

# Product Specifications

## Three Phase Smart Energy Meter

Mfr: PCP International Ltd.

Customer: Electricity Boards (AMR/AMI)

Product: Three phase smart energy meter

Sr No	Specifications/Requirements	Vendor's submission
1	Manufacturer's Name and address	PCP International Ltd.
2	Type of meter	3 Phase, 4 Wire , Whole Current Meter, Direct Reading Type
3	Accuracy class of meter	class 1 as per IS 13779/IS16444
4	Ib and I <sub>max</sub>	5A, I <sub>max</sub> 80A
5	a. operating voltage for meter	240V, +20% and -40%
	b. operating voltage with communication unit	120V AC
6	Operating Frequency	50hz +/- 5%
7	Power consumption and Burden	voltage circuit: 7w(under communication)5W, 15VA , current circuit : 4VA
8	Starting current	0.2% Ib , 240V Unity power factor
9	Short time over current	30 I <sub>max</sub> for half cycle
10	Influence of self-heating	Operational within class 1, as per IS 16444/IS13779 External surface of the meter shall not exceed 20 K at 45° C ambient temperature
11	Rated impulse withstand voltage	8kV , 100E impedance
12	AC withstand voltage for 1 Min	4kV , between body and terminals
13	Insulation resistance	
14	a. Between frame and current and voltage circuits connected together	>5Mohm
	b. Between Each current (or voltage circuit) & each and every other circuit	>50mohm
15	Mechanical requirements	As per Clause of 12.3 of IS 13779
16	Resistance to heat and Fire (as per specifications )	IS 13779:99 Not ignited by thermal overload & material is fire retardant
17	Degree of protection	IP51 (final product) as per IS 12063
18	Resistance against climatic influence	IS 13779:99 Clause 12.6
19	Electromagnetic Compatibility(EMC)	Yes as per IS 13779:99
20	Accuracy requirements	As per IS 13779
21	Power factor range	Zero Lag Unity - Zero Lead
22	Energy measurement	Active Energy / optional for kVARh
23	Connection diagram of system on Terminal	yes
24	Self-diagnostic feature	Yes , all segments on display ON
25	Initial startup of the meter (meter shall be fully functional within 5 secs after reference voltage is applied to the terminals	yes , meter start up within 5 sec
26	Terminal Block	
	a. Depth of terminal holes	25mm, (5-80A)
	b. Internal diameter of the terminal holes	8.5mm (5-80A), 5.5mm (5-30A)
	c. clearance between adjacent terminals	13mm
28	Communication capabilities	RF 865 – 867 MHz, GRPS 4G with fall back on 2G, Bluetooth, Wi-Fi, RS- 485, Optical Port.
29	FOTA	Has feature for FOTA. DLMS compliant
30	Sealing of meter	Polycarbonate seals with serial number and logo

31	Communication in Power OFF	sends message for Power fail .
32	Immunity and logging against the abnormal magnetic influence	Meter is immune to STRAY magnetic field , and for abnormal magnetic field records as per I <sub>max</sub> with date and time stamp .
33	Immunity and logging against ESD/Jammer	Immune
34	DC and other Tamper immunity and logging	YES, meter is IMMUNE to DC in both phase and Neutral
35	Abnormal tamper events and logging with snap shot in all tamper conditions	under the tamper conditions , meter will get disconnected after warning
36	Grade / name of material used for	
	a. meter base	PC , thickness 2mm
	b. meter cover	PC transparent, 2mm thickness
	c. terminal block	Integral part of the Base body
	d. terminal cover	transparent
37	Tamper counters	Yes
38	Recording forward energy in all conditions ( including current/potential reversal)	Yes
39	Display Backlit Color	GREEN
40	Nonvolatile memory (retention period)	Yes EEPROM , More than 20years
41	Measuring elements used in the meter	Shunt in Phase and CT in neutral
42	Power supply to the meter (in case of supply failure)	Super Cap , and then Battery
43	Display of measured values	Yes
44	LCD display (type and Viewing angle )	Pin type, STN, 120degree
	Pulse rate	3200imp/kWh
45	Name plate marking with Laser printer	Name plate is printed UV stabilized, serial number and M/Y laser printed
46	Routine Test certificates	Yes (Applied For)
47	Acceptance Test certificates	Yes (Applied For)
48	Type test certificates	Under Process
49	Output device	LED
50	Make of disconnctor switch	HONGFA/KG/EVE
51	Disconnecter technical particulars (as per cl no 4.1 of specifications )	Two Single pole Relays(90A) used in Phase and Neutral circuit
52	Terminal Screws	M6, Nickle plated Brass
53	Fire retardant category of material	
	a. meter body	PC,
	b. terminal block	Integral part of the base body
54	Ultrasonic welding of Meter base and cover	Glued, locked
55	Terminal material	Nickle plated Brass terminals
56	Terminal screw material and plating details	Nickle plated Brass terminals
57	Terminal screw size and type	M4(5-30A), M6 for 5-80A, Hex head
58	Sealing screw	Unidirectional sealing screw for base and cover , with holes for seals
59	Optical port	additional optical port with RS232 (D9) connector for termination in Meter Box