

Branch Series Multi-Circuit (Branch) Meter

Monitors up to 96 circuits
On board webserver and data logging
Customizable alarming features

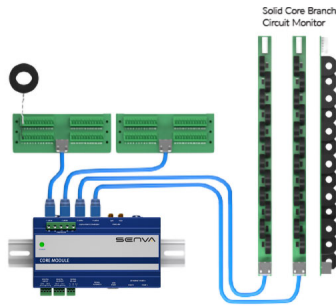


DESCRIPTION

Senva is redefining Branch Circuit Monitoring with a next generation technology that simplifies installation and connectivity while providing instant access to data in a user friendly format. The versatile Core Module™ system is a single monitoring solution with peripherals optimized for Branch Circuit and Multi-Circuit Monitoring applications designed to reduce the cost and complexity associated with legacy multi-circuit monitors.

APPLICATIONS

- Ideal for baseline consumption in premises (e.g., store-to-store comparisons for chains)
- Activity-based costing in commercial and industrial facilities
- More informative than an amperage measurement only
- Great for solid core, split core CTs, and analog for data center



Options for solid core, split core CTs & analog, discrete & pulse inputs

Connectivity Options

- Modbus TCP/IP and RTU
- HTML
- BACnet¹

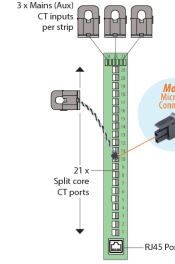


Data Acquisition

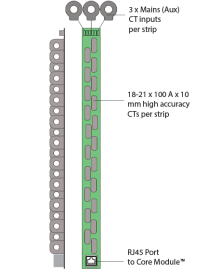
- Web Server**
On board web server provides access to real time and logged data.
- Data Stream**
Open protocols feed data to any third party monitoring system
- Cloud**
View and manage data using the optional plug and play cloud application¹
- Manual Export**
Logged data can be manually exported from the Core Module™

On board webserver for easy setup and data access

Retrofit on panelboard branch circuit

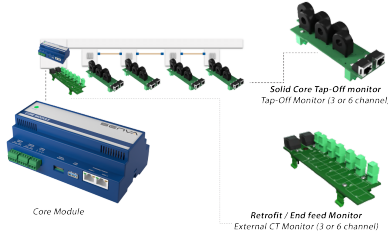


New installation on panelboard branch circuit

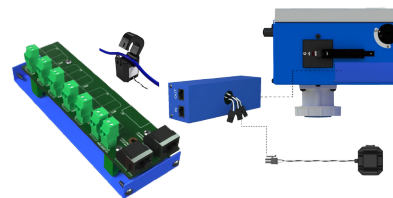


Split Core Strip for Retrofit or Solid Core Strip for New Installations

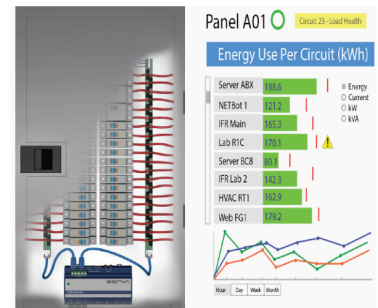
Module supporting up to 24 x 4 channel monitors or 16 x 6 channel monitors or any combination of 3 or channel monitors totaling 96 circuits



Add metering to tap-off boxes or end-feeds in any busway system



Retrofit Monitoring Installation (CTS40x-F)



Presence of Voltage detection accurately indicates breaker status - even under no load

FEATURES

- Optimized for new and retrofit installations with no disruption to critical loads
- Monitors up to 96 circuits
- Options for solid core, split core CTs, and analog, discrete inputs.
- On-board web server provides immediate access to real-time and logged data
- Integrated data logging supports up to 64 GB storage; remotely accessible or manually exportable
- Customizable alarming features
- Select from multiple connectivity options, including Modbus TCP/IP, RTU
- Open protocols allow connection with any third-party monitoring system
- True 0.5% accuracy suitable for billing applications
- Presence of Voltage detection accurately indicates breaker status even under no load conditions
- True-Circuit Display mapping function presents data according to actual circuit configurations
- Detailed power and energy monitoring per circuit, including Waveform capture and THD

ORDERING

Core Module Monitoring Systems

CM02SV	Enhanced Core Module, 90-300 VAC L-N, 50/60 Hz (combined sensing and power supply input); supports 277V L-N / 480V 4W with neutral sources and 240 VAC / 415V 4W sources; use alternate models for 3W sources that do not have a neutral
CM02SV-480	Enhanced Core Module, 160-480 VAC L-L / 0.1A, 50 Hz (combined sensing and power supply input); used for 3W applications where neutral is not available
CM02SV-DC	Enhanced Core Module with 12-24VDC control power required; supports 3W and 4W sources; 90-300 VAC L-N / 160-480VAC L-L, 50/60 Hz sensing voltage
CTS-ENCL1	NEMA 1 Core Module Enclosure

Solid Core CT Strip monitoring system for installations on new panelboards

All systems include 10mm x 100 A solid core CTs and + 3 auxiliary CT terminals per strip for main input CTs

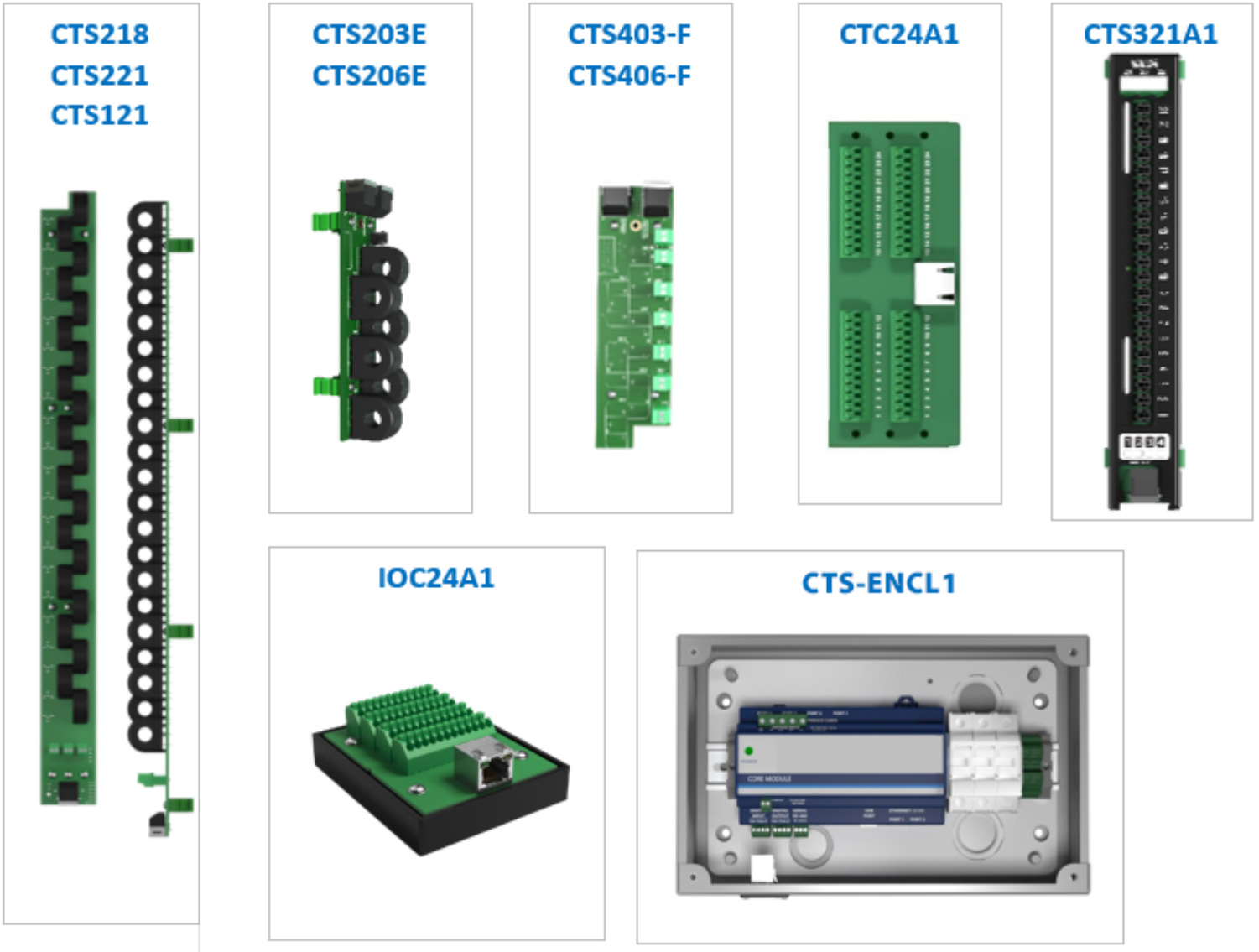
0.75" c-c CT strips

CTS021A	Standard 0.75" CT center 1 x 21 100A solid core CT strip
CTS021B	Enhanced 0.75" CT center 1 x 21 100A solid core CT strip (w/presence of voltage detection to detect if circuit is energized)

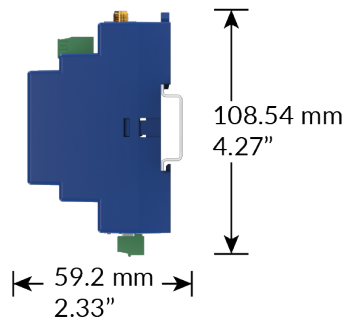
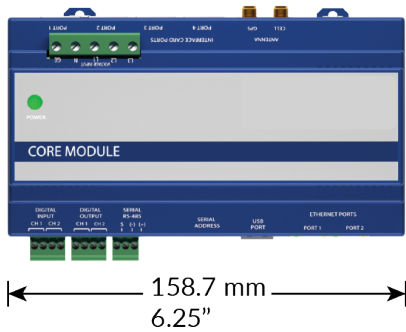
1.0" c-c CT strips

CTS203E	3 channel tap-off monitor with presence of voltage sensing and PC mounted 100 A solid core CTs
CTS206E	6 channel tap-off monitor with presence of voltage sensing and PC mounted 100 A solid core CTs
CTS403-F	3 channel tap-off monitor for remote CTs (end feed and retrofit)
CTS406-F	6 channel tap-off monitor for remote CTs (end feed and retrofit)
CTS121A	Standard 1.0" CT center 1 x 21 100A solid core CT strip
CTS121B	Enhanced 1.0" CT center 1 x 21 100A solid core CT strip (w/presence of

	voltage detection to detect if circuit is energized)
18mm c-c CT strips	
CTS218A	Standard 18mm CT center 1 x 18 100A solid core CT strip
CTS218B	Enhanced 18mm CT center 1 x 18 100A solid core CT strip (w/presence of voltage detection to detect if circuit is energized)
CTS221A	Standard 18mm CT center 1 x 21 100A solid core CT strip
CTS221B	Enhanced 18mm CT center 1 x 21 100A solid core CT strip (w/presence of voltage detection to detect if circuit is energized)
CTS223B	Enhanced 18mm CT center 1 x 23 100A solid core CT strip (w/presence of voltage detection to detect if circuit is energized)
Retrofit Panelboard CT Interface Module (Floating Strip CT interface module) and Core Module monitor	
Floating Strip CT interface boards reside in raceway and interface with 10mm x 75 A or 100 A split core CTs using plug-in quick connects; each	
CTS321A	24-channel Floating Strip split core CT interface board; utilizes branch CTs with connectors
CTSC01050	50 A x 10mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector
CTSC01075	75 A x 10mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector
CTSC010100	100 A x 16mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector
Multi-Circuit Monitoring Systems and Core Module monitor	
The Multi-Circuit Monitoring system supports up to 4 x 24 CT Interface Cards (96 circuits) and accommodates any 0.33 Vout current transformers or native Rogowski coils.	
IOC24A1	24 Channel Digital Input Card
CTC24A1	24 channel Multi-Circuit Monitoring CT interface board; utilizes CTs with bare leads
Current Transformers	
see Current Transformer selection guide for details	
Current Transformer Range: 10-5,000 A; 10mm (3/8") to 254mm (10") diameter window	



DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS				
INPUTS		MONITORED PARAMETERS		
Input power (standard)	90-277 VAC (480 VAC 4W+G) 50/ 60 Hz	Monitored Parameter	Circuit Level	Input Level ¹
Input power (enhanced)	480-600 VAC (3W or 4W+G) 50/ 60 Hz	phase per Current	•	•
DC Control	12-24 VDC nominal (only available on models with DC input power supply)	Max. current per phase	•	•
Overload protection	Internally fused	Current demand (avg. current) per phase	•	•
Power consumption	<5W	Current phase angle	•	•
		Voltage phase angle	•	•
Channels / circuit capacity	24 x 4 channels (96 circuits total)	Real power (kW) per phase	•	•
PERFORMANCE		Real power (kW) demand per phase	•	•
Power/Energy Accuracy	IEC 62053-21 Class 1, ANSI C12.1-2008 System Accuracy (including branch CTs) (1% system accuracy includes both the Core Module and branch current sensors)	Real power (kW) demand max	•	•
Sampling rate	> 3 kHz	Energy (kWh) per phase	•	•
COMMUNICATION		Power factor	•	•
Physical interface	Cat5 or greater Ethernet cable. 10/100Mbit speeds supported			
Data protocols	Modbus TCP/IP (Ethernet), Modbus RTU (RS-485 2 wire), HTML (web server)	Power factor vector	•	•
Baud Rate	9600, 19200, 38400, 57600, 76800, 115200	Apparent power (kVA)	•	•
Ethernet ports	2 x RJ-45 10/100 Mbit	Reactive power (kVA)	•	•
USB port	USB 2.0 Type A	THDI	•	•
Web server	HTML via standard browser	THDV	•	•
		Voltage, L-L and average		•
		Voltage, L-N and average		•
Protocols supported	BACnet/IP			
DIGITAL I/O				
Digital Input	Dry Contact (N.O) with 5V @ 10mA source			
Digital Output	30VDC / 0.1A maximum			
ENVIRONMENTAL		Voltage, L-N and per phase		•
Operating temperature	0 to 60 °C (32 to 140 °F) (<95% RH non-condensing)	Waveform capture	•	•
Storage temperature	-40 to 70 °C (-40 to 158 °F)	Presence of Voltage ³	•	•
Enclosure versions	NEMA 1/IP20 (indoor use);	Ground current ²	•	•
APPROVALS				
Agency approvals	UL61010 IEC/EN61010-1, CE, CAT II	1 - Input level data can be calculated by summing up branch CT measurements or directly measured using CTs. 2 - Required optional ground current CT connected to auxiliary CT input		

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