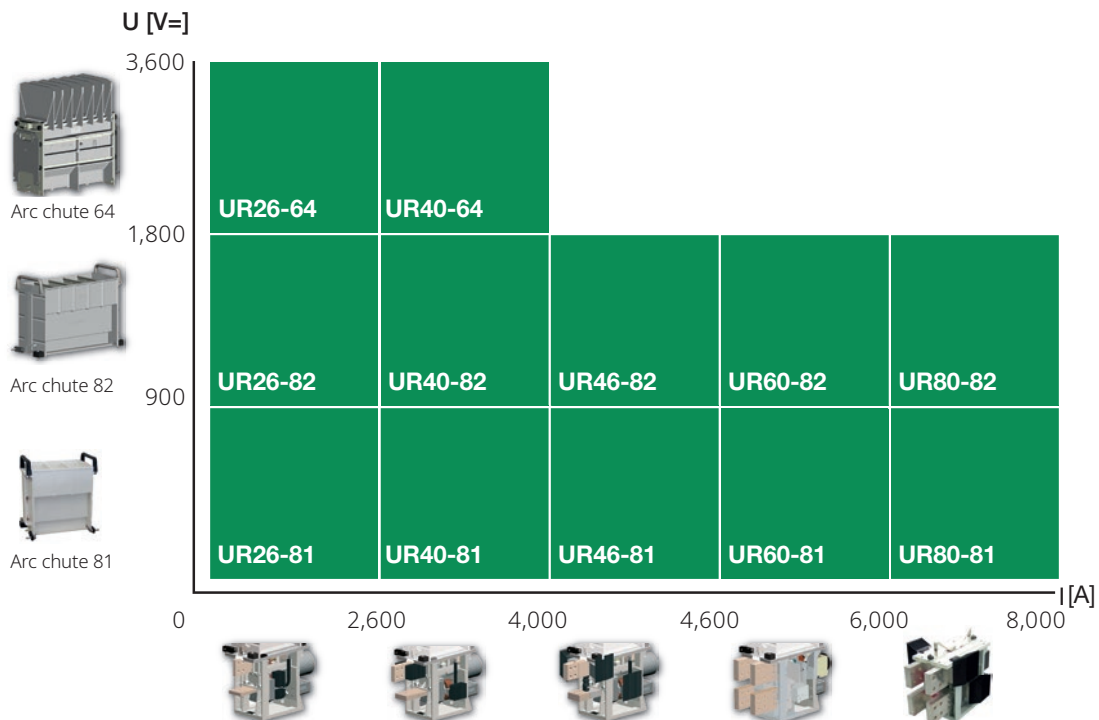
- ✓ Safe with a high insulation level.
- ✓ Very low maintenance requirements with high electrical and mechanical endurance.
- ✓ Simple design with few moving parts resulting in high reliability.
- ✓ High rated short circuit making and breaking capacity.
- ✓ A large number of different options to match the various application requirements.
- ✓ Proven design with worldwide experience and acceptance.

MAIN FEATURES

- Thermal current up to 8,000 A
- Rated voltage 900 V_{DC}, 1,800 V_{DC} and 3,600 V_{DC}
- Indoor installation
- Bi-directional (UR26 to UR80)
- Uni-directional configuration available for UR60 & UR80
- Trip-free direct acting device
- Limited maximum arc voltage
- Electro-magnetic closing with electric or magnetic holding
- Reference standards: EN 50123-1 /-2 ,IEC 61992-1 /-2
- Insulation material according to EN 45545-2
- Also available according to IEEE (ANSI) C37.14 / C37.16 standards (refer to our specific SG104309BEN brochure)



PRODUCT RANGE

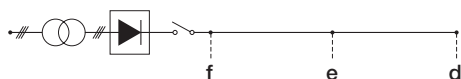


Note: Additionally to the above range, is also available the DC high-speed circuit breaker type UR15 rated 1500A and 900V_{DC}/1,800V_{DC}. For more information on this breaker type refer to its specific brochure SG104147BEN.

BREAKING CURRENT PARAMETERS

/// THIRD RAIL OR OVER-HEAD CATENARY SYSTEM

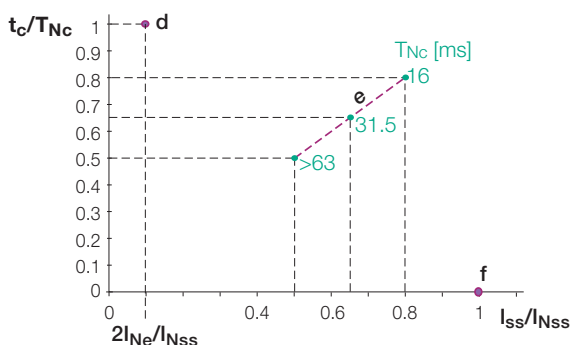
POWERED BY A RECTIFIER



- f : duty f - peak of the short-circuit current
- e : duty e - maximum circuit-energy short-circuit
- d : duty d - distant fault short-circuit.

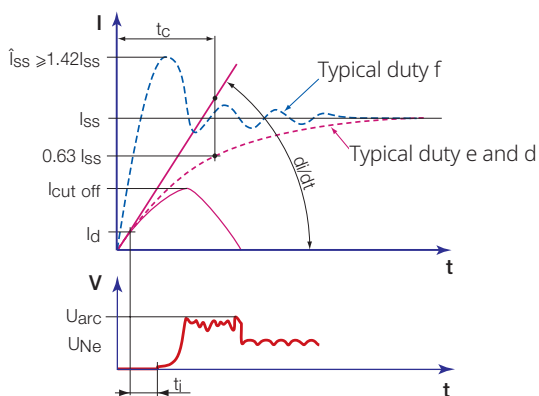
Note: points f, e and d represent fault conditions along the line at different distances from the rectifier.

/// CHARACTERISTICS OF THE DUTIES d, e AND f



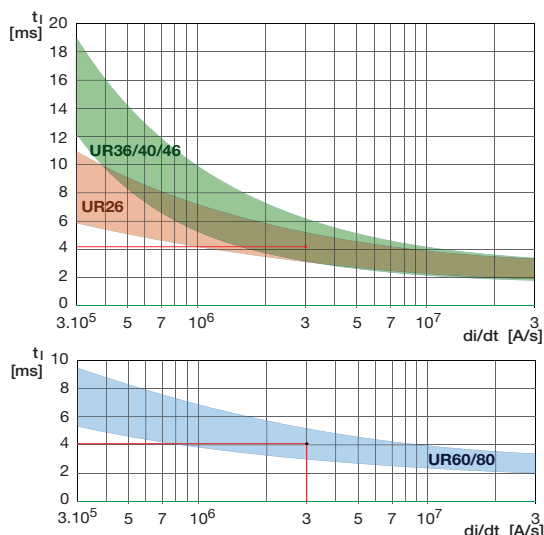
- I_{ss} = Prospective sustained short-circuit current
- I_{Nss} = Rated short-circuit current of the circuit breaker
- t_c = Time-constant of the circuit
- T_{Nc} = Rated track time constant of the circuit breaker.

/// BREAKING CURRENT PARAMETERS



- I_{ss} = Prospective sustained short-circuit current
- \hat{I}_{ss} = Peak of I_{ss}
- di/dt = Initial current rate of rise
- I_d = Setting of maximum current release
- $I_{cut\ off}$ = Cut-off current
- t_c = Time-constant of the circuit
- t_i = Opening time
- U_{arc} = Maximum arc voltage
- U_{Ne} = Rated operational voltage

/// OPENING TIME t_i



Relationship between opening time t_i and the initial rate of rise of current di/dt for direct instantaneous over-current release.

Example for a di/dt of 3×10^6 A/s:

- for UR26: $t_i \sim 4.3$ ms,
- for UR60/80: $t_i \sim 4.1$ ms.

Note: for a shorter opening time on low di/dt , the "indirect release" (shunt trip) option can be used (refer to "Options" section page 12).