

SMART ENERGY METER

Super Capacitors
(for first breath and
Last gasp)

3G Module
(Can also house
LoRa, WiFi,
Bluetooth
NBloT and other
comms)

High Quality Relays
(Below Top Cover)
(For control over both
Phase and Neutral)

Touch Sensitive Push Button
(Provides High Environment
Protection)

Adequate Shielding Arrangements
(To protect against 35kV and Jammer Tamperers)

Robust Power
Supply
(Can handle up
To 6000V surges)

Adequate Sealing Arrangements

EASY TO ACCESS

SMART METER SINGLE PHASE



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| | | |
|----|--|--|
| 1 | Manufacturer's Name and address | PCP International Limited |
| 2 | Type of meter | 1 ph2 wire , 240VAC, 50hz |
| 3 | Accurcay class of meter | class 1 as per IS 13779/IS16444 |
| 4 | Ib and Imax | 10A, Imax 60A /5A and Imax 30A |
| 5 | a. operating voltage for meter | 240V, +20% and -40% |
| | b. operating voltage with communication unit functionality | 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 | 30Imax for half cycle |
| 10 | Influence of self heating | Operational within class 1 , as per IS 16444/IS13779 |
| 11 | Rated impulse withstand voltage | 6kV , 100E impedance |
| 12 | AC withstand voltage for 1 Min | 4kV , between body and terminals |
| 13 | Insulation resistance | |
| 14 | a. Between frame and current and volatge circuits connected together | >5Mohm |
| | b. Between Each current (or volatge circuit) & each and every other circuit | >50mohm |
| 15 | Mechanical requiremnets as per IS13779 :99 | Yes |
| 16 | Resistance to heat and Fire (as per specifications) | Yes as per IS 13779:99 |
| 17 | Degree of protection | IP51 (final product) |
| 18 | Resistance against climatic influence | Yes as per IS 13779:99 |
| 19 | Electromagnetic Compatibility(EMC) | Yes as per IS 13779:99 |
| 20 | Accuracy requiremnets as per IS 13779 | Yes |
| 21 | Power factor range | Zero Lag Unity |
| 22 | Energy measurement | Active Energy / optional for kVARh |
| 23 | Connection diagram of system on Terminal Cover | yes |
| 24 | Self diagonistic feature | Yes , all segmnets on display ON |
| 25 | Initial start up 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, (10-60A) |
| | b. Internal diameter of the terminal holes | 8.5mm (10-60A), 5.5mm (5-30A) |
| | c. clearance between adjacnt terminals | 13mm |
| 28 | Communication capabilities | Optical port, LoRa , GRPS, 3G, NB IoT |
| 29 | FOTA | Has feature for FOTA. DLMS compliant |

SMART METER SINGLE PHASE



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| 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 _{max} 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 | Non volatile 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 disconnector 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, Nickel 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 10-60A, 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 |
| 60 | Net metering | Net metering facility available |

SMART METER THREE PHASE



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| 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 | Accurcay class of meter | class 1 as per IS 13779/IS16444 |
| 4 | Ib and Imax | 20A, Imax 100A |
| 5 | a. operating voltage for meter | 240V, +20% and -40% |
| | b. operating voltage with communication unit func | 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 Imax 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 voltge circuits connected together | >5Mohm |
| | b. Between Each current (or volatge circuit) & each and every other circuit | >50mohm |
| 15 | Mechanical requiremnets | 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 requiremnets | 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 Cover | yes |
| 24 | Self diagonistic feature | Yes , all segmnets on display ON |
| 25 | Initial start up 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, (10-60A) |
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| 30 | Sealing of meter | Polycarbonate seals with serial number and logo |

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| | Pulse rate | 3200imp/kWh |
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