

# ES-10B

Class B and Class A

Residential Single Phase  
SMETS2 Electricity Meter

Designed for the residential smart meter rollout in Great Britain, this 4 terminal single phase electricity meter is the second generation version within our SMETS2 compliant solution.

Taking learnings from the first generation meter, the ES-10B is a more refined SMETS2 compliant electricity meter with 100A main disconnect relay, dedicated secure microcontroller and with multiple interfaces including Zigbee and DLMS.



## Key Features



DLMS  
READY



ANTI TAMPER



MULTIPLE COMMS  
OPTIONS

P-PAY

PREPAYMENT



ZIGBEE  
ALLIANCE



HIGH  
SECURITY

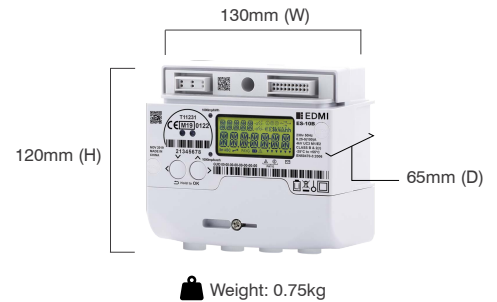


DISCONNECT  
RELAY

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Class B and Class A

## Residential Single Phase SMETS2 Electricity Meter



### Standards and Compliance

- MID Class A or Class B, Class 1 or 2
- GBCS v1.1, SMETS2 v2.0, CPA v1.2, DLMS CTT 3.0, Zigbee 1.2b, ICHIS v1.0, WELMEC 7.2:2018, RoSH 2012, WEEE 2013
- BS EN 50470-1:2006, 50470-3:2006, 62052-11:2003, 62055-31:2005-UC3
- IEC 62053-21:2003, 62053-23:2003, CLC/TR 50579
- ETSI EN 301 489-1, EN 301 489-17 V3.1.1
- EN 300328, 301489

### Voltage

- Nominal voltage: 230V, 50Hz, 5(100) Class 1/(MID Class B)
- Normal operating range: 207V - 253V
- Extended operating range: 184V - 264.5V
- Minimum Current: 0.25A
- Reference Current: 5A
- Maximum Current: 100A
- Active Energy [imp./kWh]: 1000
- Reactive Energy [imp./Varh]: 1000

### Current

- WC Range: 0.25/100A, 5/100A
- WC Limit: 3000A for 0.5 cycle
- Disconnect Relay: 100A
- Disconnect Rating: IEC62052-31 UC3 @ I<sub>max</sub>, 230 VAC

### Frequency

- 47Hz - 50Hz

### Inputs/Outputs Configuration

- 1000 imp/kWh pulsing LED Indicator
- 1000 imp/kvarh pulsing LED Indicator
- Relay Auxiliary Load Control Switch (ALCS) (230V, 2A)

### Battery

- Internal battery for up to 1 year of shelf storage

### Real-time Clock

- Accuracy (internal) within 10 seconds per month

### Internal Storage

- Up to 8 megabytes of Non-Volatile Memory Storage

### Display

- Backlit starburst liquid crystal display

### Measured Values

- Active energy import (Wh)
- Reactive energy import (varh)
- Active energy export (Wh)
- Reactive energy export (varh)
- Voltage RMS (V)
- Maximum Demand Active Power Import & Export (W)

### Power Quality Indication

- Sag/Swell
  - Records power events on configurable thresholds
  - RMS Voltage (over, under, swell, sag)
  - Supply Outage
  - Supply Interruption
  - Alerts

### Calendar

- Supports Daylight Saving time as per GBCS

### Tamper Detection and Alarms

- Tamper detection for terminal cover, meter cover and Communication Hub removal
- Tamper evident seals
- Wire seals for terminal cover and Communication Hub

### Billing Data Log

- GBCS Compliant
  - Tariff TOU Register Matrix
    - Up to forty 48 plus unified rate
  - Tariff Block Count Matrix
    - 4 x 8 matrix for storing block counters and pricing
- Active Import Registers
- Prepayment
  - Prepayment Credits
  - Payment-based debt payments
  - Meter Balance
  - Emergency Credit Balance
  - Accumulated Debt Registers
  - Payment Debt Registers
  - Time Debt Registers

### Security

- WOLF-SSL Cryptographic Library
  - GBCS security approaches, ECDH, SHA-256, AES-128 GCM
- Dedicated A7001 secure microcontroller
- 9 Trust Anchor Cells (TACs)

- Secure unlock mechanism for triage
- Commercial Product Assurance (CPA)
  - Secure provisioning process through EDMII supply chain

### Communications

- Local optical port
- DLMS COSEM
- Zigbee Smart Energy Profile 1.2
- GBCS object support

### Environmental

- Specified operating range:
  - 10°C to +40°C
- Operating range limit:
  - 25°C to +55°C
- Storage range limit:
  - 25°C to +55°C
- Transportation range limit:
  - 25°C to +70°C
- Relative operating humidity:
  - Up to 75%
- Storage humidity:
  - 30% to 95%, non-condensing for 30 days
- Ingress protection:
  - IP53 (without suction)

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