MICROSTAR[®]

MICROSTAR

P2000-D

Direct Connected

Technology Leader of Smart Metering



FEATURES

Class 1.0

Accurate measurement of kWh, kvarh, & kVAh

Certified by

- Maximum demand registration of kW, kvar & kVA
- Instrumentation of voltage, current, power, frequency & power factor

Three-Phase Smart Electricity Meter

- Time of Use (TOU) control with flexible programming for up-to 8 tariffs
- 2 load profiles with recording of up-to 180 days at 30' interval
- 4 event logs with configurable power quality or tampering events
- High quality 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
- Remote, scheduled, or on-demand, or event-triggered load control
- Energy dispenser with configurable daily consumption limit
- Sub-meter reading via RS485 and data aggregation features
- STS certified prepayment feature with up-to 100A internal contactor
- Remote or local firmware upgrade support

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APPLICATION

- Direct connected (Whole current)
- Industrial, commercial, or residential billing
- 3-phase 4-wire connection

BENEFITS

- High accuracy measurement of energy and maximum demand
- Instrumentation and power quality data for monitoring & diagnostics
- AMR ready with hot-pluggable communication modules
- Supports DLMS communication protocol (Certified)
- Flexible software configurations for measurement, billing, TOU, display, load profile and event logs
- Patented IP54 whole case design with multiple sealing provisions
- Large contact area between wire and terminal & increased distance between phases
- Sealable wiring cover to protect wiring and isolate signal terminals

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Technical Specifications P2000-D

ELECTRICAL

Connection Type	Direct connected (Whole current)
Measurement Modes	3-phase 4-wire 3-element
Accuracy Class	Class 1.0
Rated Voltage	110/190V to 240/415V
Rated Current	5 (120) A, 10 (100) A, 10 (160) A
Starting Current	< 0.1% I _n
Rated Frequency	50 or 60 Hz
Power Consumption Voltage Circuit Current Circuit	< 1W, < 2.5VA per Phase < 0.1VA

MECHANICAL

Dimensions	285 mm x 200 mm x 94mm
Weight	2 kg (approximately)
Insulation	Protective Class II
Ingress Protection	IP54
Case / Terminal Cover	High Quality Polycarbonate

Flame-Retardant Polycarbonate

Terminal Block 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-digit LCD display
Display Mode	Automatic, Push Button, Test
Display Item	200 configurable display items

INPUT & OUTPUT

Electric Pulse I/O	4 Programmable Ports
Test Pulse Output	400 - 8000 imp/kWh, kvarh
LED Pulse Output	400 - 8000 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

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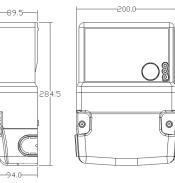
MEASUREMENT & INSTRUMENTATION	

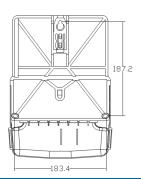
	IRUMENTATION
Energy	Total & per phase import/export kWh, kvarh, kVAh; Absolute or net meter- ing
Maximum Demand	Total & per phase import/export kW, kvar, kVA
Automatic Billing Data Recording / MD Reset	Date & Time Programmable
Instantaneous Values	Current, Voltage, Power, Average Demand, Power factor, Phase An- gles and Frequency
LOAD PROFILE	
Load Profile	2 configurable load profiles
Channels	16 configurable channels
Available Data	All energy, demand, & instrumenta- tion data (see above for details)
Integration Period	15 to 60 minutes configurable
Memory Space	Up-to 180 days with 30' 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	phase reverse, overload, terminal cover open, meter top cover open
Data Recording at Event Program Record	phase reverse, overload, terminal cover open, meter top cover open8 configurable channels of energy, demand, & instrumentation data re-
0	phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data re- cording Last 100 program records
Program Record	phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data re- cording Last 100 program records
Program Record TIME OF USE (TOU) C	phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data re- cording Last 100 program records
Program Record TIME OF USE (TOU) Co Number of Tariffs	phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data re- cording Last 100 program records ONTROL 4 tariffs, or 8 tariffs (optional)
Program Record TIME OF USE (TOU) C Number of Tariffs Daily Profiles	 phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data recording Last 100 program records ONTROL 4 tariffs, or 8 tariffs (optional) 12 daily profiles, 14 tariff slots
Program Record TIME OF USE (TOU) C Number of Tariffs Daily Profiles Week Tables/Seasons	 phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data recording Last 100 program records DNTROL 4 tariffs, or 8 tariffs (optional) 12 daily profiles, 14 tariff slots 12 week tables, 12 seasons 120 special days (up-to 250)
Program Record TIME OF USE (TOU) C Number of Tariffs Daily Profiles Week Tables/Seasons Holidays	 phase reverse, overload, terminal cover open, meter top cover open 8 configurable channels of energy, demand, & instrumentation data recording Last 100 program records DNTROL 4 tariffs, or 8 tariffs (optional) 12 daily profiles, 14 tariff slots 12 week tables, 12 seasons 120 special days (up-to 250)

Internal Contactor

Load Control

credit and vital necessity power Scheduled / on-demand or event triggered load control 100A internal contactor





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