CVM-B100-ITF-485-ICT2

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

Code: M56011.

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

> Transistor output: 2

> Communications: RS-485

> N° relays: 2

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

> Modules: 96 x 96 Description

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.

> Digital inputs: 2

> Mounting: Pannel

Power analyzer, colour display, panel mounted

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:

The CVM-B100 and CVM-B150 units are panel mounted three-phase power analyzers (dimensions: 96x96

o Format: 96x96 (CVM B100) and 144x144 (CVM B150) o High-resolution VGA colour screen

o 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

○ 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) o 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 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.

 $\circ~$ 2 transistor outputs for alarms or impulse generation, with all the possible configuration parameters

purposes, with RS-485 Modbus communications, monitoring of logical states of other electromechanical

o 2 digital inputs, with control over the selection of the unit's tariffs or configurable for monitoring

units. (RCCBs, thermal-magnetic circuit breakers, etc.)

parameter (energy, costs, kgCO₂, total meter or tariff hours)

calculate, with built-in expansion modules with analogue outputs.

 $\circ\;$ Electrical parameters: instantaneous, maximum, minimum (with date and time) and demand

order to improve its reliability, functionality, design or for other reason

o Incremental electrical parameters (energy), times, costs, emissions

o 3 Tariffs (can be selected via the digital input or RS485 communications)

CVM-B100-ITF-485-ICT2

Power analyzer, colour display, panel mounted

Circutor

Circutor

Code: M56011.

Power analyzers for panel

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,

400 Hz Applications

Military

order to improve its reliability, functionality, design or for other reasons.

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Power analyzer, colour display, panel mounted

CVM-B100-ITF-485-ICT2

these signals to SCADA systems through communication systems \circ 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.

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

o Transducer that converts analogue signals to any instantaneous parameter that the unit can measure or

 \circ Display of process signals, with a built-in expansion module with analogue inputs; optional reporting of

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

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Specifications

AC power supply

Installation category

Circutor

Circutor

CAT III 300 V

máx. 23.9 VA

100 ... 240 V ~

Panel 92x92

0,516

45 ... 65Hz

Consumption Frequency Nominal voltage DC power supply Installation category Consumption

CAT III 300 V max. 12.2 W 120 ... 300 Vdd Nominal voltage

Mechanical characteristics 97 x 99 x 99 (mm) Self-extinguishing V0 plastic

Envelope Fastening

Environmental characteristics IP 40 (Front), IP 65 (Sealing), IP 30 (unmounted) Protection class Relative humidity (without condensation) 5 ... 95% -20... +80 °C Storage temperature -10...+60 °C Working temperature Standards UL 61010-1 3rd edition, CAN/CSA-C22.2 No.61010-1 3rd. edition 2012-05 Certifications

2000

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

Electrical safety, Maximum height (m)

Standards

Maximum input current consumption 0,9 VA 100 A Maximum pulse current Minimum current measurement 0,01 A (.../5A, .../1A, .../0,250A Voltage measurement circuit

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Power analyzer, colour display, panel mounted

CVM-B100-ITF-485-ICT2

Power analyzers for panel

Code: M56011.

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Circutor

Circutor

10 V~ Minimum measurement voltage (Vstart) Communications Fieldbus (BACnet) MS/TP

1-2

non

CAT III 600V

1.2ΜΩ

40...70Hz

40...70 Hz

RS-485 / RTU

0,15VA

Stop bits (ModBus) Parity (BACnet) Parity Protocol

Fieldbus (ModBus)

Stop bits (BACnet)

non-pair-impar (Modbus) ModBus/BACnet 9600-19200-38400-57600-76800-115200

4:3 Display format LED 3 LED (CPU-Keys-ALARM) VGA (640x480) Resolution of the display Capacitive, 3 keys Keyboard TFT color Display type 3.5" Visible display area size Digital inputs 4 kV Input/output insulation Quantity

Potential-free contact

5 mA

15 Vdc

3x10⁴ cycles

1x10⁷ cycles 1500 VA

1 ms

NPN

Type Digital relay outputs Electrical life (at maximum load)

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0,3 ms/0,7 ms

Class 0.1 (.../5A, .../1A, .../0.250A)

0.01...0.3A (.../0.250A)

class 1 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), calculated (.../0.250A)

class 1 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), calculated (.../0.250A)

(Vn 230/110 Vac) class 0.5 ± 1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A),

(IEC 62053-22) Class 0.5S (.../5A), Class 1 (.../1A), Class 1 (.../0.250A)

(Vn 230/110 Vac) Class 1 \pm 1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A

(IEC 62053-23) Class 1 (.../5A), Class 2 (.../1A, .../0.250A)

1 kHz

130 mA

48 Vdc

Power analyzers for panel

Code: M56011.

Phase current measurement Neutral current measurement Reactive energy measurement (kvarh) Reactive power measurement (kvar)

Maximum current

Maximum voltage

Measurement accuracy

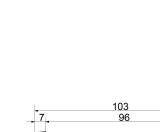
Frequency measurement

(Vn 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../0.250A) class 0,5 (.../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A)

CVM-B Power analyzer, colour display, panel mounted Transistor Digital Communications Protocol CODE TYPE Input current N° relays output inputs M56011. CVM-B100-ITF-485-ICT2 .../5 A | .../1 A | .../250 mA RS-485 Modbus/RTU | BACnet Modbus/RTU | BACnet RS-485 M56111. CVM-B150-ITF-485-ICT2 .../5 A | .../1 A | .../250 mA 2 4-quadrant measuring unit. See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B Circutor Creation date: 07/06/2023 - CIRCUTOR, SAU reserves the right to make tec order to improve its reliability, functionality, design or for other reasons. It accepts no liability for any errors, inaccuracies or possible lack of information in this docume

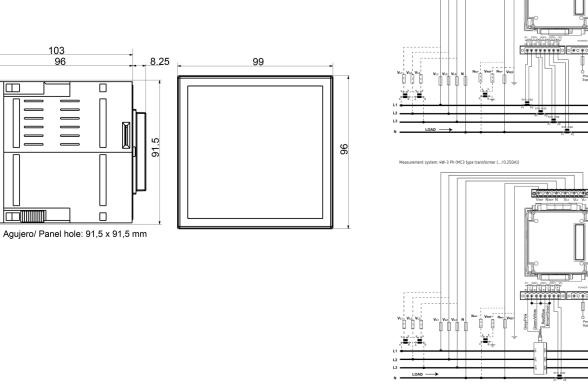
Circutor

Connections Dimensions



Circutor

99



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Power analyzer, colour display, panel mounted

Circutor

CVM-B150-ITF-485-ICT2

CVM-B150-ITF-485-ICT2, Power analyzer

Code: M56111.

> Protocol: Modbus/RTU | BACnet > Energy accuracy: 0,5 S (.../5A) > Communications: RS-485 > Transistor output: 2

> N° relays: 2

Description

> Digital inputs: 2 > Input current: .../5 A | .../1 A | .../250 mA > Mounting: Pannel > Modules: 144 x 144

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.

The **CVM-B100** and **CVM-B150** units are panel mounted three-phase power analyzers (dimensions: 96x96

Features: o Format: 96x96 (CVM B100) and 144x144 (CVM B150) o High-resolution VGA colour screen

 IP 65 front panel protection (with sealing joint) \circ 5 voltage inputs (3 phases + neutral + earth) 1000 V_{f-f} 4 Current inputs, ITF

Class 0.2 voltage and current accuracy

RS485 communications port (Modbus/RTU and BACnet protocols)

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

o Customisation of parameters to be displayed Operating hour indicator for preventive maintenance.

 $\circ\;$ Electrical parameters: instantaneous, maximum, minimum (with date and time) and demand

o Innovative SCV interface (Slide, Choose & View) for versatile data display, enabling the customisation of

Page 2 of 6

Page 3 of 6

Other features:

the parameters displayed on the screen

Universal power supply source

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 $\circ~$ 2 Relay outputs for alarms with delay, times, ON and OFF, etc.

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Power analyzer, colour display, panel mounted

Power analyzers for panel

CVM-B150-ITF-485-ICT2

Application

Military

Code: M56111.

purposes, with RS-485 Modbus communications, monitoring of logical states of other electromechanical units. (RCCBs, thermal-magnetic circuit breakers, etc.)

hysteresis, connection/disconnection delays, normally open or closed standby status and interlocking. \circ 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.

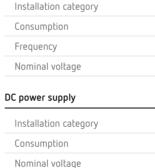
 $\circ~$ 2 transistor outputs for alarms or impulse generation, with all the possible configuration parameters

o 2 digital inputs, with control over the selection of the unit's tariffs or configurable for monitoring

 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

CVM-B150-ITF-485-ICT2 Power analyzers for panel



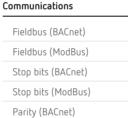
max. 11.9 W 120 ... 300 Vdd

Self-extinguishing V0 plastic Panel 138x138 0,704 **Environmental characteristics** IP 40 (Front), IP 65 (Sealing), IP 30 (unmounted)

Protection class 5 ... 95% Relative humidity (without condensation) -20... +80 °C Storage temperature

Code: M56111.

order to improve its reliability, functionality, design or for other reasons.
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Voltage measuring range

Maximum input voltage consumption

Minimum measurement voltage (Vstart)

4:3

Keyboard Display type Visible display area size

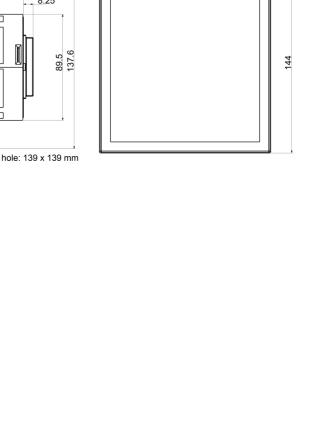
Maximum switching capacity Digital transistor outputs Pulse width

Maximum frequency Maximum current Maximum voltage

Phase current measurement

Power analyzer, colour display, panel mounted Input current M56011. CVM-B100-ITF-485-ICT2 .../5 A | .../1 A | .../250 mA M56111. CVM-B150-ITF-485-ICT2 .../5 A | .../1 A | .../250 mA

Power analyzer, colour display, panel mounted

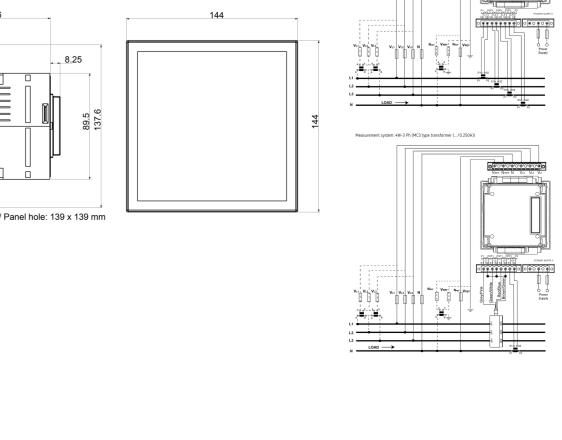


3 LED (CPU-Keys-ALARM) VGA (640x480) Capacitive, 3 keys TFT color 5.6" 4 kV Potential-free contact 5 mA 15 Vdc 3x10⁴ cycles 1x10⁷ cycles 1500 VA 1 ms NPN It accepts no liability for any errors, inaccuracies or possible lack of information Power analyzer, colour display, panel mounted Page 5 of 6 CVM-B150-ITF-485-ICT2 Power analyzers for panel Code: M56111. 0,3 ms/0,7 ms 1 kHz 130 mA 48 Vdc Class 0.1 (.../5A, .../1A, .../0.250A) class 1 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), calculated (.../0.250A) class 1 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), calculated (.../0.250A) (IEC 62053-23) Class 1 (.../5A), Class 2 (.../1A, .../0.250A) (Vn 230/110 Vac) Class 1 ± 1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (Vn 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../0.250A) (IEC 62053-22) Class 0.5S (.../5A), Class 1 (.../1A), Class 1 (.../0.250A) (Vn 230/110 Vac) class 0.5 ±1 digit 0.05...6A (.../5A),0.01...1.2A (.../1A), 0.01...0.3A (.../0.250A) class 0,5 (.../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A) Class 0.5 ±1 digit (50...600 Vca, .../5A, .../1A, .../0.250A) Class 0.5 ±1 digit (50...600 Vca, .../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A)

Neutral current measurement Reactive energy measurement (kvarh) Reactive power measurement (kvar) Apparent power measurement (kVA) Active energy measurement (kWh) Active power measurement (kW) Neutral voltage measurement Current harmonics (THD) Voltage harmonics (THD)

Code: M56111. Connections Dimensions

CVM-B150-ITF-485-ICT2



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Circutor

Circutor

Specifications

AC power supply

Envelope

Fastening

Weight (kg)

Page 3 of 6

Nominal voltage Mechanical characteristics Size (mm) width x height x depth

Nominal current (In) Phase current measuring range Neutral current measuring range Maximum input current consumption Maximum pulse current Minimum current measurement

Voltage measurement circuit

Circutor

Page 4 of 6

Input impedance Frequency measuring range

Protocol User interface Display format

Resolution of the display

Parity

LED

Type

Туре

Circutor

Circutor

Power factor measurement Current THD Voltage THD Phase voltage measurement

CVM-B

CODE

TYPE

Power analyzers for panel

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, \circ Display of process signals, with a built-in expansion module with analogue inputs; optional reporting of these signals to SCADA systems through communication systems \circ Control of electrical load or alarm signal operations by programming the transistor or relay outputs that are built-in or added through expansion modules.

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144 x 144 x 96 (mm)

CAT III 300 V

máx. 29.4 VA

100 ... 240 V ~

CAT III 300 V

45 ... 65Hz

-10...+60 °C Working temperature Standards UL 61010-1 3rd edition, CAN/CSA-C22.2 No.61010-1 3rd. edition 2012-05 Certifications 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 CAT III 600 V Installation category .../5A, .../1A, .../0.250A

0,9 VA

100 A

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0.01...10A (.../5A),0.01...2A (.../1A), 0.01...0.5A (.../0.250A)

0.02...0.5A (.../0.250A, calculated)

0,01 A (.../5A, .../1A, .../0,250A

Power analyzers for panel Code: M56111. CAT III 600V Installation category 1.2ΜΩ

40...70Hz

40...70 Hz

0,15VA

10 V~

MS/TP

RS-485 / RTU 1-2 non non-pair-impar (Modbus) ModBus/BACnet 9600-19200-38400-57600-76800-115200

Digital inputs Input/output insulation Quantity Maximum short-circuit current Maximum open circuit voltage Digital relay outputs Electrical life (at maximum load) Mechanical life

Pulse output, time period (Ton / Toff) Measurement accuracy Frequency measurement

4-quadrant measuring unit. See expansion modules and accessories (Sealing gaskets) for CVM-A / CVM-B Circutor Creation date: 07/06/2023 - CIRCUTOR, SAU reserves the right to make tech order to improve its reliability, functionality, design or for other reasons. Circutor

Transistor

output

Digital

inputs

2

2

N° relays

Communications Protocol

Modbus/RTU | BACnet

Modbus/RTU | BACnet

RS-485

RS-485

38 .

Agujero / Panel hole: 139 x 139 mm

Circutor Circutor

Page 2 of 6

Power analyzers for panel Code: M56011.

Size (mm) width x height x depth Weight (kg)

Current measurement circuit CAT III 600 V Installation category Nominal current (In) .../5A, .../1A, .../0.250A 0.01...10A (.../5A),0.01...2A (.../1A), 0.01...0.5A (.../0.250A) Phase current measuring range 0.02...0.5A (.../0.250A, calculated) Neutral current measuring range

Installation category Input impedance Frequency measuring range Voltage measuring range

Maximum input voltage consumption

User interface

Maximum short-circuit current Maximum open circuit voltage

Mechanical life Maximum switching capacity Digital transistor outputs Pulse width Quantity Type

Pulse output, time period (Ton / Toff) Maximum frequency

Apparent power measurement (kVA) Active energy measurement (kWh) Active power measurement (kW) Power factor measurement Current THD Voltage THD Phase voltage measurement

Neutral voltage measurement

Current harmonics (THD) Voltage harmonics (THD)

8.25



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class 1 (.../5A, .../1A, .../0.250A) Class 0.5 ±1 digit (50...600 Vca, .../5A, .../1A, .../0.250A) Class 0.5 ±1 digit (50...600 Vca, .../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A) class 1 (.../5A, .../1A, .../0.250A) Power analyzer, colour display, panel mounted Page 6 of 6 CVM-B100-ITF-485-ICT2 Power analyzers for panel Code: M56011.