


EMEA COLLEGE OF ARTS AND SCIENCE, KONDOTTI

**REVAMPING OF POWER ELECTRICAL SUPPLY SYSTEM ON THE
CAMPUS BY INSTALLING 11 / 0.415 kV, 500 kVA OWN TRANSFORMER**

A REPORT




PRINCIPAL
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTI
MALAPPURAM DT. 673 638

Revamping of Power Electrical Supply System in the campus

Our campus facilities increased every month and meanwhile reliable and quality supply requirement to be provided to the campus.

Now **415-volt** supply received from public transformer installed by the KSEB. Every day load increased on the public transformer due to adding of new residential load and it leads to reduce the terminal voltage at our end and automatically quality of power supply reduced.

Reduced voltage leads to bad performance of the equipment's inside the campus. In addition to the above, the LV supply feeding from public transformer, for every residential customer supply complaint, LT supply (0.415 volt) switch-off for maintenance activities by supply authorities. Hence supply interruption happened in campus for every complaint of public.

To ensure the reliable and quality electrical supply to campus we installed our own **11 / 0.415 kV, 500 kVA** dedicated transformer with **TOD** metering facilities inside the campus feeding through underground cable.

Following benefits will get due to above Electrical revamp work

- ❖ **Underground cable system and customer (Owned) 500 kVA transformer ensure reliable and quality supply inside the campus.**
- ❖ **500 kVA capacity Transformer will meet our current and nearby future energy requirement.**
- ❖ **By ensuring the rated auxiliary supply voltage to Equipment /Computer/ Electronic system, life span of equipment will increase.**
- ❖ **Campus supply will interrupt only during 11 kV system fault or maintenance activities done by supply authorities (KSEB).**
- ❖ **Rate per unit charge shall be reduced due to change in customer status LT customer to HT customer (by installing TOD with CT&PT unit).**
- ❖ **Power factor improvement device (Capacitor) installed hence voltage of the system improved and we will be received incentives from supply authority for maintaining power factor**
- ❖ **A standby generator is a back-up electrical system that operates automatically in Audio Visual Theater with required power.**
- ❖ **Also having two generators used for essential power requirement.**

UNIPOWER

3 PHASE TRANSFORMER AS PER IS : 1180 (LEVEL- 2)

O.I.L IMMERSED TYPE CLASS 'A'

KVA
 VOLTS AT NO LOAD
 AMPERES
 IMPED. VOLT %
 SERIAL NO. UTPL /

TYPE OF COOLING
 FREQUENCY Hz
 VECTOR GROUP
 CORE AND WINDING Kg
 OIL Kg
 OIL Ltrs
 TOTAL WEIGHT Kg
 YEAR OF MFR.
 MAX TEMP. RISE OF WDG °C

CUSTOMER

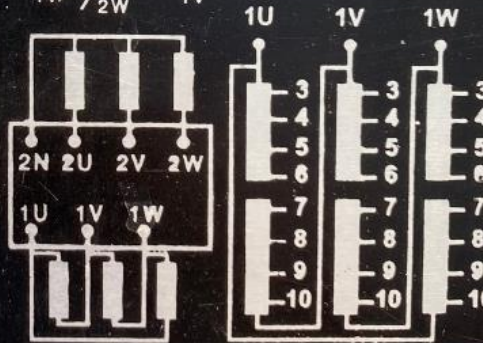
INSULATION LEVEL
 POWER FREQUENCY TEST VOLTAGE
 INDUCED OVER VOLTAGE
 IMPULSE VOLTAGE



LV	HV
3 KV	28 KV
0.866 KV	22 KV
-	75 Kvp

HV VOLTAGES BY LINKS

POS	HIGH VOLTS	LOW VOLTS
1	11550	433
2	11275	433
3	11000	433
4	10725	433
5	10450	433
6	10175	433
7	9900	433



CONNECTION DIAGRAM

MADE IN INDIA BY
UNIPOWER TRANSFORMERS PRIVATE LIMITED

BLOCK No. 32, KINFRA SMALL INDUSTRIES PARK
 NELLAD P.O, KOCHI, PIN - 686 669, KERALA



Class 'A' Electrical Engineers & Contractors (CA-365)
Door No : 17/1898 D-5, 2nd Floor, Lamyas Building
East Kottaparamba, G. H. Road, Calicut - 673 001

E-mail : voltaicpower365@gmail.com
Tel : 0495 2726795, 2722207
Mob : 9446586207, 9447088054

To
The Manager
M/s EMEA College Of Arts And Science,
Kumminiparamba, Kondotty
Malappuram District

28.02.2019

QUOTATION OF ELECTRIFICATION WORK FOR POWER SUPPLY AT M/S EMEA COLLEGE OF ARTS AND SCIENCE, KUMMINIPARAMBA, KONDOTTY, MALAPPURAM DISTRICT

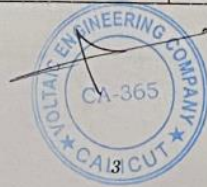
S.No	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1	11 KV LBS Outdoor type Supply at site & installation & commissioning of 11KV,630A,26.3 KA, outdoor type Load Break Switch with earth switch.	1	No	120000	120000
2	500KVA OIL COOLED TRANSFORMER Supply at site & installation & commissioning of 1 No 500 KVA Capacity Type 11KV/433V. 3Phase Oil Cooled, distribution Transformer with Off Circuit tapings of +5% to -5% in steps of 2.5, changeable by tap links provided, H.V Terminals Box & LT Terminal Box. Transformer should have temperature sensing device and whole should have all standard accessories as per rules & practices. (IS 1180,(Level-2)) Make- UNIPOWER	1	No	695000	695000
3	Supply, testing, Installation and commissioning of CT and PT outdoor type	1	Set	98000	98000
4	Supply, testing, Installation of HT TOD Meter with outdoor enclosure and terminatio cable from CT, PT for KSEB / all prewired from CT and PT etc . Including supply and fixing of HT TOD Meter duly tested in the TMR section KSEB, with necessary armoured control cables etc. complete as per KSEB/ Inspectorate standards	1	No	52000.00	52000



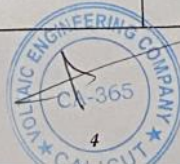
5	Supply at site and laying ,testing commissioning of 11 KV ,3C x 240sq.mm XLPE armoured HT UG cable confirming to IS specification as amended up to date through trench on group as per standards .	75	Mtr	1450	108750
6	Supply at site and providing Indoor End Termination of 3C x 240 Sq.mm XLPE cable to HT Switch including all materials required for firm joint as per standards.	3	Nos	9000	27000
7	Supply at site and providing Outdoor End Termination of 3C x 240 Sq.mm XLPE cable from DP structure for firm joint & connecting to the AB switch provided by KSEB as per standards.	1	No	9500	9500
8	EARTHING				
8.1	Supply and providing efficient plate earthing using 1200mm x 1200mm x 12.3 mm C I plate earth electrode conforming to IS 3043 complete with,GI pipe, connections including filling the pit with charcoal & salt.	10	Nos	15000	150000
8.2	Supply and Fixing giving termination of the GI /Copper strips /Wire for effective earthing of the system as per IS 3043				
a	31 x 3 mm Cu strip	60	Mtr	810	48600
b	25 x 3 mm Cu strip	100	Mtr	625	62500
c	25 x 6 mm GI strip	1200	Mtr	225	270000
d	# 10 SWG Cu	500	Mtr	75	37500
9	MV SWITCH BOARD				
	Design fabrication, supply, installation, erection testing and commissioning of the following cubical panel. Appropriate rating bus bars, earth bus and approved shade dust tight vermine proof floor mounted free standing cubical construction & fabricated out of 16SWG CRS sheet with 2 coats primer and 2 coats enamel paint.				
a	MSB Incomer a) 800A , 4P ACB 30/C + 1E/F release release SET AT 655A - 1No b)800A 4P Onload CGS TPN BUSBAR as per ISS RYB indicator,Multifunctional meter ,EFR with CT etc Outgoing 1)400A TP MCCB set at 320A -2Nos 2)250A TP MCCB set at 200A - 3Nos Space for spare-2Nos	1	No	410900	410900



b	SSB-I Incomer 250A TPN ISO-1No TPN BUSBAR as per ISS Outgoing: 1)100A TP MCCB - 5Nos Space for spare-2Nos	1	No	102400	102400
c	SSB-II Incomer 250A TPN ISO-1No TPN BUSBAR as per ISS Outgoing: 1)100A TP MCCB - 6Nos Space for spare-2Nos	1	No	110950	110950
d	SSB-III Incomer 400A TPN ISO-1No TPN BUSBAR as per ISS Outgoing: 1)250A TP MCCB Set at 125 - 3Nos 2)100A TP MCCB - 5Nos Space for spare-2Nos	1	No	140000	140000
d	SSB-IV Incomer 400A TPN ISO-1No TPN BUSBAR as per ISS Outgoing: 1)160A TP MCCB - 2 Nos 2)100A TP MCCB - 8Nos Space for spare-2Nos	1	No	164000	164000
d	SSB-IV A & IV B Incomer 200A TPN ISO-1No TPN BUSBAR as per ISS Outgoing: 1)63A TP MCCB -6Nos Space for spare-2Nos	2	Nos	105000	210000
e	APFC Panel 80 kVAr Incomer 1)200A TPN ISO Multifunctional meter , RYB indicator TPN BUSBAR as per ISS Outgoing 1)63A TP MCB - 1 No 2)50A TP MCB - 1 No 3)40A TP MCB - 2 No 4)25A TP MCB - 2 Nos 25 kVAr Capacitor with contactor - 1No 20 kVAr Capacitor with contactor - 1No 15 kVAr Capacitor with contactor - 1No 10 kVAr Capacitor with contactor - 1No 5 kVAr Capacitor with contactor - 2Nos 8 Stage APFC Relay	1	No	148000	148000



10	Cable Laying				
	Supply, laying testing and commissioning of the following Aluminum L.T.Cables(AYWY/AYFY) through excavated trenches, built up cables trenches, cable trays, hume pipes, including supply and fixing of clamps,etc.				
a	3.5C x 400Sq.mm	50	Mtr	1650	82500
b	3.5C x 240Sq.mm	250	Mtr	1100	275000
c	3.5C x 185Sq.mm	1200	Mtr	910	1092000
d	3.5C x 150Sq.mm	10	Mtr	725	7250
e	3.5C x 120Sq.mm	40	Mtr	625	25000
f	3.5C x 50Sq.mm	350	Mtr	325	113750
g	3.5C x 35Sq.mm	400	Mtr	265	106000
h	4C x 25Sq.mm	200	Mtr	215	43000
i	4C x 16Sq.mm	200	Mtr	175	35000
j	3C x 1.5Sq.mm Copper cable	225	Mtr	135	30375
11	Cable Termination				
	Supply of all materials & termination of the following Aluminum L.T.Cables using simple compression type cadmium plated brass cables glands, suitable crimped type cable lugs, etc.				
a	3.5C x 400Sq.mm	6	Nos	1600	9600
b	3.5C x 240Sq.mm	4	Nos	1500	6000
c	3.5C x 185Sq.mm	4	Nos	1400	5600
d	3.5C x 150Sq.mm	2	Nos	1350	2700
e	3.5C x 120Sq.mm	4	Nos	1300	5200
f	3.5C x 50Sq.mm	8	Nos	700	5600
g	3.5C x 35Sq.mm	12	Nos	650	7800
h	4C x 25Sq.mm	4	Nos	650	2600
i	4C x 16Sq.mm	4	Nos	600	2400
j	3C x 1.5Sq.mm Copper cable	2	Nos	300	600
	CABLE TRAY				
12	Supply and Installation of cable tray using MS Angles and plates of adequate size painted with one coat of zinc chromate primer and two coat of enamel paint.	500	Kg	175	87500
13	Emergency Push Button				
a	Supply, Installation & Wiring of emergency trip push button station for tripping incomer of MSB	1	No	2000	2000
14	Documents & Approval				
a	Preparation of necessary forms, documents, drawing etc. & procuring approval & energisation certificate from the Electrical Inspectorate.		LS	100000	100000



LIST OF USED MATERIALS

<u>SI No</u>	<u>Description</u>	<u>Make</u>
1.	Transformer	: Unipower
2.	HT SFU	: Unipower
3.	HT TOD Meter	: L&T
4.	ACB/MCCB/ LT Switches	: L&T
5.	Isolator/contactor	: L&T
6.	HT/ LT UG Cable	: polycab/Gloaster/Ralison
7.	Cable Gland	: Hmi
8.	Crimping socket	: Dowkes
9.	Other Materials	: Reputed Make
10.	APFC Relay	: Beluk
11.	Capacitor	: L&T

For VOLTAIC ENGINEERING COMPANY

Managing Director





കേരളം കേരल KERALA

CA 763094

AGREEMENT

AGREEMENT NO.....

Articles of agreement made the 28th Day of February 2019 between C.P MOHAMMED KUTTY, MANAGER, EMEA COLLEGE OF ARTS AND SCIENCE Kumminiparamba, Kondotty, Malappuram District of the one part (here in after called client) and Sri.K.P.SAKEER HUSSAIN, MANAGING DIRECTOR, VOLTAIC ENGINEERING COMPANY, 2ndFLOOR, LAMIYAS BUILDING, EAST KOTTAPARAMBA, G.H.ROAD, KOZHICODE DIST. whose registered office situated at Kozhikode the other part (here in after called contractor) Where as the Contractor has agreed with the client for the performance of the work set forth in the quotation as per the schedule

Now these presents witness that in consideration of the payments to be made by the client here in after mentioned the contractor will duly perform the said works in the said quotation and complete the same in accordance with specifications there in to annexed with approved materials and as per direction by the consultant/client on or before the 25th day of May 2019 and will observe fulfill and keep all conditions there in mentioned in the quotation (which shall deemed and taken to be a part of this contract as if the same had been fully set out herein).

K.P.SAKEER HUSSAIN
[Signature]

[Signature]
MANAGER
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTY
MALAPPURAM DT-673 638
9 FEB 2019

20139 KERALA Rs 100
21.02.2019

ame.....
O, Chalappuram Stamp V ndef
K.P. ANAND
payment details on lke



കേരളം കേരल KERALA

And the both hereby agree that if the contractor shall duly perform the said work in the manner aforesaid and observe and keep the said terms and conditions the client will pay or caused to be paid to the contractor at the times and in the manner in the said conditions set forth. The contractor hereby agrees to carry out the work on the total amount of Rs.5000000/- (Rupees Fifty Lakh) as per the negotiation on 08.02.2019

The scope of work is included as per the quotation for the HT power supply to the EMEA College of Arts And Science Kumminiparamba, Kondotty, Malappuram District. This scope of work does not included the internal wiring of existing and new building of the EMEA college.

All the excavation work for cable laying / earthing etc are included in the the scope of work .

Payment

1. 500000 Advance at the time of agreement
2. 1500000 After delivering cables at site & panel board advance
3. 500000 After completed excavation works
4. 700000 After delivering of panel boards

K-P. SAKEER HUSSAIN

MANAGER
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTY
MALAPPURAM DT-673 833



5. 500000 After lay
6. 900000 3days be
7. 200000 Af
8. 200000

The rate s
unloadi



കേരളം केरल KERALA

CA 763095

And the both hereby agree that if the contractor shall duly perform the said work in the manner aforesaid and observe and keep the said terms and conditions the client will pay or caused to be paid to the contractor at the times and in the manner in the said conditions set forth. The contractor hereby agrees to carry out the work on the total amount of Rs.5000000/-(Rupees Fifty Lakh) as per the negotiation on 08.02.2019

The scope of work is included as per the quotation for the HT power supply to the EMEA College of Arts And Science Kumminiparamba, Kondotty, Malappuram District. This scope of work does not included the internal wiring of existing and new building of the EMEA college.

All the excavation work for cable laying / earthing etc are included in the the scope of work .

Payment

1. 500000 Advance at the time of agreement
2. 1500000 After delivering cables at site & panel board advance
3. 500000 After completed excavation works
4. 700000 After delivering of panel boards

K.P.SAKEER HUSSAIN

MANAGER
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTY
MALAPPURAM DT-673 635



06/140
21.02.2019
K.P. NARAYAN
K.P. NARAYAN

5. 500000 After laying cable and erection of panel boards
6. 900000 3days before delivering transformers and LBS(Cheque to Transformer Company Unipower)
7. 200000 After cable work / CT,PT erection
8. 200000 After six month of commissioning

The rate shall be inclusive of all materials & labour charges, transportation, loading, unloading, leading, lifting, scaffolding and taxes also

This contract comprises the following quotation schedule already submitted by the contractor consisting, make of materials labor excavation, commissioning and documentation.

All the said documents and quotation submitted by second part shall be read and construed together as forming part of this agreement.

The several part of this contract including all conditions and documents in the quotation read fully understood by me.

Signature of the contractor

K. P. SAKKAR HUSSAIN

Signature of the client

MANAGER
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTY
MALAPPURAM DT. 673 638

Witness: -

1. JACOB.K.M. JACOB

2.

Witness:-

1. Dr. Agudb. C.P. PRINCIPAL, EMEA COLLEGE

2. DR. ABDULLA.M.P.



PRINCIPAL
EMEA COLLEGE OF ARTS
& SCIENCE, KONDOTTY
MALAPPURAM DT. 673 638