SN	Item Description	Qty	UOM
	VRF/VRV Out Door Unit		
1	Supply, Installation and testing of air cooled variable refrigerant flow modular type condensing units, The Out Door Units(ODU) must have balanced oil distribution,quick cooling and heating, emmergency backup during compressor failure and better energy efficiency. Thus it reduce compressor damage,ODUs shold be full factory charge of refrigerant gas (R-410a), lubricating oil and all accessories as per the specifications.The condensing units shall be **suitable to work in both cooling and heating mode .** The condensing units shall be suitable for operation on 380 or 415 ± 10% volts, 50Hz, 3 phase AC power supply and the condensing units shall be of following capacities.Fully factory assembled, wired and tested Outdoor Condensing Units as per specifications and as required to make the system complete as Out Door Units. Independent outdoor units for each floor.Outdoor must be top discharge to fit in existing system layout and for better air circulation: The operating temperature of cooling and heating :-5 to 54 deg cel and -25 to 24 deg cel respectively.		
1.1	VRF Out Door Units heatpump 10HP	2.00	nos
2	Portable Dual Floor Standing VRF INDOOR UNIT		
	Supply ,Installation and Testing of the indoor unit. Unit shall be complete in all respect and suitable for 230 ±5% volts . Indoor unit shall include hanging arrangemnt of the unit with necessary supporting rod, nut & bolts, drop in anchor (halti/fisher make) and accessories for complete installation of Indoor unit.		
2.1	Floor Standing AC : 4tr	4.00	nos
2.2	Drain pump with complete accessories	4.00	Nos
3	**Installation, Testing & Commissioning of REMOTE CONTROLLER :**		
3.1	Wireless remote controller with receiver kits (inbuild or attached) Units	4.00	nos
4	**Installation and Testing of REFNET JOINTS (INDOOR & OUTDOOR)**		
4.2	Y - Joints for Indoor Units	2.00	nos
5	**Copper Refrigerant Piping with Insulation**		
	Supply, Installation, Testing of high pressure rating standred of **JIS H 3300** copper refrigerant piping suitable for R 410a refrigerant of suitable size as required and duly insulated with 19mm thick for gas line /13mm thick for liquid line **class o closed cell elastomeric foam insulation basis nitrile rubber** tube. Piping inside occupied spaces shall be supported using M S/GI hangers . Entire refrigerant piping work shall be carried out in accordance with approved drawing.The copper and insulation sizes shall be as follows :		
5.1	22.2 mm O.D..(with 19 mm insulation)	70.00	m
5.2	15.88 mm O.D.(with 19/13mm insulation)	50.00	m
5.3	9.52 mm O.D.(with 13mm insulation)	137.00	m
6	Supply and Top -up of additional Refrigerent -R410a as per OEM Regrigarent calculation.	45.00	kg
7	Supply, installation,testing of rigid **PVC Drain piping** complete with fittings, supports as per specifications and duly insulated with 6 or 9 mm thick closed cell elastomeric foam insulation basis nitrile rubber tube. Pressure rating for PVC pipe shall not be less than 6 kg / m3.		
7.1	Ø 50mm		m

SN	Item Description	Qty	UOM
7.2	Ø 40mm	50.00	m
7.3	Ø 32mm	48.00	m
8	Supply, installation of pre galvanized factory fabricated 18 gauge G.I. **perforated type cable trays with cover**, with bends, supports like nuts, bolts, washers, fasteners and all accessories of the following sizes.		
8.1	Perforated cable tray size 300 mm X100mm	30.00	m
8.2	cable tray cover size 300 mm X15mm	30.00	m
9	Supply,Installation of unarmoured copper Control cable 1sq.mm 2 core	200.00	m
10	Supply and laying of power supply cable for floor mounted Units 2.5 sq.mm 3C with RCBO 6A and MCB type C 1A with complete accessorries	1.00	Lot
11	Supply and laying of power supply cable 5C ,6 sq.mm for Out door Units 2 nos 10HPalong with RCBO 25A,300mA 4P with complete accessories .To be connected from Nearest panel	1.00	Lots
12	Lifting and shiting of Indoor units and ODUs door units to final location with proper machine base and any other missing item to make the system fully functional should be included here only	1.00	LS
13	Any other civil works including cutting and repairment of false ceiling etc	1.00	LS
14	Commissioning of over all VRF/VRV system as per the OEM Standred	1.00	LS