

## Power Xpert C445 series

### Global motor management relay



# Motor management intelligence made easy

Power Xpert™ C445 is the most intelligent option in the C400 motor protection family. C445 offers industry-leading protection, diagnostics and energy usage analytics. Multiple network options and easy integration tools make leveraging C445 intelligence easy.



#### Features

- Product range
  - 0.3–800 A
  - 690 Vac, 4160 Vac with potential transformers (PTs)
  - 20–80 Hz operation
  - Selectable trip class (5–40)
- Power options 120/240 Vac or 24 Vdc
- On-board I/O
  - 4 digital inputs: 120 Vac or 24 Vdc
  - 3 relay outputs: 2NO, 1NO/NC
- Optional external expansion I/O
  - Digital I/O 64 in and 64 out
  - Up to 8 analog I/O cards (RTD and thermocouple input cards)
- Logic engine allows for programming local logic with function block programming
- On-board communication options
  - EtherNet/IP
  - Modbus® TCP
  - Modbus RTU
  - Web pages
  - PROFIBUS®
  - USB
- Real-time clock (RTC), backup non-volatile memory, and positive temperature coefficient (PTC) options
- Flexible user interface options
- Power Xpert *inControl* configuration and monitoring software tool

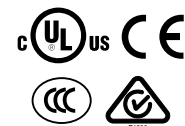
- Ground fault detection
  - Residual
  - Pulse detection
  - Zero sequencing
  - High resistance ground

#### Benefits

- Reliability
  - Advanced diagnostics allow for quick and accurate identification of the root cause of a fault in line, load and motor conditions
  - Voltage loss restart functionality allows for automatic recovery in the event of undervoltage conditions without the need for user intervention
  - Pre-programmed operation modes support fast, easy, error-free installation for the majority of applications
- Flexibility
  - Modular pass-through design with scalable options for current, voltage, power, energy protections and monitoring
  - Fully programmable trip and alarm thresholds and time delays

#### Standards and certifications

- CE, UL®, CSA®, CCC, C-tick
- IEC EN 60947-4-1



# EATON

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### Base control module

The core of the C445 system, the base control module contains all of the protection, monitoring and control algorithms in addition to on-board I/O. An interchangeable communication card slot allows for various communications with a single base unit.

- 120/240 Vac or 24 Vdc power source options
- Four 120 Vac or 24 Vdc inputs, 2NO and 1NO/1NC relay outputs
- Optional communications
  - USB, Modbus RTU, Modbus TCP, EtherNet/IP, Web pages, PROFIBUS
- Multiple preconfigured operation modes
- On-board logic for local control, and motor management can be programmed via function block programming
- On-board I/O can be expanded via external module
  - Digital I/O, 64 in and 64 out
  - Up to 8 analog cards



### Measurement module

The pass-through design measurement module samples current, voltage, power and energy data consumed by the electric motor and continuously passes it electronically to the base control module via a cable connection. For applications with limited mounting space, users can mount the base control module directly onto the 45 mm measurement module, achieving a best-in-class compact footprint.

- 45, 55 and 90 mm frames provide direct pass-through capability from 0.3 to 136 A
- External current transformer (CT) kits available for applications up to 800 A
- Standard current-based monitoring and protection with options for voltage and PTC inputs
- Ground fault pulse detection, used with high resistance ground
- Residual ground fault measurement



Monitoring user interface

### User interface

Two user interface options provide safe device access fit to the application. The monitoring user interface features advanced metering, parameter setting and optional control. The control family offers overlays to match the operation mode with IEC and NEMA® color schemes. All user interfaces offer:

- Bright fault and warning LEDs
- Micro USB port for connection to Power Xpert *inControl*



Ground fault module

### Ground fault module

Ground fault detection module coupled with ground fault current transformers allow the C445 Base Control Module to detect excessive ground current on high resistance grounded systems as well as zero sequencing.

### Accessories

- Communication cards
- Real-time clock and backup memory module
- Connection cables
- External CT kits (>136 A)
- Spare parts kits
- Power Xpert *inControl* software tool

| Support documentation available |   |
|---------------------------------|---|
| CA08100008E                     | Motor control and protection catalog              |
| MN042001EN                      | C445 user manual                                  |
| MZ042003EN                      | C445 quick start guide                            |
| MZ042004EN                      | C445 user interface infographic                   |
| BR042003EN                      | C445 plug & play connectivity brochure            |
| MN181001EN                      | EIP-Assist tag generation tool user manual        |
| MN040013EN                      | Power Xpert <i>inControl</i> software manual      |
| PA042003EN                      | C400 series product aid                           |
| BR04302001E                     | FlashGuard™ NEMA MCC brochure                     |
| BR043003EN                      | Power Xpert CX™ IEC MCC brochure                  |
| MZ042003EN                      | C445 quick start guide                            |
| BR043008EN                      | Power Xpert CXH™ IEC MCC brochure                 |
| AP042007EN                      | Application paper on grounding systems and faults |

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