

PowerLogic® BCM Series Branch Current Monitors



PowerLogic BCM42 dual-row branch current monitor, showing CT strips, connecting ribbon cables and signal acquisition board.

Applications:

- Circuit load monitoring
- Current limit alarming
- Load-based cost allocation
- Load management
- Load balancing
- Lighting panel monitoring

Square D® PowerLogic® BCM series branch current monitors are a simple and cost-effective solution for electrical load management at panelboards. They are ideally suited for applications where load capacity requirements are dynamic, such as power distribution units (PDUs) for the data center industry.

PowerLogic BCM series products are UL508 open type devices without enclosure. A choice of two models with associated options makes new build or retrofit installations fast and easy:

- **Solid-core:** The PowerLogic BCM42 model offers solid-core mini-CTs in a dual-row configuration for monitoring of 42 individual circuits. An SR option provides the CT strips in a single-row configuration for in-line applications.
- **Split-core:** The PowerLogic BCMSC model offers split-core mini CTs for non-intrusive installation applications on critical loads, with options for monitoring up to 42 individual circuits.

Each branch current monitor reports the current level at each of the breakers of the panelboard, delivering timely circuit loading information using Modbus® protocol over an RS-485 communications network to system software, such as PowerLogic ION Enterprise®, PowerLogic System Manager™ or other compatible system.

In addition, as a circuit load approaches one of two user-definable warning and critical alarm thresholds the branch current monitor can send a notification back to the central monitoring software or system. Each threshold features a configurable time delay. Alarm status is stored in on-board Modbus registers.

Key features and benefits:

- **Cost-effective:** a single PowerLogic BCM reports on current consumed on up to 42 circuits of a typical dual- or single-row panelboard, such as Square D NQOD series.
- **Easy installation:** solid-core CTs are available spaced for 3/4" or 1" centers, split-core CTs are available for quick installation on non-interruptible loads.
- **Simple communications wiring:** daisy chain up to 63 PowerLogic BCM or other devices on an RS-485 string for easy networking.
- **Alarm condition monitoring:** Two current limit alarms provide early notification of potential overload on the circuit they are monitoring. Can be set to 70% of current sensor maximum (configurable).

Specifications

Accuracy

- BCM42: $\pm 2\%$ of reading from 5 A to 50 A
- BCMSC, 50A option: $\pm 5\%$ of reading from 5 A to 50 A
- BCMSC, 100A option: $\pm 5\%$ of reading from 10A to 100A

Current inputs

- Number of channels: up to 42, dependent on model and options
- Connection to conductor: solid- or split-core toroidal CT, dependent on model
- Overload specifications: tested to 10,000 A single cycle
- Frequency: 50/60 Hz
- Measurement resolution: 1280 Hz sampling, 1.2 second update rate
- Designed for operation with voltages below 600 V phase-to-phase

Serial RS-485 port

- Connection: 2-wire or 4-wire*, up to 63 devices per loop
- Protocol: Modbus® RTU, address configurable for 1 to 247*, parity configurable for none / odd / even*, bit format 1 start / 8 data / 1 stop
- Data rate: 2400, 4800, 9600, or 19200 bps*
- Connector: 5-position, captured wire, pluggable

*DIP switch selectable

Alarm registers

- Warning alarm register: configurable threshold (software configurable)
- Critical alarm register: configurable threshold (software configurable)

CT wire gauge compatibility

- BCM42: accommodates up to #6 THHN insulated conductors
- BCMSC: accommodates up to 1 AWG insulated conductors

Control power

- Standard: 120 VAC (+10/-25%), line-to-neutral, 50/60 Hz
- Optional: 240 VAC (+10/-25%), line-to-neutral, 50/60 Hz

Environmental conditions

- Operating temperature range: 0 to 60°C (<95% RH, non-condensing)
- Storage temperature range: -25°C to 70°C

Warranty

- 5 years



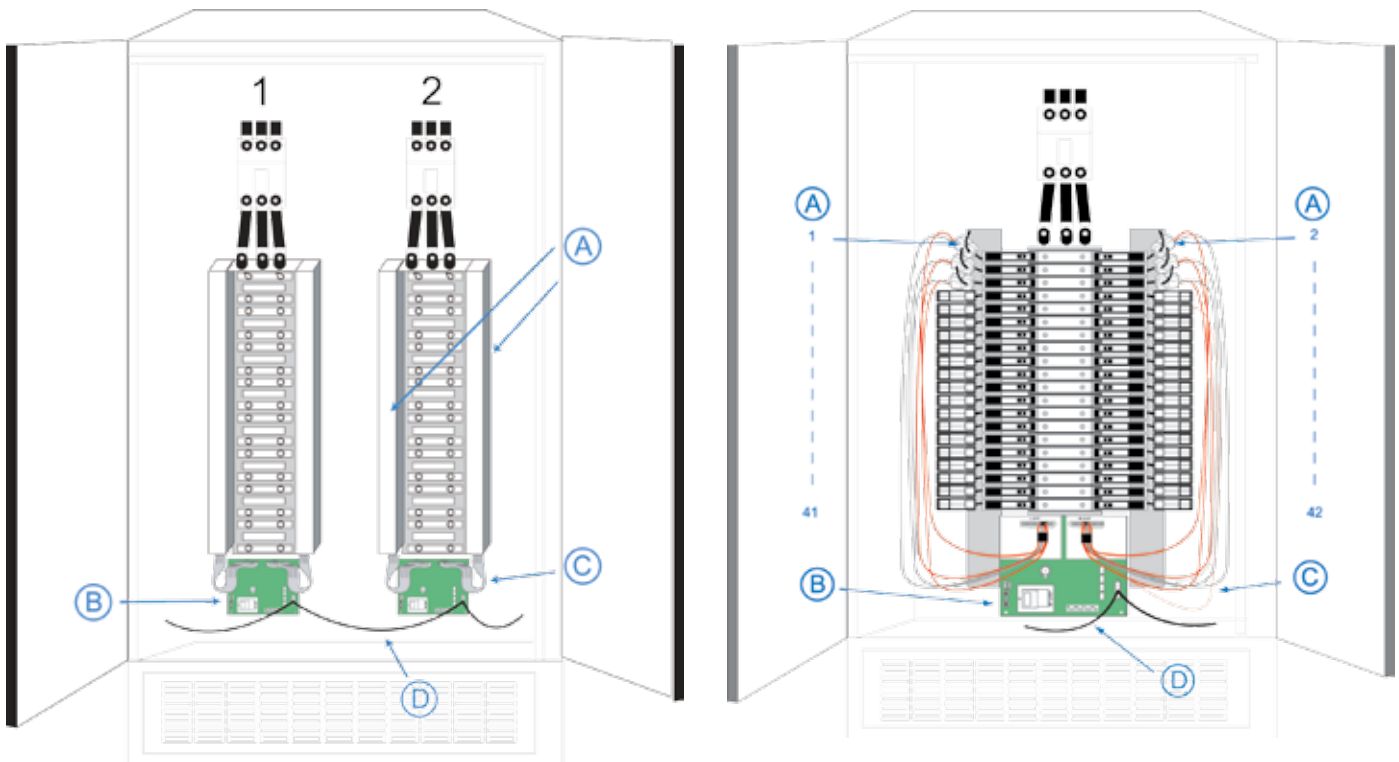
PowerLogic BCM42 branch current monitor with single-row SR option, showing vertically oriented CT strips, connecting ribbon cables and signal acquisition board.



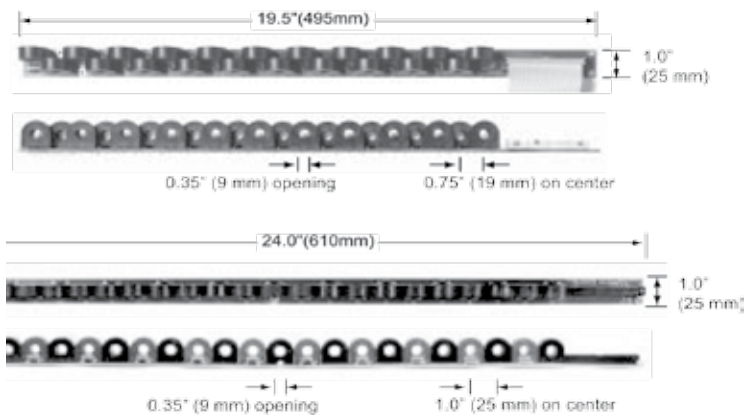
PowerLogic BCMSC split-core branch current monitor, showing two connected CTs (maximum 42 possible), signal acquisition board and mounting bracket.



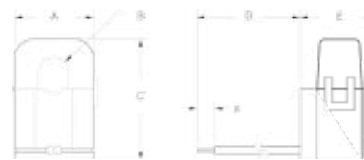
Programmable warning (A) and critical (B) alarm thresholds (example is for 20 Amp circuit).



Typical panelboard installation for BCM42 dual-row model (left) and BCMSC split-core model (right), showing solid-core CT strips or individual split-core CTs (A), signal acquisition board (B), ribbon cable or CT wires (C), and RS-485 network cabling (D).

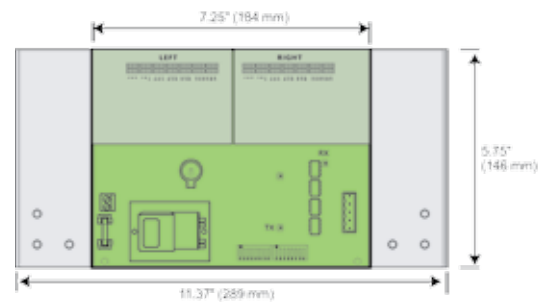


CT strip dimensions for BCM42 and BCM42R, including options for 0.75 and 1.0 inch on center spacing.



	50A	100A
A	1.04" (26 mm)	2.15" (55 mm)
B	0.40" (10 mm)	0.518" (13 mm)
C	1.58" (40 mm)	2.34" (60 mm)
D	6.0' (1.82 m)	6.0' (1.82 m)
E	1.04" (26 mm)	0.915" (24 mm)
F	0.24" (6 mm)	0.24" (6 mm)

BCM42R split-core CT dimensions and wire length for 50A and 100A options.



Signal acquisition board and mounting bracket dimensions

Model / Options*	CT Type, Rating	Circuits	CT Spacing	Alarm Monitoring
BCM42	Solid-core, dual-row, 50A	42	0.75 in. (19 mm)	▶
BCM42C1	Solid-core, dual-row, 50A	42	1.0 in. (25 mm)	▶
BCM42SR	Solid-core, single-row, 50A	42	0.75 in. (19 mm)	▶
BCM42SRC1	Solid-core, single-row, 50A	42	1.0 in. (25 mm)	▶
BCM5C12	Split-core, individual, 50A	12		▶
BCM5C18	Split-core, individual, 50A	18		▶
BCM5C24	Split-core, individual, 50A	24		▶
BCM5C30	Split-core, individual, 50A	30		▶
BCM5C42	Split-core, individual, 50A	42		▶
BCM5C12H	Split-core, individual, 100A	12		▶
BCM5C24H	Split-core, individual, 100A	24		▶
BCM5C42H	Split-core, individual, 100A	42		▶

*All models above feature a 120 VAC power supply. For 240 VAC power supply, append the letter E to the part number above. Example: BCM42**E**

Engineering services

Our services team can help you with system selection, project management, integration, custom reporting, documentation, and training to meet your organization's unique needs.

PowerLogic[®]

Square D / Schneider Electric

295 Tech Park Drive
 LaVergne, TN 37086
 Tel: (615) 287-3500
 PowerLogic.com