kawamura

Control & Automation

Products

Kawamura Electric Inc.

KWMC2-D Series AC Contactor

Standard	IEC/EN 60947-4-1
Electric ratings	9-95A
Rated operating voltage Ue(V)	220/380/400/415
Rated insulation voltage Ui(V)	690
Operation range	Pick-up voltage (85%~110%)Us
	Drop-out voltage (20%~75%)Us
Rated impluse withstand voltage Uimp(kV)	6
Rated frequency(Hz)	50/60
Utilization category	AC-3,AC-4
Degree of protection	IP20
Ambient air temperature(℃)	-5 to+40,max.95%humidity
Storage temperature(℃)	-40~+75
Maximum operating altitude(meters)	≤2000
Flame resistance	V1
Certification	CE CB



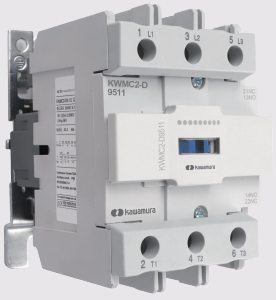
KWMC2-D12



KWMC2-D25



KWMC2-D40



KWMC2-D95

KWMC2-D Series AC Contactor

Type			KWMC2-D									
			09	12	18	25	32	40	50	65	80	95
Number of poles			3	3	3	3	3	3	3	3	3	3
Rated operational current(A)	380V	In AC-3	9	12	18	25	32	40	50	65	80	95
		In AC-4	3.5	5	7.7	8.5	12	18.5	24	28	37	44
	440V	In AC-1	20	25	32	40	50	60	80	80	110	125
	660V	In AC-3	6.6	8.9	12	18	21	34	39	42	49	55
		In AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
Rated conventional thermal current Ith(A)			20	25	32	40	50	60	80	80	95	95
Rated making capacity(A)	400V		10 x Ie AC-3 or 12 x Ie AC-4									
Rated breaking capacity(A)	400V		8 x Ie AC-3 or 10x Ie AC-4									
Rated operational power in category AC-3(kW)	220/230/240V		2.2	3	4	5.5	7.5	11	15	18.5	22	25
	380/400V		4	5.5	7.5	11	15	18.5	22	30	37	45
	415/440V		4	5.5	9	11	15	22	25	37	45	45
	660/690V		5.5	7.5	10	15	18.5	30	33	37	45	45
Average impedance per pole(mΩ)			2.5	2.5	2.5	2	2	1.5	1.5	1.5	0.8	0.8

Add-on auxiliary contact blocks	
Front	KWA1-DN
Side	KWA8-DN
Front time delay	KWA2-DT/KWA3-DR
Front dust and damp protected	YES

Associated thermal overload relays		KWTH2-D13				KWTH2-D23	KWTH2-D33				
Operation cycles (times/hour)	Electrical AC-3	1200	1200	1200	1200	600	600	600	600	600	600
	Electrical AC-4	300	300	300	300	300	300	300	300	300	300
	Mechanical	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
Elechanical life (X 10^3 times)	AC-3	1000	1000	1000	1000	800	800	600	600	600	600
	AC-4	200	200	200	200	200	150	150	150	100	100
Mechanical life(X 10^3 times)		10000	10000	10000	10000	8000	8000	8000	8000	6000	6000
Matching fuse model		RT16-20	RT16-20	RT16-32	RT16-40	RT16-50	RT16-63	RT16-80	RT16-80	RT16-100	RT16-125
Tightening torque(N.m) Connection		1.2	1.2	1.7	2.0	2.5	5	5	5	9	9

KWMC2-D Series AC Contactor

Selection and ordering data

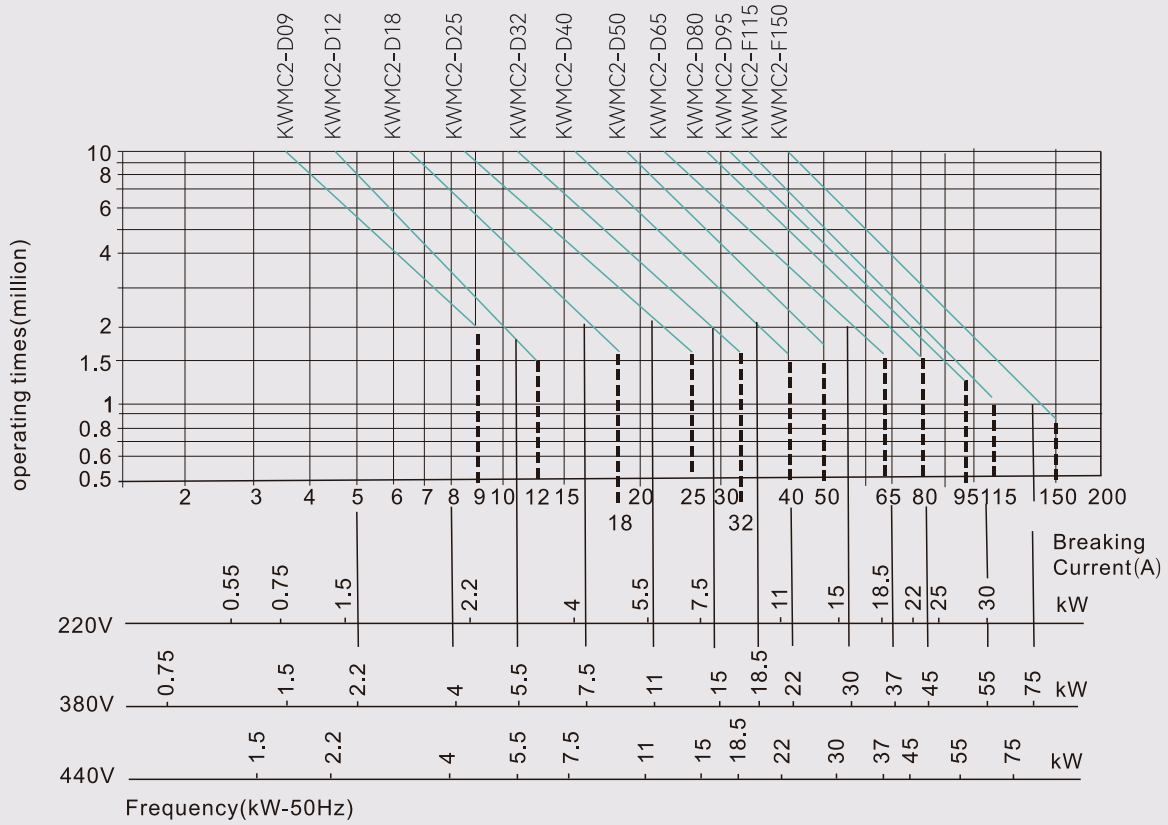
Rated Operational current in category AC-3 400V(A)	Number of poles	Instantaneous auxiliary contacts	Standard control circuit voltages (VAC)	Rated frequency (Hz)	Auxiliary contacts	Model number
9	3 -	1 -	380/400	50/60	1NO	KWMC2-D0910
	3 -	- 1			1NC	KWMC2-D0901
12	3 -	1 -	380/400	50/60	1NO	KWMC2-D1210
	3 -	- 1			1NC	KWMC2-D1201
18	3 -	1 -	380/400	50/60	1NO	KWMC2-D1810
	3 -	- 1			1NC	KWMC2-D1801
25	3 -	1 -	380/400	50/60	1NO	KWMC2-D2510
	3 -	- 1			1NC	KWMC2-D2501
32	3 -	1 -	380/400	50/60	1NO	KWMC2-D3210
	3 -	- 1			1NC	KWMC2-D3201
40	3 -	1 1	380/400	50/60	1NO+1NC	KWMC2-D4011
50	3 -	1 1	380/400	50/60	1NO+1NC	KWMC2-D5011
65	3 -	1 1	380/400	50/60	1NO+1NC	KWMC2-D6511
80	3 -	1 1	380/400	50/60	1NO+1NC	KWMC2-D8011
95	3 -	1 1	380/400	50/60	1NO+1NC	KWMC2-D9511

Refer to other coil voltage listed as followings

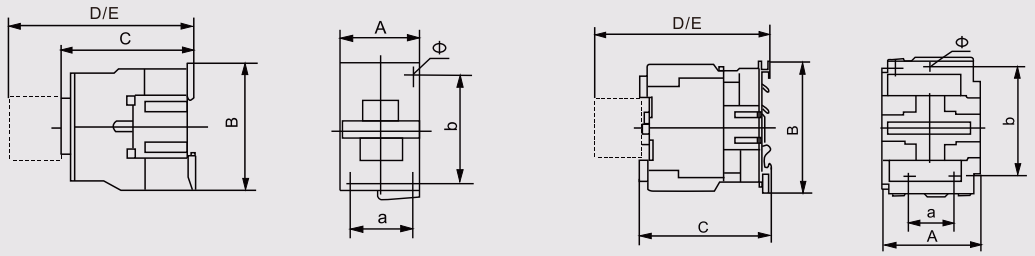
Coil voltage(V)	24	36	48	110	127	220	230	240	380/400	415	440	480	500	600	660
50Hz	B5	C5	E5	F5	G5	M5	P5	U5	Q5	N5	R5	T5	S5	-	Y5
60Hz	B6	-	E6	F6	G6	M6	P6	U6	Q6	N6	R6	T6	-	S6	-
50/60Hz	B7	C7	E7	F7	G7	M7	P7	U7	Q7	N7	R7	T7	-	-	-

For technical data, see technical specifications for type KWMC2-D Series

Electrical life curve for AC contactor KWMC2-D



Overall Dimensions

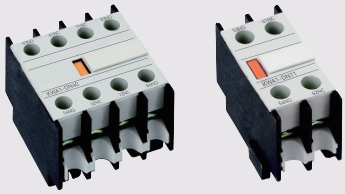
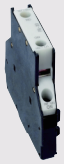


KWMC2-D09~32 KWMC2-D40~95

	Type	A max	B max	C max	D max	E max	a	b	φ
3P	KWMC2-D09~12	47	76	82	113	133	34/35	48/61	2-/φ4.5
	KWMC2-D18	47	76	87	118	138	34/35	48/61	2-/φ4.5
	KWMC2-D25	57	86	95	126	146	40	48	2-/φ4.5
	KWMC2-D32	57	86	100	131	151	40	48	2-/φ4.5
	KWMC2-D40~65	75	127	115	145	165	40	106/116	3-/φ6.5
	KWMC2-D80~95	87	127	124	156	176	40	106/116	3-/φ6.5

Dmax (D): Overall depth of contactor body fitted with top-mounted auxiliary contact block
Emax (E): Overall depth of contactor body fitted with time relay

Accessories

Auxiliary Contact Block	Model	Number of contacts	Mounting Type	Auxiliary Contacts	
	KWA1-DN10	2	Front	1	0
	KWA1-DN01	2		0	1
	KWA1-DN11	2		1	1
	KWA1-DN20	2		2	0
	KWA1-DN02	2		0	2
	KWA1-DN22	4		2	2
	KWA1-DN13	4		1	3
	KWA1-DN40	4		4	0
	KWA1-DN04	4		0	4
	KWA1-DN31	4		3	1
	KWA8-DN11	2	Lateral	1	1
	KWA8-DN20	2		2	0

Timer delay block	Model	Number of contacts	Range	Time-delay type
	KWA2-DT0 KWA2-DT2 KWA2-DT4	1NO+1NC	0.1-3s 0.1-30s 10-180s	Making time- delay
	KWA3-DR0 KWA3-DR2 KWA3-DR4		0.1-3s 0.1-30s 10-180s	Breaking time- delay

Mechanical interlock	Model	Matched AC Contactor
	KWML-0932 KWML-4095	KWMC2-D09 to KWMC2-D32 KWMC2-D40 to KWMC2-D95

Spare coils	Model	Voltage (VAC)	Rated frequency(Hz)	Matched AC Contactor
	KWX1-D2 KWX1-D4 KWX1-D6	24(B7) 36(C7) 48(E7) 110(F7) 127(G7) 220(M7) 230(P7) 240(U7) 380/400(Q7) 415(N7) 440(R7) 480(T7)	50/60Hz	KWMC2-D 09~95

KWMC2-F Series AC Contactor

Standard	IEC60947-4-1
Electric ratings	Up to 800A,1000V
Rated insulation voltage Ui(V)	690
Operation range	Pick-up voltage (85%~110%)Us
	Drop-out voltage (20%~75%)Us
Rated impluse withstand voltage Uimp(kV)	8
Rated frequency(Hz)	50/60
Utilization category	AC-3,AC-4
Degree of protection	IP20
Ambient air temperature(℃)	-5 to+40,max.95%humidity
Storage temperature(℃)	-40~+75
Maximum operating altitude(meters)	≤2000
Flame resistance	V1
Certification	CE CB



KWMC2-F

KWMC2-F Series AC Contactor

Type		KWMC2-F									
		115	150	185	225	265	330	400	500	630	800
Number of poles		3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3,4	3
Current Ie(A) (Ue≤400V)	AC-3	115	150	185	225	265	330	400	500	630	800
	AC-4	52	60	79	85	105	117	138	147	188	195
Rated conventional thermal current Ith(A)		200	200	280	280	360	360	580	580	850	850
Rated making capacity(A)	1ms	10 x Ie AC-3 or 12 x Ie AC-4									
Rated breaking capacity(A)	1ms	8 x Ie AC-3 or 10 x Ie AC-4									
Rated operational power in category AC-3(kw)	220/230V	30	40	55	63	75	100	129	147	200	220
	380/400V	55	75	90	100	132	160	200	250	335	400
	415V	59	80	100	110	140	180	220	280	375	425
	440V	59	80	100	110	140	180	220	280	375	425
	500V	75	90	110	129	160	200	257	335	400	450
	660/690V	80	100	120	129	180	220	280	355	450	475
	1000V	65	65	100	140	147	160	185	335	450	450
Average impedance per pole(mΩ)		0.37	0.35	0.33	0.32	0.3	0.28	0.26	0.18	0.12	0.12
Operation cycles (times/hour)	AC-3	1200	1200	600	600	600	600	600	600	600	600
	AC-4	300	300	300	300	300	300	300	300	300	300
Mechanical life(X 10^3 times)		3000									
Electrical life (X 10^3 times)	AC-3	800	800	500	500	500	500	300	200	200	100
	AC-4	150	150	150	150	150	150	80	80	50	30
Matching fuse model		RT16-2	RT16-2	RT16-3	RT16-3	RT16-3	RT16-3	RT16-3	RT16-3	RT16-3	RT16-3
Tightening torque(N.m) cable Connection		10	18	18	35	35	35	35	35	58	58

Add-on auxiliary contact blocks	Front	KWA1-DN
	Side	KWA8-DN
	Front time delay	KWA2-DT/KWA3-DR

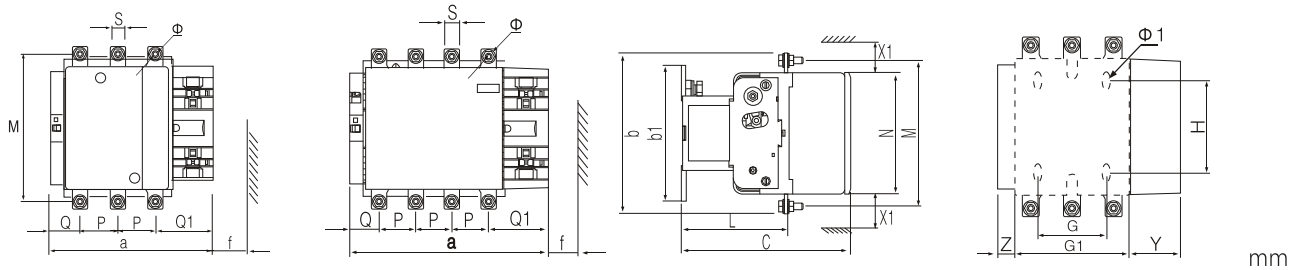
Mechanical interlock	Model	Matched AC Contactor
	KW9FF970 KW9FG970 KW9FJ970 KW9FL970	KWMC2-F115 to KWMC2-F150 KWMC2-F185 to KWMC2-F225 KWMC2-F265 to KWMC2-F400 KWMC2-F630

Refer to other coil voltage listed as followings

	VoltageV	24	48	110	125	127/132	220	230	240	250	380	400	415	440	480
KWMC2-F115...F225	50Hz (Coil LX1)	B5	E5	F5	-	G5	M5	P5	U5	-	Q5	V5	N5	R5	T5
	60Hz (Coil LX1)	-	E6	F6	-	G6	M6	P6	U6	-	Q6	V6	N6	R6	T6
	40...400Hz (Coil LX9)	-	E7	F7	-	G7	M7	P7	U7	-	Q7	V7	N7	R7	T7
	DC (Coil LX4)	BD	ED	FD	GD	-	MD	-	-	UD	-	-	-	RD	-
	Remark: For 50Hz coil LX1: 220/230V and 380/400V share the same coil														
KWMC2-F265...F330	40...400Hz (Coil LX1)	-	E7	F7	-	G7	M7	P7	U7	-	Q7	V7	N7	R7	T7
	DC (Coil LX4)	-	ED	FD	GD	-	MD	-	-	UD	-	-	-	RD	-
	Remark: F265 is equipped with dual-winding coil as standard														
KWMC2-F400...F800	40...400Hz (Coil LX1)	-	E7	F7	-	G7	M7	P7	U7	-	Q7	V7	N7	R7	T7
	DC (Coil LX4)	-	ED	FD	GD	-	MD	-	-	UD	-	-	-	RD	-

Overall Dimensions (KWMC2-F Series)

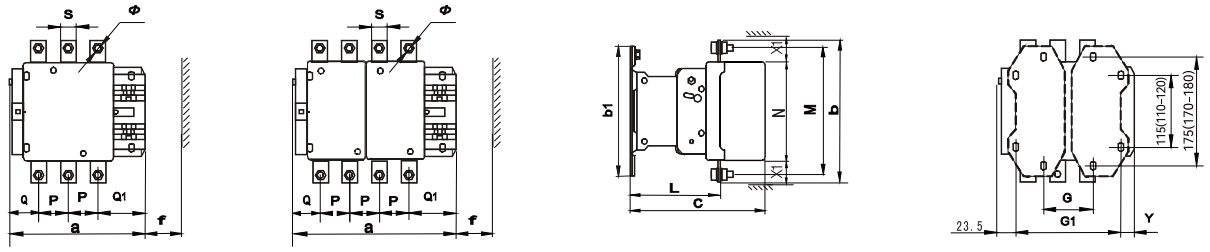
1.KWMC2-F115/1154-330/3304



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KWMC2-F	a	p	Q	Q1	S	Φ	f	b	b1	M	N	C	L	G	H	Φ1	G1	Z	Y	X1	
																				≤500V	> 500V
115	163.5	37	29.5	60	15	M6	131	162	137	147	124	171	107	80	106-120	6.5	106	13.5	44	10	15
1154	200.5	37	29.5	60	15	M6	131	162	137	147	124	171	107	80	106-120	6.5	143	13.5	44	10	15
150	163.5	40	26	57.5	20	M8	131	170	137	150	124	171	107	80	106-120	6.5	106	13.5	44	10	15
1504	200.5	40	25	55.5	20	M8	131	170	137	150	124	171	107	80	106-120	6.5	143	13.5	44	10	15
185	168.5	40	29	59.5	20	M8	130	174	137	154	127	181	113.5	80	106-120	6.5	111	13.5	44	10	15
1854	208.5	40	29	59.5	20	M8	130	174	137	154	127	181	113.5	80	106-120	6.5	151	13.5	44	10	15
225	168.5	48	21	51.5	25	M10	130	197	137	172	127	181	113.5	80	106-120	6.5	111	13.5	44	10	15
2254	208.5	48	17	47.5	25	M10	130	197	137	172	127	181	113.5	80	106-120	6.5	151	20.5	44	10	15
265	201.5	48	39	66.5	25	M10	147	203	145	178	147	213	141	96	106-120	6.5	140	20.5	38	10	15
2654	224.5	48	34	66.5	25	M10	147	203	145	178	147	213	141	96	106-120	6.5	186	20.5	38	10	15
330	213	48	43	74	25	M10	147	206	145	181	158	219	145	96	106-120	6.5	154.5	20.5	38	10	15
3304	261	48	43	74	25	M10	147	206	145	181	158	219	145	96	106-120	6.5	202.5	20.5	38	10	15

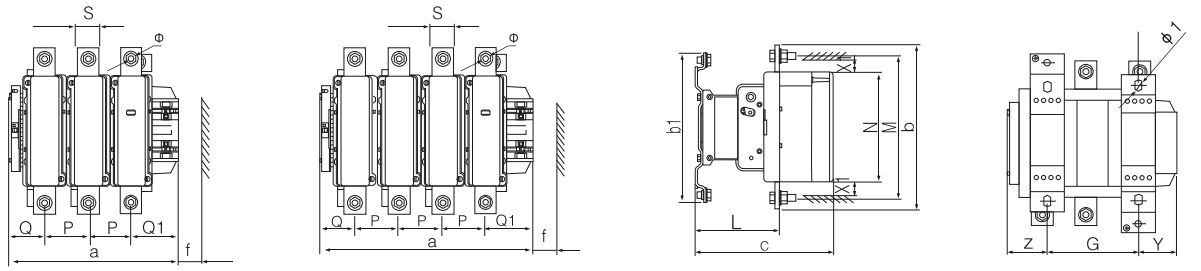
2.KWMC2-F400/4004/500/5004



mm

KWMC2-F	a	p	Q	Q1	S	Φ	f	b	b1	M	N	C	L	G	G1	Φ1	Y	X1	
																		≤500V	> 500V
400	213	48	43	74	25	M10	151	206	209	181	158	219	145	80(66-102)	170(156-192)	8.5	19.5	15	20
4004	261	48	43	74	25	M10	151	206	209	181	158	219	145	80(66-102)	170(156-192)	8.5	67.5	15	20
500	233	55	46	77	30	M10	169	238	209	208	172	232	146	80(66-102)	170(156-192)	8.5	39.5	15	20
5004	288	55	46	77	30	M10	169	238	209	208	172	232	146	140(66-175)	230(156-265)	8.5	34.5	15	20

3.KWMC2-F630/6304/800



mm

KWMC2-F	a	p	Q	Q1	S	Φ	f	b	b1	M	N	C	L	G	Φ1	Z	Y	X1	
																		≤500V	> 500V
630 800	309	80	60	89	40	M12	201	304	280	264	202	255	155	180(100-195)	10.5	60.5	68.5	20	30
6304	389	80	60	89	40	M12	201	304	280	264	202	255	155	240(150-275)	10.5	60.5	68.5	20	30

KWTH2-D Series Thermal Relay

Standard	IEC/EN 60947-4-1
Rated insulation voltage Ui(V)	690
Rated impluse withstand voltage Uimp(kV)	6
Tripping class	10A
Signalling	Trip indicator
Tightening torque(N.m)	0.8
Degree of protection	IP20
Ambient air temperature(℃)	-5 to+40,max.95%humidity
Storage temperature(℃)	-40~+75
Maximum operating altitude(meters)	≤2000
Flame resistance	V1
Mounting	Directly under the contactor
Certification	Up to 32A available



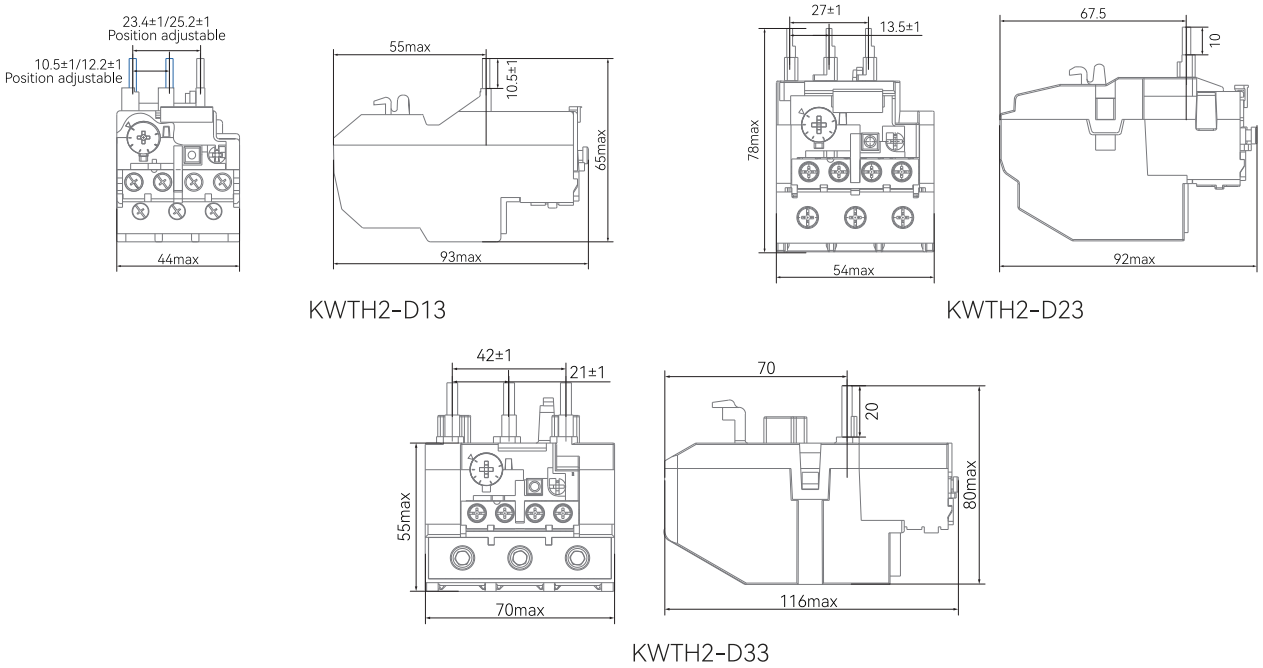
KWTH2-D

KWTH2-D Series Thermal Relay

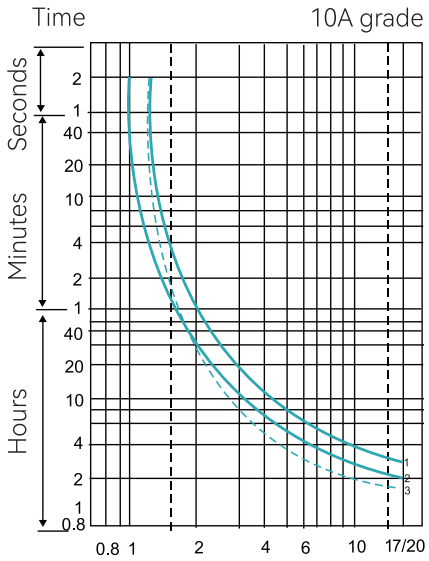
KWTH2-D thermal relay matched with contactor KWMC2-D

Rated frame current (A)	Rated working current of thermal relay	Rated current (A)	Current setting range(A)	Matched fuse type aM(A)	gG(A)	Matched AC contactor
25	KWTH2-D 1301	0.16	0.10~0.16	0.25	2	KWMC2-D09
	KWTH2-D 1302	0.25	0.16~0.25	0.5	2	KWMC2-D09
	KWTH2-D 1303	0.40	0.25~0.40	1	2	KWMC2-D09
	KWTH2-D 1304	0.63	0.40~0.63	1	2	KWMC2-D09
	KWTH2-D 1305	1.0	0.63~1.0	2	4	KWMC2-D09
	KWTH2-D 1306	1.6	1.0~1.6	2	4	KWMC2-D09
	KWTH2-D 1306X	2.0	1.25~2.0	4	6	KWMC2-D09
	KWTH2-D 1307	2.5	1.6~2.5	4	6	KWMC2-D09
	KWTH2-D 1308	4.0	2.5~4.0	6	10	KWMC2-D09
	KWTH2-D 1310	6.0	4.0~6.0	8	16	KWMC2-D09
	KWTH2-D 1312	8.0	5.5~8.0	12	20	KWMC2-D09
	KWTH2-D 1314	10	7~10	12	20	KWMC2-D12
	KWTH2-D 1316	13	9~13	16	25	KWMC2-D18
	KWTH2-D 1321	18	12~18	20	35	KWMC2-D18
	KWTH2-D 1322	25	17~25	25	50	KWMC2-D25
36	KWTH2-D 2353	32	23~32	40	63	KWMC2-D32
	KWTH2-D 2355	40	30~40	40	80	KWMC2-D40
93	KWTH2-D 3353	32	23~32	40	63	KWMC2-D32
	KWTH2-D 3355	40	30~40	40	100	KWMC2-D40
	KWTH2-D 3357	50	37~50	63	100	KWMC2-D50
	KWTH2-D 3359	65	48~65	63	100	KWMC2-D65
	KWTH2-D 3361	70	55~70	80	125	KWMC2-D80
	KWTH2-D 3363	80	63~80	80	125	KWMC2-D80
	KWTH2-D 3365	93	80~93	100	160	KWMC2-D95

Overall Dimensions



Tripping curve for thermal relay



Equilibrium running	3phase	Start form cold state
	2phase	
	3phase	After long period of setting current(hot state)

Operating Characteristics

Operating Time under Balanced Three-Phase Load

Serial No.	Multiple of Rated Current	Operating Time	Initial Condition	Ambient Temperature
1	1.05	> 2h	Cold state	20 ± 5℃
2	1.2	< 2h	Hot state (After Test No.1)	20 ± 5℃
3	1.5	< 2min		20 ± 5℃
4	7.2	2s < Tp ≤ 10s	Cold state	20 ± 5℃

Phase Loss Operating Performance

Serial No.	Multiple of Rated Current		Operating Time	Initial Condition	Ambient Temperature
	Any Two Phases	Third Phase			
1	1.0	0.9	> 2h	Cold state	20 ± 5℃
2	1.15	0	< 2h	Hot state (After Test No.1)	20 ± 5℃

Product Description

KWTH2-D series thermal overload relays

KWTH2-D series thermal overload relays are intended for use in circuits with AC 50/60 Hz, rated voltage up to 690 V and current up to 93 A, providing overload and phase-failure protection for AC electric motors.
Featuring a differential mechanism, temperature compensation and trip indication, these relays can be mounted in combination with AC contactors or installed independently.
This product complies with the IEC/EN 60947-4-1 standard.

Selection Guide

AC Contactor

KWMC2-D	09	10	N
Product Code	Rated Current	Built-in Auxiliary Contacts	Special Options
AC Contactor	09~95	10: For 32A and below, 3P + NO 01: For 32A and below, 3P + NC 11: For 40A and above, 3P + NO + NC NO: Normally Open Auxiliary Contact NC: Normally Closed Auxiliary Contact	None: Standard Contactor N: Reversible Contactor PC: With Transparent Dust Cover

Auxiliaries

KWA1-DN	20	
Product Code	Auxiliary Contact Configuration	
Top Auxiliary Contact Blocks	20: 2 NO contacts 11: 1 NO + 1 NC contacts 02: 2 NC contacts 40: 4 NO contacts 31: 3 NO + 1 NC contacts	22: 2 NO + 2 NC contacts 13: 1 NO + 3 NC contacts 04: 4 NC contacts NO: Normally Open Auxiliary Contact NC: Normally Closed Auxiliary Contact
KWA8-DN	20	
Product Code	Auxiliary Contact Configuration	
Side Auxiliary Contact Blocks	20: 2 NO contacts 11: 1 NO + 1 NC contacts	NO: Normally Open Auxiliary Contact NC: Normally Closed Auxiliary Contact
KWA2-DT/DR	0	
Product Code	Pneumatic Timer Delay Range	
DT: Making time- delay DR: Breaking time- delay	0: 0.1–3s delay range 2: 0.1–30s delay range 4: 10–180s delay range	

F AC Contactor

KWMC2-F	115	2
Product Code	Rated Current	Number of Poles
AC Contactor	115~800	3 or 4 poles

Thermal Relay

KWTH2-D	25
Product Code	Frame Size
Thermal Relay	D: 25 36 93



Information in this catalog is for reference only. Product iteration and upgrade may cause delayed data update, and shall not constitute an offer. In case of discrepancy, the delivered goods and latest technical documents shall prevail. We reserve the right to change product specifications without prior notice. Please verify latest information before order placement.

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