TECHNICAL SPECIFICATIONS FOR SUPPLY OF
Digital Energy Meter

Sl. No.	Description for BHEL Requirement		Vender to Note/Specify	Supplier's confirmation	Remarks
1.0	**SPECIFICATION OF THE ENERGY METERS**				
1.1	Total Quantity of 100 Nos of Three phase Energy meters should be supplied				
1.2	Purpose: Digital energy meter capable to measure 3 phase voltages, 3 phase currents, 3 phase real power kW of each phase, 3 phase apparent power kVA of each phase, and reactive power KVAr of each phase, powerfactor of each phase, All three energy parameters of each phase (KWh, KVArh and KVAh). The measured value is to be True RMS upto 31st harmonic. The device should have RS 485 port with MODBUS RTU protocol and be able to communicate with BHEL EMS(Energy Monitoring system).				
1.3	Make	Schneider Electric, Krykard, L&T, Secure, Elstar			
1.4	Current Voltage	5A nominal; 6A continous max 400V LL nominal; 480V LL continous max			
1.5	Programmable CT	CT primary should be programmable upto 9999A. CT Secondary should suitable for both 5A & 1A Inputs.			
1.6	Programmable PT	PT should be programmable and Should be fit for PT ratio 11000/110V			
1.7	Burden	Voltage & current input < 0.2VA per each phase			
1.8	Overload	Current 50A for 1s			
1.9	Sampling Rate	64 samples/cycle on all 3 voltages and 3 current channels simultaneously			
1.10	Isolation	2kV			
1.11	Impulse Withstand Voltage	5 kV (peak) -1.2/50microsec			

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1.12	Measurement Parameters	Voltage – 3U, 3V, Hz, Current – 3I, In Unbalance, Powers – kW, kVA, kVAr – phase wise and total, PF – phase-wise and total, Frequency, kWh, kVArh, kVAh, THD – V & I and Individual harmonics up to 31st order. (on communication)			
1.13	DISPLAY				
	Type	LCD Display with 5 digit or more and 2 or 3 Line or more			
1.14	COMMUNICATION				
	Protocol	MODBUS RTU protocol with 16 bit CRC; 2-wire			
1.15	Baud Rate	Programmable Baud rate - 2400 bps to 19200 bps. User settable			
1.16	AUXILLARY SUPPLY (Optional)				
	Rating	85 to 265 Vac 50Hz; 100 to 300 Vdc			
	Burden	5VA			
1.17	ACCURACY				
	Voltage	0.2% of reading (20% to 120% nominal)			
	Current	0.2% of reading (20% to 120% nominal)			
	Power	Kw: 0.5% of reading, Kvar: 1% of reading			
	Energy	Class 0.5 as per IEC 62053-22			
	power factor	0.5% of reading			
1.18	Others				
	Phase Sequence	Phase Sequence Adjustment on meter directly for easy installation without changing CT & PT Inputs			
	Digital Inputs	Two digital inputs			
1.19	GENERAL				
	Temperature	Operating range: -20 C to 60 C			
	Humidity	<5% to 95% non condensing			
	IP rating	IP54			

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