T-Line Contactors (9A ~ 95A)

3 & 4 Pole Contactors with AC operating coil

TC1D65••-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						
AC-3 A	AC-1 A	120V	230V	200V	230V	480V	600V	NO	NC	
9	25	0.5	1	2	2	5	7.5	1	0	TC1-D0910-XX
								0	1	TC1-D0901-XX
12	25	1	2	3	3	7.5	10	1	0	TC1-D1210-XX
								0	1	TC1-D1201-XX
18	32	1	3	5	5	10	15	1	0	TC1-D1810-XX
								0	1	TC1-D1801-XX
22	32	2	3	5	7.5	15	20	1	0	TC1-D2210-XX
								0	1	TC1-D2201-XX
25	40	2	3	5	7.5	15	20	1	0	TC1-D2510-XX
								0	1	TC1-D2501-XX
32	50	2	5	10	10	20	25	1	0	TC1-D3210-XX
								0	1	TC1-D3201-XX
38	60	3	5	10	10	30	25	1	0	TC1-D3810-XX
								0	1	TC1-D3801-XX
40	60	3	5	10	10	30	30	1	1	TC1-D4011-XX
50	80	3	7.5	15	15	40	40	1	1	TC1-D5011-XX
65	80	5	10	20	20	50	50	1	1	TC1-D6511-XX
80	125	7.5	15	25	25	60	60	1	1	TC1-D8011-XX
95	125	7.5	15	25	25	60	60	1	1	TC1-D9511-XX

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

TC1D09004

4 Pole Contactor with AC operating coil

Maximum Current		Maximum HP						Main Pole Configuration		Catalog Number
Inductive	Resistive	Single Phase		Three Phase						
AC-3 A	AC -1 A	120V	230V	200V	230V	480V	600V	NO	NC	
9	25	0.5	1	2	2	5	8.	4	0	TC1-D09004-XX
		0.5	1	2	2	5	8.	0	4	TC1-D09006-XX
		0.5	1	-	-	-	-	2	2	TC1-D09008-XX
12	25	1	2	3	3	7.5	10	4	0	TC1-D12004-XX
		1	2	3	3	7.5	10	0	4	TC1-D12006-XX
		1	2	-	-	-	-	2	2	TC1-D12008-XX
25	40	2	3	5	7.5	15	20	4	0	TC1-D25004-XX
		2	3	5	7.5	15	20	0	4	TC1-D25006-XX
		2	3	-	-	-	-	2	2	TC1-D25008-XX
40	60	3	5	10	10	30	30	4	0	TC1-D40004-XX
		3	5	-	-	-	-	2	2	TC1-D40008-XX
65	80	5	10	20	20	50	50	4	0	TC1-D65004-XX
		5	10	-	-	-	-	2	2	TC1-D65008-XX
80	125	7.5	15	20	25	60	60	4	0	TC1-D80004-XX
		7.5	15	-	-	-	-	2	2	TC1-D80008-XX

TC2D09••-XX

3 Pole Machanically Interlocked Contactor with AC coil (Pre-wired)

Maximum Current		Maximum HP 3 Phase				Aux. Contacts Built-in per contactor		Catalog Number
Inductive AC-3 A	Resistive AC-1 A	200V	230V	480V	600V	NO	NC	
9	25	2	2	5	7.5	0	1	TC2-D0901-XX
						1	0	TC2-D0911-XX
12	25	3	3	7.5	10	0	1	TC2-D1201-XX
						1	0	TC2-D1211-XX
18	32	5	5	10	15	0	1	TC2-D1801-XX
						1	0	TC2-D1811-XX
22	32	5	5	10	15	0	1	TC2-D2201-XX
						1	0	TC2-D2211-XX
25	40	5	7.5	15	20	0	1	TC2-D2501-XX
						1	0	TC2-D2511-XX
32	50	10	10	20	25	0	1	TC2-D3201-XX
						1	0	TC2-D3211-XX
38	50	10	10	20	25	0	1	TC2-D3801-XX
						1	0	TC2-D3811-XX
40	60	10	10	30	30	1	1	TC2-D4011-XX
50	80	15	15	40	40	1	1	TC2-D5011-XX
65	80	20	20	50	50	1	1	TC2-D6511-XX
80	125	20	25	60	60	1	1	TC2-D8011-XX
95	125	20	25	60	60	1	1	TC2-D9511-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	W6	Q6	-	-	R6	T6	S6	X6
50/60 Hz	B7	E7	F7	G7	-	M7	P7	U7	-	Q7	V7	N7	R7	-	-	-

T-Line Contactors (9A ~ 95A)

3 & 4 Pole Contactors with AC operating coil

General Characteristics

Type		Unit	TC1 -D09 ~ TC1 -D95
Rated insulation voltage (Ui)	IEC 60947-4-1	V	1000
Conforming to standards			NFCEN60947, VDE0660, BSEN60947, IEC 60947 &IS13947
Approvals			UL, CSA
Degree of Protection	Conforming to VDE 0106		Protection against direct finger contacts
Protective treatment	Standard version		"TH"
Ambient air temperature	Storage	°C	-60 to +80
(around the device)	Operation	°C	-5 to +55 (0.8 to 1.1 Uc)
	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 TC 1 -		Unit	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80	D95
Number of poles (Power) Power + Auxiliary			3or4 3+1	3or4 3+1	3 3+1	3 3+1	3or4 3+1	3 3+1	3 3+1	3or4 3+2	3or4 3+2	3or4 3+2	3or4 3+2	3or4 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 opeating 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)	θ <40°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 impedence 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	TC1- D09~D22	TC1- D25~D38	TC1- D40~D65	TC1- D8O~D95
Rated control circuit voltage (Uc)		50 or 60 Hz		V		12 to 660		
Control voltage limits (θ < 55°C)	50 or 60Hz Coil	Operational				0.8 - 1.1 Uc		
		Drop out				0.3 - 0.6 Uc		
Average consumption at 20°C and at Uc	50/60Hz Coil	Operational				0.85 - 1.1 Uc at 60Hz		
	AC 50 Hz	Inrush	50 Hz Coil	VA	60	90	200	200
			50/60 Hz Coil	VA	70	100	245	245
			COS Φ		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 Φ		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 Φ		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 Φ		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 "0"		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 TC1D18)	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

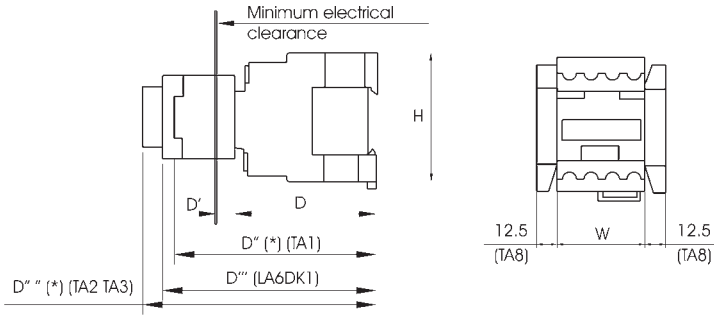
Type		Unit	TC1- D09 ~ 1C1- D95
Rated thermal current (Ith)	θ < 55°C	A	10
Rated operational voltage (Ue)	Upto	V	660

T-Line Contactors (9A ~ 95A)

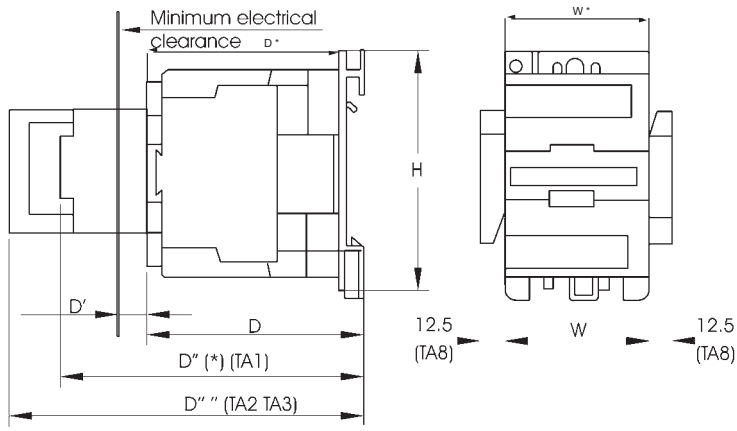
Contactors' Dimensions with AC operating coil

Product Dimensions

TC1D09~D38
TP1DC09/DC12/DC25



TC1D40 ~ D95

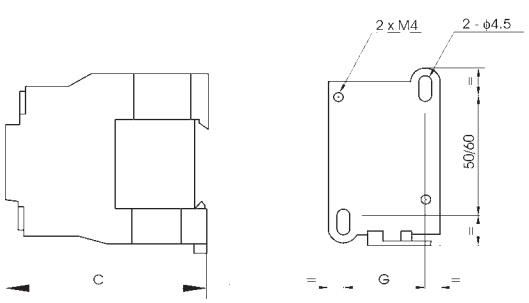


TC1-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80-D95
TP1-	DC09	DC12	-	-	DC25	-	-	-	-	-	- -
W (3 Pole)	45	45	45	45	56	56	56	75	75	75	85
W* (4 Pole)	45	45	-	-	56	-	-	85	85	85	96
H (3/4 Pole)	74	74	74	74	84	84	84	127	127	127	127
D (3/4 Pole)	80	80	85	85	94	99	99	114	114	114	120
D' (3/4 Pole)	10	10	10	10	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

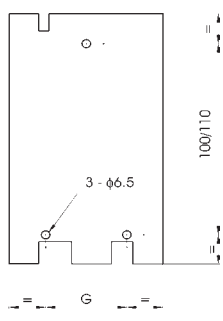
Panel Mounting Reference

TC1D09~D95
TP1DC09/DC12/DC25

TC1-D09~D38
TP1-DC09/DC12/DC25



TC1-D40 ~ D95

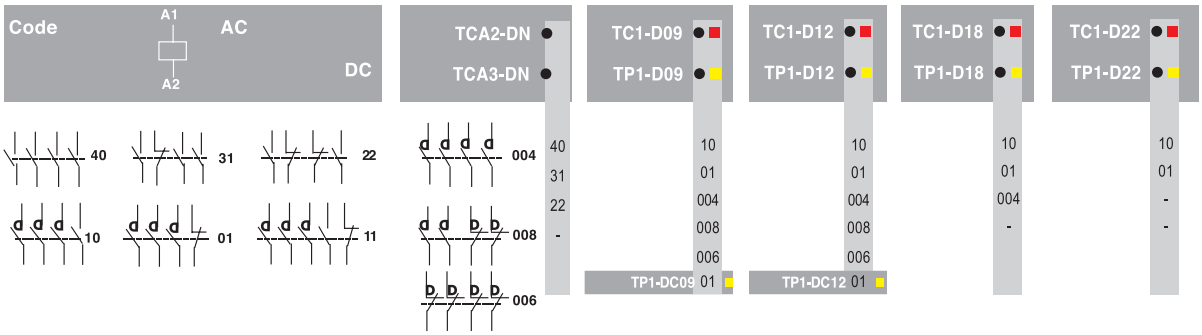


TC1-	D09	D12	D18	D22	D25	D32	D38	D40	D50	D65	D80	D95
TP1-	DC09	DC12	-	-	DC25	-	-	-	-	-	-	-
C	80	80	85	85	93	98	98	114	114	114	125	125
G	35	35	35	35	44	44	44	40	40	40	40	40

Control Relays

Synopsis - Contactors / Control Relays

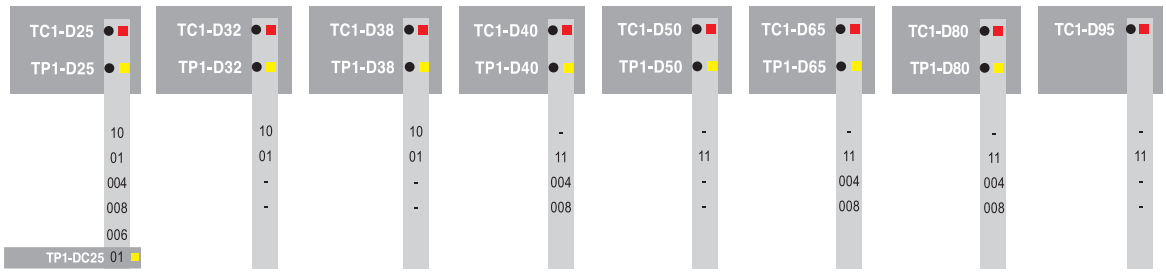
Conforming to
IEC-VDE-BS-IS
For other standards, please refer to us



Maximum rated operational voltage					
	660V	690V	690V	690V	690V
Maximum rated current for motor control 3 phase 440V,50-60Hz for AC3 Duty)	**AC 15 duty (IEC 60947-5-1) AC 11 duty (IEC 851) 6A at 500V**	**9A**	**12A**	**18A**	**22A**
Maximum standard power rating for motor control for AC3 Duty θ< 55°C, 415V		**Kw / hp**	**Kw / hp**	**Kw / hp**	**Kw / hp**
3 phase AC3 UL-Continuous Current — 230V HP		4 / 5.5	5.5 / 7.5	9 / 12.5	11 / 15
460/480V HP	-	2	3	5	-
575/600V HP	-	5	7.5	10	-
	-	7.5	10	15	-
Mounting position (w.r.t. normal vertical mounting plane)"	+ 30 °	+ 30°	+ 30°	+ 30°	+ 30°
Maximum terminal current Ith (θ<40°C)	**10A**	**25A**	**25A**	**32A**	**32A**
Maximum operating rate (operations / hr) AC	10800	3600	3600	3600	3600
DC	3600	3600	3600	3600	3600
Average coil consumption (inrush / sealed) **TC1-D** 50 Hz	60 / 7 VA	60 / 7 VA	60 / 7 VA	60 / 7 VA	60 / 7 VA
60 Hz	70 / 7.5 VA	70 / 7.5 VA	70 / 7.5 VA	70 / 7.5 VA	70 / 7.5 VA
50/60 Hz	70 / 8 VA	70 / 8 VA	70 / 8 VA	70 / 8 VA	70 / 8 VA
TP1-D TP1-DC DC	9 / 9W	9 / 9W 150 / 2.75W	9 / 9W 150 / 2.75W	9 / 9W	9 / 9W
Power dissipation per pole at AC1	1.56W	1.56W	1.56W	2.5w	1.56W
AC3	0.20W	0.20W	0.36W	0.80W	0.80W
Mechanical life (in millions of operations) **TC1-D** 50 or 60 Hz	30	20	20	20	20
TC1-D (50/60Hz) / **TP1-DC**	20	15/15	15/15	15/-	15/-
TP1-D	30	30	30	30	30
Power contact terminal capacity mm²	2.5	4	4	6	6
Overall dimensions in mm **TC1-D**					
TP1-DC	80mm	80mm	80mm	85mm	85mm
Over-all dimensions in mm **TP1-D**					
Projection (TCA3-D/TP1-D)	115mm	115mm	115mm	120mm	120mm
Weight (TC1-D/TP1-D/TP1-DC) **kg**		0.32/0.58/0.32	0.32/0.60/0.32	0.35/.85/-	0.35/0.85/-
Weight (TCA2/TCA3) **kg**	0.32/0.58				

Coil Selection Chart

For Contactor Type	Coil Reference	Replace with ■ or ■ following codes																				
		Volts →	12	24	48	72	110	120	125	208	220	230	240	250	277	380	400	415	440	480	575	600
TC1 -D09-22	TX1-D2 ■	50 Hz		B5	E5		F5				M5	P5	U5			Q5	V5	N5	R5			
TC1-D25-38	TX1-D4 ■	60 Hz		B6	E6		F6	G6		L6	M6		U6		W6	Q6			R6	T6	S6	X6
TC1-D40-95	TX1-D6 ■	50/60 Hz		B7	E7		F7	G7			M7	P7	U7			Q7	V7	N7	R7			
TP1-D09-22	TX4-D2 ■			BD	ED	SD	FD		GD		MD	PD		UD		QD	VD	ND	RD			
TP1-D25-38	TX4-D4 ■			BD	ED	SD	FD		GD		MD	PD		UD		QD	VD	ND	RD			
TP1-D40-80	TX4-D6 ■			BD	ED	SD	FD		GD		MD	PD		UD		QD	VD	ND	RD			
TP1-DC09-12	TX4-DC2 ■			BD	ED		FD				MD											
TP1-DC25	TX4-DC4 ■			BD	ED		FD				MD											

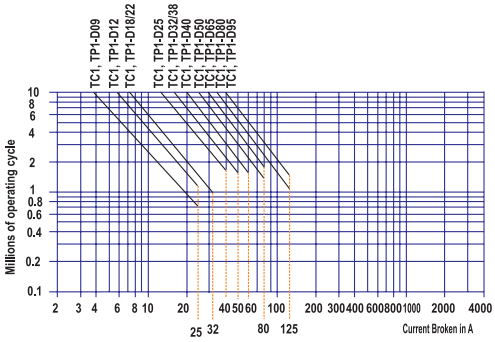


690V	690V	690V	690V	690V	690V	690V	690V
25A	**32A**	**38A**	**40A**	**50A**	**65A**	**80A**	**95A**
Kw / hp	**Kw / hp**	**Kw / hp**	**Kw / hp**	**Kw / hp**	**Kw / hp**	**Kw / hp**	**Kw / hp**
11 / 15	15 / 20	18.5 / 25	22 / 30	25 / 35	37 / 50	45 / 60	45 / 60
7.5	10	-	10	15	20	25	25
15	20	-	30	40	50	60	60
20	25	-	30	40	50	60	60
+ 30°	+ 30°	+ 30°	+ 30°	+ 30°	+ 30°	+ 30°	+ 30°
40A	**50A**	**50A**	**60A**	**80A**	**80A**	**125A**	**125A**
3600 3600	3600 3600	3600 3600	3600 3600	3600 3600	3600 3600	3600 3600	3600 3600
90 / 7.5VA 100 / 8.5 VA 100 / 8.5 VA 11/11W 250 / 3.5W	90 / 7.5VA 100 / 8.5 VA 100 / 8.5 VA 11/11W	90 / 7.5VA 100 / 8.5 VA 100 / 8.5 VA 11/11W	200 / 20 VA 200 /22 VA 245 / 26 VA 22 / 22W	200 / 20 VA 200 /22 VA 245 / 26 VA 22 / 22W	200 / 20 VA 200 /22 VA 245 / 26 VA 22 / 22W	200 / 20 VA 200 /22 VA 245 / 26 VA -	200 / 20 VA 200 /22 VA 245 / 26 VA -
3.2W 1.25W	5W 2W	5W 2W	5.4W 2.4W	9.6W 3.7W	6.4W 4.2W	12.5W 5.1W	12.5W 7.2
16 12/12	16 12/-	16 12/-	16 6/-	16 6/-	16 6/-	10 4/-	10 4/-
25	25	25	20	20	20	20	-
10	10	10	25	25	25	50	50
							
93mm	98mm	98mm	114mm	114mm	114mm	125mm	125mm
							
130mm	135mm	135mm	171mm	171mm	171mm	181mm	
0.505 / 0.88 / 0.505	0.525 / 0.88 /-	0.525 / 0.88 /-	1.15 /2.1 /-	1.15 /2.12 /-	1.15 /2.16 /-	1.5 / 2.22/-	1.5 /- /-

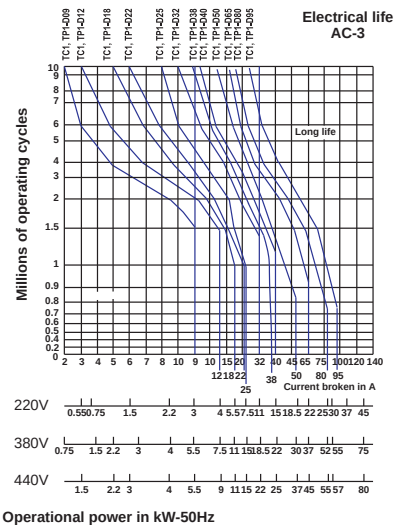
T-Line Contactors (9A ~ 95A)

Contactors' Selection Guide (according to the required electrical life)

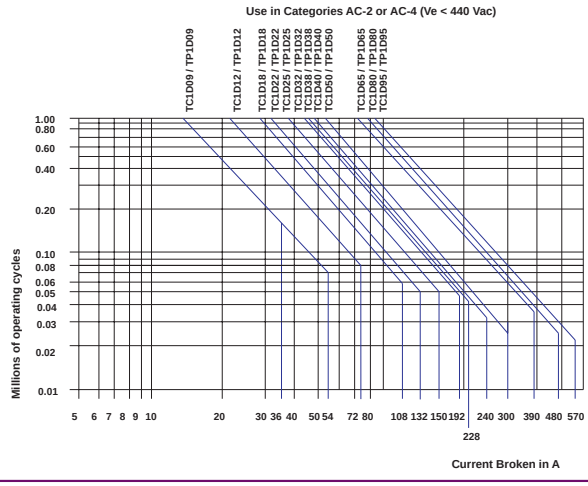
Use in Category AC-1 (Ue < 440V). Control of resistive circuits (cos Φ > 0.95). The current broken (1_c) in category AC-1 is equal to the current (Ie) normally drawn by the load.



Use in Category AC-3 (Ue < 440V). Control of 3-phase asynchronous squirrel cage motors with breaking whilst motor running. The current broken (I_c) in category AC-3 is equal to the current (1_e) normally drawn by the load.



Use in Categories AC-2, AC-4 (Ue < 440V). Control of 3-phase asynchronous squirrel cage (AC-4) or slip ring (AC-2) motors with breaking whilst motor stalled. The current broken in category AC-4 is equal to $6x1_e$ (I_e=rated operational current of the motor).



T-Line Contactors (9A ~ 95A)

Accessories, Spare Coils

TA9D1269

TA9RC980U

LA9D09978

TX1D • -XX

LA6DK01

Power Connectors Wire Sets for Reversing Contactors

With Two Identical Contactors	Catalog Number
TC1-D09, TC1-D12, TP1-D09, TP1-D12	TA9-D1269
TC1-D18, TP1-D18	TA9-D1869
TC1-D25, TP1-D25	TA9-D2569
TC1-D32, TP1-D32	TA9-D3269
TP1-D40, TP1-D65, TC1-D40, TC1-D50, TC1-D65	TA9-D6569
TC1-D80, TP1-D80, TC1-D 95	TA9-D8069

Mechanical / Electric Interlocks Horizontally Mounted

Use for Contactor	Mechanical	Electromechanical
TCA2DN, TCA3DN	LA9D09978	ELA9D09978
TC1 D09 ~ D32, TP1 D09 ~ D32		
TC1 D40 ~ D65, TP1 D40 ~ D65	LA9D50978	ELA9D50978
TC1D80 - D95, TP1D80	LA9D80978	ELA9D80978

Coil Suppressor

Description	Voltage Ratings	Catalog Number
Varistor (AC/DC) Clip-on mounting for 9-95A Contactor	24 ~ 48V AC/DC 110 ~ 240V AC/DC	TA9AMOV980E TA9AMOV980U
RC Circuit (AC) Clip-on mounting for 9A-95A Contactor	24 ~ 48V AC	TA9RC980E
	110 ~ 240V AC	TA9RC980U
	380 ~ 440V AC	TA9RC980N

Spare Coils (AC)

Use for contactor AC	Catalog Number
TC1-D09~D22	TX1-D2-XX
TC1-D25~D38	TX1-D4-XX
TC1-D40~D95	TX1-D6-XX

Replace XX with voltage code from table - 3

Table-3: XX-AC Coil Voltages

Volts AC	24	48	110	120	208	220	240	277	380	415	440	480	575	600
50 Hz	B5	E5	F5			M5	U5		Q5	N5	R5			
60 Hz	B6	E6	F6	G6	L6	M6	U6	W6	Q6		R6	T6	S6	X6
50/60 Hz	B7	E7	F7	G7		M7	U7		Q7	N7	R7			

Spare Coils (DC)

Use for contactor DC	Catalog Number
TP1-D09 ~ TP1-D22	TX4-D2-XX
TP1-D25 ~ TP1-D38	TX4-D4-XX
TP1-D40 ~ TP1-D65	TX4-D40-XX
TP1-D80	TX4-D80-XX
TP1-DC09 ~ TP1-DC12	TX4-DC2-XX "available coil voltage
TP1-DC25	TX4-DC4-XX "available coil voltage

Replace XX with voltage code from table - 4

Table-4: XX-DC Coil Voltages

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

Mechanical Latching Blocks

Description of Contactors	Catalog Number
For Contactors up to 32 Amps	LA6DK01-XX

Replace XX with voltage code from table - 5/6

For Mechanical Latching Block	Table-5: For AC Voltage									
	24	48	110-115	120-127	220-225	230-240	380	400-415	440	500	660
LA6-DK01	B	E	F	G	M	U	Q	N	R	S	Y

For Mechanical Latching Block	Table-6: For DC Voltage						
	24	48	72	110-115	120-127	220-225	230-240
LA6-DKO1	BD	ED	SD	FD	GD	MD	UD