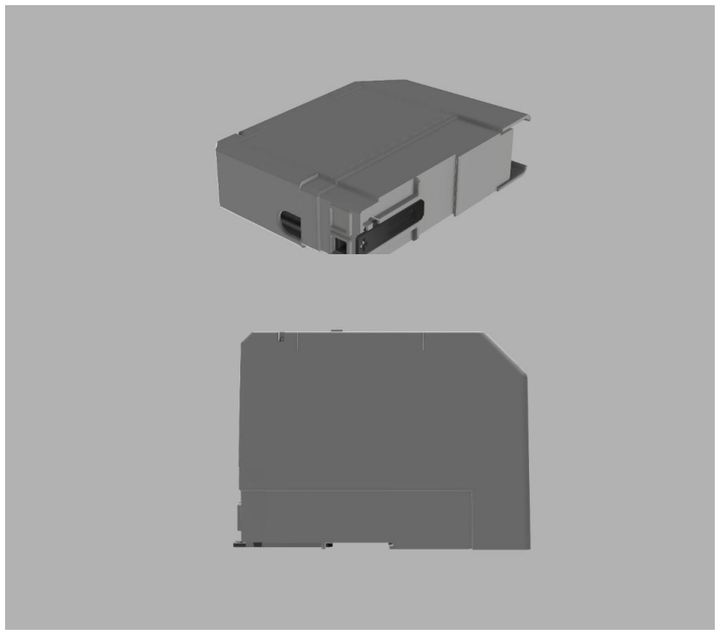
sensemi
SOLUTIONS

smart metering
solutions.

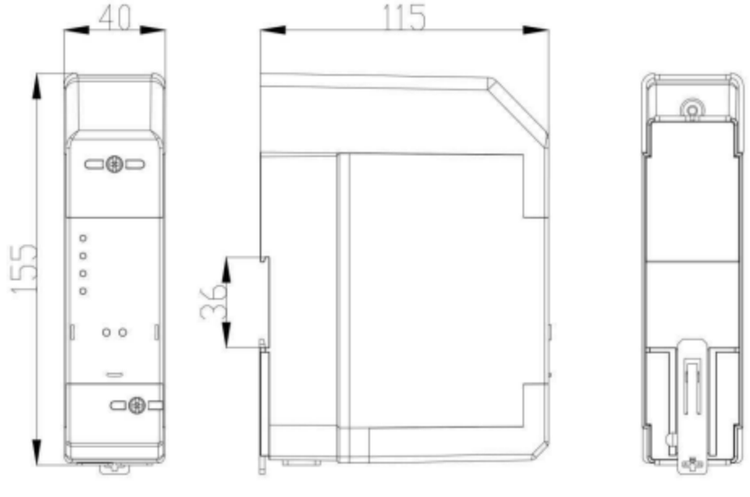
SM120B2

SINGLE PHASE DIN RAIL
SMART ELECTRICITY METER





DIMENSIONS



*ALL UNITS ARE IN MM (MILIMETER)

PRODUCT OVERVIEW

The SM120B2 is a versatile single-phase DIN Rail smart meter, designed for power grid monitoring, load control, and tamper detection. It features an advanced anti-tamper solution that helps utilities boost revenue and reduce line losses. Compliant with DLMS and FID2 open standards, the SM120B2 is an intelligent choice for residential customers.

PRODUCT FEATURES

- **Top-in, bottom-out design.**
- **Non-volatile memory for data storage without battery usage.**
- **Replaceable internal and external batteries for clock maintenance.**
- **Internal latching relay for disconnect control Data reading**
- **Capability during power outages.**
- **Anti-tamper design for enhanced security.**

TECHNICAL SPECIFICATIONS

Operating Voltage	230V
Voltage Range	0.6Un~1.2Un
Current rating	5(100)A
Starting current	0.4% of Ib
Frequency	50Hz±5%
Accuracy Class	Active Energy: CL 1.0 1000 imp/kWh Reactive Energy: CL 2.0 1000 imp/kvarh

STANDARDS AND COMPLIANCE

- Adheres to IEC standards (IEC 62052-11, IEC 62053-21, IEC 62053-23).
- Complies with interoperability standards (DLMS, FID2).

MAIN FUNCTIONS

MEASUREMENTS

- kWh (import, export, net, absolute).
- Kvarh (import, export).
- Kvah (import, export).
- Instantaneous values for voltage, phase line current, neutral line current.
- Instantaneous values for active power, reactive power, power factor.
- Current date and time.
- Phase angle measurement.
- Frequency measurement.

TARIFF FUNCTIONS

- Time of Use (TOU) measurement with up to 4 tariffs, 8 days, 12 seasons, 12 weeks, 16 switches, and 100 special days.
- Supports active and passive tariffs that can be updated at any time.
- Internal and external batteries maintain clock and calendar during power outages.

ANTI-TAMPER FEATURES

- Detection of meter cover tampering, terminal cover tampering, external magnetic fields, current reversal, unauthorized communication, and more.
- Tamper alarm displayed via LED.
- All tamper events are recorded in the meter memory.

LOAD PROFILES

- Records up to 100 days of 15-minute load profiles with 16 channels on a FIFO basis.
- Configurable load profile interval from 1 to 60 minutes.
- Records 5 load profiles, including Load Profile 1, Load Profile 2, Average Values Profile, Min. Values Profile, and Max. Values Profile.

BILLING

- Automatic monthly billing reset at 00:00:00 on the 1st day of each month (configurable).
- Local and remote billing reset via software.
- Storage of up to 17 months of data in meter memory.

DISCONNECT/RECONNECT SWITCH

- 1-pole 120A internal latching relay.
- Capable of 100,000 off-load cycles.
- Maximum switch voltage of up to 250V.
- Disconnection and reconnection based on tariff table, maximum current (fuse supervision), and maximum demand/allowed current (limiter).
- Scheduled disconnection and reconnection.
- Local or remote disconnection and reconnection requests.

POWER QUALITY

- Detection of over-voltage and under-voltage with configurable time thresholds.
- Long and short outage detection with configurable time thresholds.
- Phase loss and over-current detection with configurable time thresholds.
- All power quality events are recorded in the meter memory

COMMUNICATION

- Full compliance with IEC 62056-21 optical port standards.
- RS485 communication.
- Optional external 4G communication via RS485.

TECHNICAL SPECIFICATIONS

Real-time Clock Accuracy	≤0.5 (sec/day (IEC 62054-21)
Maximum withstand voltage	500V
Consumption	Current (1 VA), Voltage (1.5 W, 2.5 VA)
Insulation class	Double insulation
Temperature Range	Operating: -40 ℃ ~ +70 ℃ Storage: -40 ℃ ~ +85 ℃D
Degree of protection	IP51