



TRANSMISSION CORPORATION OF TELANGANA LIMITED
(Website: www.tstransco.in CIN No: U40102TG2014SGC094248)

From
The Chief Engineer /P&MM,
Room No.-207, B-Block,
TSTRANSCO,
Vidyut Soudha,
Hyderabad – 500 082.

To
M/s. Dubas Engineering Pvt. Ltd.,
#43(p), Electronics City II-Phase,
Hosur Main Road,
Bangalore – 560 100
Tel:080-40336193.

SAP P.O.No. 4500002940/ P.O No. 422 – PMM/2020/CE/P&MM/SE/P&MM/DE31/F.Extn PO
(Dubas) /D.No.240 /20, dt.20 -04-2020.

Sirs,

Sub:- TSTRANSCO - P&MM – Telecom -Specn.no.TSPMM31-43/2017 – Supply,
Erection & Commissioning of 48V Battery and Battery Chargers – Extension
Purchase Order - Issued - Reg.

Ref:-1. Tender Specification No.TSPMM31-43/2017

2. P.O.No.249 PMM/2018/CE/P&MM/SE/P&MM/DE31/F.TSPMM31-43/2017
(Battery & Battery Chargers) /D.No.326/18, dt.11-12-2018.

3. Lr.No.CE/P&MM /SE/P&MM/DE-31/F.TSPMM31-43/2017(Batt.)/D.No.310/18,
Dt.27-11-18.

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LTD., (herein after called the "TSTRANSCO" or "the purchaser") place an Extension Purchase Order as per the provision at the clause 2.7 of the Purchase Order in ref.(2) cited, for Supply, Erection & Commissioning of 1No.48V/50A(1+1) Battery charger and 2 Nos. 48V/250AH Battery Sets, against Purchase Order in ref.(2) with the same Terms and Conditions set out in the Original Purchase Order.

SCOPE OF CONTRACT:

This contract relates to the Supply, Erection & Commissioning of 1No.48V/50A(1+1) Battery charger and 2 Nos. 48V/250AH Battery Sets detailed under clause (2) below and covers design, manufacture, testing before dispatch, delivery F.O.R. destination.

Contd...P/2

- 2) **SCHEDULE OF MATERIALS AND PRICES:** Supply, Erection & Commissioning of 48V Battery and Battery Chargers (inclusive of Freight, Insurance, Packing & Forwarding and GST) detailed in annexure.

Sl. No.	Description	Total Amount (in Rs.)
1	Supply, Erection & Commissioning of 48V Battery and Battery Chargers including all Taxes. (Details in Schedule of Material Quantities and Prices)	4,12,108.38
(Rupees Four Lakhs Twelve Thousand One Hundred Eight and Paise Thirty Eight only)		

- 2.1 The Prices accepted above are FIRM during the process of the contract and until the warranty period is completed.
- 2.2 The prices accepted are inclusive of Freight, Insurance, Packing & Forwarding and GST.
- 2.3 The above prices are inclusive of unloading charges at destination stores.
- 2.4 M/s. Dubas Engineering Pvt. Ltd is responsible for all the Taxes applicable on this contract.
- 2.5 Income Tax, other taxes if any, will only be towards the supplier's account and would be recovered from the supplier bills for arranging payment as directed by the concerned department.
- 2.6 **STATUTORY VARIATION:**

Any variation up or down in statutory levy or new levies introduced after tender calling date under this specification will be to the account of TSTransco, provided in cases where delivery schedule is not adhered to by the contractor/manufacturer and there are upward variation/revision after the agreed delivered date, the contractor/manufacturer will bear the impact of such levies and if there is downward variation/revision, the TSTransco will be given credit to the effect.

In case of bought out items statutory variation shall not be applicable on that taxes and duties. For this purpose, bought out items means the material/equipment not manufactured by the bidder i.e. statutory variation will be applicable on taxes and duties involving direct transaction between bidder and TSTransco only and not for the taxes and duties between the bidder and his sub vendors.

- 3) **DELIVERY:** The Supply, Erection and Commissioning of 48V Battery and Battery Chargers shall be completed within 2 Months from the date of issue of this Purchase Order.

Contd...P/3

4) PERFORMANCE SECURITY:

- 4.1 The supplier shall furnish to the purchaser the performance security in the name of **The Chief Engineer/P&MM, TSTransco, VidyutSoudha, Hyderabad-82**, for an amount equal to 10% of the total contract value i.e. for an amount of **Rs.41,211 /-** for proper fulfillment of the contract, shall include the warranty period and completion of performance obligations including warranty obligations. The performance security will cover 60 days beyond the date of completion of performance obligations including warranty obligations.
- 4.2 The performance security shall be executed in accordance with the clause (6), of Purchase Order 2nd cited, furnished on a stamp paper of value Rs.100/-. The B.G shall be extended if required suitably, in accordance with the provisions of Clause (38) of Tender specification.
- 4.3 In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced material shall have to be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value shall have to be extended 60 days over and above the extended warranty period. It is entirely your responsibility to extend the validity of this Bank Guarantee to cover the period of guarantee well before its expiry.

The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to fulfill its obligations under the Contract.

5) TERMS OF PAYMENT:-

- i) a) 80% payment towards the equipment cost will be arranged within 45 days for the material/equipment supplied in complete shape subject to their delivery as per the schedule of work and on its receipt in good condition at the destination / stores (i.e., from check measurement date in Form-13), on prorata basis against the submission of the following documents.
- i) Form 13
 - ii) Contractor's detailed invoice
 - iii) Detailed Challan Acknowledged by Consignee
 - iv) Manufacturer's/Supplier's Warranty Certificates
 - v) Approved Test Certificates
 - vi) Copy of Insurance Policy Certificate
 - vii) Copy of Acceptance Letter of Performance Security issued by Purchaser

One additional copy each of the above and delivery challan shall be sent to the consignees. Copies of the above documents shall be sent to the Chief Engineer/P&MM/ TSTransco,VidyutSoudha, Hyderabad-82 immediately after delivering the materials at the destination stores.

- b) 10% payment towards equipment cost will be made after erection of equipment/ material on prorata basis against the submission of invoice.
- c) Balance 10% payment towards equipment cost will be made along with the total erection & commissioning charges after commissioning of equipment / material duly certified by concerned Divisional Engineer/Telecom on prorata basis against the submission of invoice.
- ii) The Supplier Bank details are as detailed below for RTGS payment (Real Time Gross Settlement).

1	Vendor Name	Dubas Engineering Pvt. Ltd
2	Complete Address	M/s. Dubas Engineering Pvt. Ltd., #43(P), Electronic City II-Phase, Hosur Main Road, Bangalore – 560 100,Tel:080-40336193.
3	Name of the Bank	AXIS Bank Ltd.
4	Branch Address	Corporate Banking Branch, “Express Building”, 2 nd Floor, No.1 Queens Road, Bangalore – 560001.
5	Swift Code	AXISINBBA06
6	Account No.	914030010612274
7	IFSC No.	UTIB0001541
8	Income Tax PAN No.	AAACD7283M

The Bank details as above are final and shall not be revoked under any circumstances. The Bank Charges if any will be made to the account of M/s. Dubas Engineering Pvt. Ltd, and will be recovered from the bill amount per each disbursement on LOA raised by unit officers.

No interest will be payable in case the payment is delayed for whatever reason.

The Banker charges involved if any in establishing and operating the Cheque / Bills shall be to your account.

- iii) If the supplier has received any over-payments by mistake or if any amounts are due to the TSTransco due to any other reason, when it is not possible to recover such amounts under this contract, the TSTransco reserves the right to collect the same from any other amounts and / or Bank guarantees given by you due to or with the TSTransco.
- iv) The supplier should invariably submit Inspection/test certificates and other documents that the purchaser specifies, before dispatch is made so that they can be checked and approved well before it is dispatched and due for payment.
- v) When the supplier does not at any time, fulfill his obligations in replacing / rectifying etc. of the damaged / defective materials in part or whole, promptly to the satisfaction of the TSTransco Officers, the TSTransco reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharf ages or damage occurring to the consignments so dispatched.

- 6) **CURRENCY OF PAYMENT:** All payments will be made in non-convertible Indian Rupees.
- 7) **GUANTED TECHNIAL PARTICULARS** The Guaranteed Technical Particulars are indicated in Annexure-1(A, B).
- 8) **DRAWINGS:**
Drawings were approved vide Lr.No.CE/P&MM/SE/P&MM/DE-31/F.TSPMM31-43/2017 (Batt.) /D.No.310/18, Dt.27-11-18.
- 9) **ACKNOWLEDGEMENT:** Please acknowledge this order soon on its receipt by returning the extra copy of the order enclosed, duly signing it with date in token of acceptance.
- 10) ***All other Terms and conditions remain the same as mentioned in Original Purchase Order.***

Yours faithfully,

Sd/-

Encl.: 1. Schedule of Materials & Services
2. Annexures –1 (GTPs)

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

"WE ACCEPT THE TERMS AND CONDITIONS STIPULATED IN THIS P.O."

Signature of the Contractor with seal

Copy to:

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

The Pay Officer/TS TRANSCO/Vidyut Soudha/ Hyderabad

The SAO/ P&A/ TSTransco/Vidyut Soudha/Hyderabad.

The FA&CCA/ACCOUNTS/TSTransco/Vidyut Soudha/Hyderabad.

The Chief Engineer/Telecom/Vidyuth Soudha/Hyderabad.

The Chief Engineer/Transmission/Vidyuth Soudha/Hyderabad.

The Superintending Engineer/ Transmission/Vidyuth Soudha/Hyderabad

The Superintending Engineer/Telecom/TSTransco /132/33KVSS Opp. to Court Jagityala road, Karimnagar-500501.

The Superintending Engineer/OMC/Adilabad/TSTransco/132kVSS Old Mancheryal/ Mancheryal.

The Divisional Engineer/Telecom/Adilabad

Contd...P/6

Annexure-1

A.GUARANTEE TECHNICAL PARTICULAR FOR 48V, 50A (1+1) Float Cum Boost Charger

1	Manufacturer's Type & Designation	DUBAS Make, DFCBC 48VDC,50A
2	Input AC supply	
a	Voltage	1φ-2Wire, 160-290V AC
b	Frequency	50Hz, ±5%
c	Power Factor	0.8 at rated load minimum input
3	Type of Rectifier (IEC-60146)	1φ, Full wave controlled Bridge
4	Type of semiconductor material	Silicon mono Crystalline
5	Automatic voltage regulator type	Static control, Constant voltage current limit
6	Float cum boost charger rating	
a	Auto Float voltage (Nominal)	53V (2.2Vpc)
b	Charger output continuous current	50A
c	Manual Float voltage Adjust (Through Pot)	50 – 56V, +/-5V (Recommended 2.27Vpc max. for VRLA)
d	Manual Boost voltage Adjust (Through Pot) (Should be Off load boost charging)	56 – 65V, +/-5V (Not recommended for VRLA)
e	Battery charging Current Adjust (Through Pot)	10 – 50A (Recommended 38A for 250Ah VRLA)
f	Load voltage (When chargers are healthy on float)	48 – 52V (By dropper diode. Dropper diodes will be bypassed by a contactor in case of AC mains fail to connect total battery across the DC load)
g	Load current (Max)	15A continuous
7	Auto / Manual feature is provided	Yes
8	Rectifier Transformer (IS-2026)	
a	Type	Dry Type, Double Wound, Class-H insulation, Class-F temperature rise
9	In Auto mode, during trickle charging, the charger output voltage variation for specified AC voltage & Frequency variation	±1% of set value @ feedback point
10	Maximum ripple content at rated load, nominal input	≤4mV psophometric without battery connect
11	Efficiency at Rated load, nominal input	≥75%
12	Maximum permissible temperature rise over an ambient temperature of 45°C.	110°C (For magnetic) 65°C (For Rectifier stack)
13	Protections	
	a) Output soft start	Yes
	b) Output over load	110% for short time
	c) Input UV/OV alarm, Thermal magnetic trip	Yes
	d) Output short circuit & Over voltage	Yes
	e) Total load current & Battery Current Limit	Yes
14	Protection Class / Paint Shade	IP-30 /631 of IS-5
15	Internal wiring	600/1100V grade, PVC insulated, stranded copper conductor
16	Measuring instruments	Analog, Flush mount, 90° Scale, 72Sqmm, Class2.5
17	Indication & Alarms	Refer Drawing
18	DCDB Detail (inbuilt)	Feeder – 06A, SP, DC MCB – 24Nos
19	ADDB Detail (inbuilt)	Feeder – 06A, SPN, AC MCB – 6Nos

Sd/-

Chief Engineer/P&MM

Contd...P/7

B. GENERAL TECHNICAL PARTICULAR FOR 48V UPST 250Ah VRLA Battery

1	Manufacturer's Type & Designation	Exide Make 48V UPST 250Ah VRLA Battery
2	Capacity in AH at 27 ° C	
(i)	Initial	250
(ii)	Rated	250
(iii)	End of Life	200
3	Capacity at Various Discharge Rates at 27°C	
a	Period of 10Hr Discharge for 250 AH Capacity	Discharge Current-25.0 Amp End Cell Voltage-1.75 Volts
b	Period of 1Hr Discharge for 125 AH Capacity	Discharge Current-125.0 Amp End Cell Voltage-1.7 Volts
4	Maximum Momentary Current for 1 min up to cut off voltage of 1.6 V	750 Amps
5	Expected Fault at bus due to battery	1500 Amps
6(i)	Short Circuit Current at Battery terminals	1500 Amps
(ii)	Time for which the battery can withstand short circuit at terminals	5 Sec
7	Type/No. of Negative Plates per cell	Flat pasted; 7
8	Type/No. of Positive Plates per cell	Flat pasted; 6
9	Size of negative plates, mm	315(L) x 140(W) x 2.65 (+/- 1) (Thk)
10	Size of positive plates, mm	315(L) x 140(W) x 4.5 (+/- 1) (Thk)
11	Type of Connection between cells	Bolted rigid copper connectors
12	Type of Separators	Absorptive glass mat
13	Thickness of Separators	4.2 (2 layers of 2.1 mm each)
14	Dimension of 2 volts cell (LxWxH) , mm	167(+/-3)mm x 126(+/-3)mm x 394 (+/- 5) mm
15	Material of Container	Polypropylene Co-polymer
16	Recommended Charging Rate	
(i)	Float Charging Voltage	
	between ambient temp. (-)5-14 ° C	2.27 +/- 0.02 VPC
	between ambient temp. 15-24 ° C	2.25 +/- 0.02 VPC
	between ambient temp. 25-34 ° C	2.23 +/- 0.02 VPC
	between ambient temp. 35-40 ° C	2.20 +/- 0.02 VPC
(ii)	Float Charging Current	37.5 Amps (Max)
(iii)	Boost Charging Voltage	2.35Volts
(iv)	Boost Charging Current	50Amps
(v)	Time taken to full charge from 100% discharge state by constant voltage charging & voltage at the end of this charge	72 Hrs (Min) 2.1 volts(ocv)
17	Guaranteed efficiencies at 10 hrs rate	
	(a) Ampere-hour efficiency	90%
	(b) Watt-hour efficiency	80%
18	Internal Resistance of each cell at Fully Charged Condition	0.86 milli ohms min
19	Overall Dimensions of each complete modular (LxWxH) in mm	Length 588 +/- 5, Width 460 +/- 5, Height 288 +/- 5; (6 cells module);
20	Weight of unpacked and complete module with electrolyte ; Kgs	100 +/- 5% Kgs (Single 6 cell module)
21	Material of Modules	Powder coated MS

Contd...P/8

22	Whether explosion vents are offered	Yes, self re-sealing rubber safety valve with flame arrestor
23	The period for which the battery should be stored after supply in charged conditions	If stored in Indian ambient temp of 30 deg C cells will need freshening charge once in every three months, however if stored at higher or lower temperature freshening charge to be provided as recommended.
24	Amount of Hydrogen evolved during normal float charging	Less than 200ppm normal float condition
25	Recommended interval at which battery should be discharged at 10 hr discharge rate	Once annually
26	No. of charge-discharge cycle battery can give during its entire life	
	at 20% DOD	4000 cycles
	at 50% DOD	1800 cycles
	at 80% DOD	1400 cycles
27	Expected Life of Battery in years	20 Yrs at 27 deg C in ideal float condition.
28	Applicable standard	IEC 60896 - 21 & 22, JIS : C 8704-2, : 1998, ANSI T1 330, GR/BAT-01/03-MARCH 2004, IS 15549 : 2005

Sd/-
Chief Engineer/P&MM
Contd...P/9

Schedule of Material Quantities and Prices for PO No. 4500002940

(All Financial Figures in Rs.)

ERP PO Itm No.	Schd. No.	Material Code	Material Description	HSN Code	PO Qty.	PO Unit	Base Rate /Unit	P & F /Unit	Freight /Unit	Insurance/Unit	GST Rate (%)	IGST (Rs)	FADS Price /Unit	Total Amount(Rs.)
1		4000001359	48V 50A FLOAT CUM BOOST CHARGER 48V/50A(1+1) Float cum boost Charger	85044030	1	SET	146,441.00	1,000.00	2,000.00	200.00	18	26,935.38	176,576.38	176,576.38
2	1	4000001315	48V 250AH BATTERY SET 48V/ 250 AH SMF VRLA Battery Set	85072000	2	NO	89,700.00				28	25,116.00	114,816.00	229,632.00
Total														406,208.38
Amount in Words: Four Lakh Six Thousand Two Hundred Eight Rupees Thirty Eight Paise														

Schedule of Service Quantities and Prices for PO No. 4500002940

(All Financial Figures in Rs.)

ERP PO Itm/Sb Itm No.	Schd. No.	Service Code	Service Description	HSN Code	PO Qty.	PO Unit	Rate/ Unit	Total Base Value	GST Rate (%)	IGST (Rs)	Corpus Fund (Rs.)	Total Tax Portion	Total Amount(Rs.)
3	2		EC Batr.Charg.&EC Batry Set free of cost										
3/1	2	C4F20-C-B	Erection and commissioning of folat cum boost charger	995429	1.000	SET	5,000.00	5,000.00	18	900.00		900.00	5,900.00
Total									5,000.00			900.00	5,900.00
Amount in Words: Five Thousand Nine Hundred Rupees													

Grand Total: 412,108.38

Grand Total Amount in words: Four Lakh Twelve Thousand One Hundred Eight Rupees Thirty Eight Paise

