

Series CDP2 Definite Purpose Contactors

High performance economical contactors for commercial applications up to 90A



Sprecher + Schuh's Definite Purpose contactors are ideal for commercial applications including air conditioning, refrigeration, resistive heating and many other installations where a low cost, high performance contactor is needed. These devices offer flexibility and are designed to meet or exceed electrical and mechanical requirements as defined by definite purpose contactor standards.

Popular sizes for most applications

The CDP2 series consists of one, two, three and four pole contactors rated to 600V AC. Three pole devices range up to 90A, while the one and two pole models are rated to 40A. Four pole contactors are also available ranging from 25A to 40A.

Flexibility and convenience make installation easy

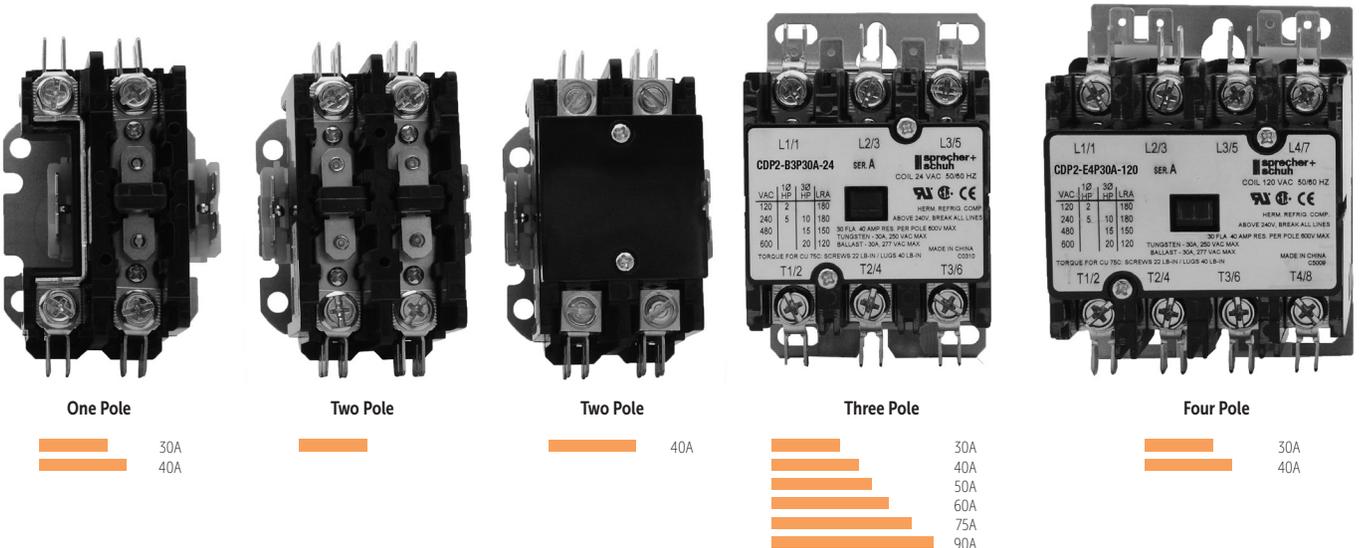
CDP2 contactors are compact in size and offer three convenient methods of wire connection: quick connect terminals, screws or box lugs. Box lugs are standard on 40A and larger contactors. Other models come standard with combination quick connect terminals and screws that accept hex, slotted or phillips screwdrivers.

Standard Features

- Universal mounting plate
- 25A & 30A have screw power terminals that will accept ring-tongue terminals
- 40A and larger have box power terminals
- Dual quick-connect power terminals on all sizes
- Dual quick-connect coil terminals on all sizes
- Double break power contact design with feed-thru wiring
- Class B (130°C) coil insulation
- Double E magnet assembly

Optional Features

- SPDT auxiliary contacts optional on 3- and 4-pole contactors (max of two)
- Optional covers for 1- and 2-pole contactors
- Mechanical interlock for 3-pole contactors



Compare These Features

A4
CDP2 Contactors

Built-in Shock Absorber
Reduces contact bounce for longer life.

Coil Dust Cover
Keeps dust and dirt away from magnet and coil area.

Coil
Class B (1300 C Insulation System) with wide range of voltages and 50/60 Hz ratings. Includes shading coil that reduces contact chatter.

Snap-on Auxiliary Contact
(optional on 3 and 4 pole contactors) One or two SPDT (shown) available. Also 1NO and 1NC with 600V AC rating.

Base Assembly
High arc resistant polyester holds stationary terminals, positions actuator and magnet/coil assembly.

Movable Contacts
Heavy duty silver cadmium oxide composition to resist welding and contact erosion for greater reliability

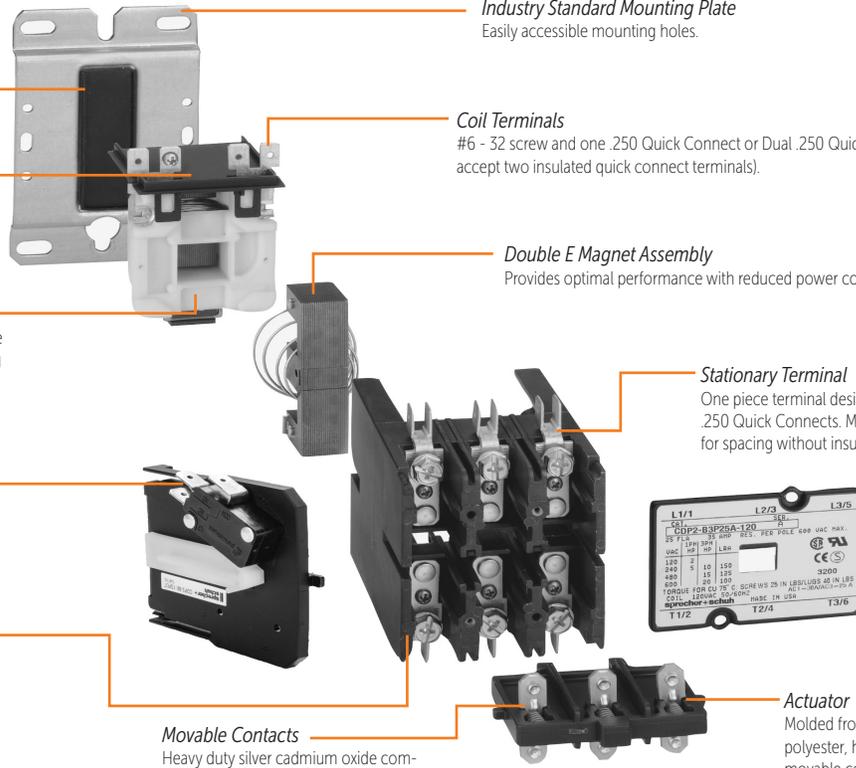
Actuator
Molded from high arc resistant polyester, holds upper magnet, movable contacts and contact springs in position.

Industry Standard Mounting Plate
Easily accessible mounting holes.

Coil Terminals
#6 - 32 screw and one .250 Quick Connect or Dual .250 Quick Connects (will accept two insulated quick connect terminals).

Double E Magnet Assembly
Provides optimal performance with reduced power consumption

Stationary Terminal
One piece terminal design with integral dual .250 Quick Connects. Meets NEMA standard for spacing without insulated terminals.



Quick Selection Guide

One and Two Pole Definite Purpose Contactors with AC Coil - See page A152				
CDP2 ①	A	1P	30A	24
Type	Frame Size	Poles	Amp Rating	Coil Voltage
Definite Purpose	A = 30 & 40A	1P = 1 pole 2P = 2 pole	30A = 30 amps 40A = 40 amps	24 = 24 volts 120 = 120 volts 220W = 208-240 volts 277 = 277 volts

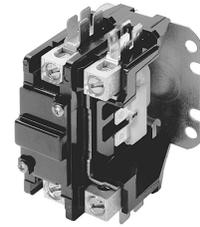
Three Pole Definite Purpose Contactors with AC Coil- See page A153				
CDP2 ①②	B	3P	30A	24
Type	Frame Size	Poles	Amp Rating	Coil Voltage
Definite Purpose	B = 30 & 40A C = 50 & 60A D = 75 & 90A	3P = 3 poles	30A = 30 amps 40A = 40 amps 50A = 50 amps 60A = 60 amps 75A = 75 amps 90A = 90 amps	24 = 24 volts 120 = 120 volts 220W = 208-240 volts 277 = 277 volts 480 = 480 volts

Four Pole Definite Purpose Contactors with AC Coil - See page A154				
CDP2 ①②	E	4P	25A	24
Type	Frame Size	Poles	Amp Rating	Coil Voltage
Definite Purpose	E = 25...40A	4P = 4 poles	25A = 25 amps 30A = 30 amps 40A = 40 amps	24 = 24 volts 120 = 120 volts 220W = 208-240 volts 277 = 277 volts 480 = 480 volts

- ① Screw power terminals standard on 30A. Box lug power terminals standard for 40A and larger.
- ② Box lugs on 30A available with volume special order only.

One and Two Pole Definite Purpose Contactors with AC Coil (Open type only) ④

Full Load Amps	Poles	Locked Rotor Amps			Resistive Amps ②	Maximum H.P.		Catalog Number	Std. Pkg.
		240V ②	480V	600V		1Ø			
						120V	240V ②		
30 ①	1 ⑥	150	75	50	40	1	2	CDP2-A1P30A-* ⑤	50
30 ①	2	150	125	100	40	2	3	CDP2-A2P30A-* ⑤	50
40	1 ⑥	200	150	120	50	2	3	CDP2-A1P40A-* ③	50
40	2	200	150	120	50	2	3	CDP2-A2P40A-* ③	50



Series CDP2 1-pole contactor



Series CDP2 2-pole contactor (with optional cover)

Accessories

Accessory	Description	For use with...	Catalog Number
	Contactor Cover - Prevents foreign particles from entering contactor. Covers current carrying parts.	CDP2-A1P30A... CDP2-A2P30A...	CDP2-A1P-C ⑦ CDP2-A2P-C

AC Coil Codes

AC Coil Code	Voltage Range
	60 Hz
24	24V
120	120V
220W	208-240V
277	277V

Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See Coil Codes on this page

- ① 25A contactors only available by special order. Contact your Sprecher +Schuh representative.
- ② 240V rating also applies to 277V applications.
- ③ Box Power Lugs are supplied as standard. Screw terminals are available on the power connections by special order only in quantity.
- ④ 1 and 2 Pole, 25 and 30A contactors supplied without cover. See Accessories for cover options.
- ⑤ Screw Power Terminals are supplied standard on 25 and 30A contactors. Box Lugs available by special order only in quantity.
- ⑥ 1-Pole (1-pole plus) contactors include a shunt for termination and feed-thru of neutral.
- ⑦ 40 Amp contactors are supplied with cover as standard.

Three Pole Definite Purpose Contactors with AC Coil (Open Type only)

Full Load Amps	Locked Rotor Amps			Resistive Amps ②	Maximum Horsepower ②						Catalog Number	Std. Pkg.	
					1Ø			3Ø					
	240V ②	480V	600V		120V	200	240V	200V	240V	480V			600V
30 ①	180	150	120	40	2	~	5	10	10	15	20	CDP2-B3P30A-* ④	25
40	240	200	160	50	3	~	7-1/2	10	10	20	25	CDP2-B3P40A-* ⑤	25
50	300	250	200	65	3	7-1/2	10	15	15	25	25	CDP2-C3P50A-*	15
60	360	300	240	75	5	7-1/2	10	25	25	30	30	CDP2-C3P60A-*	15
75	450	375	300	93	5	10	15	20	25	40	40	CDP2-D3P75A-*	1
90	540	450	360	120	7-1/2	15	20	25	30	50	50	CDP2-D3P90A-*	1



Series CDP2 3-pole contactor

Auxiliary Contacts for 3 Pole Contactors ⑥

Auxiliary	Description	Circuit Diagram	Catalog Number
	Two pole Auxiliary Contact Block (1-NO / 1-NC) - Side mount with quick connect stabs for 25...40A, 3 pole contactors for 50...90A, 3 pole contactors		CDP2-BE-11 ⑥ CDP2-CD-11 ⑥
	One pole Auxiliary Contact Block (SPDT) - Side mount with quick connect stabs for 25...40A, 3 or 4 pole contactors		

AC Coil Codes

AC Coil Code	Voltage Range
	60 Hz
24	24V
120	120V
220W	208-240V
277	277V
480	480V

Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See Coil Codes on this page

- ① 25A contactors available by special order. Contact your Sprecher + Schuh representative.
- ② 240V rating also applies to 277V applications.
- ③ Box lugs are supplied as standard. Screw terminals are available on the power connections by special order only in quantity.
- ④ Screw power terminals are supplied standard on 25 and 30A contactors. Box Lugs available by special order only in quantity.
- ⑤ Meets NEMA Standard B600. See page A0:7 for technical details.
- ⑥ Meets NEMA Standard B600 EXCEPT has 10 A continuous current rating.
- ⑦ A maximum of two auxiliary contacts can be installed on the contactor, one contact block on each side.

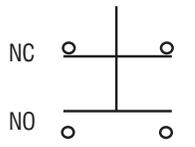
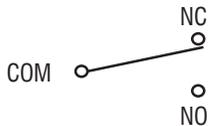
Four Pole Definite Purpose Contactors With AC Coil (Open Type only)

Full Load Amps	Locked Rotor Amps			Resistive Amps ②	Maximum Horsepower ②					Catalog Number	Std. Pkg.
					1Ø		3Ø				
	240V ②	480V	600V		120V	240V	200V	240V	480V		
30 ①	180	150	120	40	2	5	10	10	15	CDP2-E4P30A-* ④	20
40	240	200	160	50	3	7-1/2	10	10	20	CDP2-E4P40A-* ⑤	20



Series CDP2 4-pole contactor

Auxiliary Contacts for 4 Pole Contactors ⑥

Auxiliary	Description	Circuit Diagram	Catalog Number
	Two pole Auxiliary Contact Block (1-NO / 1-NC) - Side mount with quick connect stabs for all 4 pole contactors		CDP2-BE-11
	One pole Auxiliary Contact Block (SPDT) - Side mount with quick connect stabs for all 4 pole contactors		CDP2-BE-1SPDT

A.C. Coil Codes

AC Coil Code	Voltage Range
	60 Hz
24	24V
120	120V
220W	208-240V
277	277V
480	480V

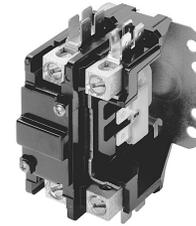
Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See Coil Codes on this page

- ① 25A contactors available by special order. Contact your Sprecher + Schuh representative.
- ② 240V rating also applies to 277V applications.
- ③ Box Power Lugs are supplied as standard. Screw terminals are available on the power connections by special order only in quantity.
- ④ Screw per terminals are supplied standard on 25 and 30A contactors. Box Lugs available by special order only in quantity.
- ⑤ A maximum of two auxiliary contacts can be installed on the contactor, one contact block on each side.

Definite Purpose Lighting Contactors with AC Coil (Open Type only)

Tungsten Rating (Amps)	Ballast Rating (Amps)	Number of Poles	Standard Auxiliary Contacts		Electrically Held
			NO	NC	Open Type
					Catalog Number
30	40	1	0	0	CDP2-A1P30A-*
40	40	1	0	0	CDP2-A1P40A-*
30	40	2	0	0	CDP2-A2P30A-*
40	40	2	0	0	CDP2-A2P40A-*
30	40	3	0	0	CDP2-B3P30A-*
40	40	3	0	0	CDP2-B3P40A-*
30	40	4	0	0	CDP2-E4P30A-*
40	40	4	0	0	CDP2-E4P40A-*



Series CDP2 1-pole contactor



Series CDP2 3-pole contactor

Description

Sprecher + Schuh Definite Purpose contactors can be used to control a mixture of lighting loads. These contactors are well suited to handle the high inrush currents typical of this application as well as other non-motor (resistive) loads.

Lamps can basically be divided into three categories:

- Tungsten Filament Lamps
 - General purpose incandescent
 - Special purpose incandescent
 - Infrared
 - Sodium Iodine
- Discharge Lamps (with Ballast)
 - Fluorescent lamps - Mercury vapor
 - High/low pressure sodium
 - Quartz
 - Halogen metal-vapor
- Mixed Light Lamps

In Application...

The tungsten filaments of incandescent lamps have a very low ohmic resistance when cold. As a result, the closing current is very high but also very short. The closing current of discharge lamps (lighting with ballast) is highly inductive (due to series-connected transformers or chokes), and its duration depends on the lamp type.

Electrically held contactors

Electrically held contactors are available for use where the control signal is activated by a timer or other maintained electrical signal. The coil is energized as long as the contactor is closed. This design is well suited for applications where lights are operated frequently or where the control panel is in a remote location.

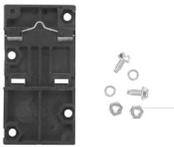
AC Coil Codes

AC Coil Code	Voltage Range
	60 Hz
24	24V
120	120V
220W	208-240V
277	277V
480	480V

Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See Coil Codes on this page

Accessories

Auxiliary	Description	For use with...	Catalog Number
	<p>DIN-rail Adaptor - Attaches to the universal mounting plate of 1-, 2-, 3- and 4-pole contactors 25...40 Amps.</p>	<p>CDP2-A1P...B3P CDP2-E4P</p>	<p>CDP2-DRA</p>
	<p>Mechanical Interlock - Can be combined with electrical interlocks on 3-pole and 4-pole contactors as required.</p>	<p>CDP2-B3P CDP2-E4P</p>	<p>CDP2-MK1</p>

Short-Circuit Coordination

		25-30A 1+2-Pole	40A 1+2-Pole	25-30A 3-Pole	40A 3-Pole	50-90A 3-Pole	25-30A 4-Pole	40A 4-Pole
Standard Short Circuit Rating	[kA]	5	5	5	5	5	5	5
High Current Short Circuit Rating								
Class J-fuses								
Available fault current	[kA]	100	100	100	100	❶	100	100
cUL Max. fuse (600V)	[A]	60	100	60	100	❶	50	100
Enclosure Minimum	[in ³]	96	96	144	144	❶	144	144
Molded Case Circuit Breaker								
Available fault current	[kA]	100	100	100	100	❶	100	100
cUL Max. breaker (480V)	[A]	80	80	80	100	❶	80	100
Enclosure Minimum	[in ³]	144	144	144	144	❶	144	144

Service Life

	1,000,000	1,000,000	1,000,000	1,000,000	500,000	1,000,000	1,000,000
Mechanical (operations)							
Electrical (operations)							
Resistive Load (UL)	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Inductive Load (UL)	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Inductive Load (Self-certified)	200,000	200,000	200,000	200,000	200,000	200,000	200,000

Data for Surge Suppression Selection

Contactors Configuration (All voltages)	Resistor	Capacitor	Snubber ❷
1 Pole	680 ohms	0.47 nf	RCS1M-6
2 Pole	330 ohms	0.47 nf	RCS1K-6
3P 30/40 Amp	220 ohms	0.47 nf	RCS1A-6
4P 30 Amp	220 ohms	0.47 nf	RCS1A-6
3P 50/60 Amp	150 ohms	0.47 nf	RCS1H-6
3P 75/90 Amp	68 ohms	0.47 uf	RCS1E-6

❶ UL testing not complete at the time of this printing.

❷ Recommended snubbers from RK Electric.

General Specifications

		CDP2	CDP2	CDP2	CDP2	CDP2
		25...40A, 1 & 2 pole	25...40A, 3 pole	50...60A, 3 pole	75...90A, 3 pole	25...40A, 4 pole
Approvals		UL508, Guide No. NLDX2-File No. E3125 C22.2 No. 14, Class; 321104-File No. 210566 (75A, 3 pole / C22.2 No. 14, Class: 122201 - File No. 210566) Certified EN60947-4-1: 2010 IEC 947-4-1 (Except 50A...90A, 3 pole)				
Line and Load Terminals		#10 - 32 screw or box lug	#10 - 32 screw or box lug	Box lug	Box lug	#10 - 32 screw or box lug
Wire Size (min/max)						
#10 - 32 screw (all 25A & 30A)	[AWG]	16 - 8 ①	16 - 8 ①	~	~	16 - 8 ①
Box Lug (≥40A)	[AWG]	14 - 4 Cu/Al	14 - 4 Cu/Al	14 - 2 Cu/Al	14 - 1/0 Cu/Al	14 - 4 Cu/Al
Recommended Tightening Torque						
#10 - 32 screw (all 25A & 30A devices)		22 lbs-in	22 lbs-in	~	~	22 lbs-in
Box Lug (40A devices only)		40 lbs-in	40 lbs-in	50 lbs-in	50 lbs-in	40 lbs-in
Quick Connects						
Coil Terminals		Dual .250 QC (2)	Quad .250 QC (2)	#6-32 screw 7.250 QC (2)	#6-32 screw 7.250 QC (2)	Dual .250 QC (2)
Power Terminals		1 pole: Quad .250 QC 2 pole: Quad .250 QC	Dual .250 QC (2)	Dual .250 QC (2)	Dual .250 QC (2)	Dual .250 QC (2)
Arc Cover		Optional	Standard	Standard	Standard	Standard
Insulation System		130°C Class B				
Temperature Range	[°C] [°F]	-40°C to +65°C -40°F to +150°F				
Weight		1 pole 0.5 lb 2 pole: 0.6 lb	1 lb	2 lbs	4 lbs	1.5 lbs.
UL/CSA Ratings for 25A special order contactors		1 Pole	2 Pole	3 Pole		
Locked Rotor Amps	240/277 V [A]	150	150	150		
	480V [A]	125	125	125		
	600V [A]	100	100	100		
Resistive Amps	[A]	35	35	35		
Max. HP	1∅ 120 V [HP]	2	2	2		
	240 V [HP]	3	3	3		
	200 V [HP]	~	~	7.5		
	230 V [HP]	~	~	7.5		
	3∅ 460 V [HP]	~	~	10		
	575 V [HP]	~	~	10		

Coil Data

		24V Coils	120V Coils	220W Coils	277V Coils	480V Coils
1 Pole Contactors (25...40A)						
Normal Coil Voltage	[V]	24	120	208 / 240	277	~
Pickup voltage (min.)	[V]	18	88	177	221	~
Drop-out/Voltage Range	[V]	6...15	20...70	40...140	50...165	~
Nominal Inrush						~
50 Hz	[VA]	22.5	22.5	22.5	22.5	~
60Hz	[VA]	20	20	20	20	~
Nominal Seal-in						~
50 Hz	[VA]	7	7	7	7	~
60 Hz	[VA]	5.25	5.25	5.25	5.25	~
Nominal DC Resistance	[Ω]	16.5	420	1850	2650	~
2 Pole Contactors (25...40A)						
Normal Coil Voltage	[V]	24	120	208 / 240	277	~
Pickup voltage (min.)	[V]	18	88	177	221	~
Drop-out Voltage Range	[V]	6...15	20...70	40...140	50...165	~
Nominal Inrush						~
50 Hz	[VA]	37	37	37	37	~
60Hz	[VA]	35	35	35	35	~
Nominal Seal-in						~
50 Hz	[VA]	8	8	8	8	~
60 Hz	[VA]	7	7	7	7	~
Nominal DC Resistance	[Ω]	11	250	1000	1600	~

Auxiliary Contacts

① Stranding must be split for #8 wire.

Coil Data (continued)		50/60 Hz 24V Coils	110 - 50 Hz 120 - 60 Hz 120V Coils	220 - 50 Hz 208-240 - 60 Hz 220W Coils	277 - 60 Hz 277V Coils	440 - 50 Hz 480 - 60 Hz 480V Coils
3 Pole Contactors (25...40A)						
Nominal Coil Voltage	[V]	24	120	208-240	277	480
Pickup Voltage (min.)	[V]	18	88	177	220	384
Drop-out Voltage Range	[V]	6...15	20...70	40...140	50...165	150...270
Nominal Inrush						
50 Hz	[VA]	65	65	65	65	65
60Hz	[VA]	60	60	60	60	53
Nominal Seal-in						
50 Hz	[VA]	7.5	7.5	7.5	7.5	7.5
60 Hz	[VA]	6	6	6	6	6
Nominal DC Resistance	[Ω]	7	180	720	950	3100
3 Pole Contactors (50...60A)						
Nominal Coil Voltage	[V]	24	120	208-240	277	480
Pickup Voltage (min.)	[V]	18	88	177	221	374
Drop-out Voltage Range	[V]	6...15	20...70	40...140	65...185	120...286
Nominal Inrush						
50 Hz	[VA]	114	108	126	120	98
60Hz	[VA]	105	105	125	115	108
Nominal Seal-in						
50 Hz	[VA]	13	12	14	13	10
60 Hz	[VA]	12	11	13	1	10
Nominal DC Resistance	[Ω]	4	52	282	453	1390
3 Pole Contactors (75...90A)						
Nominal Coil Voltage	[V]	24	120	208-240	277	480
Pickup Voltage (min.)	[V]	22	95	177	235	384
Drop-out Voltage Range	[V]	6...15	20...70	40...110	65...185	150...270
Nominal Inrush	[Ω]					
50 Hz	[VA]	225	225	280	210	210
60Hz	[VA]	222	220	270	202	202
Nominal Seal-in						
50 Hz	[VA]	22	19	27	27	19
60 Hz	[VA]	21	18	25	25	18
Nominal DC Resistance	[Ω]	.66	15.8	50	93	258
4 Pole Contactors (25...40A)						
Nominal Coil Voltage	[V]	24	120	208-240	277	480
Pickup voltage (min.)	[V]	18	88	177	220	384
Drop-out Voltage Range	[V]	6...15	20...70	40...140	65...185	15...270
Nominal Inrush						
50 Hz	[VA]	62	62	62	62	67
60 Hz	[VA]	59	59	59	59	60
Nominal Seal-in						
50 Hz	[VA]	9	9	9	8	9
60 Hz	[VA]	7	7	7	6.5	7
Nominal DC Resistance	[Ω]	6	150	600	750	2400
Operating Times						
AC: 50Hz, 60hz						
Pick-up [ms]		0...20	0...20	0...20	0...20	0...20
Drop-out [ms]		0...30	0...30	0...30	0...30	0...30

2 Pole (NO/NC) - Single Circuit Contact Rating

Voltage Rating	120	240	480	600
Break	3.0	1.5	0.75	0.6
Amperes				
Make	30	15	7.5	6
Continuous	10	10	10	10

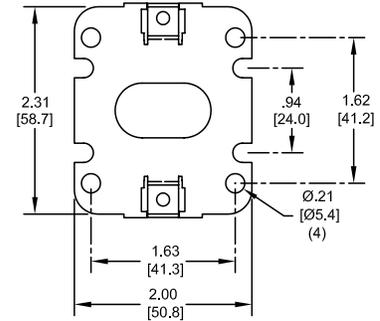
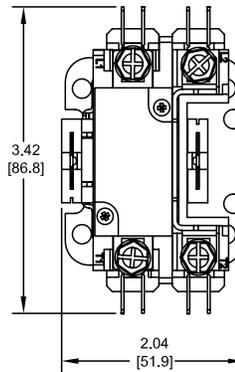
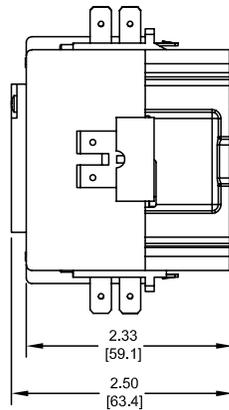
SPDT

10A, 1/3 HP, 125 or 250V AC; 1/2A, 125 V DC; 1/4A, 250V DC; 4A, 120V AC on Lamp Load

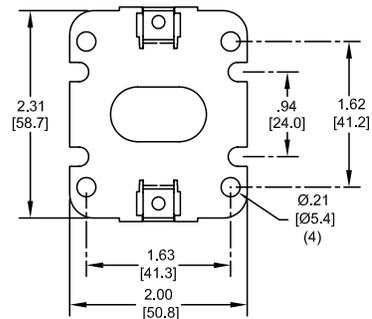
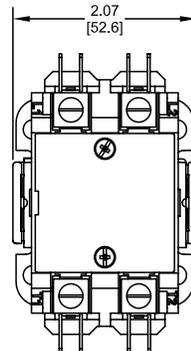
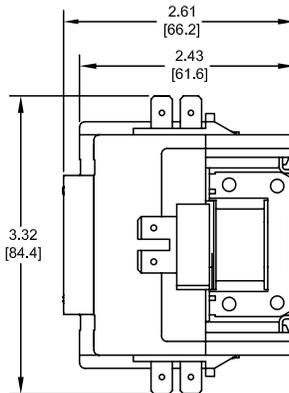
CDP2 25...40A, 1 & 2 Pole

Dimensions are in inches (millimeters). Dimensions not intended for manufacturing purposes.

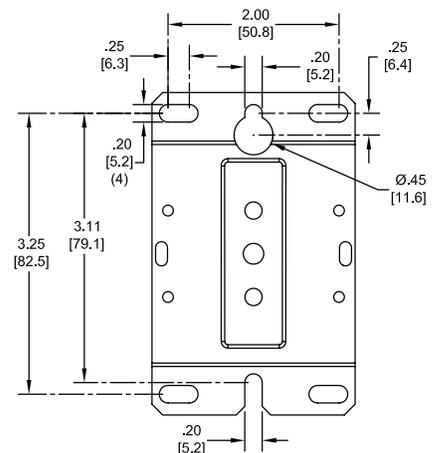
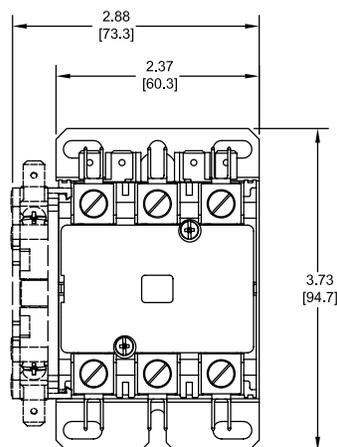
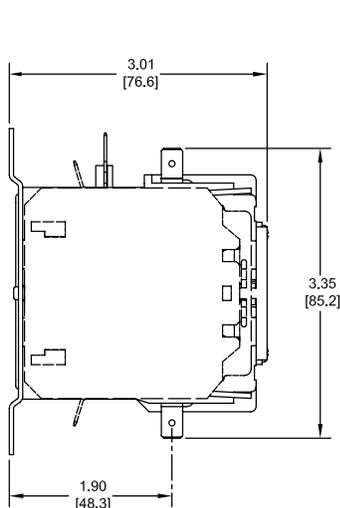
1-Pole



2-Pole

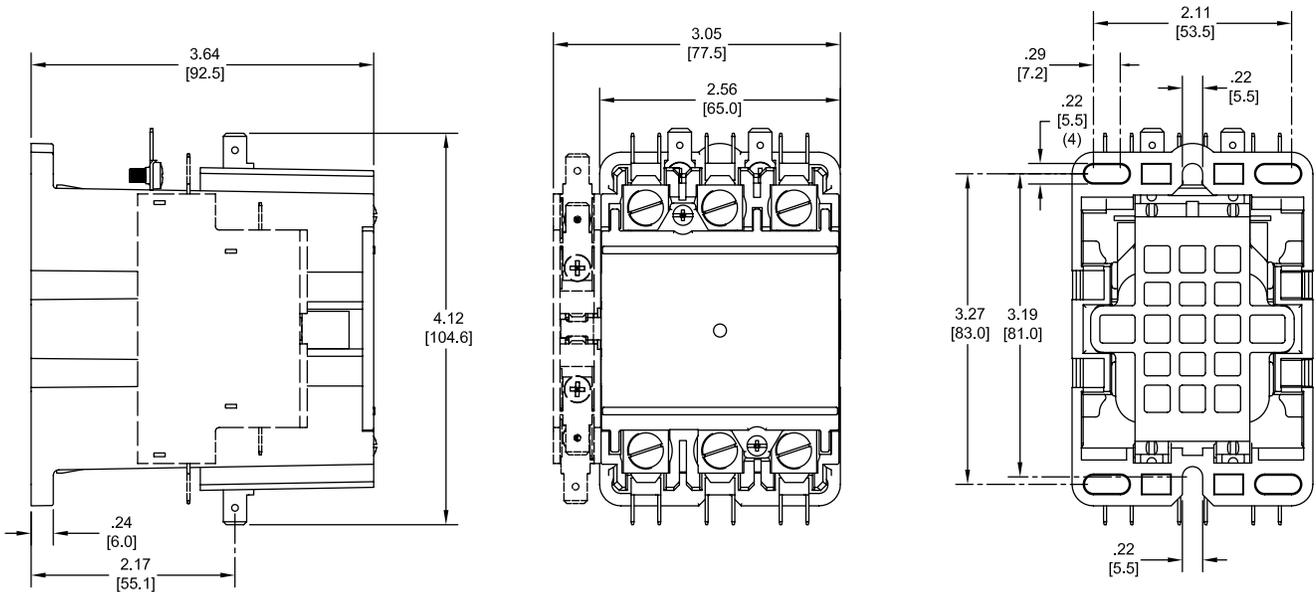


CDP2 25...40A, 3 Pole with Auxiliary



CDP2 50...60A, 3 Pole with Auxiliary

Dimensions are in inches (millimeters). Dimensions not intended for manufacturing purposes.



CDP2 75...90A, 3 Pole with Auxiliary

