



CVM-B100-ITF-485-ICT2, Power analyzer

Code: M56011.

> Protocol: Modbus/RTU | BACnet > Energy accuracy: 0,5 S (.../5A) > Communications: RS-485

> Transistor output: 2

> N° relays: 2

> Digital inputs: 2

> Input current: .../5 A | .../1 A | .../250 mA

> Mounting: Pannel > Modules: 96 x 96

Description

The CVM-B100 and CVM-B150 units are panel mounted three-phase power analyzers (dimensions: 96x96 and 144x144 mm, respectively). Both offer 4-quadrant measurement (consumption and generation). Suitable for Medium or Low voltage installations, in both 3 or 4-wire three-phase circuits, two-phase circuits with or without neutral, single-phase circuits or ARON connections.

The CVM-B100 and CVM-B150 high-performance units feature a measurement engine that allows the user to analyse many different electrical parameters, in addition to offering a large variety of optional expansion modules for the same unit.

Features:

- Format: 96x96 (CVM B100) and 144x144 (CVM B150)
- o High-resolution VGA colour screen
- IP 65 front panel protection (with sealing joint)
- 5 voltage inputs (3 phases + neutral + earth) 1000 V_{F-F}
- o 4 Current inputs, ITF
- Class 0.2 voltage and current accuracy
- o Class 0.5S energy accuracy
- o Expandable unit, up to 4 modules, combining digital and analogue outputs, Modbus/TCP, MBus, LonWorks, Profibus, XML/Web
- Modular (optional addition of expansion modules)
- o Touch-sensitive movement buttons
- Universal power supply source
- o RS485 communications port (Modbus/RTU and BACnet protocols)
- Customisation of parameters to be displayed
- Operating hour indicator for preventive maintenance.

Other features:

- o Innovative SCV interface (Slide, Choose & View) for versatile data display, enabling the customisation of the parameters displayed on the screen
- o Electrical parameters: instantaneous, maximum, minimum (with date and time) and demand
- o Incremental electrical parameters (energy), times, costs, emissions
- o 3 Tariffs (can be selected via the digital input or RS485 communications)
- o Capable of showing costs and kgCO₂ emission sources on the screen, depending on the energy consumed
- o 2 Relay outputs for alarms with delay, times, ON and OFF, etc.







Power analyzers for panel

Code: M56011.

- o 2 transistor outputs for alarms or impulse generation, with all the possible configuration parameters
- $\circ~$ 2 digital inputs, with control over the selection of the unit's tariffs or configurable for monitoring purposes, with RS-485 Modbus communications, monitoring of logical states of other electromechanical units. (RCCBs, thermal-magnetic circuit breakers, etc.)

Application

- o Control and monitoring of all electrical parameters measured in any electric distribution panel and low and high-voltage connection points.
- o 4 alarms (2 per transistor and 2 per relay), fully and independently programmable: low or high value, hysteresis, connection/disconnection delays, normally open or closed standby status and interlocking.
- o Generation of impulses with transistor outputs, fully and independently configurable over any incremental parameter (energy, costs, kgCO₂, total meter or tariff hours)
- o Transducer that converts analogue signals to any instantaneous parameter that the unit can measure or calculate, with built-in expansion modules with analogue outputs.
- o Display of process signals, with a built-in expansion module with analogue inputs; optional reporting of these signals to SCADA systems through communication systems
- o Control of electrical load or alarm signal operations by programming the transistor or relay outputs that are built-in or added through expansion modules.
- o Autonomous datalogger with web server, connected to a M-CVMAB-Datalogger module. Enables direct monitoring of the historical data stored in the unit via a conventional web browser.

400 Hz Applications

CVM-B150 provides a version adapted to 400 Hz networks specially designed for applications such as:

- Aeronautical
- Astronautics
- o Naval
- Military







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Specifications

AC power supply				
Installation category	CAT III 300 V			
Consumption	máx. 23.9 VA			
Frequency	45 65Hz			
Nominal voltage	100 240 V ~			
DC power supply				
Installation category	CAT III 300 V			
Consumption	max. 12.2 W			
Nominal voltage	120 300 Vdc			
Mechanical characteristics				
Size (mm) width x height x depth	97 x 99 x 99 (mm)			
Envelope	Self-extinguishing V0 plastic			
Fastening	Panel 92x92			
Weight (kg)	0,516			
Environmental characteristics				
Protection class	IP 40 (Front), IP 65 (Sealing), IP 30 (unmounted)			
Relative humidity (without condensation)	5 95%			
Storage temperature	-20 +80 °C			
Working temperature	-10+60 °C			
Standards				
Certifications	UL 61010-1 3rd edition, CAN/CSA-C22.2 No.61010-1 3rd. edition 2012-05			
Electrical safety, Maximum height (m)	2000			
Standards	IEC 61010-1 (1rd. Edition), UNE-EN 61000-6-2, UNE-EN 61000-6-4, IEC 60664-1 IEC 61010-2-030 (First Edition). Measurement according to IEC 61557-12			
Current measurement circuit				
Installation category	CAT III 600 V			
Nominal current (In)	/5A,/1A,/0.250A			
Phase current measuring range	0.0110A (/5A),0.012A (/1A), 0.010.5A (/0.250A)			
Neutral current measuring range	0.020.5A (/0.250A, calculated)			
Maximum input current consumption	0,9 VA			
Maximum pulse current	100 A			
Minimum current measurement	0,01 A (/5A,/1A,/0,250A			







Power analyzers for panel

Code: M56011.

Installation category	CAT III 600V
Input impedance	1.2ΜΩ
Frequency measuring range	4070Hz
Voltage measuring range	20600 V~
Maximum input voltage consumption	0,15VA
Minimum measurement voltage (Vstart)	10 V~

User interface

Display format	4:3		
LED	3 LED (CPU-Keys-ALARM)		
Resolution of the display	VGA (640x480)		
Keyboard	Capacitive, 3 keys		
Display type	TFT color		
Visible display area size	3.5"		

Digital inputs

Input/output insulation	4 kV
Quantity	2
Туре	Potential-free contact
Maximum short-circuit current	5 mA
Maximum open circuit voltage	15 Vdc

Digital relay outputs

Electrical life (at maximum load)	3x10 ⁴ cycles
Mechanical life	1x10 ⁷ cycles
Maximum switching capacity	1500 VA

Digital transistor outputs

Pulse width	1 ms
Quantity	2
Туре	NPN
Pulse output, time period (Ton / Toff)	0,3 ms/0,7 ms
Maximum frequency	1 kHz
Maximum current	130 mA
Maximum voltage	48 Vdc

Measurement accuracy

requency measurement Class 0.1 (/5A,/1A,/0.250A)			
Phase current measurement	class 0,2 ±1 digit 0.058A (/5A),0.011.2A (/1A), 0,01 0,3A (/0,250A)		
Neutral current measurement	class 1 \pm 1 digit 0.056A (/5A),0.051.2A (/1A), calculated (/0.250A)		
Reactive energy measurement (kvarh)	(IEC 62053-23) Class 1 (/5A), Class 2 (/1A,/0.250A)		







Power analyzers for panel

Code: M56011.

Reactive power measurement (kvar)	(Vn 230/110 Vac) Class 1 ±1 digit 0.056A (/5A),0.011.2A (/1A), 0.010.3A (/0.250A)
Apparent power measurement (kVA)	(Vn 230/110 Vac) class 0.5 ±1 digit 0.056A (/5A),0.011.2A (/1A), 0.010.3A (/0.250A)
Active energy measurement (kWh)	(IEC 62053-22) Class 0.5S (/5A), Class 1 (/1A), Class 1 (/0.250A)
Active power measurement (kW)	(Vn 230/110 Vac) class 0.5 \pm 1 digit 0.056A (/5A),0.011.2A (/1A), 0.010.3A (/0.250A)
Power factor measurement	class 0,5 (/5A,/1A,/0.250A)
Current THD	class 1 (/5A,/1A,/0.250A)
Voltage THD	class 1 (/5A,/1A,/0.250A)
Phase voltage measurement	Class 0.2 ±1 digit (20600 Vca,/5A,/1A,/0.250A)
Neutral voltage measurement	Class 0.5 ±1 digit (50600 Vca,/5A,/1A,/0.250A)
Current harmonics (THD)	class 1 (/5A,/1A,/0.250A)
Voltage harmonics (THD)	class 1 (/5A,/1A,/0.250A)

Serial communication

Protocol	ModBus/RTU, BACnet
Technology / Type	RS-485 / BACnet

CVM-B Power analyzer, colour display, panel mounted

CODE	TYPE	Input current	Transistor output	N° relays	Digital inputs	Communications	Protocol
M56011.	CVM-B100-ITF-485-ICT2	/5 A /1 A /250 mA	2	2	2	RS-485	Modbus/RTU BACnet
M56111.	CVM-B150-ITF-485-ICT2	/5 A /1 A /250 mA	2	2	2	RS-485	Modbus/RTU BACnet

4-quadrant measuring unit. See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B







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Dimensions

Connections





