![EDMI]

**ELECTRICITY**

# Mk6ES

Class 0.2S

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## High Precision Three Phase Meter
## Power Quality / Substation Monitoring

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The Mk6ES combines high precision metering and comprehensive data for network operation for power quality and substation monitoring. Designed for grid edge, transmission and distribution metering it provides unprecedented state-of-the-art metrology in terms of accuracy, precision, and reliability. Mk6ES has Power Quality Class S fitted as a standard offering with optional IEC 61850 substation protocol compliance.



## ❙ Key Features

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SECURE | HIGH ACCURACY | DLMS READY | LARGE LCD DISPLAY | MEASURE EVERYTHING | ETHERNET | ANTI TAMPER | SCRIPT EXTENSION |

# Mk6ES

Class 0.2S

## High Precision Three Phase Meter
## Power Quality / Substation Monitoring

175mm (W)

288mm (H)

93mm (D)
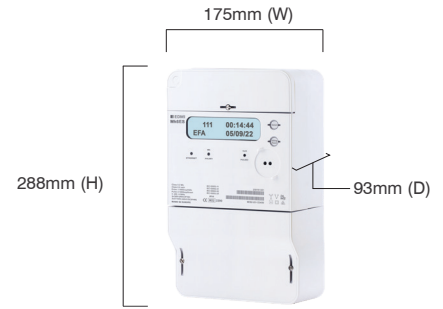
Weight: 2.2 kg

## Standards and Compliance

- Class 0.2S Active and Class 0.5S Reactive
- IEC 62052-11, 62053-22, 62053-24, 62052-31, 62059-32-1, SP-1618
- MID Class C

## Measurement

- 3 phase 3 wire
- 3 phase 4 wire

## Voltage

- Nominal voltage: 57 - 240V L-N/100V - 415 L-L or 57 - 277V L-N/100V - 480 L-L
- Impulse voltage: 12kV
- Terminal size: Ø 3.2mm - 3.3mm

## Current

- CT range: 0.3/6A, 1/6A, 1/10A, 5/10A, 5/20A
- CT limit: 20 x Imax for 0.5 seconds
- Terminal size: Ø 6.4mm - 6.6mm

## Auxiliary Supply Option

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

## Power Consumption

- Voltage circuit: <10VA/phase @ Vn
- Current circuit: <0.5VA/phase @ In

## Frequency

- 50Hz/60Hz

## Inputs/Outputs Configuration

- 2 x LED indicators + 1 x Ethernet indicator
- 4 x passive inputs (5VDC/12VDC/24VDC/48VDC 110VAC/240VAC)
- 6 x BOSFET outputs (240V, 100mA maximum)
- 2 x Active inputs (5VDC)/ 2 x S0 outputs (27VDC, 20mA rated)

## Battery

- External lithium thionyl chloride battery (1200mAh, 3.6V)
- Internal super capacitor (5V)
- Backup time: 72 hours without power (super capacitor)
- Read-Without-Power (optional): Nickel metal hydride (NiMH) battery (3.6V, 500mAh, Charge cycle: 1000 times)
- Backup time: 10 years without power (lithium battery)

## Real-time Clock

- Precision clock accuracy: <5ppm (15 seconds per month) at full temperature range (-40°C to +85°C)
- RTC and frequency synchronisation
- Mains synchronised or internal crystal time keeping with revert

## Data Memory

- 64MB of non-volatile memory

## Display

- Display digit size: 9mm x 5.2mm
- 16 Characters by 3 lines alphanumeric display
- Programmable units, multipliers and leading zeros
- Displays any available meter parameter
- Up to 64 user-defined screen pages to display any meter/energy parameter

## Measured Values

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

## Power Quality

- IEC 61000-4-30 Class S
- Power frequency
- Magnitude of supply voltage
- Supply voltage sag and swell
- Voltage interruption
- Unbalance supply voltage
- Voltage harmonics
- Voltage total harmonics distortion (THD)

## Load Survey/Profile

- Up to 70 channels and 2 independent surveys
- Intervals programmable from 1 minute to 1 month
- 30 days storage (70 channels, 30 minute interval)
- 120 days storage (15 channels, 30 minute interval)
- 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 32 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

## Tamper Detection and Alarms

- Multiple tamper detection options
- Provision for sealing with conventional wire or plastic seals
- Pre-configured alarms self-check
- Alarms trigger LEDs and/or communication event

## Security

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

## Script Extensions

- Adaptable concept of meter "extensions"
- Standard toolbox extensions provided
- Customer-specific extensions will be made to order

## Communications

- Optical port: FLAG (IEC 62056-21)
- LTE/GSM Modem (optional)
- Ethernet
- RS-232
- RS-485
  - 2 or 4-wire RJ45
  - 2 or 4-wire screw terminal

## Protocol

- EDMI command line
- DLMS/IDIS
- MODBUS RTU/TCP
- IEC 61850 (optional)
- DL/T-645:2007

## Environmental

- Specified operating range: -25°C to +60°C
- Operating range limit: -40°C to +70°C
- Storage range limit: -40°C to +85°C
- Relative humidity: Up to 75% mean, 95% non-condensing for 30 days
- Ingress protection: IP54 (without suction)
- Salt spray resistance: ASTM B117

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