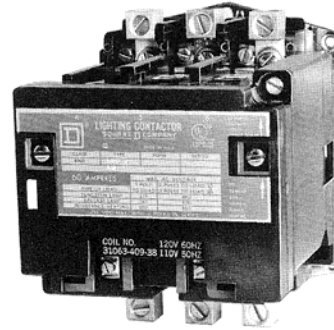
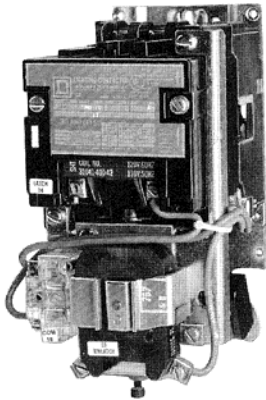


CLASS 8903 TYPE S

Lighting Contactors



MECHANICALLY HELD

Ampere Rating	No. of Poles	NEMA Type 1	Flush Mount	NEMA Type 4X	NEMA Type 4	NEMA Type 12	Open Type
		Type	Type	Type	Type	Type	Type
30	2	SMG10	SMF10	SMW31	SMW10	SMA10	SMO10
	3	SMG11	SMF11	SMW32	SMW11	SMA11	SMO11
	4	SMG12	SMF12	SMW33	SMW12	SMA12	SMO12
	5	SMG13	SMF13	SMW34	SMW13	SMA13	SMO13
60	2	SPG10	SPF10	SPW31	SPW10	SPA10	SPO10
	3	SPG11	SPF11	SPW32	SPW11	SPA11	SPO11
	4	SPG12	SPF12	SPW33	SPW12	SPA12	SPO12
	5	SPG13	SPF13	SPW34	SPW13	SPA13	SPO13
100	2	SQG10	SQF10	SQW31	SQW10	SQA10	SQO10
	3	SQG11	SQF11	SQW32	SQW11	SQA11	SQO11
	4	SQG12	...	...	SQW12	SQA12	SQO12
	5	SQG13	...	...	SQW13	SQA13	SQO13
200	2	SVG10	...	...	SVW10	SVA10	SVO10
	3	SVG11	...	...	SVW11	SVA11	SVO11
	4	SVG12	...	...	SVW12	SVA12	SVO12
	5	...	...	...	...	...	...
300	2	SXG13	...	...	SXW13	SXA13	SXO13
	3	SXG14	...	...	SXW14	SXA14	SXO14
400	2	SYG16	...	...	SYW16	SYA16	SYO16
	3	SYG17	...	...	SYW17	SYA17	SYO17
600	2	SZG18	...	...	SZW18	SZA18	SZO18
	3	SZG19	...	...	SZW19	SZA19	SZO19
800	2	SJG10	...	...	SJW10	SJA10	SJO10
	3	SJG11	...	...	SJW11	SJA11	SJO11

ELECTRICALLY HELD

NEMA Type 1	Flush Mount	NEMA Type 3R	NEMA Type 4X	NEMA Type 4	NEMA Type 12	Open Type
Type	Type	Type	Type	Type	Type	Type
SMG1	SMF1	SMH1	SMW21	SMW1	SMA1	SMO1
SMG2	SMF2	SMH2	SMW22	SMW2	SMA2	SMO2
SMG3	SMF3	SMH3	SMW23	SMW3	SMA3	SMO3
SMG4	SMF4	SMH4	SMW24	SMW4	SMA4	SMO4
SPG1	SPF1	SPH1	SPW21	SPW1	SPA1	SPO1
SPG2	SPF2	SPH2	SPW22	SPW2	SPA2	SPO2
SPG3	SPF3	SPH3	SPW23	SPW3	SPA3	SPO3
SPG4	SPF4	SPH4	SPW24	SPW4	SPA4	SPO4
SQG1	SQF1	SQH1	SQW21	SQW1	SQA1	SQO1
SQG2	SQF2	SQH2	SQW22	SQW2	SQA2	SQO2
SQG3	...	SQH3	...	SQW3	SQA3	SQO3
SQG4	...	SQH4	...	SQW4	SQA4	SQO4
SVG1	...	SVH1	...	SVW1	SVA1	SVO1
SVG2	...	SVH2	...	SVW2	SVA2	SVO2
SVG3	...	...	...	SVW3	SVA3	SVO3
SVG4	...	...	...	SVW4	SVA4	SVO4
SXG1	...	...	...	SXW1	SXA1	SXO1
SXG2	...	...	...	SXW2	SXA2	SXO2
SYG1	...	...	...	SYW1	SYA1	SYO1
SYG2	...	...	...	SYW2	SYA2	SYO2
SZG1	...	...	...	SZW1	SZA1	SZO1
SZG2	...	...	...	SZW2	SZA2	SZO2
SJG1	...	...	...	SJW1	SJA1	SJO1
SJG2	...	...	...	SJW2	SJA2	SJO2

- Proven Type S Design
- No Arcing Contacts Required
- Enclosed Silver Alloy Double Break Contacts
- Lugs Suitable for Use with Copper or Aluminum Wire (60-800 Amperes Only)
- Combination Lighting Contactors Available
- UL Listed Withstand Rating

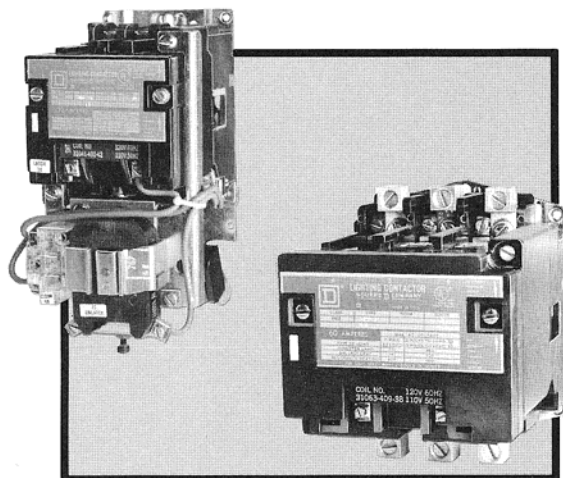


SQUARE D

CLASS 8903 TYPE S

Lighting Contactors

PRODUCT DATA



MAXIMUM VOLTAGE RATINGS

Type of Load	Type SM 30 Amperes		Types SP, SQ, SV & SX 60-300 Amperes		Types SY, SZ & SJ 400-800 Amperes	
	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1ø and 3 Poles to Load on 3ø	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1ø and 3 Poles to Load on 3ø	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1ø and 3 Poles to Load on 3ø
Tungsten	277AC	480AC	277AC	480AC	...	...
Ballast	347AC	600AC	347AC	600AC	347AC	600AC
Resistance	600AC	600AC	600AC	600AC	600AC	600AC
Control Circuit (Coil) Voltage	6-600AC		6-600AC Type SP 24-600AC Types SQ & SV 120-600AC Type SX		120-600AC	

MIXED LOAD RATINGS

Motor Voltage and Phase ▲	Con- tactor Ampere Rating	Percent Lighting (and/or Resistive) Load							
		0%		25%		50%		75%	
		Max. Non- Motor Amp.	Max. Motor HP	Max. Non- Motor Amp.	Max. Motor HP	Max. Non- Motor Amp.	Max. Motor HP	Max. Non- Motor Amp.	Max. Motor HP
200 V. 3 Phase	30	0	7 1/2	7.5	5	15.	3	22.5	1 1/2
	60	0	10	15.	10	30.	7 1/2	45.	3
	100	0	25	25.	20	50.	15	75.	5
	200	0	40	50.	40	100.	30	150.	15
	300	0	75	75.	75	150.	50	225.	20
	400	0	125	100.	100	200.	60	300.	30
	600	0	150	150.	150	300.	100	450.	50
	800	0	250	200.	200	400.	125	600.	60
230 V. 3 Phase	30	0	7 1/2	7.5	7 1/2	15.	3	22.5	2
	60	0	15	15.	10	30.	10	45.	3
	100	0	30	25.	25	50.	15	75.	7 1/2
	200	0	50	50.	50	100.	30	150.	15
	300	0	100	75.	75	150.	50	225.	25
	400	0	150	100.	100	200.	75	300.	30
	600	0	200	150.	150	300.	100	450.	50
	800	0	300	200.	200	400.	150	600.	75
380 V. 3 Phase	30	0	10	7.5	7 1/2	15.	7 1/2	22.5	3
	60	0	25	15.	20	30.	15	45.	7 1/2
	100	0	50	25.	40	50.	30	75.	10
	200	0	75	50.	75	100.	60	150.	30
	300	0	150	75.	150	150.	100	225.	40
	400	0	250	100.	200	200.	125	300.	60
	600	0	300	150.	250	300.	150	450.	75
	800	0	450	200.	350	400.	250	600.	125
460- 575 V. 3 Phase	30	0	10	7.5	7 1/2	15.	7 1/2	22.5	3
	60	0	25	15.	20	30.	20	45.	10
	100	0	50	25.	40	50.	30	75.	15
	200	0	100	50.	100	100.	75	150.	30
	300	0	200	75.	150	150.	100	225.	50
	400	0	300	100.	200	200.	150	300.	75
	600	0	400	150.	350	300.	200	450.	100
	800	0	600	200.	500	400.	300	600.	150
115 V. Single Phase	30	0	2	7.5	1 1/2	15.	3/4	22.5	1/2
	60	0	3	15.	3	30.	2	45.	3/4
	100	0	7 1/2	25.	5	50.	3	75.	2
230 V. Single Phase	30	0	3	7.5	2	15.	2	22.5	3/4
	60	0	7 1/2	15.	5	30.	5	45.	2
	100	0	15	25.	15	50.	10	75.	3

▲ Select lighting contactor on basis of rated motor voltage, whether non-motor load is connected line-to-line or line-to-neutral.

DC VOLTAGE RATINGS FOR TUNGSTEN LAMP OR RESISTANCE LOADS ONLY

Type of Load	Type SM 30 Amperes	Types SP, SQ, SV & SX 60-300 Amperes	Types SY, SZ, & SJ 400-800 Amperes
DC with 2 Poles in Series	125 DC	250 DC	...
DC with 3 Poles in Series	250 DC	250 DC	...

KILOWATT RATINGS*

Voltage 3 Phase	Lighting Contactor Size							
	30 Amp.	60 Amp.	100 Amp.	200 Amp.	300 Amp.	400 Amp.	600 Amp.	800 Amp.
200 V.	10.3	20.7	34.6	69.2	103.9	138.5	207.8	277.1
230 V.	11.9	23.9	39.8	79.6	119.5	159.3	239.0	318.7
380 V.	19.7	39.4	65.8	131.6	197.4	263.2	394.9	526.5
460 V.	23.9	47.8	79.6	159.3	239.0	318.6	478.0	637.4
575 V.	30.0	60.0	99.0	199.0	299.0	398.4	597.6	796.7

* Resistance heating only (three phase system)

MOTOR LOAD RATINGS †

Lighting Contactor Size	Has Same HP Ratings As Equivalent NEMA Size Contactor
30 Ampere	NEMA Size 1
60 Ampere	NEMA Size 2
100 Ampere	NEMA Size 3
200 Ampere	NEMA Size 4
300 Ampere	NEMA Size 5
400 Ampere	...
600 Ampere	NEMA Size 6
800 Ampere	NEMA Size 7

† 8903 Lighting Contactors do not provide motor overload protection.

DISTANT CONTROL OF LIGHTING CONTACTORS

Electrically Held						Mechanically Held					
Ampere Rating	Class 8903 Type	Control Circuit (Coil) Voltage	Maximum Control Distance in Feet*			Ampere Rating	Class 8903 Type	Control Circuit (Coil) Voltage	Maximum Control Distance in Feet		
			#16 Copper Wire	#14 Copper Wire	#12 Copper Wire				#16 Copper Wire	#14 Copper Wire	#12 Copper Wire
30	SM	120	535	845	1300	30	SM	120	535	845	1300
		208	1600	1500	1300			208	1600	2500	3900
		240	1300	1100	995			240	2100	3300	5200
		277	995	895	745			277	2800	4500	7000
		480	330	295	245			480	8600	13500	21000
60	SP (2 & 3 Pole)	120	515	810	1200	60	SP (2 & 3 Pole)	120	515	810	1200
		208	1500	2300	1900			208	1500	2400	3700
		240	1900	1700	1400			240	2000	3200	5000
		277	1400	1300	1100			277	2700	4300	6600
		480	490	440	365			480	8300	12900	20000
	SP (4 & 5 Pole)	120	385	595	920		SP (4 & 5 Pole)	120	385	595	920
		208	1150	1760	1465			208	1150	1790	2760
		240	1470	1320	1100			240	1530	2385	3675
		277	1100	990	830			277	2040	3180	4900
		480	365	330	275			480	6130	9540	14705
100	SQ	120	230	360	555	100	SQ	120	230	360	555
		208	695	1000	1600			208	695	1000	1600
		240	925	1400	1600			240	925	1400	2200
		277	1200	1400	1200			277	1200	1900	2900
		480	550	495	410			480	3700	5700	8900
200	SV	120	145	230	355	200	SV	120	145	230	355
		208	445	695	1000			208	445	695	1000
		240	595	925	1400			240	595	925	1400
		277	795	1200	1900			277	795	1200	1900
		480	990	890	740			480	2300	3700	5700
300	SX	120	85	130	200	300	SX	120	85	130	200
		208	260	400	605			208	260	400	605
		240	345	530	810			240	345	530	810
		277	460	710	1000			277	460	710	1000
		480	1300	2100	2200			480	1300	2100	3200
400	SY	120	65	105	165	400	SY	120	65	105	165
		208	200	315	495			208	200	315	495
		240	265	420	660			240	265	420	660
600	SZ	277	355	560	880	600	SZ	277	355	560	880
		480	950	855	715			480	1000	1600	2600

* If 3 wire control is used, maximum distances may be shortened. Refer to Product Data Bulletin M-379 or consult local Square D field office.

WIRING TERMINALS

Ampere Rating	Type	Power Terminals On Lighting Contactor†		Control Terminals On All Lighting Contactors	
		Type of Lug	Wire Size Min.-Max.	Type of Lug	Wire Size Min.-Max.
30	SM	Clamp	#14-#8 Copper	Clamp	#16-#12 Copper
60	SP	Screw Lug	#14-#2 Copper or Aluminum	Clamp	#16-#12 Copper
100	SQ	Screw Lug	#14-#00 Copper or Aluminum	Clamp	#16-#12 Copper
200	SV	Screw Lug	#6-350 KCMIL Copper or Aluminum	Clamp	#16-#12 Copper
300	SX	Screw Lug	One #4-600 KCMIL or Two #0-250 KCMIL Copper or Aluminum	Clamp	#16-#12 Copper
400	SY	Screw Lug	One or Two #6-350 KCMIL Copper or Aluminum	Clamp	Elec. Held #16-#14 Copper Mech. Held #16-#12 Copper
600	SZ	Screw Lug	One or Two #2-600 KCMIL Copper or Aluminum	Clamp	Elec. Held #16-#14 Copper Mech. Held #16-#12 Copper
800	SJ	Screw Lug	One, Two or Three #3/0-750 KCMIL Copper or Aluminum	Clamp	Elec. Held #16-#14 Copper Mech. Held #16-#12 Copper

† Line and load electrically and mechanically held. Load side only on combination.

WITHSTAND RATINGS

CONTACTORS PROTECTED BY FUSIBLE DISCONNECT SWITCHES

Contactor Continuous Rating Amps	Maximum Class RK5 Fuse Rating	Maximum Voltage	Withstand Rating
30	30	600	100,000
60	60	600	100,000
100	100	600	100,000
200	200	480	100,000
300	400	600	100,000
400	400	600	100,000

CONTACTORS PROTECTED BY CIRCUIT BREAKERS

Contactor Continuous Rating Amps	Maximum Circuit Breaker Rating Amps	Recommended Square D Circuit Breaker Types	Maximum Voltage	Withstand Rating
30	40	FA-FAL, FH-FHL	480	10,000
30	40	IF-IFL	480	100,000
60	80	FH-FHL	480	18,000
60	90	IF-IFL	480	100,000
100	125	KA-KAL, KH-KHL	600	10,000
100	125	IK-IKL	480	100,000
200	250	LA-LAL, LH-LHL	600	14,000
200	225	IK-IKL	480	100,000
300	400	LA-LAL, LH-LHL	600	22,000
300	350	IK-IKL	480	100,000
400	800	MA-MAL, MH-MHL	600	22,000
600	800	MA-MAL, MH-MHL	600	22,000

MAXIMUM NUMBER OF AUXILIARY CONTACTS ALLOWED ON TYPE S LIGHTING CONTACTORS

Type	Amp Size	Poles	Electrically Held	Mechanically Held
SM	30	2-3	6	5
		4-5	3	2
SP	60	2-3	6	5
		4-5	3	2
SQ	100	2-5	5	4
SV	200	2-4	5	4
SX	300	2-3	5	4
SY	400	2-3	4	5
SZ	600	2-3	4	5
SJ	800	2-3	4	5

COMMON MODIFICATIONS FOR TYPE S LIGHTING CONTACTORS

Description	Form Letter	Enclosure	Elec. Held	Mech. Held
"On-off" (momentary contact) push button	A3	Any		*
"On-off" push button (includes holding circuit interlock)	A12	Any	*	
"Hand-off-auto" selector switch	C	Any	*	*
"On-off" selector switch	C6	Any	*	*
Control circuit fuse (1 fuse)	F	Any	*	*
Control circuit transformers, standard capacity — 50 or 60 hertz				
Two fuses in primary	F4T	1, 3R, 4, 4X, 12	*	*
Two fuses in primary and one fuse in secondary	FF4T	1, 4, 4X, 12	*	*
Two fuses in primary and two fuses in secondary	F4F10T	1, 4, 4X, 12	*	*
Additional capacity transformers				
100 VA additional capacity plus Two fuses in primary	F4T11	1, 4, 4X, 12	*	*
200 VA additional capacity plus Two fuses in primary	F4T12	1, 4, 4X, 12	*	*
300 VA additional capacity plus Two fuses in primary	F4T13	1, 4, 4X, 12	*	*
400 VA additional capacity plus Two fuses in primary	F4T14	1, 4, 4X, 12	*	*
500 VA additional capacity plus Two fuses in primary	F4T15	1, 4, 4X, 12	*	*
Sound proof enclosure and shock mounted panel	G4	Any		*
Addition of photoelectric receptacle	G10	3R, 4, 12	*	
Addition of photoelectric receptacle with photoelectric cell installed	G101	3R, 4, 12	*	

Description	Form Letter	Enclosure	Elec. Held	Mech. Held
Addition of photoelectric receptacle (120-277V) and relay (R6)	G10R6	4, 12		*
With photocell installed (120-277V only)	G101R6	4, 12		*
Bracketing for internally mounted pilot device	G53	All	*	*
Addition of 24 hour time clock (120-277V only)	K14	1, 4, 12	*	*
Addition of 24 hour time clock with day omission (120-277V only)	K141	1, 4, 12	*	*
Addition of 7 day time clock (120-277V only)	K142	1, 4, 12	*	*
Addition of solid neutral terminal block	N	Any	*	*
Pilot lights				
Red pilot light	P1	Any	*	*
Two or more lights	P —	Any	*	*
Red push-to-test pilot light	P21	Any	*	*
Addition of 2 pole relay (1NO x 1NC pole)	R6	Any	*	*
Auxiliary contacts (specify number of N.O. and N.C.)	X	Any	*	*
Coil transient suppressor (per coil)	Y145	Any	*	*
Lightning arrestor	Y1532	1, 4, 12	*	*
Substitute copper only lugs for standard	Y157	Any	*	*
Substitute Anderson VC crimp style lugs for standard — per lug adder — specify lug	Y1574	Any	*	*
Multiple contactors in common enclosures [(xx = number of contactors (up to 16))]	Y10XX	1, 4, 12	*	*

* Indicates Availability

COIL INFORMATION AT 60 HERTZ 120 VOLTS COIL

Type	Amps	Poles	OHMs	INRUSH			SEALED		
				Henries	VA	PF	Henries	VA	PF
SM	30	3	31	0.137	245	.64*	1.45	27	.22*
SP	60	3	17.8	.110	311	.46*	1.00	37	.28*
SQ	100	3	8.48	.048	700	.46*	.764	46	.33*
SV	200	3	3.57	.032	1185	.37	.490	85	.23
SX	300	3	.95	.013	2970	.23	.187	212	.13

VA = VOLT AMPS

PF = POWER FACTOR

* WORST CASE. ALL OTHERS ARE MEAN VALUES