Vantor VM-C15M

Single Phase DIN Rail Energy Meter, CT Operated, RS485 Modbus

Vantor VM-C15M single-phase CT-operated DIN rail energy meter with RS485 Modbus RTU. Connects through an external 1A/5A (or mV/mA) current transformer for high-current single-phase circuits, with bi-directional import/export metering in a 1-module housing.



Key specifications

- Class 0.5 active energy, Class 2 reactive (IEC 62053-21/22)
- 1P2W, 230V AC (176–276V), 45–65Hz
- CT input 1A/5A (default) or 100mA/mV optional; primary 1–9999A programmable
- Bi-directional: import/export active and reactive energy
- Multifunction: V, A, W, var, VA, kWh, kvarh, PF, frequency
- 4 tariffs, 8 time segments; monthly and daily energy statistics
- RS485 Modbus RTU / DL/T645-2007, 1200–19200bps
- Configurable pulse output (open collector), 5–27V DC
- Backlit LCD with touch buttons, password protection
- 1 module (18mm) TH35-7.5 DIN rail, IP51 display / IP30 body
- –25°C to +55°C operating, 4kV AC insulation, CAT III
- CT sold separately — see Vantor VM-CT split-core CTs

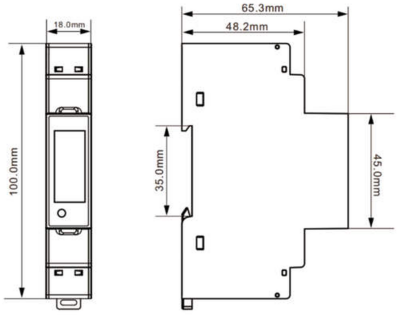
Ordering information

Order code	Description
VM-C15M	Single Phase DIN Rail Energy Meter, CT Operated, RS485 Modbus

Technical data

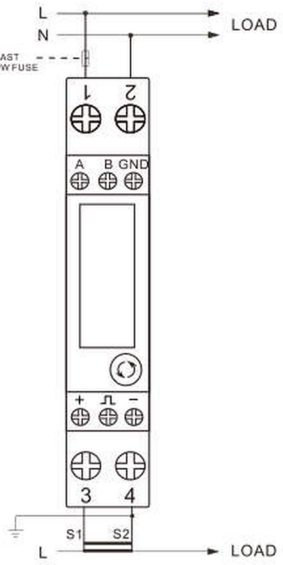
Accuracy	Voltage / current	Class 0.5
	Active power	Class 1 / Class 0.5
	Reactive power	Class 2
	Apparent power	Class 1
	Active energy	Class 1 / Class 0.5 S (IEC 62053-21/22)
	Reactive energy	Class 2
	Power factor	Class 1
	Frequency	Class 0.2
	Real-time clock	0.5 s/day
	Data update rate	1 s (100 ms optional)
Voltage input	Rated voltage	230 V AC, 1P2W
	Measuring range	176 - 276 V AC
	Frequency	45 - 65 Hz
	Overload	2 × rated voltage for 1 s
	Self-consumption	Voltage circuit < 2 W / 10 VA; current circuit < 1 VA
Current input	CT secondary	1 A / 5 A (default); 100 mA / mV optional
	CT primary	1 - 9999 A, programmable
	Measuring range	0.01 - 6 A, rated 5 A
	Input impedance	0.01 Ω
	Overload	20 × maximum current for 0.5 s
Pulse output	Type	Open-collector optocoupler, Class A (IEC 62053-31)
	Pulse constant	1000, 100, 10 or 1 imp/kWh (kvarh)
	Pulse width	60, 100 (default) or 200 ms
	Assignable to	Import, export or total active energy; total reactive energy
	External supply	5 - 27 V DC
	Pulse LED	5000 imp/kWh
Communication	Interface	2-wire RS485, half duplex
	Protocol	Modbus RTU (default); DL/T645-2007 (optional)
	Baud rate	1200 - 19200 bps
	Parity / stop bits	None (default), even, odd / 1 (default) or 2
	Response time	< 100 ms
	Bus length / load	Max. 1000 m / max. 64 devices per bus
Mechanical	Mounting	TH35-7.5 DIN rail, 1 module
	Dimensions (W × H × D)	18.0 × 100.0 × 65.3 mm
	Protection	LCD front IP51 (indoor); meter body IP30
	Housing	Flammability UL 94 V-0; utilisation category UC2
	Display	Backlit LCD with touch buttons, 1 s refresh, password protected
Environment	Operating temperature	-25 to +55 °C
	Storage temperature	-40 to +80 °C
	Relative humidity	< 90 %, non-condensing
	Pollution degree	2
	Altitude	< 2000 m
	Vibration	10 - 150 Hz (IEC 60068-2-6)
Safety	Over-voltage category	CAT III
	AC withstand voltage	4 kV AC for 1 minute
	Impulse withstand voltage	6 kV, 1.2/50 µs waveform
	Insulation	Double insulation

Dimensions



Dimensions in mm

Wiring diagrams



1P2W with one current transformer. Voltage tap protected by a 1 A fast-blow fuse; S1 / S2 from the CT to terminals 3 / 4.

Terminals and cabling

Terminal	Function
1	Voltage input L (via 1 A fast-blow fuse)
2	Voltage input N
3 / 4	CT secondary S1 / S2
A, B, GND	RS485 Modbus RTU
+ / -	Pulse output

Standards and compliance

Standard	Scope
IEC 62053-21 / -22	Static meters for active energy - accuracy classes 1 and 0.5 S
UL 94	Housing flammability rating V-0
Modbus RTU / DL/T645-2007	RS485 communication protocols

Installation must be carried out by a qualified electrician in line with SANS 10142-1. Isolate the supply before working on the meter, fit the protection shown, and never open-circuit the secondary of a live current transformer.