CVM-B100-ITF-485-ICT2

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

Other features:

- Innovative SCV interface (Slide, Choose & View) for versatile data display, enabling the customisation of the parameters displayed on the screen
- Electrical parameters: instantaneous, maximum, minimum (with date and time) and demand
- Incremental electrical parameters (energy), times, costs, emissions
- 3 Tariffs (can be selected via the digital input or RS485 communications)
- Capable of showing costs and $kgCO_2$ emission sources on the screen, depending on the energy consumed or generated
- 2 Relay outputs for alarms with delay, times, ON and OFF, etc.

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- 2 transistor outputs for alarms or impulse generation, with all the possible configuration parameters
- 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

- Control and monitoring of all electrical parameters measured in any electric distribution panel and low and high-voltage connection points.
- 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.
- Generation of impulses with transistor outputs, fully and independently configurable over any incremental parameter (energy, costs, $kgCO_2$, total meter or tariff hours)
- Transducer that converts analogue signals to any instantaneous parameter that the unit can measure or calculate, with built-in expansion modules with analogue outputs.
- Display of process signals, with a built-in expansion module with analogue inputs; optional reporting of these signals to SCADA systems through communication 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.
- 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
- 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	0.01...10A (.../5A),0.01...2A (.../1A), 0.01...0.5A (.../0.250A)
Neutral current measuring range	0.02...0.5A (.../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

Voltage measurement circuit

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Installation category	CAT III 600V
Input impedance	1.2MΩ
Frequency measuring range	40...70Hz
Voltage measuring range	20...600 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
Type	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
Type	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

Frequency measurement	Class 0.1 (.../5A, .../1A, .../0.250A)
Phase current measurement	class 0,2 ±1 digit 0.05...8A (.../5A),0.01...1.2A (.../1A), 0,01 ... 0,3A (.../0,250A)
Neutral current measurement	class 1 ±1 digit 0.05...6A (.../5A),0.05...1.2A (.../1A), calculated (.../0.250A)
Reactive energy measurement (kvarh)	(IEC 62053-23) Class 1 (.../5A), Class 2 (.../1A, .../0.250A)

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Reactive power measurement (kvar)	(Vn 230/110 Vac) Class 1 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../0.250A)
Apparent power measurement (kVA)	(Vn 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../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 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../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 (20...600 Vca, .../5A, .../1A, .../0.250A)
Neutral voltage measurement	Class 0.5 ±1 digit (50...600 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	Nº 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

CVM-B100-ITF-485-ICT2

Power analyzers for panel

Code: M56011.

Dimensions

Connections