MICROSTAR

P2000-T

Transformer Operated Three-Phase Smart Electricity Meter

Class 0.2s, Class 0.5s, Class 1.0

Certified by dlms COSEM Compliant

FEATURES

- High accuracy measurement of kWh, kvarh, & kVAh
- Maximum demand registration of kW, kvar & kVA
- Instrumentation of voltage, current, power, power factor & harmonics
- Time of Use (TOU) control with flexible programming for up-to 8 tariffs
- 2 configurable load profiles with recording of ≥ 450 days at 60' interval
- 4 event logs with configurable power quality or tampering events
- High quality 8 or 11-digit LCD display with large characters & backlight
- Internal real-time clock (RTC) with super capacitor and backup battery
- Supports DLMS, IEC 62056-21, or MODBUS communication protocols
- Encapsulation type meter casing design for reliability and security
- Replaceable backup battery for meter reading without power

OPTIONS

- AMR ready w/ hot-pluggable internal GPRS, Wi-Fi, or Ethernet module
- Local communication options: Optical port, RS485, RS232, PLC, RF
- Dural source measurement and registration
- Sub-meter reading via RS485 and data aggregation features
- STS certified prepayment mode with tokens or contactless smart card
- Remote or local firmware upgrade support

APPLICATION

- Transformer-operated CT or CT/PT
- Generation, transmission, substation, and distribution billing
- 3-phase 4-wire or 3-phase 3-wire connections
- All voltage and current ratings

BENEFITS

- High accuracy measurement under all operational conditions
- Instrumentation and power quality data for monitoring & diagnostics
- AMR ready with hot-pluggable communication modules
- Supports DLMS communication protocol (Certified)
- Multiple local and remote communication technology options available
- Flexible software configurations for measurement, billing, TOU, display, load profile and event logs
- Patented IP54 whole case design for superior strength and anti-tampering

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MICROSTAR®

Technical Specifications
P2000-T

ELECTRICAL

Connection Type	Transformer operated
Measurement Modes	3-phase 4-wire / 3-phase 3-wire
Accuracy Class	Class 0.2s, Class 0.5s, Class 1.0
Rated Voltage	57.7/100V to 240/415V
Rated Current	1 (10) A, 1 (5) A, 5 (20) A
Starting Current	< 0.1% I_n
Rated Frequency	50 or 60 Hz
Power Consumption	
Voltage Circuit	< 1W, < 2.5VA per Phase
Current Circuit	< 0.1VA

MECHANICAL

Dimensions	255mm x 200mm x 84.5mm
Weight	1.55 kg (approximately)
Insulation	Protective Class II
Ingress Protection	IP54
Case / Terminal Cover	High Quality Polycarbonate
Terminal Block	Flame-Retardant Bakelite

ENVIRONMENT

Working Temp.	-25°C to +75°C
Storage Temp.	-40°C to +85°C
Humidity	0 - 95% non condensing
Fast Transient Burst	4kV
Static Discharge	8kV Contact / 15kV Air Discharge
Impulse Voltage	6kV, 1.2/50μs pulse
AC Voltage	4kV, 50Hz

REAL-TIME CLOCK

Accuracy	< 0.5 seconds / 24 hours
Backup Battery	Lithium Battery (20 years life)
Backup Time	≥ 15 years without power
Clock Synchronization	Local or remote via AMR

DISPLAY

LCD Display	2 line, 8 or 11-digit LCD display
Display Mode	Automatic, Push Button, Test
Display Item	200 configurable display items

INPUT & OUTPUT

Electric Pulse I/O	4 Programmable Ports (optional)
Test Pulse Output	400 - 16000 imp/kWh, kvarh
LED Pulse Output	400 - 16000 imp/kWh
Pulse Constant	Programmable
Auxiliary Power	110V - 240V (optional)

COMMUNICATION OPTIONS

Local Communication	Optical/Infrared, RS232, RS485, PLC, RF (433/866MHz)
Remote Communication	GPRS/GSM, Wi-Fi, Ethernet
Communication Protocol	DLMS/COSEM, IEC62056-21, MODBUS

MEASUREMENT & BILLING

Energy	Total & per phase import/export kWh, kvarh, kVAh; 4-quardrant kvarh; Absolute or net metering (optional)
Maximum Demand	Total & per phase import/export kW, kvar, kVA
Automatic Billing Data Recording / MD Reset	Date & Time Programmable

INSTRUMENTATION

Instantaneous Values	Current, Voltage, Power, Average Demand, Power factor, Phase Angles and Frequency
Harmonics	1 to 31th order voltage & current harmonics & THD (optional)
Voltage Sag & Swell	25 levels with sub-second detection (optional)

LOAD PROFILE

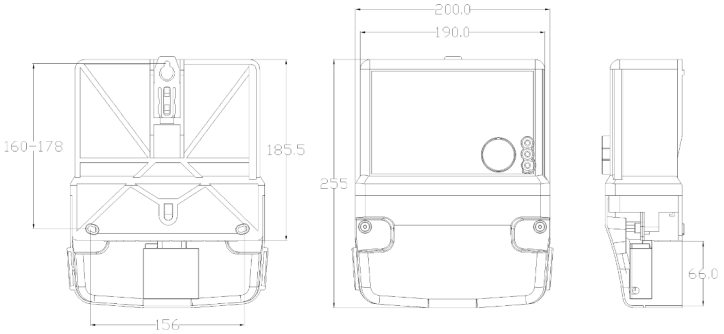
Load Profile	2 configurable load profiles
Channels	24/32 configurable channels
Available Data	All energy, demand, & instrumentation data (see above for details)
Integration Period	1 to 60 minutes configurable
Memory Space	450 days with 60' interval
Data Retention	25 Years

EVENT LOG

Event Log	5 configurable event logs
Trigger Events	Power break, phase failure, phase voltage loss, voltage over, voltage under, current loss, current over, current imbalance, reverse current flow, reverse power, reverse energy, phase reverse, overload, terminal cover open, meter top cover open
Data Recording at Event	8 configurable channels of energy, demand, & instrumentation data recording
Program Record	Last 100 program records

TIME OF USE (TOU) CONTROL

Tariff Profiles	Daily profile, week table, season table, and holiday/special days
Number of Tariffs	4 tariffs, or 8 tariffs (optional)
Daily Profiles	12 daily profiles, 14 tariff slots
Week Tables	12 week tables
Seasons	12 seasons
Holidays	100 special days (up-to 250)



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