



Instantaneous overcurrent or undercurrent protection of AC and DC circuits and machines.

Features and Benefits

- Self-reset or manual-reset relays
- Mechanical target available
- Up to 3 independent units per case
- Molded or drawout case available

Applications

- Feeder circuit overcurrent protection
- High speed, non-directional AC/DC current

Protection and Control

- Instantaneous O/C and U/C



Application

General Service: PJC relay is a high-speed, non-directional current relay that is designed for general service.

Feeder Circuit Overcurrent Protection: is a common application for the PJC relay where time delay and directional selectivity are not required and where very short tripping times on high-fault currents are desired.

On applications requiring time delay or directional selectivity, IFC or IBC should be used.

Description

The PJC is a plunger relay that operates on the principle of electromagnetic attraction. The contacts are opened or closed by an armature which is attracted vertically into a small solenoid.

Generally, the PJC is a single element relay, but these units can be mounted in the draw out case to provide a 2 or 3-unit relay. This grouping of units in a draw out case saves valuable panel space and provides for easy testing and checking.

The basic PJC11, PJC12, PJC14 and PJC15 relays have mechanical targets. The PJC32 line of relays has a somewhat smaller base and thus allows 3 units to be mounted horizontally in the S-1 or S-2 case with the conventional 0.2/2 A target seal-in.

Relay Characteristics

High-speed Operation: The contact closing time is approximately 1 cycle (60 Hz basis) at twice the pickup setting.

High Dropout: Contacts reset at approximately 90 to 95 percent of pickup on AC and 70 to 85 percent of pickup on DC when the relay has at least one circuit-closing contact.

Continuous-current Rating: The relay coils are continuously rated as specified on the nameplate for frequencies of 25 to 60 Hz and DC. Ratings for continuous operation on AC are for the non-picked-up position only. However, the limitation is mechanical, not thermal, and the relay life expectancy under continuously picked-up conditions is a matter of months.

Self-or Hand-reset: Relays listed in this section have self-resetting contacts and hand-reset targets. Special models that are not listed are available having hand-reset contacts.

Calibration: The standard relays are calibrated at 60 Hz. For 25 or 50 Hz and DC applications, this calibration is correct within approximately 10 percent.

Mounting: The molded case relays are surface mounted and have studs for back connection. The draw out case relays can be surface or flush mounted.

Contact Ratings

The current-closing rating of the contacts is 30 A. The current carrying rating is 5 A continuous or 30 A for 2 sec.

Overcurrent Ratings

Continuous Rating (A)	Calibration Points				
	0.02	0.032	0.05	0.08	0.16
0.06	0.02	0.032	0.05	0.08	0.16
0.12	0.04	0.064	0.1	0.16	0.32
0.2	0.05	0.08	0.125	0.2	0.4
0.225	0.075	0.12	0.188	0.3	0.48
0.3	0.1	0.16	0.25	0.4	0.6
0.6	0.2	0.32	0.5	0.8	1.2
1	0.4	1.6	4	10	16
1.5	0.5	0.8	1.25	2	3
3	1	1.6	2.5	4	6
5	2	8	20	50	80
6	2	3.2	5	8	12
10	4	16	40	100	160
12	4	6.4	10	16	24
25	10	16	25	40	60
25	20	32	50	80	120
25	40	64	100	160	240

Contact Interrupting ratings in A

AC Circuits			DC Circuits		
Noninductive		Inductive	Noninductive		Inductive
V	A	A	V	A	A
115	5	2	24	5	1.0
230	2	1	48	2	0.5
460	1	0.5	125	1	0.3
----	----	----	250	0.3	0.15

Table 1. Contact availability

Relay Models	Number Cont. Per Unit	Contact Types					
		Standard [ⓐ]		Optional			
		2 N.O. (Code 20)	4 N.O. (Code 40)	1 N.O. and 1 N.C. (Code 11)	2 N.O. and 2 N.C. (Code 22)	1 N.O. and 3 N.C. (Code 13)	4 N.C. (Code 04)
PJC11A, 11X, 11Z, 11AV, 11AW, 12A, 12D	2	2 N.O. (Code 20)	2 N.O. (Code 20)	1 N.O. and 1 N.C. (Code 11)	2 N.C. (Code 02)	----	----
PJC14C, 14D, 14F	4	2 N.O. and 2 N.C. (Code 22)	4 N.O. (Code 40)	3 N.O. and 1 N.C. (Code 31)	2 N.O. and 2 N.C. (Code 22)	1 N.O. and 3 N.C. (Code 13)	4 N.C. (Code 04)
PJC32D, 32E	2	1 N.O. and 1 N.C.	----	----	----	----	----
PJC21A, 32C, 32F, 32G, 32H, 32J, 32L	2	2 N.O.	----	----	----	----	----
PJC15F	4	4 N.O.	----	----	----	----	----

[ⓐ] Unless specified, standard contact arrangement will be supplied. To order other than standard contact arrangement, place the contact code behind the model number.
 Example: 12PJC11AV3A-Code 11. N.O. = normally open N.C. = normally closed

Connection Diagrams

Fig. 1. Internal connections diagram for the PJC32C relay (front view)

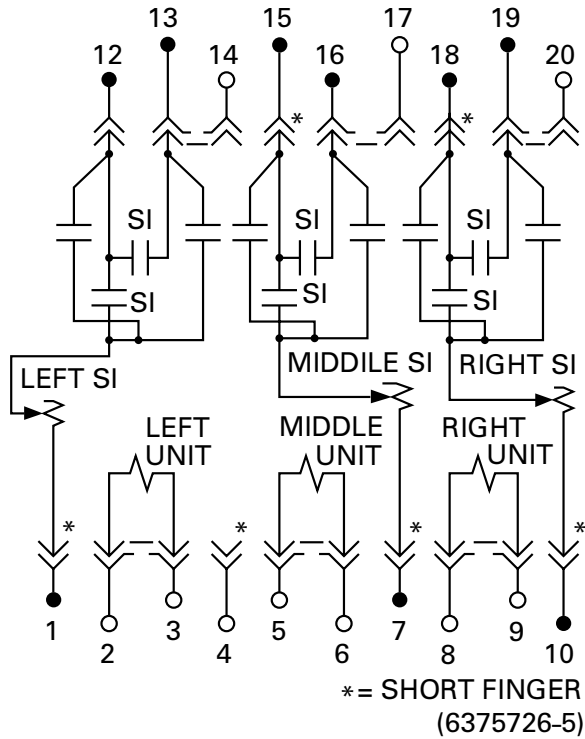


Fig. 2. Internal connections diagram for the PJC32D relay (front view)

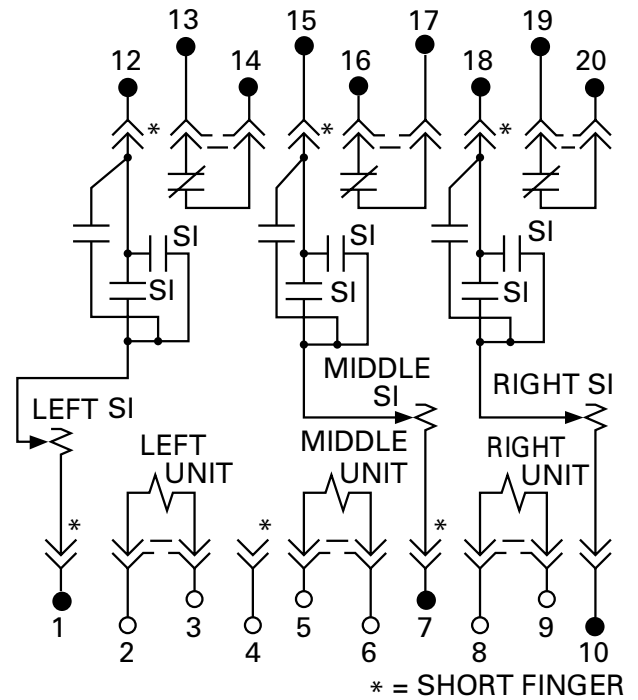


Fig. 3. Internal connections diagram for the PJC32E relay (front view)

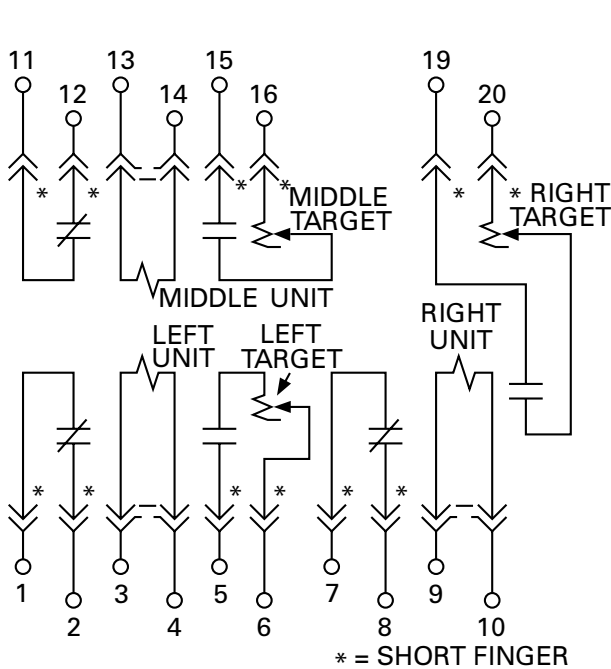
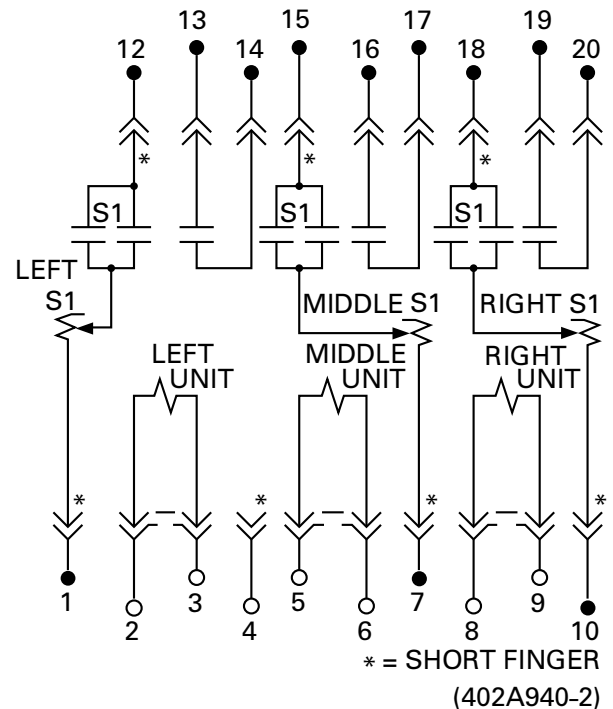


Fig. 4. Internal connections diagram for the PJC32F relay (front view)



Connection Diagrams

Fig. 5. Internal connections diagram for the PJC32G relay (front view)

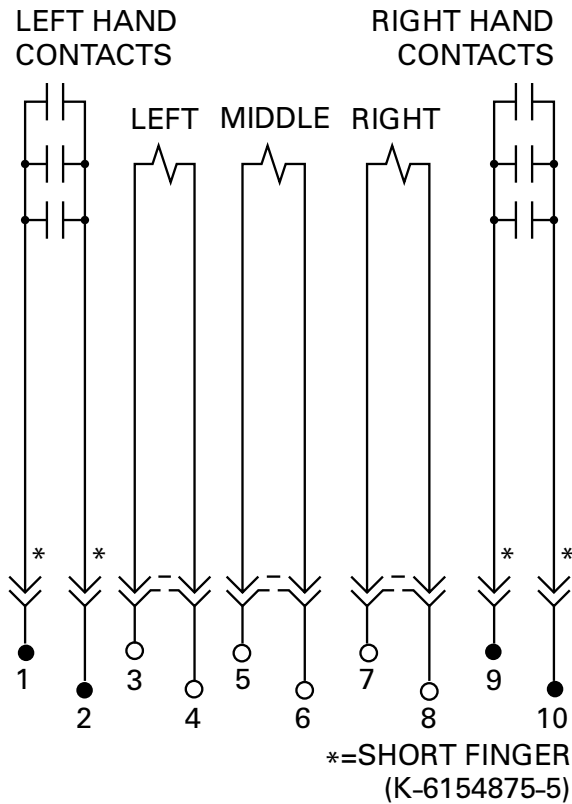


Fig. 6. Internal connections diagram for the PJC32H relay (front view)

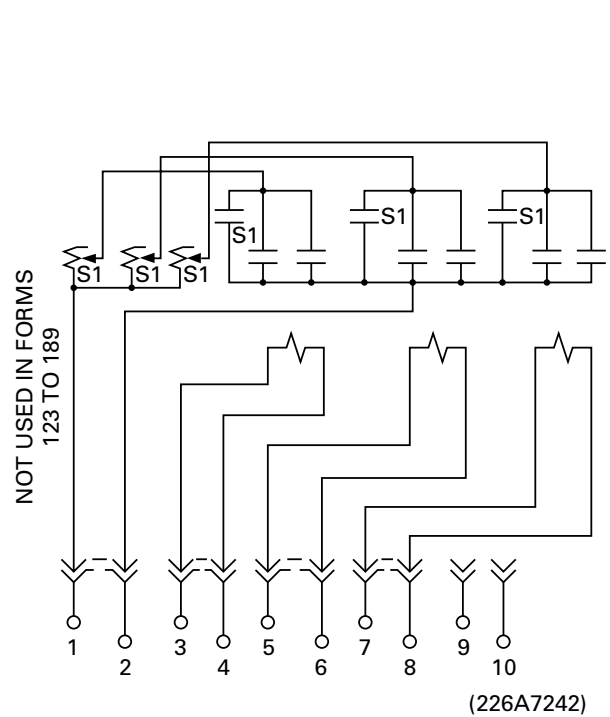


Fig. 7. Internal connections diagram for the PJC32J relay (front view)

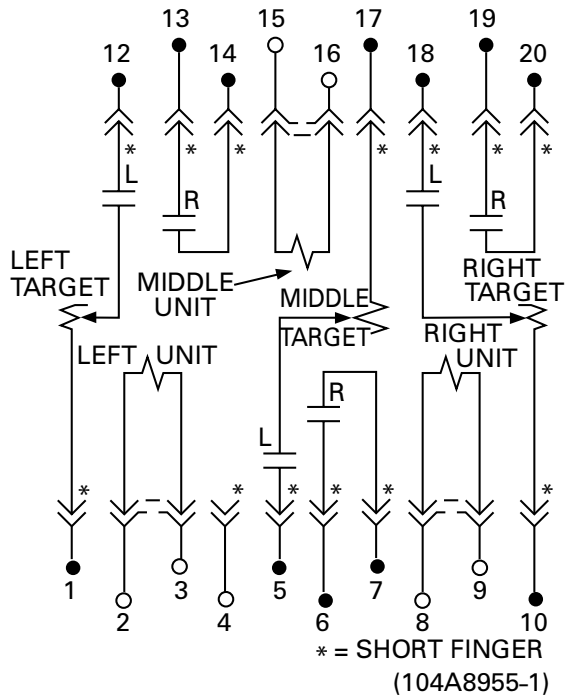
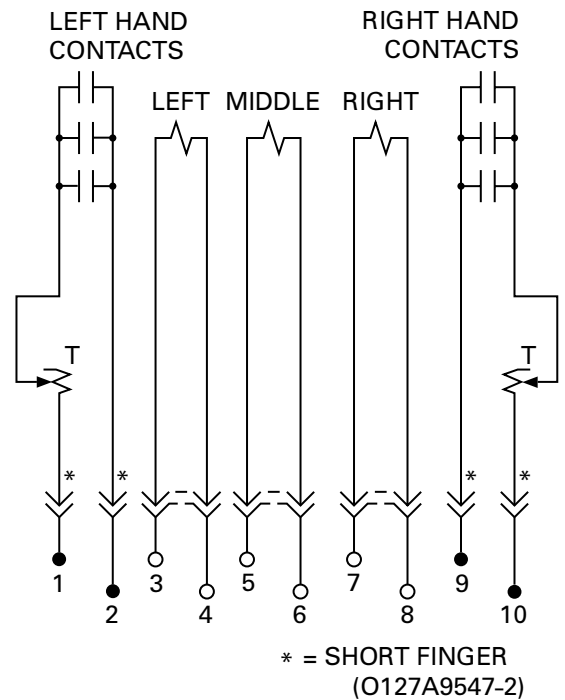


Fig. 8. Internal connections diagram for the PJC32L relay (front view)



Selection Guide

Molded Case Relays

DC, OR 25, 50, 60 HZ AC

Rating (A)			Model Number		Contacts	Approx. Wt. in lbs (kg)	
Continuous	One Sec	Calibrator Range	Self-Reset	Hand Reset ^①		Net	Ship
0.06	2.8	0.02-0.08	PJC11A28	----	2 Contacts (If contact arrangement is not specified 2 N.O. will be supplied)	2.5 (1.1)	4 (1.8)
0.12	5.7	0.04-0.16	A29	----			
0.2	9.2	0.05-0.7	A10	----			
0.225	11.4	0.075-0.3	A30	----			
0.3	18.2	0.1-0.4	A9	----			
0.6	36.8	0.2-0.8	A8	PJC12A10			
1.5	75	0.5-2	A1	A1			
3	150	1-4	A2	A2			
6	275	2-8	A3	A3			
12	280	4-16	A4	A4			
25	500	10-40	A5	A5			
40	500	20-80	A6	A6			
40	500	40-160	A7	A7			
1.5	75	0.5-2	PJC14D1	PJC14F1			
3	150	1-4	D2	F2			
6	275	2-8	D3	F3			
12	280	4-16	D4	F4			
25	500	10-40	D5	F5			
40	500	20-80	D6	F6			
40	500	40-160	D7	F7			

Drawout Case Relays

Ratings (A)			Model Number		Contacts	Case Size	Approx. Wt. in lbs (kg)	
Continuous	One Second	Calibration Range	Self-Reset	Hand Reset ^①			Net	Ship

ONE UNIT

0.12	5.7	0.04-0.16	PJC11AV23A	----	2 Contacts (If contact arrangement is not specified 2 N.O. will be supplied)	S1	8 (3.6)	12 (5.4)
0.3	18.2	0.1-0.4	AV10A	----				
0.6	36.8	0.2-0.8	AV8A	----				
1.5	75	0.5-2	AV1A	PJC12D1A				
3	150	1-4	AV2A	D2A				
6	275	2-8	AV3A	D3A				
12	275	4-16	AV4A	D4A				
25	275	10-40	AV5A	D5A				
25	275	20-80	AV6A	D6A				
25	275	10-160	AV7A	D7A				
1.5	75	0.5-2	PJC14C1A	----	4 Contacts (If contact arrangement is not specified 2 N.O. & 2 N.C. will be supplied)			
3	150	1-4	C2A	----				
6	275	2-8	C3A	----				
12	275	4-16	C4A	----				
25	275	10-40	C5A	----				
25	275	20-80	C6A	----				
25	275	40-160	C7A	----				

① N.O. contact may not remain closed when relay is in the latched-up position.

Selection Guide

Drawout Case Relays (cont...)

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TWO UNITS (BOTH UNITS RATED ALIKE)

Ratings (A)			Model Number		Contacts	Case Size	Approx. Wt. in lbs (kg)	
Continuous	One Second	Calibration Range	Self-Reset	Hand Reset ^①			Net	Ship
1.5	75	0.5-2	PJC11AW11A	----	2 Contacts (If contact arrangement is not specified 2 N.O. will be supplied)	S2	10 (4.5)	15 (6.8)
3	150	1-4	AW12A	----				
6	275	2-8	AW13A	----				
12	275	4-16	AW14A	----				
25	275	10-40	AW15A	----				
25	275	20-80	AW16A	----				
25	275	40-160	AW17A	----				

THREE UNITS (ALL UNITS RATED ALIKE)

1	73.5	0.4-10	PJC11X2A	----	2 Contacts (If contact arrangement is not specified 2 N.O. will be supplied)	M2	14 (6.4)	20 (9.1)
5	375	2-50	X3A	----				
10	500	4-100	X1A	----				
1.5	75	0.5-2	PJC11Z1A	----	2 N.O.	M2	13 (5.9)	19 (8.6)
3	150	1-4	Z2A	----				
6	275	2-8	Z3A	----				
12	275	4-16	Z4A	----				
25	275	10-40	Z5A	----				
25	275	20-80	Z6A	----				
25	275	40-160	Z7A	----				
1.5	75	0.5-2	PJC15F1A	----	4 N.O.	M2	14 (6.4)	20 (9.1)
3	150	1-4	F2A	----				
6	275	2-8	F3A	----				
12	275	4-16	F4A	----				
25	275	10-40	F5A	----				
25	275	20-80	F6A	----				
25	275	40-160	F7A	----				

ONE UNIT WITH 0.2/2.0 A TARGET AND SEAL-IN

1.5	75	0.5-2	PHC21A1A	----	2 N.O.	S1	8 (3.6)	12 (5.4)
3	150	1-4	A2A	----				
6	275	2-8	A3A	----				
12	275	4-16	A4A	----				
25	275	10-40	A5A	----				
25	275	20-80	A6A	----				
25	275	40-160	A7A	----				

THREE UNITS WITH OR WITHOUT 0.2/2.0 A TARGET AND SEAL-IN

Model Number	Contacts (Each Unit)	Number of Targets	Seal-in	Int. Conn. Diagram	Approx. Wt. in lbs (kg)	
					Net	Ship
PJC32C*A	2 N.O.	3 Targets	Yes	See Figure 3	12 (5.4)	18 (8.2)
PJC32D*A	1 N.O. & 1 N.C.	3 Targets	Yes	See Figure 4		
PJC32E*A	1 N.O. & 1 N.C.	3 Targets	No	See Figure 5		
PJC32F*A	2 N.O.	3 Targets	Yes	See Figure 6		
PJC32G*A	2 N.O.	—	—	See Figure 7		
PJC32H*A	2 N.O.	3 Targets	Yes	See Figure 8		
PJC32J*A	2 N.O.	3 Targets	No	See Figure 9		
PJC32L*A	2 N.O.	2 Targets	No	See Figure 10		

① N.O. contact may not remain closed when relay is in the latched-up position.

* Complete the model number by selecting the proper number from the table below.

Calibration Range For Middle Unit(A)	Model Number*						
	Calibration Range for Left and Right Units (A)						
	0.5-2	1-4	2-8	4-16	10-40	20-80	40-160
0.5-2	23	24	25	26	27	28	29
1-4		34	35	36	37	38	39
2-8			45	46	47	48	49
4-16				56	57	58	59
10-40					67	68	69
20-80						78	79
40-160							89

