



Government of India
Ministry of Housing & Urban Affairs
Central Public Works Department
O/o the Chief Engineer (Kolkata)
234/4, AJC Bose Road, Nizam Palace, Kolkata - 20.



SCHEDULE OF QUANTITY (ELECTRICAL)

Name of work :-	Comprehensive up-gradation of existing old outlived VRF AC system of centenary building to contemporary inverter technology at Indian Association of the Cultivation of Sciences (IACS) Jadavpur Kolkata.
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Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
1	31.1.3	Supply, Installation, Testing & Commissioning of Modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling/heating having 100% hermetically sealed inverter type twin Rotary/Scroll Compressor(s), minimum two compressors (with individual seperate PCB) for above 14HP modules, microprocessor based Controller, top discharge type condensing unit(s), with R-410-A Refrigerant or equivalent, vibration Isolators with suitable foundation etc. complete as required. To have better efficiency condensor fan shall be capable to operate at different speed with respect to load. The unit shall deliver the rated capacity and in confirmation as per IS 18728:2024 and CPWD Specifications and work even at 50°C ambient temperature without tripping. The system shall be able to deliver 100% of the rated capacity upto 39 Degree Celcius. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply and BMS compatible. The unit shall be filled with first charge of the refrigerant and ready for use as required. The condenser should be coated with a hydrophilic film to prevent water accumulation on the surface of the heat exchanger, enhance water dispersion, and reduce the risk of degradation, thereby improving overall performance and durability. The Indian Seasonal Energy Efficiency Ratio (ISEER) of the unit shall be as per Energy Conservation and Sustainable Building Code (ECSBC) 2024 as below and complete as per CPWD specification, connections, inter connections etc. as required. (For capacity <40 kWr ISEER 5.4, Capacity > 40 and <70 ISEER 5.5, Capacity > 70 ISEER 5.6 for ECSBC Building)	414.00	HP	₹ 19,111.00	₹ 79,11,954.00

Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
		INDOOR UNIT				
2	31.4	Supply, Installation, Testing and Commissioning of following minimum capacity 4 way Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan / dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a singal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement in auto mode. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor)				
2.1	31.4.2	1 TR	24.00	Each	₹ 27,880.00	₹ 6,69,120.00
2.2	31.4.4	1.6 TR	27.00	Each	₹ 39,464.00	₹ 10,65,528.00
2.3	31.4.5	2.00 TR	5.00	Each	₹ 39,734.00	₹ 1,98,670.00
3	31.11	Supply, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted mid high static ductable type Indoor unit equipped with washable synthetic media pre filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a singal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor) High Static Ductable units (minimum 49 to 77 Pascal external static pressure)				
3.1	31.11.4	1.6 TR	5.00	Each	₹ 34,983.00	₹ 1,74,915.00
3.2	31.11.5	2.00 TR	23.00	Each	₹ 36,063.00	₹ 8,29,449.00
3.3	31.11.7	3.2 TR	5.00	Each	₹ 40,166.00	₹ 2,00,830.00

Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
4	31.12	Supply, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted high ductable type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature. (Make will be same as of Outdoor)				
4.1	31.12.3	6.6 TR	1.00	Each	₹ 78,065.00	₹ 78,065.00
4.2	31.12.4	8.0 TR	24.00	Each	₹ 85,191.00	₹ 20,44,584.00
5	31.13	Supply, Installation, Testing and Commissioning of Y/T/Multi Joints. Joints shall be of same Original Equipment Manufacturer (OEM) make as of ODUs and IDUs				
5.1	31.13.1	Indoor Units	106.00	Each	₹ 4,535.00	₹ 4,80,710.00
5.2	31.13.2	Outdoor Multi Joint	10.00	Each	₹ 8,098.00	₹ 80,980.00
6	31.14	Supply, Installation, testing and commissioning including vacuumization and Nitrogen testing of following nominal sizes of soft/ hard drawn copper refrigerant piping for VRV/ VRF system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/ brazing including accessories, insulated with XPLE Class-O tubular insulation / with Class-O closed cell elastometric nitrile rubber tubular sleeves section of specified thickness as given below for Suction and Liquidlines, all accessories as per specifications etc. as required :				
6.1	31.14.1	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	225.00	Mtr	₹ 256.00	₹ 57,600.00
6.2	31.14.2	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	500.00	Mtr	₹ 346.00	₹ 1,73,000.00
6.3	31.14.3	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	300.00	Mtr	₹ 487.00	₹ 1,46,100.00
6.4	31.14.4	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	120.00	Mtr	₹ 615.00	₹ 73,800.00
6.5	31.14.5	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	180.00	Mtr	₹ 739.00	₹ 1,33,020.00
6.6	31.14.6	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	200.00	Mtr	₹ 904.00	₹ 1,80,800.00
6.7	31.14.7	25.4 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	100.00	Mtr	₹ 1,068.00	₹ 1,06,800.00
6.8	31.14.8	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	200.00	Mtr	₹ 1,157.00	₹ 2,31,400.00
6.9	31.14.9	31.8 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	125.00	Mtr	₹ 1,222.00	₹ 1,52,750.00
6.10	31.14.10	34.9 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	20.00	Mtr	₹ 1,286.00	₹ 25,720.00

Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
6.11	31.14.11	38.1 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	50.00	Mtr	₹ 1,322.00	₹ 66,100.00
6.12	31.14.12	41.27 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	325.00	Mtr	₹ 1,368.00	₹ 4,44,600.00
7	30.12.1	Supply, installation, balancing and commissioning of site fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.				
7.1	30.12.1.1	Thickness 0.63 mm sheet	200.00	Sqm	₹ 1,213.00	₹ 2,42,600.00
7.2	30.12.1.2	Thickness 0.80 mm sheet	100.00	Sqm	₹ 1,387.00	₹ 1,38,700.00
8	MR	Supply & filling of Refrigerent R410 A required for piping between IDU and ODU	400.00	KG	₹ 1,068.00	₹ 4,27,200.00
9	MR	Supplying and fixing of rigid PVC pipe complete with fittings, suppot as per spefications & duly insulated with closed cell nitrile rubber insulation	250.00	Mtr	₹ 186.00	₹ 46,500.00
11	30.23	Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (class "O") insulation on existing duct after applying two coats of cold setting adhesive (CPRX compound). The joints shall sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.				
11.1	30.23.1	19mm	300.00	Sqm	₹ 810.00	₹ 2,43,000.00
12	MR	Supplying of One number XLPE Copper armoured power cable of 1.1 KV Grade of size 4 x 10 sqmm and conforming to IS 7098(Part-1) 1988 at site of work etc as required.	150.00	Mtr	₹ 1,582.00	₹ 2,37,300.00
13	MR	Supplying of One number Copper un-armoured power cable of 1.1 KV Grade of size 2 x 1.5 sqmm and conforming to IS 7098(Part-1) 1988 at site of work etc as required.	1,800.00	Mtr	₹ 149.00	₹ 2,68,200.00
14	MR	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's (but without MCB's and incomer) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)(Load bank type /MCCB as incomer)				
14.1		4 way (4 + 12), Double door	7.00	Each	₹ 12,393.00	₹ 86,751.00

Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
15	2.4	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
15.1	2.4.1	4 way (4 + 12), Double door	5.00	Each	₹ 4,337.00	₹ 21,685.00
16	1.17	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
16.1	1.17.21	3 x 4 sq. mm	750.00	Mtr	₹ 222.00	₹ 1,66,500.00
17	2.10	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
17.1	2.10.1	Single pole	114.00	Each	₹ 285.00	₹ 32,490.00
17.2	MR	63A TPMCB	28.00	Each	₹ 1,903.00	₹ 53,284.00
18	2.2	Providing and fixing following rating and breaking capacity and pole MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
18.1	2.2.14	125 Amp, 36KA, FPMCCB	7.00	Each	₹ 8,644.00	₹ 60,508.00
19	2.13	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
19.1	2.13.3	100A	5.00	Each	₹ 1,317.00	₹ 6,585.00
20	MR	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
20.1		4 X 10 sq. mm + 2 X 6 sq. mm earth wire	50.00	Mtr	₹ 1,510.00	₹ 75,500.00
20.2		4 X 16 sq. mm + 2 X 6 sq. mm earth wire	75.00	Mtr	₹ 2,155.00	₹ 1,61,625.00
21	10.7	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
21.1	10.7.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	2,000.00	Mtr	₹ 55.00	₹ 1,10,000.00

Sl. No.	DSR (E & M) 2025 Item / Market Rate	Description of items	Quantity	Unit	Rate	Amount
22	MR	SITC of MS stand for out door units of suitable dimentions as required.	23.00	Job	₹ 8,772.00	₹ 2,01,756.00
23	MR	Supplying of One number XLPE Aluminium armoured power cable of 1.1 KV Grade of size 3.5x35 sqmm and conforming to IS 7098(Part-1) 1988 at site of work etc as required.	50.00	Mtr	₹ 592.00	₹ 29,600.00
24	MR	Nitrogen for fluxing purpose and making the system comiissioning with all respect to work and check the lead hold the pressure for minimum 48 Hrs (for all IDU & ODU units) IDU-114 Nos ODU-23 Nos	2.00	Job	₹ 65,787.00	₹ 1,31,574.00
25	MR	Dismantling of Outdoor unit from top floor and kept in a store as per instruction of Engineer-in-charge.	23.00	Nos	₹ 1,479.00	₹ 34,017.00
26	MR	Dismantling of Indoor unit and kept in a store as per instruction of Engineer-in-charge.	114.00	Nos	₹ 912.00	₹ 1,03,968.00
27	MR	Dismantling of Copper pipes of different sizes for Indoor unit and kept in a store as per instruction of Engineer-in-charge.	2,345.00	Mtr	₹ 26.00	₹ 60,970.00
28	MR	Bye back of U/s materials				₹ -
28.1		Outdoor Unit	23.00	Each	-₹ 11,000.00	₹ -2,53,000.00
28.2		Indoor Units-114 Nos	114.00	Each	-₹ 1,500.00	₹ -1,71,000.00
28.3		DB With accessories	12.00	Each	-₹ 150.00	₹ -1,800.00
28.4		Copper pipes in parts	400.00	Kg	-₹ 300.00	₹ -1,20,000.00
28.5		Copper conductor assorted size /Cables etc	1.00	Lot	-₹ 22,500.00	₹ -22,500.00
ESTIMATED COST PUT TO TENDER FOR ELECTRICAL PART						₹ 1,78,98,508.00

Assistant Engineer (P) (E)

Executive Engineer (P)