

Fewer Frames with Wider Ranges



Powering Business Worldwide

- Direct connect cost-effective thermal overload relays to protect your motors
- More accurate electronic overload relays react to phase loss fast
- Fewer frames covering a wider range of classes and protection with fewer parts
- Protect it right — fight premature motor failure with Motor Insight™

Circuit & Motor Protection

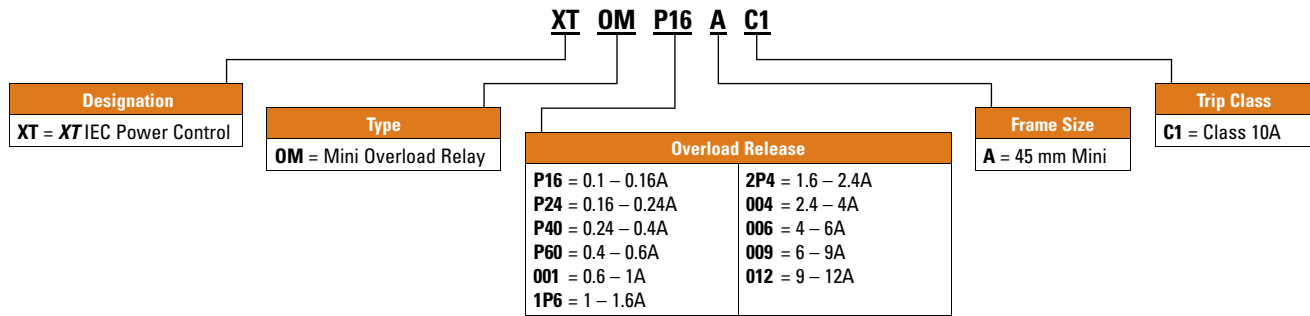
Overload Relays

PRODUCT OVERVIEW

Overload Relays Product Overview

| |  |  |  |  |
|-------------------------------------|---|---|---|---|
| Description | XT IEC Mini Overload Relays | XTOB, XTOT Thermal Overload Relays | C396 Electronic Overload Relays | Motor Insight Overload and Monitoring Relays |
| Page | Page 63 | Page 64 | Page 67 | Page 69 |
| Relay Type | Thermal Bi-Metallic | Thermal Bi-Metallic | Electronic | Electronic |
| Direct Connect to XT Contactor | Yes, XTMC | Yes, XTCE | Yes, XTCE | — |
| Separate Mount | — | Yes, Adapter | Yes | Yes |
| FLA Range | 0.1 – 12A | 0.1 – 630A | 0.1 – 1500A | 1 – 540A (with CTs) |
| FLA Max.:Min. Ratio | Approx. 1.5:1 | Approx. 1.5:1 | 5:1 | — |
| Motor Overload Protection | Yes | Yes | Yes | Yes |
| Underload Protection | — | — | — | Yes |
| Supply Protection | — | — | — | Yes |
| Enhanced Phase Loss Protection | — | — | Yes | Yes |
| Enhanced Phase Imbalance Protection | — | — | Yes | Yes |
| Trip Class | 10A | 10A | Selectable 5 / 10 / 20 / 30 | 5 – 30 |
| Reset Type | Selectable Manual / Automatic | Selectable Manual / Automatic | Selectable Manual / Automatic | Selectable Manual / Automatic / Programmable / Remote |
| Communications with I/O | — | — | — | Yes (Modbus, DeviceNet, PROFIBUS) |
| Remote Display | — | — | — | Yes (NEMA 3R available) |
| Ground Fault | — | — | — | Yes |
| Alarm No Trip | — | — | — | Yes (voltage and ground faults) |
| Jam | — | — | Yes | Yes |
| Programmable Reset Timers | — | — | — | Yes |
| Programmable Reset Attempts | — | — | — | Yes |
| Current Monitoring | — | — | — | Yes |
| Voltage Monitoring | — | — | — | Yes |
| Power Monitoring | — | — | — | Yes |
| Thermal Capacity Monitoring | — | — | — | Yes |
| Motor Run Hours Monitoring | — | — | — | Yes |

XT IEC Miniature Overload Relays — Catalog Numbering System



XT IEC Miniature Overload Relays

- Trip Class 10A
- Ambient temperature compensated -5° to 50°C (23° to 122°F)
- Selectable manual / automatic reset
- 1NO-1NC auxiliary contact as standard
- Direct mount with XTMC contactors



Mini Overload Relays ①②

| Overload Release It | Trip Class | Contact Sequence | Contact Configuration | Short Circuit Protection (A) | | | | Catalog Number |
|--|------------|------------------|-----------------------|------------------------------|------------------------------|-----------------|--------------|----------------|
| | | | | Type 1 Coordination, gG / gL | Type 2 Coordination, gG / gL | Circuit Breaker | CEC/NEC Fuse | |
| 0.1 – 0.16A 0.16 – 0.24A 0.24 – 0.4A 0.4 – 0.6A | 10A | | 1NO-1NC | 20 | 0.5 | 15 | — | XTOMP16AC1 |
| 20 | | | | 1 | 15 | — | XTOMP24AC1 | |
| 20 | | | | 2 | 15 | — | XTOMP40AC1 | |
| 20 | | | | 2 | 15 | — | XTOMP60AC1 | |
| 0.6 – 1A 1 – 1.6A 1.6 – 2.4A | 10A | | 1NO-1NC | 20 | 4 | 15 | 3 | XTOM001AC1 |
| 20 | | | | 6 | 15 | 6 | XTOM1P6AC1 | |
| 20 | | | | 6 | 15 | 6 | XTOM2P4AC1 | |
| 2.4 – 4A 4 – 6A 6 – 9A 9 – 12A | 10A | | 1NO-1NC | 20 | 10 | 15 | 15 | XTOM004AC1 |
| 20 | | | | 10 | 15 | 20 | XTOM006AC1 | |
| 20 | | | | 10 | 15 | 35 | XTOM009AC1 | |
| — | | | | — | — | 45 | XTOM012AC1 | |

① Short-circuit protection: Observe the maximum permissible fuse of the contactor with direct device mounting. See MN03402002E for more information.

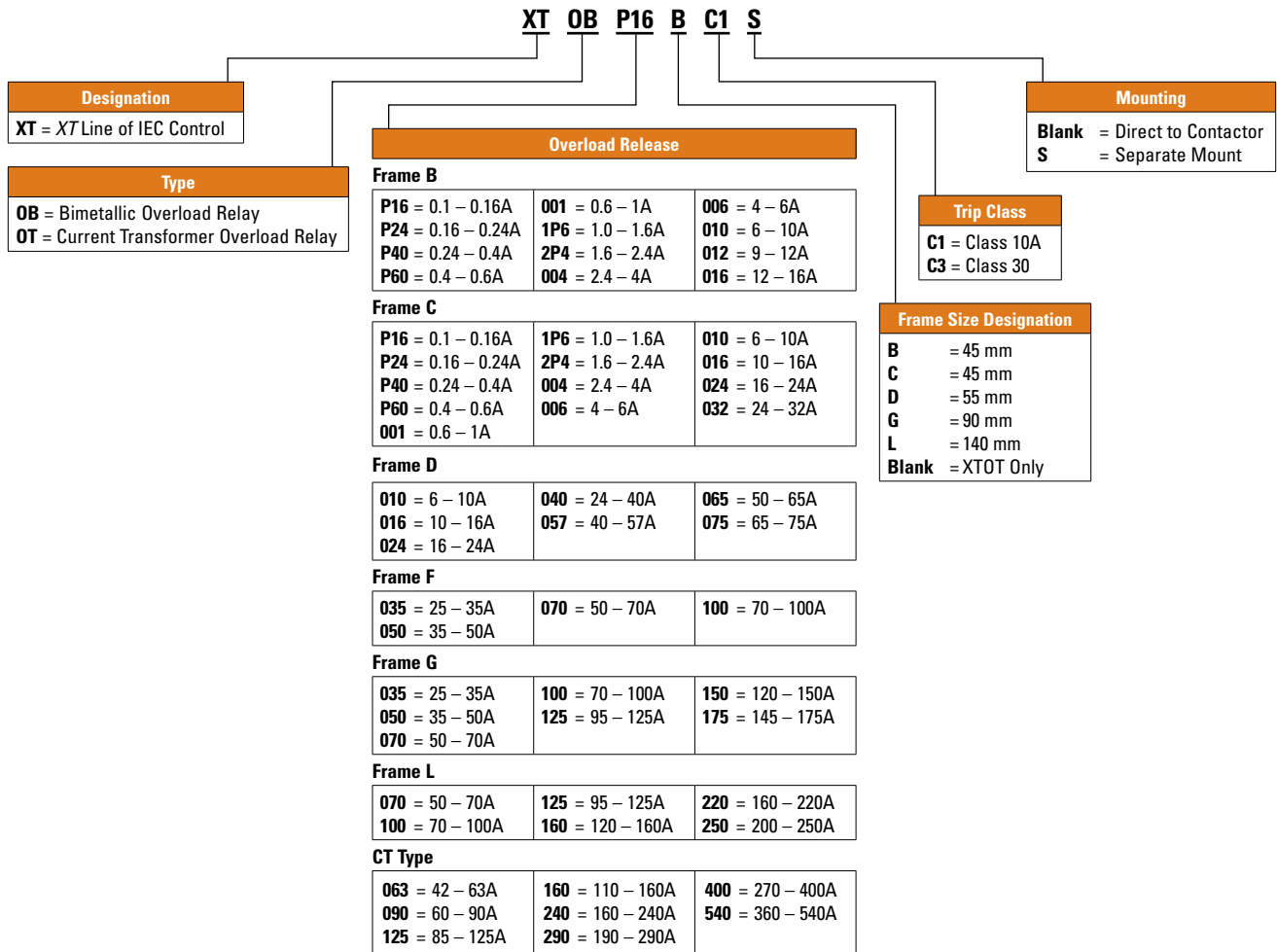
② When fitted directly to the contactor, a clearance of at least 5 mm is required between the overload relays.

Circuit & Motor Protection

Overload Relays

CATALOG SELECTION

XTOB, XTOT Thermal Overload Relays — Catalog Numbering System



Circuit & Motor Protection

Overload Relays PRODUCT SELECTION



XTOB, XTOT Thermal Overload Relays

- Direct mount to XT contactors or separate mount
- Class 10A
- Up to 630A

Overload Relay

| Overload Releases, I _r | Contact Sequence | Contact Configuration | For Use with Contactor Ampere Range | Short-Circuit Protection (A) | | Catalog Number |
|---|------------------|-----------------------|-------------------------------------|------------------------------|----------------|----------------|
| | | | | Maximum Circuit Breaker | CEC / NEC Fuse | |
| Frame B — Direct Mount to XTCE...B Contactor | | | | | | |
| 0.1 – 0.16 | | 1NO-1NC | 7 – 15A | 25 | 3 | XTOBP16BC1 |
| 0.16 – 0.24 | | 1NO-1NC | 7 – 15A | 25 | 3 | XTOBP24BC1 |
| 0.24 – 0.4 | | 1NO-1NC | 7 – 15A | 25 | 3 | XTOBP40BC1 |
| 0.4 – 0.6 | | 1NO-1NC | 7 – 15A | 25 | 3 | XTOBP60BC1 |
| 0.6 – 1 | | 1NO-1NC | 7 – 15A | 25 | 3 | XTOB001BC1 |
| 1 – 1.6 | | 1NO-1NC | 7 – 15A | 25 | 6 | XTOB1P6BC1 |
| 1.6 – 2.4 | | 1NO-1NC | 7 – 15A | 25 | 6 | XTOB2P4BC1 |
| 2.4 – 4 | | 1NO-1NC | 7 – 15A | 25 | 15 | XTOB004BC1 |
| 4 – 6 | | 1NO-1NC | 7 – 15A | 25 | 20 | XTOB006BC1 |
| 6 – 10 | | 1NO-1NC | 7 – 15A | 25 | 35 | XTOB010BC1 |
| 9 – 12 | | 1NO-1NC | 9 – 15A | 25 | 45 | XTOB012BC1 |
| 12 – 16 | | 1NO-1NC | 12 – 15A | 30 | 45 | XTOB016BC1 |
| Frame C — Direct Mount to XTCE...C Contactor | | | | | | |
| 0.6 – 1 | | 1NO-1NC | 18 – 32A | 25 | 3 | XTOB001CC1 |
| 1 – 1.6 | | 1NO-1NC | 18 – 32A | 25 | 6 | XTOB1P6CC1 |
| 1.6 – 2.4 | | 1NO-1NC | 18 – 32A | 25 | 6 | XTOB2P4CC1 |
| 2.4 – 4 | | 1NO-1NC | 18 – 32A | 25 | 15 | XTOB004CC1 |
| 4 – 6 | | 1NO-1NC | 18 – 32A | 25 | 20 | XTOB006CC1 |
| 6 – 10 | | 1NO-1NC | 18 – 32A | 25 | 25 | XTOB010CC1 |
| 10 – 16 | | 1NO-1NC | 18 – 32A | 30 | 25 | XTOB016CC1 |
| 16 – 24 | | 1NO-1NC | 18 – 32A | 30 | 25 | XTOB024CC1 |
| 24 – 32 | 1NO-1NC | 25 – 32A | 30 | 25 | XTOB032CC1 | |
| Frame D — Direct Mount to XTCE...D Contactor | | | | | | |
| 6 – 10 | | 1NO-1NC | 40 – 72A | 25 | 25 | XTOB010DC1 |
| 10 – 16 | | 1NO-1NC | 40 – 72A | 25 | 25 | XTOB016DC1 |
| 16 – 24 | | 1NO-1NC | 40 – 72A | 30 | 25 | XTOB024DC1 |
| 24 – 40 | | 1NO-1NC | 40 – 72A | 125 | 125 | XTOB040DC1 |
| 40 – 57 | | 1NO-1NC | 50 – 72A | 150 | 150 | XTOB057DC1 |
| 50 – 65 | | 1NO-1NC | 65 – 72A | 150 | 200 | XTOB065DC1 |
| 65 – 75 | | 1NO-1NC | 72A | 150 | 200 | XTOB075DC1 |
| Frame F – G — Direct Mount to XTCE...F or XTCE...G Contactor | | | | | | |
| 35 – 50 | | 1NO-1NC | 80 – 170A | 150 | 200 | XTOB050GC1 |
| 50 – 70 | | 1NO-1NC | 80 – 170A | 150 | 200 | XTOB070GC1 |
| 70 – 100 | | 1NO-1NC | 80 – 170A | 400 | 400 | XTOB100GC1 |
| 95 – 125 | | 1NO-1NC | 80 – 170A | 500 | 400 | XTOB125GC1 |
| 120 – 150 | | 1NO-1NC | 80 – 170A | 600 | 600 | XTOB150GC1 |
| 145 – 175 | | 1NO-1NC | 150 – 170A | 600 | 600 | XTOB175GC1 |

Note: Short circuit protection: Observe the maximum permissible fuse of the contactor with direct device mounting. See MN03402001E for more information on overload relays for Frame B – G. Trip Class: 10A
Suitable for protection of EEx e-motors. EC prototype test certificate available upon request.
Observe manuals MN03402001E and MN03407001E, See Documentation — Manuals for Overload Monitoring of EEx e-motors.

Circuit & Motor Protection

Overload Relays

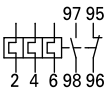
PRODUCT SELECTION

XTOB, XTOT Thermal Overload Relays

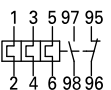
Overload Relay (Continued)

| Overload Releases, I _r | Contact Sequence | Contact Configuration | For Use with Contactor Ampere Range | Short-Circuit Protection (A) | | Catalog Number |
|-----------------------------------|------------------|-----------------------|-------------------------------------|------------------------------|----------------|----------------|
| | | | | Maximum Circuit Breaker | CEC / NEC Fuse | |

Frame F – G — Separate Mount

| | | | | | | |
|------------------------------------|---|---------|------------|-----|-----|--|
| 35 – 50 50 – 70 70 – 100 |  | 1NO-1NC | 80 – 170A | 150 | 200 | XTOB050GC1S XTOB070GC1S XTOB100GC1S |
| | | 1NO-1NC | 80 – 170A | 150 | 200 | |
| | | 1NO-1NC | 80 – 170A | 400 | 400 | |
| 95 – 125 120 – 150 145 – 175 | | 1NO-1NC | 80 – 170A | 500 | 400 | XTOB125GC1S XTOB150GC1S XTOB175GC1S |
| | | 1NO-1NC | 80 – 170A | 600 | 600 | |
| | | 1NO-1NC | 150 – 170A | 600 | 600 | |

Frame L — Direct Mount to XTC(EORS)...L or Separate Mount

| | | | | | | |
|-------------------------------------|---|---------|------------|-----|-----|---|
| 50 – 70 70 – 100 95 – 125 |  | 1NO-1NC | 185 - 250A | 150 | 200 | XTOB070LC1 XTOB100LC1 XTOB125LC1 |
| | | 1NO-1NC | 185 - 250A | 400 | 400 | |
| | | 1NO-1NC | 185 - 250A | 500 | 400 | |
| 120 – 160 160 – 220 200 – 250 | | 1NO-1NC | 185 - 250A | 600 | 600 | XTOB160LC1 XTOB220LC1 XTOB250LC1 |
| | | 1NO-1NC | 185 - 250A | 800 | 800 | |
| | | 1NO-1NC | 225 - 250A | 600 | 700 | |

Note: Short circuit protection: Observe the maximum permissible fuse of the contactor with direct device mounting. See MN03402001E for more information on overload relays for Frame B – G. Trip Class: 10A

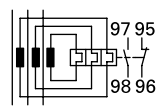
Suitable for protection of EEx e-motors. EC prototype test certificate available upon request.

Observe manuals MN03402001E and MN03407001E. See Documentation — Manuals for Overload Monitoring of EEx e-motors.


Current Transformer Operated Overload Relay

| Overload Releases, I _r | Contact Sequence | Contact Configuration | For Use with Contactor Ampere Range | Short-Circuit Protection (A) | | Catalog Number |
|-----------------------------------|------------------|-----------------------|-------------------------------------|------------------------------|----------------|----------------|
| | | | | Circuit Breaker | CEC / NEC Fuse | |

Frame M – N — Separate Mount

| | | | | | | |
|---|---|---------|------------|------|------|---|
| 160 – 240 190 – 290 270 – 400 360 – 540 420 – 630 |  | 1NO-1NC | 300 – 500A | 600 | 700 | XTOT240C3S XTOT290C3S XTOT400C3S XTOT540C3S XTOT630C3S |
| | | 1NO-1NC | 300 – 500A | 600 | 700 | |
| | | 1NO-1NC | 300 – 500A | 1000 | 1000 | |
| | | 1NO-1NC | 500A | 600 | 1000 | |
| | | 1NO-1NC | 630A | 600 | 1000 | |

DIN-Rail or Panel-Mount Adapter, Frame C – D — Accessories ①

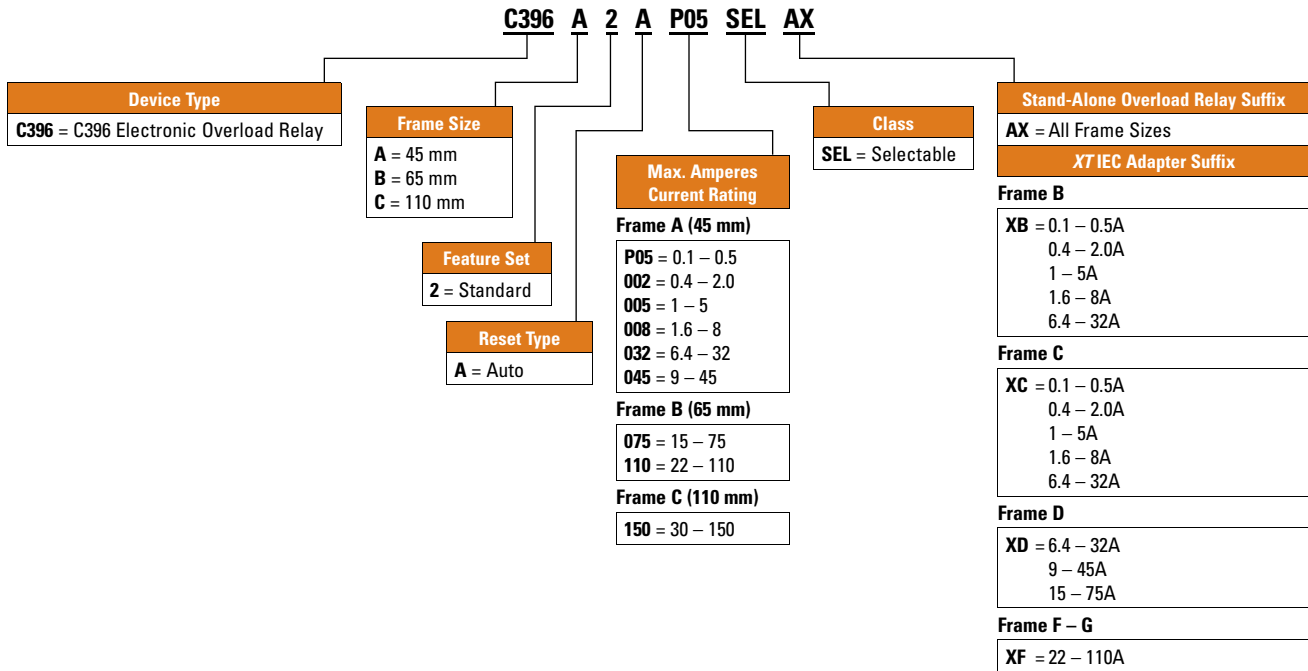
| | For Use with... | Pkg. Qty. | Catalog Number |
|---|-----------------|-----------|------------------|
|  | XTOB...CC1 | 5 | XTOBXDINC |
| | XTOB...DC1 | 2 | XTOBXDIND |

① Can be snap fitted on a top hat rail (DIN-Rail) or can be screw fitted.

Terminal Lug Kit – Set of (3) Lugs — Accessories

| Description | For Use with... | Pkg. Qty. | Catalog Number |
|-----------------------------|-----------------|-----------|-----------------|
| Set of 3 Lugs #6 AWG-350MCM | XTOB...LC1 | 1 | XTOBXTLL |

C396 Electronic Overload Relays — Catalog Numbering System



C396 Electronic Overload Relays

- Direct mount to XT contactors or separate mount
- Standard version: selectable trip class (5, 10, 20, 30) with selectable manual or auto reset
- Broad 5:1 FLA range
- Self-powered design, will accept ac voltages from 12 – 690V 50/60 Hz
- Electrically isolated 1NO-1NC contacts (Push-to-Test)
- FLA range of 0.1 – 1500 amps



C396 Overload for Integrated Use with XT IEC Contactors

| FLA Range (Amps) | XT IEC Contactor Frame Size / Width | Catalog Number |
|---|-------------------------------------|-----------------|
| Direct Mount to XTCE...B Contactor | | |
| 0.4 – 2.0 | B / 45 mm | C396A2A002SELXB |
| 1 – 5 | B / 45 mm | C396A2A005SELXB |
| 1.6 – 8 | B / 45 mm | C396A2A008SELXB |
| 6.4 – 32 | B / 45 mm | C396A2A032SELXB |
| Direct Mount to XTCE...C Contactor | | |
| 1.6 – 8 | C / 45 mm | C396A2A008SELXC |
| 6.4 – 32 | C / 45 mm | C396A2A032SELXC |
| Direct Mount to XTCE...D Contactor | | |
| 6.4 – 32 | D / 55 mm | C396A2A032SELXD |
| 9 – 45 | D / 55 mm | C396A2A045SELXD |
| 15 – 75 | D / 55 mm | C396B2A075SELXD |
| Direct Mount to XTCE...F or XTCE...G Contactor | | |
| 22 – 110 | F – G / 90 mm | C396B2A110SELXF |

C396 Stand-Alone Overload Relay

| FLA Range (Amps) | Description | Catalog Number |
|---|-------------------------------|---|
| 0.4 – 2.0 1 – 5 1.6 – 8 6.4 – 32 9 – 45 | 45 mm Frame Overload Relay ① | C396A2A002SELAX C396A2A005SELAX C396A2A008SELAX C396A2A032SELAX C396A2A045SELAX |
| 15 – 75 22 – 110 | 65 mm Frame Overload Relay ① | C396B2A075SELAX C396B2A110SELAX |
| 30 – 150 | 110 mm Frame Overload Relay ② | C396C2A150SELAX |

① Overload comes with a panel / DIN-Rail mounting adapter assembled. No separate mounting adapter accessory offered.

② Panel-mount only! Overload comes with integrated pass-through holes for power wires. Bus Bar Kit (C396CBAR or C396CBARXT, see Page 68) and Lug Kit (C396CLUG) must be purchased separately if customer refers not to use pass-through capability.