BCMS

Branch Circuit Monitoring Solutions

JCOMM® & BCMS Hub

What is BCMS?

Provides real time energy usage information down to the branch circuit level.

- BCMS = Branch Circuit Monitoring Solution
- Increases reliability by alarming before circuit breaker gets close to trip points.
- Avoids labor intensive measurements.
- “Split Core CT’s” (Current Transformers) available for retrofitting systems.
- Easily integrates with any network.

BCMS JCOMM® Retrofit

Why do customers need to monitor branch circuits?

1. To capture kWh per circuit usage for individual customers – most data center applications
2. To detect stranded capacity and provide overload protection
3. To capture knowledge of usage for energy management

How did/do customers monitor branch circuits?

Hand-held meter + Clipboard + contractor

or

Monitoring system + Split core CT or Solid core CT

BCMS JCOMM Retrofit

What are the problems customers have with existing methods?

- **Inaccurate** data measurement – with handheld meter prone to human error
- **Ineffective** data – clipboard recording cannot provide data for local measurement only, very hard to port to other system
- **Costly** – hiring a dedicated person for the measurement is expensive

- **Takes hours to install** – with 10 ft. split core whip, it is time consuming to install 84 circuits and make the correct connections – 4 hours per panel
- **Complicated to retrofit** – different enclosures usually required for different mounting applications
- **Limited communication protocol** – future customer investment required when changing communication protocol, e.g. adding SNMP or changing to TCP/IP

BCMS JCOMM Retrofit

What is the VALUE of the new and improved JCOMM Solution?

Pre-Engineered Cable System with numbered Molex connectors

New JCOMM with WaveStar® Color Touch Monitor

1. Pre-engineered cable system saves up to 75% installation time:

- Contractor friendly design to significantly reduce installation time. Reduce typical 4 hours installation to 1 hour.
- Numbered Molex connectors with match split cord CT improve successful connection at the first time.

2. +/- 1% usage (kWh, amp, volt, etc.) measurement during operation*.

- Factory tested accuracy

3. New Wavestar® Color Touch monitor with built-in SNMP or TCP/IP

- SNMP or TCP/IP ready design to eliminate future hardware cost

*1% accuracy is tested in the factory above 10amp after calibration

BCMS JCOMM Retrofit – Key Features

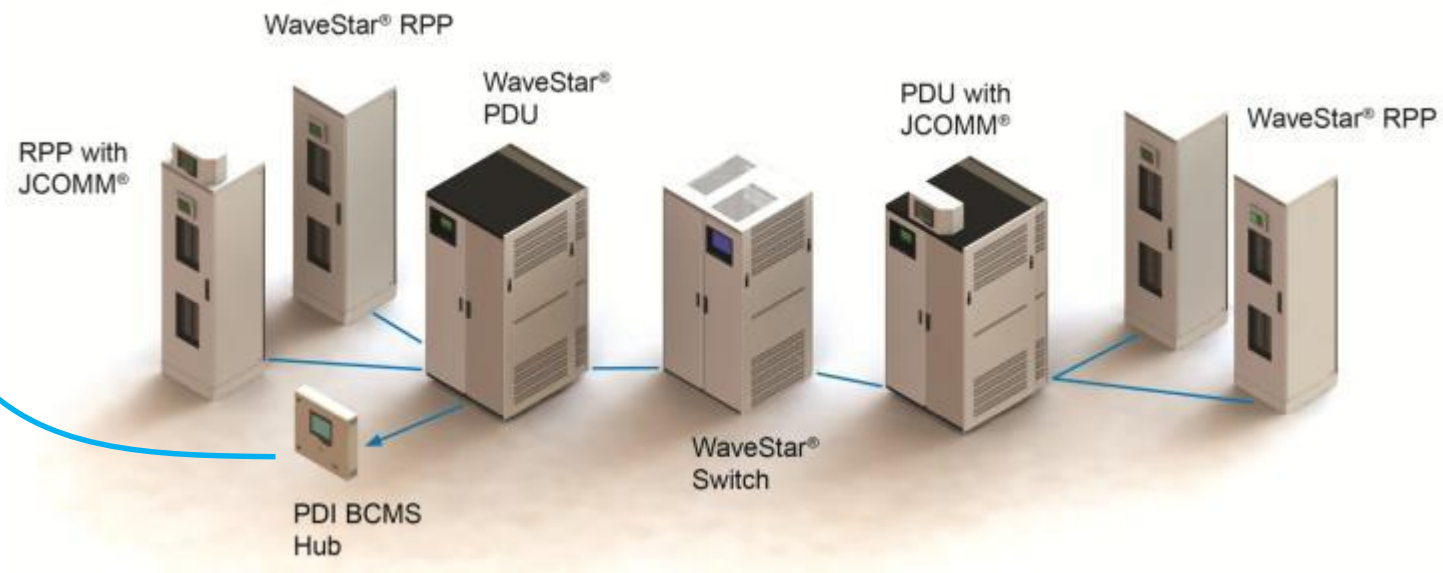
- Easily retrofits any type of distribution unit – PDU, RPP or wall mounted Panel
- Each JCOMM enclosure can monitor up to four 42-pole panelboards & four main feeders with neutral & ground
- Optional local monitor on each unit (WaveStar® Color Touch Screen)
- Pre-engineered cable harnesses with 2 pin Molex connections for fast, clean installation
- Split-core CTs with matching 2 pin Molex connectors – easily removed if damaged
- Reduced installation time – Plug and Play connectors vs traditional 6’ or 10’ whips on a split core CT
- Compact packaging for common installation platforms

BCMS JCOMM Retrofit - Integration

How does BCMS JCOMM® integrate into my Data Center?

BCMS JCOMM® fits on any manufacturer's units or panels and connects to any Building Management System via MODBUS, TCP I/P or SNMP.

SCADA, BMS
DCIM or CPMS



BCMS JCOMM Retrofit - Components

JCOMM® Enclosure

Main Feeder Harness & CT

Branch Circuit Harness & CTs

BCMS JCOMM Retrofit – Display Options

No Monitor

WaveStar® Color Touch Screen

WaveStar® BCMS Hub

Adding the WaveStar® BCMS HUB in conjunction with your JCOMM® retrofit, allows for one centralized monitor to collect up to 70 BCMS devices.

MODBUS RTU & MODBUS TCP I/P are standard forms of communications integrated into the HUB.

BCMS JCOMM Retrofit - Communications

MODBUS RTU is standard on all PDI equipment, but we offer MODBUS TCP I/P and SNMP options

MODBUS to TCP I/P converter

(For faster data collection, add a Modbus TCP I/P Converter to each unit)

BCMS JCOMM Retrofit Harness

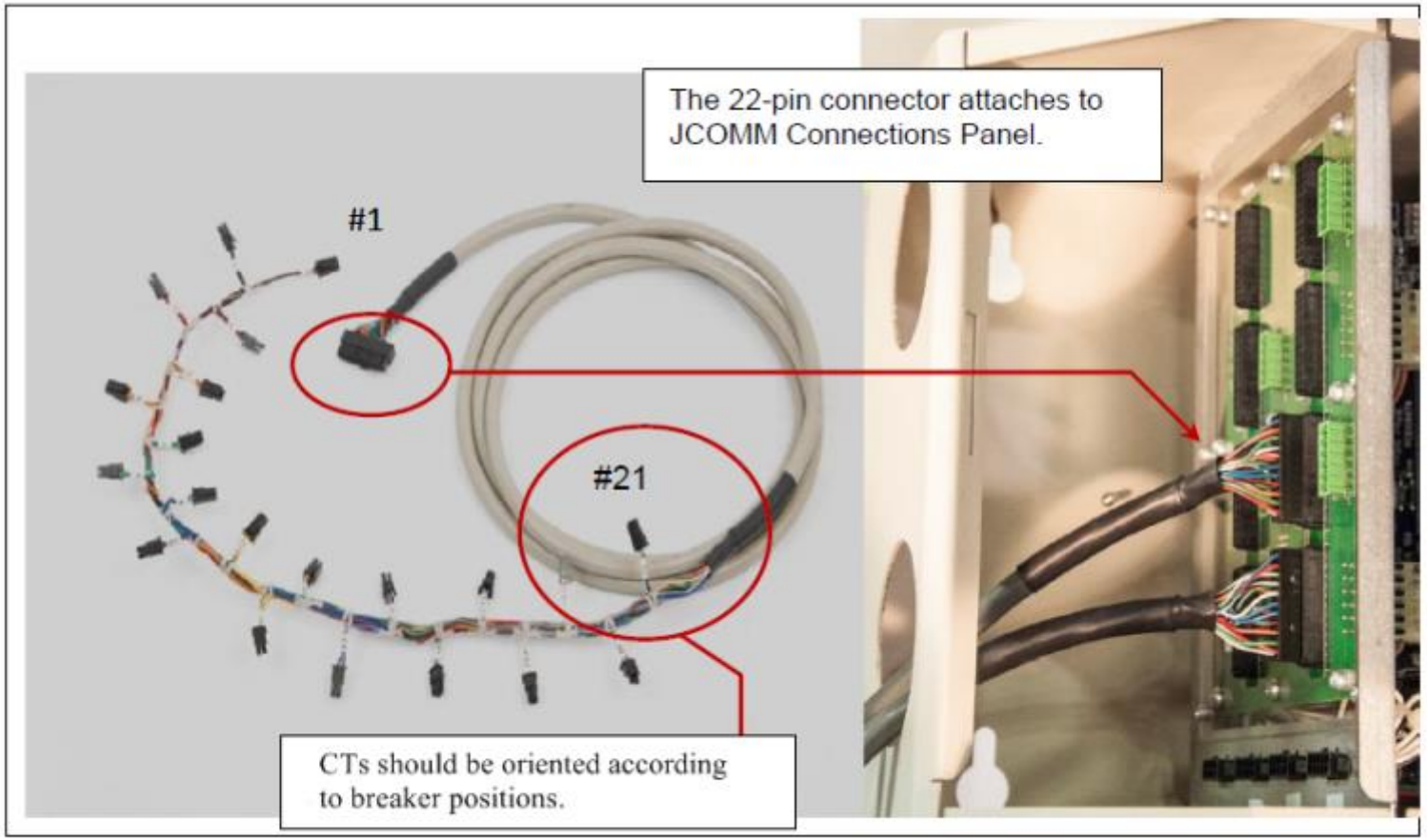
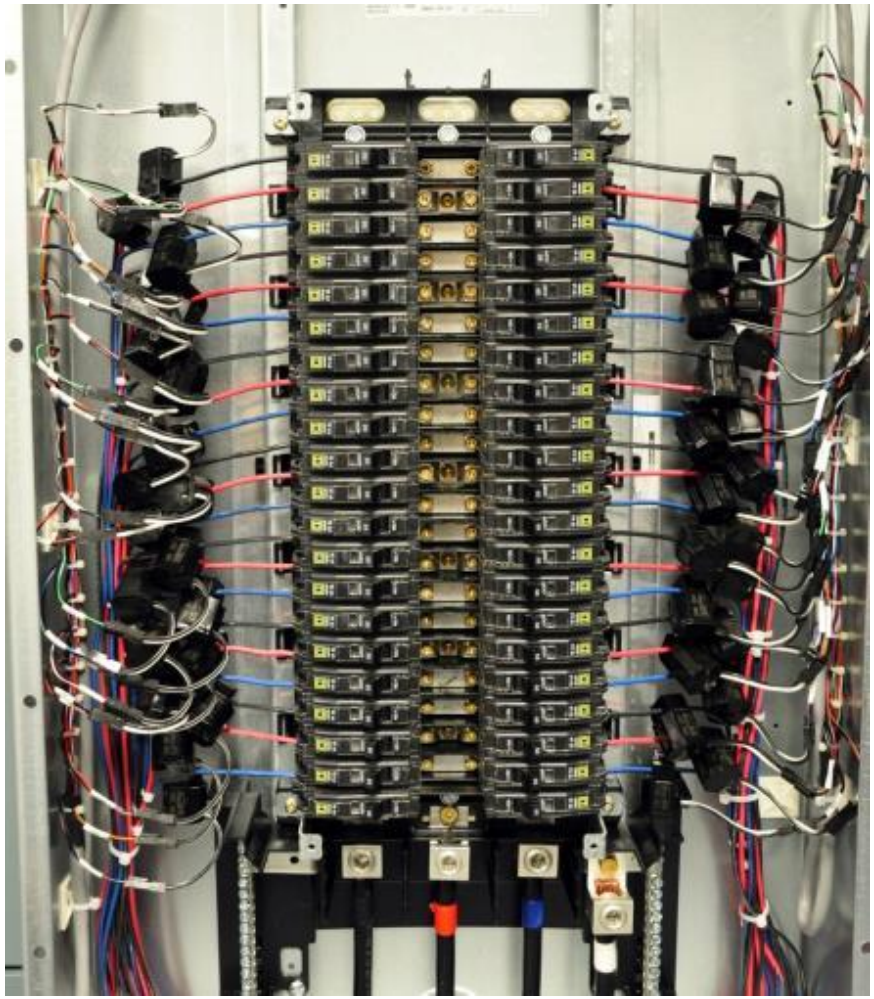


Figure 9 Connect Cable Harness to JCOMM Connections Panel

BCMS JCOMM Retrofit - Installation



New split core harness reduces installation time & the amount of wires associated with typical split core applications.

Split core harnesses are available In 5’, 10’, 15’ & 20’ lengths.

BCMS JCOMM Retrofit - Installation

BCMS JCOMM Retrofit - Installation

Monitoring Data Points

Parameter	Branch Circuit	Panelboard
Current (A)	✔	✔
Average Current (A)	✔	✔
Max Current (A)	✔	✔
Min. Current (A)	✔	✔
Voltage (V)		✔
Frequency (Hz)		✔
Power Factor (PF)		✔
Power (kW)		✔
Energy (kWh)	✔	✔
Apparent Power (kVA)		✔
Power Factor (PF)		✔
THD (%)		✔
% Load	✔	✔
Breaker Trip	✔	✔
Trip Alarms	✔	✔
Current Loss Alarm		✔
Voltage / Current Alarm	✔	✔

Qualifying LEED Points

- Office Buildings
- Universities
- Hospitals
- Factory Automation
- LEED Certification Projects
- Usage Based Leases
- Perform Energy Audits
- Optimize Energy Efficiency
- Selectively Reduce Power During Peak Times
- WaveStar® Local Monitor & BCMS Hub Available