



Head End System:

- A metering solution is primarily made up of a Meter Data Acquisition System (MDAS) / Head End System (HES) and a Meter Data Management System (MDM).
- The basic function of Head End System (HES) is to acquire the raw data from the meter
- Data from HES is then communicated to MDM which validates and store data. Missing data can also be estimated by MDM. All the analysis of data and various reports based on data are generated from MDM. It is also used for interfacing with upstream applications like SAP etc. for billing purposes.



Meter Reading: The page is used to read the meter details like status of relay, current, voltage, power factor, MD in KW/KVA etc. for all meters connected to system

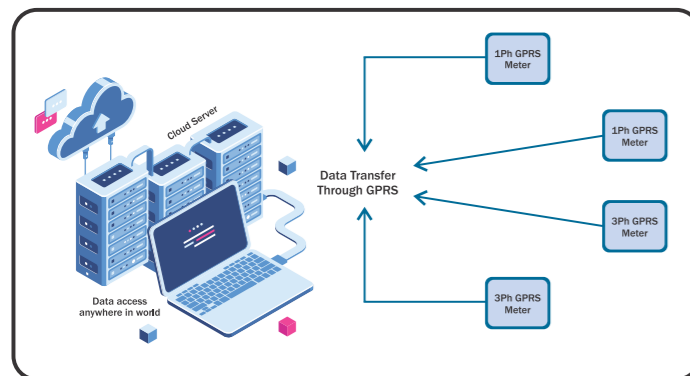


Vending Report: Various Report like daily consumption, Billing deduction, Recharge, etc can be accessed

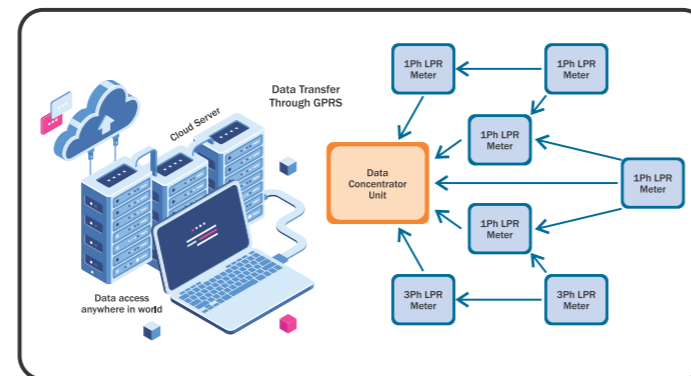


Reports: Various Meter Reports such as Billing details, Load profile, Tamper data etc. can be accessed.

Architecture for GPRS based Solution



Architecture for RF based Solution



HEPL/SMARTMETER/02-25

Technology of Measurement... defined

Smart Metering Solution (RF & Cellular Communication)



For more details scan the code



Special Features:

- SIMs Supports Multi-operators
- Remote Disconnect
- Notification Power Outage
- Modular Communication

HPL offers energy metering solution with Head End System



HPL Electric & Power Ltd

Corp. Office: 76-B, Phase-IV, Sector-57, HSIIDC Industrial Estate, Kundli-131028, Sonipat, Haryana INDIA.
Tel.: +91-130-350 3958, 350 3437
Registered Office: 1/20, Asaf Ali Road, New Delhi-110 002, INDIA.
E-mail: hpl@hplindia.com

Follow us:

Customer Care No.: 18004190198
E-mail: customercare@hplindia.com
For online Complaint Registration:
<https://www.hplindia.com/register-complaint.php>
www.hplindia.com

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METERING



Smart Metering Solution

(RF & Cellular Communication)

Special Features:

- SIMs Supports
- Multi-operators
- Remote Disconnect
- Notification Power Outage
- Modular Communication



SPSMN9 & PPSM01 are Single phase & Three phase Smart Meters with cellular / RF communication module. Suitable for reliable data transfer making it the ideal solution for Smart Metering applications. This meter supports remote firmware upgrade, remote connect/disconnect functionalities and alerts on events. This meter is suitable for domestic or commercial applications.

Benefits Utility:

- Loss Reduction.
- Energy auditing and accounting.
- Improving Reading efficiency and quality.
- Improving billing efficiency.
- Stopping “Estimated Bills” & “Billing Disputes”.
- Load forecasting.
- Remote connection/disconnection.
- Instantaneous information about Tamper/Theft.
- Remote configuration & monitoring of Meters.

Benefits Consumers:

- Giving Consumers a better understanding and control on their spending by Energy audit & accounting.
- Better customer services.
- Consumer will be able to view instantaneous/live data as well as last bill data using Consumer Mobile App.
- With live data consumer will be able to maintain and regulate his consumption.
- Consumer will be able to change meter from Postpaid to Prepaid or to Bidirectional Solar Net metering in future with same meter.
- Foot falling of consumers to DISCOM office will reduce.
- No need to raise the complaint when Smart Meter is Power OFF.
- No need to visit the DISCOM office to get the information regarding Meter.

Salient & Key Features:

- Available in Class 1.0 as per IS 16444:2015 part1 & class 0.5S as per IS16444:2015 part 2
- Meter rating available in SP 10-60A, TP 10-60A/10-100A/20-100A, -/5A LTCT & -/5A HTCT
- Two way communication.
- Built in connection/disconnection switch
- Built in modem.
- Uni-directional/Bi directional.
- Remote Meter data reading at configurable intervals/on demand (Push/Pull).
- Switchable Pre-payment/Post-payment modes.
- Switchable Forwarded metering/Net metering modes.
- Peak and off-peak tariff management.
- Remote load connection/disconnection facility.
- Immediate fraud detection through alerts.
- Remote firmware upgrade.
- Secure access control.
- 4G Cellular Communication with fall back to 2G / RF.

Measurement Energy Types:

- Active (kWh)
- Reactive (kVArh)

Demand:

- Demand calculation method: Block/Sliding Window.
- Demand Interval: 15/30 minutes (sub-interval of 5 min/10 min).



Communication:

- Local: Optical port as per IEC 62056-21.
- Remote: 4G communication with fall back to 2G / RF.
- Security: AES-GCM128 encryption.

Events:

- Event storage capacity: Minimum 200 Nos.
- list of events for logging:
 - Potential Missing.
 - Over Voltage & Low Voltage.
 - Voltage Unbalance.
 - Current Reverse & Unbalance.
 - Current Bypass & Over Current.
 - External Magnetic Influence.
 - Neutral Disturbance & Low PF.
- Communication Module Removal
- Configuration Change ('Pre-paid' to 'Post-paid' vice versa).
- Configuration Change ('Forward only mode' to 'Import and Export mode' vice versa).
- Over Load & Load Switch Status.
- Cover Open Status.
- Transaction Related & Power ON/OFF.

Load Profile Parameters:

- Phase wise Voltages & Phase wise Currents.
- kWh (Import) & kVAh (Import).
- kWh (Export) & kVAh (Export).
- Load Profile capacity: 60 days for the 11 parameters.
- Real Time Clock.

Time of Day: TOD Zones:

- Number of Zones: 8
- Number of Seasons: 2

Electrical:

- Connection Type: 1 phase 2 wire Direct connect. 3 phase 4 wire Direct connected, LTCT & HTCT
- Rated Voltage: 240V, -40% to +20%.
- Frequency: 50Hz \pm 5%.
- Impulse withstand: 10 kV as per IEC 61000-4-5.
- Current range: 10-60A, 10-100A, 20-100A, -/5A
- Accuracy class: class 1.0 & 0.5S
- Metrology (Pulse Output) LED: 2 LEDs one for Active & other for Reactive UC1/2 compliant Load connect & disconnect switch in each phase.

Compliance Standards:

- IS 16444 Part 1 & IS 15959 Part 1 & 2.

Mechanical:

- Dimension (W x H x D in mm approximately):
 - 160x262x99 (Single Phase)
 - 186x290x114 (Three Phase)
 - Enclosure Material: Polycarbonate.
- Sealing provisions: Meter body, Terminal Cover, Communication Module.
- Display: 8 digit alphanumeric LCD with backlit and necessary icons.

Real Time Clock:

- RTC Type: Crystal.
- Power source: Mains supply.
- Battery Capacity: 220mAh.
- Backup Source: Lithium Battery.

Backup for Display & Communication in the Absence of Mains Power:

- Backup Source: Lithium Battery.
- Battery Capacity: 1200 mAh.

Environmental:

- Temperature: Operating: -10 °C to +60 °C.
- Storage: -25 °C to +70 °C & Humidity: 95%.
- Ingress protection: IP-51.
- Insulation Class: Protective class II.