



EnergyPilot Series

VDG-EM-1 / VDG-EM-3

Measure Locally, Control Locally



1P / 3P

For single- or three-phase grids



±1%

Metering accuracy, V / I / P / E¹



UP TO
100 A

Clip-on current transformer²



Local EMS

Edge control, runs without internet³



Zero export

Or a set feed-in limit



≤ 1.1 w

Own power consumption

Integration and Installation



Works with Any Inverter

Third-party PV monitored via CT⁴



DIN-Rail Mounting

36 mm wide, fits the distribution board



Clip-on CT

No need to cut the main cable



OLED Display

Import, export and live values on the device



Wi-Fi Connected

2.4 GHz, signal quality shown in the app



-20 to 60 °C

Operating ambient range



VDG-EM-1

Single-phase, 1 CT



VDG-EM-3

Three-phase or 3 × single-phase, 3 CTs

¹ EnergyPilot measures for control and monitoring. It is not a billing meter.

² For currents above 100 A, contact VaySunic: a solution with a custom CT is available.

³ Metering and control run on the device. The internet is needed only for the VIP Cloud app and remote settings.

⁴ Inverters of other brands can be monitored at power level with the spare CTs of VDG-EM-3. EnergyPilot does not control third-party inverters.

Values were measured in the VaySunic laboratory under specific test conditions and may vary in actual use. Images are for reference only.

Typical Applications



01 · ZERO EXPORT

Zero Export for PV Systems

TYPICAL CONFIGURATION

VDG-EM + SolarCore microinverters

- Regulates SolarCore output to keep feed-in at zero or a set limit
- Shows home consumption and grid import / export in the app
- Existing third-party PV can be monitored, not controlled¹



02 · STORAGE

Solar and Storage Dispatch

TYPICAL CONFIGURATION

VDG-EM + PowerCube or SolarHub

- Stores solar surplus instead of exporting it
- Discharges to cover the home load
- Time-of-use and backup reserve set in VIP Cloud



03 · EV CHARGING

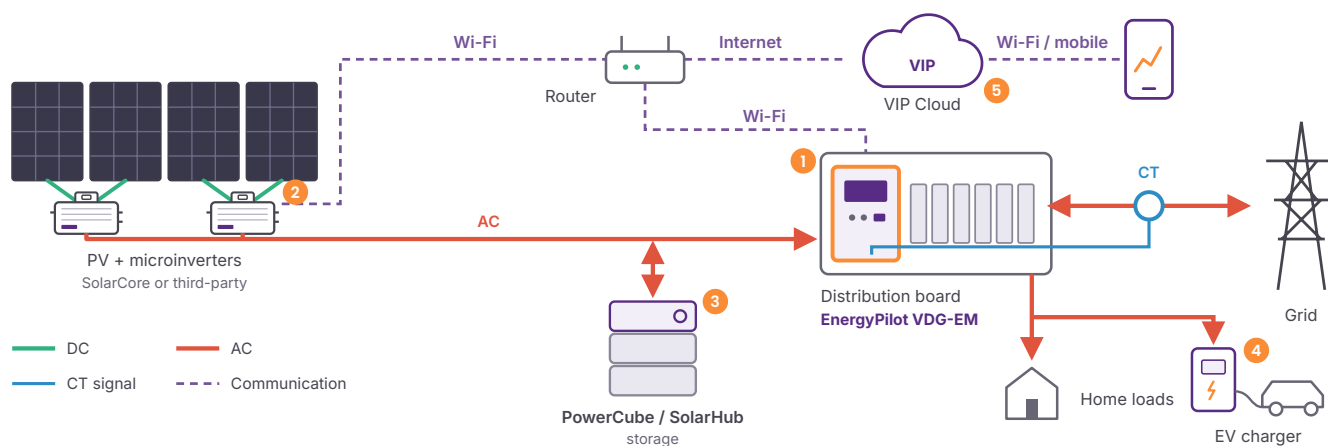
Solar-Surplus EV Charging

TYPICAL CONFIGURATION

VDG-EM + ChargeFlow EV charger

- Charges the car from solar surplus
- Dynamic load balancing protects the main fuse
- Charging modes selected in the app

One Controller for the Whole System Solar, storage and charging coordinated from the distribution board



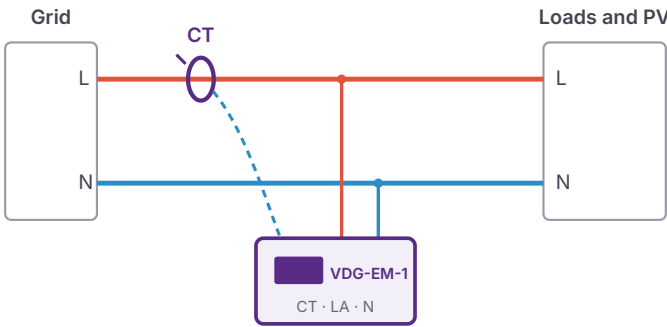
- | | | | | |
|--|--|--|---|--|
| <p>1 LOCAL EMS
EnergyPilot
Measures at the grid connection and decides locally</p> | <p>2 SOLAR
SolarCore
Controlled directly; other brands monitored¹</p> | <p>3 STORAGE
PowerCube
Or SolarHub, charged from solar surplus</p> | <p>4 CHARGING
ChargeFlow
EV charging that follows the sun</p> | <p>5 CLOUD
VIP Cloud
App, monitoring and AI scheduling</p> |
|--|--|--|---|--|

¹ Inverters of other brands can be monitored at power level with the spare CTs of VDG-EM-3. EnergyPilot does not control third-party inverters.

EnergyPilot mounts on a DIN rail in the distribution board. Clip the CT around the grid-side conductor, upstream of all loads and generators, and connect the voltage terminals. Installation must be carried out by a qualified electrician.

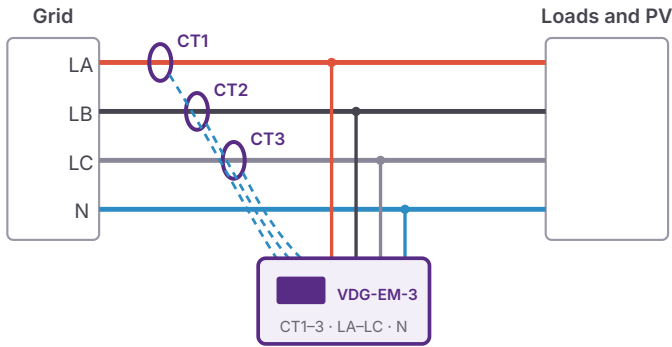
Wiring

VDG-EM-1 Single-phase, 1P2W



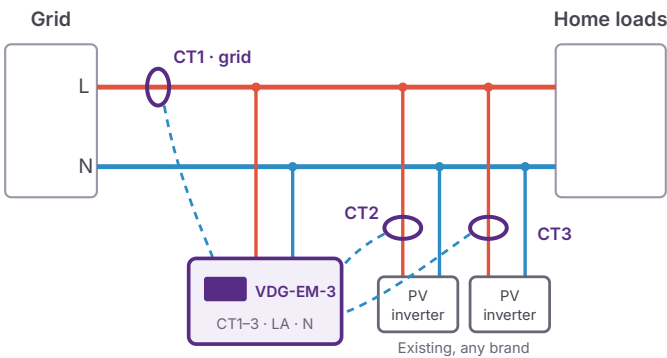
Voltage from L and N to terminals LA and N. One CT on L, between the grid and the first branch.

VDG-EM-3 Three-phase, 3P4W



One CT per phase. With a single-phase inverter on a three-phase supply, connect the inverter phase to LA and N.

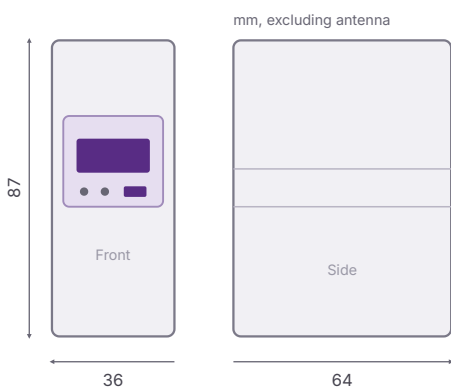
VDG-EM-3 3 × single-phase, for retrofits



Retrofit Mode

- VDG-EM-3 can also measure three single-phase circuits instead of one three-phase supply. The mode is set in the VIP Cloud app.
- CT1 measures the grid connection, so home consumption and grid import / export are visible.
- CT2 and CT3 measure existing PV inverters of any brand, at power level. They are monitored, not controlled.

Dimensions and Interfaces



Interface	Function
Grid terminal	N · LA · LB · LC, voltage measurement and power supply
CT terminal	CT- · CT1 · CT2 · CT3
Antenna	External Wi-Fi antenna; high-gain antenna optional for metal enclosures
OLED display	Live values, grid import and export energy
Button and LEDs	Parameter button, power and communication status LEDs. Wi-Fi signal quality is shown in the app.

Commissioning in Four Steps

- 1 Mount**

Snap onto the 35 mm DIN rail in the distribution board.
- 2 Connect**

Wire the grid terminal: L and N, or LA, LB, LC and N.
- 3 Clip the CT**

On the grid-side conductor, oriented as shown in the guide.
- 4 Pair**

Add the device in the VIP Cloud Installer app over Wi-Fi.

Refer to the VDG-EM Series installation guide for CT orientation, terminal torque and commissioning in the VIP Cloud Installer app.

Model	VDG-EM-1	VDG-EM-3
Power Supply		
Grid Type	Single-phase, 1P2W	3P4W, or 3 × single-phase ¹
Rated Voltage	220 / 230 V	3 × 230 / 400 V
Operating Voltage Range	0.8–1.2 Un	
Frequency	50 / 60 Hz	
Power Consumption	≤ 1.1 W	
Measurement		
Phase Voltage Range	176–264 V AC	
Current Range / Basic (Max.) Current	0.02–100 A / 5 (100) A	
Measured Values	Voltage, current, power, frequency, import and export energy	
Accuracy: Voltage / Current, Power, Energy ²	±1% / ±1%	
Current Transformer ³	1 × clip-on, 100 A / 33.3 mA	3 × clip-on, 100 A / 33.3 mA
CT Cable Length	2 m	
Accessories	CTs included; high-gain signal booster antenna (optional)	
Communication and Control		
Wi-Fi	802.11 b/g/n, 2.4 GHz, external antenna	
Local EMS Functions ⁴	Zero export / feed-in limit, storage dispatch, EV surplus charging	
Controlled VaySunic Devices	SolarCore, SolarHub, PowerCube, ChargeFlow	
Third-party Inverters ⁵	Any brand, grid-point metering	Any brand, output monitored via CT2 / CT3
Monitoring	OLED display, LED indicators, VIP Cloud (incl. Wi-Fi signal quality)	
General Data		
Dimensions (W × D × H) / Weight	36 × 64 × 87 mm (excluding antenna) / 108.5 g	
Mounting	35 mm DIN rail, indoor distribution board	
Operating / Storage Temperature	–20 to 60 °C / –40 to 85 °C	
Relative Humidity	5–85%, non-condensing	
Max. Operating Altitude	3,000 m	

Standards Compliance Certification status varies by market. Contact VaySunic for current certificates.

Directives	Low Voltage Directive 2014/35/EU · EMC Directive 2014/30/EU
Safety	EN IEC 62368-1
EMC	EN 55032 · EN 55035 · EN IEC 61000-3-2 · EN 61000-3-3
Grid	Zero-export controller on the PEA / MEA approved lists (TH, VDG-EM-3)

¹ VDG-EM-3 can also measure three single-phase circuits, for example to retrofit an existing PV system; the mode is set in the VIP Cloud app. With a single-phase inverter on a three-phase supply, connect the inverter phase to LA and N.

² EnergyPilot measures for control and monitoring. It is not a billing meter.

³ For currents above 100 A, contact VaySunic: a solution with a custom CT is available.

⁴ Feed-in is regulated continuously. Short fluctuations around the set value can occur when the load or PV output changes.

⁵ Inverters of other brands can be monitored at power level with the spare CTs of VDG-EM-3. EnergyPilot does not control third-party inverters.