



MKC / MKCP

IEC Contactor

9A ~ 95A

3 & 4 Pole | AC & DC Operating Coil



3 & 4 Pole Contactors with AC operating coil Characteristics

General Characteristics

Type		Unit	MKC1-D09 ~ MKC1-D95
Rated insulation voltage (Ui)	IEC 60947-4-1	V	1000
Conforming to standards			NFC EN 60947, VDE 0660, BSEN 60947, IEC 60947 & IS 13947
Approvals			UL, CSA
Degree of Protection	Conforming to VDE 0106		Protection against direct finger contacts
Protective treatment	Standard version		"TH"
Ambient air temperature (around the device)	Storage	°C	-60 to +80
	Operation	°C	-5 to +55 (0.8 to 1.1Uc)
	Permissible	°C	-40 to +70, for operation at Uc
Maximum operating altitude	Without derating	Mtr.	3000
Operating Position	Without derating		+30° possible, in relation to normal vertical mounting plane

Pole Characteristics

Type	MKC1-	Unit	D 09	D 12	D 18	D 22	D 25	D 32	D 38	D 40	D 50	D 65	D 80	D 95															
Number of poles (Power)			3 or 4	3 or 4	3	3	3 or 4	3	3	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4															
Power + Auxiliary			3+1	3+1	3+1	3+1	3+1	3+1	3+1	3+2	3+2	3+2	3+2	3+2															
Rated current (Ie)	AC3 up to 440V @ 55°C	A	9	12	18	22	25	32	38	40	50	65	80	95															
Rated operating Voltage	Up to	V	690	690	690	690	690	690	690	690	690	690	690	690															
Frequency limits	Of the operational current	Hz	25-400																										
Rated thermal current (Ith)	$\theta < 40^\circ\text{C}$	A	25	25	32	32	45	50	50	60	80	80	125	125															
Rated making capacity	Irms conforming to IEC-60947-4	A	250	250	300	300	450	550	550	800	900	1000	1100	1200															
Rated breaking capacity	Irms conforming to 220-440V	A	250	250	300	300	450	550	550	800	900	1000	1100	1100															
															IEC-60947-4	500V	A	175	175	250	250	400	450	450	800	900	1000	1000	1100
																660-690V	A	85	85	120	120	180	180	180	400	500	630	640	640
Average impedance per pole	At Ith and 50Hz	Milli Ω	Max.	2.5	2.5	2.5	2.5	2	2	2	1.5	1.5	1	0.8	0.8														
Power dissipation per pole for the above operational currents	AC-3	W	0.2	0.36	0.8	0.8	1.25	2	2	2.4	3.7	4.2	5.1	7.2															

Control Circuit Characteristics

Type		Unit	MKC1- D09-D22	MKC1- D25-D38	MKC1- D40-D65	MKC1- D80-D95		
Rated control circuit voltage (Uc)	50 or 60 Hz	V	12 to 660					
Control voltage limits ($\theta < 55^\circ\text{C}$)	50 or 60Hz Coil	Operational	0.8 - 1.1 Uc					
		Drop out	0.3 - 0.6 Uc					
		Operational	0.85 - 1.1 Uc at 60Hz					
Average consumption at 20°C and at Uc	AC 50 Hz	Inrush	50 Hz Coil	VA	60	90	200	200
			50/60 Hz Coil	VA	70	100	245	245
			COS $^\circ$		0.75	0.75	0.75	0.75
		Sealed	50 Hz Coil	VA	7	7.5	20	20
			50/60 Hz Coil	VA	8	8.5	26	26
			COS $^\circ$		0.3	0.3	0.3	0.3
	AC 60 Hz	Inrush	60 Hz Coil	VA	70	100	220	220
			50/60 Hz Coil	VA	70	100	245	245
			COS $^\circ$		0.75	0.75	0.75	0.75
		Sealed	60 Hz Coil	VA	7.5	8.5	22	22
			50/60 Hz Coil	VA	8	8.5	26	26
			COS $^\circ$		0.3	0.3	0.3	0.3
Average operating time at Uc	Closing time "C"	msec	12-22	15-24	20-26	20-35		
	Opening time "O"	msec	04-12	05-19	8-12	6-20		
Mechanical life Uc (mechanical durability) in millions of operating cycles	50 or 60 Hz Coil		20(16 for MKC1D18)	16	16	10		
	50/60 Hz Coil or 50 Hz		15	12	6	4		
Maximum operating rate	In operating cycle/hour		3600	3600	3600	3600		

Integral Auxiliary Contact Characteristics

Type		Unit	MKC1- D09 ~ MKC1- D95
Rated thermal current (Ith)	$\theta < 55^\circ\text{C}$	A	10
Rated operational voltage (Ue)	Upto	V	660

3 & 4 Pole Contactors with DC operating coil

Characteristics

General Characteristics

Type		Unit	MKCP1-D09 ~ MKCP1-D80
Rated insulation voltage (Ui)	IEC 60947-4-1	V	1000
Conforming to standards			NFC EN 60947, VDE0660, BSEN60947, IEC 60947 & IS 13947
Approvals			UL, CSA
Degree of Protection	Conforming to VDE 0106		Protection against direct finger contacts
Protective treatment	Standard version		"TH"
Ambient air temperature (around the device)	Storage	°C	-60 to +80
	Operation	°C	-5 to +55 (0.8 to 1.1Uc)
	Permissible	°C	-40 to +70, for operation at Uc
Maximum operating altitude	Without derating	Mtr.	3000
Operating Position	Without derating		+30° possible, in relation to normal vertical mounting plane

Pole Characteristics

Type	MKCP1-	Unit	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80	
Number of poles (P0wer)			3 or 4	3 or 4	3	3	3 or 4	3	3	3 or 4	3 or 4	3 or 4	3 or 4	
Power + Auxiliary			3+1	3+1	3+1	3+1	3+1	3+1	3+1	3+2	3+2	3+2	3+2	
Rated current (Ie)	AC3 up to 440V @ 55°C	A	9	12	18	22	25	32	38	40	50	65	80	
Rated operating Voltage (Ue)	Upto	V	690	690	690	690	690	690	690	690	690	690	690	
Frequency limits	Of the operational current	Hz	25-400											
Rated thermal current (Ith)	θ < 40°C	A	25	25	32	32	45	50	50	60	80	80	125	
Rated making capacity	Irms conforming to IEC-60947-4	A	250	250	300	300	450	550	550	800	900	1000	1100	
Rated breaking capacity	Irms conforming to IEC-60947-4	A	220-440V	250	250	300	300	450	550	550	800	900	1000	1100
			500V	175	175	250	250	400	450	450	800	900	1000	1000
			660-690V	85	85	120	120	180	180	180	400	500	630	640
Average impedance per pole	At Ith and 50Hz Milli Ω	Max.	2.5	2.5	2.5	2.5	2	2	2	1.5	1.5	1	0.8	
Power dissipation per pole for	AC-3	W	0.2	0.36	0.8	0.8	1.25	2	2	2.4	3.7	4.2	5.1	
the above operational currents														

Control Circuit Characteristics

Type		Unit	MKCP1-D09-D22	MKCP1-D25-D38	MKCP1-D4011-D65	MKCP1-D80		
Rated control circuit voltage (Uc)	DC	V	12 to 660		12 to 660			
Control voltage limits (θ < 55°C)	Operational	Standard Coil	0.8 - 1.1 Uc		0.85 - 1.1 Uc			
		Wide Range Coil	0.7 - 1.25 Uc		0.75 - 1.25 Uc			
Average consumption DC at 20°C and at Uc	Drop out		0.1 - 0.25 Uc		0.1 - 0.3 Uc			
		DC	Inrush	W	9	11	22	22
			Sealed	W	9	11	22	22
Average operating time at Uc	Closing time "C"	msec	40-48		52-64		85-110	95-130
	Opening time "O"	msec	6-14		8-14		20-35	20-35
Mechanical life Uc (mechanical durability)	In millions of operating cycles		30		25		20	20
Maximum operating rate (at ambient temp. of θ < 55°C)	In operating cycle/hour		3600		3600		3600	3600

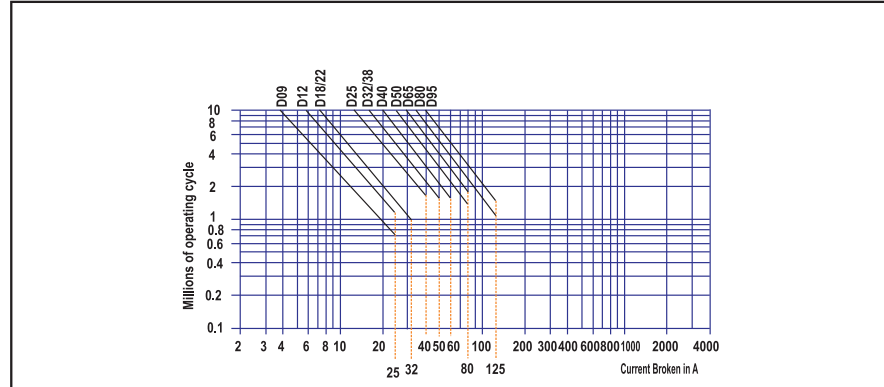
Integral Auxiliary Contact Characteristics

Type		Unit	MKCP1- D09 ~ MKCP1- D80
Rated thermal current (Ith)	θ < 40°C	A	10
Rated operational voltage (Ue)	Upto	V	660

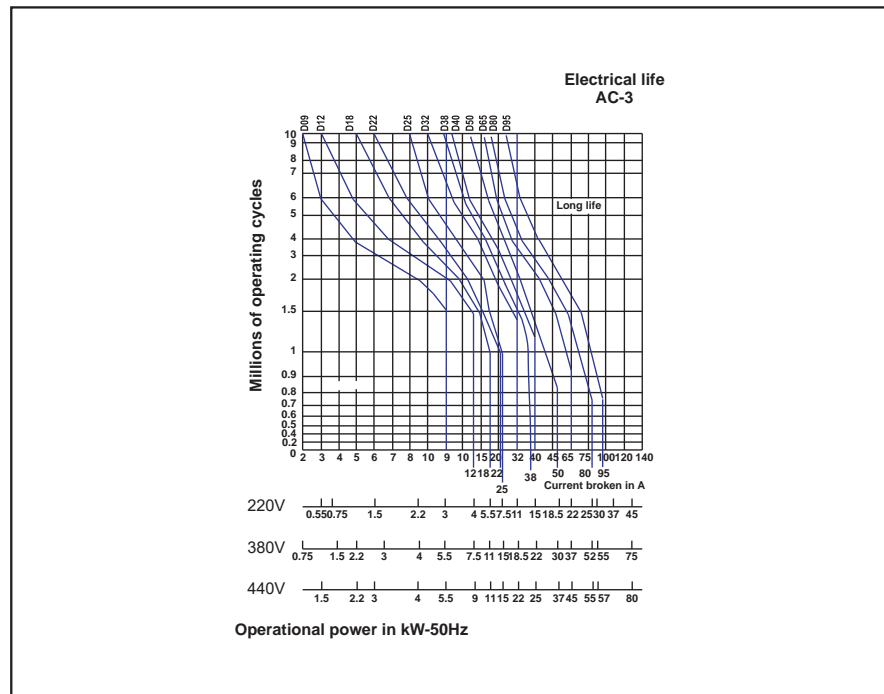
Contactors' Selection Guide

(according to the required electrical life)

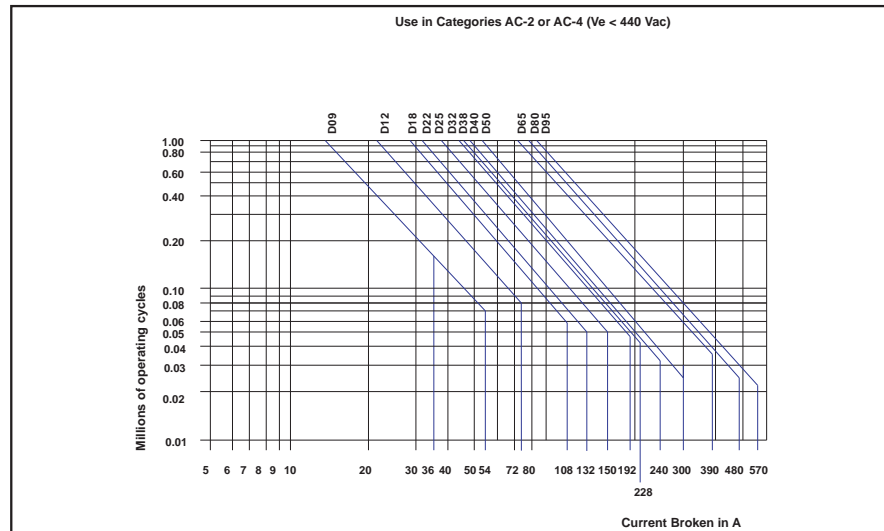
Use in Category AC-1 ($U_e < 440V$). Control of resistive circuits ($\cos \phi > 0.95$). The current broken (I_b) in category AC-1 is equal to the current (I_e) normally drawn by the load.



Use in Category AC-3 ($U_e < 440V$). Control of 3-phase asynchronous squirrel cage motors with breaking while motor running. The current broken (I_b) in category AC-3 is equal to the current (I_e) normally drawn by the load.



Use in Categories AC-2, AC-4 ($U_e < 440V$). Control of 3-phase asynchronous squirrel cage (AC-4) or slip ring (AC-2) motors with breaking while motor stalled. The current broken in category AC-4 is equal to $6 \times I_e$ (I_e =rated operational current of the motor).



3 & 4 Pole Contactors with AC operating coil Specifications



MKC1-D65●●-XX

3 Pole Contactor with AC operating coil

Maximum Current		Maximum HP						Aux. Contacts Built-in per contactor		Catalog Number
Inductive	Continuous	Single Phase		Three Phase				NO	NC	
AC-3 A	AC-1 A	120V	230V	200V	230V	480V	600V			
9	20	0.5	1	2	2	5	7.5	1	0	MKC1-D0910-XX
								0	1	MKC1-D0901-XX
12	25	1	2	3	3	7.5	10	1	0	MKC1-D1210-XX
								0	1	MKC1-D1201-XX
18	32	1	3	5	5	10	15	1	0	MKC1-D1810-XX
								0	1	MKC1-D1801-XX
22	32	2	3	5	7.5	15	20	1	0	MKC1-D2210-XX
								0	1	MKC1-D2201-XX
25	40	2	3	5	7.5	15	20	1	0	MKC1-D2510-XX
								0	1	MKC1-D2501-XX
32	50	2	5	10	10	20	25	1	0	MKC1-D3210-XX
								0	1	MKC1-D3201-XX
38	60	3	5	10	10	30	30	1	0	MKC1-D3810-XX
								0	1	MKC1-D3801-XX
40	60	3	5	10	10	30	30	1	1	MKC1-D4011-XX
50	80	3	7.5	15	15	40	40	1	1	MKC1-D5011-XX
65	80	5	10	20	20	50	50	1	1	MKC1-D6511-XX
80	125	7.5	15	25	25	60	60	1	1	MKC1-D8011-XX
95	125	7.5	15	25	25	60	60	1	1	MKC1-D9511-XX

Note : Standard Fault Ratings  High Fault Ratings  (100kA with class J/CC Fuse)

4 Pole Contactor with AC operating coil



MKC1-D09004

Maximum Current		Maximum HP						Main Pole Configuration		Catalog Number
Inductive	Resistive	Single Phase		Three Phase				NO	NC	
AC-3 A	AC-1 A	120V	230V	200V	230V	480V	600V			
9	25	0.5	1	2	2	5	7.5	4	0	MKC1-D09004-XX
		0.5	1	2	2	5	7.5	0	4	MKC1-D09006-XX
		0.5	1	-	-	-	-	2	2	MKC1-D09008-XX
12	25	1	2	3	3	7.5	10	4	0	MKC1-D12004-XX
		1	2	3	3	7.5	10	0	4	MKC1-D12006-XX
		1	2	-	-	-	-	2	2	MKC1-D12008-XX
25	40	2	3	5	7.5	15	20	4	0	MKC1-D25004-XX
		2	3	5	7.5	15	20	0	4	MKC1-D25006-XX
		2	3	-	-	-	-	2	2	MKC1-D25008-XX
40	60	3	5	10	10	30	30	4	0	MKC1-D40004-XX
		3	5	-	-	-	-	2	2	MKC1-D40008-XX
		5	10	-	-	-	-	4	0	MKC1-D65004-XX
65	80	5	10	-	-	-	-	2	2	MKC1-D65008-XX
		7.5	15	20	25	60	60	4	0	MKC1-D80004-XX
		7.5	15	-	-	-	-	2	2	MKC1-D80008-XX

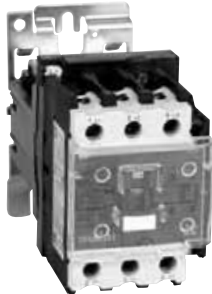
Replace XX with voltage code from table - 1

Table-1 : XX-AC Coil Voltages

Volts AC	24	48	110	120	208	220	230	240	277	380	400	415	440	480	575	600
50 Hz	B5	E5	F5	-	-	M5	P5	U5	-	Q5	V5	N5	R5	-	-	-
60 Hz	B6	E6	F6	G6	L6	M6	-	U6	V6	Q6	-	-	R6	T6	S6	X6
50/60 Hz	B7	E7	F7	G7	-	M7	P7	U7	-	Q7	V7	N7	R7	-	-	-

3 & 4 Pole Contactors with DC operating coil Specifications

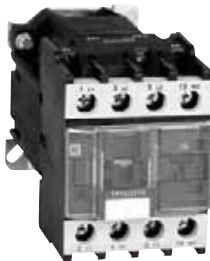
3 Pole Contactor with DC operating coil



MKCP1-D40●●-XX

Maximum Current		Maximum HP						Aux. Contacts Built-in per contactor		Catalog Number
Inductive	Resistive	Single Phase		Three Phase				NO	NC	
AC-3 A	AC-1 A	120V	230V	200V	230V	480V	600V			
9	25	0.5	1	2	2	5	7.5	1	0	MKCP1-D0910-XX
								0	1	MKCP1-D0901-XX
12	25	1	2	3	3	7.5	10	1	0	MKCP1-D1210-XX
								0	1	MKCP1-D1201-XX
18	32	1	3	5	5	10	15	1	0	MKCP1-D1810-XX
								0	1	MKCP1-D1801-XX
22	32	1	3	5	5	10	15	1	0	MKCP1-D2210-XX
								0	1	MKCP1-D2201-XX
25	40	2	3	5	7.5	15	20	1	0	MKCP1-D2510-XX
								0	1	MKCP1-D2501-XX
32	50	2	5	10	10	20	25	1	0	MKCP1-D3210-XX
								0	1	MKCP1-D3201-XX
38	50	2	5	10	10	20	25	1	0	MKCP1-D3810-XX
								0	1	MKCP1-D3801-XX
40	60	3	5	10	10	30	30	1	1	MKCP1-D4011-XX
50	80	3	7.5	15	15	40	40	1	1	MKCP1-D5011-XX
65	80	5	10	20	20	50	50	1	1	MKCP1-D6511-XX
80	125	7.5	15	20	25	60	60	1	1	MKCP1-D8011-XX

Note : Standard Fault Ratings (UL) (SF) High Fault Ratings (UL) (100kA with Fuse of class J/CC)



MKCP1-D2500●-XX

4 Pole Contactor with DC operating coil

Maximum Current		Maximum HP						Main Pole Configuration		Catalog Number
Inductive	Resistive	Single Phase		Three Phase				NO	NC	
AC-3 A	AC-1 A	120V	230V	200V	230V	480V	600V			
9	25	0.5	1	2	2	5	7.5	4	0	MKCP1-D09004-XX
		0.5	1	2	2	5	7.5	0	4	MKCP1-D09006-XX
		0.5	1	-	-	-	-	2	2	MKCP1-D09008-XX
12	25	1	2	3	3	7.5	10	4	0	MKCP1-D12004-XX
		1	2	3	3	7.5	10	0	4	MKCP1-D12006-XX
		1	2	-	-	-	-	2	2	MKCP1-D12008-XX
25	40	2	3	5	7.5	15	20	4	0	MKCP1-D25004-XX
		2	3	5	7.5	15	20	0	4	MKCP1-D25006-XX
		2	3	-	-	-	-	2	2	MKCP1-D25008-XX
40	60	3	5	10	10	30	30	4	0	MKCP1-D40004-XX
		3	5	-	-	-	-	2	2	MKCP1-D40008-XX
65	80	5	10	20	20	50	50	4	0	MKCP1-D65004-XX
		5	10	-	-	-	-	2	2	MKCP1-D65008-XX
80	125	7.5	15	20	25	60	60	4	0	MKCP1-D80004-XX
		7.5	15	-	-	-	-	2	2	MKCP1-D80008-XX

Note : Standard & High Fault Ratings (UL) (100kA with Fuse of class J/CC)

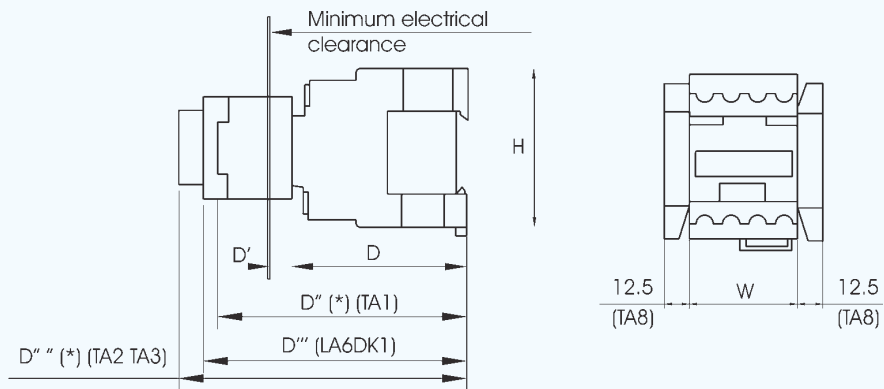
Replace XX with voltage code from table - 2

Volts DC	12	24	48	72	110	125	220	250	440
	JD	BD	ED	SD	FD	GD	MD	UD	RD

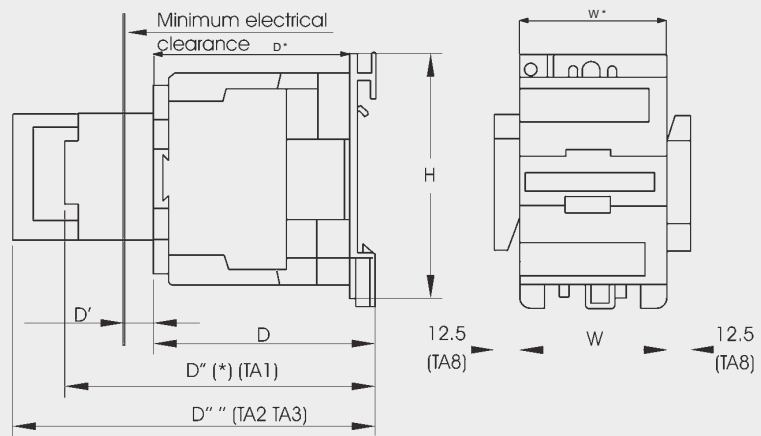
*Under UL approval

Contactors' Dimensions with AC operating coil

Product Dimensions
MKC1-D09~D38



MKC1-D40~D95

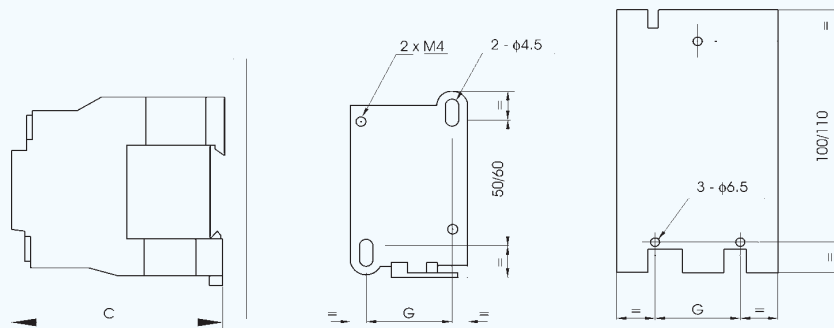


MKC1-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80-D95
W (3 Pole)	45	45	45	45	56	56	56	75	75	75	85
W* (4 Pole)	45	45	-	-	56	-	-	85	85	85	96
H (3/4 Pole)	74	74	74	74	84	84	84	127	127	127	127
D (3/4 Pole)	80	80	85	85	94	99	99	114	114	114	120
D' (3/4 Pole)	10	10	10	10	10	10	10	12	12	12	12
D'' (3/4 Pole)	113	113	118	118	126	131	131	145	145	145	153
D''' (3/4 Pole)	120	120	125	125	135	140	140	-	-	-	-
D''' (3/4 Pole)	133	133	138	138	147	152	152	166	166	166	173
D*(008)	-	-	-	-	-	-	-	124	124	124	140

Panel Mounting Reference
MKC1-D09~D95

MKC1-D09~D38

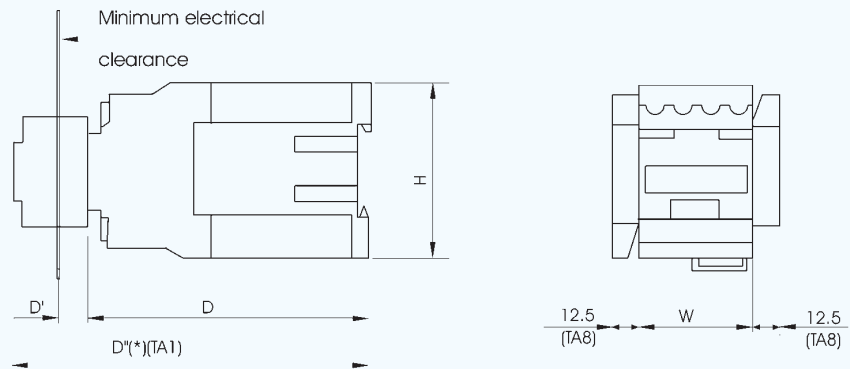
MKC1-D40~D95



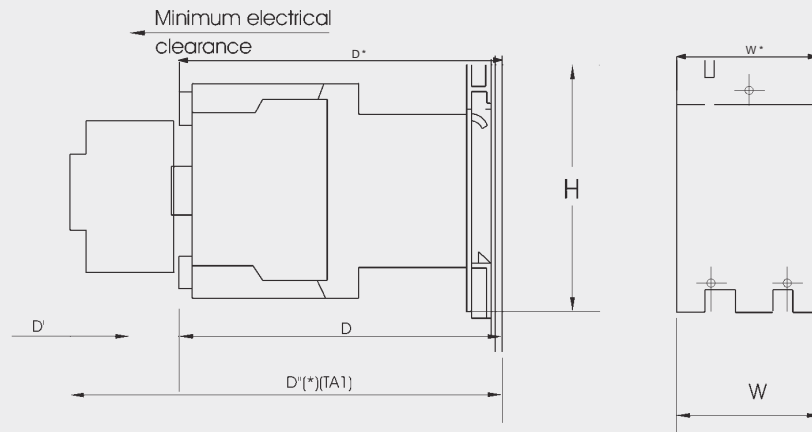
MKC1-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80	D95
C	80	80	85	85	93	98	98	114	114	114	125	125
G	35	35	35	35	44	44	44	40	40	40	40	40

Contactors' Dimensions with DC operating coil

Product Dimensions
MKCP1-D09~D3810



MKCP1-D4011~D80

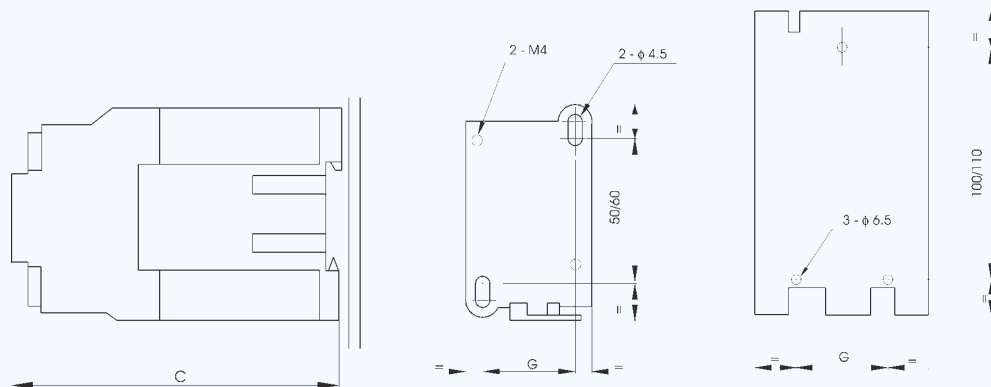


MKCP1-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80
W (3 Pole)	45	45	45	45	56	56	56	75	75	75	85
W* (4 Pole)	45	45	-	-	56	-	-	85	85	85	96
H (3/4 Pole)	74	74	74	74	84	84	84	127	127	127	127
D (3/4 Pole)	115	115	120	120	130	135	135	171	171	171	181
D' (3/4 Pole)	10	10	10	10	10	10	10	12	12	12	12
D'' (3/4 Pole)	148	148	153	153	163	168	168	202	202	202	210
D''(008)	-	-	-	-	-	-	-	181	181	181	191

Panel Mounting Reference

MKCP-D09~D38

MKCP-D40~D80



MKCP-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80
C	115	115	120	120	130	135	135	171	171	171	181
G	35	35	35	35	40	40	40	40	40	40	40

Auxilliary Contacts, Time Delay Blocks, Mechanical Latching Blocks

Instantaneous Time Delay Contact Characteristics

Type		UNIT	MKA1-D	MKA2-D	MKA3-D	MKA8-D
Number of contacts			2 or 4	2	2	2
Rated operational Voltage (Ue)	Upto	V		660		
Rated Insulation Voltage (Ui)	Conforming to IEC 60947-1	V		690		
	Conforming to CSA C22-2 No. 14	V	6 00	-	-	-
Rated Thermal current (Ith)	For ambient temperature <40°C	A		10		
Frequency of operational current		Hz		25...400		
Minimum switching capacity	U min	V		17		
	I min	mA		5		
Short time rating	Permissible for	1s	A	100		
		500ms	A	120		
		100 ms	A	140		
Insulation resistance		MΩ		>10		
Time Delay	Ambient air temperature for operation	°C		-40...+70		
(MKA2-D & MKA3-D contact blocks)	Repeat accuracy		-	± 5%	± 5%	
Accuracy only valid for setting range indicated on the front face	Drift upto 0.5 million operating cycles			+ 15%	+ 15%	
	Drift depending on ambient air temp.	-		0.25% per°C	0.25% per°C	-
Mechanical Life	In millions of operating cycles		30	5	5	30



MKA1-DN22



MKA8-DN11



MKA1-DN20



MKA2-DT2

Standard, instantaneous auxilliary contact blocks

No. of Contacts	Contacts		Snap-On Mounting	Catalog Number
	NO	NC		
4	2	2	To the front of MKC1D09~D95 MKCP1D09~D80	MKA1-DN22
	1	3		MKA1-DN13
	4	0		MKA1-DN40
	0	4		MKA1-DN04
	3	1		MKA1-DN31
2	1	1		MKA1-DN11
	2	0		MKA1-DN20
	0	2		MKA1-DN02
1	1	0	To the front of MKC1D09~D95 MKCP1D09~D80	MKA1-DN10
	0	1		MKA1-DN01
2	1	1	To the side of MKC1D09~D95 MKCP1D09~D80	MKA8-DN11
	2	0		MKA8-DN20

Pneumatic Timer Block (Front Mounted)

Description	Contacts		Range	Catalog Number
	NO	NC		
ON Delay	1	1	0.1 ... 3s	MKA2-DT0
ON Delay	1	1	0.1 ... 30s	MKA2-DT2
ON Delay	1	1	10 ... 180s	MKA2-DT4
OFF Delay	1	1	0.1 ... 3s	MKA3-DR0
OFF Delay	1	1	0.1 ... 30s	MKA3-DR2
OFF Delay	1	1	10 ... 180s	MKA3-DR4
On Delay	1	1	1 ... 30s*	MKA2-DS2

* With switching time of 40msec + 15 msec between the opening of NC contact to the closing of NO contact (for Star Delta application)



MeK-Tronics

1320 Tower Road
Schaumburg, IL 60173
Tel: 847-598-3550
Fax: 847-598-3509

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