

MOTOR MANAGEMENT

HDCX AC Contactors

Standard: IEC60947-4



Range Presentation

HDCX is Himel X series range of contactors designed for Motor Control AC-3 applications up to 95A .

HDCX contactors are applicable to AC power systems 50Hz or 60Hz with rated operating voltage up to 690V.

HDCX contactors can be combined with HDRX thermal overload relays to form magnetic motor starters up to 95A.

- ◆ 6 frame sizes: 18A DC, 38A DC, 18A AC, 38A AC, 65A AC, 95A AC.
- ◆ Wide range of operating voltage from 80%~110% Us
- ◆ Full range of accessories for any type of application
- ◆ Can be combined with HDRX thermal overload relay

Selection Code

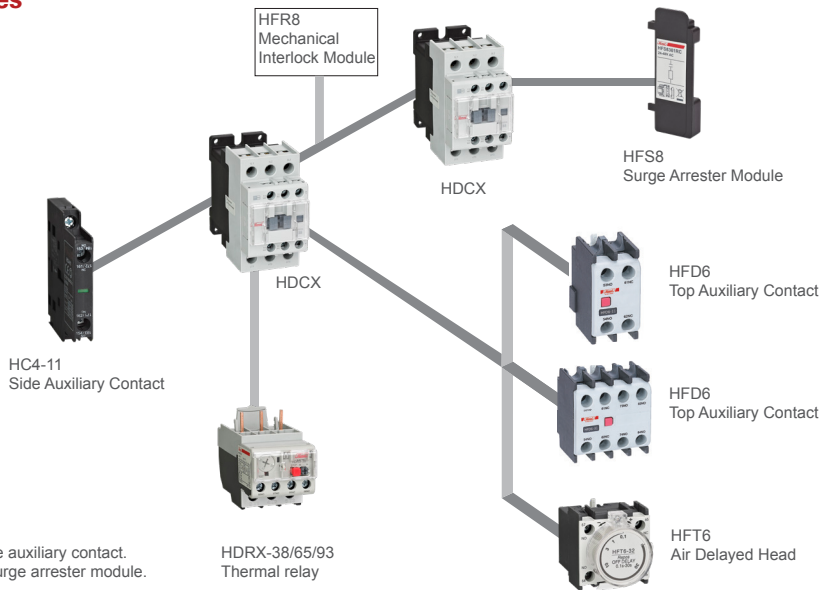
Range name	Current specification	Auxiliary contact	Coil voltage	Coil type
HDCX	09	11	M	7
09-95A	09:09A 12:12A 18:18A 25:25A 32:32A 38:38A 40:40A 50:50A 65:65A 80:80A 95:95A	11: 1NO+1NC	B:24V C:36V E:48V F:110V S:127V M:220/230V U:240V Q:380/400V L:415V X:440V	7: AC Coil 50/60Hz D: DC Coil

Note:

The current specifications of DC operation products are only 38A at present, and the operating coils are B, E, F, and M specifications. 3P is a conventional pole number and is not indicated in the model number.

Overview of Accessories

HDCX 09-95A Accessories



Note:
DC coil type contactor cannot install side auxiliary contact.
DC coil type contactor doesn't require surge arrester module.

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Specification

Technical Parameter													
AC Contactors			HDCX										
Contactor model			09	12	18	25	32	38	40	50	65	80	95
Main circuit characteristics													
Conversonal thermal current(Ith)		A	25	25	32	40	50	50	60	80	80	125	125
Rated operational current(Ie)	AC-3 220/230V	A	9	12	18	25	32	38	40	50	65	80	95
	AC-3 380/400V	A	9	12	18	25	32	38	40	50	65	80	95
	AC-3 660/690V	A	6.6	8.9	12	18	22	22	34	39	42	49	49
Rated Operational Power(Pe)	AC-3 220/230V	kW	2.2	3	4	5.5	7.5	9	11	15	19	22	25
	AC-3 380/400V	kW	4	5.5	7.5	11	15	18.5	18.5	22	30	37	45
	AC-3 660/690V	kW	5.5	7.5	10	15	18.5	18.5	30	33	37	45	45
Mechanical durability	AC Coil	Million times	10						6			4	
	DC Coil	Million times	15						/				
Electrical durability	AC-3	Million times	1				0.8				0.65		
Operation frequency		Times/hour	1200				600						
Auxiliary(standard)			1NO+1NC										
Number of poles			3P										
Rated insulation voltage(Ui)		V	690										
Maximum rated operational voltage(Ue)		V	660/690										
Certificate			CB, CE, SEMKO										
Coil													
Rated control circuit voltage(Us)	AC 50/60Hz	V	24, 36, 48, 110, 127, 220/230, 240, 380/400, 415, 440										
	DC	V	24, 48, 110, 220						/				
Allowable control circuit voltage(Us)	Operation	V	AC:85%~110%(vertical installation); DC: 80%~110%										
	Drop-out	V	AC: 15%~75%; DC: 10%~70%										
Coil power-AC	Actuation	VA	60			70			200			370	
	Holding	VA	9			11.4			36.6			36.6	
Coil power-DC	Actuation	W	6.5						/				
	Holding	W	6.5						/				
Main circuit terminal wiring capability													
Soft wire	1 wire	mm²	1...4			1...6			4...25			4...50	
	2 wire	mm²	1...2.5			1...4			4...10			4...16	
Hard wire	1 wire	mm²	1...4			1.5...6			4...25			4...50	
	2 wire	mm²	1...4			1.5...6			4...10			4...25	
Auxiliary contact													
Conventional thermal current(Ith)		A	10										
Rated operational voltage(Ue)	AC	V	220/380										
	DC	V	220										
Rated control capacity	AC-15	VA	352/361										
	DC-13	VA	33										

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Technical Parameter												
AC Contactor												
Contactor model		09	12	18	25	32	38	40	50	65	80	95
Thermal relay												
HDRX Thermal relay 0.1-93A					HDRX-38 P16: 0.1-0.16A P25: 0.16-0.25A 38: 30-38A			HDRX-65 25: 17-25A 32: 23-32A 65: 48-65A		HDRX-93 32: 23-32A 40: 30-40A 93: 80-93A		
Accessories												
Top auxiliary contact					2 Poles : HFD6-11, HFD6-20 , HFD6-02 4 Poles : HFD6-22, HFD6-31 , HFD6-13 , HFD6-40 , HFD6-04							
Side auxiliary contact					2 Poles : HC4-11							
Air delayed head					Making time delay : HFT6-20 , HFT6-22 , HFT6-24 Breaking time delay : HFT6-30 , HFT6-32 , HFT6-34							
Mechanical interlock					HDCX 09-38 horizontal installation: HFR8-38 HDCX 40-65 horizontal installation: HFR8-65 HDCX 80-95 horizontal installation: HFR8-95							
Surge arrester					HDCX 09-38A: HFS8-38 HDCX 40-65A: HFS8-65 HDCX 80-95A: HFS8-95							

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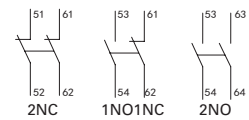
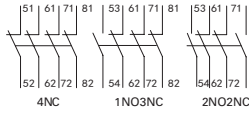
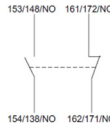
Order Information

HDCX 09-95A

Motor power AC-3 380/400V(kW)	Ie (A)	Auxiliary contact		Reference No
4	09	1	1	HDCX0911*
5.5	12	1	1	HDCX1211*
7.5	18	1	1	HDCX1811*
11	25	1	1	HDCX2511*
15	32	1	1	HDCX3211*
18.5	38	1	1	HDCX3811*
18.5	40	1	1	HDCX4011*
22	50	1	1	HDCX5011*
30	65	1	1	HDCX6511*
37	80	1	1	HDCX8011*
45	95	1	1	HDCX9511*

HDCX 09-95A Contactor Accessories

Auxiliary contact

Installation position	Pole	Auxiliary Contact NO NC		Contact point layout	Reference
Top	2	0	2		HFD6 02
		1	1		HFD6 11
		2	0		HFD6 20
	4	0	4		HFD6 04
		1	3		HFD6 13
		2	2		HFD6 22
		3	1		HFD6 31
		4	0		HFD6 40
	2	1	1		HC4 11



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Mechanical Interlock

Horizontal installation		
Interlock method	Contact type	Reference
Mechanical interlock	HDCX-09~38	HFR838HR
	HDCX-40~65	HFR865HR
	HDCX-80~95	HFR895HR

Surge Arrester

Coil voltage	Contact type	Reference
24-48V	HDCX-09~38	HFS8381RC
110-240V	HDCX-09~38	HFS8382RC
380-440V	HDCX-09~38	HFS8383RC
24-48V	HDCX-40~65	HFS8651RC
110-240V	HDCX-40~65	HFS8652RC
380-440V	HDCX-40~65	HFS8653RC
24-48V	HDCX-80~95	HFS8951RC
110-240V	HDCX-80~95	HFS8952RC
380-440V	HDCX-80~95	HFS8953RC



Air Delayed Head

Installation Position	Delay type	Wiring diagram	Delay range	Reference
Top	Making time-delay		0.1-3s	HFT6 20
			0.1-30s	HFT6 22
			10-180s	HFT6 24
	Breaking time-delay		0.1-3s	HFT6 30
			0.1-30s	HFT6 32
			10-180s	HFT6 34



Motor Power

Motor power of HDCX (AC-4)

Product	Ith(A)	AC-4					
		Ie(A)			Pe(kW)		
		220/230V	380/400V	660/690V	220/230V	380/400V	660/690V
HDCX-09	25	3.5	3.5	1.5	0.6	1.5	1.1
HDCX-12	25	5	5	2	1.1	2.2	1.5
HDCX-18	32	7.7	7.7	3.8	1.5	3.3	3
HDCX-25	40	8.5	8.5	4.4	2.2	4	3.7
HDCX-32	50	12	12	7.5	3	5.4	5.5
HDCX-38	50	14	14	8.9	4	5.5	6
HDCX-40	60	18.5	18.5	9	5.5	7.5	7.5
HDCX-50	80	24	24	12	6	11	10
HDCX-65	80	28	28	14	7.5	15	11
HDCX-80	125	37	37	17.3	11	18.5	15
HDCX-95	125	44	44	21.3	14	22	18.5

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Motor power of HDCX (Reversible AC contactor)

Product	Ith(A)	AC-4					
		Ie(A)			Pe(kW)		
		220/230V	380/400V	660/690V	220/230V	380/400V	660/690V
HDCX-09	25	3.5	3.5	1.5	0.6	1.5	1.1
HDCX-12	25	5	5	2	1.1	2.2	1.5
HDCX-18	32	7.7	7.7	3.8	1.5	3.3	3
HDCX-25	40	8.5	8.5	4.4	2.2	4	3.7
HDCX-32	50	12	12	7.5	3	5.4	5.5
HDCX-38	50	14	14	8.9	4	5.5	6
HDCX-40	60	18.5	18.5	9	5.5	7.5	7.5
HDCX-50	80	24	24	12	6	11	10
HDCX-65	80	28	28	14	7.5	15	11
HDCX-80	125	37	37	17.3	11	18.5	15
HDCX-95	125	44	44	21.3	14	22	18.5

Star-Delta Stater

Contactor (HDCX-09~95)

Max. Starting Frequency: 30 times/h; Max. Starting Time: 30s						
Class AC-3 50Hz 3-Phase Electromotor Delta Connection		Contactor			Thermal Relay	
		Straight Connection	Delta Connection	Star Connection		
		KM2	KM3	KM1		
In (A)	IrD (A)	Type	Type	Type	Type	Setting Range (A)
3.5	2	HDCX-09	HDCX-09	HDCX-09	HDRX-38	1.8~2.5
5	3	HDCX-09	HDCX-09	HDCX-09	HDRX-38	2.5~3.6
6.6	4	HDCX-09	HDCX-09	HDCX-09	HDRX-38	3.5~4.8
8.5	5	HDCX-09	HDCX-09	HDCX-09	HDRX-38	4.5~6.3
11.5	7	HDCX-09	HDCX-09	HDCX-09	HDRX-38	5~7
15.5	9	HDCX-12	HDCX-12	HDCX-09	HDRX-38	9~12
18.5	11	HDCX-18	HDCX-18	HDCX-12	HDRX-38	11~15
22	13	HDCX-18	HDCX-18	HDCX-12	HDRX-38	11~15
30	17	HDCX-25	HDCX-25	HDCX-18	HDRX-38	14~18
37	21	HDCX-25	HDCX-25	HDCX-18	HDRX-38	18~25
44	25	HDCX-32	HDCX-32	HDCX-25	HDRX-38	23~32
60	35	HDCX-40	HDCX-40	HDCX-32	HDRX-65	30~40
72	42	HDCX-50	HDCX-50	HDCX-40	HDRX-65	37~50
85	49	HDCX-65	HDCX-65	HDCX-50	HDRX-65	37~50
105	58	HDCX-80	HDCX-80	HDCX-65	HDRX-93	55~70
138	78	HDCX-95	HDCX-95	HDCX-80	HDRX-93	63~80

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Normal Installation And Operation Conditions

Standards

- ◆ IEC 60947-1 General rules
- ◆ IEC 60947-4-1 Contactors
- ◆ IEC 60947-5-1 Relays

Pollution class

- ◆ Class 3

Ambient temperature

- ◆ In normal operation, the ambient temperature range is between -5°C and +40°C , but average value in 24h is no more than +35°C ;
- ◆ Storage temperature: -25°C ~ +55°C ; a short time (24h) is allowed with maximum +70°C

Altitude

- ◆ Altitude at normal installation position does not exceed 2000m.

Humidity

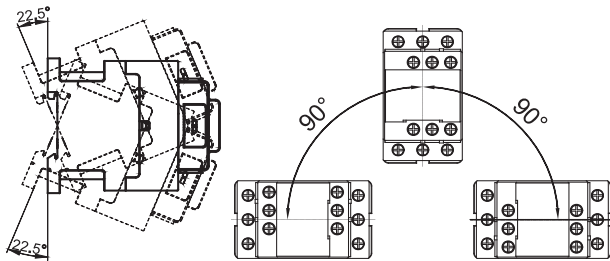
- ◆ The atmospheric relative humidity does not exceed 50% when the highest ambient temperature is +40°C. It is allowed to have a relative higher humidity under lower temperature, e.g. up to 90% at +20°C.
- ◆ For occasional dew due to the temperature change, preventive measures shall be taken.

Product protection grade

- ◆ IP20

Installation Conditions

- ◆ Installation type: III
- ◆ Installation position: should be installed in the absence of a significant shock and vibration place. The installation site shall be vertical , and inclination at all directions shall not exceed ±22.5°. When the coil control voltage is not lower than 85%Us, the inclination should be no more than ±30°.



Temperature Derating				
Ambient temperature(°C)	55°C	60°C	65°C	70°C
Correction factor	0.73	0.64	0.5	0.4

Altitude Derating				
Altitude(m)	2000	3000	4000	5000
Rated operational current coefficient	1	0.87	0.82	0.8
Rated impulse withstand voltage coefficient	1	0.9	0.7	0.6

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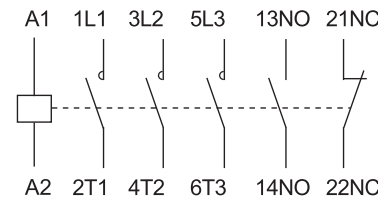
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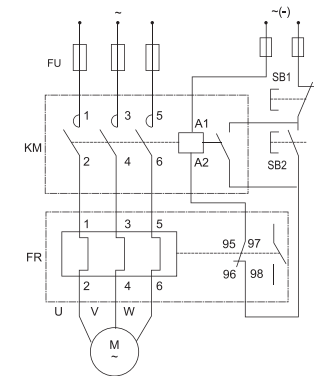


Wiring Diagram

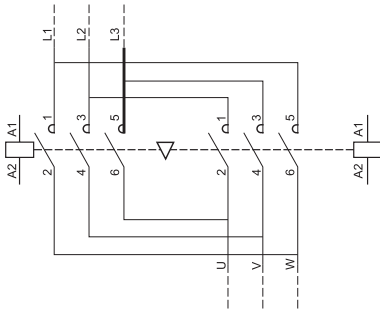
HDCX 09~95 with 1NO+1NC Auxiliary Contact



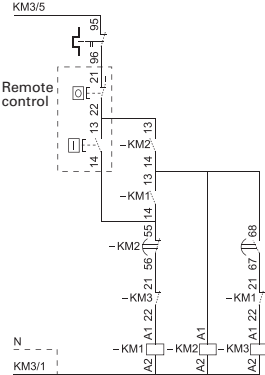
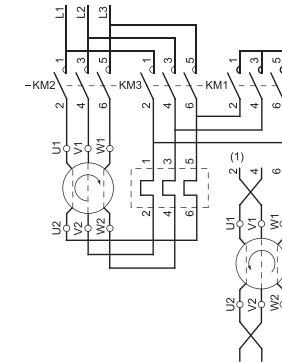
DOL Control



Reversible Control



Star-Delta Control



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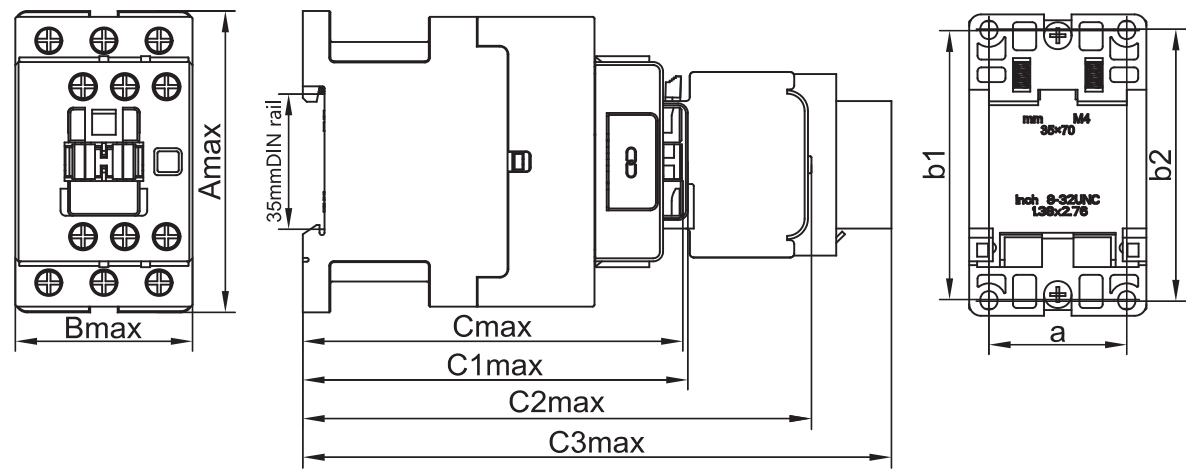
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Installation Dimensions

DC Coil Contactor

HDCX-09~38A DC Coil



Overall Dimension of HDCX-09~38A DC Coil Contactor

Model	Amax	Bmax	B1max	Cmax	C1max	C2max	C3max
HDCX-09, 12, 18 DC	79	45.5	-	97	98.5	130	155
HDCX-25, 32, 38 DC	86.5	45.5	-	103	104.5	136	161

Note: B1max- Contactor+HC4 C1max- Contactor+Transparent cover C2max- Contactor+HFD6 C3max- Contactor+HFT6

Plate Installation Dimension of HDCX-09~38A DC Coil Contactor

Model	a	b1	b2
HDCX-09, 12, 18 DC	35	69.6	70.4
HDCX-25, 32, 38 DC	35	69.6	70.4

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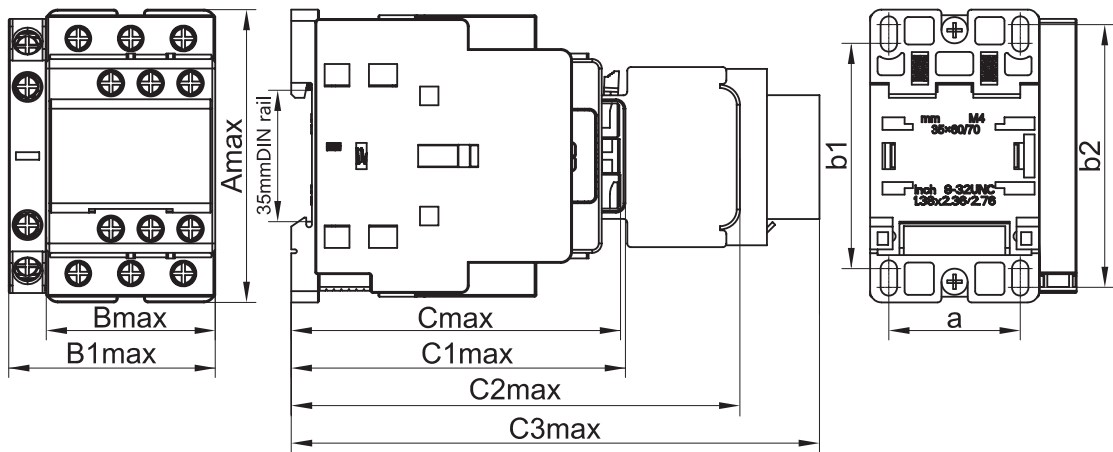
HDCX AC Contactors

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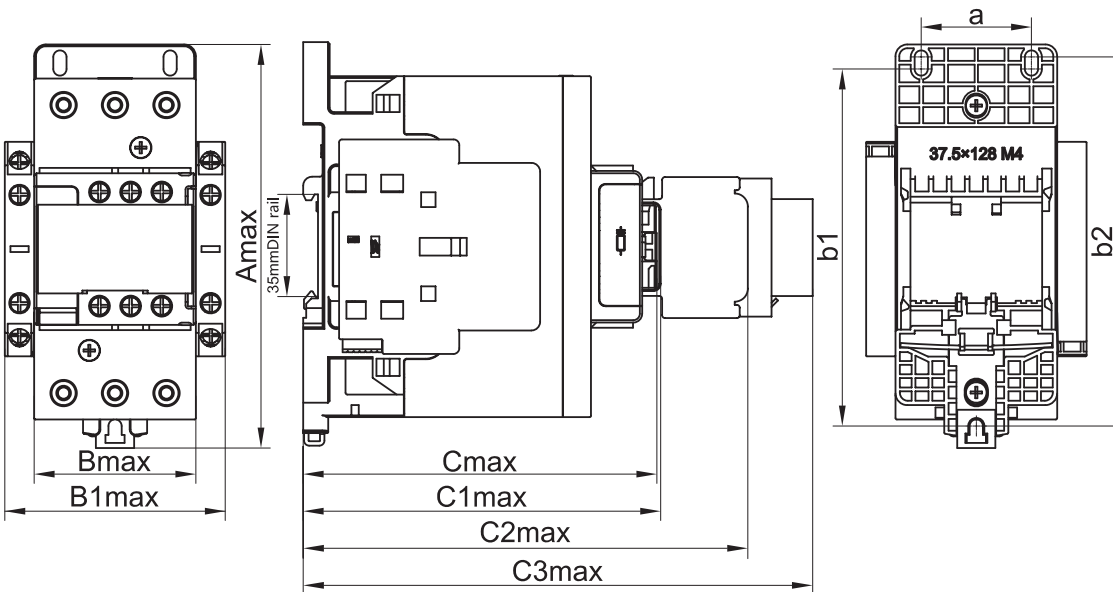


AC Coil Contactor

HDCX-09~38A AC Coil



HDCX-40~65A AC Coil



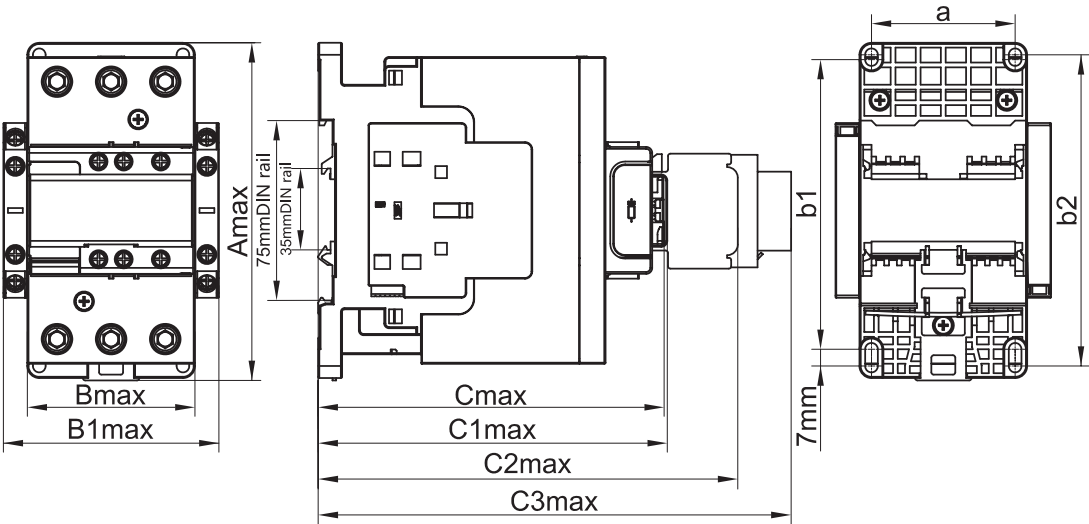
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HDCX AC Contactors

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HDCX-80~95A AC Coil



Overall Dimension of HDCX-09~95A AC Coil Contactor

Model	Amax	Bmax	B1max	Cmax	C1max	C2max	C3max
HDCX-09, 12, 18 AC	78.5	45.5	55.1	87.7	89.5	120.5	145.5
HDCX-25, 32, 38 AC	86.5	45.5	55.1	93.7	95.5	126.5	151.5
HDCX-40, 50, 65 AC	138.3	55.8	76	121.3	122.6	157.3	178.3
HDCX-80, 95 AC	142	71	91	145.9	147.2	179	199

Note: B1max- Contactor+HC4 C1max- Contactor+Transparent cover C2max- Contactor+HFD6 C3max- Contactor+HFT6

Plate Installation Dimension of HDCX-09~95A AC Coil Contactor

Model	a	b1	b2
HDCX-09, 12, 18 AC	35±0.2	60±0.5	70±0.5
HDCX-25, 32, 38 AC	35±0.2	60±0.5	70±0.5
HDCX-40, 50, 65 AC	37.5±0.5	121±0.5	129.5±0.5
HDCX-80, 95 AC	60±1	121±1	130±1

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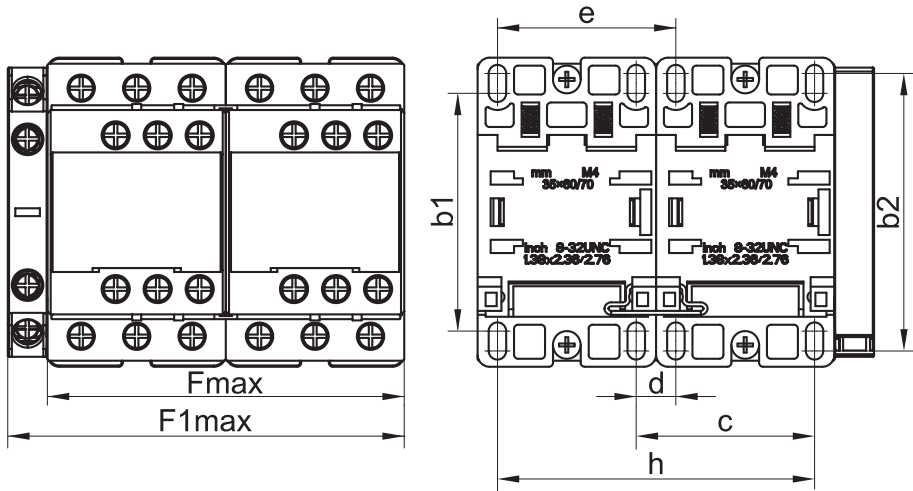
HDCX AC Contactors

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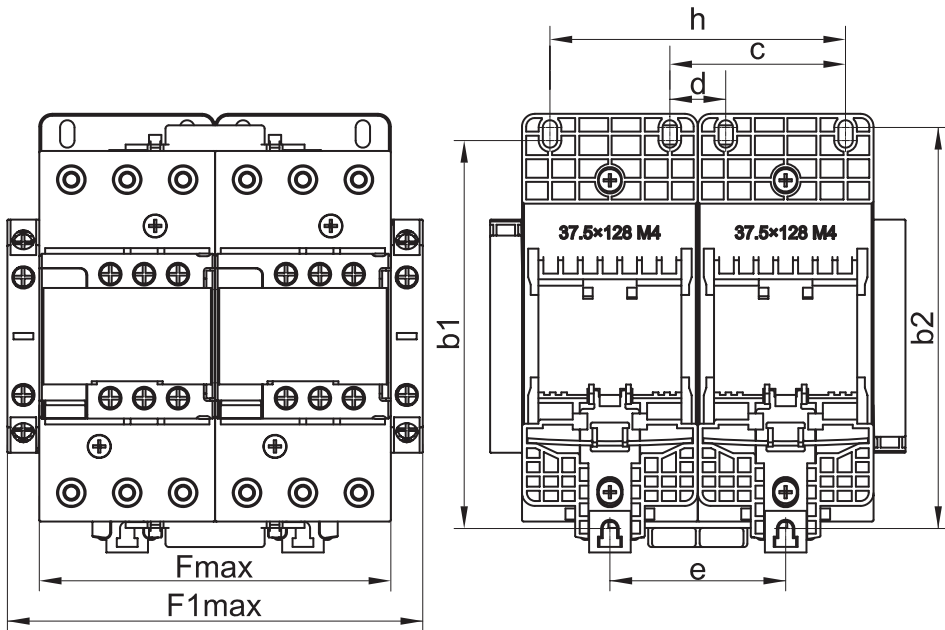


Installation Dimensions

HDCX-09~38A Reversible



HDCX-40~65A Reversible

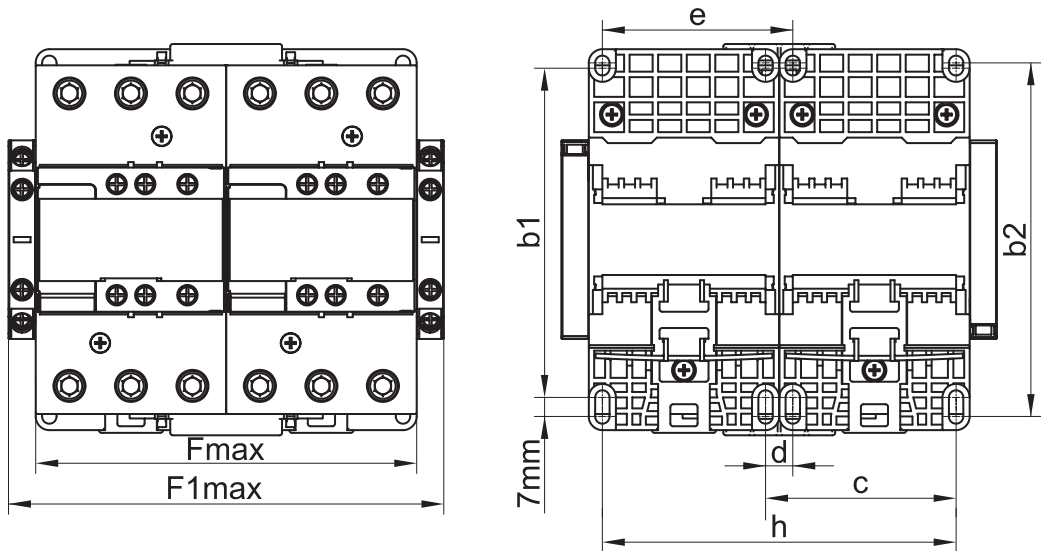


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HDCX-80~95A Reversible



Model	Fmax	F1max	b1	b2	c	d	e	h
HDCX-09, 12, 18 AC	90	100	60±0.2	70±0.5	45±0.5	10±0.5	45±0.5	80±0.8
HDCX-25, 32, 38 AC	90	100	60±0.2	70±0.5	45±0.5	10±0.5	45±0.5	80±0.8
HDCX-40, 50, 65 AC	111	131	121±0.5	129.5±0.5	55±0.8	17.5±0.5	55±0.8	92.5±0.8
HDCX-80, 95 AC	141	161	121±1	130±1	70±1	10±1	70±1	130±1