ENAPART

93 S Railroad Avenue Unit C
Bergenfield NJ 07621 USA
www.enapart.com
sales@enapart.com

Friedrich-Ebert-Anlage 36, 60325
Frankfurt am Main, Germany
www.enapart.de
anfrage@enapart.de

〒584-0023　大阪府富田林市若松町
東2丁目2番16号
www.enapart.co.jp
sales@enapart.co.jp

Via del Canneto 35,
Borgosatollo, Brescia - Italia
www.enapart.it
vendite@enapart.it

4 boulevard Carnot, 95400
villiers-le-bel, Paris, France
www.enapart.fr
sales@enapart.fr

PLAZA NUESTRA SEÑORA DE LAS
NIEVES 12 ,LOCAL ,50012,ZARAGOZA
www.enapart.es
ventas@enapart.es

Barbaros Mah. Ihlamur Bul. Ağaoğlu
My Newwork No:3/15 Ataşehir / İstanbul
www.enapart.net
satis@enapart.net

65049, ОДЕСА, ВУЛИЦЯ ІВАНА
ФРАНКА, БУДИНОК 55, ПОВЕРХ 3
www.enapart.com.ua
sales@enapart.com.ua

Складова база „Онгъл“, Склад А2, п.к.
4006, гр. Пловдив, България
www.enapart.bg
sales@enapart.bg

PRIVADA 10 B SUR #3908 COL.
ANZUREZ, C.P. 72530, PUEBLA,PUE
www.enapart.com.mx
sales@enapart.com.mx

MUNICIPIUL BUCUREŞTI, SECTOR 3,
B-DUL BASARABIA, NR.250, CORP P+5
www.enapart.ro
sales@enapart.ro

3 Austin Mews, High Street, Hemel
Hempstead, HP1 3AF , United Kingdom
www.enapart.co.uk
sales@enapart.co.uk

Comparison table
Assembly on DIN Rail

		CVM 1D	CVM NET		CVM MINI
		CVM 1D-C **CVM 1D**-RS485-C (*1)	**CVM NET**-ITF-RS485-C2	**CVM NET**-MC-ITF-RS485-C2	**CVM MINI**
Power circuit	**Power supply voltage**	88-276 V a.c	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)
	Frequency	50/60 Hz	50...60 Hz	50...60 Hz	50...60 Hz
	Consumption	<2 VA	<3 VA	<3 VA	<3 VA
	Installation category	CAT III (300V)	CAT III (300V)	CAT III (300V)	CAT III (300V)
Voltage measurement circuit	**Voltage**	110…230 V a.c.	300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)
	Voltage measurement margin	80…120 % (U_n)	4…100 % (U_n)	4…100 % (U_n)	4…100 % (U_n)
	Frequency measurement margin	50/60 Hz	45…65 Hz	45…65 Hz	45…65 Hz
Current measurement circuit	**Nominal current**	5 A	…/5A	…/250 mA (MC)	…/5A ó …/1A
	Maximum current	32 A	1.2 I_n	1.2 I_n	1.2 I_n
	Current measurement margin	0.5…120% I_n	0.2…120% I_n	0.2…120% I_n	2…120% I_n
Sampling	**Samples/Cycle**	16	32	32	32
Accuracy	**Voltage**	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit
	Current	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit
	Active power	1% + 1 digit	1% + 1 digit	1% + 1 digit	1% + 2 digits
	Reactive power	1% + 1 digit	1% + 1 digit	1% + 1 digit	1% + 2 digits
	Active power	1% (Class 1)	1% (Class 1)	1% (Class 1)	1% (Class 1)
	Reactive power	2% (Class 2)	1% (Class 1)	1% (Class 1)	1% (Class 1)
Digital transistor outputs	**Quantity**	1	2	2	-
	Maximum voltage	42 V d.c.	24 V d.c.	24 V d.c.	-
	Maximum current	50 mA	50 mA	50 mA	-
	Weight	Configurable	Configurable	Configurable	-
Parameters	**V. A. W. Wh. var. cos φ**	•	•	•	•
	Quadrants	4	4	4	4
	THD	-	•	•	•
	Harmonics	-	-	-	-
	Phase parameters	•	•	•	•
	Maximum demand	•	•	•	•
	Tariffs	-	1	1	1
	Single phase measurement	•	•	•	•
	Three phase measurement	-	•	•	•
Frontal panel	**Display**	LCD 6 digits	-	-	Backlit LCD
	Keyboard	Button	Communications	Communications	Silicone
Communications	**RS-485**	•(*1)	•	•	-
	TCP/IP	-	-	-	-
Protocols	**ModBus/RTU**	•(*1)	•	•	-
	ModBus/TCP	-	-	-	-
	BacNet	-	-	-	-
	LonWorks	-	-	-	-
Standards	**Designed acording to UL**	-	-	-	•
Environmental features	**Working temperature**	-5°C ... +45°C	-10°C ... +50°C	-10°C ... +50°C	-10°C ... +50°C
	Relative humidity (non-condensing)	5 ... 95%	5 ... 95%	5 ... 95%	5 ... 95%
	Protection degree	IP20- Frontal: IP31	IP31- Frontal: IP51	IP31- Frontal: IP51	IP31- Frontal: IP51
Mechanical features	**Dimensions**	85.5 x 64.2 x 18 mm	85 x 52 x 70 mm	85 x 52 x 70 mm	85 x 52 x 70 mm
	Format	1 module	3 modules	3 modules	3 modules
	Weight (Kg)	0.150	0.210	0.210	0.210

CVM NET4+

CVM MINI-ITF-C2	**CVM MINI**-MC-ITF-C2	**CVM MINI**-ITF-RS485-C2 (*1) **CVM MINI**-ITF-HAR-RS485-C2 (*2) **CVM MINI**-ITF-ETHERNET-C2 (*3) **CVM MINI**-ITF-BACnet-C2 (*4) **CVM MINI**-ITF-LonWorks-C2 (*5)	**CVM MINI**-MC-ITF-RS485-C2 (*1) **CVM MINI**-MC-BACnet-C2 (*2) **CVM MINI**-MC-Ethernet-C2 (*3)	**CVM NET4+**-MC-ITF-RS485-C4
230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	230 V a.c. 85…265 V a.c. / 95…300 V d.c. (Plus version)	85…265 V a.c. / 95…300 V d.c.
50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz	50...60 Hz
<3 VA	<3 VA	<3 VA	<3 VA	2.9…6 VA /3…6 W
CAT III (300V)	CAT III (300V)	CAT III (300V)	CAT III (300V)	CAT III (300V)
300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)	300 V a.c. (ph-n) 520 V a.c. (ph-ph)
4…100 % (U_n)	4…100 % (U_n)	4…100 % (U_n)	4…100 % (U_n)	2…100 % (U_n)
45…65 Hz	45…65 Hz	45…65 Hz	45…65 Hz	45…65 Hz
…/5A ó …/1A	…/250 mA (MC)	…/5A ó …/1A	…/250 mA (MC)	…/250 mA (MC)
1.2 I_n	1.2 I_n	1.2 I_n	1.2 I_n	1.3 I_n
0.2…120% I_n	0.2…120% I_n	0.2…120% I_n	0.2…120% I_n	1.2…105% I_n
32	32	32	32	32
0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit
0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit	0.5% + 1 digit
1% + 2 digits	1% + 2 digits	1% + 2 digits	1% + 2 digits	1% + 1 digit
1% + 2 digits	1% + 2 digits	1% + 2 digits	1% + 2 digits	1% + 1 digit
1% (Class 1)	1% (Class 1)	1% (Class 1)	1% (Class 1)	1% (Class 1)
1% (Class 1)	1% (Class 1)	1% (Class 1)	1% (Class 1)	1% (Class 1)
2	2	2	2	4
24 V d.c.	24 V d.c.	24 V d.c.	24 V d.c.	24 V d.c.
50 mA	50 mA	50 mA	50 mA	50 mA
Configurable	Configurable	Configurable	Configurable	Configurable
•	•	•	•	•
4	4	4	4	4
•	•	•	•	•
-	-	15 (*2)	-	15
•	•	•	•	•
•	•	•	•	•
1	1	1	1	1
•	•	•	•	-
•	•	•	•	•
Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	-
Silicone	Silicone	Silicone	Silicone	Communications
-	-	(*1). (*2)	(*1)	•
-	-	(*3)	(*3)	-
-	-	(*1). (*2)	(*1)	•
-	-	(*3)	(*3)	-
-	-	(*4)	(*2)	-
-	-	(*5)	-	-
•	•	•	•	-
-10ºC ... +50ºC	-10ºC ... +50ºC	-10ºC ... +50ºC	-10ºC ... +50ºC	-10ºC ... +50ºC
5 ... 95%	5 ... 95%	5 ... 95%	5 ... 95%	5 ... 95%
IP31- Frontal: IP51	IP31- Frontal: IP51	IP31- Frontal: IP51	IP31- Frontal: IP51	IP31- Frontal: IP51
85 x 52 x 70 mm	85 x 52 x 70 mm	85 x 52 x 70 mm	85 x 52 x 70 mm	105 x 70 x 90 mm
3 modules	3 modules	3 modules	3 modules	6 modules
0.210	0.210	0.210	0.210	0.250

CVM-1D

Single-phase power analyzer, DIN rail

Description

CVM-1D is a power analyzer for single-phase circuits up to 32 A. It features an LCD display with a rotating screen system, showing a total of 24 instantaneous, maximum and minimum, electrical variables. It has been designed in an enclosure with only 1 DIN module (18 mm). The compact size of the analyzer allows it to be installed on any electric panel. The unit has the Modbus/RTU (RS-485) protocol and is compatible with the **PowerStudio** energy management software.

Its main features are:

- Sealable
- Six-digit LCD display
- RS-485 Modbus/RTU communication (depending on model)
- Programmable alarm or impulse output
- Measurement in four quadrants

Applications

- Student residences / Hotels
- Marinas
- Shopping centres
- Buildings with rented office space
- Campgrounds
- Domestic and industrial lines
- Single-phase lines in general

Technical features

Power circuit	Single-phase power supply	88...276 Vac
	Power supply frequency	50 / 60 Hz
	Power supply use	2 V·A
Measurement circuit	Phase – Neutral rated voltage	110...230 Vac (±20%)
	Frequency	50 / 60 Hz
	Nominal current	5 A
	Minimum current	250 mA
	Maximum current	32 A
Accuracy class	Voltage, Current	0.5% + 1 digit
	Active power, Reactive power	1% + 1 digit
	Active Energy	Class 1 (**IEC 62053-21**)
	Reactive Energy	Class 2 (**IEC 62053-23)**
Output transistor features	Type	Optoisolated transistor (collector open) NPN
	Maximum operating voltage	42 Vdc
	Maximum operating current	50 mA
	Maximum frequency	1000 imp/kWh
	Impulse duration	4...200 ms (configurable)
	Insulation	3.7 kV $_{RMS}$ / 1 min
Communications	Port	RS-485 (depending on model)
	Protocol	Modbus / RTU (depending on model)
Build features	Measurement module	Assembly on DIN 46277 rail (**EN 50022**)
	Number of modules	1
Environmental conditions	Operating temperature	-5...+45 °C
	Protection degree	IP 20 / Frontal IP 31
	Humidity (non-condensing)	5 ... 95% (non-condensing)
	Maximum altitude	2000 m
Safety	**EN 61010** Double-insulated electric shock protection, class II	
Standards	**IEC 664, VDE 0110, UL94-V0, EC 801, IEC 348, IEC 571-1,** Class 2 **EN 62053-23** in Reactive Energy, **EN 61010, EN 61000-4-3, EN 61000-4-4, EN 61000-6-4, EN 55022**	

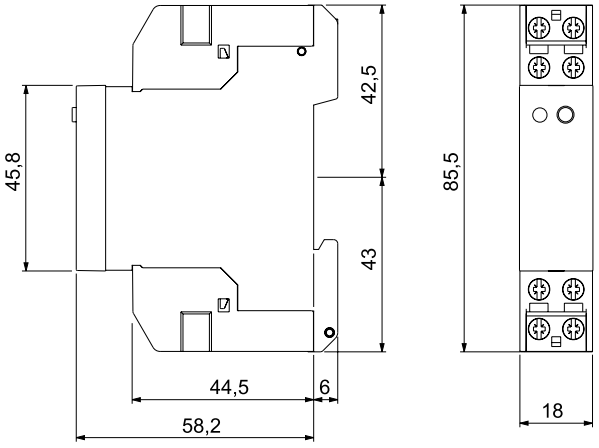
CVM-1D

Single-phase power analyzer, DIN rail

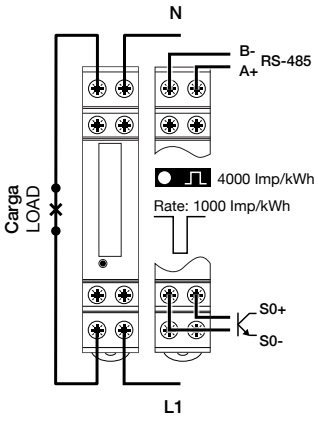
References

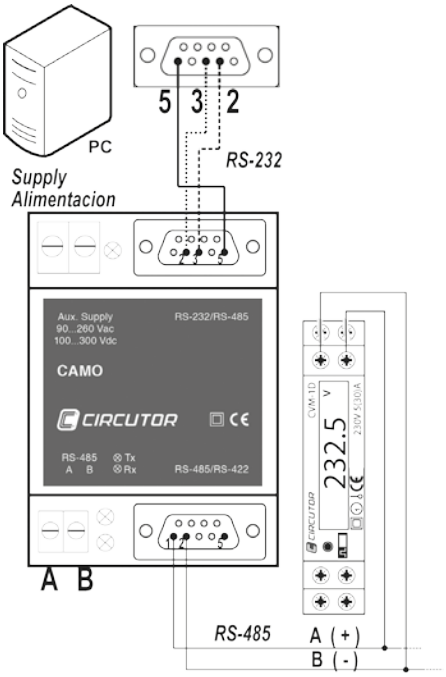
Type	Code	Nominal current	Protocol	Communication
CVM 1D-C	M55510	250 mA...32 A	-	-
CVM 1D-RS485-C	M55511	250 mA...32 A	Modbus/RTU	RS-485

Dimensions



Connections





CVM NET

Three-phase power analyzer, assembly on DIN rail - without display

Description

CVM NET is a Power Analyzer for measuring balanced or unbalanced single and three-phase networks. It has been specifically designed for measuring up to 230 electrical parameters and for transmitting this data through the RS-485 communication bus with the Modbus/RTU protocol to the supervision SCADA.

Its main features are:

- DIN rail format of only 3 modules
- Mounted on 72 x 72 mm panel, with adapter front panel (M5ZZF1)
- Measures the current with ... / 5 A and .../250 mA external transformers (**MC** model), .../333 mV
- Possibility of measuring Medium and Low Voltage networks
- RS-485 communication (Modbus RTU)
- Compatible with **PowerStudio / PSS / PSSDeluxe software**
- 2 programmable digital outputs
- Universal power supply (optional)
- Sealable

Applications

- Control application on switchboards and low and medium voltage connection points, where an analyzer must be installed on a DIN rail due to space restrictions.
- Alarm control. Maximum value, minimum value and programmable delay.
- Control of active or reactive energy using the impulse output
- Instantaneous data capture, maximum and minimum values of the electrical parameters measured.

Technical features

Power circuit	Rated voltage	230 Vac (-15...+10 %) 85...265 Vac / 95...300 Vdc optional
	Power supply frequency	50...60 Hz
	Maximum power consumption	3 VA
Measurement circuit	Rated voltage	300 Vac Ph-N / 520 Vac Ph-Ph
	Frequency	45...65 Hz
	Nominal current	.../5 A or .../250 mA, .../333 mV
	Permanent overload	1.2 I_n
Accuracy class	Voltage, Current	0.5% ± 1 digit
	Active power, Reactive power	1% ± 1 digit
	Active energy Reactive energy	1% (Class 1)
Communications	Protocol	RS-485
	Communications protocol	Modbus / RTU
	Speed	1200 / 2400 / 4800 / 9600 / 19200 bps
	Length	8
	Parity	No parity / even / odd
	Bits of parity	1 / 2
Output transistors	Type: Isolated transistor	Open NPN collector
	Maximum operating voltage	24 Vdc
	Maximum operating current	50 mA
	Maximum frequency	5 imp/s
	Impulse duration	100 ms
Build features	Measurement module	DIN Rail 46277 (**EN 50022**)
	Number of modules	3
Environmental conditions	Operating temperature	-10 °C...+50 °C
	Protection degree	Embedded unit: IP51 Terminals: IP31
	Humidity (without condensation)	5 ... 95% (non-condensing)
	Maximum altitude	2000 m
Safety	**IEC 61010** Double-insulated electric shock protection, class II	
Standards	**IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, IEC 61000-6-3, IEC 61000-6-1, IEC 61010-1, IEC 61000-4-11, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC-61000-4-5, EN 55011, CE**	

CVM NET

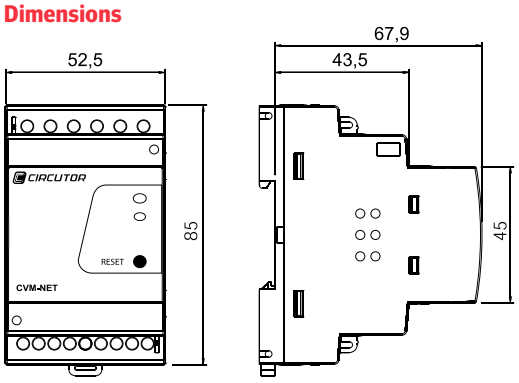
Three-phase power analyzer, assembly on DIN rail - without display

References

Current input	Protocol	Communications	Type	Code
.../5 A	Modbus/RTU	RS-485	**CVM NET ITF-RS485-C2**	**M54B21**
.../250 mA	Modbus/RTU	RS-485	**CVM NET-MC-ITF-RS485-C2**(*)	**M54B31**
.../333 mV	Modbus/RTU	RS-485	**CVM-NET-mV-RS485-C2**	**M54B310000V00**
Panel adapter for **CVM NET** (72 x 72 mm)			**Panel adapter**	**M5ZZF1**

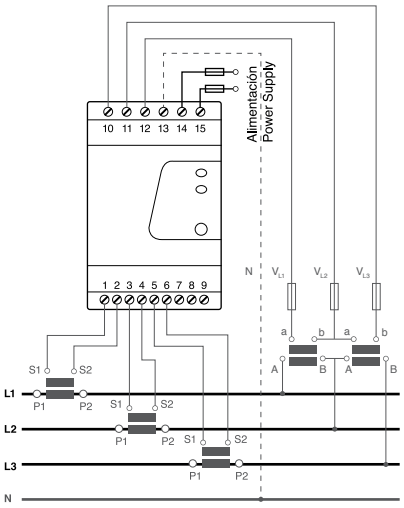
(*) Requires **MC** efficient transformers.

Dimensions

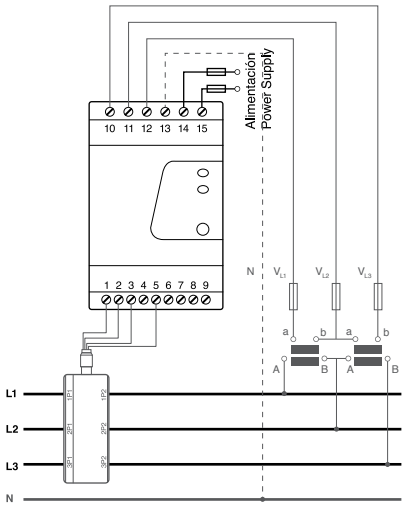


Connections

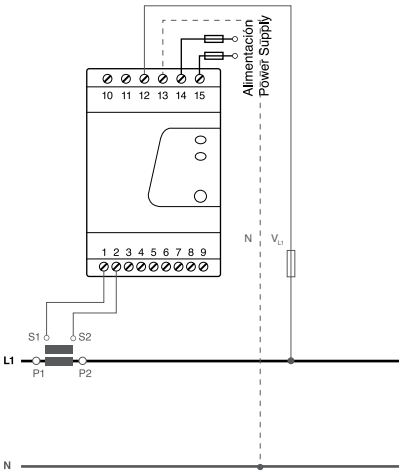
Three-phase + neutral connection
3 voltage transf. + 3 current transf.



Three-phase + neutral connection
MC efficient transformer



Single-phase connection



Coding table

M	5	X	X	X	X	0	0	X
Code						Internal code		↑
Power supply voltage			Standard (230 Vac)					0
			85...285 Vac 95...300 Vdc					C

CVM MINI

Three-phase power analyzer, assembly on DIN rail

Description

Three-phase power analyzer (balanced and unbalanced), assembly on DIN rail, with a very compact size, and 4-quadrant measurement.

Other features include:

- Current measurement .../5 or .../1 A or .../250 mA, .../333 mV
- DIN rail format of only 3 modules
- Assembly on 72 x 72 mm panel with adapter front panel
- RS-485 Communications (Modbus-RTU) depending on model
- It features two transistor outputs (programmable)
- With ITF technology: galvanic insulation protection, depending on the type
- Selection of parameters to display
- Selection of the default page
- Universal power supply (optional)
- Sealable

Applications

- Control application on switchboards and low and medium voltage connection points, where an analyzer must be installed on a DIN rail due to space restrictions.
- Alarm control. Maximum value, minimum value and programmable delay.
- Control of active or reactive energy using the impulse output.
- Instantaneous data capture, maximum and minimum values of the electrical parameters measured.

Technical features

Power circuit	Standard Optional	230 Vac (-15...+10%) 85...265 Vac / 95...300 Vdc (optional) 20...120 Vdc (optional)
	Consumption	3 V·A
	Frequency	50...60 Hz
Measurement circuit	Rated voltage	300 Vac (p-n) / 520 Vac (p-p)
	Frequency	45...65 Hz
	Voltage circuit consumption	0.7 V·A
	Current circuit consumption	ITF 0.9 VA/ Shunt 0.75 VA
	Transformers	.../5 A or.../1 A or .../250 mA, .../333 mV
	Minimum direct current	110 mA
	Maximum direct current	6 A
Accuracy class	Voltage, Current	0.5% + 1 digit
	Active power, Reactive power	1% + 2 digit
	Active energy Reactive energy	1% + 2 digit Class 1
Environmental conditions	Operating temperature	-10...+50 °C
	Relative humidity	5 ... 95%
	Maximum altitude	2000 m
Optocoupled output transistor (open collector) NPN	Maximum operating voltage	24 Vdc
	Maximum operating current	50 mA
	Maximum frequency of impulses	5 imp/s
	Duration of the impulse	100 ms
Build features	Measurement module	Assembly on **DIN 46277** rail (**EN 50022**)
	Protection degree	Embedded unit: IP 51 Terminals: IP 31
	Dimensions	52.5 x 85 x 67.9 mm (3 modules)
Safety	Designed for CAT III 300/520 Vac installations, in accordance with **EN 61010**. Double-insulated electric shock protection, class II	
Standards	**IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, EN 61000-6-3, EN 61000-6-1, EN 61010-1**	

CVM-MINI

Three-phase power analyzer, assembly on DIN rail

References

Isolated Inp.	Current Inp.	Digital output	Harmonics	Protocol	Communications	Type	Code
-	.../1 A, .../5 A	-	-	-	-	**CVM MINI**	**M52000**
Yes	.../1 A, .../5 A	2	-	-	-	**CVM MINI-ITF-C2**	**M52011**
Yes	.../250 mA	2	-	-	-	**CVM MINI-MC-ITF-C2** (*1)	**M52071**
Yes	.../1 A, .../5 A	2	-	Modbus/RTU	RS-485	**CVM MINI-ITF-RS485-C2**	**M52021**
Yes	.../250 mA	2	-	Modbus/RTU	RS-485	**CVM MINI-MC-ITF-RS485-C2** (*1)	**M52081**
Yes	.../1 A, .../5 A	2	*U* e *I* (15º)	Modbus/RTU	RS-485	**CVM MINI-ITF-HAR-RS485-C2**	**M52031**
Yes	.../1 A, .../5 A	2	-	Modbus/TCP	TCP/IP	**CVM-MINI-ITF-ETH-C2**	**M520J1**
Yes	.../250 mA	2	-	Modbus/TCP	TCP/IP	**CVM-MINI-MC-ITF-ETH-C2** (*1)	**M520L1**
Yes	.../1 A, .../5 A	2	-	BACnet	-	**CVM-MINI-ITF-BACnet-C2** (*2)	**M520F1**
Yes	.../250 mA	2	-	BACnet	-	**CVM-MINI-MC-BACnet-C2** (*1*2)	**M520H1**
Yes	.../1 A, .../5 A	2	-	LonWoks	LonTalk	**CVM MINI-ITF-LonWorks-C2**	**M52091**
				ISO/IEC 14908 – ANSI/EIA 7091			
Yes	.../333 mV	2	-	Modbus/RTU	RS-485	**CVM-MINI-mV-RS485-C2**	**M520810000V**
Panel adapter for **CVM-MINI** (72 x 72)						**Panel adapter**	**M5ZZF1**

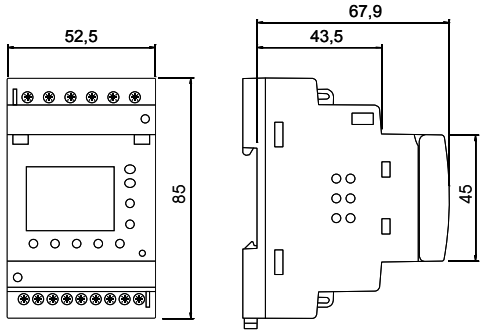
(*1) Requires the installation of **MC** series efficient transformers. – (*2) Only available with 230 V_{ac} power supply

Coding table

M	5	X	X	X	X	0	0	X
Code						Internal code		↑
			Standard (230 Vac)					0
Power supply voltage			85...285 Vac 95...300 Vdc					C
			20...120 Vdc					5*

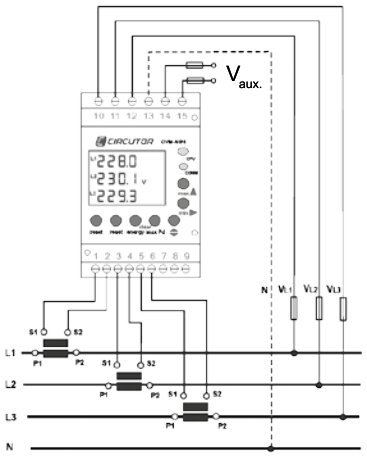
* Only **CVM MINI-ITF-RS485-C2**

Dimensions

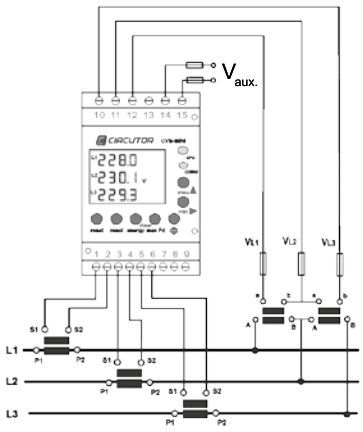


Connections

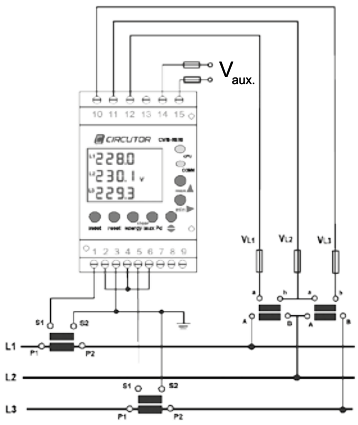
3 or 4 wires (low voltage)



3 wires (2 voltage transformers and 3 current transformers)



3 wires (2 voltage transformers and 3 current transformers)



CVM-NET4+

Multi-channel power analyzer for DIN rail - no display

Description

CVM-NET4+ is a multi-channel power analyzer designed to measure balanced or unbalanced three-phase networks and to measure single-phase networks. Its versatile configuration options enable you to take measurements in single-phase systems, three-phase systems or a combination of both. It has a single three-phase voltage input combined with 12 single-phase channels to measure the current from the **MC efficient current transformers**.

Its main features include:

- Assembly on DIN rail
- Compact size (6 DIN rail modules)
- Measurement of up to 12 single-phase channels or combined single-phase and three-phase current channels.
- Current measurement using efficient **MC** series transformers (.../250 mA)*
- RS-485 Communications (Modbus/RTU)
- 4 programmable digital outputs for alarms or impulses
- Compatible with **PowerStudio** /**PowerStudio SCADA** / **PowerStudio SCADA Deluxe** software.

Applications

- Measurement of electrical parameters in multi-channel installations, such as data processing centres and switchboards of single-phase loads.
- Simultaneous measurement at 4 different points in three-phase installations
- Its compact size is perfect for assembly on electric panels

Technical features

Power circuit	Rated voltage	85...265 Vac / 95...300 Vdc
	Power supply frequency	50...60 Hz
	Maximum consumption	2,9...6 V·A / 3...6 W
Measurement circuit	Rated voltage	300 Vac (Ph-N) / 520 Vdc (Ph-Ph)
	Frequency	45...65 Hz
	Nominal current	I_n .../250 mA
	Permanent overload	1,3 I_n
Accuracy class	Voltage, current	0,5 %
	Active Power	1 % (> 90 W)
	Active energy	1 % (class 1)
Communications	Network protocol	RS-485
	Communication protocol	Modbus/RTU
	Speed	9600 / 19200 / 38400 / 57600 bps
	Lenght	8
	Parity	No parity / odd / even
	Stop bits	1 / 2
Output transistors	Type: Isolated transistor	Open NPN collector
	Maximum operation voltage	24 Vdc
	Maximum operation current	50 mA
	Maximum frequency	5 imp/s
	Impulse duration	100 ms
Build features	Measurement module	Assembly on **DIN 46277** rail (**EN 50022**)
	Number of modules	6
	Protection Degree	IP 31, Front panel IP 51
Environmental conditions	Working temperature	-10 ... +50 °C
	Humidity (non-condensing)	5 ... 95% (non-condensing)
	Maximum altitude	2000 m
Safety	**IEC 61010** Double-insulated electric shock protection, class II	
Standards	**IEC 664, VDE 0110, UL 94, IEC 801, IEC 348, IEC 571-1, IEC 61000-6-3, IEC 61000-6-1, IEC 61010-1, IEC 61000-4-11, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC-61000-4-5, EN 55011, CE**	

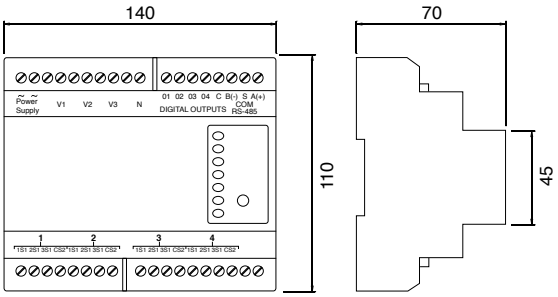
CVM-NET4+

Multi-channel power analyzer for DIN rail - no display

References

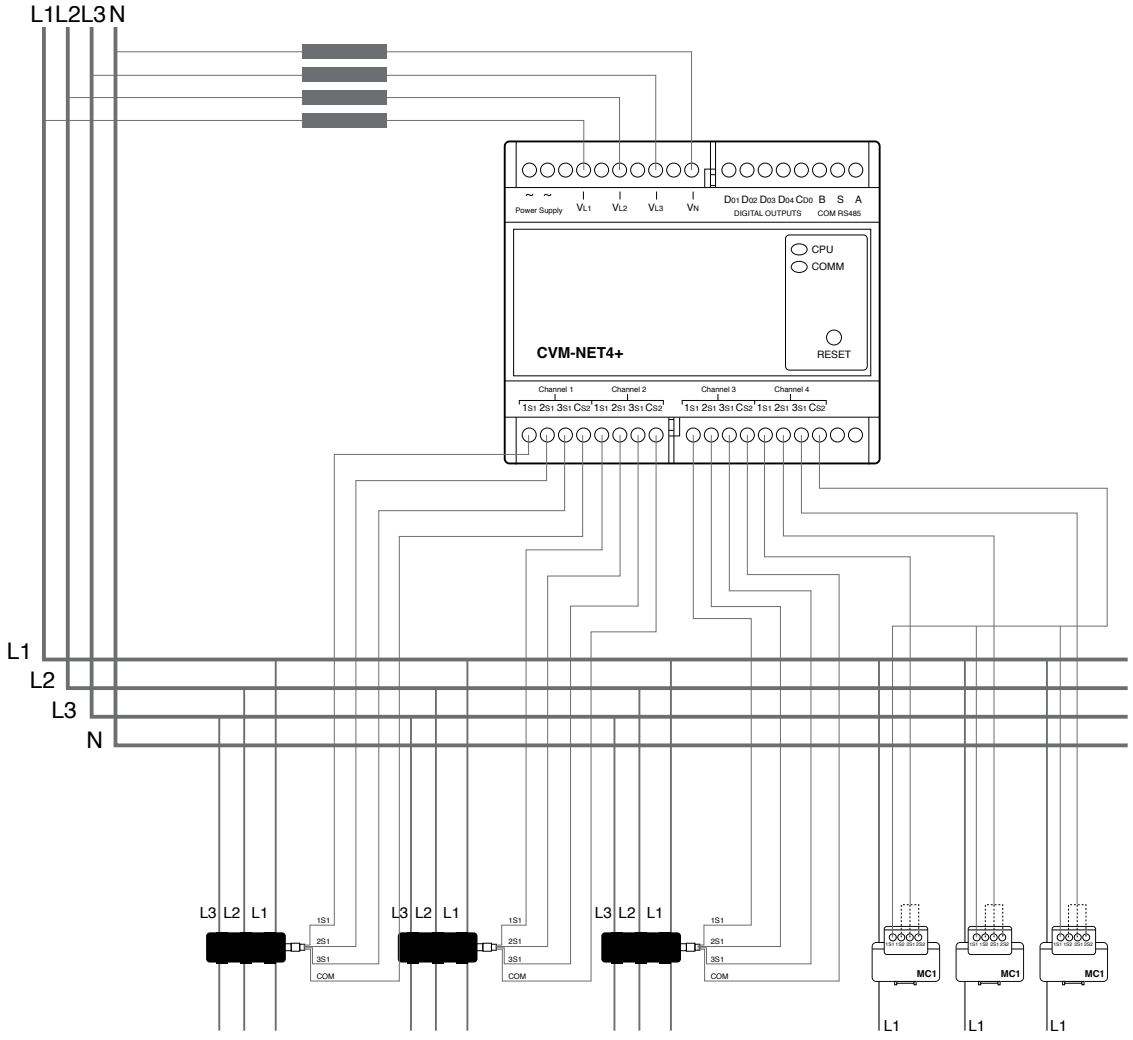
Type	Code	Communications	Transformer
CVM-NET4+-MC-RS485-C4	**M55782**	RS-485 Modbus/RTU	.../250 mA (type **MC**)
CVM-NET4+-mV-RS485-C4	**M557820000V00**	RS-485 Modbus/RTU	.../ 333 mV

Dimensions



Connections

Combined three-phase and single-phase channel connections



PowerStudio

Energy supervision and centralisation software

PowerStudio is a powerful, simple and user-friendly software tool that can be used for the integral supervision of energy of power analyzers, energy meters, earth leakages and offers complete control of a wide range of magnitudes.

PowerStudio, together with CIRCUTOR units and systems, adapts to the needs of the installation, offering the following efficient management measures:

Versions

PowerStudio is available in three versions with different features, to suit the needs of the particular management system.

PowerStudio

PowerStudio SCADA

PowerStudio SCADA Deluxe

Energy management

- Creation of historical logs
- Baseline determination
- Control of energy costs
- Energy balance
- Energy consumption ratios
- Consumption reports

Essential tool for UNE 16001 / ISO 50001 certification

Improved productivity

Maintenance
- Alarm tables
- Power quality control
- Variables analysis and management
- Technical reports

Production costs
- Correct allocation of energy costs
- Energy ratio / unit of production
- Cost reports / production ratios

Additional software

SQL DATA

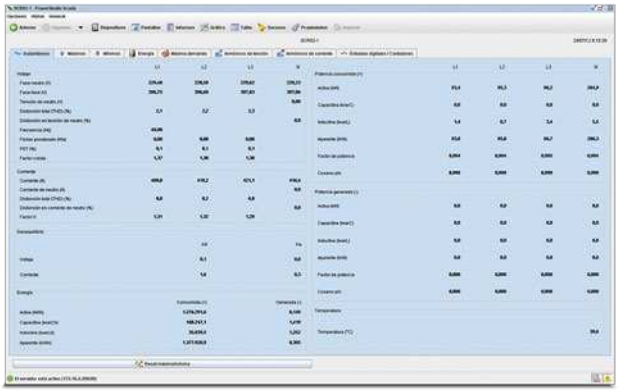
Modules for exporting historical logs to an SQL server

OPC-DA

Data connector for external systems with an OPC-DA client

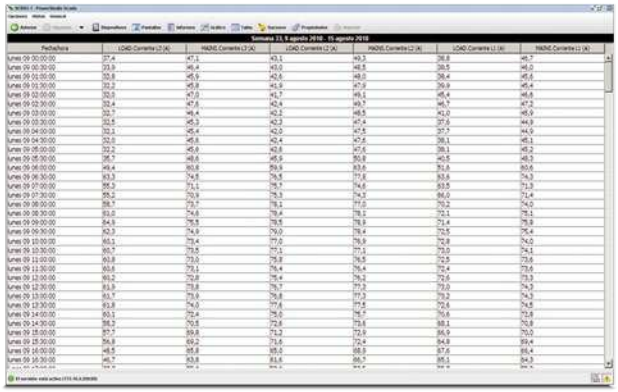
Real time variables

Displays all variables measured from all units in real time.



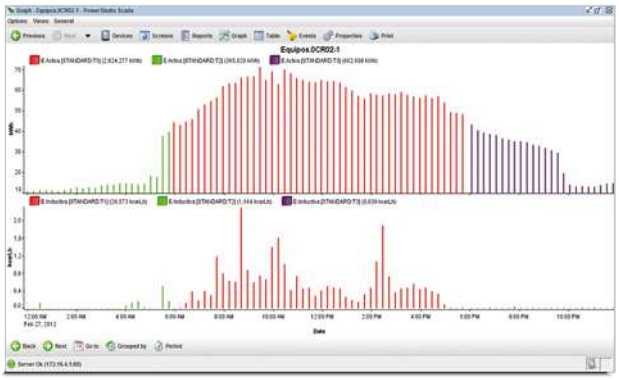
Tables

Displays data on tables; this information can be exported to .txt or .csv files.



Graphics

Graphical representation of the historical data recorded by software. Enables configuration of colours and layout individually. Displays multiple parameters simultaneously.

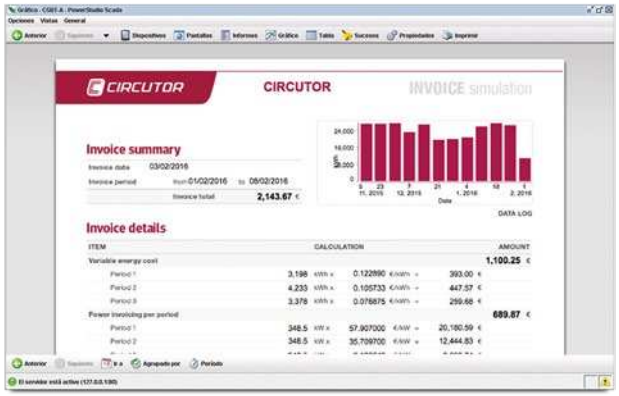


SCADA screens

With **SCADA** screens you can configure all kinds of interactive windows, create personalised screens and combine different parameters from different CIRCUTOR units easily, thus obtaining the maximum amount of information possible in an intuitive and user-friendly environment.

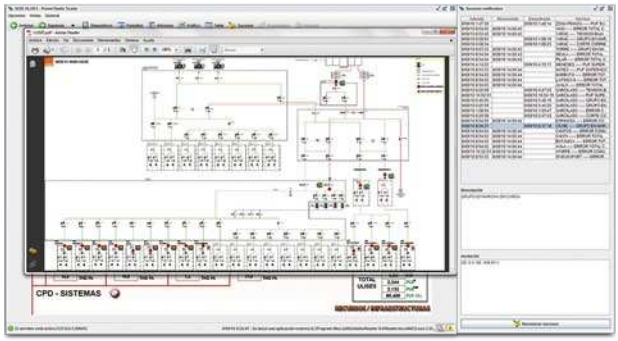
Reports

PowerStudio SCADA can generate reports for all types of bills, with the allocation of partial costs, production ratios, etc.



Events

With the events module, you can control and automate alarms and events, automatically controlling the installation's most critical and important conditions.



Accessories

TC, TCH y **TP** | **Transformers**
These units can be installed in installations with space restrictions. They are designed with a wide range of diameters and operating current values. They are easily installed, ideal for switch outputs and provide highly accurate measurement. They can be mounted on panels or assembled on DIN rails with accessories.

MC1 | **Transformers**
Very useful for installing in places where the exact nominal current range is not known. Each unit features 3 ratio ranges. Compliant with the **IEC 60044-1** Standard, featuring a 250 mA output for more efficient measurements.

RS2RS | **Converter**
Gateway that converts an RS-232 channel to RS-485. It can also operate as an amplifier-repeater of the signals of the RS-485 bus.

CMBUS-8/24 | **Converter**
Gateway designed to convert the M-Bus protocol to Modbus, with up to 24 slave units.

STP-24 | **Transformers**
Open-core current transformers with compact dimensions for easy installation. This type of transformer is very easy to install and uninstall on compact panels. In addition, these open-core transformers can measure current without the need to cut the power supply.

MC3 | **Transformers**
The new system comprises three efficient transformers in the same enclosure. This innovative design provides important advantages during installation. Compliant with the **IEC 60044-1** Standard, featuring a 250 mA output for more efficient measurements.

TCP1RS+ | **Converter**
Gateway designed to convert the Ethernet physical environment to RS-485.

TCP2RS+ | **Converter**
Gateway designed to convert the Ethernet physical environment to RS-485.

Wireless system

AirGATEWAY | **Converter**
AirGATEWAY converts the Modbus serial environment to Radio.

AirREPEATER | **Repeter**
AirREPEATER is a repeater unit that expands the range of the Radio signal.

AirHANZER | **Repeter**
AirHANZER is a handheld unit that measures radio signals, providing information about the available coverage and the need to install a repeater unit.

AirBRIDGE | **Converter**
AirBRIDGE converts Radio signals to Modbus RS-485 signals for slave units.

AirTHL | **Sensor**
AirTHL provides the infrastructure with wireless communications and can measure temperature, humidity and brightness.

Advanced system for absolute management

CVM
Power Analyzers

+ info: **comunicacion@circutor.com**

www.circutor.com

Designed by: Communication and Image Dpt. - CIRCUTOR, SA

CIRCUTOR, SA - Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
Tel. (+34) **93 745 29 00** - Fax: (+34) **93 745 29 14**
central@circutor.es

Código: **C2M5G3 -04**