EDMI

Mk6N

Advanced Three Phase Electronic Revenue Meter

***Genius Series** - Class 0.5S*

PRODUCT INFORMATION

Utilizing the same advanced meter design and firmware platform as the original Mk6, the new Mk6N meter updates this platform to address new IEC standards and to incorporate an updated power supply and input protection technology utilized by our latest range of energy meters.

KEY FEATURES

- AMI READY
- HIGH ACCURACY
- LARGE DATA STORAGE
- LARGE LCD DISPLAY
- MEASURE EVERYTHING
- UPGRADEABLE
- TAMPER PROOF
- SCRIPT EXTENSIONS

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Advanced Three Phase Electronic Revenue Meter

SPECIFICATIONS

Accuracy
- Class 0.5S
- IEC62052-11, IEC62053-22 IEC62053-23

Measurement Modes
- Single Phase (3 Circuits)
- 3 Phase 3 Wire
- 3 Phase 4 Wire

Measured Energy Values
- 3 Elements, 4 Quadrants
- Import/Export Wh, varh and VAh
- Absolute Wh, varh and VAh
- Phase A, B, C or Total

Other Measured and Displayed Values
- W, var, VA
- True RMS Voltage (3 Phase)
- True RMS Current (3 Phase)
- Power Factor
- Frequency
- Phasor Angles

Load Survey / Load Profile
- NEM Compliant
- Standard 400 day-channel capacity at 30 minute intervals
- Optional additional storage to increase to over 2,500 day-channel capacity at 30 minute intervals
- Up to 50 Channels
- Per survey interval programmable from 1 second to 1 month
- Multiple independent surveys
- Energy, instantaneous readings and pulsing inputs as potential survey channel sources
- Ability to store average / minimum / maximum values over interval duration for individual channels

Time of Use
- 8 rates plus unified rate
- Up to 12 separate import and export registers
- Up to 200 programmable special days
- Daily, Weekly, Monthly, Yearly, Special
- 13 or more previous periods
- Block or Rolling Maximum Demand
- Time of Maximum Demand
- Configurable Billing Reset Button

Communications Options
- ANSI Type 2 Optical Port (ANSI C12.18) or IEC 62056-21 (IEC 61107) Optical FLAG Port
- RS232 (RTS/CTS and DTR/DCD)
- RS485 (2 or 4 wire multidrop)
- SCADA
- Modems (PSTN/GPRS/GSM/C DMA)
- Internal Modem Power Supply
- MV-9OTM Compatible
- PPP / GPRS
- MODBUS
- DNP3
- Master / Slave arrangement with up to 31 'Slave' meters accessed through one 'Master' gateway meter

Voltage
- Operating Range of 57.7/100 - 230/400V
- Burden of < 10VA per phase @ Vn (3 Phase)
- Frequency of 45 to 65Hz

Current
- CT Range: 1(4)A, 5(10)A
- Short time over-current of 20 times 'max for 0.5 seconds
- Burden of less than 0.5VA per phase

Auxiliary Supply Options
- 240V, 110V Aux Only (other voltages available on special order)

Pulsing Inputs / Outputs
- Maximum of 8 I/O with up to 8 outputs (2 standard) or 6 inputs
- Output voltage - 5 - 220V DC, 12 - 240V AC
- Output current of 0.1A maximum
- Output pulse width 2 output independent LEDs of lms to 250ms
- Programmable output polarity
- Input Voltages of 5, 12, 48, 110, 240V AC / DC
- Time synchronised (optional)

Environmental
- Operating Range of -10 to +60°C
- Storage Range of -40 to +85°C

Time Clock
- Accuracy (internal) within 30 seconds per month
- Backup time of 2 years without power
- Backup utilizing either lithium battery or optional SuperCap
- Mains synchronised or internal crystal time keeping. Mains synchronised reverts to internal crystal on loss of voltage on all phases

Data Storage
(Configuration, TOU Data and Load Survey Data)
- FlashRAM
- Battery backed up RAM

Sag / Swell
- 5 Cycle Resolution
- Records time / date / phase / duration and worst excursion
- Programmable trigger levels

LCD Display
- 16 Character by 2 line alphanumeric display
- Programmable units, multipliers and leading zeros
- Up to 64 user definable screen displays
- Displays any available meter parameter

Optional Functions
- Quality of Supply (QOS) features
- Waveform Capture
- Harmonic analysis to the 50th harmonic
- THD Measurement
- Fundamental energy measurement

Software
- EDMI EziView software available for programming and reading of meter (Runs on Windows 98/ME/NT/ 2000/XP)
- EziView also allows offline configuration of tariff programs and all meter parameters, for later upload to meters

Dimensions
- 292.5mm (L) x 175mm (W) x 94mm (D)

Equipment Failure Alarms (EFAs)
A single user defined alarm condition (via extensions) is available plus pre-programmed alarms based on numerous:
- Self-Checks
- Tamper and wiring checks

These Alarms Can:
- Turn on LED, LCD indicator or relay output
- Record an event in the event log
- Trigger an event such as a remote alarm, dial an emergency number, send an SMS to a programmable number or send alarm messages via GPRS to a programmable server

Extensions for Customer Applications
The Mk6N inherits the ability to use Extensions to increase the functionality of the standard metering platform. A simple yet powerful scripting language allows complex register manipulations to be performed that can create customized functions within the meter without the need for a firmware upgrade. EDMI is always developing new extensions and we offer custom extension creation for specific customer needs. Contact us to find out more about Extensions for the Genius range of meters

Examples of currently available Extensions for EDMI Genius Energy Meters:
- Send SMS at percentage of maximum demand
- Average power factor for billing period
- LCD menu system
- Magnetic tamper detection
- Power factor control extension
- Maximum demand control of loads via pulsing outputs
- Average voltage / current / unbalance, THD etc.
- Voltage Sag / Swell or Power Outage
- Voltage Quality
- Send SMS / GPRS Alarm on Equipment Failure Alarm
- Detect Individual Phase VT Failures

EDMI

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SPESIFIKASI TEKNIK
KWH METER ELEKTRONIK EDMI

No	Item Spesifikasi Teknik	PERSYARATAN	MK6N
1	Standar *(standard)*	IEC 62053-22:2003 IEC 62053-23:2003 IEC 62052-11:2003	IEC 62053-21 IEC 62053-23 IEC 62052-11 IEC 62053-22
2	Kelas	0.2 | 0.5 | 1 | 1 WC	0.5S
3	Tegangan Pengenal Un (V)	57.7/100 | 230/400	57.7/100 V - 230/400 V
4	Arus Pengenal In (A)	1 - 2 - 5 A	5
5	Arus Mula / Start (%In)	0.2 | 0.2 | 0.3 | 0.5	0.2
6	Arus Maksimal	120% atau 200% | 80A	200%
7	Julat (range) Tegangan (%Vn)	80 s/d 115	80 to 115
8	Frekuensi Pengenal Fn (Hz)	50 dan 60	50
9	Burden Maksimum		
	-Sirkit Arus (VA)	<1VA | <4VA	< 0.5 VA
	-Sirkit Tegangan	<2W dan <10VA	<2W dan <10VA
10	Pengawatan	3 Phase 4 Kawat	3 Phase 4 Kawat
11	Julat (Range) Suhu (˚C)		
	- Operation	-25 s/d +55°C	-10 s/d +60°C
	-Storage	-25 s/d +70°C	-40 s/d +80°C
12	Kelembaban Rata-rata (%)	85%	85%
13	Relatif Kelembaban	Max 95 %	Max 95 %
14	Tarif	Multi Tarif	Multi Tarif
15	Mengukur Parameter Instantaneous	-Tegangan dan Arus True RMS setiap phase	-Tegangan dan Arus True RMS setiap phase
		-Faktor Daya setiap phase	-Faktor Daya setiap phase
		-Frekuensi	-Frekuensi
		-Daya Total Aktif dan daya Reaktif	-Daya Total Aktif dan daya Reaktif
		-Stand Energi Aktif dan Reaktif	-Stand Energi Aktif dan Reaktif
		-kVA Max	-kVA Max
		- Arus Neuteral | - Arus Neuteral	-
		- Temperature	-
16	Pengukuran Energy	-Energy Aktif Total (kWh) Import / Export	-Energy Aktif Total (kWh) Import / Export
		-Energy Reaktif Total (kVARh) Import / Export	-Energy Reaktif Total (kVARh) Import / Export
		-Energy Aktif dan Energy Reaktif setiap Phase	-Energy Aktif dan Energy Reaktif setiap Phase
		-Mampu mengukur energi dengan harmonisa arus sampai orde 15	- Mampu mengukur energi dengan harmonisa arus sampai orde 50
17	Display	-LCD dengan Life Time 10 tahun	-LCD dengan Life Time 10 tahun
		-Jumlah Digit 8	-Jumlah Digit 16 x 2 baris
		-Tampilan bergilir (Scrolled) secara otomatis dan manual minimal 5 detik	-Tampilan bergilir (Scrolled) secara otomatis dan manual minimal 5 detik
		-Tampilan satuan hasil pengukuran harus dalam bentuk huruf bukan dalam bentuk OBIS (Object Identification System) code	-Tampilan satuan hasil pengukuran harus dalam bentuk huruf bukan dalam bentuk OBIS (Object Identification System) code
18	Interval Demand (menit)	1,5,15,30,60 (sesuai setting)	1,5,15,30,60 (sesuai setting)
19	Maksimum Demand	Sliding (sesuai setting)	Sliding (sesuai setting)
20	Kanal Rekam Data Programable	Programmable, minimal 16 kanal	Programmable, minimal 16 kanal
21	Kapasitas Memory non Volatile kB	Min 1024 KB non volatile	2.1 M non volatile
22	Koneksi Komunikasi (Port)	RS232 dengan atau tanpa RS485 dan Optical Probe	RS232 dengan atau tanpa RS485 dan Optical Probe
23	I/O dan Fitur	Minimal 2 input dan atau 2 output	2 input dan 2 output
		Load Limitter	
24	Deteksi Tampering	-Equipment Failure Alarm	-Equipment Failure Alarm
		-Support SMS Aktif	-Support SMS Aktif
		-Mampu menampilkan berupa simbol yang berkedip dan merekam indikator dan waktu kejadian alarm :	-Mampu menampilkan berupa simbol yang berkedip dan merekam indikator dan waktu kejadian alarm :
		Arus dan tegangan tidak sefasa	Arus dan tegangan tidak sefasa
		Polaritas Arus terbalik	Polaritas Arus terbalik
		Hilang salah satu atau lebih arus fase	Hilang salah satu atau lebih arus fase
		Hilang salah satu atau lebih tegangan fase	Hilang salah satu atau lebih tegangan fase
		Kesalahan konfigurasi pengawatan	Kesalahan konfigurasi pengawatan
		Baterai Low	Baterai Low
		Tutup meter dibuka	Tutup meter dibuka

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25	Event Log	-Asymmetric Power	-Asymmetric Power
		-VT Failure	-VT Failure
		-Incorrect Phase Rotation	-Incorrect Phase Rotation
		-Clock Failure	-Clock Failure
		-Reverse Power	-Reverse Power
		-Modem Failure	-Modem Failure
		-Pulsing Output Over Flow	-Pulsing Output Over Flow
		-Battery Failure	-Battery Failure
		-Power On	-Power On
		-Power Off	-Power Off
		-Billing Reset	-Billing Reset
		- Komunikasi dengan meter dimulai (login)	- Komunikasi dengan meter dimulai (login)
		- Perubahan setting meter (konfigurasi pengawatan, TOU, jam, interval load profile)	- Perubahan setting meter (konfigurasi pengawatan, TOU, jam, interval load profile)
26	Load Survey / Load Profile	-Total Wh kirim selama interval waktu	-Total Wh kirim selama interval waktu
		-Total Wh terima selama interval waktu	-Total Wh terima selama interval waktu
		-Total VARh kirim selama interval waktu	-Total VARh kirim selama interval waktu
		-Total VARh terima selama interval waktu	-Total VARh terima selama interval waktu
		-Rata-rata Cos phi total 3 phase selama interval waktu	-Rata-rata Cos phi total 3 phase selama interval waktu
		-Rata-rata arus per phase selama interval waktu	-Rata-rata arus per phase selama interval waktu
		-Rata-rata tegangan per phase selama interval waktu	-Rata-rata tegangan per phase selama interval waktu
		-Rata-rata VA total 3 phase selama interval waktu	-Rata-rata VA total 3 phase selama interval waktu
27	Memiliki Level Security	Software 3 level atau lebih	Software 3 level atau lebih
28	Protokol Komunikasi	-IEC 1107	-IEC 1107
		- DLMS COSEM IEC62056-21:2005	-
		dapat dibaca oleh aplikasi AMR existing	dapat dibaca oleh aplikasi AMR existing
29	Format data yang dikirim	Binary (bukan plain)	Binary (bukan plain)
30	Ukuran frame untuk pengiriman data	Min 800 byte	Min 800 byte
31	Software Meter	Vendor harus menyerahkan software meter secara lengkap	Vendor harus menyerahkan software meter secara lengkap
32	Backup Internal Clock	Super Kapasitor (7hari) dan baterai lithium (3 tahun)	Super Kapasitor (7hari) dan baterai lithium (3 tahun)
33	Bahan :		
	a. Bahan Dasar meter (casing)	Fiber Glass Tahan api yang di perkuat PC	Fiber Glass Tahan api yang di perkuat PC
	b. Bahan penutup	PC transfaran tahan UV	PC transfaran tahan UV
34	Terminal	Terbentuk dalam satu group utau terminal block untuk sambungan arus dan tegangan	Terbentuk dalam satu group utau terminal block untuk sambungan arus dan tegangan
		dilengkapi terminal pentanahan	-
35	Tutup terminal	tutup terminal harus melindungi seluruh bagian konduktor / skrup pada terminal	tutup terminal harus melindungi seluruh bagian konduktor / skrup pada terminal
36	penandaan / Name Plate	a. Merk dan Pabrik Pembuat	a. Merk dan Pabrik Pembuat
		b. Type	b. Type
		c. Jumlah Fasa dan Jumlah Kawat	c. Jumlah Fasa dan Jumlah Kawat
		d. Nomor serie dan tahun pembuatan	d. Nomor serie dan tahun pembuatan
		e. Arus mula, Arus dasar dan Arus Maks	e. Arus mula, Arus dasar dan Arus Maks
		g. Frequensi (Hz)	g. Frequensi (Hz)
		h. konstanta meter	h. konstanta meter
		i. Kelas meter	i. Kelas meter
37	Segel metrologi	sudah dikalibrasi / bersegel metrologi	sudah dikalibrasi / bersegel metrologi

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