



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: Panel
- > Modules: 36 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 connectors.

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:

- o Format: 96x96 (**CVM-B100**) and 144x144 (**CVM-B150**)
- o High-resolution VGA colour screen
- o IP 65 front panel protection (with sealing joint)
- o 5 voltage inputs (3 phases + neutral + earth) 1000 V_{ac}
- o 4 Current inputs, ITF
- o Class 0.2 voltage and current accuracy
- o Class 0.55 energy accuracy
- o Expandable unit, up to 4 modules, combining digital and analogue outputs, Modbus/TP, MBus, LonWorks, Profibus, XML/Web
- o Modular (optional addition of expansion modules)
- o Touch-sensitive movement buttons
- o Universal power supply source
- o RS485 communications port (Modbus/RTU and BACnet protocols)
- o Customisation of parameters to be displayed
- o 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 or generated
- o 2 Relay outputs for alarms with delay, times, ON and OFF, etc.



CVM-B100-ITF-485-ICT2

Power analyzers for panel

Code: M56011.

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

- o Aeronautical
- o Astronautics
- o Naval
- o Military



CVM-B100-ITF-485-ICT2

Power analyzers for panel

Code: M56011.

Specifications

AC power supply	
Installation category	CAT III 300 V
Consumption	max. 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 52x92
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 1th Edition), UNE-EN 61000-6-2, UNE-EN 61000-6-4, IEC 60664-1, IEC 61010-2-630 (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...12A (.../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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Power analyzers for panel

Code: M56011.

Installation category	CAT III 600V
Input impedance	12MΩ
Frequency measuring range	40...70Hz
Voltage measuring range	40...70 Hz
Maximum input voltage consumption	0.15VA
Minimum measurement voltage (Vitar)	10 V~
Communications	
Fieldbus (BACnet)	MS/TP
Fieldbus (Modbus)	RS-485 / RTU
Stop bits (BACnet)	1
Stop bits (Modbus)	1-2
Parity (BACnet)	non
Parity	non-pair-impair (Modbus)
Protocol	Modbus/BACnet
Speed	9600-19200-38400-57600-76800-115200
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 ⁷ cycles
Mechanical life	1x10 ⁷ cycles
Maximum switching capacity	1500 VA
Digital transistor outputs	
Pulse width	1 ms
Quantity	2
Type	NPN



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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 1 ±1 digit 0.05...6A (.../5A)0.01...12A (.../1A) calculated (.../0.250A)
Neutral current measurement	class 1 ±1 digit 0.05...6A (.../5A)0.01...12A (.../1A) calculated (.../0.250A)
Reactive energy measurement (kvarh)	(IEC 61055-22) Class 1 ±1 digit 0.05...6A (.../5A) Class 2 (.../1A .../0.250A)
Reactive power measurement (kvar)	(In 230/110 Vac) Class 1 ±1 digit 0.05...6A (.../5A)0.01...12A (.../1A) 0.01...0.3A (.../0.250A)
Apparent power measurement (kVA)	(In 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A)0.01...12A (.../1A) 0.01...0.3A (.../0.250A)
Active energy measurement (kWh)	(IEC 61055-22) Class 0.55 (.../5A), Class 1 (.../1A), Class 1 (.../0.250A)
Active power measurement (kW)	(In 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A)0.01...12A (.../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 0.5 ±1 digit (50...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)

CVM-B	
Power analyzer, colour display, panel mounted	
CODE	TYPE
M56011	CVM-B100-ITF-485-ICT2
M56111	CVM-B150-ITF-485-ICT2

4-quadrant measuring unit. See expansion modules and accessories (Selling separately for CVM-B and CVM-B)



CVM-B150-ITF-485-ICT2

CVM-B150-ITF-485-ICT2, Power analyzer
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- > Communications: RS-485
- > Transistor output: 2
- > N° relays: 2
- > Digital inputs: 2
- > Input current: .../5 A | .../1 A | .../250 mA
- > Mounting: Panel
- > Modules: 144 x 144

Description

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Frequency	45 ... 65Hz
Nominal voltage	100 ... 240 V ~
DC power supply	
Installation category	CAT III 300 V
Consumption	max. 11.9 W
Nominal voltage	120 ... 300 Vdc
Mechanical characteristics	
Size (mm) width x height x depth	144 x 144 x 96 (mm)
Envelope	Self-extinguishing V0 plastic
Fastening	Panel 138x138
Weight (kg)	0.704
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
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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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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 ⁷ cycles
Mechanical life	1x10 ⁷ cycles
Maximum switching capacity	1500 VA
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Pulse width	1 ms
Quantity	2
Type	NPN