Reliable and accurate intelligence

Eaton's line of C440 electronic overload relays

Powering Business Worldwide

Increased flexibility, enhanced protection

Motor failure has the potential to cause production downtime, costly repair bills and numerous safety concerns for plant personnel. For these reasons, motor protection should be a key element in protecting your organization's most valuable assets. Selecting accurate and reliable motor overload protection is the best way to manage your costs and maintain system integrity. Eaton C440 and ***XT*** electronic overload relays provide reliable, accurate and value-driven protection—including communications capabilities in a single compact device.

Flexible design
Simplified selection, installation and maintenance.

Predictive indication
Status LED provides visual notification of impending trip.

Enhanced protection and monitoring
Electronic design provides improved capabilities versus thermal overload relays.

Just two frame sizes cover applications up to 100A.

Flexible design

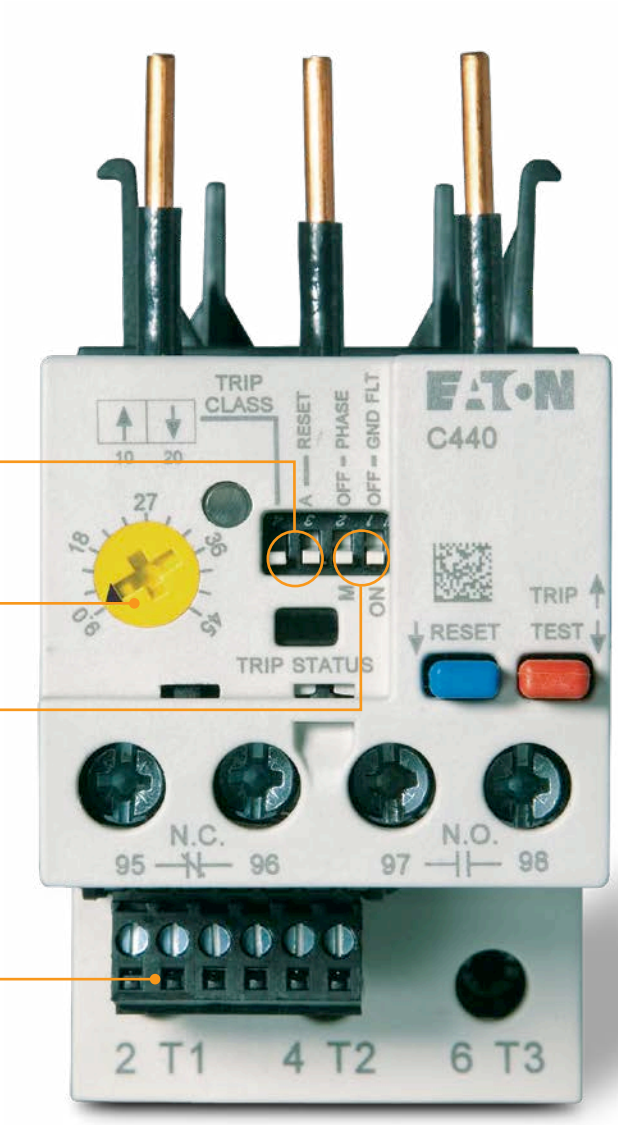
The electronic design of Eaton's C440 electronic overload relay delivers enhanced motor protection based on the ability to directly monitor motor current in each phase. Thermal modeling is performed electronically with precision solid-state components. The electronics accurately identify excessive current or phase loss and react to the condition with greater speed, reliability and repeatability than a traditional electromechanical device.

Adjustable trip classes (IEC Class 10A; NEMA® Class 10, 20 and 30). Ground fault versions have only NEMA Class 10 and 20.

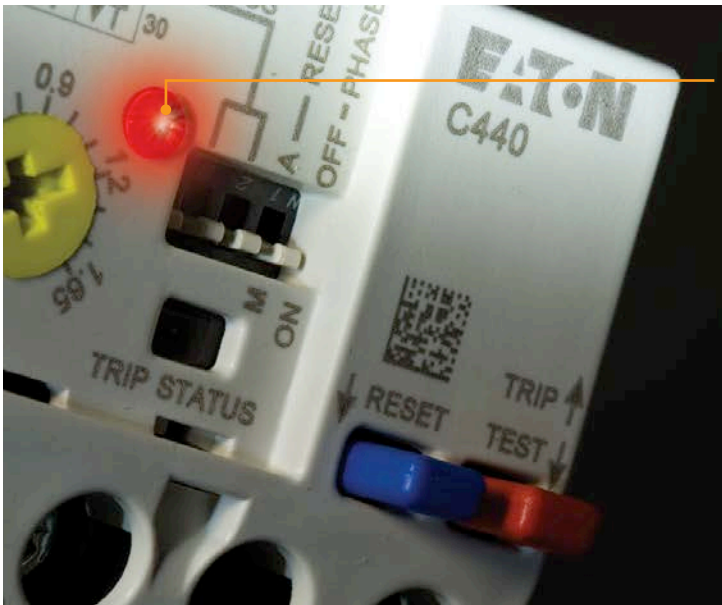
Widest full load amperes (FLA) adjustment in the industry (5:1).

Selectable (ON/OFF) phase and ground fault protection.

Electronic remote reset / communication modules for easy competitive retrofit.



How do you know your overload is working?



Single blink: Normal operation
Double blink: Fault condition developing

Predictive indication

The C440 and ***XT*** electronic overload relays are designed to provide enhanced protection over competitive models. Traditional self-powered electronic overload relays rely on internal component integrity to operate properly. If one of these components should fail, most relays would not provide any operational indication. This could leave a motor unprotected.

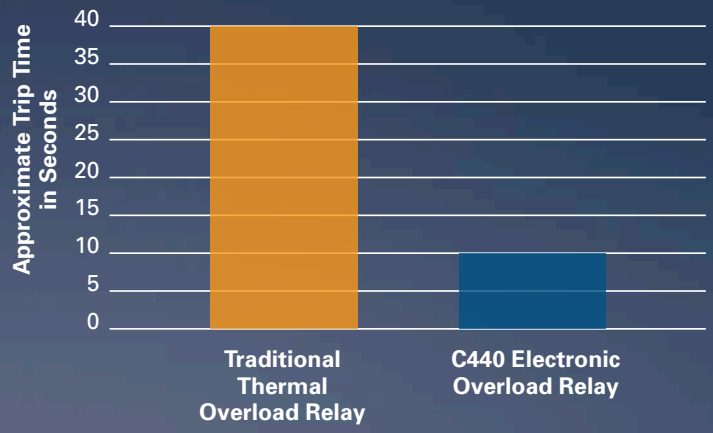
Relying on this passive approach could result in significant equipment damage and downtime. The C440 provides predictive indication via an LED indicator. At a glance, you can determine the status of the overload as well as an impending trip to provide enhanced protection of your most important assets.

Enhanced protection and monitoring

The superiority of electronic overload relays versus traditional thermal overload relays

- Faster response time under phase loss and phase unbalance conditions
- Increased motor life due to thermal modeling design
- Common design for single-phase and three-phase applications

Phase Loss Trip Times Under Full Load Current Conditions



Separate current transformers (CTs) or ground fault modules are no longer needed.

Integral ground fault protection

- The C440 has built-in ground fault protection capabilities, eliminating the need to purchase and install separate CTs and ground fault modules
- True simultaneous ground fault protection and communications capabilities—unique in the industry
- Integral design reduces inventory, speeds up installation time and delivers physical space savings

Communications capabilities

The C440 and ***XT*** electronic overload relays provide two levels of communications capabilities—monitoring only, and monitoring and control—to allow easy integration into existing plant management systems.

Monitoring only

Monitoring and control

- Flexible DIN and panel mounting
- 4IN/2OUT IO

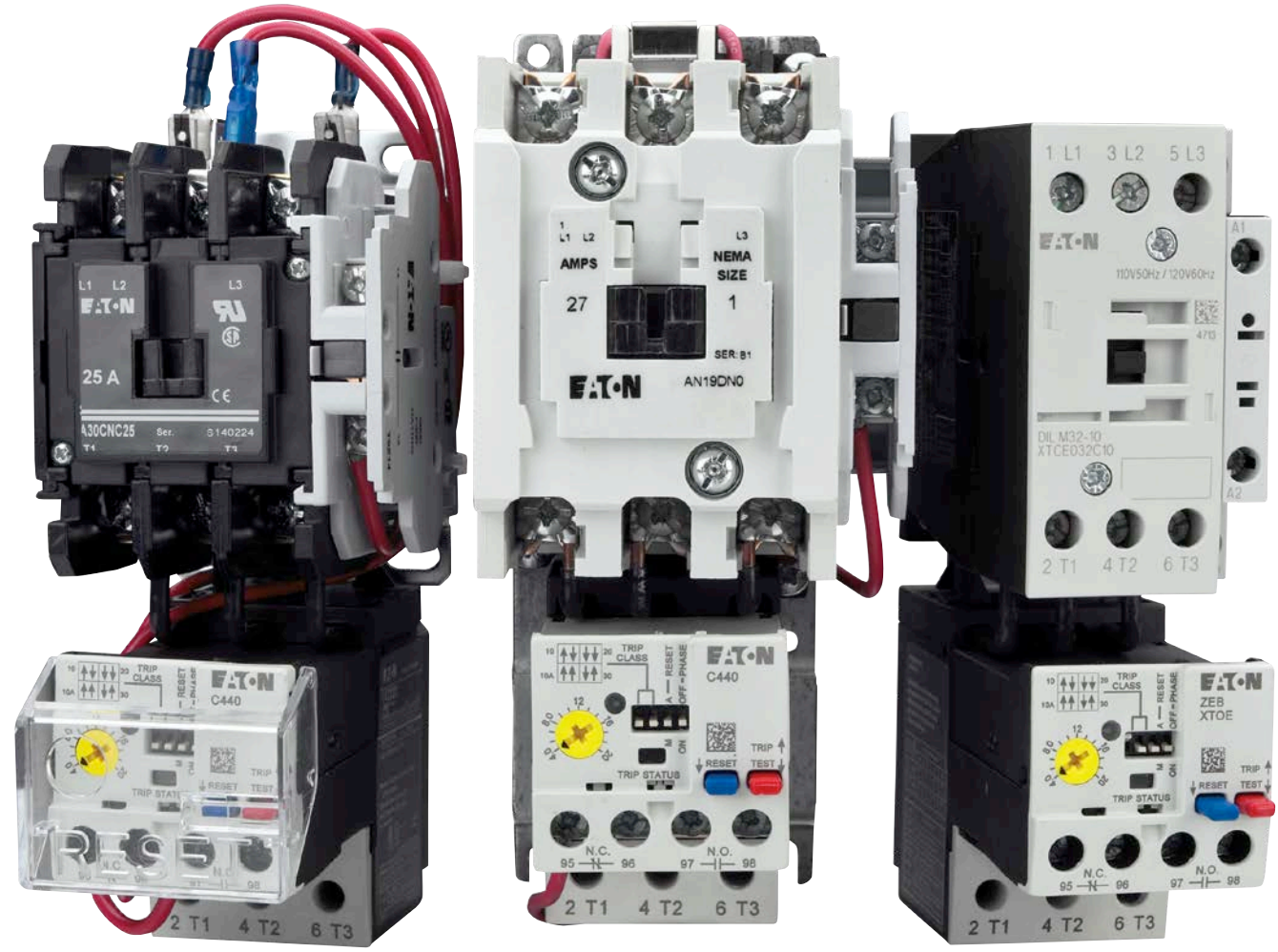
Monitor important parameters

- Motor status (running, stopped, tripped, resetting)
- Individual rms phase currents (A,B,C)
- Average of three-phase rms current
- Percent thermal capacity and phase unbalance
- Ground fault current and percent
- Network "Reset" capability

Communication protocols supported

- DeviceNet™
- PROFIBUS®
- Modbus®
- Modbus TCP
- EtherNet/IP
- 4IN/2OUT IO with each protocol for control capability

Versatile design for global applications



Eaton's motor protection offering

	XTOB, XTOT	C306	C440, XTOE	C441 Motor Insight™
General Features				
Relay type	Thermal bi-metal (fixed)	Thermal bi-metal (adjustable heaters)	Electronic	Electronic
FLA range	0.1–630A	0.25–1368A	0.3–1500A	1–540A
FLA maximum:minimum ratio	1.5:1	3:1	5:1	18:1 and 9:1
Trip class	10 or 30	10 or 20	Selectable 10A/10/20/30	5–30, stepped by 1s
Reset type	Selectable manual/automatic	Selectable manual/automatic	Selectable manual/ automatic/remote	Selectable manual/ automatic/remote
Mounting				
Direct connect to contactor	***XT*** IEC, DP	NEMA, DP	***XT*** IEC, Freedom NEMA, DP	—
Standalone mounting	Panel or DIN	Panel or DIN	Panel or DIN	Panel
Protection				
Thermal overload protection	Yes	Yes	Yes	Yes, programmable
Phase loss (single-phasing)	Yes	Yes	Yes, 10 seconds	Yes, programmable
Current unbalance protection	—	—	Yes, 10 seconds	Yes, programmable
Ground fault	—	—	Yes, 50% of FLA dial	Yes, programmable
Jam	—	—	—	Yes, programmable
Phase reversal	—	—	—	Yes, programmable
Undercurrent/overcurrent	—	—	—	Yes, programmable
Low/high power	—	—	—	Yes, programmable
Overvoltage/undervoltage	—	—	—	Yes, programmable
Voltage unbalance	—	—	—	Yes, programmable
Monitoring				
Current per phase and average rms	—	—	Yes	Yes
Current unbalance percent	—	—	Yes	Yes
Ground fault current	—	—	Yes	Yes
Thermal capacity	—	—	Yes	Yes
Voltage per phase and average rms	—	—	—	Yes
Voltage unbalance percent	—	—	—	Yes
Power	—	—	—	Yes
Power factor	—	—	—	Yes
Frequency	—	—	Yes	Yes
Motor run hours	—	—	—	Yes
Motor starts count	—	—	—	Yes
Time to restart after fault	—	—	—	Yes
Overload status	—	—	Yes	Yes
Advanced Features				
Programmable reset/backspin timers	—	—	—	Yes
Programmable reset attempts	—	—	—	Yes
Programmable trip delays	—	—	—	Yes
Programmable alarming contact	—	—	—	Yes (optional)
Programmable start time	—	—	—	Yes
Communications with I/O	—	—	Yes (Modbus, DeviceNet, PROFIBUS, Modbus TCP, EtherNet/IP)	Yes (Modbus, DeviceNet, PROFIBUS, Modbus TCP, EtherNet/IP)
Remote display	—	—	—	Yes (NEMA 1, 12 and 3R)
Lockable user interface or tamper proof	—	—	Yes	Yes
Alarm-no-trip mode	—	—	—	Yes, for GF and line faults
Diagnostics	—	—	Yes	Yes, 10 fault queue

We make what matters work.*

* At Eaton, we believe that power is a fundamental part of just about everything people do. Technology, transportation, energy and infrastructure—these are things the world relies on every day. That's why Eaton is dedicated to helping our customers find new ways to manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. To improve people's lives, the communities where we live and work, and the planet our future generations depend upon. Because that's what really matters. And we're here to make sure it works.

See more at Eaton.com/whatmatters

For more information, visit

Eaton.com/c440

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