

# ES-12B

Class B and Class A

Residential Single Phase  
SMETS2 Electricity Meter



Designed for the residential smart meter rollout in Great Britain, this 5 terminal single phase electricity meter is an addition to our range of SMETS2 compliant solutions.

With two 100A main disconnect relays, dedicated secure microcontroller and multiple communications interfaces including Zigbee and DLMS, the ES-12B is accurate and can operate in prepayment mode.

## Key Features



DLMS  
READY



ANTI TAMPER



MULTIPLE COMMS  
OPTIONS

P-PAY

PREPAYMENT



ZIGBEE  
ALLIANCE



HIGH  
SECURITY

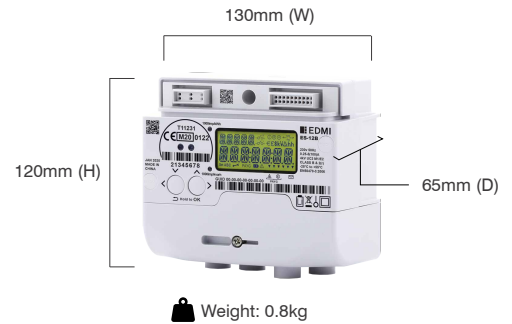


DISCONNECT  
RELAY

# ES-12B

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 2015, 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
- 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
- Withstand: 460V
- Meter Constant [imp/kWh]: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>, 240 VAC

### Frequency

- 47Hz - 52Hz

### Inputs/Outputs Configuration

- 1000 imp/kWh pulsing LED Indicator
- 1000 imp/kvarh pulsing LED Indicator
- Secondary 100 amp LCS disconnect relay, Load Control Switch (LCS) (240V, 100A)

### Battery

- Internal battery for up to 1 year of shelf storage

### Real-time Clock

- Accuracy (internal) within +/- 0.5sec per day

### 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 EDMI 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 95%
- Storage humidity:
  - 30% to 95%, non-condensing for 30 days
- Ingress protection:
  - IP53 (without suction)

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