

Core Module Voltage Inputs

Measurement voltage / input power

Standard AC Power Supply Version	90-300 VAC L-N, 50/60 Hz (combined sensing and power supply input)
480 VAC Power Supply Version	160-480 VAC L-L / 0.1A, 50 Hz (combined sensing and power supply input)
24 VDC Power Supply Version	90-300 VAC L-N / 160-480VAC L-L, 50/60 Hz sensing voltage [12-24 VDC power supply voltage]
Overload protection	Standard AC Power Supply Version: Internally fused, external minimum requirements 1.0 A @ 300 VAC 480 VAC Power Supply Version: Internally fused, external minimum requirements 1.25 A @ 500 VAC 24 VDC Power Supply Version: Internally fused, external minimum requirements 1.0 A @ 24 VDC
Current consumption	3 W or <0.1 A @ 277 VAC for AC powered versions 3 W or <0.5A @ 12-24 VDC for DC power supply version

Note: Tap off and end feed interface cards do not require line voltage inputs

Accuracy & Monitoring

Power / energy	IEC 62053-21 Class 0.5, ANSI C12.1-2008 System Accuracy including branch CTs (1% system accuracy includes both the Core Module and branch current sensors)
Voltage	±0.5% of reading 90 to 277 VAC line-to-neutral
Current	±0.5% of reading on solid core CTs; external CTs subject to CT accuracy
Minimum ON current	50 mA
Circuit capacity	24 x 4 channels (96 circuits total); up to 32 tap-offs per Core Module

Interface Card (Tap Off and End Feed)

Circuits supported	Up to six per monitor with multiple monitors permitted per tap-off; up to 96 circuits per Core Module.
Current transformer type (integrated)	Solid core 100 A with 10mm window
Current transformer type (external)	Solid core or split core (0.333 V) 10-3000 A
Dimensions	
Mounting	Integrated in tap-off or end feed or externally mounted using factory provided enclosure
Wiring Interface	Dual RJ45 jacks to facilitate daisy chain wiring; no line voltage connections required

Communications

Data protocols	Modbus TCP/IP (Ethernet), Modbus RTU (RS-485 2 wire), HTML (web server), BACnet IP, SNMP V2, REST API
Ethernet ports	2 x RJ-45 10/100 Mbit
USB port	USB 2.0 Type C
Web server	HTML via standard browser

Ethernet communication

Physical interface	RJ45 connector with 10/100 Mbit Ethernet
Protocols supported	Modbus TCP, BACnet IP, SNMP V2

Serial communication

Physical interface	2-wire RS-485
Serial protocols supported	Modbus RTU
Address range	Fixed at address 1 and 2 for Modbus RTU
Baud rate	9600, 19200, 38400, 57600, 76800, 115200
Communication format	8 data-bits, 1 start-bit, 1 stop-bit
Termination	3 pole connector
Wire size	up to 16 AWG

Digital I/O (Core Module only)

Digital input	Dry Contact (N.O.) with 5V @ 10mA source
Digital output	30 VDC / 0.1 A maximum

Wire size range

Voltage connection	24 to 12 AWG
I/O and serial connections	22 to 16 AWG
Aux. terminals on CT interface boards	26 to 16 AWG

Regulatory

Agency approvals	UL Listed to EN61010-1, IEC/EN61010-1, CE
Installation Category	100-480 VAC Versions: Cat II, pollution degree 2 24 VDC versions: Cat III, pollution degree 2
Conducted and radiated emissions	FCC part 15 Class A, EN55011/EN61000-6-4 Class A (heavy industrial)
Conducted and radiated immunity	EN61000-6-2 and EN61326-1
RoHS compliance	Compliant

Monitored parameters

Monitored parameter	Circuit Level	Input Level
Current per phase	•	•
Max. current per phase	•	•
Current demand per phase	•	•
Current demand per phase	•	•
Max. current demand per phase	•	•
Current phase angle	•	•
Voltage phase angle	•	•
Real power (kW) per phase	•	•
Real power (kW) demand per phase	•	•
Energy (kWh) per phase	•	•
Power factor	•	•
Power factor vector	•	•
Apparent power (kVA)	•	•
Reactive power (kVA)	•	•
THDI	•	•
THDV	•	•
Voltage, L-L and average		•
Voltage, L-N and average		•
Voltage, L-L and per phase		•
Waveform capture	•	•
Presence of voltage ¹	•	•

¹ Requires Enhanced version Core Module and Enhanced solid core CT strips

Features

Feature	Standard version	Enhanced version
Local network access	•	•
Integrated web server	•	•
Field upgradeable feature set	•	•
SD card and network configuration	•	•
Modbus TCP/IP output	•	•
Modbus serial output	•	•
Smart breaker trip detection	•	•
Waveform capture on event per circuit (tap off and end feed)		•
CBEMA ITIC event capture and logging		•

Feature	Standard version	Enhanced version
True circuit display	•	•
SD card data storage		•
Alarming	•	•