

**KERALA STATE ELECTRICITY BOARD LIMITED**(Incorporated Under the Companies Act, 1956 (No.1/1956)
Corporate Identity No.U40100KL2011SGC027424**Corporate Office (Supply Chain Management)**Vidyuthi Bhavanam, Pattom, Thiruvananthapuram- 695004, India.
Ph: +91-471-2446853, Fax: +91-471-2447246, E-mail: cescmkseb@ksebnet.com**PURCHASE ORDER**

From

Chief Engineer (SCM)

To

**M/s. United Electrical Industries
Limited, Pallimukku,
Kollam 691010**

Sir,

P.O.No.	SCM.116/2017-18/4656
Date	04/11/2017
P.O. type	Supply
P.O. type	New
Reference file	XR/AEE1/2017/CE(SCM)/e P.10/400 Amp AB Switch
Tender No.	KSEB/SCM/eP.10/2017-18 dated 5/5/2017
Purchase Value	Rs. 14,37,94,249/-
Price	Fixed

Sub:- Supply of 9791 numbers of 11kV, 400 Amp AB Switches – reg:

- Ref:-**
- 1) This office Bid No.KSEB/SCM/eP/10/2017-18 dated 05/05/2017
 - 2) Your bid document opened on 5th June 2017
 - 3) This office letter No. XR/AEE1/2017/CE(SCM)/eP.10/400 Amp AB Switch/2275 dated 17.7.2017
 - 4) Your letter No. SALES/KSEB/ep/10/ABS/835/2017-18 dated 19.7.2017
 - 5) Your letter No. KSEB/VR/834/2017-18 dated 20.7.2017
 - 6) This office letter No. XR/AEE1/2016/CE(SCM)/eP.10/400 Amp AB Switch/3536 dated 19.9.2017
 - 7) Your letter No. UEI/Sales/KSEB/1303/2017-18 20.9.2017
 - 8) This office Letter No. XR/AEE1/2016/CE(SCM)/eP.10/400 Amp AB Switch/3800 dated 28.9.2017
 - 8) Your letter No. SALES/KSEBL/1398/2017-18 dated 6th October 2017
 - 9) Proceedings of the Purchase Committee meeting (Agenda Item No. 04/17-18) held on 30.10.2017
 - 10) This office letter No. XR/AEE1/2017/CE(SCM)/eP.10/400 Amp AB Switch/4535 dated 31.10.2017

Your offer to supply the materials as detailed in this purchase order is accepted **subject to the condition that the type test certificate of the item from CPRI/NABL accredited lab / any Government approved laboratory as per the specifications of the KSEBL with drawing shall be submitted before commencement of supplies without affecting the delivery schedule of the Purchase Order.** Please effect the supply according to the instructions in the note below. None of the conditions stated in your tender or other letters will be applicable unless it is specifically mentioned in this order. Please acknowledge receipt of the order and confirm acceptance of the conditions by return.

A copy of this order attached is to be attested by you on all pages as token of acceptance and returned for incorporation in the contract agreement.

This Purchase Order contains 17 pages serially numbered from 1 of 17 to 17 of 17 and signed by the Chief Engineer (SCM).

Yours faithfully,

Chief Engineer (SCM)

- Acc:-
- | | |
|-----------------|---|
| 1) As above | |
| 2) Annexure-I | - Format of Agreement. |
| 3) Annexure-II | - Format of Security Deposit Bank Guarantee |
| 4) Annexure-III | - Format of Performance Bank Guarantee. |
| 5) Approved GTP | |

Copy to:-

- 1) The Secretary (Administration), KSEB Limited, Vidyuthi Bhavanam, Thiruvananthapuram.
- 2) The Financial Adviser, KSEB Limited, Thiruvananthapuram.
- 3) The Accountant General, Kerala.
- 4) The Commissioner, Commercial Tax, Public Office, Thiruvananthapuram.
- 5) The Chief Engineer (Distribution - South), Power House Building, Thiruvananthapuram.
- 6) The Chief Engineer (Distribution - Central), KSEB Limited, Gandhi Square, D.H.Road, Ernakulam.
- 7) The Chief Engineer (Distribution - North), Vidyuthi Bhavanam, Gandhi Road, Kozhikode -11.
- 8) The Chief Engineer (Distribution - North Malabar), Vidyuthi Bhavanam, Caltex, Kannur.
- 9) The TA to Director (Distribution and Safety), Vidyuthi Bhavanam, Thiruvananthapuram.
- 10) The Deputy Chief Engineer, Electrical Circle, Thiruvananthapuram, Kattakkada, Kollam, Kottarakkara, Pathanamthitta, Kottayam, Pala, Thodupuzha, Alappuzha, Harippad, Ernakulam, Irinjalakkuda, Perumbavur, Thrissur, Tirur, Manjeri, Nilambur, Shornur, Palakkad, Kasaragode, Kannur, Sreekandapuram, Vadakara, Kalpetta and Kozhikkode
- 11) The Assistant Executive Engineer, Sub Regional Store, Thiruvananthapuram, Kattakkada, Kollam, Kottarakkara, Pathanamthitta, Kottayam, Pala, Thodupuzha, Alappuzha, Harippad, Ernakulam, Irinjalakkuda, Perumbavur, Thrissur, Tirur, Manjeri, Nilambur, Shornur, Palakkad, Kasaragode, Kannur, Sreekandapuram, Vadakara, Kalpetta and Kozhikkode
- 12) The Executive Engineer, Allocation (M), O/o the Chief Engineer (SCM)
- 13) Stock File.

SCHEDULE OF PRICE FOR 11KV AB SWITCHES - P.O. NO. SCM.116/2017-18 dated 04/11/2017

Sl. No	Description	Qty. (Nos.)	Unit Basic Price (Rs.)	Freight (Rs)	Insurance (Rs)	SGST (Rs.)	CGST (Rs.)	All inclusive unit rate	Total all inclusive Amount (Rs.)
1.	11kv 400 Amp AB Switches	9,791	11,546.08	800	100	1120.147	1120.147	14686.37	14,37,94,249.67
	Rupees Fourteen crore thirty seven lakh ninety four thousand two hundred and forty nine only								

Total Contract Value = Rs. 14,37,94,249/- *
(Rupees Fourteen crore thirty seven lakh ninety four thousand two hundred and forty nine only)

Chief Engineer (SCM)
[Signature]

Special Instructions

- 1) **Scope:-** This order covers design, manufacture, inspection, testing at suppliers works packing forwarding supply and delivery including unloading at site at KSEB Limited's stores of items mentioned in the schedule and its guarantee for satisfactory performance for a period of 24 months from the date of acceptance by the consignee or 18 months from the date of commissioning whichever is earlier.

This contract will be governed by the KSEB Limited's above bid specification, terms and condition in our bid documents, General condition of contract, above correspondence and this order. In case there is any disparity between the terms and conditions of this order and aforesaid specifications and offer, the terms and conditions stated herein and the specification shall prevail. None of the conditions stated in your offer or in subsequent letters shall be deemed to be accepted unless specifically stated herein also

- 2) **Agreement:-** A contract agreement should be executed by you within 15 days of receipt of this order in the prescribed form in Kerala Government Stamp Paper worth Rs.500/- along with Security Deposit as referred to below. The Power of Attorney (duly certified by a Registered Notary and with attestation of signature) in stamp paper worth Rs.300/- authorizing the Person signing the contract agreement on behalf of the company may also please be forwarded with the contract agreement. Payment on account of supplies against this order is liable to be withheld until the agreement is executed. General Conditions of Contract, Bid Agreement, Tender Conditions and this Purchase Order will also be a part of the contract agreement.

- 3) **Security Deposit:-** An amount of Rs. 71,89,800/- (Rupees Seventy one lakh eighty nine thousand and eight hundred Only) has to be deposited as security deposit with the Chief Engineer (SCM) in the form of demand draft. Security Deposit can also be furnished in the form of Bank Guarantee in stamp paper worth Rs.500/- valid upto 3 months after expiry of the Guarantee Period from a Nationalized / Scheduled Bank except Indus Ind Bank Limited. Cheques are not acceptable. If Security Deposit submitted is in the form of Bank Guarantee, the said Bank shall include Purchase Order No., Description of Material, Quantity and All Inclusive Price in the Bank Guarantee. The security deposit will be released after completion of the entire guarantee period plus three months. The total amount to be retained after satisfactory completion of supply is limited to 10% of the amount of contract (performance bank guarantee) which will be released after expiry of the contract period on receiving ILC from the consignees. The performance bank guarantee will be valid upto 3 months after expiry of the guarantee period.

- 4) **Price Details:-** This price noted in the schedule attached is all inclusive of taxes, other levies, packing and forwarding freight and insurance. Loading and Unloading of materials at site is suppliers responsibility. The split up details of all inclusive rates are follows.

Description	11kV 400 Amp AB Switch (Rs)
Unit Basic Price (Rs.)	11,546.08
Freight Charges (Rs.)	800.00
Insurance Charge (Rs.)	100.00
SGST (Rs.)	1120.147
CGST (Rs.)	1120.147
All inclusive Rate (Rs.)	14,686.37
Total all Inclusive Amount (Rs.)	14,37,94,249

- 5) **Firmness of rates:-** The price noted in the schedule attached is FIXED. GST is @ 18%. Any increase in taxes applicable on the date of delivery will be admitted provided the date of delivery is within the scheduled delivery period. The eligible claim on account of Taxes, in tune with the provisions of the CGST Act 2017, will only be entertained. The benefit of input tax credit applicable shall be passed on to KSEB Limited as per Section 171 of CGST Act.

- 6) **Payment terms:-** 95% of basic price with 100% taxes, freight charges and insurance charges will be made by the consignee through REC/KSEB Limited's fund in due course on the SBI or its subsidiaries after receipt and preliminary

verification and acceptance by the consignee and balance 5% will be paid after completion of the guarantee period or on production of a Bank guarantee from a Nationalized/ Scheduled Bank, except Indus Ind Bank Limited, for an amount equivalent to 5% of the contract value valid upto 3 months after the expiry of the guarantee period. Bank guarantee will be for **71,89,800/- (Rupees Seventy one lakh eighty nine thousand and eight hundred Only)**. Clause 15 of General Conditions of Contract stands amended to this extent. Bank charges, if any, incurred in connection with effecting payment to the suppliers will be to the supplier's account.

Any reduction in rates of tax on any supply of goods or services or the benefit of input tax credit shall be passed to the KSEB Ltd. by way of commensurate reduction in prices. KSEB Limited is a registered dealer under the Goods and Service Tax Act. GST identification Number (GSTIN) of KSEB Limited in 32AAECK2277NBZ1.

Taxes quoted by the firm will be reimbursed after obtaining an undertaking from the supplier in Kerala Government Stamp paper worth ₹200/- in the following format:

- 1) "Purchase order No. SCM.116/2017-18/4656 dated 04.11.2017, (Name and address of the firm) here by agreed that if any dispute on payment of taxes and duties from concerned tax authorities occurs in future, the firm shall indemnify the KSEB Ltd from such liabilities and supplier will be liable for the additions, loss or cost on account of such discrepancies/ dispute."
- 2) The benefit of input tax credit will be passed on to KSEB Limited as per Section 171 of CGST Act.

Final payment will be made on production of an undertaking by the supplier/contractor that all taxes payable to the Central/ State Government Departments/Agencies due to the supply/ Contract have been paid by him and if any claim is received in future from any Central/ State Government Departments/Agencies under existing laws regarding this supply/ contract, the supplier/contractor shall be liable to pay the same.

7. **Delivery period and schedule:-** Delivery shall commence within 90 days from the date of this Purchase Order with quantity of 1363 numbers and to be completed as detailed below to Sub Regional Stores of Electrical Circles Thiruvananthapuram, Kattakkada, Kollam, Kottarakkara, Pathanamthitta, Kottayam, Pala, Thodupuzha, Alappuzha, Harippad, Ernakulam, Irinjalakkuda, Perumbavur, Thrissur, Tirur, Manjeri, Nilambur, Shornur, Palakkad, Kasaragode, Kannur, Sreekandapuram, Vadakara, Kalpetta and Kozhikkode. The Consignee for the delivery of the item will be the Deputy Chief Engineer, Electrical Circles, Thiruvananthapuram, Kattakkada, Kollam, Kottarakkara, Pathanamthitta, Kottayam, Pala, Thodupuzha, Alappuzha, Harippad, Ernakulam, Irinjalakkuda, Perumbavur, Thrissur, Tirur, Manjeri, Nilambur, Shornur, Palakkad, Kasaragode, Kannur, Sreekandapuram, Vadakara, Kalpetta and Kozhikkode. But the consignment shall be delivered anywhere in Kerala without any extra cost, if required by the KSEBL.

S.No	Consignee	First Lot Within 90 days from the date of P.O	Second Lot Within next on month	Third Lot Within next two months	Fourth Lot Within next three months	Fifth Lot Within next four months	TOTAL
	The Deputy Chief Engineer, Electrical Circle, Thiruvananthapuram	54	55	100	300	132	641
1	The Deputy Chief Engineer, Electrical Circle, Kattakada	54	55	100	119		328
2	The Deputy Chief Engineer, Electrical Circle, Kollam	54	55	100	479	194	882

4	The Deputy Chief Engineer, Electrical Circle, Kottarakkara	54	55	100	200	174	583
5	The Deputy Chief Engineer, Electrical Circle, Pathanamthitta	54	55	100		67	276
6	The Deputy Chief Engineer, Electrical Circle, Kottayam	54	55	100	200	180	589
7	The Deputy Chief Engineer, Electrical Circle, Pala	54	55	100	200	152	561
8	The Deputy Chief Engineer, Electrical Circle, Thodupuzha	54	55	100		98	307
9	The Deputy Chief Engineer, Electrical Circle, Alappuzha	54	55	100		32	241
10	The Deputy Chief Engineer, Electrical Circle, Harippad	54	55	100	100	94	403
11	The Deputy Chief Engineer, Electrical Circle, Ernakulam	54	55	100	100	139	448
12	The Deputy Chief Engineer, Electrical Circle, Perumbavur	54	55	100	100	139	448
13	The Deputy Chief Engineer, Electrical Circle, Irinjalakkuda	54	55	100	100	161	470
14	The Deputy Chief Engineer, Electrical Circle, Thrissur	54	55	100		66	275
15	The Deputy Chief Engineer, Electrical Circle, Tirur	54	55	100		29	238
16	The Deputy Chief Engineer, Electrical Circle, Manjeri	54	55	100	100	86	395
17	The Deputy Chief Engineer, Electrical Circle, Nilambur	54	55	100	100	89	398
18	The Deputy Chief Engineer, Electrical Circle, Shornur	54	55	100	100	34	343
19	The Deputy Chief Engineer, Electrical Circle, Palakkad	54	55	100	100	28	337
20	The Deputy Chief Engineer, Electrical Circle, Kozhikode	54	55	100		23	232
21	The Deputy Chief Engineer, Electrical Circle, Vatakara	54	55	100	102		311
22	The Deputy Chief Engineer, Electrical Circle, Kannur	54	55	90		0	199
23	The Deputy Chief Engineer, Electrical Circle, Sreekanthapuram	59	58	110	100	0	327
24	The Deputy Chief Engineer, Electrical Circle, Kalpetta	58	55	100		81	294
25	The Deputy Chief Engineer, Electrical Circle, Kasaragode	58	55	100		52	265
	Total	1363	1378	2500	2500	2050	9791

Delivery period noted above, cannot be altered except under recognized force-majeure conditions or under revised instructions from this office. Clarifications sought for or amendments issued will not entitle the supplier for extension of delivery time. However, the materials shall be delivered any where in Kerala without any additional cost, if required by the KSEBL. Unloading of materials at the destination store is supplier's responsibility.

- 8) **Packing and Despatch:** - The material shall be packed properly as per standard to eliminate the chances of damages during transit and while handling at site. The packages should be marked KSEB/SCM.116/2017-18.
- 9) **Quantity Variation:** - Purchase Order for an additional quantity up to 25% over and above the original tendered quantity will be placed if the supplier is willing to supply the additional quantity at the same rates, terms and conditions of the original order and accepts the KSEB Limited's refixation clause "the price for this additional quantity shall be refixed if a fall in price occurs in the next tender opened (Price bid) during the delivery schedule fixed for the additional order". The materials if any, supplied after the delivery schedule mentioned in the 25% additional quantity will be accepted only on condition that price of such materials shall also be refixed.

10) **Branding:-** Necessary identification mark as required in the relevant IS specification shall be provided on each product. In addition to the above marking, the word "KSEB Ltd." and supplied on __/__/2017 has to be indented on each item. This should be done before the material is offered for inspection.

11) **Standard:** The items shall be designed, manufactured assembled marked and packed as per the purchase order specifications drawings and GTP.

a) **Drawing:-** Outline dimensioned drawing (General Arrangement Drawing) of the item submitted for the type test is to be submitted for approval.

b) **GTP:-** The approved GTP of the item is attached herewith and shall be serve as the basic GTP for this purchase order.

c) **Type test certificate:** Type test certificate of the item as per the specifications of the KSEB Limited, from CPRI/NABL accredited laboratories/ any Government approved laboratory along with drawing shall be submitted before the commencement of the supplies without affecting the delivery schedule mentioned in clause 7 of this purchase order. The materials shall be offered only after the approval of the drawing and test certificates without affecting the delivery schedule.

If there is any discrepancy between the drawing and the GTP, the GTP will prevail and if there is any discrepancy between the technical specifications mentioned and the GTP, the technical specifications attached in this purchase order will prevail.

12) **Pre-despatch Inspection and Testing:-** KSEBL reserves its right to inspection the materials before dispatch. All facilities should be rendered for the purchaser's representative for inspecting the material before dispatch. All routine tests as prescribed in the relevant ISS have to be conducted in his presence. Advance information of not less than 20 days regarding readiness of goods for inspection and the date of inspection and testing shall be given to the Chief Engineer (SCM) immediately when each consignment or lot is ready for inspection.

- i. The manufacturer shall grant free access to the purchaser's representative at a reasonable time when the work is in progress. Inspection and acceptance of material under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing the material in accordance with the technical specification attached with this purchase order and shall not prevent subsequent rejection if the equipment is found to be defective.
- ii. All acceptance tests and inspection shall be done at the place of the manufacture unless otherwise especially agreed upon by the Bidder and Purchaser at the time of purchase.
- iii. The purchaser reserves the right to insist for witnessing the acceptance/routine testing of the bought out items.
- iv. The supplier shall give 20 days advance intimation to enable the purchaser to depute the representative for witnessing the acceptance and routine tests. Material shall be dispatched only after getting the dispatch authorization from the Purchaser, after successful inspection/testing.
- v. The supplier shall provide the inspectors representing the purchaser all reasonable facilities without charge, to satisfy himself that the material is being manufactured in accordance with this specification during stage inspection, if any and final inspection. The supplier shall ensure that the packing list and bill of material are approved by the purchaser before dispatch
- vi. The packing shall be done as per the manufacturer's standard practice. However the supplier should ensure the packing is such that, the material should not get damaged during transit by Rail/Road.

13) **Test Certificate:-** Test certificate covering all acceptance tests and routine tests as per relevant IS for each consignment shall be submitted to this office for approval before dispatch duly attested by your testing Engineer with name and seal affixed.

Copies of test certificate thus approved shall be sent along with delivery documents to the respective consignees.

The goods shall be dispatched only after the test certificates are approved from this office and MDCC is issued by the Chief Engineer (SCM).

14) **Guarantee:-** The materials offered shall be guaranteed for a minimum period of 24 months from the date of acceptance by the consignee or 18 months from the date of commissioning whichever is earlier. Defects if any noticed during this period, which are due to faulty design, workmanship or inferior raw materials or non adherence to specified IS limits, shall be made good by way of replacement free of all costs to the KSEB Limited and to the full satisfaction of the KSEBL during the guarantee period.

15) **Penalty for delayed supply:-** The quantity ordered shall be supplied as noted in clause '7' above. The material shall deliver on condition that in the event of their defaults to supply as ordered/failure to supply within the period stipulated in the order, the security deposit will be forfeited. In such cases, the KSEB Ltd or the Chief Engineer (SCM) has the option to refuse or accept the delayed supply and also has further option that when belated supplies are accepted the price to be paid will be the rate of such materials on the date of actual supply as per new tender/ Purchase Order or at the ordered rate as per this order whichever is lower or as settled by the KSEB Limited / or Chief Engineer, whose decision will be final and the contractor be further liable to pay 1% of the all inclusive rate minus taxes & duties (i.e., Basic rate plus Freight & Insurance) of materials supplied as liquidated damages for every month of delay or part subject to a maximum of 10% value of the belated supplies. But if the actual damages exceed this amount the contractor is liable to pay for such damages instead of 1% or 10% above stipulated.

In case the successful bidders, after having made partial supplies, fail to fulfill the contract in full or any of the materials is not supplied, such supplies may at the discretion of the purchasing officers be arranged by means of another bid/quotation or by negotiation or from the next higher bidder, and the loss if any, caused to the KSEB Ltd thereby shall, together with such sums as may be fixed by the KSEB Ltd towards damages, be recovered from the defaulting contractors.

Even in cases where no alternative purchases are arranged for the materials not supplied, the proportionate portion of the security deposit based on the materials not supplied at the rate shown in the bid of the defaulter, shall be forfeited and the balance alone shall be refunded.

The Purchaser without prejudice to the conditions laid in the General Conditions of Contract may terminate this contract, if the supplier fails to commence the supply within the stipulated time or fails to perform any other obligations under this contract or does not make up its failure within a period allowed by the purchaser after the receipt of the default notice from the purchaser. After termination of contract, KSEB Ltd will have liberty to arrange alternative purchase of the materials at the risk and cost of the supplier.

If the 11 kV AB Switches is offered for inspection as stipulated in Clause - 12 and inspected within the contractual delivery schedule, the materials will be accepted without imposing penalty if they are delivered within 15 days from the date of issue of Material Despatch Clearance Certificate. This is not applicable for refixation of prices.

Penalty is applicable for belated replacement of materials rejected also as stated above.

For calculation of penalty, periods less than fifteen days will not be counted and delay of 15 days and above will be counted as one month. In the event of non supply of the total quantity before due date, Board reserves the right to terminate the contract to the extent of the quantity remaining undelivered at the risk and cost of the supplier. In case KSEB Limited accept belated supply after completion period of contract this will be regulated as per clause '27' (Price refixation) below.

16) **Replacement of Rejected Materials:-** Rejected materials will have to be replaced by you within 45 days from the date of intimation by the consignee. If the replacement is not effected within the above period, the rejected materials should be taken back within a maximum period of 3 months from the date of intimation of rejection by the consignee officer, failing which the KSEB Limited will be at liberty to dispose off the rejected material without any notice. KSEB claims by the supplier will be entertained on account of the disposal. No Limited also reserves the right to recover from the concerned supplier any loss sustained by the KSEBL due to the delay in clearing the rejected materials by the suppliers and the inconvenience caused to the KSEB Limited in this respect.

If the rejected materials are not lifted from the site/store within 15 days on receipt of the intimation of rejection by the consignee, the supplier shall be

liable to pay @ 0.1% of the value of rejected materials for every week of delay subject to maximum ground rent of 10%.

- 17) **Acceptance of Materials and Tests:-** The materials will be inspected and relevant tests if deemed necessary will be conducted on receipt of the materials by the consignee and the lot not satisfying the tests will be rejected. A minimum period of 20 days will be required for verification and acceptance of the items by the consignee. Damages and defects if any noticed will be intimated to you within the period.
- Final acceptance of materials will be made after conducting tests, if deemed necessary by the purchaser in an independent laboratory (any of the Government approved laboratory in Kerala) and the lot not satisfying the tests will be rejected. The fact that the consignee has received the materials will not automatically imply total acceptance.
- 18) **Raw Materials:-** Raw materials required for the manufacture of the ordered item shall be procured by the supplier himself. No assistance in any form will be provided by the KSEB Limited for procuring raw materials
- 19) **Force Majeure Conditions:-** You will not be liable for any liquidated damages for such delay due to force majeure conditions such as acts of God, acts of Public enemy, acts of Government, Fire, Floods, epidemics, quarantine restrictions, riots, civil commotion and freight embargo provided that you notify (within 10 days from the beginning of such delay due to force majeure condition) with valid proof for force majeure conditions. The KSEB Limited will verify the facts on merits and grant suitable extension of delivery period if facts justify.
- 20) **Goods and Service Tax (GST):-** KSEB Limited is a registered dealer under the Goods and Service Tax Act. GST identification Number (GSTIN) of KSEBL is 32AAECK2277NBZ1.
- 21) **Recovery:-** Any sum of money due and payable to the KSEB Limited arising out of this contract or under any other contract made by the supplier with the purchaser may be appropriated by the purchaser and set off against the pending payments of the present contract.
- 22) **Termination:-** The purchaser without prejudice to the conditions laid in the General Conditions of Contract may terminate this contract, if the supplier fails to commence the supply within the stipulated time or fails to perform any other obligations under this contract or does not rectify the defects within a period allowed by the purchaser after the receipt of the default notice from the purchaser. After termination of the contract KSEB Limited will have liberty to arrange alternate purchase of the material at the risk and cost of the firm.
- 23) **Corrections and Omissions:-** Specification, quantities, prices etc. noted in the schedule are subject to correction. Errors or omissions, if any, will be intimated to or by the contractor within ten days from the date of this order.
- 24) **Insurance:-** The materials should be insured at your cost to the destination and for one month storage. However, proof of insurance will not be insisted, as the materials are delivered at store. The responsibility for the safe and satisfactory delivery of the materials at the destination will rest with the supplier.
- 25) **Bankers:-** Our Bankers are State Bank of India.
- 26) **Invoice:-** Invoice in triplicate should be drawn and forwarded to the consignee concerned. Separate invoices should be sent for each consignment. Separate invoices for 95% payment and 5% payment are to be drawn for each consignment. In all correspondences and invoices relating to this order, the number and date of the order given in page 1 should be clearly quoted.
- 27) **Price Refixation:-** The materials, if any, supplied after the Scheduled delivery period noted in the order will be accepted only on condition that price of such materials will be refixed taking into consideration the value of such materials on the date of actual supply as per the new tender/purchase order or as per this order whichever is lower. For applying price refixation the date of opening of price bid of the new tender shall be treated as the effective date. The price shall be refixed only for the quantity of materials delivered after this effective date. The re-fixation shall be done on the basic price only when there is a fall in price noticed in the basic price of the materials with same specifications supplied and accepted by KSEB Limited on subsequent purchase orders or tenders. The Chief Engineer (SCM)'s decision in refixing the price will be final.
- 28) **Jurisdiction:-** The courts situated at the place where the Headquarters of the KSEB Limited is situated viz. Thiruvananthapuram alone will have jurisdiction to entertain civil suits pertaining to this contract.

29) **Governing conditions:** - This order shall be governed by the conditions stated herein and in the tender notification issued by the KSEB Limited. None of the conditions stated in your offer or in the subsequent letter shall be deemed to be accepted unless specifically stated herein also.


Chief Engineer (SCM)

**TECHNICAL SPECIFICATION
FOR AB SWITCHES FOR 11KV, 400A OUTDOORS**

1. SCOPE

This specification covers the design, manufacture, testing before despatch at the manufacture's work, inspection, packing, forwarding, supply and delivery of 11 kV, 3phase, 400A, 50Hz, Gang operated type Outdoor No load Air Break Isolator for the K.S.E.Board Ltd.

2. MATERIALS AND WORKMANSHIP

All materials used in the construction of the AB Switches and accessories shall be of the highest quality. List of all sub vendors should be submitted along with the Bid. The entire design and construction should be capable of withstanding the severest stresses likely to occur in actual services and capable of resisting rough handling during transport. The workmanship shall be of the highest grade and entire construction in accordance with the best modern practice.

3. STANDARDS APPLICABLE

- a. Air Break Switch : IS 9921
- b. For Porcelain insulator : IS: 2544
- c. Metal fittings for insulators, General requirement & tests.: IS: 2486, Part-1
- d. Insulator fittings : IS: 2486, Part-2
- e. Material for nuts : IS: 1367/1980, Part-6
- f. Quality of Zinc for galvanizing : IS: 209/1992
- g. Uniformity & weight of Zinc coating : IS: 2633/1986
- h. Method of galvanizing all ferrous materials except spring washers & nuts : IS: 2633/1986
- i. Method of galvanizing spring washers : IS: 5358/1969
- j. Testing of spring washers : IS: 1573/1986
- k. Testing of nuts : IS: 1367/1980- Part-6
- l. Mass of zinc coating for nut : IS: 1367/1980, Part-13
- m. Copper rods and bars for electrical purposes : IS 613 : 2000
- n. Hot dip zinc coating on iron and steel products: IS: 4759
- o. Electroplating of Silver for general purpose IS: 1771

4. ATMOSPHERIC CONDITIONS:

All parts and fittings shall be suitable for use in atmospheric condition given below and shall be inherently resistant to atmospheric corrosion or be suitably protected against corrosion both during storage & in service.

- a. Max. Ambient temperature :50 degree centigrade
- b. Min. Ambient temperature : 5 degree centigrade
- c. Daily average Ambient temperature :50 degree centigrade
- d. Max. humidity :100%
- e. Average number of Thunder storm days :50 per annum
- f. Average number of storm per annum :55 per annum
- g. Max. rain fall per annum :4500mm (approx.)
- h. Average rain fall per annum :3000mm (approx.)
- i. Limits of variation of ambient temperature
Over a period of 24 hours :15 degree peak
- j. Wind pressure :150 kg/sq. meter
- k. Altitude :up to1000m above MSL

5. DRAWING AND TYPE TEST CERTIFICATE:

The detailed drawing of AB Switch complete with all fittings and accessories and all the rated guaranteed technical particulars (vide Annexure II) shall conform to the drawings with the type certificates. The AB Switch supplied should be of identical types. There should not be any omission of details in the drawing. The AB Switch supplied shall conform to the purchase order specifications drawings and GTP. Supplies, which do not conform to the purchase order specifications, drawings and GTP are liable to be rejected.

6. TYPE

The isolating switches specified herein are for installation in the 11kV outdoor switch yard of the Kerala Power Grid and shall conform to the requirement of IS: 9921 and its latest amendments. They shall be of 3 pole single vertical break, pantograph type mounted on channel iron base. They shall be suitable for being mounted on steel

horizontal. Three numbers single unit 11kV post type insulators shall be provided on each phase. The insulators shall be suitable for a BIL of 75 KVp. Adjustable Arcing Horns (G.I. Rod type) shall be provided one each isolator.

The isolators shall be designed for being suitably mounted on the associated supporting structures. The centre-to-centre phase-to-phase distance of the isolators shall be 760mm and 460mm in between phase and center of the supporting post. The insulation between the open contacts of a pole shall be at least 15% more than the insulation between the live parts of a pole to ground so that if any flashover occurs when switch is open, it will be to the ground.

7. OPERATION

The switches shall be provided with an operating mechanism, for satisfactory manual operation from ground level and will open or close all the three phases simultaneously. Facility will be provided to lock the operating handle in both the closed and open position. Tinned copper with Brass/ B.M. clamps or any other suitable materials shall be provided for terminal pad. The isolators shall be capable of resisting in closed position the dynamic and thermal effects of maximum possible short circuit current. The isolating distance of the AB should be at least 310mm. Operation of AB at any point should not result in breaking of any of the insulators due to physical contact with another.

8. BASE CHANNEL

The base channel shall be provided at the bottom side and be of minimum size of 75X40 mm ISMC channel and shall be galvanized as per IS: 209/1992 after fabrication. There is two numbers of holes of size 18mm shall be provided in each pole

9. INSULATOR

The insulator used shall be of post type porcelain and the voltage level is as follows:

Rated voltage of the insulators in kV rms	Rated lightning impulse withstand voltage		Rated one minute power frequency withstand voltage	
	To earth and between poles	Across the isolating distance	To earth and between poles	Across the isolating distance
12	75 kVp	85 kVp	28 kVp	32 kVp

- Insulation to ground, insulation between open contacts and the insulation between phases of the completely assembled isolators switch shall be capable of with standing the dielectric test voltage specified as above. Insulation between open contacts of a pole shall at least be 15% more than the insulation between the live parts of a pole to ground so that any flash over occurs when switch is open, it shall be to the ground.
- The solid core post insulators shall have an ultimate bending strength of 6KN and shall conform to IS.2544 or other internationally recognized standards. The insulators selected shall be for use at normally polluted atmosphere creepage distance of 25mm/KV min. and shall be specifically suited to meet the particular requirements of ultimate torsional strength and cantilever loads which they will be called upon to resist during service the rated voltages. The guaranteed data and particulars of the insulators adopted for the equipment offered by the tenderer should be given.
- The insulating material shall be homogenous and free from all cavities and flaws. Design of the insulators shall ensure ample insulation, mechanical strength and rigidity for satisfactory operation under site conditions. The design shall also ensure that the losses caused by capacitive currents or conduction through dielectric are minimum and that the leakage due to moist and dirty insulator surface is least.
- All the insulators should be interchangeable with each other.
- The mounting base flange of the insulator should be 80mm dia and with PCD 57mm.

- vi. The top of the insulator should be of 80mm dia and with PCD 57mm.
- vii. The porcelain insulator shall be sound, free from defects, thoroughly vitrified and smoothly glazed. The glaze shall be of brown in colour.
- viii. The rated short time withstand current for one second shall be 16kA and the rated peak withstand current shall be 40 kA

All metal caps and supports shall be cemented to the porcelains or supported to the composite insulator, where as the blades and contact blocks shall be bolted on the metal parts of insulator thus making the replacement of damaged insulator easy.

10. PANTOGRAPH

The pantograph used shall be of rugged in construction and is made of minimum 20x6mm thick GI strip. The length of the pantograph is 530mm. The pantograph is suitable for carrying flexible braided copper.

11. FLEXIBLE BRAIDED COPPER

Single flexible braided copper should be of current carrying current density of 1.3A/sqmm (50X6mm minimum) of AB Switch.

12. CONTACTS

The fixed and arcing contacts horns using GI rods are used for reducing the arcing of main contacts during switching operation.

- i. The fixed and moving contacts shall be silver plated (40 microns) and secured tight by phosphor bronze springs. The fixed contacts shall be made of hard drawn electrolytic copper. Electrodynamics withstands ability during short circuits without any risk of repulsion of contacts.
- ii. Thermal withstand ability during short circuits.
- iii. The minimum contact area of the contact shall be 1800sqmm for 400A Constant contact pressure even when the live parts of the insulator stacks are subject to tensile stresses due to linear expansion of connected bus bar or flexible conductors either because of temperature, variation of strong winds.
- iv. Wiping action during closing and opening.
- v. Self alignment assuring closing of the switch without minute adjustments
- vi. The current density of the contacts shall be 1.3A/sqmm

The switch blade shall be made of hard silver plated drawn electrolytic copper flats with ends silver-plated (40 microns) and the switch contacts shall be of the spring loaded jaw type. All current carrying contacts shall be of the multi-bolt type using bolts and nuts of suitable nonrusting, non-magnetic materials with suitable locking arrangements.

13. TERMINALS

Each isolator shall be provided with terminal connectors made from 50X6 mm tinned copper strip and having two holes of size 13mm dia for accommodating 95 mm² cable lug.

14. CONNECTING ROD AND MECHANISM

The connecting rod used should have rugged in construction and of 25 mm GI square rod. The mechanism connecting the square rod and connecting pipe shall strong enough to carry mechanical loading during switching operations. The central insulator of the AB is suitable for vertical breaking of the contacts through the connecting rod. Roller assembly with side plate and brass bush shall be provided. Provision for fine adjustment for the roller assembly at site should be given.

15. CONNECTING PIPE

The Length of down pipe shall be 6m and a diameter of 20mm class 'B'. No welded joint pipe shall use for this purpose. The nuts shall be provided with spring washer and plate washer. All iron parts shall be hot dip galvanized as per the relevant ISS.

16. HANDLE

The operating handle shall be of Galvanized iron and is insulated with epoxy resin cast compound after it's fabrication. The insulation thickness provided in the handle such that it should have to withstand 15kV.

17. LOCKS AND LOCKING ARRANGEMENT

The AB Switches are suitable for locking at both ON and OFF position using 8mm dia pad lock. The supplier should provide a 8mm dia pad lock along with the AB switch.

18. PACKING

The equipment shall be dispatched securely packed in wooden crates suitable for handling during transit by rail / road so as to avoid any loss or damage during transit.

Where more than one insulator is packed in a crate, wooden separators shall be fixed between the insulators to keep individual insulators in position without movement within the crate. Also packing with suitable material is to be provided to avoid any damages to the insulator.

The material shall be sent in assembled condition.

The wooden crates shall be provided with steel hoop and bends for strength and durability to withstand rough handling. The bends shall have descriptive marking of the firm thereon.

It is the responsibility of the manufacturer/ supplier to ensure the delivery of items without any damages to the consumer's store or other designated places mentioned by the customer. The customer can inspect or do any or all acceptance tests at the customer's premise after the delivery. If any failure or damage is noticed, the lot can be rejected fully or partially.

The firm shall provide at its cost, lead seal and wire on each wooden crate to facilitate sealing by the inspection authority of KSEB Ltd after acceptance of the lot at manufacturer's premises.

Delivery without any damages will be the responsibility of the supplier and if any failure is noticed the lot can be rejected.

Chief Engineer (SCM)

GUARANTEED TECHNICAL PARTICULARS

No	Particulars	United Electrical Industries Limited
1	Makers Name, Address and Brand Name	United Electrical Industries Limited Pallimukku, Kollam 691010 Unilec
2	Applicable Standards	IS9921, IS2544, IS2486 Part 1 and 2 IS 2633, IS1573, IS1367, IS613, IS 4759, IS 1771
3	Nominal Operating Voltage kV	11
4	Maximum operating voltage kV	12
5	Frequency Hz	50
6	Number of phases	3
7	Type	3 Pole Single vertical break type pantograph
8	Temperature rise	65 degree Celsius
9	Short time current rating	16kA for 1sec
10	Phase to Phase distance mm	760
10	Phase to pole centre distance mm	460
11	Fixed Contacts	
a	Type	Female type
b	Material	HDE Copper
c	Surface treatment (plating thickness)	Silver plated (40 microns)
d	Continuous Current Rating Amp	400
e	Current density Amp/sq.mm	1.3 Amp /Sq.mm
f	Spring used size and material	16mm dia Spring phosphor bronze
12	Moving Contacts	
a	Type	Male type (Spring loaded jaw type)
b	Material	Hard Drawn Electrolytic Copper
c	Size of moving contact	190xx30.5x10 Area of cross section 305 sq.mm
d	Surface treatment (End silver plated or not)	Silver plated (40 microns)
e	Continuous Current Rating Amp	400 Amp
f	Current density	1.3 Amp / Sq. mm
13	Number of phases	3
14	Number of operations which the switches can withstand without deterioration of contacts	1500 operations / hour
15	Arcing horn	
a	Material	Galvanized MS Rod
b	Size	8mm dia
16	Location and type of mechanism	Lever can be operated from below the transformer
17	Torque required to operate the switch	As per IS
18	Details of safety stops provided	Stop Stud Provided on channel
19	Technical particulars of insulators	
a	Rated Voltage kV	12
b	Make and drawing reference	Topline and Taruna Dechome Make as per drawing
c	Maximum shed diameter mm	153

d	Height mm	254
e	Creepage distance mm	320
f	Protected creepage distance mm	As per IS
g	Bending strength	6kN
h	Tensile strength	15 kN
i	Torsional strength	As per standard
j	Compression strength	As per standard
k	Dry power frequency one minute withstand strength kV rms	35
l	Wet power frequency one minute withstand strength kV rms	35
m	Dry power frequency flash over voltage kV rms	80
n	Wet power frequency flash over voltage kV rms	55
o	Impulse withstand voltage kV peak	
	Positive wave	75kVp
	Negative wave	75kVp
p	Impulse flash over voltage kV peak	
	Positive wave	To earth and between poles – 75kVp Across the isolating distance – 85kVp
	Negative wave	To earth and between poles – 75kVp Across the isolating distance – 85kVp
q	Puncture voltage kV	109 kV rms
r	Visible discharge test kV	9 kV rms
s	Top PCD mm	57
t	Bottom PCD mm	57
u	Weight approx	3.550 kg
v	Type and material of terminal connectors	Male and female tinned copper strip
w	Rated short time current	16kA
x	Rated peak withstand current	40kA
20	Base channel size	75X40x650 mm
21	Connecting pipe	
a	Material	MS Galvanised
b	Size, class and length	20mm, classB, 6m
c	Guide to pipe	Top clavis assembly
22	Handle	
a	Material	MS Galvanized
b	Insulation	Epoxy resin
23	Terminals	
a	Size of connecting flats	50x6mm tinned copper strip for 95 sq.mm cable lug
b	Tinned or not	Tinned
c	Number and size of holes in each terminal	13mm dia 2 holes for accommodating 95 sq.mm cable lug
24	Braided flexible copper	
a	Tinned or not	Tinned
b	Size	50x6 mm, current density 1.3 A/sq.mm
25	Pantographs	
a	Material used	Galvanized MS
b	Length	530x20x6 mm

26	Connecting rod	
a	Size	25x25x1828 mm
b	Thickness of galvanization	As per 209 & IS 4759

Chief Engineer (SCM)