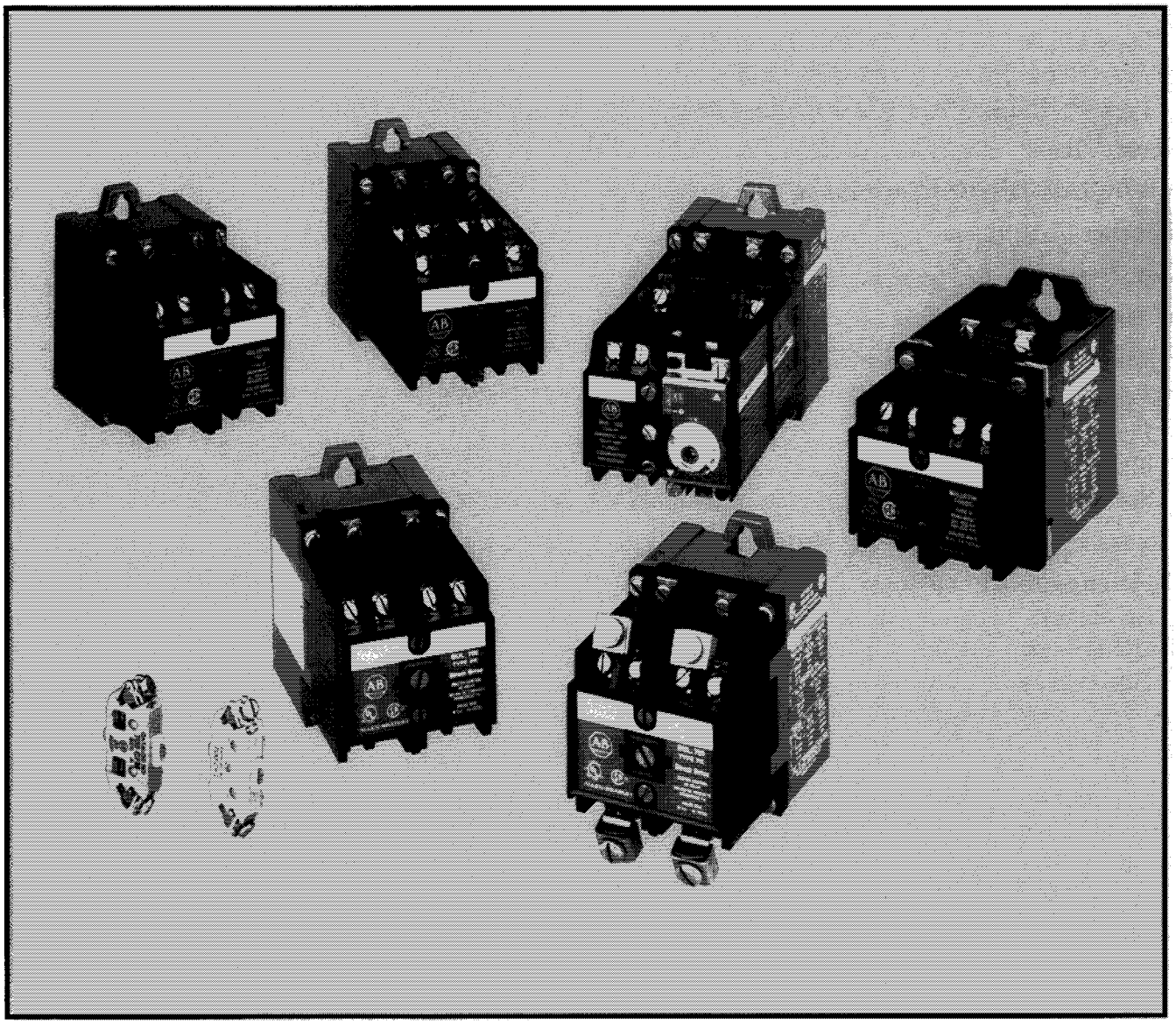
ALLEN-BRADLEY

CONTROL RELAYS

Bulletin 700 Type P • PK • PH

- 10 Amp • 20 Amp • 35 Amp
- Direct Drive™ Cartridge Relays
- 600 Volt AC & DC



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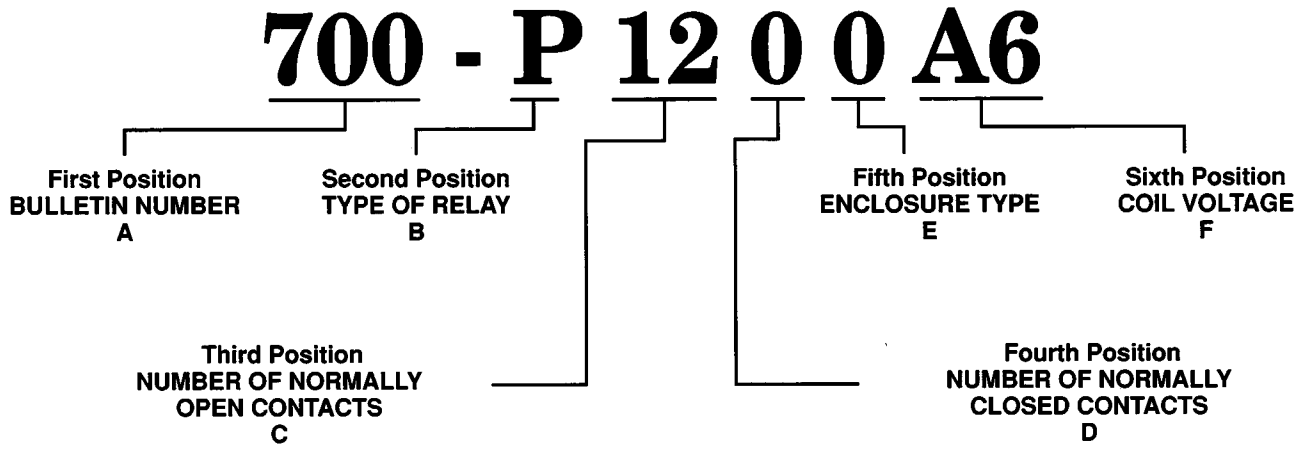
Catalog Number Explanation

INDUSTRIAL RELAYS



A. BULLETIN NUMBER
700 is the Bulletin number for relays with AC coils.
700DC is the Bulletin number for relays with DC coils.

B. TYPE OF RELAY
- P – Basic Relay with Standard 10 Amp Contact Cartridges
- PH – Relay with 20 Amp Master Cartridges and 35 Amp Jumper Kit
- PK – Relay with 20 Amp Master Cartridges
- PKT – Relay and Timing Unit with 20 Amp Master Cartridges
- PL – Basic Relay with Latching Unit
- PR – Relay with Logic Reed Contacts
- PT – Basic Relay with Timing Unit
- PZ – Basic Relay with Pairs of Overlapping Contacts

C. NUMBER OF NORMALLY OPEN CONTACTS
This position indicates the quantity of Normally Open contacts (12 maximum).

D. NUMBER OF NORMALLY CLOSED CONTACTS
This position indicates the quantity of Normally Closed contacts (8 maximum).

E. ENCLOSURE TYPE
This position provides the designation of the enclosure, e.g., NEMA Type 1, 4, etc.
Note – "O" is for Open Type

F. COIL VOLTAGE
The last position provides the letters and numbers of the coil voltage. Coils are available from 6 to 600 Volts AC and DC.

Description

TYPE P ■ 10 AMP
STANDARD CONTACT CARTRIDGES

TYPE PK ■ 20 AMP
MASTER CONTACT CARTRIDGES

TYPE PH ■ 35 AMP
TANDEM CONTACT CARTRIDGES

The Bulletin 700 Type P, PK and PH are rugged, heavy duty, 600 Volt AC or DC relays. These machine tool relays have the advantages of a convertible contact cartridge relay where the cartridge fits in any contact location, plus the additional benefits inherent in a DIRECT DRIVE™ design.

These relays feature convertible contact cartridges with SWINGAROUND™ terminals for easy N.O. / N.C. conversion without the removal of terminal screws. The standard Type P relay has a bifurcated spanner with nickel-silver contacts that provides excellent contact reliability and low contact bounce. A metal spanner guide helps withstand thermal abuse.

A broad line of accessories and attachments is available to easily convert a basic relay to meet most of your application needs without substantially increasing panel space. Attachments include: mechanical latch, pneumatic and solid state time-delay, surge suppressors, and a variety of contact cartridges.

The Type PK master control relays are factory-assembled relays equipped with 20 Amp master cartridges. The 20 Amp Master Cartridges provide the Type PK relay twice the current switching rating of the standard Type P relay. Contact cartridges can be added to a Type P or PK relay to control up to (12) 20 Amp circuits. Type PK relays are ideal for controlling the total load of many processes, machines, plus heating and lighting loads.

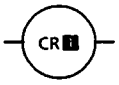
A single pole Type PH relay consists of two master cartridges and a 35 Amp Jumper Kit. The jumpers are mounted on the top and bottom terminal of two relay cartridges to parallel the contacts. With this added fexibility these relays are ideal for controlling 35 Amp lighting loads, heating loads, and many machine and process loads.

The DC Type P relay's design includes a continuous duty DC coil for use in industrial environment applications. Common uses are power plants, utilities, mining applications, petrochemical, petroleum facilities and where DC circuits such as battery supply, control alarms and shut downs are required.

TERMS AND SYMBOLS

Coils
The input to a relay is the coil.
The specified voltage is indicated on each coil.

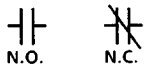
Coil Symbol



■ CR is control relay.

Contacts
The output of a relay is the contact.
The normally open (N.O.) contact closes and the normally closed (N.C.) opens when the relay is energized.

Contact Symbol



N.O. is normally open.
N.C. is normally closed.

Flexibility

The Bulletin 700 Type P relay line provides exceptional flexibility that will supply you with the exact relay to meet your specific application needs.

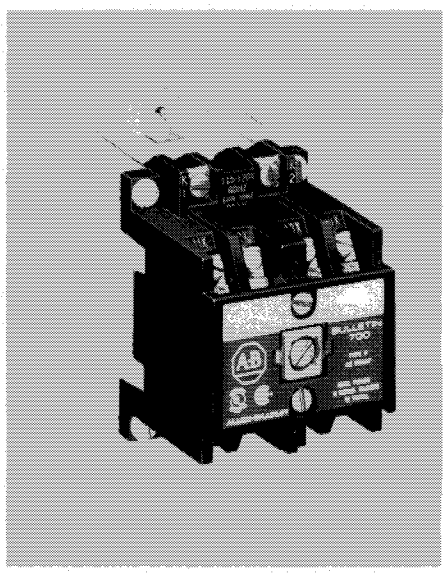
- **Type P 10 Amp 2 to 12 poles**
- **Type PK 20 Amp 2 to 12 poles**
- **Type PH 35 Amp 1 to 6 poles**

- Available for operation of AC or DC voltages from 6 to 600 volts.
- All contact cartridges are completely interchangeable making Type P relays easy to upgrade to a higher current rating. Any cartridge can fit into any cartridge location in a relay providing simple control of 10, 20 and 35 Amp circuits in the same relay. The 35 Amp Jumper Kit – Catalog No. 700-CPH can be added to any (two) 20 Amp Catalog No. 700-CPM cartridges to control 35 Amp loads.

  A single relay can control 35 Amp loads as well as 10 Amp, 20 Amp and logic reed loads to use the (12) poles available.
- Logic Reed Convertible Contact Cartridges used for controlling low energy circuits can be placed in any contact location in a relay.
- All relays are the same basic construction and require the same panel space (2-1/4" x 3-1/2") making them totally interchangeable. Refer to Pages 18, 19 and 20 for detailed dimensions.
- These relays can directly replace most competitive relays because of the 3-1/8" vertical mounting dimension. They can be mounted with either #8 or #10 mounting screws. The 2-1/4" horizontal mounting dimension is smaller than most of the competitive relays and equal to the others.
- All relays and contact cartridges are color coded for easy identification. The standard 10 Amp Type P relay has a grey label on the front of the relay. The Type PK and PH relays have a red label. For contact cartridge color coding, refer to Page 12.
- All the relays and accessories include an instruction sheet written in five languages (English, French, German, Spanish and Portugese) for use in international markets.
- The AC voltage coils are designed to energize successfully at 85% of the specified voltage. Coils will operate continuously at 110% after stabilizing at +40°C ambient.
- The DC voltage coils are designed to energize successfully at 80% rated voltage and withstand 110%. On battery supply applications, relays will operate at 115% during charging periods and at 85% rated voltage during discharging periods at +40°C ambient.

Specifications

TYPE P STANDARD CARTRIDGE CONTACT RATINGS
CATALOG NO. 700-CP1



AC Contact Ratings NEMA A600		
Volts AC	**Make**	**Break**
120-600	7200VA	720VA
72-120	60A	720VA
12-72	60A	10A
Continuous carrying current: 10 Amps		

DC Contact Ratings Single Cartridge		
NEMA Rating	**Volts DC**	**Make/Break**
P600	301-600	120VA
P600	28-300	138VA
P600	6-27.5	5A
Continuous carrying current: 5 Amps		

DC Current Ratings						
Contacts in Series	**24V**	**64V**	**125V**	**250V**	**500V**	**600V**
1	5A	2.2A	1.1A	0.55A	0.24A	0.2A
2	10A	10A	5A	2A	0.70A	0.5A
3	-	-	7A	3A	1.5A	1.0A
4	-	-	10A	5A	2.5A	1.5A

TYPE PK MASTER CARTRIDGE CONTACT RATINGS
CATALOG NO. 700-CPM

AC Contact Ratings		
20 Amp general use at 0.75 PF 20 Amp resistance heating 20 Amp - 480 Volt lighting loads		
Master Pilot Duty		
Volts AC	**Make**	**Break**
120-600	14.4KVA	1.44KVA
72-120	120A	1.44KVA
12-72	120A	20A
Continuous carrying current: 20 Amps		
Use CU wire, 75°C or higher.		

DC Contact Ratings Single Cartridge [1]		
NEMA Rating	**Volts DC**	**Make/Break**
P600	301-600	120VA
P600	151-300	138VA
N150	65-150	275VA
N150	33-64	320VA
N150	6-32	10A
Continuous carrying current: 10 Amps		

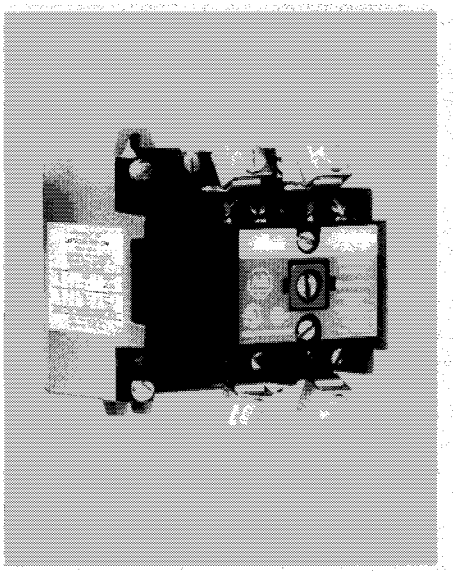
Contact Ratings AC Single Phase	
3 HP @ 240 Volts	N.O.
2 HP @ 240 Volts	N.O. / N.C.
1 HP @ 120 Volts	N.O. / N.C.

DC Current Ratings						
Contacts in Series	**24V**	**64V**	**125V**	**250V**	**500V**	**600V**
1	10A	5A	2.2A	0.55A	0.24A	0.2A
2	20A	10A	5A	2A	0.70A	0.5A
3	-	15A	7A	3A	1.5A	1.0A
4	-	20A	10A	5A	2.5A	1.5A

[1] Note that the DC Make/Break rating is 10A at 6-32V, 320VA at 33-64V and 275VA at 65-150V. This is twice the rating of standard cartridges. Ratings above 150 Volts DC are the same as for standard cartridges, but the heavier construction of the Master Cartridge provides increased contact life when switching DC loads.

Specifications

TYPE PH TANDEM CARTRIDGE CONTACT RATINGS
CATALOG NO. 700-CPH



IMPORTANT – The ratings in the following tables apply to the 20 Amp Master Cartridges only and both cartridges must be the same configuration (Normally Open or Normally Closed). These ratings DO NOT apply to other SWINGAROUND™ cartridges.

AC (Single Phase)	
35 Amp General Use 0.75 PF to 600 Volts 35 Amp Tungsten Lamp Load to 480 Volts	
AC – Single Phase	
5 HP @ 240 Volts	N.O.
3 HP @ 240 Volts	N.O. / N.C.
2 HP @ 120 Volts	N.O. / N.C.
[1]Continuous carrying current: 35 Amps	

DC Make / Break						
DC Volts	24	64	125	250	500	600
DC Amps **Watts**	20 480	7.5 480	2.2 275	0.55 138	0.27 135	0.20 120
[1]Continuous carrying current: 20 Amps						

[1] Use CU wire 75°C or higher.

BULLETIN 700 TYPE P ■ PK ■ PH RELAY
COIL BURDEN

AC RELAYS				
Type	**60 Hz**		**50 Hz**	
	Sealed VA	**Inrush VA**	**Sealed VA**	**Inrush VA**
2 to 12 Poles	20	138	23	124
AC Mechanical Latch Attachment	5.5	15.6	5.4	15
Solid State Time-Delay Attachment	4VA, 2.5 Watts			

DC RELAYS	
Type	Sealed / Inrush
0 to 12 Poles	12.7 Watts
2 Timed Contacts 0 to 4 Instantaneous Contacts	12.7 Watts
DC Latch Unit (0 to 1 Pole)	[2]35 Watts

[2] Includes self-clearing contact using momentary power to unlatch.

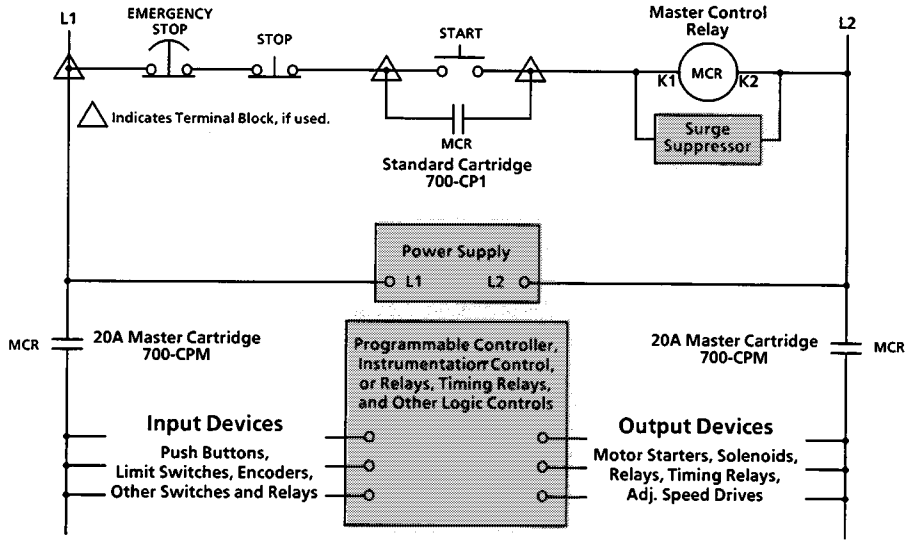
Applications

BULLETIN 700 TYPE PK OR P RELAYS WITH 700-CPM CONTACT CARTRIDGES

Master Control Relay Applications – Current ratings of the Master Cartridge allow it to carry 20 Amps continuously and interrupt its make rating (120 Amps at 120 Volts AC for example) at least **50 times**. This makes it useful in the master control circuits shown below.

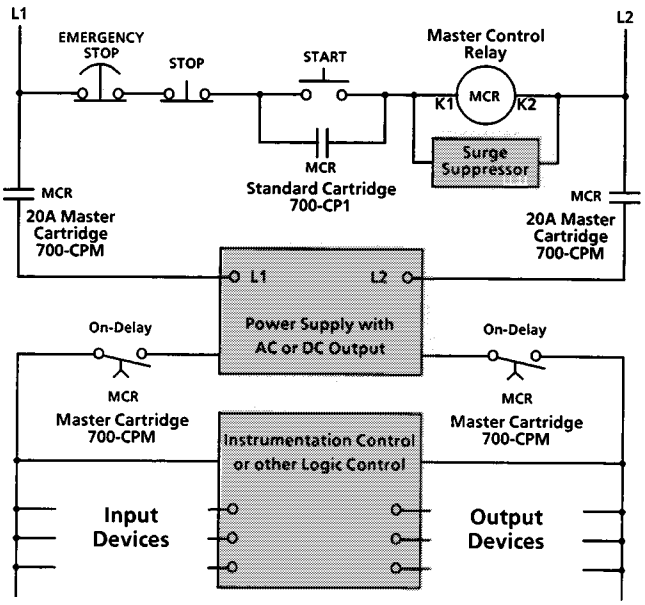
SURGE SUPPRESSOR – To minimize electromagnetic interference (EMI) generation, connect a surge suppressor in parallel with the Master Control Relay coil, as shown in the examples. Use Catalog No. 700-N24 or 700-N5 for Type P and PK relays.

In this application, 20 Amp Master Cartridges control the power from L1 and L2 to all the inputs and outputs for complete shut down of a control panel. A standard cartridge, Catalog No. 700-CP1, is used in the Master Control Relay coil circuit.



NOTE – One contact may be used to control the L1 circuit if the L2 line is grounded.

This application uses a Master Control Relay with two instantaneous Master Cartridges for shut down of the panel, and two time delay Master Cartridges to provide a definite reset time.



Applications

BULLETIN 700 TYPE PH OR PK RELAYS WITH 700-CPH JUMPER KIT

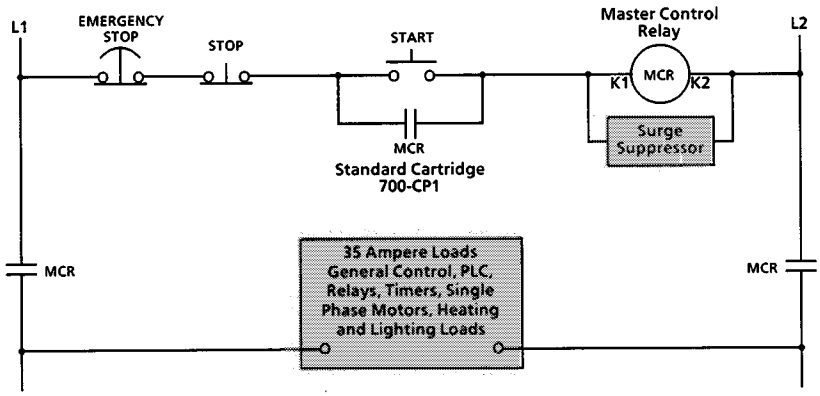
35 Amp Relay Applications

IMPORTANT – Ratings apply to Catalog No. 700-CPM Master Cartridges only and both cartridges must be of the same configuration (Normally Open or Normally Closed).

SURGE SUPPRESSOR – To minimize (EMI) generation, connect a surge suppressor in parallel with the Control Relay coil, as shown in the examples. Use Catalog No. 700-N24 or 700-N5 for Type PH relays.

AC WIRING DIAGRAM

In this application, 35 Amp tandem contacts control the power from L1 and L2 to all the inputs and outputs for complete shutdown of a control panel. A standard contact is used in the coil circuit.



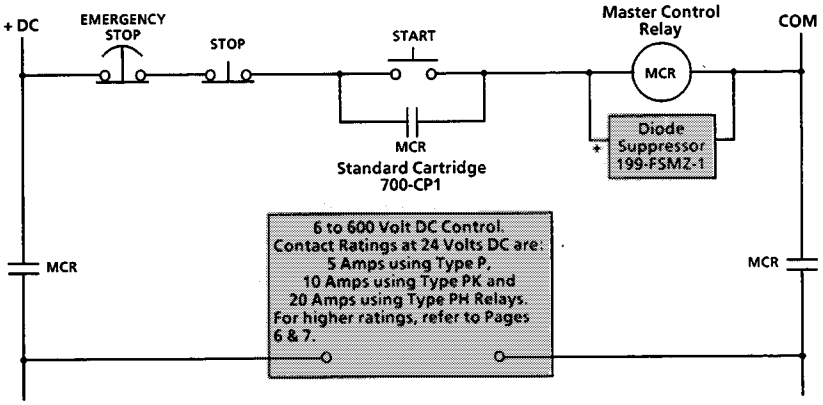
NOTE – A single contact or jumper kit may be used to control the L1 circuit if the L2 line is grounded.

35 AMP TANDEM CONTACTS IN TIME-DELAY ATTACHMENT

NOTE – Timers are factory-assembled as On-Delay and can be easily converted to Off-Delay.

DC WIRING DIAGRAM

SURGE SUPPRESSOR – To minimize (EMI) generation, connect a Catalog No. 199-FSMZ-1 diode suppressor in parallel with the relay coil.



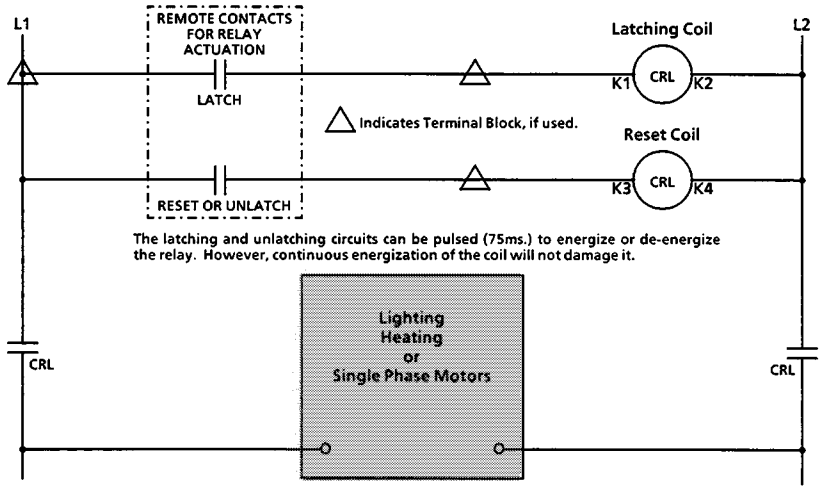
DC Relay Applications

Applications

BULLETIN 700 TYPE PL ■ PKL11 ■ PHLL11 LATCHING RELAYS

Type P ■ 10 Amp ■ 2 to 6 Poles
Type PK ■ 20 Amp ■ 2 to 6 Poles
Type PK ■ 35 Amp ■ 1 to 3 Poles

The latching and reset coils may be different AC and DC voltages from 6 to 600 Volts within the same relay.



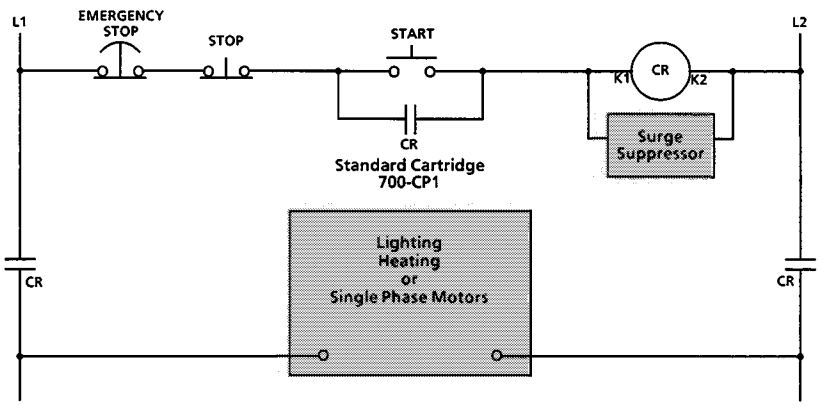
NOTE – A single contact or jumper kit may be used to control the L1 circuit if the L2 line is grounded.

CAUTION – An open or failed unlatch control circuit will fail to unlatch the relay. For this reason, a mechanical latch unit should not be used where protection is needed against automatic restart after a power failure or where reliability to a control function is critical to safety.

BULLETIN 700 TYPE PK ■ PH RELAYS

20 AMP SINGLE CONTACT RATINGS
General Use at 0.75 PF
Resistance Heating
480V Lighting Load
3HP at 240V N.O.
2HP at 240V N.O. / N.C.
1HP at 120V N.O. / N.C.

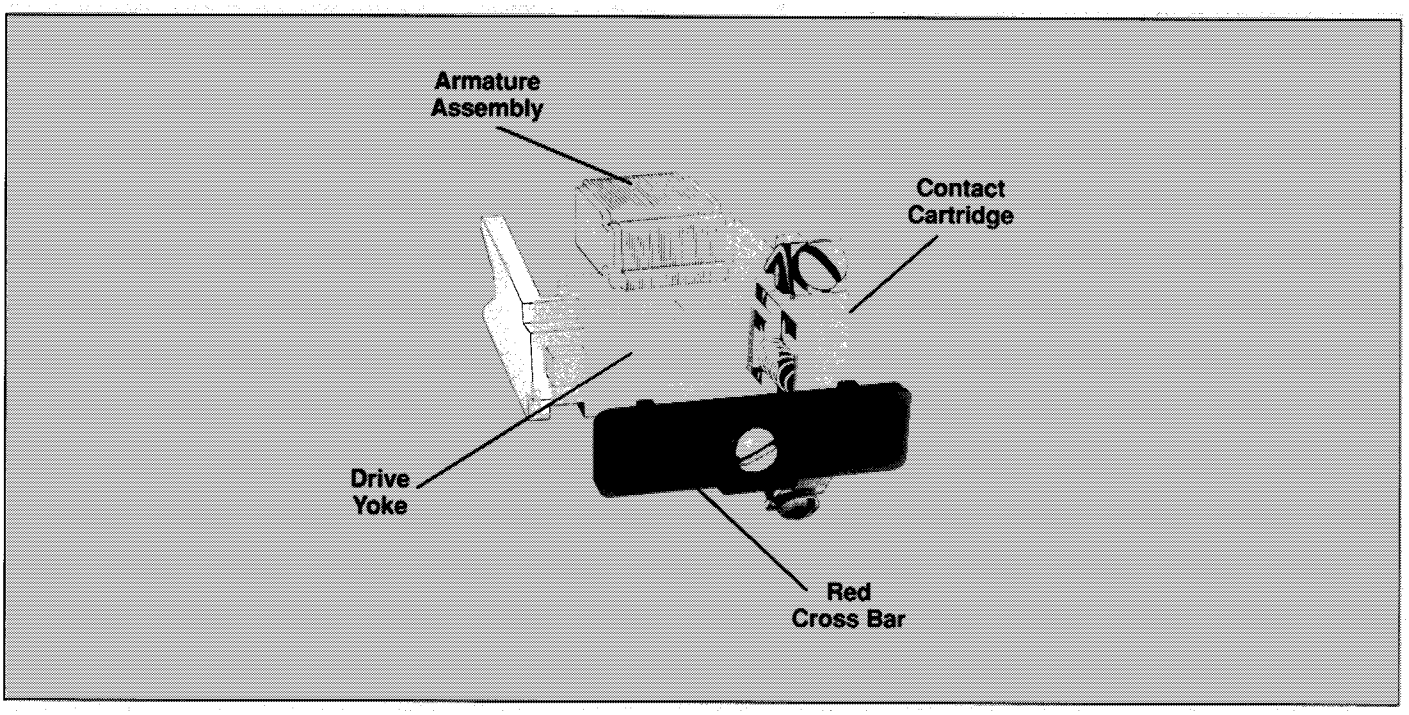
35 AMP TANDEM CONTACT RATINGS
General Use at 0.75 PF
480V Lighting Load
5HP at 240V N.O.
3HP at 240V N.O. / N.C.
2HP at 120V N.O. / N.C.



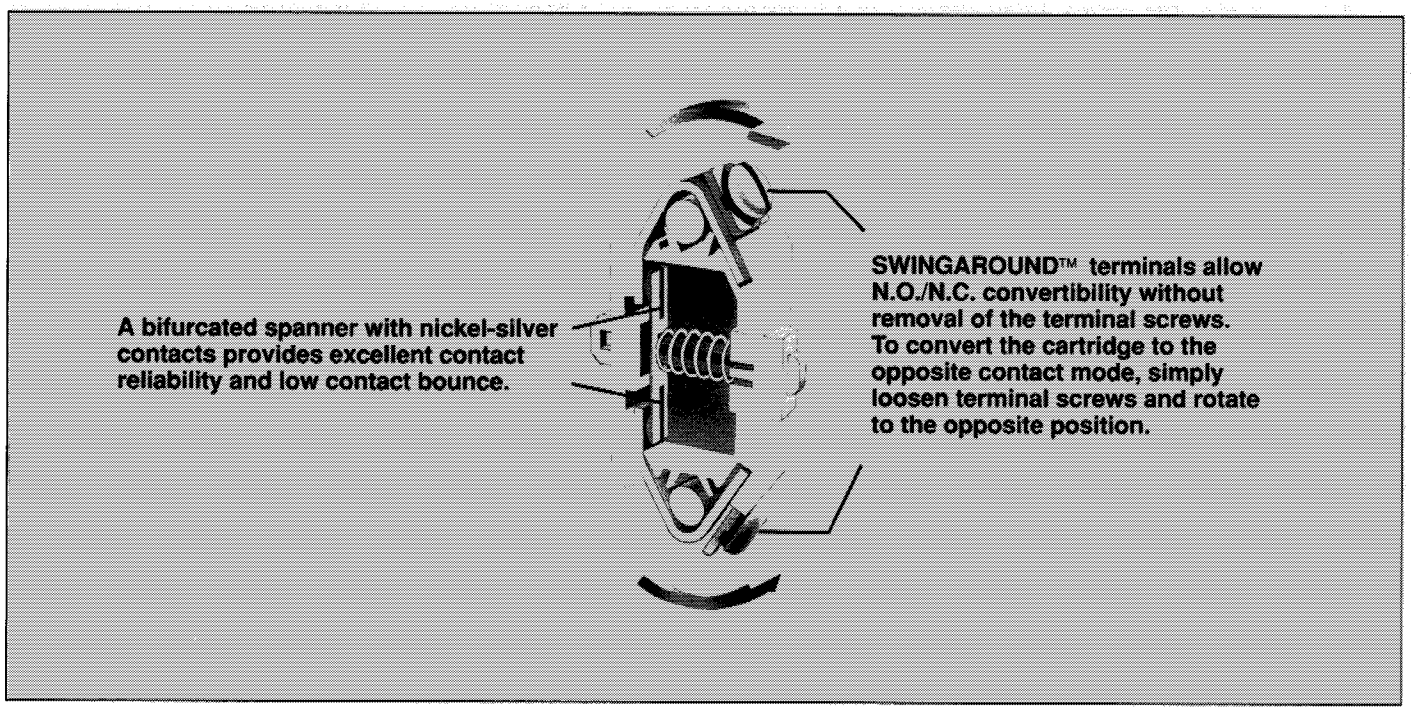
NOTE – A single contact or jumper kit may be used to control the L1 circuit if the L2 line is grounded.

Direct Drive

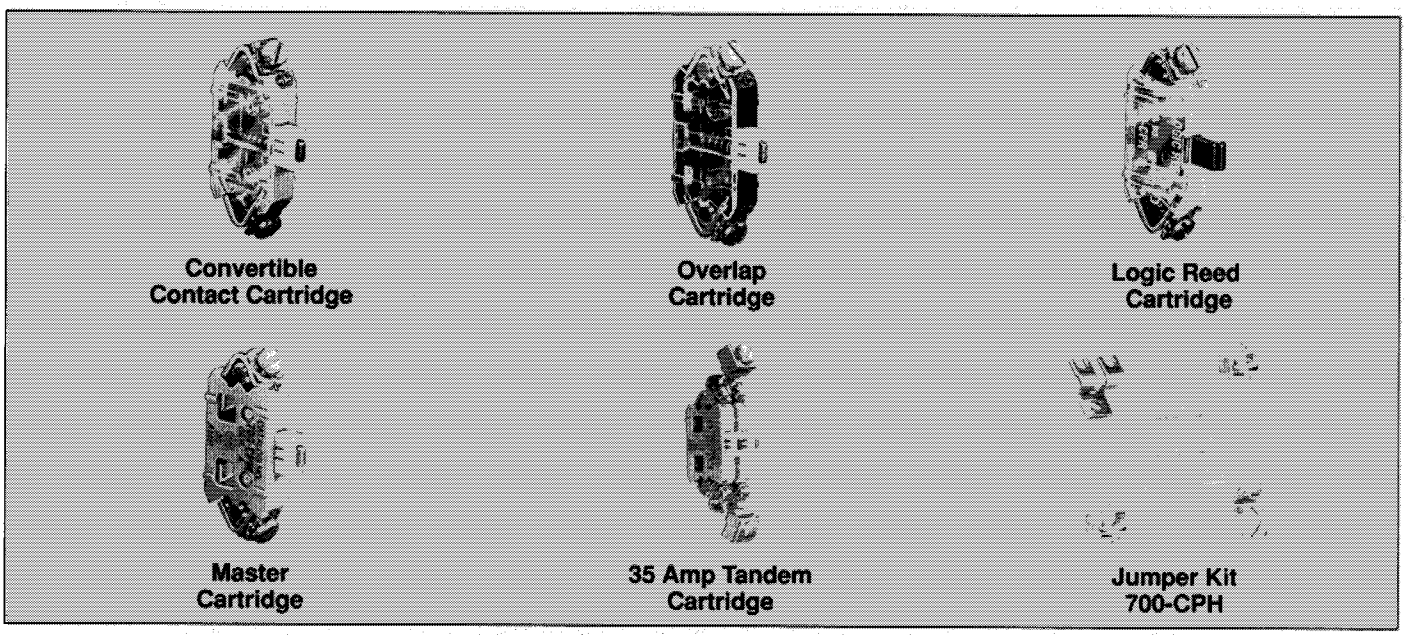
DIRECT DRIVE construction consists of contact cartridges held between a drive yoke and cross bar. This construction, together with the drive yoke coupled directly to the armature assembly and closely guided in the housing, is designed to provide a non-overlap condition between N.O. and N.C. contacts when the relay is operated within its published ratings.



Enclosed Contact Cartridges with SWINGAROUND™ Terminals



Contact Cartridges



General – All contact cartridges fit in all relay, adder deck, pneumatic time-delay and mechanical latch attachment contact locations. Refer to Pages 6 and 7 for all contact ratings.

All cartridges are easily converted from N.O. to N.C. without removing the terminal screws. Simply remove the contact from the relay and SWINGAROUND™ the terminal screws.

Convertible Cartridges (Catalog No. 700-CP1) are available for adding cartridges to the basic relay and adder decks.

Overlap Cartridges (Catalog No. 700-CP11Z) are available in pairs for those applications where it is necessary for the N.O. contact to close before the N.C. contact opens.

Logic Reed Cartridges (Catalog No. 700-CPR) containing hermetically sealed contacts for low energy switching. These cartridges are designed to provide continuity in most environments. Ratings are 150VAC, 500mA, 25VA max. make or break and 30VDC, 200mA, 6 Watts max. resistive.

Master Cartridge (Catalog No. 700-CPM) current ratings allow the cartridge to carry 20 Amps continuously. This rating makes the relay ideal for controlling the total load of many machines or processes. Contact ratings are on Page 6 and on the adhesive label that is provided with the cartridge.

Tandem Contact Circuits using Master Cartridges and a Catalog No. 700-CPH Jumper Kit to parallel two contacts are rated at 35 Amp continuous. The Jumper Kit provides a large terminal for either #8 or #10 AWG wires. Contact ratings are on Page 7 and on an adhesive label that is provided with the kit.

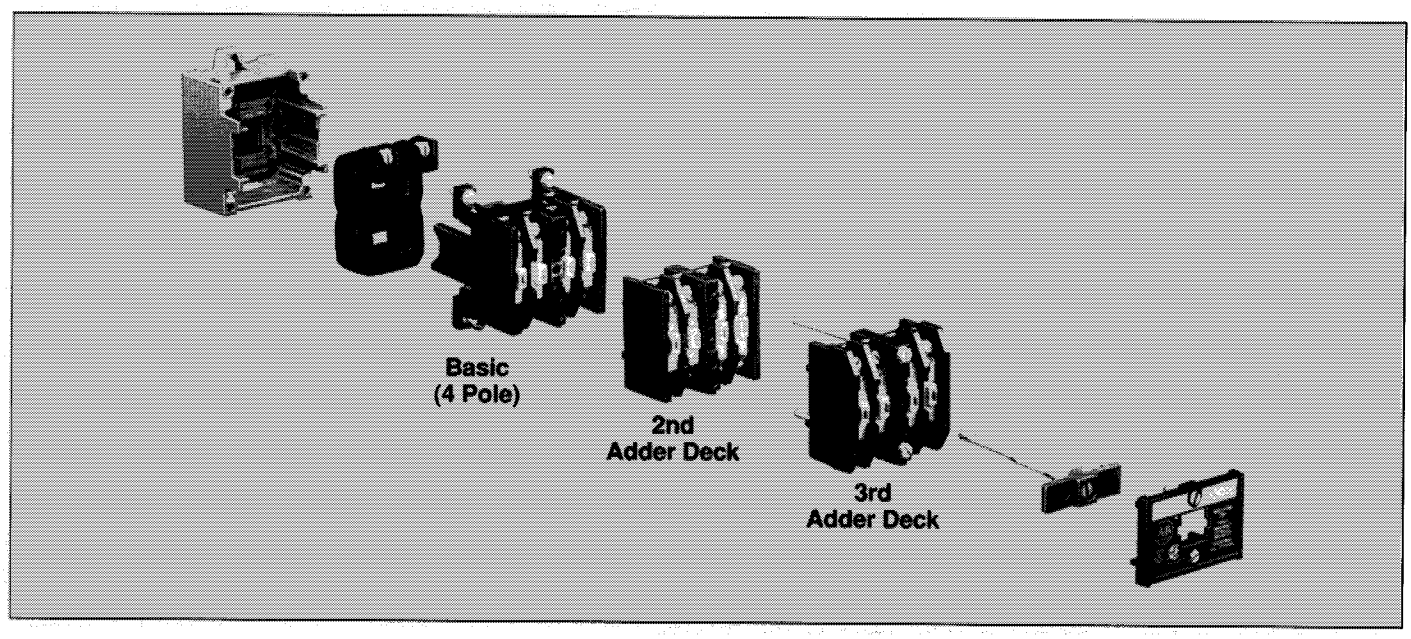
CONTACT CARTRIDGE SYMBOL & COLOR IDENTIFICATION						
CONTACT CARTRIDGE			CONTACT SYMBOL			
Type	Catalog No.	Color	N.O.	Color	N.C.	Color
Standard	700-CP1	Lt. Grey	⊣⊢	Green	⊣/⊢	Yellow
Overlap	700-CP11Z	Black	⊣⊢	Green	⊣/⊢	Yellow
Logic Reed	700-CPR	Off-White	⊣⊢	Green	⊣/⊢	Yellow
Master	700-CPM	Lt. Grey	⊣⊢	Red	⊣/⊢	Red

Construction

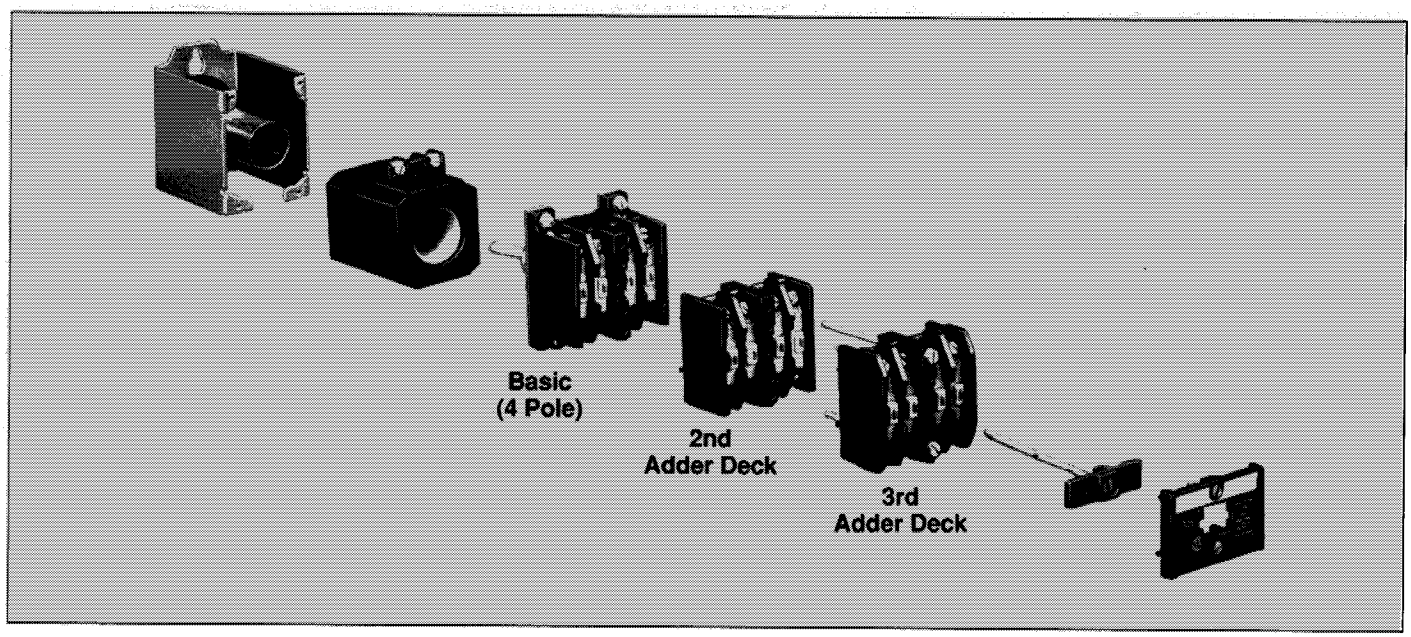
The modular construction of the Type P, PK and PH relays provide you the flexibility of buying only as much relay as you need and allows you to make last minute circuit changes. Individual contact cartridges can be converted from Normally Open to Normally Closed, and added or deleted as required. A basic deck, four pole relay can easily be converted to an eight or twelve pole relay with the addition of adder decks. A basic four pole relay can also accept the addition of a time-delay or latching attachment.

The pressure molded operating coil can be changed from the front of the relay without intruding into wiring space or adjacent relay space. It is easily removed by loosening the four captive housing screws and lifting off the housing. All parts are retained, including the armature, permitting rapid coil changes and reduced downtime if the coil should ever need to be replaced.

AC RELAY CONSTRUCTION



DC RELAY CONSTRUCTION



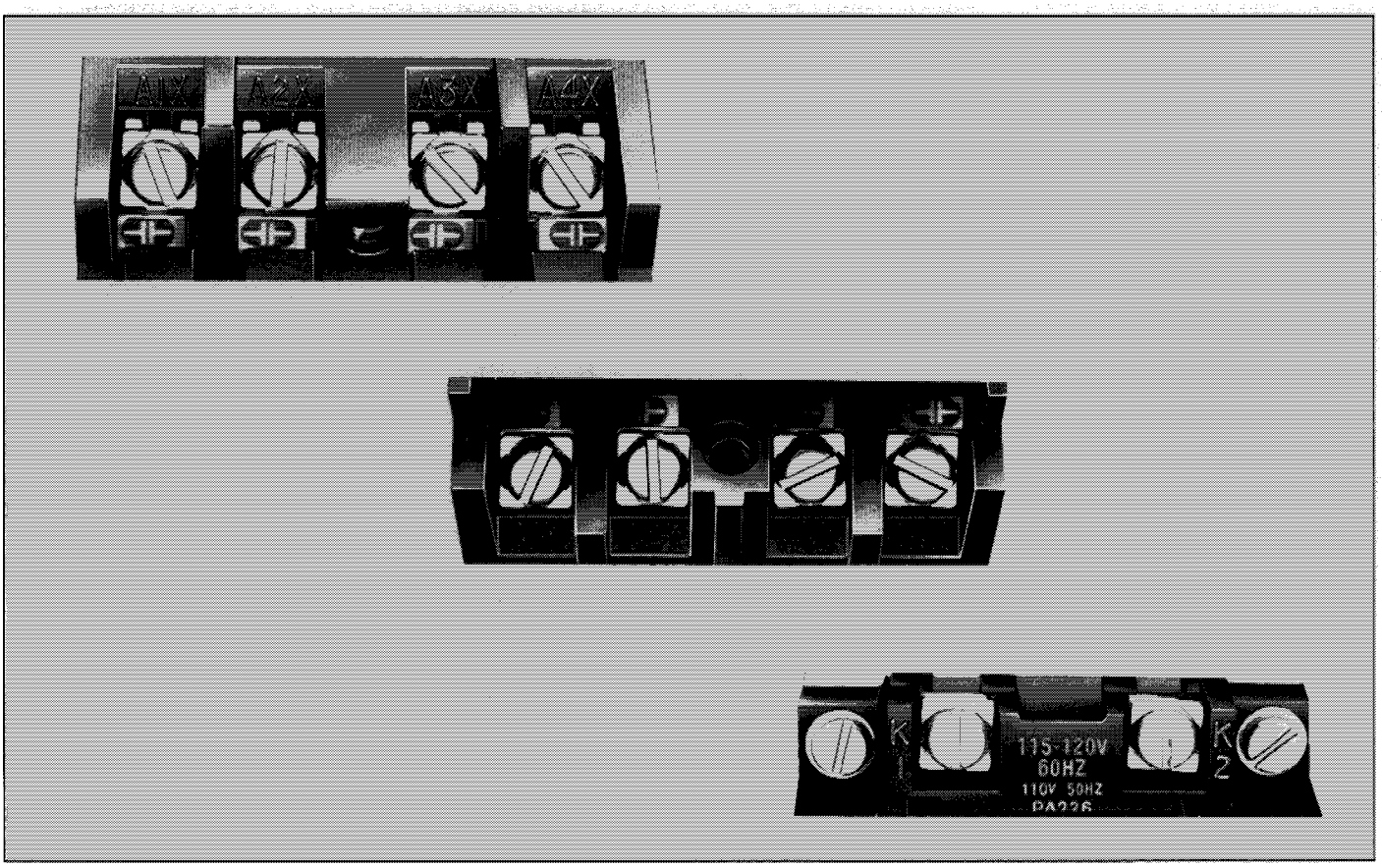
Wiring

The Type P, PK and PH relays are designed for straight through wiring and each terminal is clearly identified for easy location during wiring. The self-lifting pressure wire connectors on the cartridges are slanted for easy terminal accessibility. A guided wire entry facilitates wiring. Type P and PK terminals will accept up to two #12 AWG wires. Type PH terminals can accept up to one #8 or two #10 AWG wires.

Systematic Terminal Identification

All terminals are identified with an alphanumeric system to permit the standardization of wiring diagrams, for quick and efficient troubleshooting. The first, second, and third decks are designated A, B, and C respectively. Each cartridge slot is numbered 1 through 4 from left to right. The upper and lower terminals on each cartridge are designated X and Y respectively. For example, the upper terminal for the first contact, on the left, on a basic 4 pole relay is identified as A1X and the lower as A1Y the second as A2X and A2Y and so on.

In addition, the normal status of the contact is indicated by a symbol on the cartridge. The relay operating coil terminals are designated Kl and K2. The latch and pneumatic timing attachments utilize the same identification system, however, the prefix letter "D" is used for cartridge slot markings, and K3 and K4 for unlatch coil terminals.



Attachments

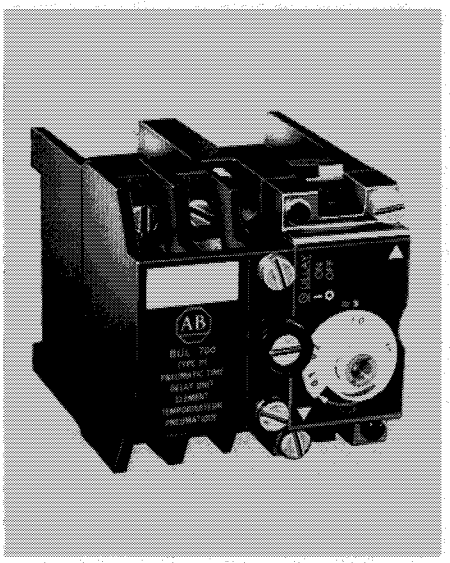
The Pneumatic Time-Delay, Mechanical Latch, and Solid State Time-Delay attachments mount directly on the Type P, PK and PH relays. This results in space savings since it takes the place of separately mounted devices. Refer to Pages 6 and 7 for ratings.

Pneumatic Time-Delay

The Pneumatic Time-Delay attachment mounts directly on a electrically held Type P, PK or PH relay. The time-delay attachment uses a recirculating air system that is filtered during each time cycle. The timing range is adjustable from 0.1 to 60 seconds with a repeat accuracy of ±10% of the time setting. A time setting indicator (red dot) provides an approximation of the time set value.

The time-delay unit is supplied in the On-Delay mode, and can easily be converted to Off-Delay by removing the timing assembly, rotating it 180° and replacing it.

The Type P & PK timers are provided with one Normally Open and one Normally Closed convertible contact cartridge which are the same as supplied with the relay. The Type PH timer is provided with either one Normally Open or one Normally Closed contact.



Mechanical Latch

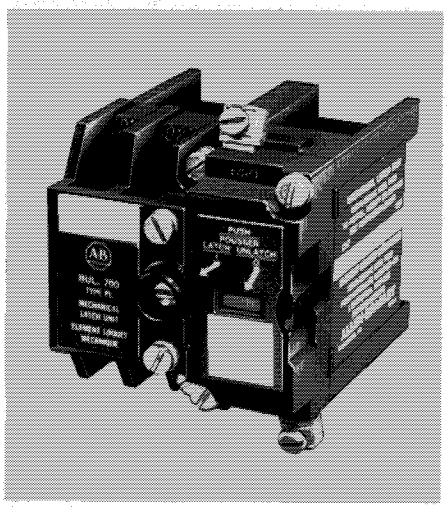
CAUTION – An open or failed unlatch control circuit will fail to unlatch the relay. For this reason, a mechanical latch unit should not be used where protection is needed against automatic restart after a power failure or where reliability to a control function is critical to safety.

A Mechanical Latch attachment is available for field or factory installation to convert an electrically held relay into a mechanically held relay. The unit mounts directly on a 2 or 4 pole relay without any adjustment. The unlatch coil, available in either AC or DC voltage, is a separate coil that can be energized continuously or momentarily as the circuit requires.

Attachments

Mechanical Latch
(continued)

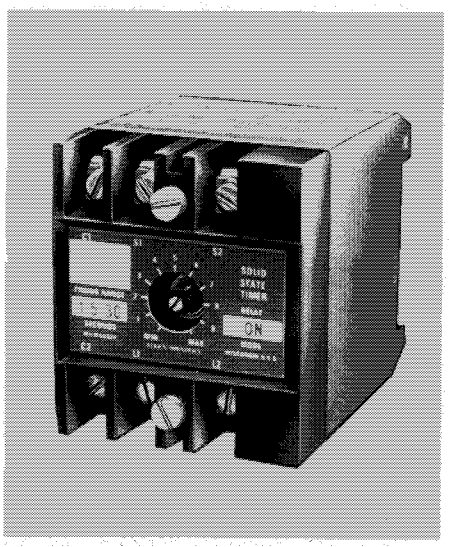
The attachment with an AC unlatch coil has provisions for accepting two additional convertible contact cartridges, for a total of six contacts per latching relay. The DC unlatch coil version has provisions for one additional contact for a total of five per latch relay. These are the same contact cartridges as used in the relay.



Solid State Time-Delay

For Type P, PK and PH relays, a Solid State Time-Delay attachment is available for applications requiring more precise repeatability. This attachment can be mounted on the relay or separately mounted. The solid state circuitry is encapsulated to provide improved reliability and protection against vibration, humidity and atmospheric contaminants.

The attachments are supplied for On-Delay or Off-Delay operation in a choice of four timing ranges, up through 120 seconds maximum with a ± 2% repeatability. The time-delay is adjusted by means of a self-contained or external potentiometer. The timed output is a Normally Open sealed contact rated NEMA B600 (not a cartridge).



CONTACT RATINGS					
AC – NEMA B600			DC – NEMA P300		
Voltage	Make	Break	Voltage	Make	Break
120-600	3600VA	360VA	125-300	138VA	138VA
72-120	30A	360VA	46-125	138VA	138VA
5-72	30A	5A	5-46	3A	3A
Continuous Current: 5 Amperes					

Accessories

The following is a list of accessories available for the Type P, PK and PH relays. Refer to the Industrial Control Catalog for complete information.

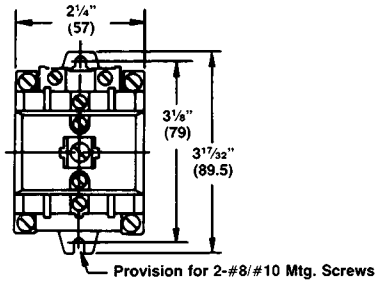
ACCESSORY KIT [1]	CATALOG NO.
Standard Contact Cartridge for all devices	700-CP1
Overlap Contact Cartridges	700-CP11Z
Logic Reed Cartridges	700-CPR
20 Amp Master Cartridges	700-CPM
35 Amp Jumper Kit	700-CPH
Second Deck without contact cartridges	700-PB00
Second Deck with two contact cartridges	700-PB20
Second Deck with four contact cartridges	700-PB40
Third Deck without contact cartridges	700-PC00
Third Deck with two contact cartridges	700-PC20
Third Deck with four contact cartridges	700-PC40
Mechanical Latch Unit	700-PLL [2]
Pneumatic Time-delay Unit	700-PT
Pneumatic Time-delay Unit with Master Cartridges	700-PKT
Solid State Time-delay Unit	700-PS
Jumper for middle pole to outer pole	700-N3
Jumper for middle poles	700-N4
Surge Suppressor (Terminal Mounted)	700-N24
Surge Suppressor (Mounted behind relay)	700-N5 (Series D)
Enclosure – NEMA Type 1 (4 to 12 pole)	700-N31
Enclosure – NEMA Type 7 & 9	700-N33
Adapter Plate	700-N34
Mounting Strip for four relays	700-MP4
Mounting Strip for eight relays	700-MP8
Mounting Strip for twelve relays	700-MP12
Mounting Strip for sixteen relays	700-MP16
Check-out Tool	700-N23

[1] Relays modified with accessories described in the table above retain UL Listing and CSA certification.
[2] The catalog number requires a voltage-frequency number.

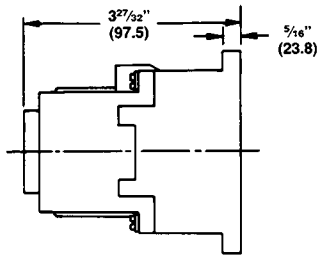
Approximate Dimensions

(Dimensions in parentheses are in millimeters).

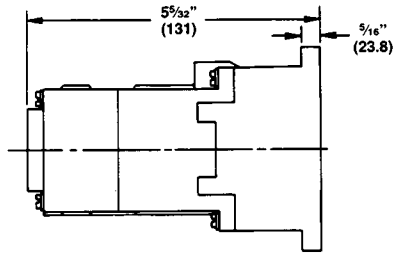
AC RELAYS



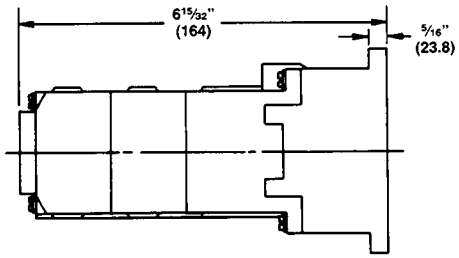
Typical Front View for all Relays



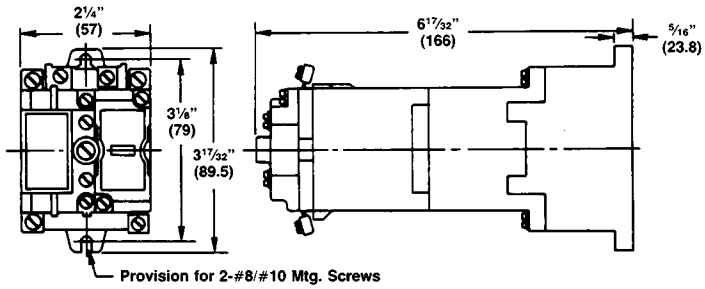
4 Pole Type P & PK Relay
2 Pole Type PH Relay



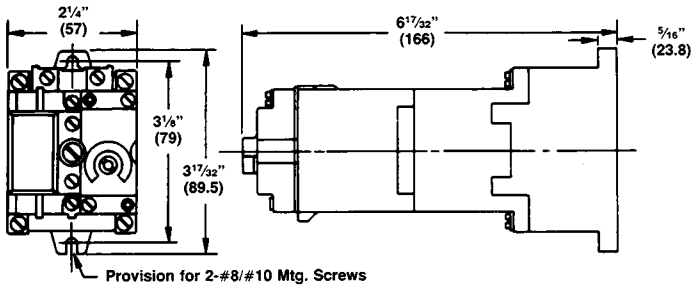
8 Pole Type P & PK Relay
4 Pole Type PH Relay



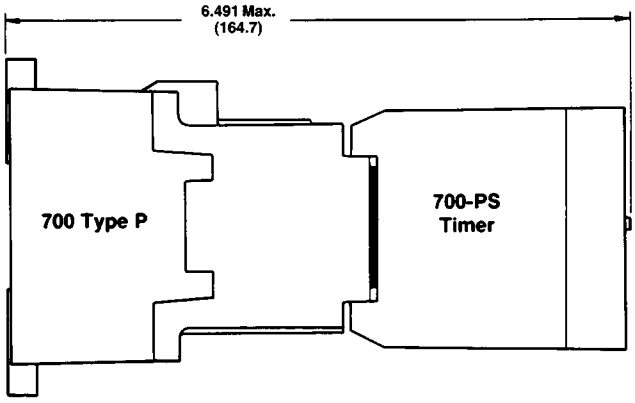
12 Pole Type P & PK Relay
6 Pole Type PH Relay



6 Pole Type P & PK Relay with Mechanical Latch Attachment
3 Pole Type PH Relay with Mechanical Latch Attachment



4 Pole Type P & PK Relay with Pneumatic Time-Delay Attachment
2 Pole Type PH Relay with Pneumatic Time-Delay Attachment

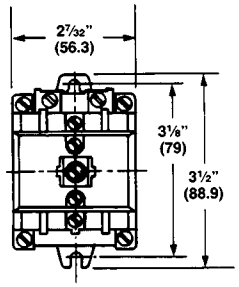


4 Pole Relay with Type PS Timer

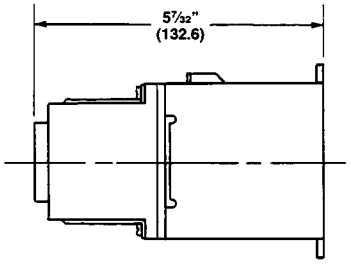
Approximate Dimensions

(Dimensions in parentheses are in millimeters).

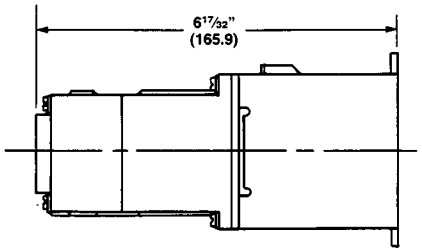
DC RELAYS



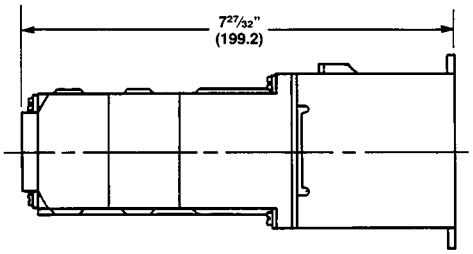
Typical Front View for all Relays



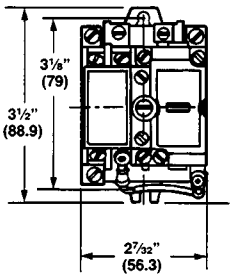
4 Pole Type P & PK Relays
2 Pole Type PH Relay

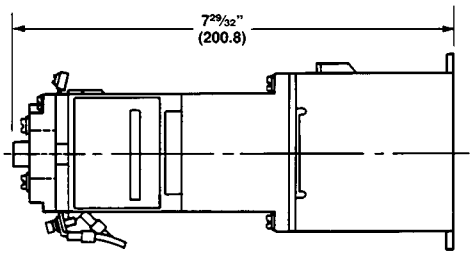


8 Pole Type P & PK Relay
4 Pole Type PH Relay

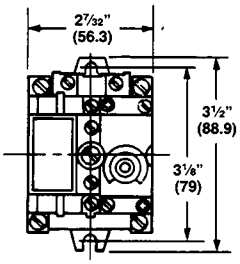


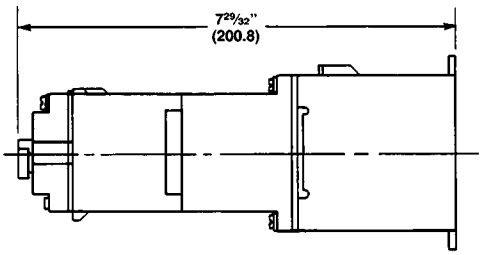
12 Pole Type P & PK Relay
6 Pole Type PH Relay





6 Pole Type P & PK Relay with Mechanical Latch Attachment
3 Pole Type PH Relay with Mechanical Latch Attachment



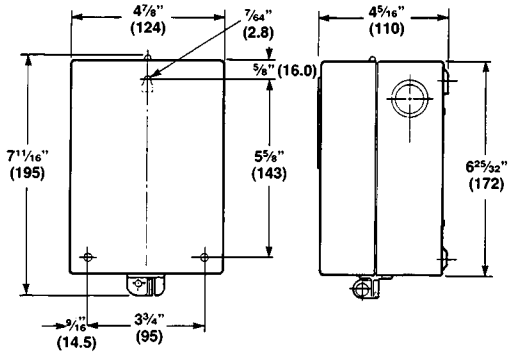


4 Pole Type P & PK Relay with Pneumatic Time-Delay Attachment
2 Pole Type PH Relay with Pneumatic Time-Delay Attachment

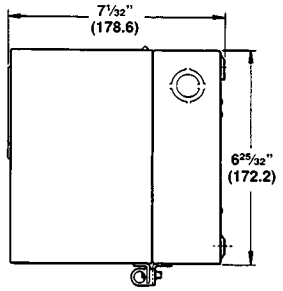
Approximate Dimensions

(Dimensions in parentheses are in millimeters).

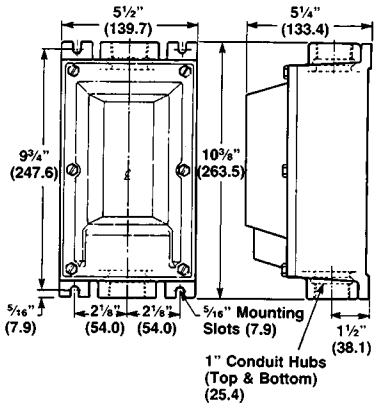
ENCLOSURES



4 Pole Type P & PK Relay
2 Pole Type PH Relay
NEMA Type 1 General Purpose



8 Pole Type P & PK Relay
4 Pole Type PH Relay
NEMA Type 1 General Purpose



4 Pole Type P & PK Relay
2 Pole Type PH Relay
NEMA Type 7 & 9 Hazardous Location

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