Product Overview

CDCH6i household AC contactor is primarily suitable for AC 50Hz circuits with an operating voltage 250V/400V and an operating current up to 63A to control household micro-inductive appliances such as microwave ovens and rice cookers, and it can also be used for household motor appliances such as air conditioners, washing machines, and refrigerators. With safe and reliable operation, long service life, and no noise issued during operation, this product is widely used in important places such as hospitals and hotels.

Product Selection

Product name	Rated current	Number of poles	Main contact type	Voltage type
CDCH6i	16	2	20	N
	16：16A 20：20A 25：25A 40：40A 63：63A	2：1P（1NO，1NC） 2P（1NO+1NC，2NO，2NC） 4：3P（3NO，3NC） 4P（2NO+2NC，3NO+1NC，1NO+3NC，4NO，4NC）	20：2NO　40：4NO 02：2NC　04：4NC 11：1NO,1NC　22：2NO,2NC 10：1NO　31：3NO,1NC 01：1NC　30：3NO 03：3NC	N：220V-240V L：24V

Note: There are no RoHS compliant materials for this model.

Technical Parameters

Contactor model			CDCH6i-16 2P	CDCH6i-16 4P	CDCH6i-20 2P	CDCH6i-20 4P	CDCH6i-25 2P	CDCH6i-25 4P	CDCH6i-40 2P	CDCH6i-40 4P	CDCH6i-63 2P	CDCH6i-63 4P
Main circuit characteristics												
Rated insulation voltage (Ui)	V		500									
Resistive current（Ith）	A		25						63			
Rated operating current（Ie）	A	AC-7a	16		20		25		40		63	
		AC-7b	6		7		8.5		15		20	
Operation cycles	Times		≥30000									
Rated operating frequency	Times/h	AC-7a	360									
		AC-7b	360		180		180		120		90	
Making and breaking capacity	A	AC-7a	1.05Ie									
		AC-7b	6Ie									
Short-time withstand current	A		8Ie（AC-7b）/10S									
Coil control supply voltage (Us)	V		AC24V　AC220-240V									
Allowable control loop voltage	V	Closed	85%-110%Us									
		Open	20%-75%									
Coil power	VA	Start	9.2	34	9.2	34	9.2	34	34	53	34	53
		Hold	2.7	4.6	2.7	4.6	2.7	4.6	4.6	6.5	4.6	6.5
Operating power	W		1.2	1.6	1.2	1.6	1.2	1.6	1.6	2.1	1.6	2.1
Installation			Space (CDCH6iIS) shall be assembled on both sides of the contactor for heat dissipation.									
Indicator			There is a signal indicator on the front of the contactor. Red: The coil is switched on									
Applied standards:			IEC61095/GB/T17885									
Certification			CCC									

■ Model Table

Product			CDCH6i household AC contactor					
Light source type	Unit power and the capacity of power factor compensation capacitor		Maximum number of lamps in a single-phase circuit and its maximum power output					
			16 A		25 A		40 A	
Common incandescent lamps, low-pressure halogen lamps, alternate mercury lamps (without ballasts)								
	40 W		38	1550W to 2000W	57	2300W to 2850W	115	4600W to 5250W
	60 W		30		45		85	
	75 W		25		38		70	
	100 W		19		28		50	
	150 W		12		18		35	
	200 W		10		14		26	
	300 W		7	2100W	10	3000W	18	5500W to 6000W
	500 W		4		6		10	
	1000 W		2		3		6	
	1500 W		1		2		4	
Electronic low voltage 12V or 24V halogen lamps								
With induction transformer	20 W		15	300W to 600W	23	450W to 900W	42	850W to 1950W
	50 W		10		15		27	
	75 W		8		12		23	
	100 W		6		8		18	
With electronic transformers	20 W		62	1250W to 1600W	90	1850W to 2250W	182	3650W to 4200W
	50 W		25		39		76	
	75 W		20		28		53	
	100 W		15		22		42	
With fluorescent lamps of starters and magnetic ballasts								
Single tube without compensation (1)	15 W		22	330W to 850W	30	450W to 1200W	70	1050W to 2400W
	18 W		22		30		70	
	20 W		22		30		70	
	36 W		20		28		60	
	40 W		20		28		60	
	58 W		13		17		35	
	65 W		13		17		35	
	80 W		10		15		30	
	115 W		7		10		20	
Single tube with parallel compensation (2)	15 W	5 μF	15	200W to 800W	20	300W to 1200W	40	600W to 2400W
	18 W	5 μF	15		20		40	
	20 W	5 μF	15		20		40	
	36 W	5 μF	15		20		40	
	40 W	5 μF	15		20		40	
	58 W	7 μF	10		15		30	
	65 W	7 μF	10		15		30	
	80 W	7 μF	10		15		30	
	115 W	16 μF	5		7		14	
2 or 4 tubes with series compensation	2 x 18 W		30	1100W to 1500W	46	1650W to 2400W	80	2900W to 3800W
	4 x 18 W		16		24		44	
	2 x 36 W		16		24		44	
	2 x 58 W		10		16		27	
	2 x 65 W		10		16		27	
	2 x 80 W		9		13		22	
	2 x 115 W		6		10		16	

Product			CDCH6i household AC contactor								
Light source type	Unit power and the capacity of power factor compensation capacitor		Maximum number of lamps in a single-phase circuit and its maximum power output								
			16 A			25 A			40 A		
Fluorescent lamps with electronic ballasts											
1 tube or 2 tubes	18 W		74	1300W to 1400W		111	2000W to 2200W		222	4000W to 4400W	
	36 W		38			58			117		
	58 W		25			37			74		
	2 x 18 W		36			55			111		
	2 x 36 W		20			30			60		
	2 x 58 W		12			19			38		
Compact fluorescent lamps											
With external electronic ballast	5 W		210	1050W to 1300W		330	1650W to 2000W		670	3350W to 4000W	
	7 W		150			222			478		
	9 W		122			194			383		
	11 W		104			163			327		
	18 W		66			105			216		
	26 W		50			76			163		
With integrated electronic ballast (Replaces incandescent lamps)	5 W		160	800W to 900W		230	1150W to 1300W		470	2350W to 2600W	
	7 W		114			164			335		
	9 W		94			133			266		
	11 W		78			109			222		
	18 W		48			69			138		
	26 W		34			50			100		
High-pressure mercury lamp without triggers but with inductive ballasts replaces high-pressure sodium lamps with inductive ballasts and triggers [3]											
Without compensation [1]	50 W		15	750W to 1400W		20	1000W to 1600W		34	1700W to 至 2800W	
	80 W		10			15			27		
	125 / 110 W [3]		8			10			20		
	250 / 220 W[3]		4			6			10		
	400 / 350 W[3]		2			4			6		
	700 W		1			2			4		
With parallel compensation [2]	50 W	7 μF	10	500W to 1400W		15	750W to 1600W		28	1400W to 3500W	
	80 W	8 μF	9			13			25		
	125 / 110 W[3]	10 μF	9			10			20		
	250 / 220 W[3]	18 μF	4			6			11		
	400 / 350 W[3]	25 μF	3			4			8		
	700 W	40 μF	2			2			5		
	1000 W	60 μF	0			1			3		
Low-pressure sodium lamp with inductive ballast and external trigger											
Without compensation [1]	35 W		5	270W to 360W		9	320W to 720W		14	500W to 1100W	
	55 W		5			9			14		
	90 W		3			6			9		
	135 W		2			4			6		
	180 W		2			4			6		
With parallel compensation [2]	35 W	20 μF	3	100W to 180W		5	175W to 360W		10	350W to 720W	
	55 W	20 μF	3			5			10		
	90 W	26 μF	2			4			8		
	135 W	40 μF	1			2			5		
	180 W	45 μF	1			2					

Product			CDCH6i household AC contactor					
Light source type	Unit power and the capacity of power factor compensation capacitor		Maximum number of lamps in a single-phase circuit and its maximum power output					
			16 A		25 A		40 A	
High pressure sodium lamp metal halide								
With inductive ballasts and external trigger 35 W, without compensation (1)	35 W		16	600W	24	850W to 1200W	42	1450W to 2000W
	70 W		8		12		20	
	150 W		4		7		13	
	250 W		2		4		8	
	400 W		1		3		5	
	1000 W		0		1		2	
With inductive ballasts and external trigger, with parallel compensation (2)	35 W	6 μF	12	450W to 1000W	18	650W to 2000W	31	1100W to 4000W
	70 W	12 μF	6		9		16	
	150 W	20 μF	4		6		10	
	250 W	32 μF	3		4		7	
	400 W	45 μF	2		3		5	
	1000 W	60 μF	1		2		3	
	2000 W	85 μF	0		1		2	
With electronic ballasts	35 W		24	850W to 1350W	38	1350W to 2200W	68	2400W to 4000W
	75 W		18		29		51	
	150 W		9		14		26	

(1) Uncompensated inductive ballast circuits consume twice the power output of each set of luminaires, so that the same current can require a limited number of such circuits.
(2) The total capacitance of the power factor compensation capacitors connected in parallel limits the number of luminaires controlled by one contactor. The limit value of the total capacitance of subordinate circuit of the standard contactor with a rated power 16A, 25A, 40A and 63A cannot exceed the 75μF, 100μF, 200μF and 300μF, respectively. If the value of the capacitance differs from the value listed in table, it is allowed to calculate the maximum number of luminaires that can be connected according to the limit value of the capacitance.
(3) High-pressure mercury lamps with power of 120W, 250W and 400W without triggers will gradually replace the lamps of the corresponding powers of 110W, 220W and 350W, respectively.

■ Heating applications

The contactor capacity is selected according to the load capacity and the number of operations per day.

230V heating		
Type of heating	Max. power	
Number of operations per day	25 A	40 A
25	5.4 kW	8.6 kW
50	5.4 kW	8.6 kW
75	4.6 kW	7.4 kW
100	4 kW	6 kW
250	2.5 kW	3.8 kW
500	1.7 kW	2.7 kW
400V heating		
25	16 kW	26 kW
50	16 kW	26 kW
75	14 kW	22 kW
100	11 kW	17 kW
250	5 kW	8 kW
500	3.5 kW	6 kW

■ Small motor applications

The contactor capacity is selected according to the capacity of the load

Single-phase asynchronous motor with capacitor		
Small motor application type	Max. power	
Voltage	25 A	
230V	1.4	2.5
Three-phase asynchronous motor		
400V	4	7.5
General motor		
230V	0.9	1.4

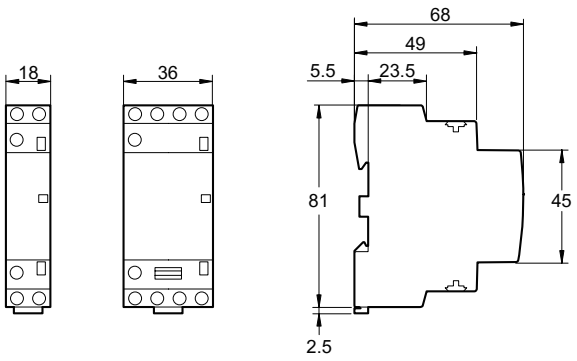
■ Load type characteristics

The IEC 61095 standard applies to contactors for civil and similar purposes. Unlike the IEC 60947.4 standard (for industrial applications), this standard also specifies some special requirements for the safety of people and equipment.

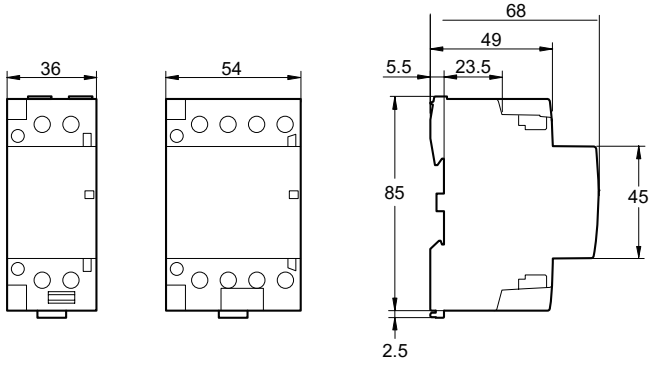
Application	Industry: IEC 60947.4	
Motor	AC3	AC7b
Heating	AC1	AC7a
Lighting	AC5a and b	AC5a and b

Outline and Installation Dimensions

CDCH6i 16A/25A



CDCH6i 40A/63A



■ Trip characteristics

B Characteristics

B The standard circuit breakers with trip characteristics comply with GB/T 10963.1 and IEC 60898-1 standards, suitable for providing the protection for the resistive loads or loads without impulse current.

C Characteristics

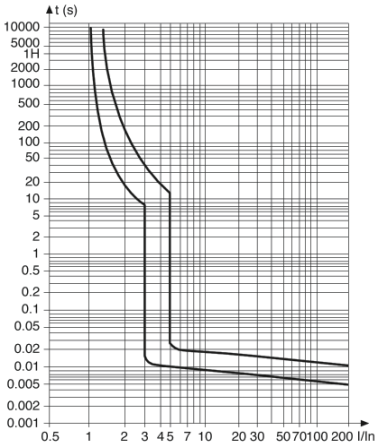
C The standard circuit breakers with trip characteristics comply with GB/T 10963.1 and IEC 60898-1 standards, suitable for providing the protection for the resistive loads or loads with low impulse current.

D Characteristics

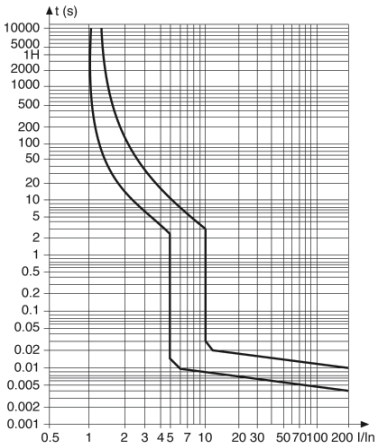
D The standard circuit breakers with trip characteristics comply with GB/T 10963.1 and IEC 60898-1 standards, suitable for providing the protection for the loads with high impulse current when the line is powered on.

Trip type	Standard	Thermal trip characteristics				Electromagnetic trip characteristics			
		Test current	Test time	Start state	Expected results	AC test current	Test time	Start state	Expected results
B	IEC 60898-1 GB/T 10963.1	1.13In	≤1h(In≤63A) ≤2h(In > 63A)	Cold state	Non-trip	3In	≤0.1s	Cold state	Non-trip
		1.45In	< 1h(In≤63A) < 2h(In > 63A)	Heat state	Trip	5In	< 0.1s		Trip
C	IEC 60898-1 GB/ 10963.1	1.13In	≤1h(In≤63A) ≤2h(In > 63A)	Cold state	Non-trip	5In	≤0.1s		Non-trip
		1.45In	< 1h(In≤63A) < 2h(In > 63A)	Heat state	Trip	10In	< 0.1s		Trip
D	IEC 60898-1 GB/ 10963.1	1.13In	≤1h(In≤63A) ≤2h(In > 63A)	Cold state	Non-trip	10In	≤0.1s		Non-trip
		1.45In	< 1h(In≤63A) < 2h(In > 63A)	Heat state	Trip	14In	< 0.1s		Trip

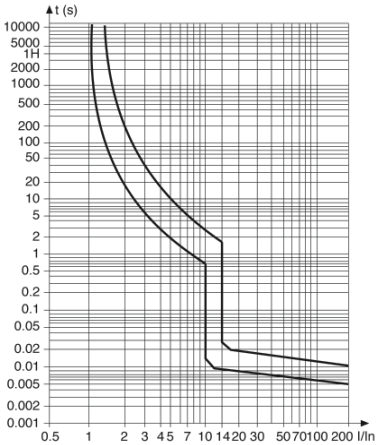
■ Trip curve



B curve



C curve



D curve

■ Temperature correction coefficient table

Rated current A	Rated current corrected value A										
	-35℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
1	1.35	1.22	1.18	1.15	1.1	1.05	1	0.94	0.9	0.84	0.78
2	2.69	2.43	2.31	2.25	2.17	2.06	2	1.93	1.85	1.63	1.59
3	4.07	3.68	3.57	3.43	3.29	3.18	3	2.82	2.63	2.57	2.33
4	5.59	4.89	4.75	4.67	4.48	4.24	4	3.98	3.52	3.25	2.97
5	6.80	6.21	5.98	5.83	5.77	5.42	5	4.85	4.57	4.19	3.80
6	8.19	7.33	7.05	6.84	6.62	6.3	6	5.64	5.42	5.06	4.65
8	11.00	9.78	9.44	9.15	8.51	7.98	8	7.1	6.92	6.75	6.20
10	14.72	12.25	11.87	11.64	11.15	10.62	10	9.3	8.96	8.48	6.55
13	18.00	15.78	15.34	14.83	14.22	13.75	13	12.1	11.75	10.93	9.88
16	22.07	19.49	18.72	18.06	17.98	16.96	16	15.04	14.42	13.47	12.17
20	27.32	24.35	23.68	22.82	22.47	21.2	20	18.8	17.85	16.78	15.49
25	34.28	30.52	29.61	28.78	28.09	26.5	25	23.25	22.52	21.02	19.21
32	43.72	38.96	37.68	36.62	35.96	33.92	32	30.08	28.81	26.84	24.79
40	54.96	48.85	47.13	46.32	45.8	42.8	40	36.8	36.21	33.5	30.66
50	69.12	61.58	59.52	57.35	55.04	52.59	50	46	44.25	42.36	37.90
63	88.66	76.86	74.25	71.18	69.13	67.41	63	58.59	56.83	52.93	46.08

80 Frame

Rated current A	Rated current corrected value A										
	-35℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
80	103.28	96.48	93.42	90.25	86.97	83.56	80.00	76.28	72.36	68.22	63.82

125 Frame

Rated current A	Rated current corrected value A								
	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃
63	78.8	75.6	72.5	69.3	66.2	63	59.2	56.1	53.0
80	100	96	92	88	84	80	75.2	71.0	67
100	125	120	115	110	105	100	94	88	80
125	169.2	162.8	143.8	137.5	131.2	125	117.8	111.5	105

■ Derating table used at high altitudes

· The IEC60947.2 standard specifies the relationship between the altitude and the dielectric characteristics. The altitude has no any significant influence on the performance of circuit breakers when below 2,000m.

· When the altitude is above 2,000 m, conditions such as air cooling and dielectric characteristics degradation must be considered, so that manufacturer shall contact the user for negotiation of the working conditions or take special designs.

· The table below lists the corrected values of the rated current with the breaking capacity unchanged when the altitude exceeds 2,000.

Altitude (m)	2000	3000	4000
Dielectric strength	2500	2200	1950
Max. operating voltage (V)	440	440	440
Rated current	In	0.96In	0.93In

■ Influence on metal parts

Chlorine gas Cl_2

· Nitrogen dioxide NO_2

· Hydrogen sulfide H_2S

· Sulfur dioxide SO_2

Copper

· The thickness of the copper sulfide coating in the chlorine environment will be twice that of the normal working environment

· The nitrogen dioxide condition is basically the same with this

Silver

· When silver contacts or silver-plated contacts work in SO2 and H2S environments, the surface of the contact will darken to form a silver sulfide coating, increasing the contact temperature rise and causing damage to the contact damage. In humid environments where there are chlorine and hydrogen sulfide, the thickness of the coating layer will be increased by 7 times. If there are SO2 and H2S, the thickness of the silver sulfide coating shall be increased by 20 times.

The following shall be considered when model selection

· The equipment used is easily vulcanized in oil refining, steelmaking, papermaking, and artificial fiber (nylon) industries, or in the factories where sulfur is generally used, and this phenomenon is also called oxidation in the chemical industry.

· The equipment shall be installed in the machine room and is guaranteed that it will not be oxidized. In order to keep the air pressure in the machine room slightly higher than the atmospheric pressure, the air inlet is generally shorter. This can really reduce external pollution to some extent. The equipment will be corroded inevitably after 5~6 years of operation.

· The equipment oxidation is unavoidable. Therefore, equipment derating is required in the factory environment with corrosive gases. The derating coefficient is the product that the equipment rating value is multiplied by 0.6 (up to 0.8). This can avoid oxidation acceleration due to temperature changes