Vantor VM-33

Three Phase DIN Rail Smart Meter 100A, WiFi/4G/LoRa

The Vantor VM-33 Three-Phase DIN Rail Smart Energy Meter is a high-precision, multifunctional energy monitoring device designed for industrial, commercial, and microgrid applications .
Built with an advanced integrated DSP measurement chip , the VM-33 delivers highly accurate metering, prepaid functionality, four-quadrant energy statistics, and flexible wireless communication options.
It supports automatic remote data collection , reducing manual meter reading errors and enabling precise electricity billing and load control.

Packed and sold in boxes of 10.



Key Features

- High-precision measurement using integrated DSP technology
  - Voltage accuracy: Level D
  - Active Energy accuracy: Level B (Class 1.0)
  - Power accuracy: Level B
- Measures:
  - Three-phase voltage and current
  - Active, reactive, and apparent power
  - Active, reactive, and apparent energy
  - Power factor
  - Frequency
- Four-quadrant energy statistics
- Multi-rate energy tracking
  - Up to 5 rates per day
  - 14 time zones per year
  - 24 time periods per day
  - Up to 8 time period tables
- 12-month frozen energy consumption data record
- Prepaid functionality with built-in magnetic latching relay
- Remote charging and load control support
- Energy data network disconnection and continuation function
- Storage of up to 7 days of 15-minute interval energy data
- Automatic data recovery after network reconnection
- Direct current input: 0.2–80A
- LED pulse output
- 1 channel passive optocoupler pulse output
- Built-in real-time clock with maintenance-free battery
- Compact 35mm DIN rail mounting for easy installation

Communication Options

The VM-33 supports multiple communication methods to suit various project requirements:

- RS485 (Standard) – Modbus-RTU protocol
- WiFi (Optional)
- 4G LTE (Optional – CAT1 module)
- LoRaWAN (Optional)

Important: Only one wireless communication option (WiFi / 4G / LoRa) can be selected per meter.

Supported communication protocols

- Modbus-RTU

- MQTT (optional)
- Modbus-RTU transparent transmission

Meters with WiFi or 4G include built-in communication hardware – no external modem required.

Prepaid & Load Control Functionality

- Integrated magnetic latching relay for remote load control
- Supports prepaid metering with remote top-up
- Automatic power on/off control
- Ideal for tenant billing, energy management, and microgrid systems

Technical Specifications

Measurement Parameters

- Three-phase voltage and current
- Active, reactive, and apparent power
- Power factor
- Frequency
- Active and reactive energy
- Four-quadrant energy statistics
- 2–31st order harmonic monitoring

Input Ratings

- Rated voltage: 3 × 220V / 380V
- Rated current: 0.2–80A (direct input)
- Frequency range: 45–65 Hz

Accuracy

- Voltage: ±0.2%
- Current: ±0.2%
- Active Power: ±0.5%
- Reactive Power: ±2.0%
- Active Energy: ±0.5%
- Reactive Energy: ±2.0%
- Power Factor: ±0.5%
- Frequency: ±0.02 Hz

Communication

- RS485 (standard)
- Optional WiFi / 4G / LoRa
- Protocols: Modbus-RTU, MQTT
- Baud rate: 1200–19200 bps

Electrical Characteristics

- Operating Voltage: 85–305VAC / 70–430VDC
- Power Consumption: <2VA
- Power frequency withstand voltage: AC 2kV/min
- Insulation resistance: >50MΩ
- Impact voltage: 5kV (1.2/50μs)

Environmental Specifications

- Operating Temperature: –30°C to +75°C
- Storage Temperature: –25°C to +70°C
- Relative Humidity: 5% – 95% (non-condensing)
- Maximum Altitude: ≤4000 m

Mechanical & Installation

- Standard 35mm DIN rail mounting
- Compact modular design
- Dimensions: 126 × 100 × 76 mm

- LCD display with backlight

Applications

- Prepaid energy billing systems
- Microgrid power measurement
- Automatic meter reading
- Remote load control
- Industrial and commercial energy management
- Building automation systems

Choose the model best suited to your communication requirements:

- VM-33-RS485 – Standard Modbus-RTU version
- VM-33-WiFi – Built-in WiFi communication
- VM-33-4G – Integrated 4G LTE communication
- VM-33-LoRa – LoRaWAN communication
- VM-33B – Prepaid load control version
- VM-33D – Dual-source monitoring version

(Custom configurations available – specify options when ordering)

Key Advantages

- High measurement accuracy
- Prepaid functionality with remote control
- Multiple wireless communication options
- Data continuity after network loss
- Compact DIN-rail design
- Ideal for smart metering and IoT applications
- Reliable performance in harsh environments

Ordering information

Order code	Description
VM-33-4G	4G
VM-33-WiFi	Wifi
VM-33-LoRa	LoRaWAN