

April 2009

D7 Series — Standard and Full Featured

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.

D7PR Series — Standard

Dimensions

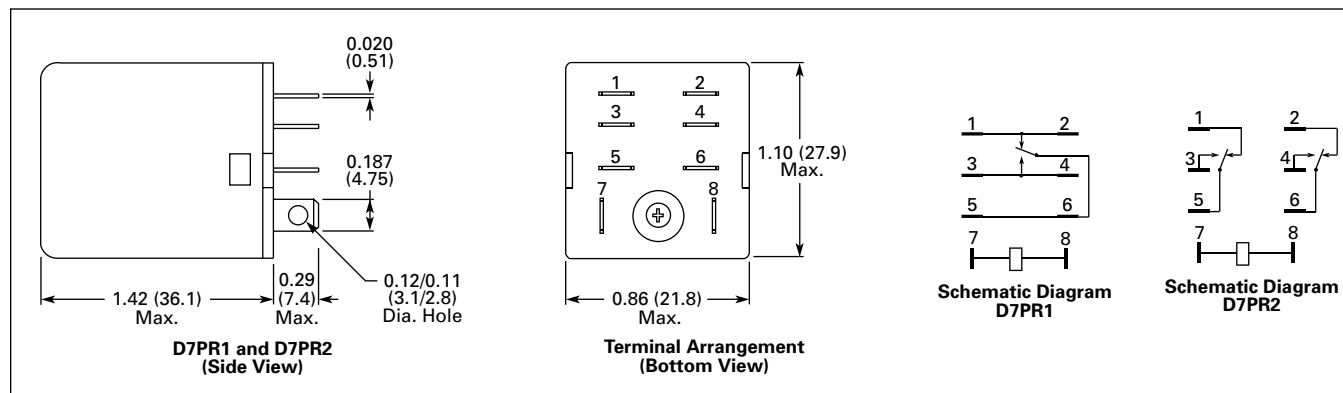


Figure 3-54. D7PR1 and D7PR2 — Approximate Dimensions in Inches (mm)

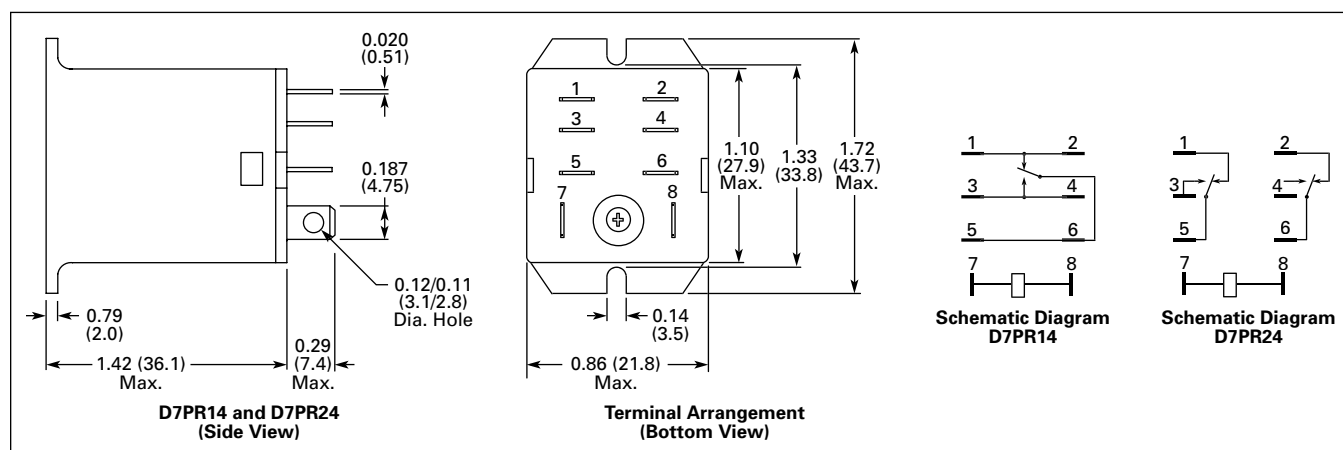


Figure 3-55. D7PR14 and D7PR24 — Approximate Dimensions in Inches (mm)

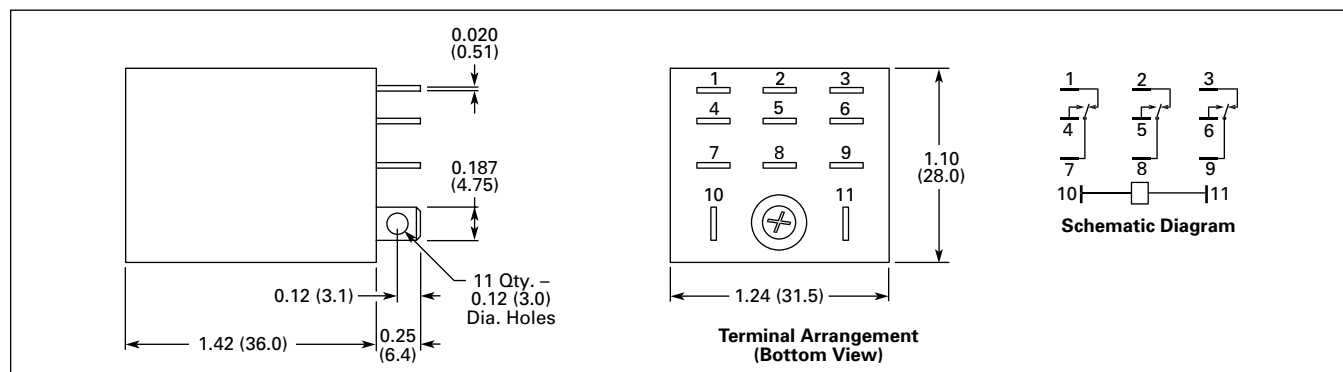


Figure 3-56. D7PR3 — Approximate Dimensions in Inches (mm)

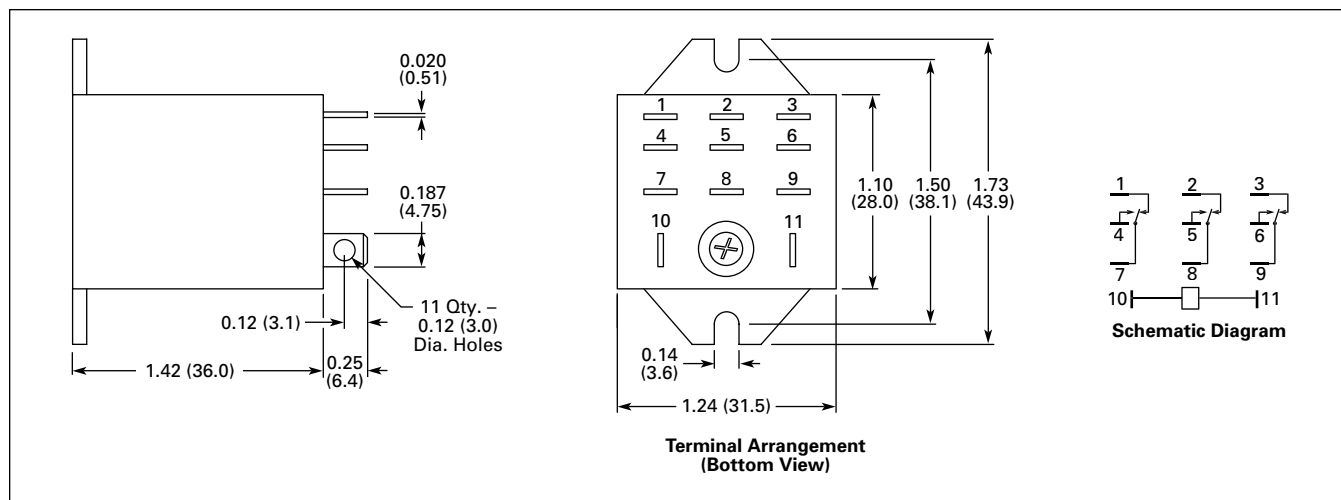


Figure 3-57. D7PR34 — Approximate Dimensions in Inches (mm)

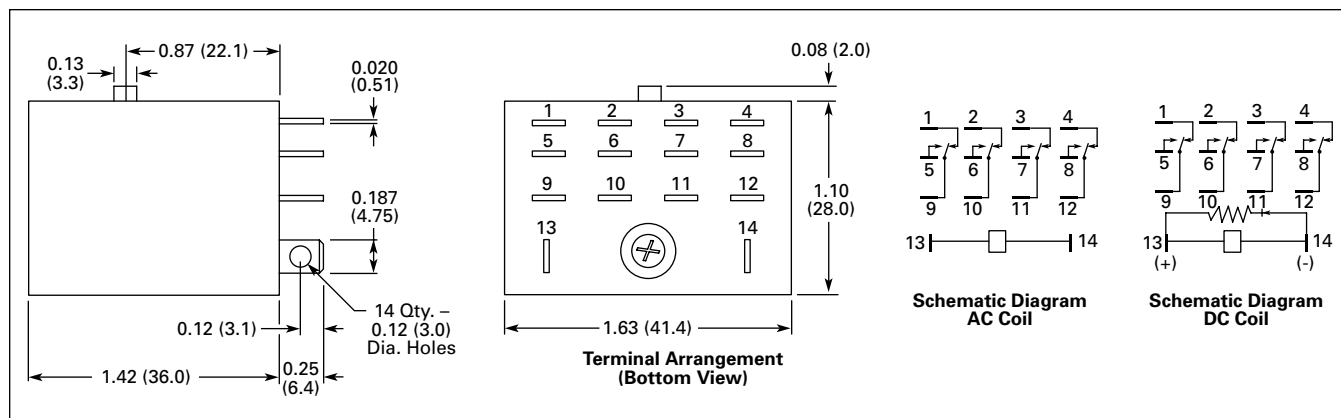


Figure 3-58. D7PR43 — Approximate Dimensions in Inches (mm)

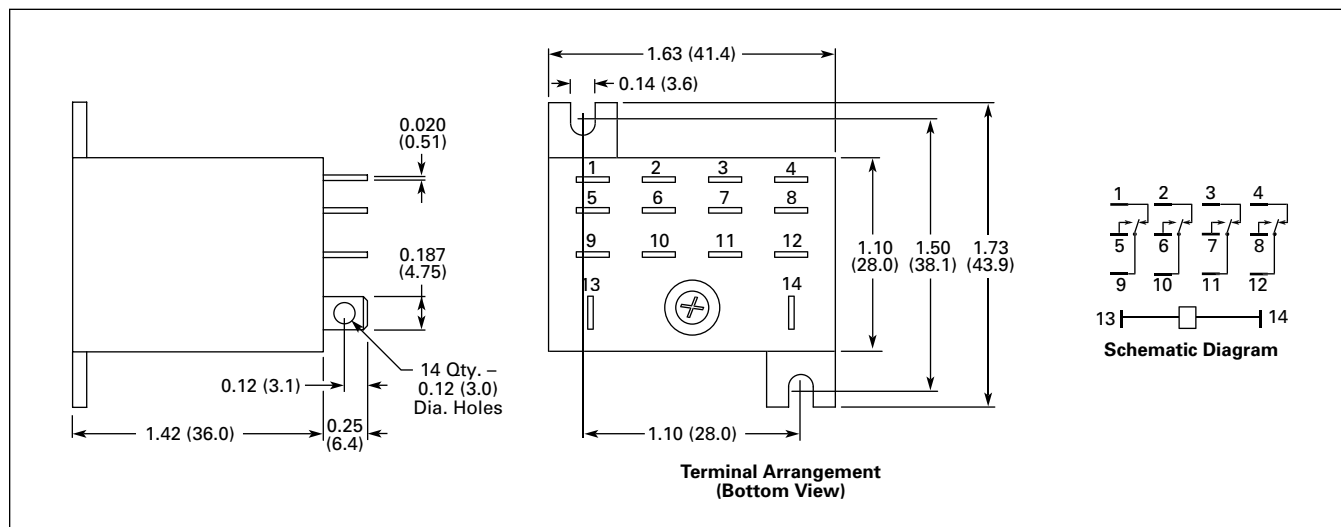


Figure 3-59. D7PR44 — Approximate Dimensions in Inches (mm)

D7PR Series — Standard

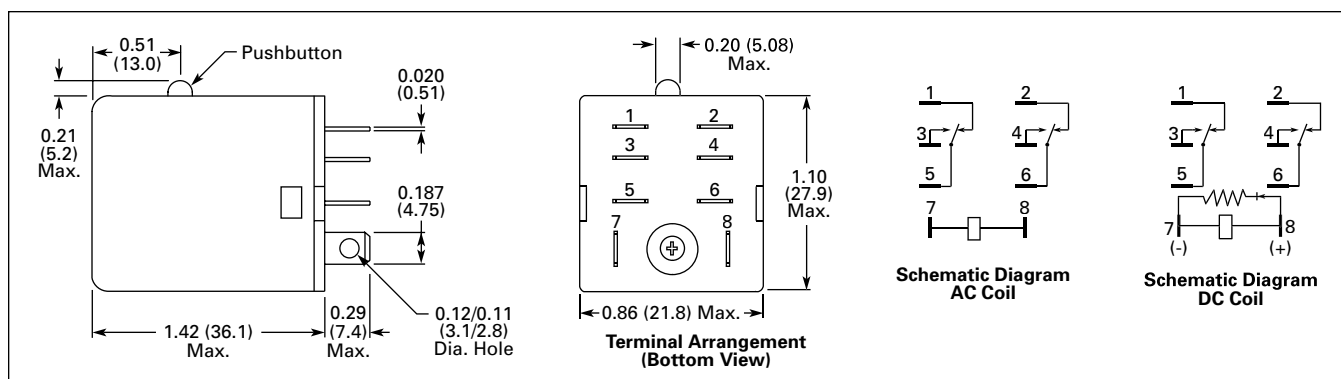


Figure 3-60. D7PR23 — Approximate Dimensions in Inches (mm)

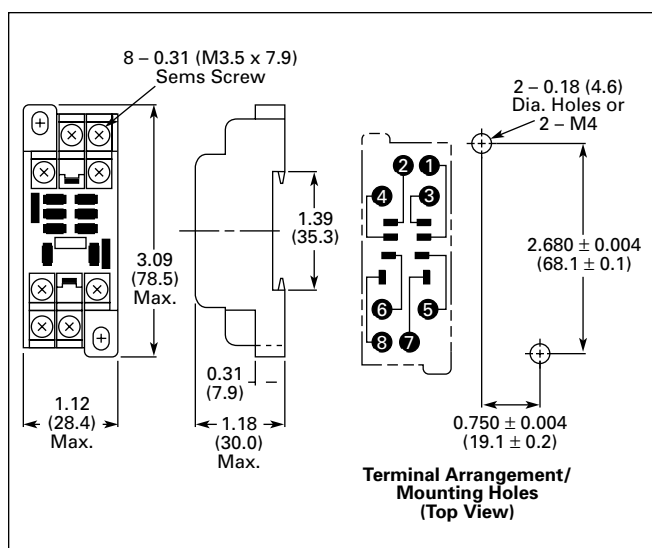


Figure 3-61. D7PA2 — Approximate Dimensions in Inches (mm)

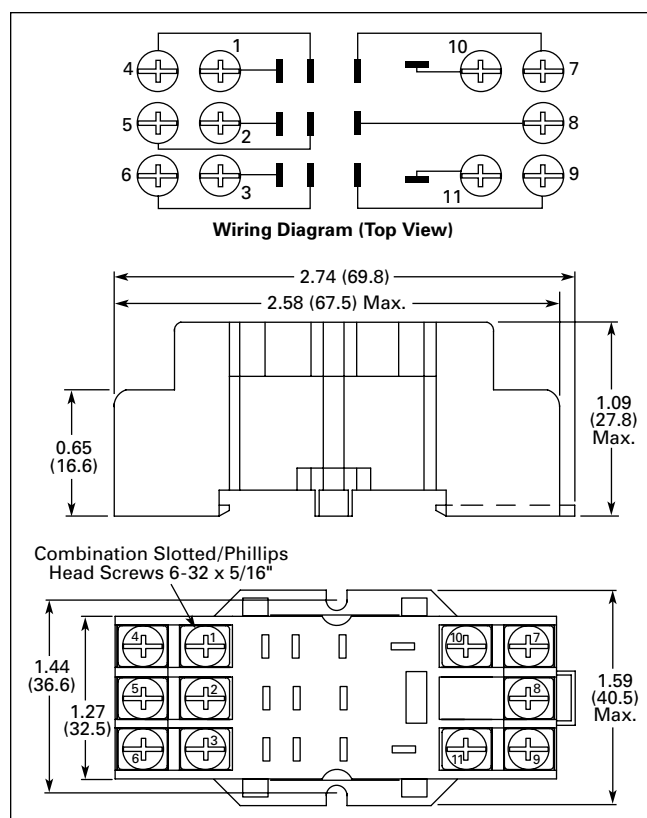


Figure 3-62. D7PA3 — Approximate Dimensions in Inches (mm)

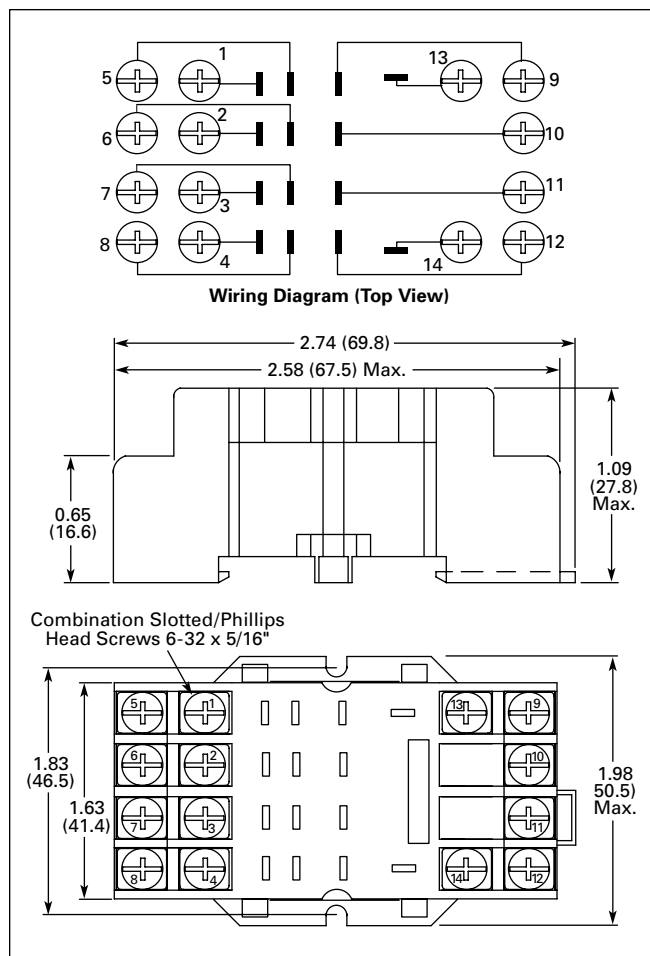


Figure 3-63. D7PA4 — Approximate Dimensions in Inches (mm)

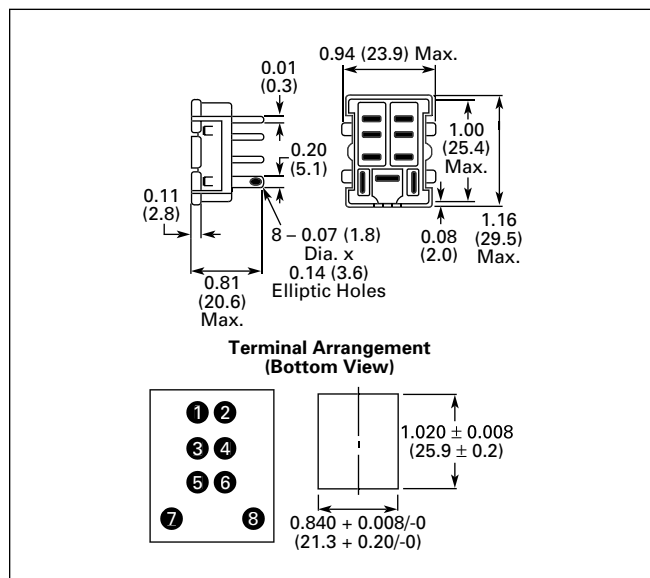


Figure 3-64. D7PA5 — Approximate Dimensions in Inches (mm)

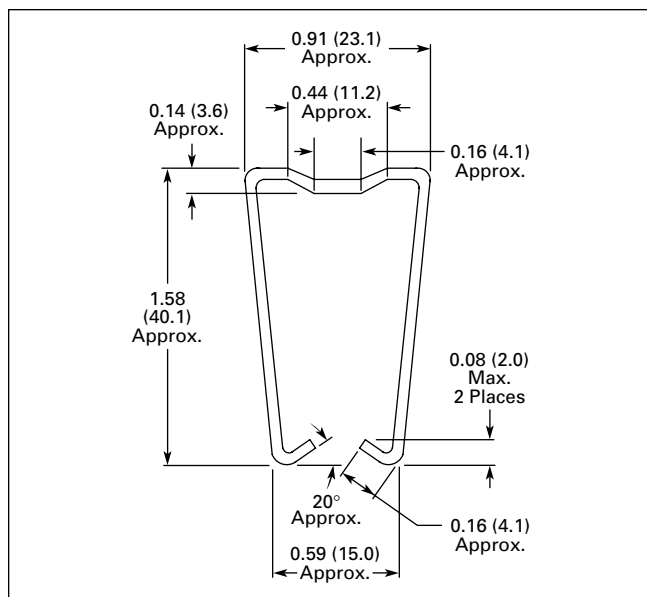


Figure 3-65. PMC-A1 Hold Down Clip — Approximate Dimensions in Inches (mm)

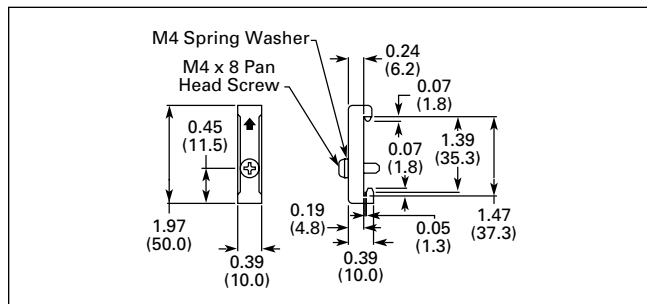


Figure 3-66. PFP-M DIN Rail End Stop — Approximate Dimensions in Inches (mm)

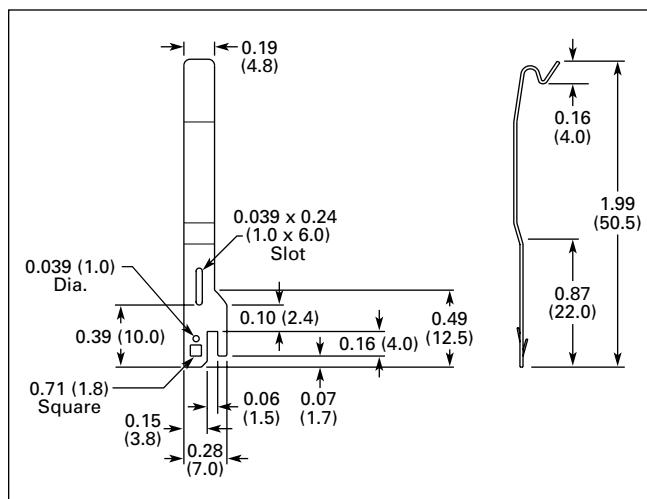


Figure 3-67. PYC-B2 Hold Down Spring — Approximate Dimensions in Inches (mm)

D7PF Series — Full Featured

D7PF Series



D7PF Series Relay

Features

- Flag indicator shows relay status in manual or powered condition
- Bi-polar LED status lamp allows for reverse polarity applications
 - Shows coil ON or OFF status
 - Ideal in low light conditions
- Colour coded pushbutton identifies AC coils with red or DC coils with blue pushbuttons
 - Allows for manual operation of relay without the need for coil power
 - Ideal for field service personnel to test control circuits

- Lock down door, when activated, holds pushbutton and contacts in the operate position
 - Excellent for analyzing circuit problems
- Finger-grip cover allows operator to remove relays from sockets more easily than conventional relays
- White plastic I.D. tag/write label used for identification of relays in multi-relay circuits

Standards and Certifications





 When used with accompanying Cutler-Hammer® screw terminal socket.

Technical Data and Specifications

Table 3-55. D7PF Coil Resistance

Coil Voltage	Ohms				Amps ^①			
	D7PF1	D7PF2	D7PF3	D7PF4	D7PF1	D7PF2	D7PF3	D7PF4
6V AC	9.5	9.5	6	5.4	0.167	0.168	0.27	0.255
12V AC	46	46	25.3	21.2	0.081	0.082	0.148	0.164
24V AC	180	180	103	84.5	0.042	0.041	0.08	0.09
48V AC	770	770	460	338	0.018	0.018	0.035	0.044
120V AC	3830	3830	2770	2200	0.012	0.012	0.016	0.018
240V AC	15700	15700	12100	9120	0.004	0.004	0.006	0.008
6V DC	40	40	25	24	0.15	0.15	0.24	0.25
12V DC	160	160	100	96	0.075	0.075	0.120	0.125
24V DC	650	650	400	388	0.037	0.037	0.060	0.062
48V DC	2600	2600	1600	1550	0.018	0.018	0.030	0.031
110V DC	11000	11000	8600	7340	0.010	0.010	0.013	0.015

^① At 60 Hz for AC Coils.

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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

D7PF Series — Full Featured

Dimensions

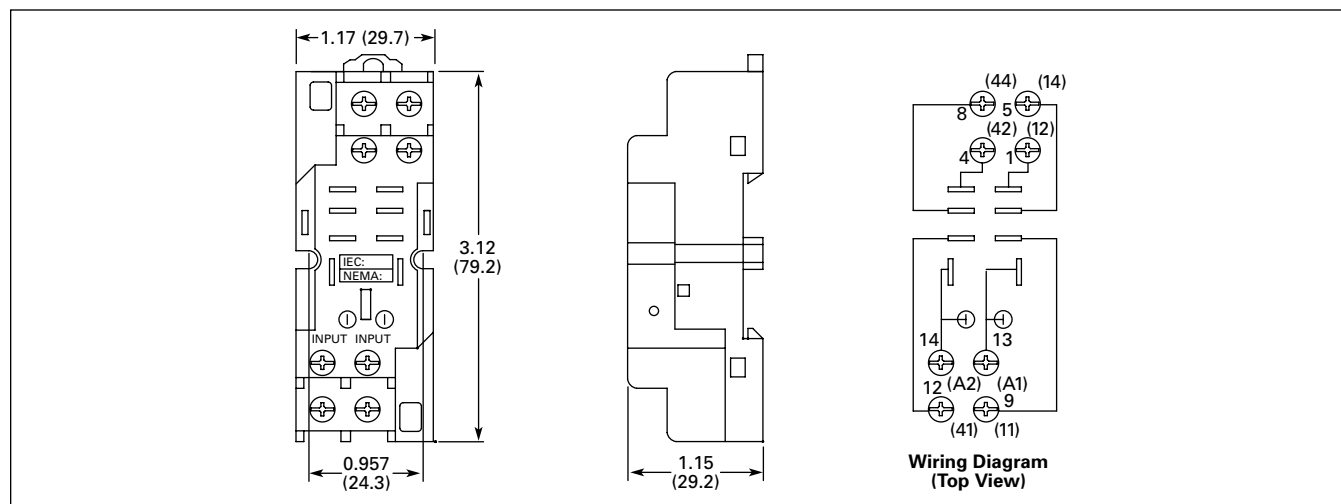


Figure 3-68. D7PAA — Approximate Dimensions in Inches (mm)

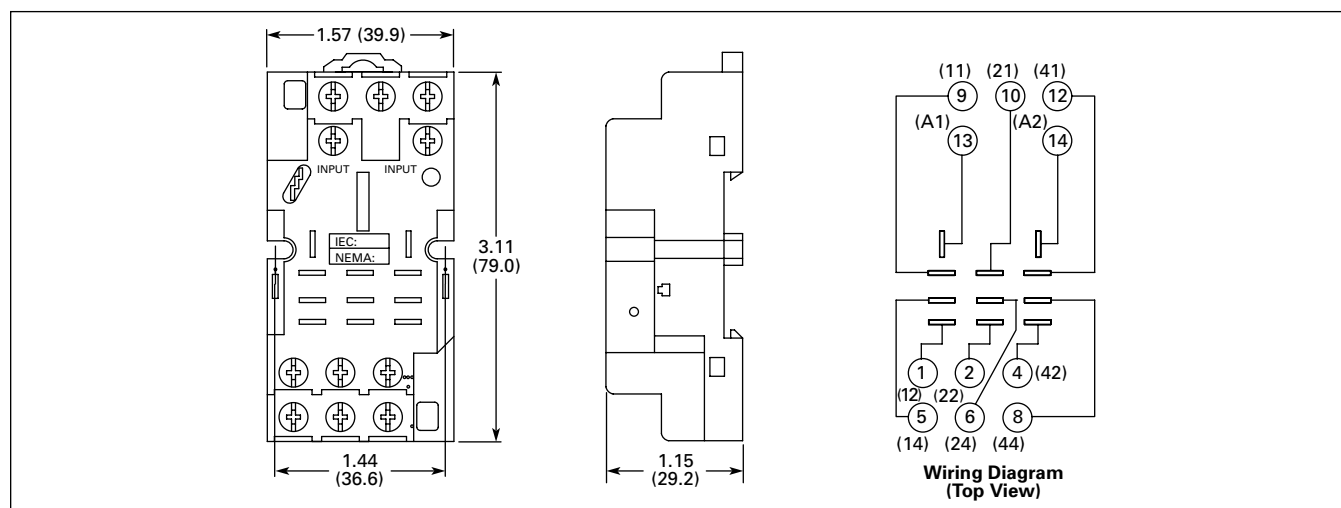


Figure 3-69. D7PAB — Approximate Dimensions in Inches (mm)

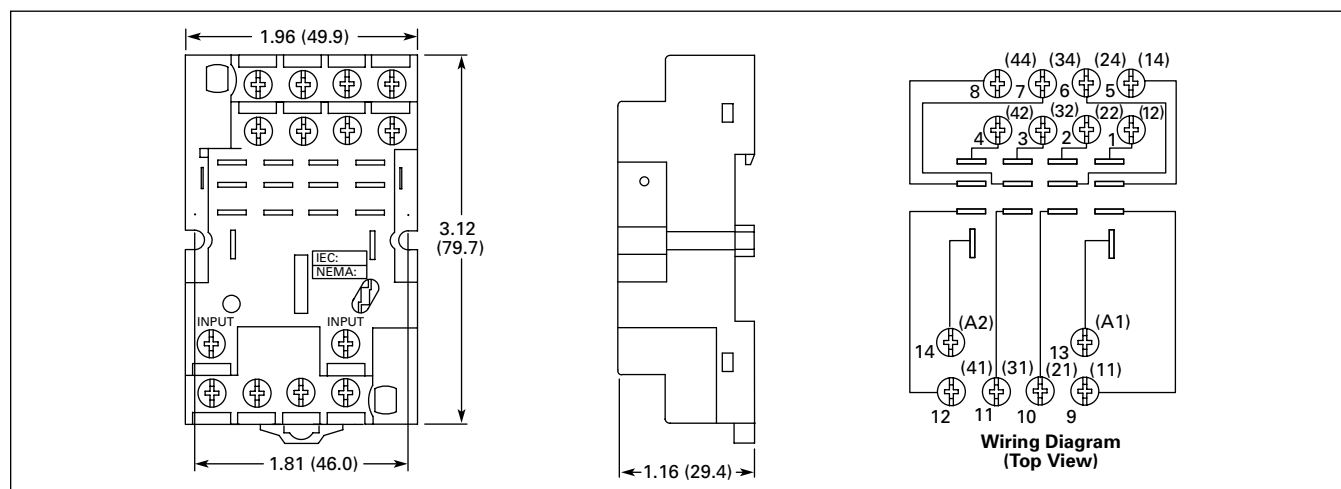


Figure 3-70. D7PAD — Approximate Dimensions in Inches (mm)

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D7PF Series — Full Featured

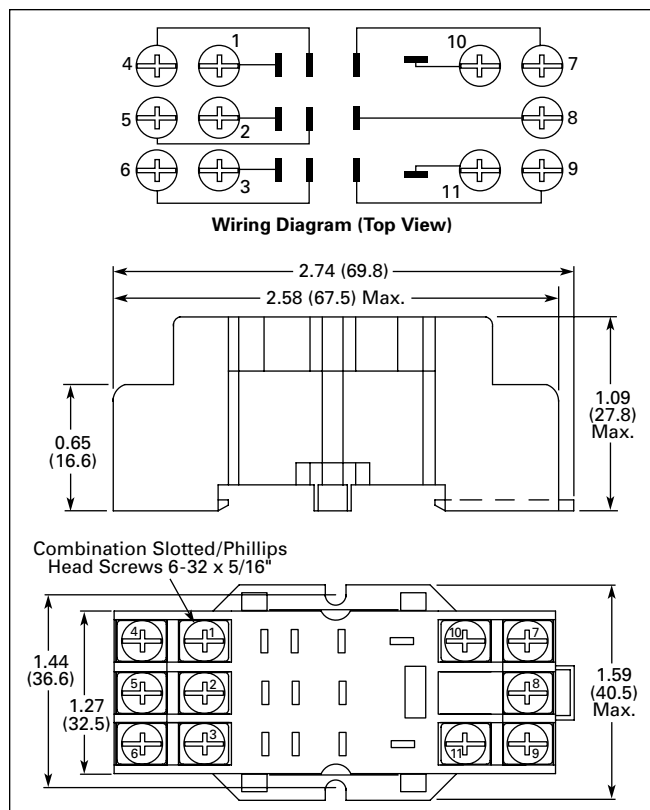


Figure 3-71. D7PA3 Standard Mount — Approximate Dimensions in Inches (mm)

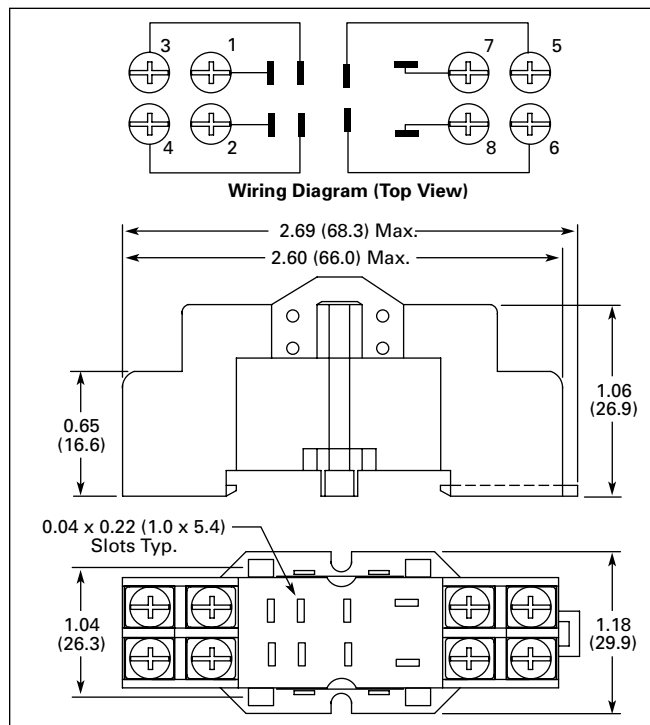


Figure 3-72. D7PA9 Standard Mount — Approximate Dimensions in Inches (mm)

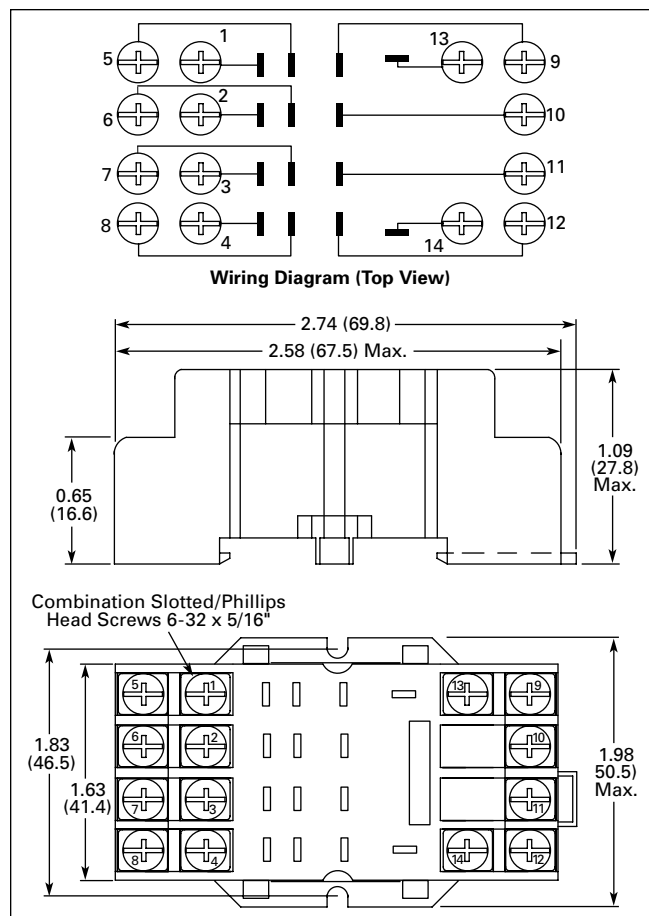


Figure 3-73. D7PA4 Panel Mount — Approximate Dimensions in Inches (mm)

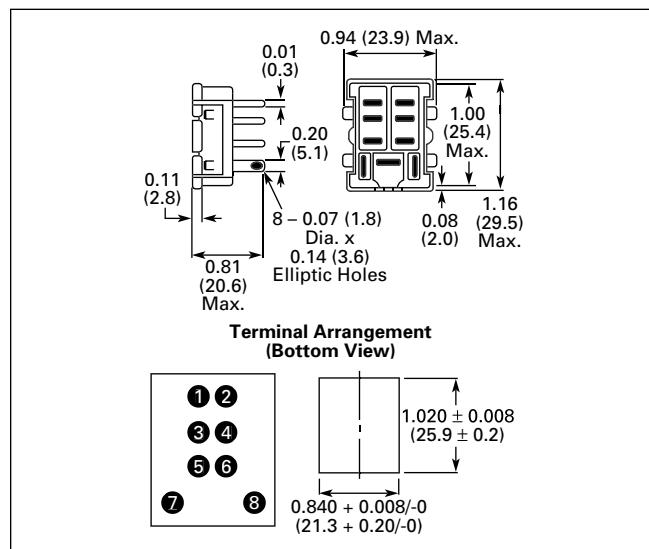


Figure 3-74. D7PA5 Panel Mount — Approximate Dimensions in Inches (mm)

D7PF Series — Full Featured

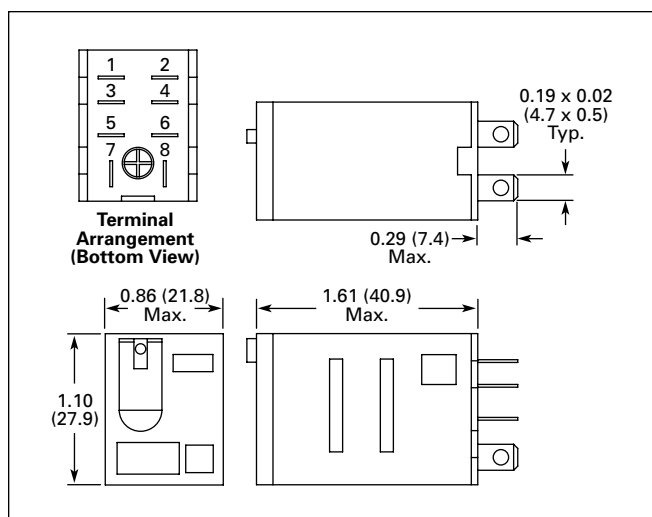


Figure 3-75. D7PF1 — Approximate Dimensions in Inches (mm)

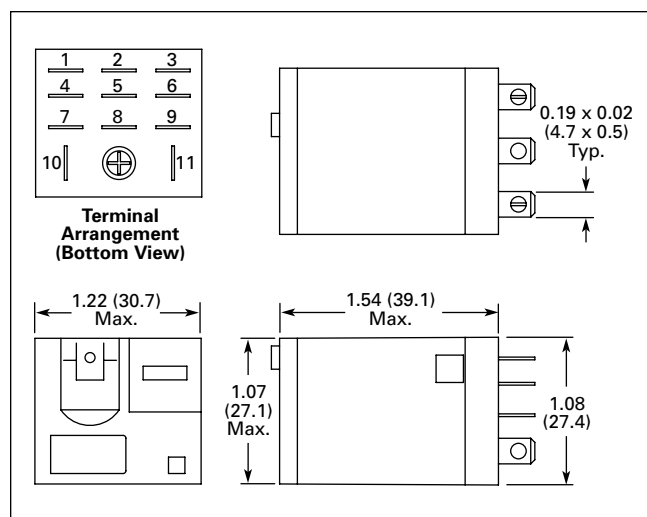


Figure 3-77. D7PF3 — Approximate Dimensions in Inches (mm)

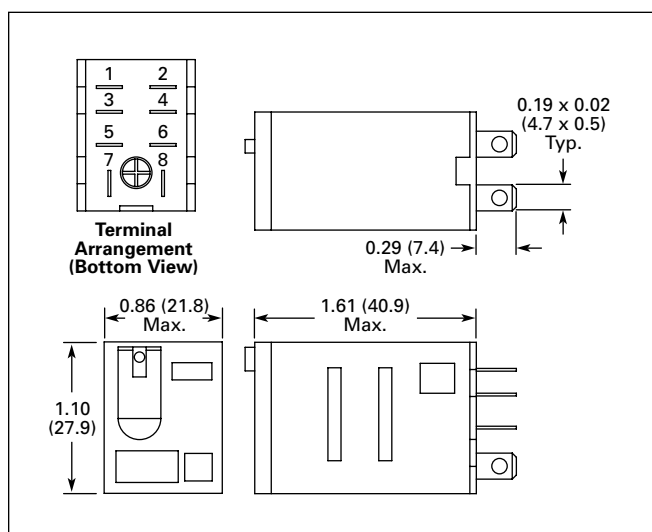


Figure 3-76. D7PF2 — Approximate Dimensions in Inches (mm)

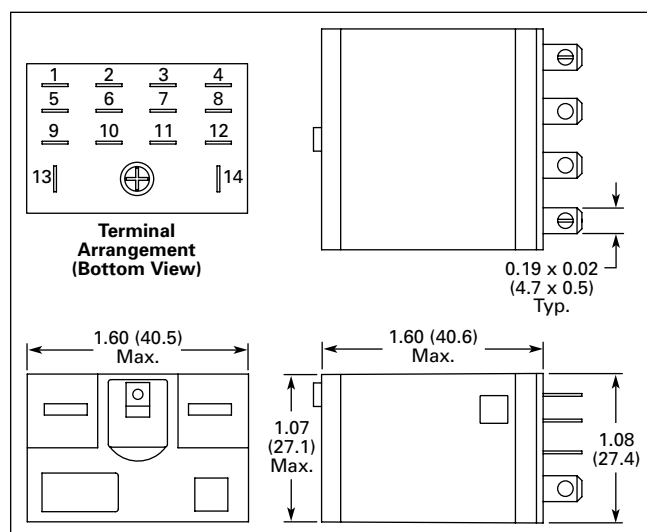


Figure 3-78. D7PF4 — Approximate Dimensions in Inches (mm)