MONITOR CURRENT, VOLTAGE, AND ENERGY CONSUMPTION WITH ONE DEVICE

5 Year Warranty

Panelboard Monitoring System - Split-Core

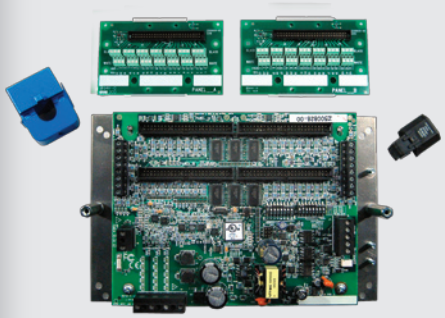
The **E31 Series** Split-Core Panelboard Monitoring System provides a solution for electrical load management, ideal for retro-fit applications for dynamic loads, such as the data storage industry, lighting panels, etc. The adapter boards can be mounted on either DIN Rail or Snaptrack for added flexibility.

The E31 series monitors the current, voltage, and energy consumption of each circuit in a panelboard including the main breaker. The accumulated information can be transmitted through the communications interface or viewed locally through an optional local display. Data updates occur roughly every two seconds to provide timely preventative maintenance information. As a circuit approaches the user-configured thresholds, alarm indicators are triggered, preventing costly downtime from overloaded circuits or failed loads. (See graph below)

A compact solution for panelboard monitoring

- Up to 126 panelboards can be monitored on one RS-485 drop...simplifies wiring
- Reports volts, amps, power, and energy for each circuit...one product covers the whole panelboard
- 92 circuits with one product...saves space
- 4 user-configurable alarm threshold registers... improved load management
- Built-in ability to set the orientation and numbering of the circuits
- 1/4 amp to 100 amp monitoring...widest dynamic range in the industry
- Two mounting options (DIN Rail or Snaptrack)... installation flexibility

E31



Adapter boards can be mounted on either DIN rail or Snaptrack

Round Ribbon Cable

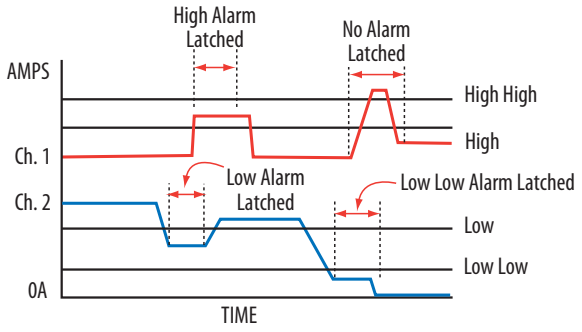


Optional Accessory...great for retrofits

APPLICATIONS

- Load based cost allocation
- Overload protection
- Load management
- Load balancing
- Lighting circuits

OPERATION EXAMPLE



SPECIFICATIONS

Performance:

System Accuracy (Branch Circuits Included)	
Current	2% of reading from 2-100A; 3% of reading from 0.25-2A
Power	3% of reading from 2-100A; 4% of reading from 0.25-2A *
Mains Accuracy	
Voltage	1% of reading from 90-277 VAC L-N
Power (Aux Input)	IEC 61036 Class 1, ANSI C12.1-2001
Current (Aux Input)	2% of reading from 1-10% of CT rating; 1% of reading from 10-100% of CT rating (0.333 VAC)

Operation:

Input Voltage	90-277 VAC
Frequency	50/60 Hz
Sampling Frequency	2560 Hz
Update Rate	~1.8 seconds (both panels)
Overload Capability	10 kAIC
Ribbon Cable Support	up to 20 ft. (6 m) available (flat or round) (sold separately for some models; see Ordering Information for details)
Operating Temperature Range	0° to 60°C (32° to 140°F) (<95% RH, non-condensing)
Storage Temperature Range	-40° to 70°C (-40° to 158°F)

Network Communications:

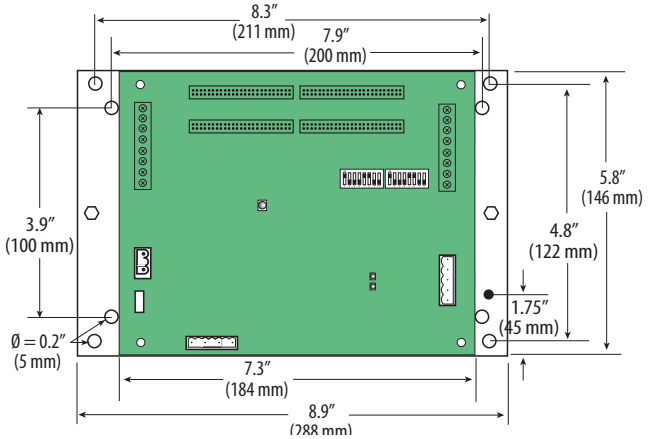
Type	Modbus RTU
Connection	DIP switch-selectable 2-wire or 4-wire, RS-485
Address	DIP switch-selectable address 1 to 247 (in pairs of 2)**
Baud Rate	DIP switch-selectable 9600, 19200, 38400
Parity	DIP switch-selectable NONE, ODD, EVEN
Communication Format	8 data bits, 1 start bit, 1 stop bit
Termination	5-position depluggable connector (TX+ TX- SHIELD TX+/RX+ TX-/RX-)

Note: Standard IEC62053-21 Table 8 temperature coefficients apply for temperatures above and below 25°C.
** ±0.8 PF.* *** See Configuration section for details.*

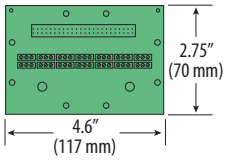
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DIMENSIONAL DRAWINGS

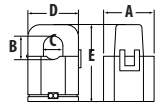
Circuit Board and Mounting Bracket



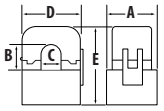
Adapter Board



Current Sensors

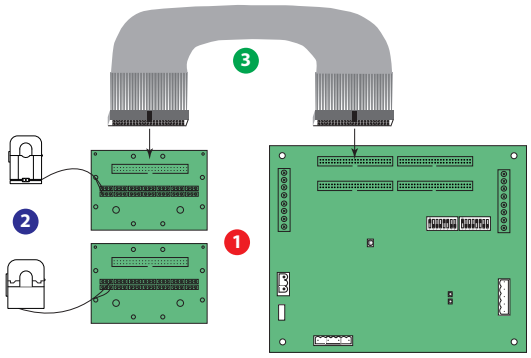


50 Amp
A = 1.0″ (26 mm)
B = 0.5″ (11 mm)
C = 0.4″ (10 mm)
D = 0.9″ (23 mm)
E = 1.6″ (40 mm)



100 Amp
A = 1.6″ (40 mm)
B = 0.7″ (16 mm)
C = 0.7″ (16 mm)
D = 1.6″ (40 mm)
E = 2.0″ (52 mm)

APPLICATION DIAGRAM



ORDERING INFORMATION

1 Boards

	Description	*# of CTs*
E31		
	A = Advanced board	002 = 2 adapter boards, no CTs, no cables
	B = Intermediate board	004 = 4 adapter boards, no CTs, no cables
	C = Basic board	42 = 2 adapter boards, 42 50A CTs, 4 ft. round ribbon cables
		84 = 4 adapter boards, 84 50A CTs, 4 ft. round ribbon cables

2 CTs *(up to 21 CTs per adapter board)*

E31CT0	Six-pack, 50A CT, 6 ft. (1.8 m) lead
E31CT0R20	Six-pack, 50A CT, 20 ft. (6 m) lead
E31CT2	Six-pack, 100A CT, 4 ft. (1.2 m) lead

3 Ribbon Cable

CBL022	Round Ribbon Cable, 4 ft. (1.2 m)
CBL023	Round Ribbon Cable, 10 ft. (3 m)
CBL024	Round Ribbon Cable, 20 ft. (6 m)

Ordering Examples:

Option A: For monitoring 42 or 84 circuits, order a pre-made kit from Group 1 only (see Application/Wiring Diagram above).
*Example: **E31x42** or **E31x84***

Option B: For monitoring other configurations, build your own kit by selecting from Groups 1, 2, and 3.
Example kit for an 18-circuit panel retrofit:
1 ***E31A002** - Advanced board, 2 adapter boards (1 unit)*
2 ***E31CT0** - 50A CT six-pack (3 units)*
3 ***CBL023** - 10 ft. round ribbon cable (2 units)*

DATA OUTPUT

Monitoring at Mains	E31A (Advanced)	E31B (Intermediate)	E31C (Basic)
Current per phase	■	■	■
Max. current per phase	■	■	■
Current demand per phase	■	■	■
Max. current demand per phase	■	■	■
Energy (kWh) per phase	■	■	
Real Power (kW) per phase	■	■	
Apparent Power (kVA)	■	■	
Power factor total *	■	■	
Power factor per phase	■	■	
Voltage, L-L and average	■	■	
Voltage, L-N and average	■	■	
Voltage, L-N and per phase	■	■	
Frequency (phase A)	■	■	
Monitoring at Branch Circuit			
Current	■	■	■
Max. current	■	■	■
Current demand	■	■	■
Max. current demand	■	■	■
Real power (kW)	■		
Real power (kW) demand	■		
Real power (kW) demand max.	■		
Energy (kWh) per circuit	■		
Power factor	■		
Apparent Power (kVA)	■		
Modbus Alarms			
Voltage over/under	■	■	
Current over/under	■	■	■

** Based on a 3-phase breaker rotation.*

ACCESSORIES

Ribbon Cables (round or flat)
E3x cover (AE001), E31 adapter boards (E31CTDB)
CT six-packs (E31CT, 6 ft or 20 ft leads)

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