

Information is power



Power analysers allow us to obtain reliable, real time data on the behaviour of our loads, as well as to know the effects that these loads can cause to other electronic equipment, to guarantee the correct functioning of all the devices in our installation. In addition to this valuable information, they allow us to know how much energy we are consuming at each period of the day.

By registering electrical variables, you can verify whether the voltage level is adequate for your equipment and production processes to function correctly or to detect if their operation could cause the electrical protection to trip. In addition, the most technological loads can cause pollution in the electrical network, which must be quantified to adapt your installation to improve the quality of consumption, preventing the harmonics generated from affecting the correct functioning of the rest of the installation.

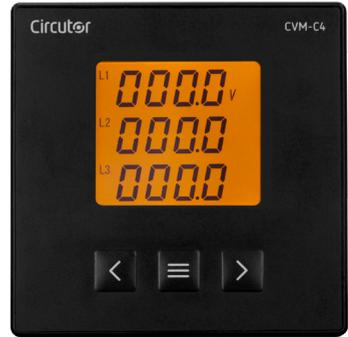
In short, the installation of power analyzers helps you to record what is happening in your installation in order to better manage the available power resources.

CVM-C4

Power analyzer

The **CVM-C4** lets you analyse the evolution of consumption, electrical variables and quality parameters, such as the voltage and current THD% for each phase. The RS-485/Modbus RTU communications enables its integration into any Energy Management System (EMS), to record the evolution of any electrical parameter that may affect the performance of a load or line, as well as managing both the energy consumed and generated in hybrid installations with self-supply systems.

The analyzer is designed to monitor information regarding the status of a load or line and to act and control its status according to any condition, via inputs and outputs that interact, in real time, to generate an alarm or connect/disconnect the system and avoid any possible failures.



-  Single-phase or three-phase measurement
-  3 voltage channels
-  3 current channels
-  Harmonic distortion (THDU% and THD%)
-  4 quadrants (consumption and generation)
or
 Dual supply (via digital input)
-  RS-485 (Modbus RTU)
-  2 relay outputs
-  2 transistor outputs
-  2 digital inputs

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

Discover how much your loads or lines consume



Discover how much your loads or lines consume

Record the active energy (kWh), inductive reactive energy (kvarLh) and capacitive reactive energy (kvarCh) consumed by the loads of your installation. This will allow you to know the weight of the consumption of each load or line on the total installation.

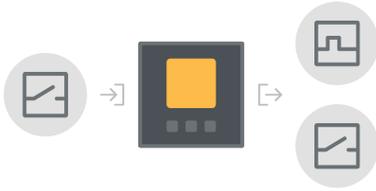
ϕ Take reactive energy into account

Find out how much reactive energy your loads consume. Reactive energy results in the customer paying a financial penalty on their electricity bill, so it is essential to know how much reactive energy your installation consumes, as well as what loads or lines are the most consumed. With this information you will be able to properly size your capacitor bank to avoid any type of penalty.

Designed for self-supply systems

The analyzer is designed to show the energy consumed by the loads of your installation and the energy generated by your self-supply system in order to display in separate records how much energy you consume and how much you generate, and to perform net hourly balances through the RS-485 communication management software.

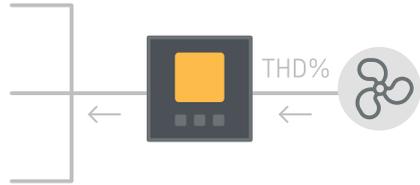




🔗 Ensure that everything is working correctly

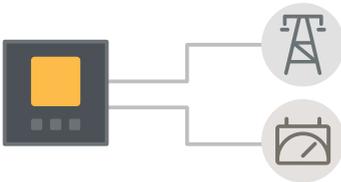
Performs automatic controls depending on the status of any variable. Uses digital inputs to control the status of any sensor and activate an alarm through the equipment outputs.

Uses relay outputs to generate alarms related to any instantaneous parameter, connecting or disconnecting a load or activating an external alarm. In addition, the analyzer screen will flash when any alarm is active for rapid visual detection.



⚡ Discover the quality of the loads

The loads that use AC/DC conversion are harmonic generators. These harmonics, depending on their level, can affect the proper functioning of other loads or elements of the actual installation. By reading and recording THD%, both in voltage and current, you will be able to discover whether the load or line generates harmonics that could damage the continuity of your supply.



🕒 Separates consumption of two energy sources

The equipment has a digital input for tariff changes. In this way, the equipment is able to save incremental values from two power sources, be it mains power or an auxiliary power generation system.



📊 Records what is happening in your installation

Records and centralises all the equipment variables including maximum and minimum values via RS-485 communications (Modbus RTU). This information allows you to create charts and tables of electrical variables for your installation, as well as detect any faults or abnormal consumption.

Better management & control of your installation



-  96x96 mm panel
-  Up to 230 variables (RMS)
-  Class 0.5S in Active Energy
-  Class 0.2 in voltage and current
-  Total harmonic distortion (THD%)
-  .../5 A; .../1 A
-  2 digital outputs
-  2 relay outputs
-  2 digital inputs
-  RS-485 (Modbus RTU)

Applications



Technical specifications

Power supply circuit	Nominal voltage	80... 270 Vca / 80...270 Vcc
	Installation category	Cat III 300V
Power supply voltage measurement	Nominal voltage (U_n)	100...277 Vca F-N ($\pm 8\%$)
	Voltage measurement range	10...300 Vca F-N
	Frequency measurement range	45...65 Hz
	Installation category	Cat III 300V
Current measurement circuit	Nominal current (I_n)	1 A / 5 Aac
	Current measurement margin	10 mA...6 A
	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%
	Reactive power measurement (kvar)	0.5%
	Active energy measurement (kWh)	0.5%
	Reactive energy measurement (kvarh)	0.5%
	Frequency measurement	0.5%
Output to relay	Quantity	2
	Electrical life (at max. load)	(250 Vca / 5 A) 1×10^5
	Mechanical life	Mechanical resistance: 5×10^6 operations
	Maximum switching power	1385 VA / 150 W
Output to transistor	Quantity	2
	Type	Passive pulse
	Pulse width	minimum pulse width: 80 mA
	Maximum frequency	10 Hz
	Maximum current	27 mA
	Maximum voltage	27 Vcc
Digital inputs	Quantity	2
	Type	Potential free contact
	Insulation	3.75 kV RMS
Environmental characteristics	Protection rating	Front: IP54, Rear: IP20
	Operating temperature	-10... +60 °C
	Storage temperature	-20... +70 °C
	Relative humidity (without condensation)	5 ... 95%
	Maximum altitude	2000 m
Mechanical characteristics	Dimensions	96 x 96 x 67.2 (mm)
	Weight	0.268 kg
	Enclosure	Polycarbonate + ABS
	Attachment	Panel 96 x 96 mm
Standards	IEC 61010-1, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11	

References

Type	Code	Input current	Inputs	Outputs
CVM-C4-ITF-485-ICT2	M52706.	.../5 A .../1 A	2	2 + 2

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