



MEASUREMENT & CONTROL

CVM-C11

Compact power analyzer

Information is power



By installing power analyzers, you can have real-time information on electrical parameters, such as voltage, current and harmonics. You can use all this information to determine the power quality and to know where, when and how much energy the different loads in your installation consume.

Having a record of your energy consumption (consumption habits) lets you quantify the energy demanded by the different systems or loads in your installation. This information is essential to assessing future energy improvement actions in order to optimize your consumption, avoid penalties, or quickly identify any abnormal or undesired consumption.

The analysis of electrical parameters provides reliable information on how the loads in your installation behave, letting you clearly identify where you need to install devices to improve the quality of your network, such as active or passive filters to reduce the number of harmonics, or capacitor banks to reduce reactive power and avoid surcharges on your electric bill.

CVM-C11











Compact power analyzer

The **CVM-C11** lets you analyze trends in electrical variables and consumption quality variables, such as the THD% for voltage and current, as well as individual harmonics for each phase up to the 31st.

The inclusion of neutral current measurement lets users detect any phase imbalance, as well as overloads in the neutral conductor, which can lead to insulation breakdown or other kinds of problems with the installation.

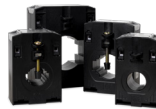
Designed to be part of any Energy Management System (EMS), measuring both the energy consumed and generated for installations with self-supply systems. The **CVM-C11** calculates efficiency variables such as kgCO_2 , and the energy cost in each of the 3 tariffs that can be set up on it.



-  Single-phase or three-phase measurement
-  3 voltage channels
-  4 current channels (phases + neutral)
-  4 quadrants (consumption + generation)
-  Harmonic distortion (THD%)
-  Individual harmonics (up to 31st)
-  RS-485 (Modbus RTU/BACnet)
-  2 relay outputs + 2 transistor outputs
-  2 digital inputs
-  Adjustable displays.

For any type of transformer:

Compatible with any closed-core transformer.



.../1 A

.../5 A

Compatible with any open-core transformer.



.../1 A

.../5 A

Monitors the quality of your electrical installation



Determine the quality of the network

Analyze the harmonic distortion rate (THD%) produced by the loads in your installation to avoid problems caused by harmonics. The analyzer displays up to the 31st voltage and current harmonic for each phase to help you detect internal problems, as well as to select the filter that is best suited to the harmonic value measured.



The importance of the neutral current

Current flow through the neutral wire can cause problems in your installation, such as heating, overvoltages or even damage to equipment due to loss of insulation. The current measurement in the neutral lets you guarantee continuity of service in your installation and identify the loads that cause them.

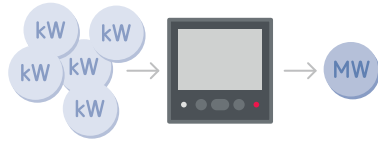


Designed for self-supply systems

The analyzer measures the energy consumed and generated (4Q) in the installation and shows the active quadrant on the display. This way, you can know at all times whether you are consuming or generating energy and whether it is inductive or capacitive.

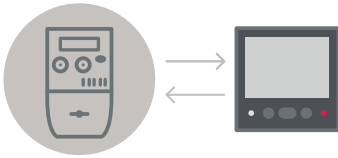
Full-scale adjustment

The Energy value automatically changes units (auto-scale) to ensure the energy values (active, reactive inductive/capacitive and apparent) are correctly displayed, no matter how large they are.



⚙️ Check the power of your installation

Quickly view the percentage of active power consumed to get real-time information on the demanded power and available power. You can check whether your installation exceeds the contracted power or is well below it, and thus adjust the contracted power to your actual needs.



φ Track reactive energy

In addition to logging the inductive and capacitive reactive energy consumption of your installation, you can see the Power Factor (PF) or cosine phi ($\cos \phi$) value on the analyzer display.



👤 You decide what to display





Customize the analyzer screens based on your needs: you can configure the analyzer to show only the screens of the electrical parameters that interest you most.



Better management and control of your installation



Configure the available inputs and outputs to fully manage your installation and view its status on the analyzer's display. Discover all the things you can control:

-  RS-485 communications with Modbus RTU and BACnet protocol, selectable on the device itself.
-  2 digital inputs for status monitoring (open/closed), tariff change (up to 3 tariffs and dual supply system) and maximeter synchronization with fiscal meter.
-  2 digital outputs to create instantaneous variable or pulse emission alarms proportional to incremental variables (energies, costs,...).
-  2 relay outputs to create instantaneous variable alarms

Applications



Technical specifications

Power supply circuit	Nominal voltage	100... 270 VAC \pm 10%, 100...270 VDC \pm 10%
	Installation category	Cat III 300V
Voltage measurement circuit	Nominal voltage (U_n)	230 V L-N, 400 V L-L
	Voltage measurement range	5 ...120% U_n
	Frequency measurement range	45... 65 Hz
	Installation category	Cat III 300V
Current measurement circuit	Nominal current (I_n)	.../5 A , .../1 A
	Current measurement margin	1... 120% I_n
	Minimum current measurement (I_{start})	1 mA
	Installation category	Cat III 300V
Accuracy of the measurements	Phase voltage measurement	0.2%
	Phase current measurement	0.2%
	Active power measurement (kW)	0.5% \pm 2 digits
	Reactive power measurement (kvar)	1% \pm 2 digits
	Active energy measurement (kWh)	Class 0.5S (w/o transformers), IEC 62053-22
	Reactive energy measurement (kvarh)	Class 1 (w/o transformers), IEC 62053-24
Output to relay	Quantity	2
	Electrical life (at max. load)	60 x 10 ³ cycles
	Mechanical life	10x10 ⁶ cycles
	Maximum switching power	625 VA / 75 W (AC1)
Output to transistor	Quantity	2
	Type	NPN
	Pulse width	30... 400 ms (Programmable)
	Maximum frequency	16 pulses/s
	Maximum current	50 mA
	Maximum voltage	24 VDC
Digital inputs	Quantity	2
	Type	NPN
	Insulation	2000 V
Environmental characteristics	Protection rating	IP 54 (Front), IK 08
	Operating temperature	-25 ... +70 °C
	Storage temperature	-25 ... +75 °C
	Relative humidity (without condensation)	5 ... 95%
	Maximum altitude	2000 m
Mechanical characteristics	Dimensions	96 x 96 x 67.2 (mm)
	Weight	0.353 kg
	Enclosure	Self-extinguishing V0 plastic
	Attachment	Panel 96 x 96 mm
Standards	EN IEC 61326-1, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN 61010-2-030, EN IEC 61557-12, EN 61010-1	

References

Type	Code	Input current	Inputs	Outputs
CVM-C11-ITF-IN-485-ICT2	M58541.	.../5 A .../1 A	2	2 + 2

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