

BCM101

AC Precision Distribution Monitoring Unit



Elecnova

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BCM 101

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Overview

BCM101 AC precision distribution monitoring unit is used to monitor electrical parameters of array cabinet, to measure electrical parameters such as voltage, current, energy and harmonics of inlet and outlet branches and to monitor the switch status of all circuit breakers in data center. BCM101 is equipped with trip alarm function and over current alarm function which can be set in every output circuit by two-level users so as to prevent potential power failure. BCM101 is configured with 7-inch human-machine interface and Ethernet communication interface which makes it simple to be connected to other systems.

Features

- Modular design, independent incoming line monitoring module, outgoing line monitoring module, CT module, Switch monitoring module and display module;
- 7-inch human-machine interface for convenient interactive operation,
- Ethernet or RS485 communication interface for connection with superior monitoring system;
- Pluggable CT and special cable for convenient wiring;
- Two-level threshold alarm function for effective early warning;
- All the alarming points can be set with enable switches for testing and operation at field;
- Relay output function to realize grading alarm for important parameters
- Measured voltage and current of each feeder circuit correspond to each other, so as not to be influenced by single phase or three phase load distribution
- 0.1 Class current transformer and special energy metering chip to guarantee the measurement accuracy.

Components

Name	Function
Main module (Incoming line monitoring module) BCM101-M1 BCM101-M2	BCM101-M1 can measure the electrical parameters of one three-phase circuit, and BCM101-M2 can measure the electrical parameters of two three-phase circuits. The electrical parameters include voltage, zero to earth voltage, current, power, frequency, energy, demand, extreme values, harmonics and temperature. The main modules are equipped with two RS485 communication ports, one Ethernet port for option, four digital inputs and two relay outputs; they are also equipped with two busbar interfaces which can be connected with feeder monitoring module and switch monitoring module. The main modules can record tariff energy and save the energy of ten years. They can record 1024 pieces of SOE event records, 1024 pieces of real-time alarm records and 12800 pieces of alarm records.
Slave module (Feeder monitoring module) BCM101-S	BCM101-S can measure the electrical parameters of thirty single-phase circuits. The electrical parameters include voltage, current, power, frequency, energy, demand, extreme values and harmonics. This module is equipped with busbar interface which is used to extend the module. It is also equipped with thirty digital inputs which can judge the opening and closing of circuit breaker through voltage values.
Switch monitoring module BCM101-K	BCM101-K can monitor the status of sixty switches with wet contact input. It is equipped with two busbar interfaces which are used to extend this module.
Current transformer SHI-BCT50II	SHI-BCT50II is Solid core current transformer. The max. input signal is 63A.
Current transformer SHI-BCT100II	SHI-BCT100II is Solid core current transformer. The max. input signal is 120A.
Module connection line BCM101-L1	BCM101-L1 is not only communication line but also power supply line. It is used for the connection between main module and slave module, two slave modules as well as slave module and switch monitoring module. It also provides power supply to slave module and switch monitoring module.
CT connection line BCM101-L3	BCM101-L3 is used to connect current signal between CT and slave module.
Display module BCM101-HMI	BCM101-HMI is used to display measuring electrical parameters of incoming line/feeder and status of circuit breaker.
Power supply module BCM101-P	BCM101-P is used to provide DC24V working power supply for monitoring unit.

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Parameters



BCM101-M1

BCM101-M2

Parameters		Specification
Accuracy		U, I: 0.2 class, P, Q, PF: 0.5 class
		Active energy: 0.5S class, Reactive energy: 2 class
Voltage	Rated value	Three-phase AC 3×220/380V, single phase AC 220V
	Overload	Continuous: 1.2Un, Instantaneous: 2Un/1min
	Power consumption	≤0.1VA (each phase)
	Impedance	>400 kΩ
Signal input	Rated value	AC5A/AC1A
	Overload	Continuous: 1.2In, Instantaneous: 10In/5s
Current	Power consumption	≤0.2VA (each phase)
	Impedance	≤20mΩ
	Frequency	45~65Hz, accuracy: ±0.01Hz
Digital input	Type	4 Digital inputs, dry contact
	Withstand voltage	2kV AC
Relay output	Capacity	2 relay outputs, AC 250V/5A DC 30V/3A
	Withstand voltage	2kV AC
Temperature		2 temperatures, NTC3950
Communication		2 RS485 communication ports, Modbus-RTU protocol
		1 RJ45 communication port, Modbus-TCP protocol
Busbar interface		2
Power supply	Working range	DC : 24V
	Power consumption	≤3VA
Installation dimension		L×W×H(mm): 126*133*50, DIN35mm rail mounted

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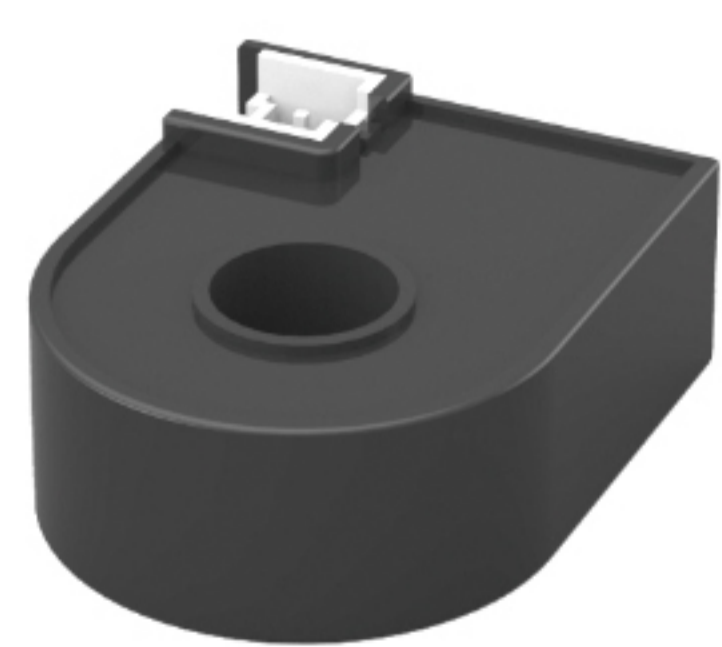
AC Precision Distribution Monitoring Unit

Parameters



BCM101-S

Parameter	Specification
Accuracy	U, I: 0.2 class, P, Q, PF: 0.5 class Active energy: 1 class, Reactive energy: 2 class
Voltage	Rated value: Single phase AC 220V
	Overload: Continuous: 1.2Un, Instantaneous: 2Un/1min
	Power consumption: $\leq 0.1VA$ (each phase)
Signal input	Impedance: $> 1.6M\Omega$
	Rated value: External current transformer with max. current 100A
Current	Overload: Continuous: 1.2In, Instantaneous: 10In/5s
	Power consumption: $\leq 0.2VA$ (each phase)
	Impedance: $\leq 20m\Omega$
Frequency	45~65Hz, accuracy: $\pm 0.01Hz$
Digital input status	30 digital inputs, judging the opening and closing of circuit breaker through voltage value. If voltage $> 120V$, circuit breaker closes; if voltage $< 110V$, circuit breaker opens.
Busbar interface	2
Installation dimension	L×W×H(mm): 126*125*50, DIN35mm rail mounted



Current transformer module

Parameter	Specification
Rated value	SHI-BCT50 II : 5(50)A, SHI-BCT100 II : 5(100)A
Accuracy	Class 0.1
Overload	Continuous: 1.2In, Instantaneous: 10In/5s
Power consumption	$\leq 0.2VA$ (each phase)
Impedance	$\leq 20m\Omega$
Insulation	4000V/min
Installation dimension	5(50)A - L×W×H(mm): 26*33.5*11.5, pore diameter: $\varnothing 8.9mm$, 5(100)A - L×W×H(mm): 45*52.5*17.5, pore diameter: $\varnothing 19mm$,

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Parameters



BCM 101-K

Parameter	Specification
Circuits	60 circuits, wet contact input (need auxiliary power supply)
Input voltage range	24V±2V
Insulation	2kV
Busbar interface	2
Installation dimension	L×W×H(mm): 126*133*50, DIN35mm rail mounted



BCM 101-HMI

Parameter	Specification
Display mode	7-inch touch LCD, resolution 800*480
Interface	RS485 Modbus-RTU protocol
	USB USB2.0
Working range	(24±20%)VDC
Power supply	Power consumption
	≤ 5W
Installation dimension	Cut-out (mm):215×152, panel mounted



BCM 101-P

Parameter	Specification
Input voltage range	AC/DC: 80V~270V
Output voltage	DC: 24V±1V
Output power	≤ 20W
Efficiency	> 75%
Isolation strength	AC 2kV/min
Installation dimension	L×W×H(mm):36×90×63.5, DIN35mm rail mounted

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Typical wiring

Double incoming line system

Double independent incoming lines system, take branch circuits 120 in total for example.

Monitoring units are installed in power distribution cabinet to realize switch status monitoring of incoming line circuit, feeder circuit and feeder branch circuits.

BCM101-S can measure 30 single phase circuits. If the number of circuits is bigger than 30, please extend to two BCM101-S modules; if the number of circuits is bigger than 60, please extend to 3 BCM101-S modules. If user needs other information of switches, please extend with BCM101-K module.

