

ACCURACY CLASS 0.5S

AS/IEC 62053-22 COMPLIANT

UP TO 36 CURRENT CIRCUITS

NMI APPROVED

[View the BFM136 product page on satec-global.com.au ↗](#)

BFM136

NMI Approved Branch Feeder Monitor

SATEC's BFM136 Branch Feeder Monitor™ is the solution in energy management metering for multi-point power solutions. Ideal for both new and retrofit projects, the BFM136 automatically provides metering, demand and energy readings, logging and multi-tariff (Time-of-Use) data for up to 36 circuits from a single compact device – perfect for multi-tenant facilities such as residential projects, office buildings, data centres and shopping malls.

The BFM136 monitors up to 36 currents via High Accuracy Current Sensors (HACS), each reporting the current consumed by a circuit at the panel board. Single or multiple circuits can be grouped per customer for billing, allowing simple reassignment without wiring changes as tenants move in and out. The BFM136's user-defined, easily configured alarm system enables predictive maintenance action to avoid unnecessary outages.



Main Features

- Monitors up to 12 three-phase, 18 two-phase or 36 single-phase circuits – or any combination – from a single device
- **High Accuracy Current Sensors (HACS)** rated from 100A to 3000A, each with a built-in automatic shorting protection circuit
- Voltage measurement range 120 (207) to 277 (480)V AC $\pm 15\%$, with an auto-ranging 88–552V AC power supply
- Built-in Time-of-Use (TOU) metering, stored on non-volatile memory to protect data against communication loss or power outage
- Standard Modbus RTU/TCP/ASCII communications and BACnet via RS-485 and Ethernet
- 8MB onboard data logging, plus automatic daily energy and maximum-demand profile logs
- 2×16 character local LCD display, with an optional RGM180 remote display
- Rugged, compact enclosure for wall or DIN-rail mounting; three-year warranty

Feature Capabilities

Multi-Point Metering & Logging

- Monitors up to 12 three-phase, 18 two-phase or 36 single-phase circuits, or any combination of single, two or three phase circuits
- Multi-point power, energy and demand data logging
- Local LCD display providing up to 36 channels of consumption readings for each tenant

Billing & Time-of-Use (TOU)

- TOU function stores energy consumption data according to the programmed time schedule, in compliance with the rates set by the local electricity supplier
- Daily energy tariff profile and maximum demands, programmable interval for load profile
- TOU information stored on non-volatile memory, protecting the data in case of communication loss or power outage
- Provides data for the assessment of penalty if the power factor falls below the level defined by the local electricity supplier

Data Storage

- Real Time Clock (RTC) and Flash memory for data and event logging
- 8MB data logging capacity
- Logging for any type of parameter, for all profiles

Standard Communication Platforms

- Protocols: Modbus RTU, Modbus TCP/IP, Modbus ASCII, BACnet
- Standard RS-485 port
- Standard Ethernet TCP/IP
- Operates as up to 36 separate Modbus slaves for simple integration

Current & Voltage Inputs

- 36 current inputs per device, measured per phase with unique **High Accuracy Current Sensors (HACS)** rating from 100A to 3000A
- Voltage measurement range*: 120 (207) to 277 (480)V AC $\pm 15\%$
- Auto-ranging power supply: 88–552V AC

Alarms & Diagnostics

- User-defined and easily configured alarm system enables predictive maintenance action to avoid unnecessary outages
- Alarm configuration: over/under voltage, over current, over kVA, over/under frequency
- Self-diagnostic test, with password protection per meter

Feature Capabilities (continued)

Software Integration — PAS

- **SATEC PAS (Power Analysis Software)** provides real-time access to data, a downloading scheduler and automatic export to .mdb files for MS Access, MS Excel and database integration
- Remote setup and data viewing and analysis, including energy daily profile

Building Management Systems

- Open Modbus and BACnet protocols allow interfacing with any system, such as Building Management, HMI and more
- The BFM136 operates as up to 36 separated Modbus slaves for simple integration

ExpertPower™ Web Service

- **ExpertPower™** is SATEC's web-based energy management system for automated monitoring, complete billing service and advanced analysis
- Delivers total visibility for entire power systems over the Internet
- Provides alarms, power diagrams, power profiles and demands, events logging, history, graphs and waveforms

Design & Installation

- Compact design engineered to fit easily into existing panel boards, or be flush mounted nearby
- Wall or DIN rail mounting
- 2×16 characters local display; optional RGM180 remote display
- Three-year warranty

Specifications

INPUT RATINGS — GENERAL

Nominal frequency 50/60Hz (order-selectable)

AC VOLTAGE

Wiring 4 wires: 3 phases + neutral

Maximum line-to-neutral voltage 320V

Maximum line-to-line voltage 552V

Burden per phase <1.5W

Isolation 2.5kV RMS, 60Hz, 1 min – Impulse 6kV

PT ratio 1–6500

AC CURRENT

Current circuits 36 per device

Nominal current 50% of HACS rating

Maximum input direct current 100% of HACS rating

Maximum momentary overcurrent 3000% of HACS rating

Burden per phase <0.1VA

Isolation 2.5kV RMS, 60Hz, 1 min

Primary current range 1–10,000A

Current sensors Requires High Accuracy Current Sensors (HACS), 100–3000A rating – see the [HACS datasheet](#)

HARDWARE

LCD display 2 rows, 16 digits each

Push buttons 4

Non-volatile memory storage life 20 years

RTC storage upon loss of power 24 hours minimum, 1 week typical

Voltage input terminals 10 AWG max.

Weight 1.85 kg

Dimensions (H×W×D) 4.2×13×2.3" / 107×331×58mm

Mounting Wall or DIN rail

ENVIRONMENTAL CONDITIONS

Operating temperature -20°C to 60°C (-4°F to 140°F)

Storage temperature -25°C to 80°C (-13°F to 176°F)

Humidity 0 to 95% non-condensing

COMMUNICATION — COM1 & COM2 (STANDARD)

Port Built-in RS-485 and Ethernet

Protocols Modbus RTU, Modbus TCP/IP, Modbus ASCII, BACnet

Addressing Up to 36 separate Modbus slaves per device

Specifications (continued)

MEASUREMENT ACCURACY

Voltage	0.3% reading + 0.05% FS (184–260V, $V_L=230V$ FS)
Line current	0.5% reading + 0.05% FS (Instrument HACS, $I_L=100\%$)
Active / reactive / apparent power	0.5S/1% reading + 0.02% FS
Power factor	1.0% ($ PF \geq 0.5$, $I \geq 2\%$ FSI)
Active energy	Class 0.5S per AS/IEC 62053-22:2003
Reactive energy	Class 1 per AS/IEC 62053-21:2003 ($ PF \leq 0.9$)
Apparent energy	Class 1 per AS/IEC 62053-21:2003

Accuracy expressed as (% of reading + % of full scale) ± 1 digit; does not include inaccuracies introduced by user potential/current transformers. Assumes voltage and current THD $\leq 5\%$ for kVAr, kVA and PF; reference operating temperature 20–26°C.

DISPLAY MODULE

Local display	2×16 character LCD
Remote display	Optional RGM180

MEASURED PARAMETERS

Energy (per submeter)	Import/export active, reactive & apparent energy totals; 6-tariff TOU energy
Average values (per feeder)	Voltage, current, angles, kW, kVAr, kVA, power factor, frequency & neutral current, per phase and per submeter
Present & maximum demand	Volts, amperes, kW, kVAr and kVA per phase and per submeter; 6-tariff demand per submeter
Service	Self-diagnostic test, password per meter, serial number, software version, COM1 & COM2 ID, current direction

Standards Compliance

Accuracy

- Complies with AS/IEC 62052-11:2003
- Complies with AS/IEC 62053-22:2003, Class 0.5S
- Meets ANSI C12.20-1998, Class 0.5

Electromagnetic Immunity

- IEC 61000-4-2:1995 – Electrostatic discharge
- IEC 61000-4-3:2002 – Radiated electromagnetic RF fields
- IEC 61000-4-4:1995 – Fast transient
- IEC 61000-4-5:1995 – Conductive surge
- IEC 61000-4-6:1996 – Conducted disturbance
- IEC 61000-4-11:1994 – Voltage dip / interruption

Electromagnetic Emission

- EN 61000-3-2:2000 – Limits for harmonic current emissions
- EN 61000-3-3:1995 – Limits of voltage changes, fluctuations and flicker

Safety

- Complies with AS 62052-31
- Complies with UL 61010-1:2003

Authorised Labs & Approvals

- NMI (National Measurement Institute, Australia) – Approved
- ISO 17025 Certified Lab
- NATA Certified Testing
- UL: Listed for the US & Canada
- NY State / NY City PSC
- MET Labs
- CE
- VNIIMS

Ordering Information

BFM136-N-NMI-50HZ-ETH-S-CC



To place an order or request a quotation for the BFM136, contact the SATEC Australia sales team, or scan the QR code.

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Document Revision History

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