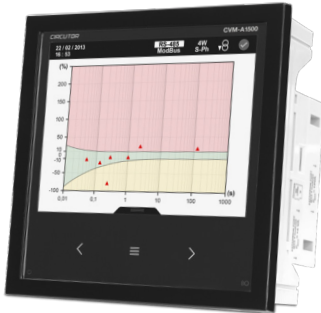


CVM-A1500

Power analyzer for panel with power quality measurement parameters



Description

CVM-A1500 is a panel mounted power quality analyzer with EMS (Energy Management Software) integrated. Its internal Web Server (html5) allows any user to have full installation control by using any web browser.

Designed to be installed in the most relevant or critical part of electric installations since it registers and monitors a wide range of variables (almost one year of data with RMS, maximum and minimum values). The device also registers power quality events such as swells, dips, interruptions (every half cycle) and transients (according to **IEC 61000-4-30** Class A). Any event will be immediately captured with the voltage and current waveform.

This model adds the measurement of power quality variables (defined in the standard **EN 50160**) such as flicker, unbalance (Kd) and asymmetry (Ka) coefficients or voltage and current harmonics decomposition up to 63th. In addition it is possible to monitor in real time the instantaneous waveforms of voltage and current through its oscilloscope function.

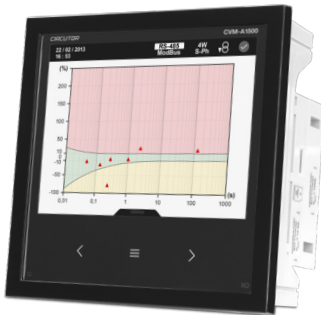
As an added value, **CVM-A1500** displays the number of events and transients on each affected phase with the level reached, duration and its associated waveform. In addition, those events are directly displayed in CBEMA, ITIC y SEMI-F47 graphs.

The smart design of the **CVM-A1500** allows users to customize their own screens in order to access to the information faster and easy. Remark that the device allows the connection through PowerStudio software to save and store, in a redundant way, all the information in a server or PC avoiding memory limits.

- Dimensions:144 x 144 mm
- Energy Management Software (EMS) included with historical data register
- Register of power quality events, waveforms and instantaneous parameters.
- Expandable up to 3 modules (inputs/outputs and communications)
- VGA color display with high definition
- IP 65 with airtight seal
- 5 voltage channels + 4 ITF current channels
- Active energy class 0,2S (**IEC 62053-22**)
- Universal switching power supply AC/DC or DC
- Ethernet communications (Web Server) + RS-485 (ModBus RTU or BACnet protocol)
- 5 user customizable screens
- 3 tariffs (selectable by digital input or by communications)
- Cost calculation(any currency) and emissions of kgCO₂
- 2 relay outputs for alarms + 2 transistor outputs for alarms or pulses + 2 digital inputs to select tariff, to control logical states or pulse centralizer from any external meter.

CVM-A1500

Power analyzers for panel with power quality measurement parameters



Applications

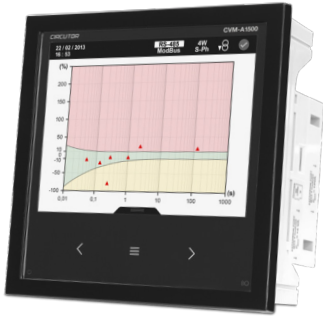
- Control, monitoring and logging of the power quality in High and Low Voltage distribution panels. Performed directly or remotely thanks to its WEB server. Integration in SCADA systems through XML requests.
- 4 alarms (2 per transistor and 2 per relay), fully and independently programmable according to a low or high value, hysteresis, connection/disconnection delays, normally open or closed standby status and interlocking.
- Generation of impulses with transistor outputs, fully and independently configurable over any incremental parameter (energy, costs, kgCO₂, total meter or tariff hours).
- Transducer converting analogue signals to any instantaneous parameter measured or calculated by the unit, with built-in expansion modules with analogue outputs.
- Display of process signals featuring a built-in expansion module with analogue inputs, with optional reporting of these signals to SCADA systems through communications systems.
- Control of electrical load or alarm signal operations by programming the transistor or relay outputs that are built-in or added through expansion modules.
- Datalogger integrated with Web server and XML (log of historical data).

Technical features

Power circuit	Power supply voltage	85...265 Vac / 120...300 Vdc 20...120 Vdc (SDC model)			
	AC frequency	50...60 Hz			
	AC consumption	max 29,4 V-A			
	DC consumption	max 11,9 W max 13,8 W (SDC model)			
Voltage measurement circuit	Voltage range	500 V _{p-n} - 866 V _{p-p} (functional up to 600 V _{p-n} / 1000 V _{p-p})			
	Frequency	40...70 Hz			
	Measurement margin	7...200% of the U _n for U _n = 300 Vac. (p-n)			
	Admissible overvoltage	750 Vac			
	Maximum power consumption (limited current)	< 0.15 VA			
	Current measurement circuit	Current measurement	4 (3 phases + 1 neutral)		
Input current		.../5 A or .../1 A or .../250 mA			
Minimum current for class		250 mA			
Start-up current		10 mA			
Measurement margin		0.2...200% I _n (.../5 A)			
		1...200% I _n (.../1 A)			
		4...200% I _n (.../250 mA)			
Admissible overload	2 I _n A permanent, 100 A t < 1 s				
Consumption	< 0.9 VA				
Maximum transformation ratios	Primary V: 500,000 (500 kV)				
	Primary A: 999.9 to 1.0 (10 kA) in .../5 A and .../1 A, 63...2000 A in MC	Prim V x Prim A < 900 MW			
Maximum meter value (total)	Yes (Primary A / Secondary A) < 1000 (2 GW)				
	Yes (Primary A / Secondary A) ≥ 1000 (2 TW)				
Accuracy class		.../5 A	.../1 A	.../250 mA	
	Voltage	0,1 ±1 digit (20...600 V _{a.c.})	0,1 ±1 digit (20...600 V _{a.c.})	0,1 ±1 digit (20...600 V _{a.c.})	
	Neutral voltage	0,5 ±1 digit (55...500 V _{a.c.})	0,5 ±1 digit (55...500 V _{a.c.})	0,5 ±1 digit (55...500 V _{a.c.})	
	Current	0,1 ±1 digit (0,05...8 A)	0,1 ±1 digit (0,01...1,2 A)	0,1 ±1 digit (0,01...0,3 A)	
	Neutral current	1 ±1 digit (0,1...6 A)	1 ±1 digit (0,05...1,2 A)	1 ±1 digit (calculated)	
	Active power	0,2 ±2 digits (0,05...6 A)	0,2 ±2 digits (0,01...1,2 A)	0,5 ±2 digits (0,01...0,3 A)	
	Reactive power	1 ±1 digit (0,05...6 A)	1 ±1 digit (0,01...1,2 A)	1 ±1 digit (0,01...0,3 A)	
	Active energy	0,2S	0,5S	0,5S	
	Reactive energy	1	2	2	
	Display of harmonics	Voltage / Current	to 63 rd		

CVM-A1500

Power analyzers for panel with power quality measurement parameters



Technical features

Connections	
Digital inputs	Selection of tariffs, states or external alarms Type: Optoisolated potential-free contact Quantity: 2 Activation current: 5 mA (15 V maximum voltage of open contact) Insulation: 4 kV
Digital outputs	Generation of impulses or alarms Type: NPN transistor Quantity: 2 Maximum operation voltage: 48 Vdc Maximum switching current: 130 mA Maximum frequency: 1 kHz Pulse duration (T _{on} / T _{off}): 0.3 / 0.7 ms (1 ms of a complete impulse)
Alarms	Type: Relay Quantity: 2 Maximum operating power: 1500 W Maximum voltage, open contacts: 250 Vac Maximum switching current: 6 A Electrical working life (400 V / 6 A): 3 x 10 ⁴ cycles Mechanical working life: 1 x 10 ⁷ cycles
Built-in communications	Protocols: Modbus RTU / BACnet Speed: 9600...115200 bits, parity, stop: 8, n, 1 (configurable)
Environmental conditions	Working temperature: -10...+50°C Relative humidity: 5...95% Altitude: 2000 m
Build features	Format: Assembly on 144x144 mm panel Depth: 1 module Front panel IP protection: IP 40 (IP 65 with sealing gasket) Rear panel IP protection: IP 30
Safety	Designed for CAT III 300/520 Va.c. installations, in accordance with EN 61010 Double-insulated electric shock protection, class II
Standards	IEC 62053-22, ANSI (class 0.2S), IEC 62053-24 (Class 1) / ANSI C12.1 (Class 2), class A acc. to IEC 61000-4-30, IEC 61010, IEC 61000, UNE-EN 55022 Measurement acc. to MID, UL certification IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-11, IEC 61000-4-4, IEC 61000-4-5

References

144 x 144

Current measuring secondaries	Type	Code
.../5 or .../1 A or ...250 mA	CVM-A1500-ITF-RS485-ICT2	M56311
.../5 or .../1 A or ...250 mA	CVM-A1500-SDC-ITF-485-ICT2*	M5631100F0000

* Power supply 20...120 Vdc



CVM-A1500

Power analyzers for panel with power quality measurement parameters

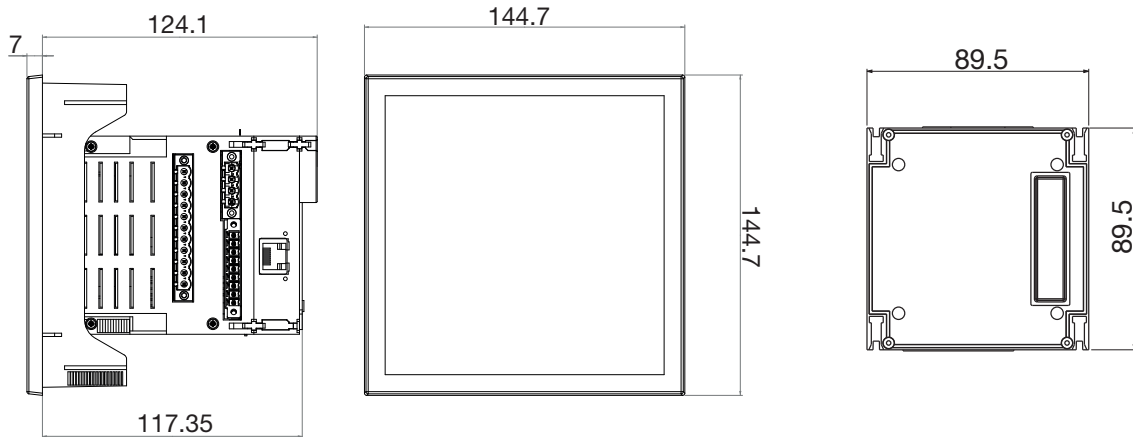
Expandable modules for CVM-A1500

Outputs	Digital Inp.	Analogue Inp.	Communication	Protocol	Type	Code
8 Trans.(*)	8	-	-	-	M-CVM-AB-8I-8OTR	M56E01
8 relay	8	-	-	-	M-CVM-AB-8I-8OR	M56E02
8 (0/4...20 mA)	-	4 (0/4...20 mA)	-	-	M-CVM-AB-4AI-8AO	M56E03
-	-	-	Ethernet (RS-485 Bridge)	Modbus / TCP	M-CVM-AB-Modbus-TCPBridge	M56E05
-	-	-	Ethernet (Ethernet Bridge)	Modbus / TCP	M-CVM-AB-Modbus-Switch	M56E0A
-	-	-	MBus	MBus	M-CVM-AB-MBUS	M56E07
-	-	-	LonWorks	LonTalk ISO/IEC 14908 ANSI/EIA 7091	M-CVM-AB-LonWorks	M56E08
-	-	-	-	Profibus/DP	M-CVM-AB-Profibus	M56E09

Description	Type	Code
IP 65 sealing gasket for CVM-AB (144x144)	IP65-AB-144	M5ZZ5V

Dimensions

CVM-A1500



Window level: 138x138 mm

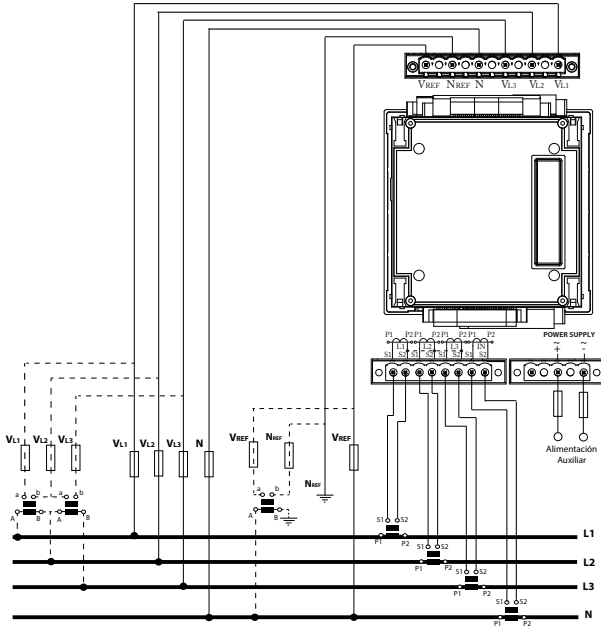
Note: Refer to the product manual for other options

CVM-A1500

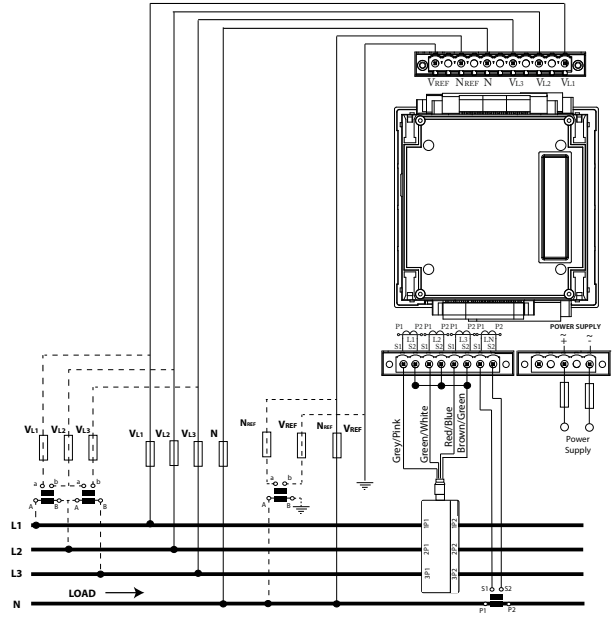
Power analyzers for panel with power quality measurement parameters

Connections

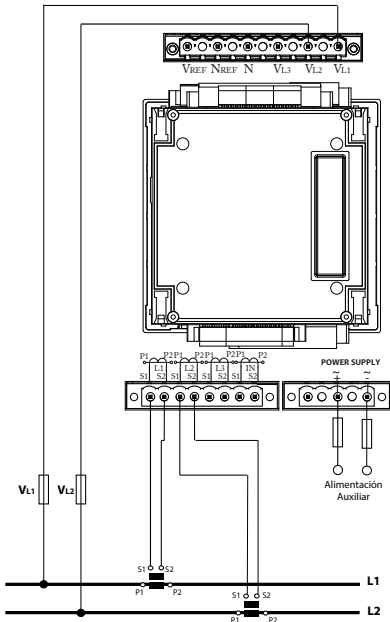
Three-phase measuring with or without voltage transformer and current transformers.



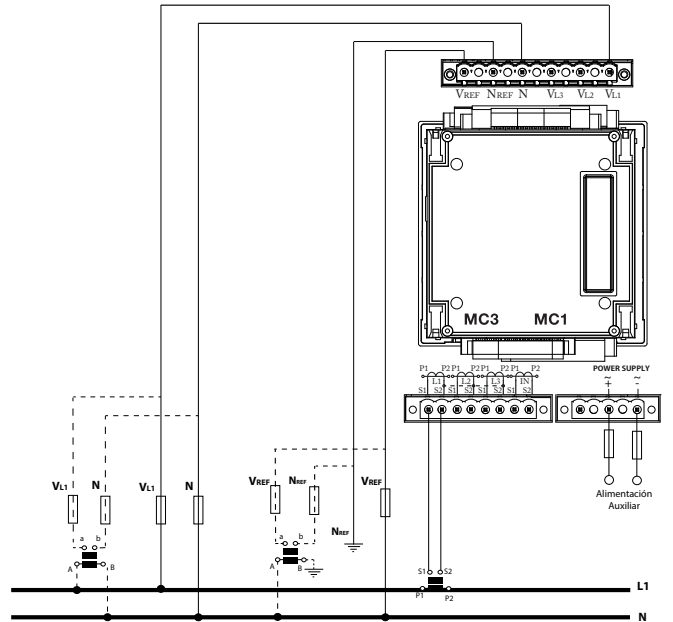
Three-phase measuring with or without voltage transformer and MC3 (250 mA) + .../5 A type transformers for neutral current.



Direct phase-phase measurement with current transformers



Measurement in single-phase system with or without voltage transformer



Note: Refer to the product manual for other options