Contactor Ratings Chart

Authorised Distributor

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			100-K05	100-K09 [100-K12]	100-E09	100-E12	100-E16	100-E26	100-E30	100-E38	100-E40	100-E52	100-E65	100-E80	100-E96	100S-E116	100S-E146	100S-E190	100S-E205	100S-E265	100S-E305	100S-E370	100S-E400	100S-E460	100S-E580	100S-E750	100-E860	100-E1060
			Current ratings																			**Current ratings**							
40°C	AC 1 - 690V	Amps	20	20 [20]	25	28	30	45	50	50	70	100	105	125	130	160	225	275	350	400	500	600	600	700	800	1050	1350	1650
60°C	AC 1 - 690V		16	16 [16]	25	28	30	40	42	42	60	80	90	100	105	145	200	250	300	350	400	500	500	600	700	875	1150	1450
60°C	AC 2, AC 3 - 400V/415V		4.9	8.5 [11.5]	9	12	18	26	32	38	40	53	65	80	96	116	146	190	205	265	305	370	400	460	580	750	860	1060
60°C	AC 4 - 400V/415V(1)		4.9	8.5 [11.5]	-	-	-	-	-	-	-	-	-	-	-	84	103	128	156	195	230	280	307	377	-	-	-	-
60°C	AC 2, AC 3 - 690V		2.8	4.9 [6.7]	7	9	10.5	17	21	24	25	35	39	49	57	66	93	135	165	250	290	315	350	400	500	650	800	970
60°C	AC 2, AC 3 - 1000V		-	-	-	-	-	-	-	-	-	-	-	25	30	46	60	85	100	113	131	141	155	200	250	300	375	400
			Motor starter ratings at operational voltage 400/415 V. All kW ratings approximate																			**Motor starter ratings at operational voltage 400/415 V. All kW ratings approximate**							
60°C	AC 2, AC 3 - 415V	kW	2.2	4 [5.5]	4	5.5	9	11	15	18.5	22	30	37	45	55	55	75	90	110	132	160	200	220	250	355	425	500	630
60°C	AC 4 - 415V(1)		-	-	-	-	-	-	-	-	-	-	-	-	-	45	55	63	90	110	132	160	160	220	-	-	-	-
60°C	AC 2, AC 3 - 690V		2.2	4 [5.5]	5.5	7.5	9	15	18.5	22	22	30	37	45	55	63	90	132	160	200	250	315	315	355	500	600	800	1000
60°C	AC 2, AC 3 - 1000V		-	-	-	-	-	-	-	-	-	-	-	35	40	55	75	110	132	160	185	200	220	280	355	400	555	600
Star-delta	50Hz at 415V		4	7.5 [7.5]	7.5	7.5	15	22	30	37	37	45	55	75	90	110	132	160	200	250	315	355	400	400	560	800	900	1100
			Mechanical, electrical and coil data																			**Mechanical, electrical and coil data**							
Mechanical life		Millions/Ops	15	15	10	10	10	10	10	10	4	4	4	4	4	5	5	5	5	5	5	5	3	3	3	3	0.5	0.5
Electrical life at AC 3, 415 V			0.7	0.7	1.5	1.7	1.6	1.2	1.2	0.6	1.5	1.4	1.4	1	1	0.8	0.75	0.75	0.75	0.75	0.75	0.6	0.6	0.5	0.5	0.5	0.05	0.05
Max switching frequency, AC-1		Ops/Hr	-	-	600	600	600	600	600	600	600	600	600	-	-	300	300	300	300	300	300	300	300	300	300	300	60	60
Standard coil operating times	Closing delay	ms	15-40	15-40	40-95	40-95	40-95	40-95	40-95	40-95	42-100	42-100	42-100	42-100	42-100	20-55	20-55	25-60	25-60	30-60	30-60	30-60	50-120	50-120	50-120	50-120	50-80	50-80
	Opening delay		15-33	15-33	11-95	11-95	11-95	11-95	11-95	11-95	17-100	17-100	17-100	17-100	17-100	40-70	40-70	45-80	45-80	45-80	45-80	45-80	33-70	33-70	33-70	33-70	35-55	35-55
Standard coil operating times with PLC	Closing delay	ms	-	-	-	-	-	-	-	-	-	-	-	-	-	20-31	20-31	25-45	25-45	25-45	25-45	25-45	40-60	40-60	40-90	40-90	40-65	40-65
	Opening delay		-	-	-	-	-	-	-	-	-	-	-	-	-	24-34	24-34	25-45	25-45	25-45	25-45	25-45	10-30	10-30	10-30	10-30	10-30	10-30
AC Standard coil consumption	Pick-up	VA	35(2)	35(2)	50(2)	50(2)	50(2)	50(2)	50(2)	50(2)	25(2)	25(2)	25(2)	40(2)	40(2)	130(3)	130(3)	220(3)	220(3)	385(3)	385(3)	385(3)	955(3)	955(3)	880(3)	880(3)	2450(3)	2450(3)
(Coil Range 100-250V AC)	Hold-in		5(2)	5(2)	2.2(2)	2.2(2)	2.2(2)	2.2(2)	2.2(2)	2.2(2)	4(2)	4(2)	4(2)	4(2)	4(2)	6(3)	6(3)	7(3)	7(3)	17.5(3)	17.5(3)	17.5(3)	12(3)	12(3)	12(3)	12(3)	48(3)	48(3)
DC Standard coil consumption	Pick-up	W	3(2)	3(2)	50(2)	50(2)	50(2)	50(2)	50(2)	50(2)	25(2)	25(2)	25(2)	40(2)	40(2)	135(3)	135(3)	190(3)	190(3)	410(3)	410(3)	410(3)	895(3)	895(3)	880(3)	880(3)	2290(3)	2290(3)
(Coil Range 100-250V DC)	Hold-in		2.6(2)	2.6(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	3(3)	3(3)	2.5(3)	2.5(3)	4.5(3)	4.5(3)	4.5(3)	5(3)	5(3)	5(3)	5(3)	20.5(3)	20.5(3)
Energy efficient coil operating times	Closing delay	ms	-	-	40-95	40-95	40-95	40-95	40-95	40-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Opening delay		-	-	11-95	11-95	11-95	11-95	11-95	11-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AC Energy efficient coil consumption	Pick-up	VA	-	-	16	16	16	16	16	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(Coil Range 24-60V AC)	Hold-in		-	-	1.7	1.7	1.7	1.7	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC Energy efficient Coil consumption	Pick-up	W	-	-	12-16	12-16	12-16	12-16	12-16	12-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(Coil Range 24-60V DC)	Hold-in		-	-	1.7	1.7	1.7	1.7	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High energy efficient Coil operating times	Closing delay	ms	-	-	27-53	27-53	27-53	27-53	27-53	27-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Opening delay		-	-	17-29	17-29	17-29	17-29	17-29	17-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC High energy efficient Coil consumption	Pick-up	W	-	-	6	6	6	6	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(Coil Range 24-60V DC)	Hold-in		-	-	1.7	1.7	1.7	1.7	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Internal auxiliary contacts available		Max	1	1	1	1	1	0	0	0	0	0	0	0	0	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	2	2
Add-on auxiliary contacts available			4	4	6	6	6	6	6	6	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	6	6
Auxiliary contact (Internal)	AC 12 40°C	Amps	10	10	16	16	16	0	0	0	0	0	0	0	0	16	16	16	16	16	16	16	16	16	16	16	16	16
Auxiliary contact (Mounted)(5)	AC 12 40°C		10	10	16	16	16	16	16	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0	0	0	16	16
Auxiliary contact (Internal)	AC 15, 415 V		1.2	1.2	3	3	3	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3
Auxiliary contact (Mounted)(5)	AC 15, 415 V		1.8	1.8	3	3	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	3	3
			Electronic overload section																			**Electronic overload section**							
Electronic overload 193-1EE/EF and adjustment range, direct mounting application(7). *Overload selection based on AC-3 415V Current ratings		Amps			193-1EECFM 1.0…5.0A 193-1EEDFM 3.2…16.0A 193-1EEEFM 5.4…27.0A			193-1EEEGM 5.4…27.0A 193-1EEFGM 11…55.0A			193-1EEQHM 13.2…66A			193-1EEGJM 20…100A		E200/E300	E200/E300	E200/E300	E200/E300	CTKIT400A or E300 + External CT	CTKIT400A or E300 + External CT	CTKIT400A or E300 + External CT	CTKIT600A or E300 + External CT	CTKIT600A or E300 + External CT	CTKIT600A or E300 + External CT	CTKIT800A or E300 + External CT	Contact NHP or E300 + External CT	Contact NHP
			Thermal overload																										
Thermal Overload(7)		Amps	193-KA/KB/KC 0/1…12.5A																										

Utilisation Categories

Main Poles

AC 1: Non-inductive or slightly inductive loads: resistance furnaces

AC 2: Slip-ring motors: Starting, plugging

AC 3: Squirrel-cage motors: Starting, switching off motors during running

AC 4: Squirrel-cage motors: Starting, plugging, inching

Auxiliary Contacts

AC 12: Control of resistive loads and solid state loads with isolation by optocouplers

AC 15: Control of electromagnetic loads: contactors coils

(1) Different ratings at 200,000+ operations. Contact NHP for more info.

(2) Ratings are consistent for coil voltage 24V-500V.

(3) Ratings change with different coil voltage ranges. Contact NHP for info.

(4) One of the N.C. contact meets IEC 60947-4-1 Annex F requirements for mirror contact performance.

(5) Ratings relevant for 100-EF/ES*/ESB*

(6) 193-1EE* is a basic Electronic overload. For advanced version replace the EE with EF in the part code. Contact NHP for more info.

(7) Maximum current setting to be no more than the rated current of the contactor.

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