

# Industrial Control Relays

## Type X - NEMA Type Relays

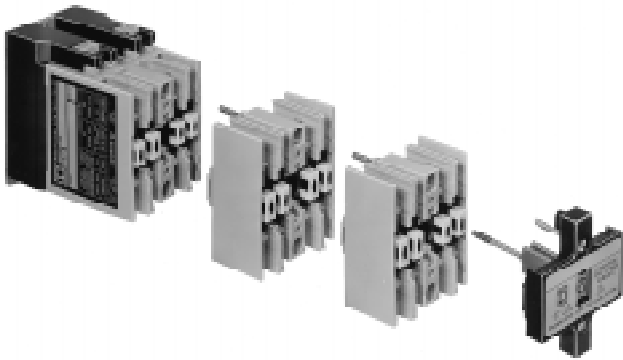
### General Information

Class 8501 Type X relays combine a rugged, heavy-duty design with modular construction for greater flexibility. They are ideal for those applications where long life, high reliability and ease of maintenance are important. The Type X family offers a complete line of relays and accessories for all control applications.

- Specified In Major Automotive Plants
- Modular Design Provides Greater Versatility and Reduction In Stock
- XUDO Version Ideal for Power Plant Applications
- Replaceable, Convertible Contacts
- Extremely Reliable Contacts
- 600 Volt 10 Ampere Rating (NEMA Type A600)
- Plug-In Color-Coded Contact Cartridges
- Mechanical Tie Between Contact Cartridges
- 1 and 3 Minute Timing Relays
- 8 Pole Latching Relays
- DC Operated Relays

### Modular Construction

A basic relay has room for up to 4 convertible contact cartridges. It can be expanded to 6 or 8 poles by installing an adder deck. A 10 or 12 pole relay can be built by adding a second deck. The same adder deck is used for both the middle and upper decks. Latching and timing relays are made by adding a latch or timer attachment to a basic relay. This reduces the number of components required in inventory.



### Common Mechanical Tie Non-Overlapping Contacts



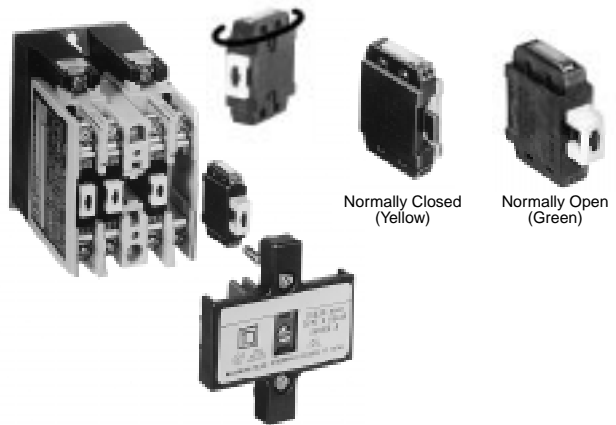
The Type X relay is designed to provide a significant degree of non-overlap between N.O. and N.C. contacts during normal operation. In addition, a common mechanical tie between all contact cartridges is provided. Therefore, the Type X relay is suitable for use in self-checking circuits for press control and automatic transfer line applications. Since the T-bar actuator is held captive in the cover plate, there is no chance of losing or forgetting to replace the mechanical tie when converting a contact or adding another deck.

### Plug-In Contact Cartridges

#### Contact Conversion Without Removing Terminal Screws or Wires

1. Remove relay cover and captive T-bar actuator.
2. Remove contact cartridge and rotate 180°.
3. Plug contact cartridge back in.
4. Replace T-bar actuator and cover.

**Note:** For additional information regarding contact cartridges see Page 9.



### Ring Or Spade Lugs – Form Y414

For relays with terminals that will accept ring or spade lugs, add Form Y414 to the Class and Type number of the device being ordered. Form Y414 is available on all AC relays, DC relays and attachments at no additional charge. Ring or spade lugs must have an outside diameter of .31 inch or less and an inside diameter large enough to accommodate a #6 screw. Lugs should accept #12 – #14 gauge (AWG) stranded copper wire. UL Listing is maintained only when AMP Plasti-Grip® #32958 insulated-barrel ring-tongue lugs are used.

### Normally Closed Contacts

Contact conversion is so simple that it is generally more economical to purchase relays with all contacts N.O. and convert contacts to N.C. as required. If it is preferred that relays be factory assembled with a combination of N.O. and N.C. contacts, change the type number so that following the “XO”, the first number indicates the number of normally open contacts (N.O.) and the second number indicates the number of normally closed contacts (N.C.). As indicated on contact arrangement tables found on Page 6.

There is a price adder for the factory installation of normally closed (N.C.) contacts.

### How to Order:

To Order Specify:	Catalog Number			
	Class	Type	Voltage Code	Form(s)
<ul style="list-style-type: none"> <li>• Class Number</li> <li>• Type Number</li> <li>• Voltage Code</li> <li>• Form(s)</li> </ul>	8501	XO40	V02	Y414



# Industrial Control Relays

## Type X - NEMA Type Relays/AC

### General Information, Order Information

#### AC Control Relays

In addition to all of the features listed on the previous page, the Type XO relay also provides:

- Straight-through wiring
- Plug-in contact cartridges for easy contact conversion and replacement
- Contact conversion without removing terminal screws or wires
- Self-lifting pressure wire connectors that will accept up to two #12-18 (AWG) gauge stranded copper wires
- Replaceable coil



Type XO40



File E78403  
CCN NKCR

File LR 60905  
Class 3211 03

Normally Open Convertible Instantaneous Contacts	Control Relay $\Delta$	
	Type	
0	XO00 *	
2	XO20 *	
3	XO30 *	
4	XO40 *	
6	XO60 *	
8	XO80 *	
10	XO1000 *	
12	XO1200 *	

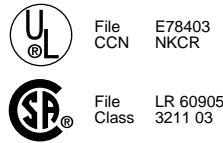
$\Delta$  A maximum of 8 N.C. contacts is allowed on 9-12 pole relays.

#### AC Master Relays

- 20 Ampere Contact Rating due to use of Master Contact Cartridges
- Provisions for Standard Cartridges to be used in contact cavities not occupied by Master Cartridges in 2-8 pole AC relay
- Straight-through wiring
- Plug-in contact cartridges for easy contact conversion and replacement
- Contact conversion without removing terminal screws or wires
- Self-lifting pressure wire connectors that will accept up to two #12-18 (AWG) gauge stranded copper wires
- Replaceable coil



Type XMO40



File E78403  
CCN NKCR

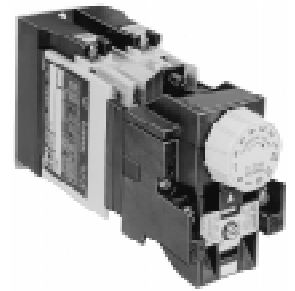
File LR 60905  
Class 3211 03

Number of N.O. 20 Ampere Convertible Contacts	Open Type $\dagger$	
	Type	
2	XMO20 *	
4	XMO40 *	
6	XMO60 *	

$\dagger$  Attachments not permitted on this relay.

#### AC Timing Relays

- Easily convertible On Delay or Off Delay
- Two adjustable timing ranges
- Repeat accuracy well above  $\pm 10\%$
- Convertible 1 N.O. and 1 N.C. timed contacts
- Large knob for easy adjustment of time delay
- Off Delay mode times out even after loss of power



Type XO40XTE1



File E78403  
CCN NKCR

File LR 60905  
Class 3211 03

Timing Mode	Normally Open Convertible Instantaneous Contacts	Timed Convertible Contacts		Timing Relay	
		N.O.	N.C.	0.2-60 sec.	5-180 sec.
				Type	Type
On Delay	0	1	1	XO00XTE1 *	XO00XTE2 *
	2	1	1	XO20XTE1 *	XO20XTE2 *
	4	1	1	XO40XTE1 *	XO40XTE2 *
Off Delay	0	1	1	XO00XTD1 *	XO00XTD2 *
	2	1	1	XO20XTD1 *	XO20XTD2 *
	4	1	1	XO40XTD1 *	XO40XTD2 *

#### AC Latching Relays

- Mechanical Latch holds all contacts switched even after removal of power from replaceable Latching Coil.
- Provides sequence memory in the event of power loss. Ideal for press control, process control and punch presses.
- Replaceable Unlatch Coil to switch contacts back to original state.
- Continuously rated Unlatch Coil (no coil clearing contacts required).



Type XO40XL

Normally Open Convertible Instantaneous Contacts	Latching Relay	
	Type	
2	XO20XL *	
3	XO30XL *	
4	XO40XL *	
6	XO60XL *	
8	XO80XL *	



File E78403  
CCN NKCR

File LR 60905  
Class 3211 03

\* Voltage Code must be specified to order this product. Refer to standard voltage codes listed below and insert as shown in How To Order.

#### Voltage Codes:

AC Voltages — Hz.	Code
12 - 60	V11
24 - 60	V01
24 - 50	V12
48 - 60	V18
48 - 50	V16
120 - 60/110 - 50	V02
208 - 60	V08
240 - 60/220 - 50	V03
277 - 60	V04
480 - 60/440 - 50	V06
600 - 60/550 - 50	V07

#### How to Order:

To Order Specify:	Catalog Number		
• Class Number	Class	Type	Voltage Code
• Type Number	8501	XO40	V02
• Voltage Code			

