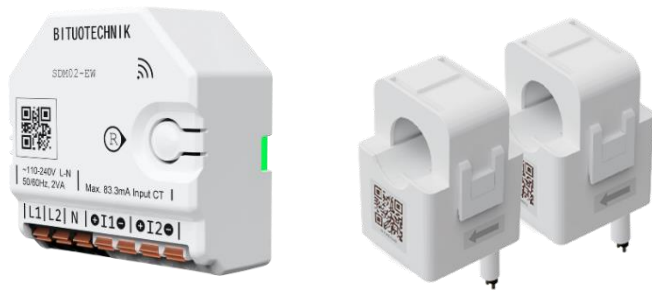


# SDM02

## Compact Energy Monitor with Split-core Current Transformers

### Datasheet



### Product Description

The SDM02 Smart Energy Monitor is a compact electrical monitoring device for split-phase and two-phase monitoring. With two split-core CTs, it precisely measures voltage, current, power, and energy, supporting wireless communication for seamless integration.

#### Technical Data

- Rated operating voltage  $U_n$ : 110~240 VAC L-N, 50/60 Hz
- Max current  $I_{max}$ : 120 A / 200 A
- Over-voltage category: III
- Rated insulating voltage  $U_i$ : 250 V
- Rated impulse withstand voltage  $U_{imp}$ : 4 kV
- Pollution degree: 3
- Protection degree: IP20
- Energy measurement accuracy: Class 1
- Rated operating temperature: -25~70 °C

#### Product Features

- Bi-directional measurement of power consumption and generation.
- Real-time monitoring of electrical data like voltage, current and power
- Class 1 active energy metering<sup>1)</sup> complying with IEC 61557-12
- Easy installation with pluggable terminal and compact split-core CTs
- A wide range of connectivity options including Wi-Fi, Zigbee, etc.
- Local automation for dynamic load balancing and export limitation
- History data chart at a period of hourly, daily and monthly
- Alarm notification of over/under voltage, over/under current etc.

1) Please use the paired monitor and split-core CT in the package to ensure the accuracy

### Ordering Information

|  | Max. Current | Split-core CT window | Connectivity                 | Communication SoC | Ordering Code <sup>1)</sup> |
|--|--------------|----------------------|------------------------------|-------------------|-----------------------------|
|  | 120A         | Φ16 mm               | Wi-Fi (Tuya)                 | BK7231N           | SDM02-TW-12                 |
|  | 120A         | Φ16 mm               | BLE + Wi-Fi (Bituo / Custom) | ESP32-8685        | SDM02-EW-12                 |
|  | 120A         | Φ16 mm               | Zigbee (Tuya)                | EFR32MG21         | SDM02-TZ-12                 |
|  | 120A         | Φ16 mm               | Zigbee (Std. 3.0)            | EFR32MG21         | SDM02-TZ-12-U01             |
|  | 200A         | Φ20 mm               | Wi-Fi (Tuya)                 | BK7231N           | SDM02-TW-20                 |
|  | 200A         | Φ20 mm               | BLE + Wi-Fi (Bituo / Custom) | ESP8685           | SDM02-EW-20                 |
|  | 200A         | Φ20 mm               | Zigbee (Tuya)                | EFR32MG21         | SDM02-TZ-20                 |
|  | 200A         | Φ20 mm               | Zigbee (Std. 3.0)            | EFR32MG21         | SDM02-TZ-20-U01             |

Note 1: For customers requiring products with split-core CTs with UL2808 certificates, please contact us for further details.

Please Note: Refer to the user guide for detailed wiring diagrams and safety precautions.

The diagram illustrates a power distribution system. On the left, a transformer with a primary winding is connected to a three-phase supply (Line 1, Neutral, Line 2) with a 240V line-to-line voltage and 120V line-to-neutral voltage. The secondary winding is connected to an 'Upstream Protection Device' (a grey box). The output of the protection device is split into two paths: one path goes through a switch labeled 'Line 2' and another path goes through a switch labeled 'Line 1'. Both paths lead to a common busbar labeled 'To Line N'. The voltage across the protection device is indicated as  $U_{n1}(L_1-N): \sim 110-120\text{ V}$  and  $U_{n2}(L_2-N): \sim 110-120\text{ V}$ .

The diagram illustrates the internal wiring of an RCCB. On the left, a box labeled "Upstream Protection Device" is connected to a terminal block. The terminal block has six terminals: two for "Line N" (blue), one for "Line N" (blue), and three for "Line N" (red). The voltage  $U_n (L-N): \sim 110-240 V$  is indicated. The wiring shows the "Line N" (blue) and "Line N" (red) connections passing through the RCCB's internal components, which are represented by two 3D models of the device. The first model is labeled "Branch 1" and the second is labeled "Branch 2". Arrows indicate the direction of current flow through the device.

Dimension: Unit in mm

