

C&S T-LINE AC CONTACTORS - GENERAL CHARACTERISTICS

T-LINE CONTACTORS – 3 & 4 POLE WITH AC OPERATING COILS

TYPE		UNIT	TC1-D09 ~ TC1-D95
Rated insulation voltage (Ui) VDEO 110grC/IEC 60947-4	Conforming to IEC 158-1	V	750
		V	1000
Conforming to standards			NFC63-110, VDE0660, BS5424, JEM1038, IEC60947-1 & IEC60947-4
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 +60 (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	UNIT	TC1-D09	TC1-D12	TC1-D18	TC1-D25	TC1-D32	TC1-D40	TC1-D50	TC1-D65	TC1-D80	TC1-D95	
Number of poles Power + Auxiliary		4 or 3+1	4 or 3+1	3+1	4 or 3+1	3+1	4 or 3+2	3+2	4 or 3+2	4 or 3+2	4 or 3+2	
Rated current (Ie) In AC-3 $\theta < 55^\circ\text{C}$	A	9	12	18	25	32	40	50	65	80	95	
Rated operating Voltage Up to	V	690	690	690	690	690	690	690	690	690	690	
Frequency limits of the operational current	Hz	25-400	25-400	25-400	25-400	25-400	25-400	25-400	25-400	25-400	25-400	
Rated thermal current (Ith) $\theta \leq 40^\circ\text{C}$	A	25	25	32	45	50	60	80	80	125	125	
Rated making capacity I _{rms} conforming to IEC-94 7-4	A	250	250	300	450	550	800	900	1000	1100	1200	
Rated breaking capacity I _{rms} conforming to IEC-947-4	220-440V	A	250	250	300	450	550	800	900	1000	1100	1100
	500V	A	175	175	250	400	450	800	900	1000	1000	1100
	660-690V	A	85	85	120	180	180	400	500	630	640	640
Average impedance per pole At Ith and 50Hz	Milli Ω	2.5	2.5	2.5	2	2	1.5	1.5	1	0.8	0.8	
Power Dissipation per pole for the above operational currents	W	0.2	0.36	0.8	1.25	2	2.4	3.7	4.2	5.1	7.2	

CONTROL CIRCUIT CHARACTERISTICS AC COILS

TYPE	UNIT	TC1-D09-D18	TC1-D25-D32	TC1-D40-D65	TC1-D80-D-95				
Rated Control Circuit Voltage (Uc)	50 or 60Hz	V	12 to 660						
Control Voltage limits ($\theta < 55^\circ\text{C}$)	50 or 60Hz Coil	Operational	0.8 - 1.1 Uc						
		Dropout	0.3 - 0.6 Uc						
Average Consumption DC at 20°C and at Uc	50 or 60Hz Coil	Operational	0.85 - 1.1 Uc at 60Hz						
		AC 50Hz	Inrush	50Hz Coil	VA	60	90	200	200
	50/60Hz Coil			VA	70	100	245	245	
	Cos \emptyset				0.75	0.75	0.75	0.75	
	AC 50Hz	Sealed	50Hz Coil	VA	7	7.5	20	20	
				50/60Hz Coil	VA	8	8.5	26	26
				Cos \emptyset		0.3	0.3	0.3	0.3
	AC 60Hz	Inrush	60Hz Coil	VA	70	100	220	220	
				50/60Hz Coil	VA	70	100	245	245
				Cos \emptyset		0.75	0.75	0.75	0.75
		AC 60Hz	Sealed	60Hz Coil	VA	7.5	8.5	22	22
					50/60Hz Coil	VA	8	8.5	26
Cos \emptyset						0.3	0.3	0.3	0.3
Average Operating Time at Uc	Closing Time "C"	m.sec	12-22	15-24	20-26	20-35			
	Opening Time "O"	m.sec	04-12	05-19	8-12	6-20			
Mechanical Life Uc (mechanical durability) in Millions of operating cycles	50 or 60Hz Coil		20(16 for TC1D18)	16	16	10			
	50/60Hz coil or 50Hz		15	12	6	4			
Maximum operating	In operating cycles/hour		3600	3600	3600	3600			



C&S T-LINE AC CONTACTORS - RATINGS



3 POLE CONTACTOR WITH AC OPERATING COIL											
Maximum Current		Maximum HP						Auxiliary Contacts Built-in		CAT. NO.	LIST
Inductive	Resistive	Single Phase		Three Phase				NO	NC		
		120V	230V	200V	230V	480V	600V				
9	25	0.5	2	2	2	5	7.5	1	0	TC1-D0910-XX	\$113.50
								0	1	TC1-D0901-XX	\$113.50
12	25	1	2	3	3	7.5	10	1	0	TC1-D1210-XX	\$126.00
								0	1	TC1-D1201-XX	\$126.00
18	32	1	3	5	5	10	15	1	0	TC1-D1810-XX	\$158.00
								0	1	TC1-D1801-XX	\$158.00
25	40	2	3	5	7.5	15	20	1	0	TC1-D2510-XX	\$233.50
								0	1	TC1-D2501-XX	\$233.50
32	50	2	5	10	10	20	25	1	0	TC1-D3210-XX	\$298.00
								0	1	TC1-D3201-XX	\$298.00
40	60	3	5	10	10	30	30	1	1	TC1-D4011-XX	\$414.00
50	80	3	7.5	15	15	40	40	1	1	TC1-D5011-XX	\$574.00
65	80	5	10	20	20	50	50	1	1	TC1-D6511-XX	\$735.00
80	125	7.5	15	25	25	60	60	1	1	TC1-D8011-XX	\$924.00
95	125	7.5	15	25	25	60	60	1	1	TC1-D9510-XX	\$962.00



4 POLE CONTACTOR WITH AC OPERATING COIL											
Maximum Current		Maximum HP						Main Pole Configuration		CAT. NO.	LIST
Inductive	Resistive	Single Phase		Single Phase				NO	NC		
		120V	230V	200V	230V	480V	600V				
9	25	0.5	1	2	2	5	7.5	4	0	TC1-D09004-XX	\$172.50
								2	2	TC1-D09008-XX	\$172.50
12	25	1	2	3	3	7.5	10	4	0	TC1-D12004-XX	\$184.00
								2	2	TC1-D12008-XX	\$184.00
25	40	2	3	5	7.5	15	15	4	0	TC1-D25004-XX	\$306.50
								2	2	TC1-D25008-XX	\$306.50
40	60	3	5	10	10	30	30	4	0	TC1-D40004-XX	\$653.00
								2	2	TC1-D40008-XX	\$653.00
65	80	5	10	15	20	50	50	4	0	TC1-D65004-XX	\$1,033.00
								2	2	TC1-D65008-XX	\$1,033.00
80	125	7.5	15	20	25	60	60	4	0	TC1-D80004-XX	\$1,360.00
								2	2	TC1-D80008-XX	\$1,360.00



3 POLE MECHANICALLY INTERLOCKED CONTACTOR WITH AC COIL (PRE-WIRED)											
Maximum Current		Maximum HP						Aux. Contacts Built-in (per contactor)		CAT. NO.	LIST
Inductive	Resistive	Single Phase		Three Phase				NO	NC		
		115V	230V	200V	230V	480V	600V				
9	25	0.5	1	2	2	5	7.5	0	1	TC2-D0901-XX	\$380.00
								1	0	TC2-D0911-XX*	\$380.00
12	25	1	2	3	3	7.5	10	0	1	TC2-D1201-XX	\$388.00
								1	0	TC2-D1211-XX*	\$388.00
18	32	1	3	5.0	5.0	10	15	0	1	TC2-D1801-XX	\$453.00
								1	1	TC2-D1811-XX*	\$453.00
25	45	2	3	5.0	7.5	15	20	0	1	TC2-D2501-XX	\$610.00
								1	0	TC2-D2511-XX*	\$610.00
30	50	2	5	7.5	10	20	25	0	1	TC2-D3201-XX	\$830.00
								1	0	TC2-D3211-XX*	\$830.00
40	60	3	5	10	10	30	30	1	1	TC2-D4011-XX	\$1,095.00
50	70	3	7.5	10	15	40	40	1	1	TC2-D5011-XX	\$1,313.00
65	80	5	10	15	20	50	50	1	1	TC2-D6511-XX	\$1,615.00
80	125	7.5	15	20	25	60	60	1	1	TC2-D8011-XX	\$2,138.00
95	125	7.5	15	20	25	60	60	1	1	TC2-D9511-XX	\$2,312.00

* 2 Auxiliary contact blocks # TA1DN11 are supplied for electrical interlocking purposes.
 XX Replace 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			



NOTE: Pricing and specifications subject to change without notice.

3 POLE CONTACTOR WITH DC OPERATING COIL

Maximum Current		Maximum HP 3 Phase				Auxiliary Contacts Built-in		CAT. NO.	LIST
Inductive	Resistive	200V	230V	480V	600V	NO	NC		
9	25	2	2	5	7.5	1	0	TP1-D0910-XX	\$240.00
						0	1	TP1-D0901-XX	\$240.00
12	25	3	3	7.5	10	1	0	TP1-D1210-XX	\$252.00
						0	1	TP1-D1201-XX	\$252.00
18	32	5	5	10	15	1	0	TP1-D1810-XX	\$328.00
						0	1	TP1-D1801-XX	\$328.00
25	45	5	7.5	15	20	1	0	TP1-D2510-XX	\$384.00
						0	1	TP1-D2501-XX	\$384.00
32	50	7.5	10	20	25	1	0	TP1-D3210-XX	\$573.00
						0	1	TP1-D3201-XX	\$573.00
40	60	10	10	30	30	1	1	TP1-D4011-XX	\$926.00
50	70	10	15	40	40	1	1	TP1-D5011-XX	\$926.00
65	80	15	20	50	50	1	1	TP1-D6511-XX	\$985.00
80	125	20	25	60	60	1	1	TP1-D8011-XX	\$985.00



4 POLE CONTACTOR WITH DC OPERATING COIL

Maximum Current		Maximum HP 3 Phase				Main Pole Configuration		CAT. NO.	LIST
Inductive	Resistive	200V	230V	480V	600V	NO	NC		
9	25	2	2	5	7.5	4	0	TP1-D09004-XX	\$249.50
						2	2	TP1-D09008-XX	\$249.50
12	25	3	3	7.5	10	4	0	TP1-D12004-XX	\$367.00
						2	2	TP1-D12008-XX	\$367.00
25	45	5	7.5	15	15	4	0	TP1-D25004-XX	\$638.00
						2	2	TP1-D25008-XX	\$638.00
40	60	10	10	30	30	4	0	TP1-D40004-XX	\$1,234.00
						2	2	TP1-D40008-XX	\$1,234.00
65	80	15	20	50	50	4	0	TP1-D65004-XX	\$1,586.00
						2	2	TP1-D65008-XX	\$1,586.00
80	125	15	20	50	50	4	0	TP1-D80004-XX **	\$2,120.00
						2	2	TP1-D80008-XX **	\$2,120.00



3 POLE MECHANICALLY INTERLOCKED CONTACTOR WITH DC COIL (PRE-WIRED)

Maximum Current		Maximum HP						Aux. Contacts Built-in per contactor		CAT. NO.	LIST
Inductive	Resistive	Single Phase		Three Phase				NO	NC		
		115V	230V	200V	230V	480V	600V				
9	25	0.5	1	2	2	5	7.5	0	1	TP2-D0901-XX	\$605.00
								1	0	TP2-D0911-XX*	\$605.00
12	25	1	2	3	3	7.5	10	0	1	TP2-D1201-XX	\$814.00
								1	0	TP2-D1211-XX*	\$814.00
18	32	1	3	5	5	10	15	0	1	TP2-D1801-XX	\$836.00
								1	1	TP2-D1811-XX*	\$836.00
25	45	2	3	5.0	7.5	15	20	0	1	TP2-D2501-XX	\$1,408.00
								1	0	TP2-D2511-XX*	\$1,408.00
32	50	2	5	7.5	10	20	25	0	1	TP2-D3201-XX	\$1,426.00
								1	0	TP2-D3211-XX*	\$1,426.00

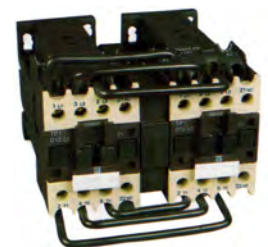
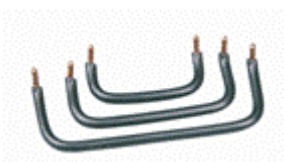


TABLE 2 - XX-DC COIL VOLTAGES

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

* Auxiliary contact blocks TA1DN11 (2) are supplied factory fitted for electrical interlocking purposes.

** Under UL Approval



TA9-D*



LA9-D*



TX1-D*



LA6-DK.01-XX

POWER CONNECTORS WIRE SETS FOR T-RANGE REVERSING CONTACTORS

WITH TWO IDENTICAL CONTACTORS	CAT. NO.	LIST
TC1-D09, TC1-D12, TP1-D09, TP1-D12	TA9-D1269	\$50.30
TC1-D18, TP1-D18	TA9-D1869	\$57.40
TC1-D25, TP1-D25	TA9-D2569	\$61.90
TC1-D32, TP1-D32	TA9-D3269	\$77.90
TP1-D40, TP1-D65, TC1-D40, TC1-D50, TC1-D65	TA9-D6569	\$151.10
TC1-D80, TP1-D80, TC1-D95	TA9-D8069	\$366.70

MECHANICAL INTERLOCKS HORIZONTALLY MOUNTED T - RANGE

USE FOR CONTACTOR	CAT. NO.	LIST
TCA2-DN, TCA3-DN	LA9-D09978	\$67.00
TC1-D09 ~ D32, TP1-D09 ~ D32		
TC1-D40 - D65, TP1-D40 - D65	LA9-D50978	\$110.30
TC1-D80 ~ D95, TP1-D80	LA9-D80978	\$110.30

SPARE COILS (AC) T - RANGE

USE FOR CONTACTOR	CAT. NO.	LIST
TC1-D09~D18	TX1-D2-XX	\$68.00
TC1-D25~D32	TX1-D4-XX	\$85.00
TC1-D40~D95	TX1-D6-XX	\$160.30

Replace XX with voltage code from Table 3

TABLE 3: XX - AC COIL VOLTAGES

Volts AC	24	48	110	120	208	120	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) T - RANGE

USE FOR DC CONTACTOR	CAT. NO.	LIST
TP1-D09 ~ TP1-D18	TX4-D2-XX	\$146.20
TP1-D25 ~ TP1-D32	TX4-D4-XX	\$175.70
TP1-D40 ~ TP1-D65	LX4-D40-XX	\$215.00
TP1-D80	LX4-D80-XX	\$220.00

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	600
Code	JD	BD	ED	SD	FD	GD	MD	UD	RD	CX

MECHANICAL LATCHING BLOCKS T - RANGE

DESCRIPTION OF CONTACTORS	CAT. NO.	LIST
For Contactors up to 32 Amps	LA6DK.01-XX	\$197.00

Replace XX with voltage code from Table 5 or 6

TABLE 5: FOR AC VOLTAGE

For Mechanical Latching Block	24	48	110	120	220	240	380	415	440
LA6-DK.01	B	E	F	G	M	U	Q	N	R

TABLE 6: FOR DC VOLTAGE

For Mechanical Latching Block	24	48	72	110	220	250
LA6-DK.01	BD	ED	SD	FD	MD	UD