

Government of India
Bhabha Atomic Research Centre
Electron Beam Centre, Kharghar, Navi Mumbai

Ref. No.: BARC/APPD/EBC/HT/2017/261

Date: 25/07/2017

Subject: Inviting quotations for the “Fabrication of PLC controlled power supply, involving procurement of standard equipments, components etc, on-site preparing PCB layout from given schematic, on-site PCB Assemblies, preparing AutoCAD drawings for General Assembly, assembly of all items, programming of PLC as per given control logic. Detailed work description as per Statement of Case (SoC) – Annexure-A.”

Dear Sir,

On behalf of the President of India, you are invited to quote for the under-mentioned work. Terms & conditions are given below.

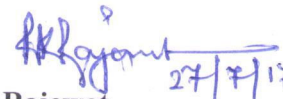
S. No.	Brief Description of the Job	Quantity
1.	Fabrication of PLC controlled power supply, involving procurement of standard equipments, components etc, on-site preparing PCB layout from given schematic, on-site PCB Assemblies, preparing AutoCAD drawings for General Assembly, assembly of all items, programming of PLC as per given control logic. Detailed work description as per Statement of Case (SoC) – Annexure-A.	As per SoC-Annexure

Terms and Conditions:

1. The supplier should quote unit cost, applicable tax rate (GST) and calculate final cost against each work and item separately as asked in SoC Annexure-A. Then mention transportation charges upto site and any other applicable charges and then carefully total the costs.
2. At [Index 2.5](#) of the SoC Annexure-A, the Re-iteration charges per iteration will be added directly in the total. The price comparison calculation hence will assume one re-iteration which in actual case may not be done at all.
3. All the prices and taxes figures may be mentioned by hand after printing the SoC Annexure-A sheet. Each of these printed pages as well as other papers of your offer should be stamped by your company's seal. Unsigned and unstamped offers will be rejected. Use your company letter head in your offer documents where ever feasible.
4. **Important:** The overall work may be logically splitted into sub-works which can be independently executed by different firms. **Please mention explicitly in your offer, whether you would accept part orders.** If you provide your unconditional acceptance, order will be placed without any reconfirmation at ordering stage. You can also mention the conditions, which if fulfilled; you are ready to execute part of the order.
5. BARC being a Government organization is exempted from payment of Excise duty and Octroi duty. Hence, Excise duty / Octroi duty exemption certificates will be issued if required.
3. Supplier should submit their offers **on or before Monday, 28-08-2017 (before 18:00 hours)** in their letterhead, placed in sealed envelope super scribed with the above mentioned Reference No., due date and Title, “Quotations for Fabrication of PLC controlled power supply, involving procurement of standard equipments, components etc, on-site preparing PCB layout from given schematic, on-site PCB Assemblies, preparing AutoCAD drawings for General Assembly, assembly of all items, programming of PLC as per given control logic. Detailed work description as per Statement of Case (SoC) – Annexure-A.”.

4. Offer should be addressed to "Project Manager, EBC, Kharghar, Navi Mumbai", Kind attention: "Shri Harshit Tyagi". The quotation should contain the following details like (i) Period of Validity, (ii) Terms and Conditions of Offer, (iii) Approximate period of completion of job, (iv) Copies of registration and income tax clearance certificates (v) PAN, VAT and Registration no. and Company's seal with proprietor signature. The quotation containing above information should reach to us before due date by **speed post only**. Courier, by hand or any other modes of delivery will be not be accepted. Please note that shorter delivery period will be preferred.
3. The quotations should have the **minimum validity period of two months**. The requirements mentioned in this tender may cease to exist and the tender process may be cancelled anytime before placement of Work Order to your firm.
4. All or some of the items / materials shall be inspected by our concerned officers before the start of the fabrication. The requested items will have to be brought by your firm's personnel at our site.
7. The fabrication of the system shall be subjected to inspection by our Scientists / Engineers at the supplier's works. Necessary inspection facilities should be provided to them during fabrication at the supplier's premises. The purchaser has the right to make minor modifications in the design and drawings. Additional charges will not be admissible for such minor modifications, if any. The item should be delivered to us at **Electron Beam Centre, Kharghar, Navi Mumbai** after approval by our Scientists / Engineers.
8. Payment will be made only after delivery and installation of the item to the above-mentioned address and approval by our Scientists / Engineers as per BARC rules.
9. Detailed description of work is given in attached Statement of Case – Annexure A.
10. For any further clarifications you may contact, Shri Harshit Tyagi, EBC, Kharghar on Tel. 022-27524566/23 or E-Mail: harshit@barc.gov.in

Approved by

 27/7/17

R. K. Rajawat

Associate Director, BTDG

~~Head, APPD, BARC~~ **Rajawat**

सह निदेशक / Associate Director

किरणपुंज प्रौद्योगिकी विकास वर्ग/भारत सरकार
Beam Technology Development Group/Government of India
भा.प.अ. केंद्र, ट्राम्बे, मुंबई-85. /B.A.R.C., Trombay, Mumbai-85.

Copy to: Accounts Officer, Works Section,
Central Complex, BARC

Statement of Case (SoC)						Annexure 'A'						
Format for Quantity and Cost of proposal						No. of subracks		2				
Named cells												
Bad/N.A./Don't care												
Tenderer's Inputs												
Calculations												
Quoting firm's inputs												
1		2		3		9		10				
S. No.	Description of works to be done					Quantity values			Unit	Estimated Rate per Unit from Market Survey	Tax rate	Estimated Cost
						per Sub-rack	for 2 Sub-racks	Spares	Total			
1	Preparation of power supply's enclosure body											
1.1	Procurement and/or Fabrication of Equipment Sub-rack , External dimensions (Width/Depth/Height): 44cm (or 17 1/4") / 53cm / 35.5cm, Mountable in 19" rack: Yes, Wall thickness: 2mm (including powder coating), Powder coated: Yes, Every holes/slit/custom cutout power- coated from inside: Yes, Hole sizes and locations as per drawing described in Index 1.2 .					1	2	0	2	Nos.		Rs. -
1.1.1	No of support rails mounted in the rack assembly: 9 Nos. (3 for Top plate, 3 for Middle plate, & 3 for Bottom plate), Support rail assembly: Using 2 Nos. counter-sunk screws in each rail on both sides, they are joined with vertical plates					N.A.						
1.1.2	Vertical partitions of inside space: 2 Nos., Partition by: Powder coated MS Plate of thickness 2mm (including powder coating), Size of plate (Width/Depth): <44cm (as per internal dimensions)/41.5cm (7.5cm less from front panel, 4cm less from rear panel), Vertical space available on upper deck: 18cm, Vertical space available on lower deck: 16cm - (plate thickness)					N.A.						
1.2	Preparation and supply of 2-D AutoCAD drawings of following views of equipment sub-rack and getting it approved from concerned officers before starting the fabrication work/purchasing from market as described in Index 1.1 . Dimensioning and labelling to be added invariably to every drawing.					1	1	0	1	Set		
1.2.1	In front view two 2-D drawings are to be prepared. In first drawing, Cutout of HMI (Index 3.1.3), MCB (Index 3.1.9) and BNC connector (Index 3.1.28) to be shown. In second drawing, mounted HMI, MCB and BNC connector to be shown. Both drawings to be placed side by side in AutoCAD window. On Front panel a one to one layout of the customized plastic sticker which will be pasted on the system with a given logo should be shown in both drawings. Handles fixed on mounting collar also to be shown.					1	1	0	1	Nos.		Rs. -
1.2.2	In rear view cutouts for 3 Nos. of Power and Signal connectors, Type: Box mounting receptacles (Indices 3.1.12, 3.1.14 and 3.1.16), and Ethernet interface connector (Index 3.1.18) to be shown on rear face					1	1	0	1	Nos.		Rs. -
1.2.3	Top view showing mounting collar on both sides alongwith top plate holes/slit for air exchange in the sub-rack. Their sizes and their relative position to be shown.					1	1	0	1	Nos.		Rs. -
1.2.4	Left/Right side plates are to be identical in air exchange holes/slits. Any one of left/right side view showing their holes/slits sizes and the relative positions to be shown.					1	1	0	1	Nos.		Rs. -
1.2.5	FRP board, for mounting resistor and making connections over the capacitor bank, Thickness: 3mm, Size: 13.5cm x 12.7cm, Holes: (1) M5/M6: 8 Nos., (2) M8: 1 Nos., (3) M4: 2 Nos.					1	1	0	1	Nos.		Rs. -
2	PCB assembly (PCBA) with electronic components of the fabricated PCB with Identification Code No.: PCB_7_SCAN_MAGNET_SUPPLY_T2_V1											
2.1	On-site PCB layout preparation in the provided software package by interaction with our concerned officers from the given Schematic circuit. For preparing the footprints of components, parts etc either datasheet or the sample of item will be provided along with precision measuring instrument Vernier Callipers (if needed). After approval from our concerned officers, generation of gerber files.					1	1	0	1	Nos.		Rs. -
2.1.1	The person visiting at site for the work should bring PVC (Police Verification Certificate) xerox, Adhar card xerox, and Employer's Certificate on firm's letter head having a mention of years of employment with you, years of experience in the software along with other details as deemed fit by firm. No memory storage devices/ mobile phones with or without camera are allowed inside the building premises for outside agency personnel.					N.A.						
2.2	Fabrication of two-layer printed through-hole (PTH) Printed Circuit Board (PCB), as per designed PCB layout for which gerber files were generated and will be provided to your firm. PCB Area for cost estimation: 253 ± 40 cm ² , Approx. linear dimensions (Exact values may vary keeping total PCB Area within given limits): 230mm x 107.5mm, Primary Insulating substrate (or board) material: FR-4 glass epoxy, Substrate thickness approx.: 1.78mm, No. of copper (Cu) layers: 2 (1/1), Thickness of Cu layers: 1oz/ft ² or 300g/m ² or 34.1µm, Holes: Printed through holes of given sizes as per Drill drawing file, Solder masked pads: Yes					1	2	2	4	Nos.		Rs. -
2.3	Procurement of the following components for mounting on the PCB and to be supplied as spares											

			PCB Connector, Type: Single-level Plug-in header, Pitch: 5.08mm, With side panels: Yes, Plug-in direction: Vertical to the PCB, No. of contact positions: 6 Nos., Rated current per contact: 12A, Rated insulation voltage for pollution degree 2: 320V, Rated surge voltage: 4kV, Type of insulation material: PBT, Insulation material group: IIIa, Inflammability class according to UL 94: V0, Pin dimensions: 1.7mm, Drill hole diameter: 1.75mm, Colour: Green, Make: Phoenix Contact, Series: Classic Combicon, Part No.: EMSTBVA 2.5/ 6-G-5.08, Order No.: 1859551 or equivalent	3	6	6	12	Nos.				Rs.	-
			PCB Connector, Type: Plug with screw connection, Pitch: 5.08mm, Plug-in direction: Parallel to the conductor axis, No. of contact positions: 6 Nos., Rated current per contact: 12A, Conductor cross section: 2.5mm², Connection capacity Solid or Stranded: 0.2mm² to 2.5mm² or AWG 24-12, Rated insulation voltage for pollution degree 2: 320V, Rated surge voltage: 4kV, Type of insulation material: PA (Polyamide), Insulation material group: I, Inflammability class according to UL 94: V0, Colour: Green, Make: Phoenix Contact, Series: Classic Combicon, Part No.: MSTB 2.5/ 6-ST-5.08, Order No.: 1757051 or equivalent	3	6	6	12	Nos.				Rs.	-
			Heak sink, Compatible with package: TO-220, Height: 6.5cm, Material: Anodized Aluminum, Mounting position: Vertical, With internal threaded holes on top side of size: M3, compatible with cooling fan holes at Index 3.1.25 , With internal threaded holes on bottom side of size: M4, 1cm thread length, Make: Not specified, Part No.: Not specified	4	8	8	16	Nos.				Rs.	-
			On-site mounting of the components as per PCB's Bill of materials (BOM) in only one PCB. Components present in PCB's BOM which are not listed under Index 2.3 will be provided by us at site. Soldering iron, soldering wire and any other materials or tools have to be brought by the person visiting the site for work.	1	1	0	1	Nos.				Rs.	-
			Re-iteration: If after the inspection and testing of PCB, changes are required to be incorporated in the PCB schematic and/or PCB layout, then partial re-iteration of work as described in Index 2.1 and full re-iteration of work as described in Index 2.2 and 2.4 will be done. Please quote for each such re-iteration. The healthy components will have to be de-soldered and removed from old PCB and then transferred to new. <i>Note: N is a Whole Number and may range from 0, 1,...</i>	N	N	0	N	Nos.				#VALUE!	
			If re-iteration described in Index 2.5 was not required or after successful re-iteration, and testing of PCB by our concerned officers and getting approval, further PCBAs are to be developed on site as the first one. This involves activity at Index 2.4 to be repeated.	1	1	0	1	Nos.				Rs.	-
3			General assembly of the power supply										
			Procurement and supply of the following items listed from index 3.1.1 to 3.1.28 for mounting inside the equipment sub-rack and as spares										
			DC power supply with options, Output voltage range: 15 - 300V, Output current range: 0 - 3A, Max. output power: 900W, Input voltage: Single phase, 50Hz, 230V, Operating Modes: Constant voltage (CV) and Constant current (CC), Load and Line Regulation: ±0.05%, Ripple and Noise: 0.1% max., Analog Programming in both CV and CC modes: 0-5V or 0-10V input for control and 0-5V or 0-10V output for monitoring V and I, Output terminals reference: Floating, Make: Sairush Electronics Systems, Series: SVH, Model No.: SVH 300003, with Options: Rack Mounting, Variable over-voltage protection or equivalent	1	2	0	2	Nos.				Rs.	-
			Programmable Logic Controller (PLC), Rated supply voltage: 24V DC, Discrete input number: 14 discrete input including 8 fast input conforming to IEC61131-2 Type 1, Discrete output number: 10 transistor including 4 fast output, Discrete I/O number: 24, No. of I/O expansion module: 7 (with local I/O architecture), 14 (with remote I/O architecture), Supply voltage limits: 20.4-28.8V, Inrush current ≤50A, Power consumption: 32.6-40.4W with max no. of I/O expansion modules, Discrete input logic: Sink or source, Memory capacity: 8MB program, 64MB system memory RAM, Data backed up: 128MB built-in flash memory for backup of user programs, Data storage equipment ≤32 GB SD card optional, Battery type: BR2032 lithium non-rechargeable, Battery life: 4years, Backup time: 2 years at 25°C, Execution time for 1KInstruction: 0.3ms event and periodic task, 0.7ms other instruction, No of slave: 16 Ethernet/IP, 64 Modbus TCP, Mounting: Top hat type TH35-7.5 rail conforming to IEC 60715, Dimension H/D/W: 90mm/95mm/150mm, Weight: 0.52kg, Ambient air temperature for operation: -10°C to 55°C (horizontal installation), Make: Schneider Electric, Part No.: Modicon TM241CE24T or equivalent	1	2	0	2	Nos.				Rs.	-
			HMI Touch Panel Screen, Display Size: 3.5", Display type: QVGA TFT colour touchscreen, Display colour: 65536 colours, Pixel resolution: 320 x 240 pixels, Touch panel: Analogue, Backlight lifespan: 50,000 hrs, Brightness: 16 levels, Character font: ASCII, Rated power supply: 24V DC, Supply: External source, Supply voltage limits: 20.4 - 28.8V, Inrush current: ≤30A, Power consumption: 6.5W, Number of pages: Limited by internal memory capacity, Memory (Application): 16MB, Memory (Back up of data): 64kB, Integrated connection type: 1USB (V2.0) port mini B USB, 1 USB (V2.0) port USB type A, COM 1 serial link female RJ45, transmission rate ≤ 115.2 kbits/s (RS232C/RS485), Processor Name: CPU ARM9, Processor frequency: 333MHz, Realtime clock: Access to the PLC real-time clock, Downloadable protocols: Modbus TCP/IP, Modbus, Dimensions (H/W/D): 98.15mm/118mm/55.3mm, Ambient air temp for operation: 0-50°C, Relative Humidity: 0-85% without condensation, RoHS and REACH compliance: Yes, Warranty period: 18 months, Make: Schneider Electric , Model No.: HMISTU655 or equivalent	1	2	0	2	Nos.				Rs.	-

			<p>DC power supply, Nominal output voltage: 24V DC, Setting range of the Output voltage: 24V DC - 29.5V DC, Nominal Output current: 5A, Static Boost: 6.25A, Dynamic Boost: 10A (5s), Selective Fuse Breaking: 30A (15ms), Short circuit proof: Yes, No load proof: Yes, Connection in parallel, for redundancy and increased capacity: Yes, Connection in series: Yes, Rise time typical (10% to 90%): 50ms, Ambient temp.(operation): -25°C - 70°C, Max. permissible relative humidity (operation): ≤ 95% (at 25°C, non-condensing), Input Voltage range: 100V AC - 240V AC (-15% - +10%) and 110V DC - 250V DC (-18% - +40%), AC Frequency: 50Hz - 60Hz (-10% - +10%), Input current: 0.86A (230V AC), Protective circuit: Transient surge protection Varistor, gas-filled surge arrester, DIN Rail Mountable: Yes, Weight: 0.7kg, Dimension W/H/D: 36mm/130mm/125mm, Make: Phoenix Contact, Series: Quint Power, Part No.: QUINT-PS/1AC/24DC/5 or equivalent</p>	1	2	0	2	Nos.				Rs.	-
			<p>10W Single output Industrial DIN rail DC power supply, Output DC Voltage: 5V, Output Rated Current: 2.0A, Output Current Range: 0-2A, Output Rated Power: 10W, Output Ripple & Noise (max.): 80mVp-p, Output Voltage Tolerance: ±5.0%, Output Line Regulation: ±1.0%, Output Load Regulation: ±5.0%, Output Setup, Rise Time: 500ms, 30ms/230VAC and 1000ms, 30ms/115VAC at full load, Output Hold Time (Typ.): 120ms/230VAC and 25ms/115VAC at full load, Input Voltage Range: 84-264 VAC and 120-370VDC, Input Frequency Range: 47 - 63Hz, Efficiency (Typ.): 77%, Input AC Current (Typ.): 0.33A/115VAC and 0.21A/230VAC, Input Inrush Current (Typ.): Cold Start 35A/115VAC and 70A/230VAC, Input Leakage Current: <1mA/240VAC, Overload Protection: Above 105% rated output power, OL Protection Type: Hiccup mode, recovers automatically after fault condition is removed, Over Voltage Protection: 5.75 - 6.75V, OV Protection Type: Shut down O/P voltage, Re-power on to recover, Function DC OK Active Signal (max.): 3.75 - 6V / 50mA, Environment Working Temp.: -20 - +70°C, Env. Working Humidity: 20-90% RH non-condensing, Env. Storage Temp., Humidity: -40 - 85°C, 10-95% RH, Dimension: 22.5*90*100mm (W*H*D), Weight: 0.17kg, Technology: SMPS, DIN Rail TS-35/7.5 or TS-35/15 Mountable: Yes, LED indicator for power on: Yes, No load power consumption < 0.75W, Warranty: 3 years replacement, Make: Mean Well, Model No.: MDR-10-5 or equivalent</p>	1	2	0	2	Nos.				Rs.	-
			<p>15W Single output Industrial DIN rail DC power supply, Output DC Voltage: 15V, Output Rated Current: 1A, Output Current Range: 0-1A, Output Rated Power: 15W, Output Ripple & Noise (max.): 120mVp-p, Output Voltage Tolerance: ±1.0%, Output Line Regulation: ±1.0%, Output Load Regulation: ±1.0%, Output Setup, Rise Time: 1000ms, 50ms/230VAC and 1000ms, 50ms/115VAC at full load, Output Hold Up Time (Typ.): 70ms/230VAC and 16ms/115VAC at full load, Input Voltage Range: 84-264 VAC and 120-370VDC, Input Frequency Range: 47 - 63Hz, Efficiency (Typ.): 83.5%, Input AC Current (Typ.): 0.88A/115VAC and 0.48A/230VAC, Input Inrush Current (Typ.): Cold Start 35A/115VAC and 65A/230VAC, Overload Protection: 105-160% rated output power, OL Protection Type: Constant current limiting, recovers automatically after fault condition is removed, Over Voltage Protection: 17.25 - 20.25V, OV Protection Type: Shut off O/P voltage, clamping by Zener diode, Environment Working Temp.: -20 - +60°C, Env. Working Humidity: 20-90% RH non-condensing, Env. Storage Temp., Humidity: -40 - 85°C, 10-95% RH, Dimension: 25*93*56mm (W*H*D), Weight: 0.1kg, Technology: SMPS, DIN Rail TS-35/7.5 or TS-35/15 Mountable: Yes, LED indicator for power on: Yes, No load power consumption < 0.5W, Warranty: 3 years replacement, Make: Mean Well, Part No.: DR-15-15 or equivalent or better</p>	2	4	0	4	Nos.				Rs.	-
			<p>Aluminum Electrolytic capacitor with mounting nuts and washers, Capacitance: 4700µF, Capacitance Tolerance: ± 20%, Rated Voltage: 450V DC, Surge Voltage: 495V DC, Polar: Yes, Type: Aluminum Electrolytic, Max ESR at 100Hz, 25°C: 0.034 Ω, Impedance at 100Hz, 25°C: 0.339 Ω, Ripple current at 100Hz, 85°C: 13.92A, Nominal Can size D x L mm: 76 x 146, Screw terminals size: M5, Distance between screw terminals: 31.6mm, Capacitor mounting style: Screw terminals with stud mounting, Mounting stud size: M12, Length of mounting stud: 16 ± 1 mm, Mounting Nut for Can: Type C (of suggested make), Internal Threads M12 x 15mm Depth, OD 29mm, Mounting Washer for Can (OD/ID/Thickness): 34mm/12.5mm/2mm, Quantity of Nuts: 2 Nos. per capacitor, Quantity of washers: 2 Nos. per capacitor, Operating temperature range: -40°C to +85°C, Make: Alcon Electronics, Series: PG-6DI or equivalent</p>	4	8	0	8	Nos.				Rs.	-
			<p>Potential Distributors, Mounting on: NS 35 DIN rails, Internal construction: Two equipotential busbars (P1, P2) for potential distribution, Module width: 70.4mm, Height: 65.5mm, Depth: 50mm, Ambient temperature (operation): -20°C to 50°C, Nominal voltage: 250V AC/DC, Max. current carrying capacity per branch: 15A, Total current: 30A (per potential), Potential connections: Per potential (P1, P2) 2 power/12 distributor terminal blocks, Standards/regulations: IEC 60664, DIN EN 50178 and IEC 62103, Rated surge voltage: 2.2kV, Make: Phoenix, Model No.: VIP-2/SC/PDM-2/24 - 2315269 or equivalent</p>	1	2	0	2	Nos.				Rs.	-
			<p>Miniature Circuit Breaker (MCB), Poles Description: 2P, Number of protected poles: 2, Rated current: 6A, Network type: AC and DC, Trip unit technology: Thermal-magnetic, Curve code: B, Network Frequency: 50/60Hz, Magnetic tripping limit: 4 x Rated Current ± 20%, Contact position indicator: Yes, Control type: Toggle, Mounting support: DIN rail, 9mm pitches: 4, Dimensions (H/W/D): 91mm/36mm/78.5mm, Weight: 0.25kg, Mechanical durability: 20,000 cycles, Electrical durability: 10,000 cycles, Ambient air temp for operation: -35°C - 70°C, Relative humidity: 95% (55°C), Warranty: 18 months, RoHS and REACH compliance: Yes, Make: Schneider Electric, Model No.: A9F06206 iC60H-2P-6A-B curve or equivalent</p>	1	2	0	2	Nos.				Rs.	-

			RFI/EMI Line filter , Rated Voltage: 250V AC, 50Hz, 1 Phase, Rated Current: 6A, Mounting: Chassis-type, High Voltage test for 60sec: 2kVAC between Phase and Neutral shorted to Earth, Voltage Drop: 1V max., Insulation resistance at 500VDC: 300M Ω min. between Phase and Neutral shorted to Earth, Leakage Current: 2 x 0.3mA, Make: Elcom, Part No.: EP 42 - 6 or equivalent	1	2	0	2	Nos.			Rs.	-
			Relay Module , PLC relay, consisting of compatible base terminal and pluggable miniature relay with power contact, Contacts Configuration: 1 PDT, Contact material: AgSnO, Input voltage: 24V DC, Typical input current: 9mA, Typ. response time: 5ms, Typ. release time: 8ms, Operating voltage display: Yes, Protective circuit: Protection against polarity reversal Polarity protection diode, Free-wheeling diode, Damping Diode, Din Rail Mountable: Yes, on DIN Rail NS 35/7.5, Dimensions W/H/D: 6.2mm/80mm/94mm, Ambient temperature (operation): -40°C to 60°C, Maximum switching voltage: 250V AC/DC, Limiting continuous current: 6A, Make: Phoenix Contact, Part No.: PLC-RSC-24DC/21 or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Box Mounting Receptacle, Receptacle for front mounting: Yes, No. of contacts: 2 Nos., Contact Type: Socket, Contact size: 16, Contact Arrangement: 10SL-4, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25043-10D, With Square sealing gaskets: Yes, 1Nos. per connector, Square sealing gasket material: Neoprene, Square sealing gasket compatible to shell size 10SL Part No.: MS 02-10SL SQG, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, Make: Allied Connectors, Series: MS, Part No.: MS 3102 R 10SL-4 S - SQG C&C or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Straight cable connector, No. of contacts: 2 Nos., Contact Type: Pin, Contact size: 16, Contact Arrangement: 10SL-4, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25042-10D, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, With Telescopic Bushing: Yes, 1 Nos. per connector, Make: Allied Connectors, Series: MS, Part No.: MS 3106 F 10SL-4 P - C&C TB or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Box Mounting Receptacle, Receptacle for front mounting: Yes, No. of contacts: 3 Nos., Contact Type: Pin, Contact size: 16, Contact Arrangement: 10SL-3, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25043-10D, With Square sealing gaskets: Yes, 1Nos. per connector, Square sealing gasket material: Neoprene, Square sealing gasket compatible to shell size 10SL Part No.: MS 02-10SL SQG, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, Make: Allied Connectors, Series: MS, Part No.: MS 3102 R 10SL-3 P - SQG C&C or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Straight cable connector, No. of contacts: 3 Nos., Contact Type: Socket, Contact size: 16, Contact Arrangement: 10SL-3, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25042-10D, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, With Telescopic Bushing: Yes, 1 Nos. per connector, Make: Allied Connectors, Series: MS, Part No.: MS 3106 F 10SL-3 S - C&C TB or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Box Mounting Receptacle, Receptacle for front mounting: Yes, No. of contacts: 3 Nos., Contact Type: Socket, Contact size: 16, Contact Arrangement: 10SL-3, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25043-10D, With Square sealing gaskets: Yes, 1Nos. per connector, Square sealing gasket material: Neoprene, Square sealing gasket compatible to shell size 10SL Part No.: MS 02-10SL SQG, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, Make: Allied Connectors, Series: MS, Part No.: MS 3102 R 10SL-3 S - SQG C&C or equivalent	1	2	0	2	Nos.			Rs.	-
			Power and Signal Connector , Type: Straight cable connector, No. of contacts: 3 Nos., Contact Type: Pin, Contact size: 16, Contact Arrangement: 10SL-3, Service Rating: A, With Protective metal cap with sash chain: Yes, 1 Nos. per connector, Protective metal cap with sash chain compatible to shell size 10SL Part No.: MS 25042-10D, Insulator: Standard, Polychloroprene, Contact Option: Standard Solder (Silver Plated), Finish: Standard Cadmium Olive Drab, With Telescopic Bushing: Yes, 1 Nos. per connector, Make: Allied Connectors, Series: MS, Part No.: MS 3106 F 10SL-3 P - C&C TB	1	2	0	2	Nos.			Rs.	-
			RJ45 connector receptacle , for panel mounting, Body material: Plastic, Size: C, Middle Size (13/16" - 28 UNS), Cat Type & Shielded: Cat 5e shielded, Connector Body (Style): Front Fastened (P), Connector (Housing) Gender: F-F Jack, Connector Assembly Style: Jack 180° (Horizontal) (H), Mating Style: Screw Thread (S), Backshell Shape: Square, Waterproof Types: Unmated Waterproof, Waterproof Rating: IP 67, Panel Cut-Out Type: B, with four mounting holes dia. 3.1mm, Make: Amphenol LTW Technology, Part No.: RCP-SSPFH-SS U 7001 or equivalent	1	2	0	2	Nos.			Rs.	-

3.1.19	RJ45 Overmolded with Cable , Specification (1st End): RJ45 C Size , Middle Size (13/16" - 28 UNS), Body material: Plastic, Cat Type & Shielded: Cat 5e unshielded, Connector (Housing) Gender (1st End): M Plug, Specification (2nd End): Unshielded Plug, Cat Type & Shielded (2nd End): Gold Plating 6u", Connector (Housing) Gender (2nd End): M Plug, Mating Style: Screw Thread, Backshell: Straight, Cable type: Cat 5e FTP Solid Cable, Cable length: 5m, Make: Amphenol LTW Technology, Part No.: RCP5UM-UPG06M-SLB05 or equivalent	1	2	0	2	Nos.			Rs.	-
3.1.20	PCB mounting profile assembly part, Press drawn section, compatible with Index 3.1.21 , DIN Rail NS 35 or NS 32 Mountable: Yes, with the help of part at Index _____, PCB Width (corresponding to UM press drawn section width): 107.5mm, PCB Length (corresponding to UM press drawn section length): 230mm ± 40mm, Colour: Pale Green (GN6021), Make: Phoenix Contact, UM Profile Part No.: UM 108, Order No.: 2952020 (for custom length) or 2907525 (for 100cm length) or equivalent	1	2	0	2	Nos.			Rs.	-
3.1.21	PCB mounting profile assembly part pair, Side elements with foot, compatible with Index 3.1.20 , DIN Rail NS 35 or NS 32 Mountable: Yes, Colour: Pale Green (GN6021), for Left/Right: Both, Width: 5mm, With screws for coupling with item at Index 3.1.21: Yes, Make: Phoenix Contact, Part Nos.: UM108-SEFE/L (Order No.: 2959696) and UM108-SEFE/R (Order No.: 2959683) or equivalents	1	2	0	2	Nos.			Rs.	-
3.1.22	Top hat DIN Rail , for mounting in equipment racks, Width: 35mm, Depth: 7.5mm, Length: 1m, As per European standard: EN 50022, Material: Cold rolled carbon steel sheet, Sheet thickness: 1mm, Surface coating: Chromated bright surface finish, Trade number: TS-35/7.5, Make: Not specified, Part No.: Not specified	1	1	1	2	Nos.			Rs.	-
3.1.23	Cable duct or Wiring Channel , Consisting of upper and lower part, Height: 40mm, Width: 25mm, Length: 2000mm, Ambient temperature: -5°C to 60°C, Components: Lead-free, Flammability rating according to UL 94: V0, Material: PVC, Colour: Gray, Make: Phoenix Contact, Part No.: CD 25x40 - 3240188 or equivalent	1	1	0	1	Nos.			Rs.	-
3.1.24	Power Resistor , Value: 50 Ohms, Tolerance: 5%, Power Dissipation: 50W, Housing Body: Aluminum encased, Mounting: Surface mountable with 2Nos. Of M4 sized screws, Make: Ashok Precision Resistors (APR), Part No.: 1232 or equivalent	1	2	0	2	Nos.			Rs.	-
3.1.25	Fan , for mounting on heatsinks at Index 2.3.3, Input voltage: 230V AC, Line Frequency: 50/60Hz, Ball Bearing: Yes, Impedance protected: Yes, Make: ALFIN Blowers, Model Name: Celcon, Model No.: 80 AK or equivalent	1	2	0	2	Nos.			Rs.	-
3.1.26	FRP board, for mounting resistor and making connections over the capacitor bank, Thickness: 3mm, Size: 13.5cm x 12.7cm, Holes: (1) M5/M6: 8 Nos., (2) M8: 1 Nos., (3) M4: 2 Nos. as per drawing made in Index 1.2.5	1	2	0	2	Nos.			Rs.	-
3.1.27	Plastic sticker, for pasting on front panel, with marked grooves for easy separation from main sticker according to AutoCAD drawing for front panel as per Index 1.2.1, Logo and Text: will be provided to your firm after order is placed,	1	2	0	2	Nos.			Rs.	-
3.1.28	BNC Connector, Panel Mountable: Yes, Isolated: Yes, Inside contacts: Solderable, Make: Not specified, Part No.: Not specified	1	2	0	2	Nos.			Rs.	-
3.2	Preparation of a General Assembly/Arrangement (GA) diagram in AutoCAD. GA diagram preparation should start with the inputs from our concerned officers. GA diagram is to be submitted to our concerned officers after implementing all suggested changes and final approval. After that consent has to be taken to proceed to work at Index 3.3.									
3.2.1	Taking the equipment sub-rack's internal partitioned space dimensions into account and the items procured in Index 3.1 per power supply, preparation of a General Assembly/Arrangement (GA) diagram of the complete system in AutoCAD.	1	1	0	1	Nos.			Rs.	-
3.2.2	From the electrical connection schematic diagram that will be provided to the firm after confirm work order is placed, determining the routing path of each interconnecting PVC/PTFE wires/cables through the cable trays and entering the details in the GA diagram viz. wire/cable ferrule numbers and cable tray numbers, colour of insulations, type of insulation, lugs specifications on both ends.	1	1	0	1	Nos.			Rs.	-
3.3	Installation of the above items listed from index 3.1.1 to 3.1.28 and the PCBA fabricated as in Index 2 as per the approved GA diagram.	1	2	0	2	Nos.			Rs.	-
3.4	Electrical diagram to be updated with wire/cable ferrule numbers and cable tray numbers. The updated electrical diagram to be submitted to us after approval from concerned officers.	1	1	0	1	Nos.			Rs.	-
4	Programming of the PLC in the provided ladder logic software as per the control logic provided by our concerned officers.	1	1	0	1	Nos.			Rs.	-
4.1	Installing the code in PLC of Power supply and testing.	1	2	0	2	Nos.			Rs.	-
									Total Estimated Cost =	Rs. -
									Transportation =	
									Final Estimated Cost =	