ELSEWEDY ELECTROMETER®

ADVANCED PAYMENT

SINGLE PHASE METER

EM101-4 Smart G

Residential Applications (Low Voltage)

Load Profile

Active Energy

Cut-Off Relay

Tampers

Upgradeable to support

GSM/GPRS

M-Bus

INTRODUCTION

The EM101-4 Smart G is a single phase two wires prepaid electronic meter upgradeable to support the latest wireless M-Bus technology, to communicate with a Customer Interface Unit (CIU) installed within the consumer's household.

The EM101-4 Smart G benefits from the RFID technology which allows a two-way communication path between the utility company and the consumer. Various forms of information and data can be transferred securely via the RFID card(s) including but not limited to customer data, meter configuration and monthly consumption.

The EM101-4 Smart G was developed to meet the changing requirements of worldwide utility markets. The EM101-4 Smart G benefits from modern technology and up-to-date manufacturing techniques resulting in low power losses, high reliability and more flexibility.

Furthermore the meter is upgradeable to support a direct communication path between the consumer and the utility company without the use of meter readers, money collectors or vending stations via an AMM interface, hence reducing operational expenditure to the utility company and saving time for the consumer.

STANDARDS

- IEC 60060
- IEC 60387
- IEC 61036
- IEC 62053
- IEC 62056-51
- IEC 60068
- IEC 60529
- IEC 62052
- IEC 62056-41

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METER SPECIFICATIONS

Electrical Characteristics	
Accuracy Class	1
Nominal Voltage	230 V
Supply Variation	±30% Vn
Spike Voltage Tolerance	4KV
Starting Current	20mA
Nominal Current	5A
Maximum Current	60A
Nominal Frequency	50Hz
Frequency Variation	±2%
Inherent Consumption of Voltage Circuit	<2W,<10VA
Inherent Consumption of Current Circuit	<0.5VA
Back-up Battery Lifetime	10 Years
Memory	
Type	EEPROM
Retention Period	40 Years
Environmental Conditions	
IP Rating	IP54
Temperature Range	–5°C to +60°C
Storage Temperature	–25°C to +70°C
Humidity Range	85%
Communication	
Optical Interface	Standard Optical Port - IEC 62056-21
AMM Module	Upgradeable to support GSM/GPRS
Radio Frequency Link	Upgradeable to support M-Bus
Serial Communication Port	RS-485
Data Transmission Rate	Optical Port: 2400 Kbit/s GPRS: 56–114 Kbit/s M-Bus: 16.384 Kbit/s RS-485: 2400 Kbit/s

METER FEATURES

Feature	Description
Measurements	• The EM101-4 Smart G is capable of measuring the active energy consumed
Load Profile	• Each profile has an integration period of fifteen minutes • The profiling period extends over a range of thirty five days
Events	• The EM101-4 Smart G records a considerable amount of data for extended periods of time • In addition the EM101-4 Smart G stores up to one hundred tamper events • Events are logged with a date/time stamp
Tamper Proofing	• The EM101-4 Smart G has the ability to detect the following types of tamper attempts: ✓ Terminal Open ✓ Reverse Connection ✓ Current Bypass Connection ✓ Overload ✓ Overvoltage ✓ Undervoltage ✓ Parameter Change
Alarms	• The meter supports two alarm methods: ✓ LED Indicator ✓ Audible Alarm • The meter can be configured to give any combination of alarms as required
Relay Operation	• The relay control modes include: ✓ Remote Disconnect ✓ Local Disconnect • The relay is configurable to be triggered in the event of: ✓ Meter cover open ✓ Meter terminal cover open ✓ Energy reverses ✓ Meter current overload ✓ Meter overvoltage and undervoltage ✓ At low battery ✓ Low credit
Auto-diagnostics	• With each power-up or firmware update, the meter shall diagnose: ✓ Meter and memory integrity ✓ Display, alarms & battery status ✓ External communication module status
RFID Operation	• The meter is fully configurable via the RFID cards • Various data can be retrieved from the meter including but not limited to data relating to consumption, remaining credit, tamper attempts • The meter can be recharged via the RFID cards • Extremely secure as it includes a MIFARE CLASSIC encryption/decryption module to verify and validate the authenticity of the card used

MECHANICAL SPECIFICATIONS

- **Dimensions:** (L x W x D) = 209 mm x 125 mm x 78.5 mm
- **Weight:** Approximately 1.1Kg
- **Meter Housing:** Flame Retardant Polycarbonate