CVM-C10-Flex

Panel-mounted power analyser with flexible Rogowski sensors

Description

Compact and versatile power analyser, with 4-quadrant measurement (Consumption and Generation), suitable for High, Medium and Low-Voltage installations, since it can process high voltage:current transformation ratios of up to 2000 A. Measures current with flexible Rogowski sensors.

Capable of adapting to any type of electrical network topology, from single-phase lines, two-phase lines with or without neutral to three-phase lines with or without Neutral. The **CVM-C10-Flex** calculates the sensitivity of the measurement range scale automatically, according to the nominal value of the detected current, up to a full-scale of 2000 A. (Twice the full-scale value of measured current, 1000 A).

The flexible sensors feature a magnetic lock, which allows the sensors to be sealed. They are robust and can withstand frequent assembly and disassembly procedures, thanks to these magnetic lock.

Quick installation on distribution panels or switchboards of the unit, thanks to its flexible current sensors. Self-adjustment of the scale sensitivity. Does not require the current primary to be programmed. (1000 A by default, factory setting). Remote correction of errors associated with the incorrect connection of the unit to the electrical installation via remote communication systems (PowerStudio).

Display features and interface:
- Backlit keypad (capacitive)
- Analogue display for instantaneous parameters (power, maximum power reached and cos φ or PF)
- Backlit display
- Cost by tariff
- Operating time indicator for preventive maintenance.

The unit has the following functions:
- Recording of the energy consumption from three different sources: network, generator set or photovoltaic energy generation system.
- Selection of tariffs with digital inputs. Perfect for calculating costs in three different work shifts.

Applications

- Management Systems that require roaming measuring points.
- Distribution panels or switchboards that cannot stop the installation of a measuring unit.

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Technical features of the analyser

Power circuit	Power supply voltage	85...265 Vac / 95...300 Vdc 20...120 Vdc (SDC model)	
Measurement circuit	Voltage	300 V AC p-n / 520 V AC p-p	
	Frequency	50...60 Hz	
	Current	**Flex-Mag flexible sensors** 1000 A / 100 mV	
	Maximum full-scale	Twice the full-scale value of measured current (2000 A)	
	Double scale sensitivity	Automatic change of sensitivity 400 A ±30%, with hysteresis	
	Sampling	64 samples/cycle	
Accuracy class		Without sensors	With sensors
	Voltage measurement	0.5 % ±1 digit	0.5 % ±1 digit
	Current measurement	0.5 % ±1 digit	±3%
	Frequency measurement	0.5%	±0.5%
	Active power measurement	1% ±2 digits	±4%
	Reactive power measurement	1% ±2 digits	±4%
	Active energy measurement	Class 1	-
	Reactive energy measurement	Class 2	-
Display of harmonics, up to	V	31st	
	A	31st	
Communications	Protocol	Modbus/RTU / BACnet (RS-485)	
	Speed	9600, 19200	
	Bit, parity, stop	8, n, 1	
Connections	Voltage inputs	4 (3 + neutral)	
	Current inputs	4 (for **Flex-Mag** flexible sensors)	
	High transformation ratios	Voltage primary: 600000 V Current primary: 1000 A (maximum 2000 A)	
Inputs	2 digital inputs	Selection of the tariff or external alarms NPN, optocoupled	
Build features	Enclosure	VO self-extinguishing plastic	
	Protection degree	Front panel: IP 51 (IP 64 with accessory) Rear: IP 31	
	Dimensions	96.7 x 96.7 x 63.4 mm	
Environmental conditions	Working temperature	-5...+45 °C	
	Relative humidity	5 ... 95%	
	Maximum altitude	2000 m	
Safety	Class III, according to **EN 61010** Double-insulated electric shock protection, Class II		
Standards	**BS EN 61000-6-4**, **BS EN-61000-6-2**, **IEC 61000-6-2**, **IEC 61000**, **IEC 61000-4-3**, **IEC 610004-11**, **IEC 61000-4-4**, **IEC 610004-5**, Measurement according to **MID**, **UL** certification.		

Technical features of flexible sensors

Electrical features	Standard output voltage	100 µV/A @50 Hz
	Frequency Range	50...60 Hz
	Precision	± 1% of the range
	Linearity (10...100%)	± 0.2%
	Max. temperature coefficient	± 0.05%
	Position sensitivity (cable joint)	± 3%
	Sensitivity to external fields	± 2%
Electrical Safety	Insulation	Double insulation
	Class of protection	II **IEC/EN 61010-1:2001**
	Overvoltage category	1000V CAT III / 600V CAT IV
	Contamination level	2
	Dielectric rigidity	**IEC/EN 61010-2-32:2002**, 5.4k V 50 Hz
Build features	Probe material	Self-extinguishing **UNE 21031** 90 °C
	Material coupling elements	PA V-0
	Probe cable diameter	8 mm
	Output cable length	2 m
	Temperature Range	-20...85 °C
	Storage temperature	-40...85 °C
	Relative humidity	15...85 % (non-condensing)
	Protection degree	IP 54

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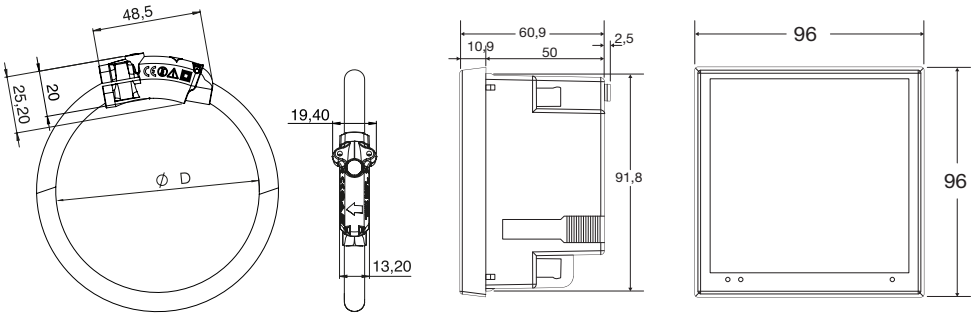
References

Type	Code	Power supply	Communications
CVM-C10-FLEX-IN-485-I2	M55963	85...265 V_{ac} / 95...300 V_{dc}	RS-485; Modbus/BACnet
CVM-C10-SDC-FLEX-IN-485-I2	M5596300F0000	20...120 V_{dc}	RS-485; Modbus/BACnet

Flexible sensor references

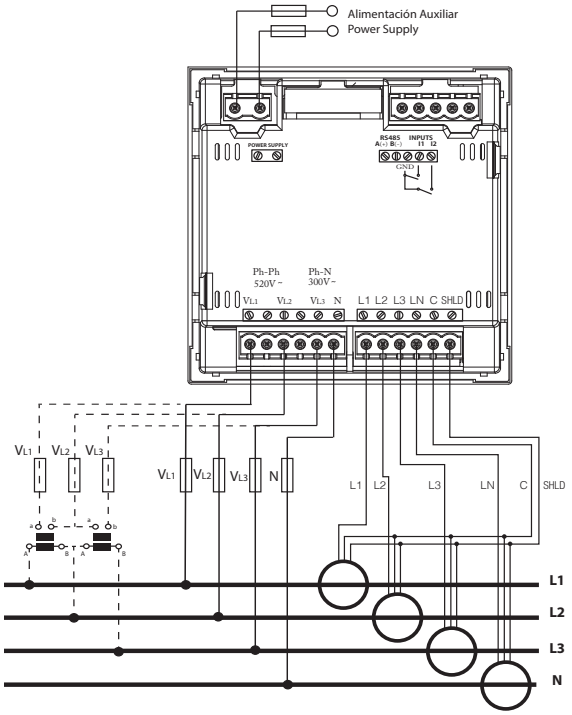
Type	Code	Scale	Length	Diameter D	Sensitivity	Full-scale
FLEX-MAG70	M818110041500	Config.	2 m	Ø 70 mm	1000 A / 100 mV	2000 A
FLEX-MAG120	M818120041500	Config.	2 m	Ø 120 mm	1000 A / 100 mV	2000 A

Dimensions



Connections

Three-phase connection + Neutral
with or without voltage transformers



Single-phase connection
with or without voltage transformers