



XT IEC Power Control

Product Focus

XT Contactors
XT Manual Motor Protectors
XT Manual and Combination
Motor Controllers





Global solutions for a global marketplace



Solutions designed for OEMs.

Building on its strength in electrical power distribution, Eaton is now offering advanced industrial control solutions for panel builders and OEMs. If you need all the pieces of the puzzle provided by a single supplier, Eaton is your answer.

Not only is Eaton able to address issues faced by machine and industrial OEMs with product options, it also offers superior solutions designed to solve problems faced by businesses around the world.

Sophisticated logic control, sensors, drives, operator interfaces, and power control all fit together to give Eaton the edge when it comes to supplying OEM centric products.

XT is the answer.

With the goal of offering global systems of control, Eaton's new **XT** Line of IEC Power Control completes the puzzle. With globally rated contactors, starters, overload relays, manual motor protectors and combination motor controllers, **XT** defines power control.

With open and packaged control options, this new line

of technologically superior products reinforces Eaton's strategy of providing OEM focused solutions. Responding to increased global competition, OEMs demand control systems that can be shipped around the world. A global marketplace reinforces the need for global ratings, smaller products for smaller panels, and easier installation and maintenance.



XT is the answer. The wide range of applications and suitability for worldwide use call for a variety of operating voltages and ratings, as well as reliable AC and DC control options.

XT dramatically reduces mounting and wiring times by allowing standard components to be combined without using tools – quickly

and error-free. OEMs expect innovations in electrical engineering to bring them clear advantages by making processes more efficient, from planning and designing through fitting and installation. **XT** does just that.



Global products mean global solutions.

When you think IEC, you're thinking globally. Designed for IEC applications, **XT** is truly a global product line that offers OEMs the flexibility to deliver their equipment worldwide.

Providing application solutions that fit customer business plans is our goal. If customers provide machinery that is used globally, then the components they use must meet global standards, be

competitive, and be supported and serviced in every corner of the world. With UL, CSA, CE and CCC approvals, as well as RoHS compliance, **XT** is the perfect global product. Packaged control options meet UL, cUL and CE standards, allowing enclosed **XT** customers to choose options such as circuit breakers, or North American or European fuses.

As open components or enclosed devices, **XT** is designed to be the perfect fit. Only four frame sizes cover contactor ratings up to 150A, making it easier for OEMs to lay out panels. The **XT** enclosed offering (ECX), uses a back panel sized for metallic or non-metallic enclosures, offering customers design flexibility. With a broad line of application specific designs, ECX allows customers to select the

right tool for the job. Available in a wide range of control voltages, 12 to 600V AC and 12 to 220V DC, **XT** meets most application requirements. Not only is there a wide range of control voltages, but **XT** also carries kilowatt and horsepower ratings from 200V to 1000V AC.

Globally focused, but locally available, **XT** is now available through the worldwide Eaton Distribution channel.

Small size, big expectations.

With only 0.5 watts of sealing power consumption, **XT** is sized to fit most application requirements – up to 30% smaller than the competition (even with an integral auxiliary contact)! Panels can be designed smaller or more products can be added into the same enclosure that formerly housed competitive devices. Even with more

product in a panel, low power consumption means there is less energy and heat to remove from the panel, lowering the cost of cooling requirements.

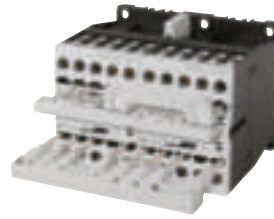
Designed for side-by-side mounting, **XT** is perfect for small spaces. Devices can be mounted closely, and the mechanical interlocking

system leaves no space between forward and reversing contactors, leading to smaller panels and enclosures.

Enclosed **XT** (ECX) is a lot of power in a small package. Need more available options in a smaller enclosure? You've been waiting for **XT**.

ECX houses more power while maintaining a competitively small size. Now, a Combination Motor Controller requires only an 11" x 10" enclosure and a 65A combination starter needs an enclosure no bigger than 12" x 12". For every inch of space you save, you keep \$100. Can you afford not to choose **XT**?





Installation and maintenance made easy.

XT makes installation and maintenance easy with DIN rail mounting for devices up to 65A, reversing and star-delta (wye-delta) wiring link kits, and modular combination motor controllers. There's nothing better than controlling the cost and timing of a project. **XT** helps take the worry out of project management.

DIN rail mounting gives OEMs the ability to save installation time – devices just snap-on to the DIN rail. With the DIN rail mounting adapter, combination motor controllers can now be

mounted on a single DIN rail instead of two. The adapter allows product to be removed with fewer wiring hassles. Contactors can be removed from the combination without unwiring the attached MMP from the network circuit.

Saving time and money never seems easy – **XT** changes all that. With reversing and star-delta (wye-delta) wiring kits, assembling combinations is a snap. Link kits come standard with finger-proof wiring links and connectors for error-free, tool-less assembly. The links just snap into the contactors

to form an electrical connection. Not only are they easy, but they also cut down on the costs of wiring contactors together. Cutting individual wires for assemblies is a thing of the past. These tool-less kits are the perfect solution to reducing the installation time of panel controls.

The hassle that went along with wiring combination motor controllers (CMC) is eliminated with **XT**. Panel builders and OEMs are always looking for ways to reduce mounting times and

associated production costs. By using perfectly matched components, CMCs can be plugged together and wired with virtually no tools. Building a CMC is easier than ever. With simple plug-in connectors, **XT** reduces fitting and wiring times, while helping avoid wiring errors. In addition, standard components allow for quick product exchanges, controlling costly downtime.

Saving time and lowering costs is as easy as **XT**.

Keeping you and your customers safe.

Safety is a top priority. Eaton makes sure that all products offered to its customers meet stringent environmental and user safety requirements. With IP20 rated terminals, **XT** is finger- and back-of-hand proof, giving you an extra level of security during maintenance work. **XT** complies with RoHS component environmental safety requirements as directed by the European community. The hazards of

human contact with AC current are well known; low voltage DC control power eliminates hazards for personnel while working on control systems. **XT** is available in DC control voltages from 12–220V. Using DC voltage eliminates the need to transform the wide variety of AC input voltages used worldwide. It's another way **XT** improves safety conditions while reducing system costs.

For combination motor controllers up to 15A, the tool-less plug assembly not only offers an element of ease, but also increases safety. Removing the electrical contact module creates a visible isolating gap to ensure greater safety during servicing. **XT** contactors up to 400A have yet another feature emphasizing Eaton's commitment to keeping you safe. Twin terminals with

dual sockets form a better connection, allowing wires of different sizes to be wired safely, and lowering the possibility of flash.

XT helps keep you and your customers' personnel, processes and equipment running safely.



XT Manual Motor Protectors (MMPs)

Included in the XT Line of IEC Power Control are XTPB pushbutton (up to 25A) and XTPR rotary (up to 63A) actuated Manual Motor Protectors, accessories, and enclosures.

XTPB Pushbutton Actuated MMP

The new XTPB MMPs up to 25A are ideally suited for small machines and

applications operated by push-button or palm switches. Special MMP enclosures with IP40, IP55 or IP65 degrees of protection are available surface mount or installed and feature protection against direct contact, solid foreign bodies and dust, as well as the ingress of water. Whether equipped with protective membranes, locking devices or an emergency-stop button,

the XTPB will meet your application requirements.

XTPR Rotary Actuated MMP

XTPR MMPs offer a solution for applications from 0.1 to 63A in two small frame sizes. The 63A XTPR has a width of just 55mm, the smallest MMP in the industry! Enclosures with black or red/yellow covers are available for

North American and IEC applications in IP41, IP55 or IP65 degrees of protection. XTPR enclosures are available for MMPs with front mount auxiliary contact modules including those with the early-make contact. Padlock attachments and a rotary handle mechanism kit make it easy to mount the XTPR in any enclosure.

XT Manual Motor Protectors Control Functions

| | XTPB Pushbutton Style MMP | XTPR Frame B Rotary Style MMP | XTPR Frame D Rotary Style MMP | XTPM Mag Only Rotary Style MMP | XTPM Manual Transformer Protector |
|--|---|---|---|---|---|
| Overload Current Range | 0.1–25A | 0.1–32A | 10–63A | 0.1–32A | 0.1–25A |
| Rated operational voltage (U_e) | 690V AC | 690V AC | 690V AC | 690V AC | 690V AC |
| Rated impulse withstand voltage (U_{imp}) | 6000V AC | 6000V AC | 6000V AC | 6000V AC | 6000V AC |
| Rated uninterrupted current = rated operation current (I_u = I_e) | 16A or current setting of the overcurrent release | 32A or current setting of the overcurrent release | 63A or current setting of the overcurrent release | 32A or current setting of the overcurrent release | 25A or current setting of the overcurrent release |
| Rated frequency | 40–60 Hz | 40–60 Hz | 40–60 Hz | 40–60 Hz | 40–60 Hz |
| Mechanical Life (operations) | 50,000 | 100,000 | 30,000 | 100,000 | 100,000 |
| Electrical Life (AC-3) (operations) | 50,000 | 100,000 | 30,000 | 100,000 | 100,000 |
| Maximum operating frequency, operations/hr | 25 | 40 | 40 | 40 | 40 |
| Motor switching capacity | | | | | |
| AC-3 (up to 690 V) | 16A | 32A | 63A | 32A | 25A |
| DC-5 (up to 250 V) | 16A | 25A (3 contacts in series) | 63A (3 contacts in series) | – | – |
| Degree of protection | | | | | |
| Device | IP20 | IP20 | IP20 | IP20 | IP20 |
| Terminals | IP00 | IP00 | IP00 | IP00 | IP00 |
| Protection against direct contact | | | Finger- and back-of-hand proof | | |
| Ambient temperature, °C | | | | | |
| Storage | -25–80 | -25–80 | -25–70 | -25–80 | -25–80 |
| Operating | -25–55 | -25–55 | -25–55 | -25–55 | -25–55 |
| Temperature Compensation (operation) to IEC 60947, VDE 0660 | -5–40 | -5–40 | -5–40 | -5–40 | -5–40 |
| Instantaneous short circuit release | 14 x I _e | 14 x I _e | 14 x I _e | 14 x I _e | Varies, 16–22 x I _e |
| IEC 60947 Type 2 @ 400V (kA) | 50 | 0.1–10A=150kA 10–32A=50kA | 10–25A=150kA 25–63A=50kA | 0.1–10A=150kA 10–32A=50kA | 0.1–10A=150kA 10–32A=50kA |
| UL508 Type E @ 480V (kA) | – | 0.1–10A=50kA 10–16A=42kA 16–32A=18kA | 10–40A=50kA | – | – |
| Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 | Yes | Yes | Yes | No | Yes |



Because **XT** meets IEC, UL, CSA, CCC and CE standards, it is the perfect product solution for applications all over the world. Including non-reversing and reversing contactors and starters as well as overload relays and accessories, **XT** brings IEC Power Control to a whole new level. The space-saving and easy-to-install **XT**

line of IEC contactors and starters is the efficient and effective solution for customer applications from 7–2000A. Enclosed control options include metallic and non-metallic enclosures with circuit breakers or North American or European fuses.

| Frame Reference | A | B | C | D | F | G |
|--------------------------|-----|------|-------|-------|-------|---------|
| Frame Width (mm) | 45 | 45 | 45 | 55 | 90 | 90 |
| AC-3 Amps, 400V | 6–9 | 7–15 | 18–32 | 40–65 | 80–95 | 115–150 |
| Max. Motor Rating | | | | | | |
| HP @ 460V | 5 | 10 | 20 | 50 | 75 | 125 |
| kW @ 400V | 4 | 7.5 | 15 | 30 | 45 | 75 |

| Frame Reference | L | M | N | P | R |
|--------------------------|---------|---------|----------|-------------|-------------|
| Frame Width (mm) | 140 | 160 | 250 | 260 | 515 |
| AC-3 Amps, 400V | 185–250 | 300–500 | 580–1000 | 1400 (AC-1) | 2000 (AC-1) |
| Max. Motor Rating | | | | | |
| HP @ 460V | 200 | 400 | 700 | - | - |
| kW @ 400V | 132 | 250 | 560 | - | - |



Key Features

Feature: AC and DC devices with the same dimensions achieved with an electronically controlled coil system.

Benefit: Space savings, reduced engineering design time.

Feature: Reduced sealing power consumption for DC contactors due to an electronic coil controller that uses less power.

Benefit: With sealing wattage as low as 0.5W, **XT** contactors reduce power consumption and generate less heat. This results in lower cooling requirements, the ability to mount more contactors/starters per cabinet and an extended life on pilot devices that carry control signals (pushbuttons, relays, PLC outputs, etc.).

Feature: Integrated suppressors in DC controlled contactors from 7–1000A.

Benefit: Offers reductions in total logistics and inventory costs by limiting the number of products ordered and stocked. Increased installation and maintenance efficiency, as wiring is not required.

Feature: Wide range of DC coil control voltages.

Benefit: IEC and UL standards require that contactors energize from 85 – 110% of the nominal control voltage.

XT contactors are designed with an expanded control voltage range as wide as 70 – 120%. This allows them to operate reliably through fluctuations in control voltages.

Feature: Twin terminals with separate sockets in contactors up to 400A.

Benefit: Offers installation and application flexibility when using different size wires. The improved integrity of the connections reduces cabling faults.



Rated to both IEC and UL standards, the **XT** Manual Motor Controller (MMC) and Combination Motor Controller (CMC) are available as open non-reversing or reversing devices. The **XT** MMC uses a mechanical and electrical connection element to combine a Manual Motor Protector (MMP) with a contactor. The **XT** CMC uses the same principle, but it comes standard with a Line Side Adapter to meet UL 508 Type E/F requirements for line side spacing, creepage and insulation in applications

without an in-the-panel short circuit protective device.

In one compact, assembled unit, the MMC and CMC combine:

- Motor disconnect function
- Thermal overload protection
- Magnetic short circuit protection
- Remote control operation

Since the manual motor protectors are UL listed for Group Motor Installations, the MMC provides a compact, assembled package for Group Motor applications.

Key Features

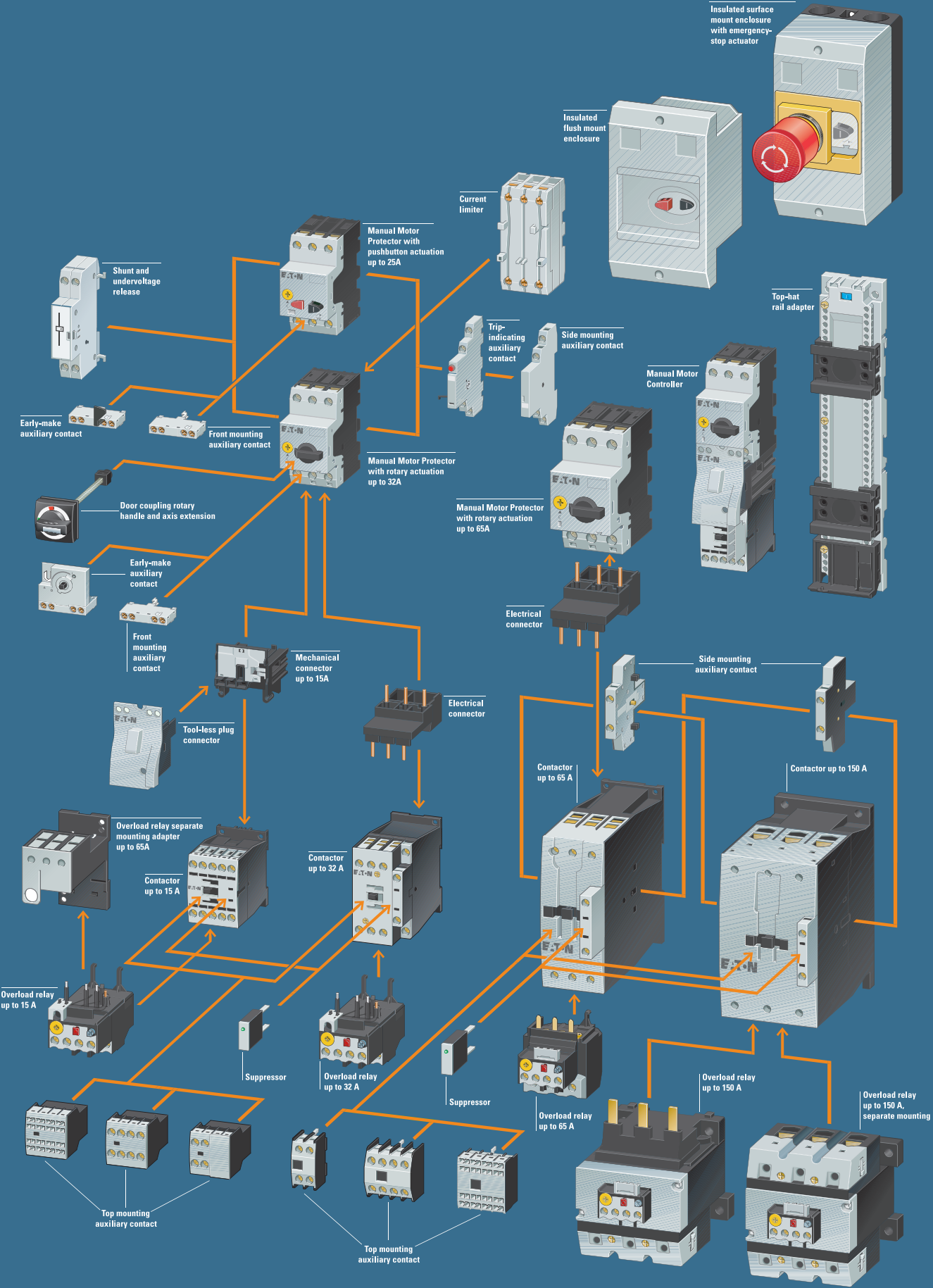
- Motor applications from .10 to 52A
- UL508 Type F Combination Motor Controller
- Visible trip indication
- Ambient compensated up to 131°F (55°C)
- Phase loss sensitivity
- Built-in heater and magnetic trip elements to protect the motor
- Short circuit trip at 14 times the maximum setting of the FLA adjustment dial
- High fault short circuit ratings – Type 2 coordination as high as 65k Ampere Interrupting Capacity
- 1NO-1NC auxiliary contacts as standard
- DIN rail and/or panel mount
- Magnet coil terminals located at the front of the contactor for easy access and wiring
- AC/DC coils offered in a variety of voltages

Manual & Combination Motor Controllers

| | XTSC | XTFC |
|-----------------------------------|---|-------------|
| HP Range, 460V AC | 1/2–30HP | 1/2–30HP |
| kW Range, 400V AC | .06–20kW | .06–20kW |
| Amp Rating | 0.1–40A (Consult Eaton for higher amp ratings) | 0.1–40A |
| AC Coils | Yes | Yes |
| DC Coils | Yes | Yes |
| Standards / Certifications | | |
| UL/CSA | Yes | Yes |
| UL508 Type F | No | Yes |
| CE | Yes | Yes |
| IEC 60947 | Yes | Yes |
| IEC 60947 Type 2 Coordination | See Catalog for Specific Combinations | |
| Components | | |
| Manual Motor Protector (MMP) | XTPR Series | XTPR Series |
| Contactor | XTCE Series | XTCE Series |
| Incoming Line Side Adapter | Not Required | Included |



Eaton's XT IEC Power Control



Also available (not shown):

- XT Mini Contactors, 6-9A
- XT Contactors up to 2000A
- XT Overload Relays up to 630A

Eaton's electrical business is a global leader in electrical control, power distribution, and industrial automation products and services. Through advanced product development, world-class manufacturing methods, and global engineering services and support, Eaton's electrical business provides customer-driven solutions under brand names such as Cutler-Hammer®, Powerware®, Durant®, Heinemann®, Holec® and MEM®, which globally serve the changing needs of the industrial, utility, light commercial, residential, and OEM markets. For more information, visit www.EatonElectrical.com.

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