

D7PR Series — Standard

D7PR Series

Features

- Arc barrier equipped relay with high dielectric strength
- Panel, DIN rail and flange mounting

Standards and Certifications

 File # E37317, E65657

 File # LR217017, LR217069





D7 Series Relay

Technical Data and Specifications

Table 3-49. D7PR Coil Resistance

Coil Voltage	Ohms				Milliamps							
	D7PR1	D7PR2	D7PR3	D7PR4	D7PR1	D7PR1	D7PR2	D7PR2	D7PR3	D7PR3	D7PR4	D7PR4
					50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
6V AC	11	11	6.5	5	222.3	190	234	200	326	278	393	336
12V AC	41	41	25.5	20	111.2	95	95.9	82	148	126	202	173
24V AC	180	180	102	80	58.5	50	48	41	77	66	91	78
48V AC	788	788	735	735	21	18	21	18	21.5	18.4	24	20
120V AC	4430	4430	2700	2000	12.9	11	12.9	11	14.7	12.6	17.3	14.8
240V AC	15700	15700	10000	8000	5.9	5	7	6	9.7	8.3	11.4	9.7
6V DC	47	40	25	24	—	127.7	—	150	—	240	—	250
12V DC	188	160	100	96	—	63.8	—	75	—	120	—	125
24V DC	750	650	400	360	—	32	—	36.9	—	60	—	67
48V DC	2600	2600	1600	1600	—	18.5	—	18.5	—	18.5	—	18.5
110V DC	13800	11000	8400	6800	—	8	—	10	—	13	—	16.2

Table 3-50. D7PR Relay Specifications

	D7PR1		D7PR2/D7PR3/D7PR4	
	Resistive Load (p.f. = 1)	Inductive Load (p.f. = 0.4, L/R = 7 ms)	Resistive Load (p.f. = 1)	Inductive Load (p.f. = 0.4, L/R = 7 ms)
Rated Load	120/240V AC 15A 30V DC 15A	120/240V AC 10A 30V DC 7A	120/240V AC 10A (D7PR2 only) 30V DC 10A (D7PR2 only) 250V AC 10A (D7PR3/D7PR4 only) 120V AC 15A (D7PR2 only) 28V DC 10A (D7PR3/D7PR4 only)	120/240V AC 7.5A 30V DC 5A
Carry Current	15A	15A	10A	10A
Max. Operating Voltage	250V AC/125V DC	250V AC/125V DC	250V AC/125V DC	250V AC/125V DC
Max. Operating Current	15A	15A	10A	10A
Contact Material	AgCdO	AgCdO	AgCdO	AgCdO
Max. Switching Capacity	1700 VA 360W	1100 VA 170W	1100 VA 240W	830 VA 120W
Min. Permissible Load	100 mA, 5V DC	100 mA, 5V DC	100 mA, 5V DC	100 mA, 5V DC
Pickup Voltage (max.)	80%	80%	80%	80%
Drop Out Voltage (min.)	30% AC, 10% DC	30% AC, 10% DC	30% AC, 10% DC	30% AC, 10% DC
Voltage (max.)	110%	110%	110%	110%
Mechanical Life (min.)	10,000,000 AC 100,000,000 DC	10,000,000 AC 100,000,000 DC	10,000,000 AC 100,000,000 DC	10,000,000 AC 100,000,000 DC
Electrical Life @ All Contact Ratings (min.)	200,000	200,000	200,000	200,000
Maximum hp Rating	1/3 hp (120V AC)	1/2 hp (240V AC)	1/3 hp (120V AC) (D7PR2 only)	1/2 hp (240V AC) (D7PR2 only)

Table 3-51. D7PR Socket Specifications

Catalogue Number	Electrical Ratings	Mounting Torque	Hook-Up Wire Range
D7PA2	15A, 250V	.785 Nm – 1.18 Nm	AWG 14 Max.
D7PA3	10A, 300V	7 – 8 in-lbs	AWG 12 to 22 Solid or Stranded
D7PA4	10A, 300V	7 – 8 in-lbs	AWG 12 to 22 Solid or Stranded
D7PA5	15A, 250V	N/A	AWG 14 Max.

Catalogue Number Structure

Table 3-52. D7 Series Catalogue Numbering System ①

D 7 P R 1 1 A		
Family Type		Coil Voltage
D7PR = Standard Relay D7PF = Full Featured Relay		A = 120V AC A1 = 110V DC B = 240V AC P = 6V AC P1 = 6V DC R = 12V AC R1 = 12V DC T = 24V AC T1 = 24V DC W = 48V DC W1 = 48V DC
Contact Configuration		
1 = SPDT 2 = DPDT	3 = 3PDT 4 = 4PDT	
Options		
1 = Indicating Light 4 = Flange Mounting A = LED, Test Button, Flag Indicator, Lock-Down Door, Finger-Grip Cover, I.D. Tag		

① For deciphering Catalogue Numbers. Do not use for ordering as not all combinations are readily available.

Table 3-53. Relay/Socket Quick Reference

Relay Type	Socket	Hold Down Spring
D7PR1	D7PA2/D7PA5	PMC-A1
D7PR2	D7PA2/D7PA5	PMC-A1
D7PR3	D7PA3	PYC-B2
D7PR4	D7PA4	PYC-B2
D7PF1/D7PF2	D7PA9/D7PA5	PQC-1342
D7PF1/D7PF2	D7PAA	PQC-1349
D7PF3	D7PA3	N/A
D7PF4	D7PA4	N/A
D7PF3	D7PAB	PQC-1350
D7PF4	D7PAD	PQC-1351

Product Selection

Table 3-54. D7 Product Selection ②

	Catalogue Number
Standard SPDT	
Coil Voltage: 24V AC 120V AC 240V AC	D7PR1T D7PR1A D7PR1B
6V DC 12V DC 24V DC	D7PR1P1 D7PR1R1 D7PR1T1
SPDT with Indicating Light	
24V AC 120V AC	D7PR11T D7PR11A
24V DC	D7PR11T1
SPDT Flange Mount	
120V AC	D7PR14A
SPDT Full Featured Relay	
120V AC 110V DC 12V DC 24V AC 24V DC	D7PF1AA D7PF1AA1 D7PF1AR1 D7PF1AT D7PF1AT1

Table 3-54. D7 Product Selection, continued ②

	Std. Pack	Catalogue Number
Standard DPDT		
24V AC 120V AC 240V AC		D7PR2T D7PR2A D7PR2B
12V DC 24V DC 48V DC 110V DC		D7PR2R1 D7PR2T1 D7PR2W1 D7PR2A1
DPDT Full Featured Relay		
Coil Voltage: 120V AC 110V DC 240V AC 12V DC 24V AC 24V DC		D7PF2AA D7PF2AA1 D7PF2AB D7PF2AR1 D7PF2AT D7PF2AT1
DPDT Flange Mount		
24V AC 120V AC		D7PR24T D7PR24A
Standard 3PDT		
120V AC		D7PR3A
12V DC 24V DC		D7PR3R1 D7PR3T1
3PDT with Indicating Light		
120V AC		D7PR31A
12V DC 24V DC		D7PR31R1 D7PR31T1
3PDT Flange Mount		
120V AC		D7PR34A
3PDT Full Featured Relay		
120V AC 110V DC 240V AC 12V DC 24V AC 24V DC		D7PF3AA D7PF3AA1 D7PF3AB D7PF3AR1 D7PF3AT D7PF3AT1
Standard 4PDT		
Coil Voltage: 24V AC 120V AC		D7PR4T D7PR4A
24V DC 110V DC		D7PR4T1 D7PR4A1
4PDT Full Featured		
Coil Voltage: 120V AC 240V AC 12V AC 12V DC 24V AC 24V DC 48V DC		D7PF4AA D7PF4AB D7PF4AR D7PF4AR1 D7PF4AT D7PF4AT1 D7PF4AW1
4PDT Flange Mount		
120V AC 24V DC		D7PR44A D7PR44T1
DIN Rail Mount Sockets		
1- and 2-Pole 1- and 2-Pole Finger-Safe ③ 3-Pole 3-Pole Finger-Safe ③ 4-Pole 4-Pole Finger-Safe ③	10 10 10 10 10 10	D7PA2 D7PAA D7PA3 D7PAB D7PA4 D7PAD
Panel Mount Sockets		
1- and 2-Pole	10	D7PA5
Accessories		
Spring Clip DIN Rail End Stop Hold Down Spring	100 100 100	PMC-A1 PFP-M PYC-B2

② Additional coil voltages available — consult Contact Customer Support Centre 1-800-268-3578.

③ IP20 rated. Table 3-54.

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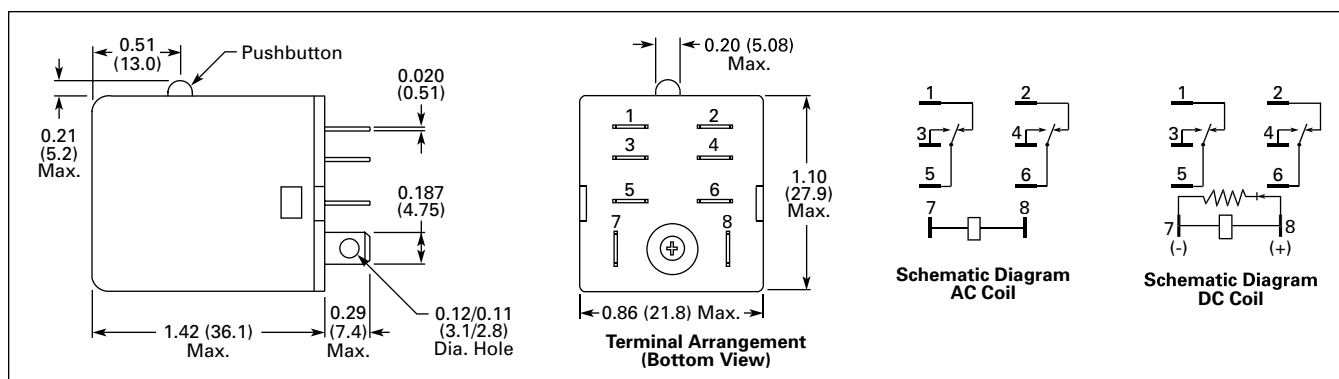


Figure 3-60. D7PR23 — Approximate Dimensions in Inches (mm)

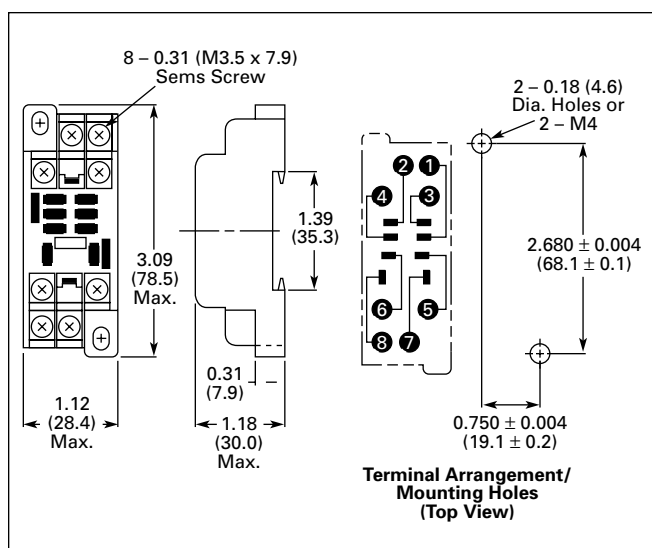


Figure 3-61. D7PA2 — Approximate Dimensions in Inches (mm)

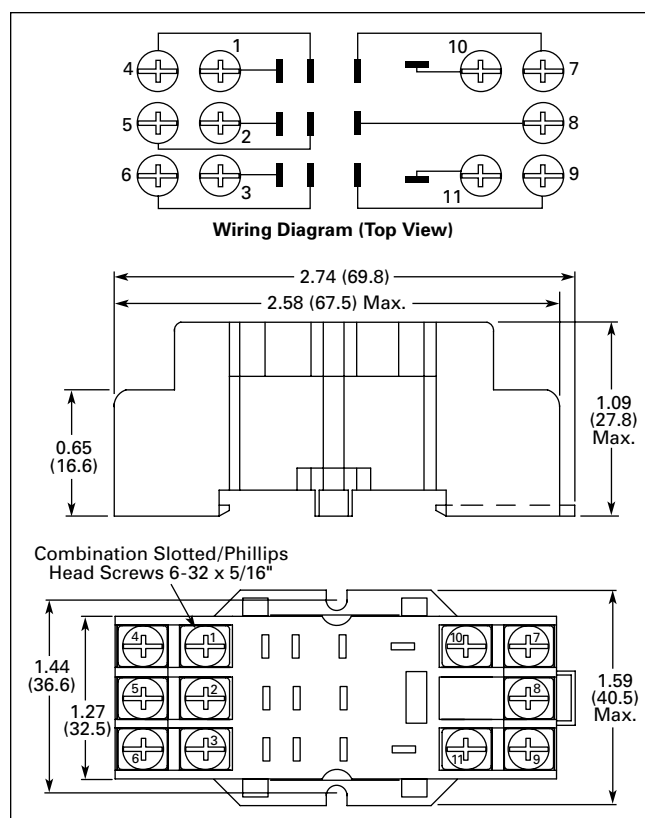


Figure 3-62. D7PA3 — Approximate Dimensions in Inches (mm)

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D7PF Series — Full Featured

Table 3-56. D7PF Relay Specifications

	D7PF1 Resistive Load (p.f. = 1.0)	D7PF2 Resistive Load (p.f. = 1.0)	D7PF3 Resistive Load (p.f. = 1.0)	D7PF4 Resistive Load (p.f. = 1.0)
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Coil

Pickup Voltage (Max.)	85% AC; 80% DC (% of nominal)			
Drop Out Voltage (Min.)	10% AC; 10% DC (% of nominal)			
Maximum Voltage	110% of nominal			
Insulation System per UL Standard 1446	Class B 266°F (130°C)			

Contacts

Rated Load	277V AC, 28V DC – 20A 220V DC – 0.5A	120V AC – 15A 277V AC, 28V DC – 12A 220V DC – 0.5A	120V AC, 28V DC – 15A 277V AC – 12A 220V DC – 0.5A	120V AC, 28V DC – 15A 277V AC – 12A 220V DC – 0.5A
Maximum hp Ratings	1/2 hp, 120V AC 1 hp, 250V AC		1/2 hp, 120V AC 3/4 hp, 250V AC	
Contact Material	Silver Alloy, Gold Flashed			
Pilot Duty	B300			
Utilization Category (IEC)	AC-15			
Min. Permissible Load	100mA @ 5V DC or 0.5W			
Contact Resistance	100 Milliohms Max @ 6V, 1A			

Dielectric Strength

Coil to Contacts	2500V RMS			
Across Open Contacts	1500V RMS	1000V RMS	1000V RMS	1000V RMS
Pole to Pole	—	2500V RMS	2500V RMS	2500V RMS
Insulation Resistance	100 Megohms Min. @ 500V DC			

Temperature

Operating	-40 – 158°F (-40 to 70°C)
Storage	-40 – 221°F (-40 to 105°C)

Life Expectancy

Electrical at Rated Resistive Load	100,000 Operations	200,000 Operations	150,000 Operations	150,000 Operations
Mechanical at No Load	10 Million Operations			

Weight

Approximate Weight	0.079 lbs. (36g)	0.079 lbs. (36g)	0.132 lbs. (60g)	0.176 lbs. (80g)
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Table 3-57. D7PF Socket Specifications

Catalogue Number	Electrical Ratings	Mounting Torque	Hook-Up Wire Range
D7PA3	10A, 300V	7 – 8 in-lbs	AWG 12 to 22 Solid or Stranded
D7PA4	10A, 300V	7 – 8 in-lbs	AWG 12 to 22 Solid or Stranded
D7PA5	15A, 250V	N/A	AWG 14 Max.
D7PAA	16A, 300V	8 – 10 in-lbs	20 – 12 AWG
D7PAB	16A, 300V	8 – 10 in-lbs	20 – 12 AWG
D7PAO	16A, 300V	8 – 10 in-lbs	20 – 12 AWG
D7PA9	10A, 300V	7 – 8 in-lbs	20 – 12 AWG

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D7PF Series — Full Featured

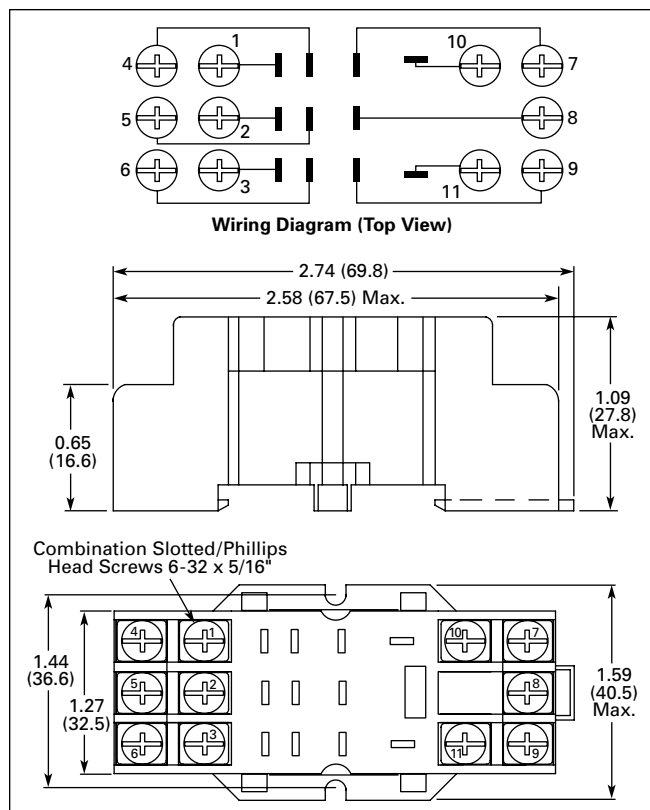


Figure 3-71. D7PA3 Standard Mount — Approximate Dimensions in Inches (mm)

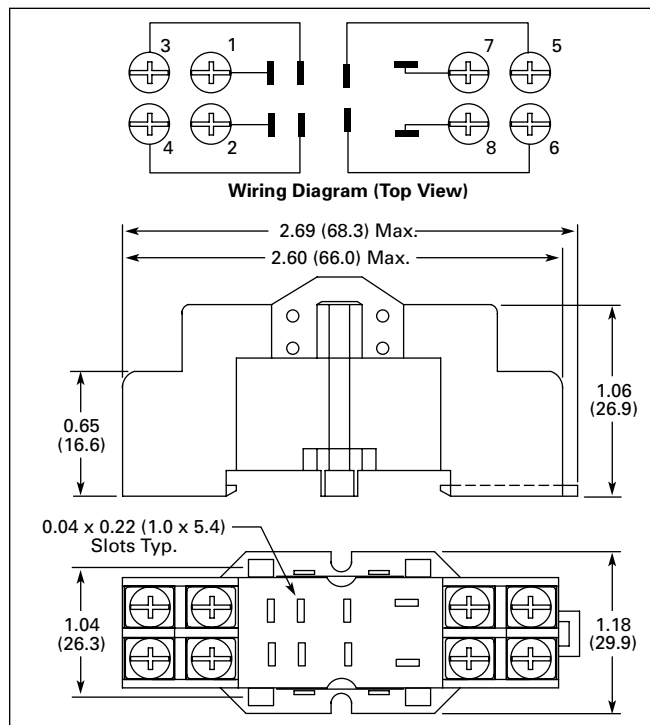


Figure 3-72. D7PA9 Standard Mount — Approximate Dimensions in Inches (mm)

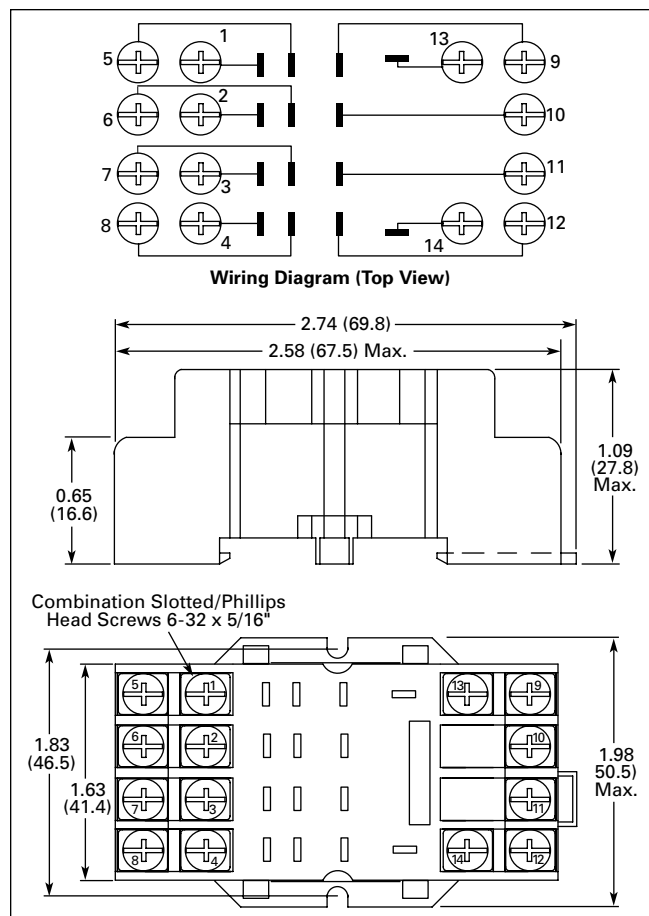


Figure 3-73. D7PA4 Panel Mount — Approximate Dimensions in Inches (mm)

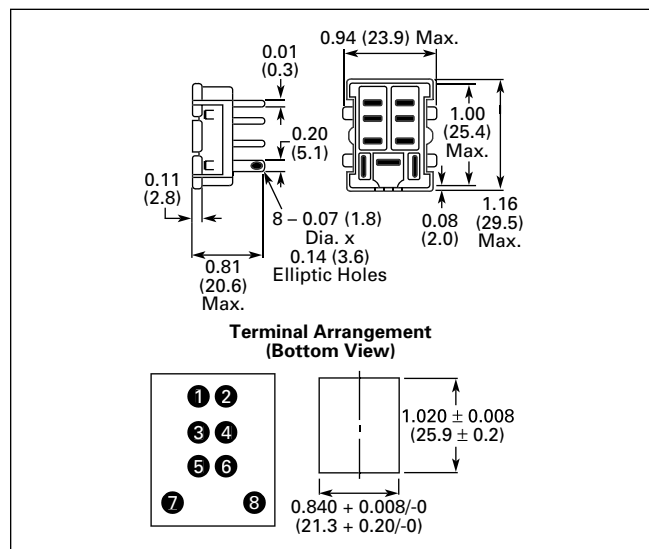


Figure 3-74. D7PA5 Panel Mount — Approximate Dimensions in Inches (mm)