



Mk11

High-Precision Power Quality
Electronic Revenue Meter

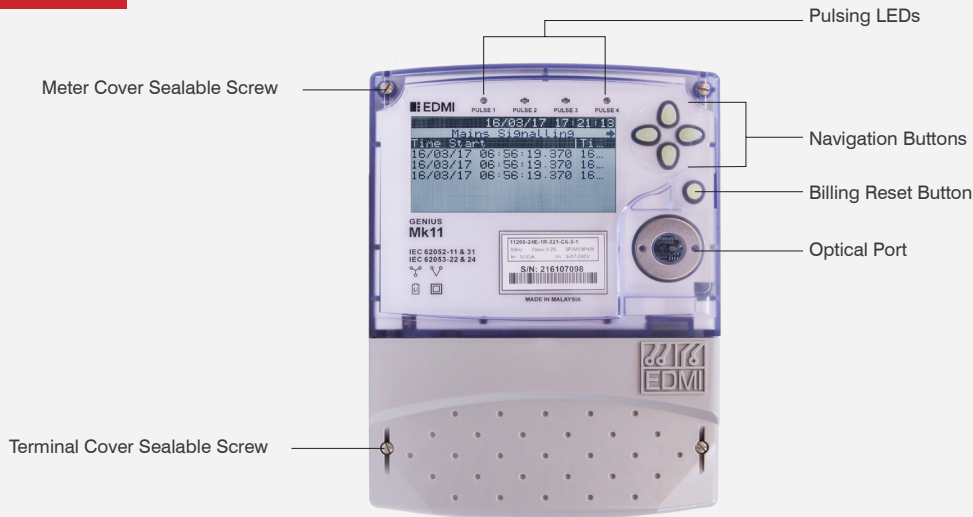


Mk11

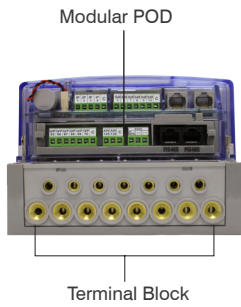


Genius Series - Class 0.2S

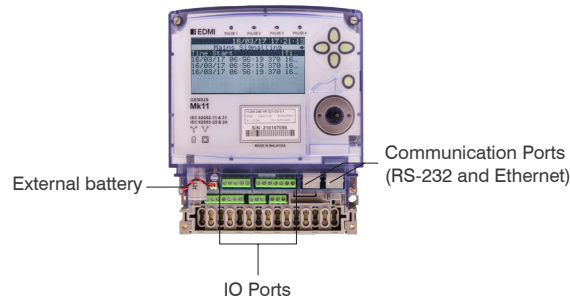
Meter Details



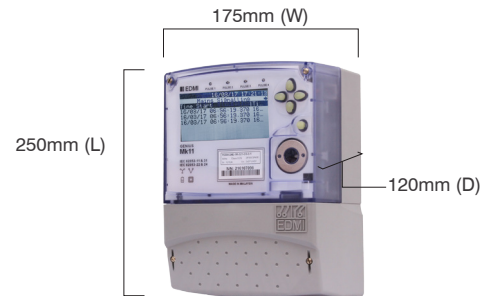
Meter Bottom View



Meter Front View



Dimensions

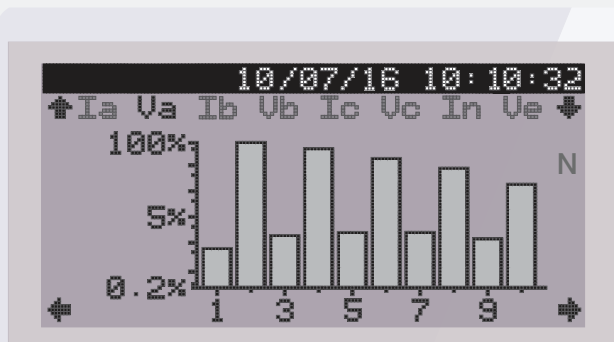


Weight: 2.56kg

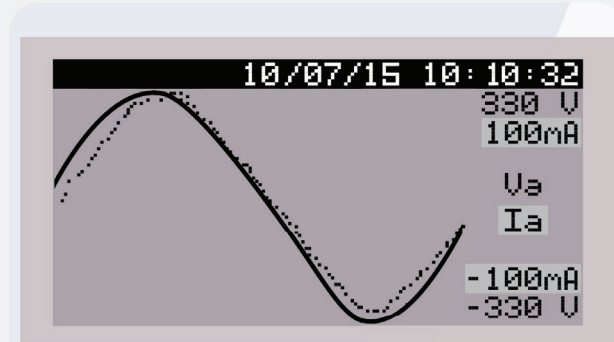
LCD Display

Fitted with a greyscale backlit LCD, Mk11 is capable of displaying graphs, tables, waveforms and vector diagrams. Advanced data analysis views on the meter include harmonics spectrum, real time waveforms, and many more.

Harmonics



Waveform



Specifications



Standards and Compliance

IEC 62052-11/EN 50470-1

Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 11: Metering equipment

IEC 62053-22/EN 50470-3

Electricity metering equipment (AC) - Particular requirements - Part 22: Static meters for active energy (Classes 0.2S and 0.5S)

IEC 62053-24

Electricity metering equipment (AC) - Particular requirements - Part 24: Static meters for reactive energy at fundamental frequency (Classes 0.5S, 1S and 1)

IEC 62052-31

Electricity metering equipment (AC) - General requirements, tests and test conditions - Part 31: Product safety requirements and tests

IEC 61000-4-30 Edition 3 (2015)

Electromagnetic compatibility (EMC) - Part 4-30: Testing and measurement techniques - Power quality measurement methods

Measuring Element Configuration

3 phase 3 wire
3 phase 4 wire
Neutral current measurement

Voltage

Nominal voltage: (Un): 57V - 240V L-N/100V - 415V L-L
Impulse voltage: 12kV
Terminal size: Ø 4.8mm - 5mm
PQ declared input voltage: (Udin): 120V or 230V
PQ flicker system: 120V/60Hz or 230V/50Hz

Auxiliary Supply

100 - 240VAC / 70 - 240VDC
Auxiliary only input/Auxiliary priority/Phase priority

Current

CT range: 0.3/1.2A, 1/6A, 1/4A, 0.3/6A, 1/10A, 5/6A, 5/10A, 5/20A
CT limit: 20 x I_{max} for 0.5 seconds

Power Consumption

Voltage circuit: <10VA/phase @ V_n
Current circuit: <0.5VA/phase @ I_n

Frequency

50Hz/60Hz

Inputs/Outputs Configuration

4 x LED indicators
4 x passive inputs (5VDC/12VDC/24VDC/48VDC/110VAC/240VAC)
6 x S0 outputs (27VDC, 20mA rated)
Output pulse width: Atleast 500ms, thereafter multiples

Battery

External lithium thionyl chloride battery (3.6V, 1200mAh)
Internal super capacitor (5V)
Backup time: 10 years without power (lithium battery)
Backup time: 72 hours without power (super capacitor)

Data Memory

64MB of non-volatile memory (expandable to 256MB)

LCD Display

Display digit size: 7mm x 4mm
Greyscale graphic (with backlight)
17 Characters by 2 lines alphanumeric display
Displays graphs, tables and vector diagrams
Programmable units, multipliers and leading zeros
Graphical display of load survey, phasor diagram, others

Real-time Clock

Precision clock accuracy: <5ppm (15 seconds per month) at full temperature range (-25°C to + 60°C)

Measured Values

3 element 4 quadrant
Import/Export/Absolute Wh, varh and VAh
Per quadrant: Wh,varh and VAh
Phase A,B,C and Total
W, var, VA
Power factor, frequency, phase angles
True RMS voltage and current (3 phase + neutral)
CT and VT correction
Transformer and line loss compensation

Power Quality Indication

Power frequency
Magnitude of supply voltage and current
Flicker
Supply voltage sag and swell
Voltage interruption
Rapid voltage change
Unbalance supply voltage and current
Voltage and current harmonics
Voltage and current inter-harmonics
Main signalling voltage on supply voltage
Measurement of under-deviation and over-deviation parameters

LCD Configuration

Up to 64 user-defined screens of any meter parameter
Up to 4 displays sets

Load Profile

Up to 150 channels and 2 independent surveys
Intervals programmable from 1 minute to 1 month
Over 131,000 days storage (1 channel, 30-minute intervals)
Over 36,400 days storage (2 channels, 15-minute intervals)
Over 19,200 days storage (4 channels, 15-minute intervals)
Energy, instantaneous readings, pulsing inputs as channel sources
Ability to store average/minimum/maximum values for interval duration

Time of Use

Up to 8 rates plus unified rate
Up to 56 separate import and export registers
Daily, weekly, monthly, yearly and special days
Up to 200 programmable special days
Up to 100 previous periods plus period totals
Block or rolling maximum demand
Energy, pulsing inputs
Time of maximum demand

Calendar

Supports Daylight Saving time
Supports Gregorian or Persian calendars
RTC and frequency synchronisation
Configurable external time source input (e.g. 1PPS)
Mains synchronised or internal crystal time keeping with revert

Tamper Detection and Alarms

Provision for sealing with conventional wire or plastic seals
Reverse current detection
Advanced tamper detection and logging
Pre-programmed alarms for meter self-check
Alarms trigger LEDs and/or communication event
Alarms are stored in event logs

Security

Multi-level security (username and password including encrypted log-in)
Up to 7 independent levels
Up to 6 individual users

Script Extensions

Mk11 Genius meter continues the adaptable concept of meter "extensions", introduced in the original MK6 Genius using EziScript, complex register manipulations can be performed allowing sophisticated processing capabilities.
Standard toolbox extensions provided
Customer-specific extensions will be made to order

Communications

Up to 2 independently working communication ports:
- Optical port: FLAG (IEC 62056-21)
- RS-232 with modem power supply (4W, 12VDC max)
POD features:
- 2x RJ45 RS-485
- 1x 2-wire RS-485/1x Fiber optic (receiver/transmitter)
- 2x Active I/P (+11V)
- 6x BOSFET O/P (240V)
GSM/GPRS
Built-in Ethernet Port (10/100Mbps)

Protocol

EDMI command line
DLMS/COSEM
MODBUS
DL/T 645-2007
DNP3.0
IPv4/IPv6
IEC 870

Software

EDMI EziView software available for meter programming and reading (Windows® compatible)
EDMI MultiDrive software available for large scale AMI and AMR solutions (Windows® compatible)

Environmental

Specified operating range: -25°C to +60°C
Operating range limit: -40°C to +70°C
Storage range limit: -40°C to +70°C
Relative humidity: Up to 75% mean, 95% non-condensing for 30 days
Ingress protection: IP54 (without suction)

More about EDM I

Since 1978 – for more than 30 years - energy companies all over the world have relied on EDM I to deliver the flexibility and reliability they need and the innovative solutions they demand. EDM I's experience, our proven track record, and millions of EDM I multi-functional smart meters installed worldwide, mean that our products are tried and tested and that you can trust EDM I to meet and exceed your expectations.

As the future of smart metering solutions, EDM I prides itself on its dedication to quality, compliance and customer service. Our focus on quality flows from the design phase through to our post-sales service, giving you the peace of mind that you can then pass onto your clients. We are international leaders in smart metering innovation and recognise our obligation to combine the best of cutting-edge technologies with a strong commitment to quality and reliability. We are dedicated to providing smarter solutions for our customers and are proud of our customer relationships. Our partnership approach ensures that we truly understand our customers' requirements now and into the future.

Smart Energy Solutions



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