



Lighting Contactors

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APPLICATION OF LIGHTING CONTACTORS

Lighting contactors have evolved from the need for more than just simple on-off manual control of lights. Today's requirements call for the development of new and varied types of control. Often, the application will call for remote control of lighting from some distant location. This control may or may not be in addition to a master control station at a central location. Or certain applications include the use of automatic control by time clocks or photoelectric cells. Whatever the need may be, applications are increasing, and lighting contactors are designed to meet the ever-changing requirements.

Square D lighting contactors offer a time proven design for better electrical and mechanical performance. They are used wherever reliable, convenient and economical control of indoor and outdoor lighting is required. Typical installations include:

- parking lots
- industrial plants
- office buildings
- theaters and auditoriums
- hospitals and institutions
- shopping centers
- stadiums
- airports

LIGHTING CONTACTORS FOR ENERGY MANAGEMENT

Lighting contactors should be an integral part of any Energy Management System. They help conserve energy consumption and reduce utility bills by providing three types of control.

Lighting contactors offer both **centralized** and **remote control** of lighting. Circuits can be turned on and off from a number of remote locations in addition to a master control station.

They also offer **selective switching** of lights. Selective switching is the control of one or more individual lighting circuits, independent of the other circuits. This design allows the potential for turning on only the amount of lighting that is actually needed.

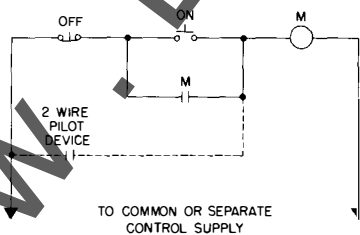
Lighting contactors can provide **automatic control** to insure that lights will be turned off when not needed. There are a number of devices that, when used with lighting contactors, offer a convenient and reliable method of automatically controlling lighting loads: program time clock, photoelectric cell, programmable controller and demand controller.

ELECTRICALLY HELD VS. MECHANICALLY HELD

ELECTRICALLY HELD

Electrically held lighting contactors require voltage to be continuously applied to the coil to maintain the contacts in the closed position (or open position in the case of normally closed contacts). Electrically held devices are used:

- wherever a high rate of operation is encountered (such as heating elements or electric furnaces).
- in areas where the ac hum of a continuously energized coil would not be annoying, such as factories, machine shops or outdoors.
- with three-wire control schemes to provide low voltage protection, thus preventing the load from being automatically energized after restoration of power following a failure.

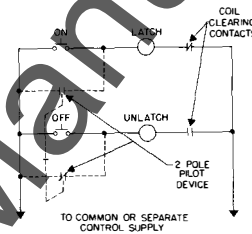


Electrically Held

MECHANICALLY HELD

Mechanically held lighting contactors require only momentary application of voltage to be latched (turned on) or unlatched (turned off). Since the contacts are mechanically held closed (open if normally closed contacts), the latch and unlatch coils need only be momentarily energized, thus eliminating ac hum. This feature allows for quiet application of the mechanically held lighting contactor and makes it the perfect choice for quiet locations. As standard, Square D lighting contactors are provided with coil clearing contacts, assuring that the coils will be de-energized even if the control device is held closed. Mechanically held lighting contactors are used wherever:

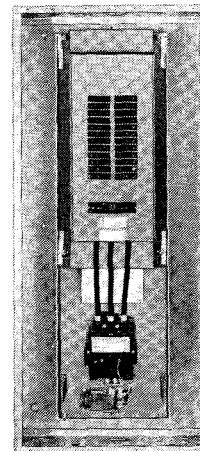
- quiet operation is required (offices, hospitals, schools).
- circuits are required to remain closed (or open in the case of normally closed contacts) during a power failure.
- excessive control line distances are required.



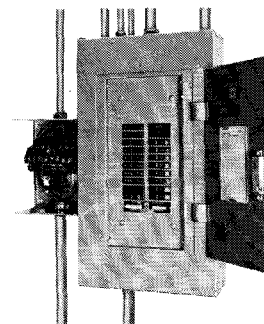
Mechanically Held

INSTALLATION OF LIGHTING CONTACTORS

For new installations, lighting contactors can either be installed right in the lighting panelboard, or in their own enclosure next to or remote from the panelboard.



In existing applications where the lighting control system is being updated, lighting contactors can be installed in their own enclosure next to a lighting panelboard.



LIGHTING CONTACTORS

APPLICATION DATA

CLASS
8903

MAXIMUM VOLTAGE RATINGS

Type of Load	Types L & LL 20 Amperes		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 1φ and 3 Poles to Load on 3φ	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1φ and 3 Poles to Load on 3φ	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1φ and 3 Poles to Load on 3φ	When Connected 1 Pole to Load	When Connected 2 Poles to Load on 1φ and 3 Poles to Load on 3φ
Tungsten	277AC	480AC	277AC	480AC	277AC	480AC	....	....
Ballast	277AC▲	480AC▲	347AC	600AC	347AC	600AC	347AC	600AC
Resistance	600AC	600AC	600AC	600AC	600AC	600AC	600AC	600AC
DC with 2 Poles in Series*	....	125DC	....	....	....	250DC	....	....
DC with 3 Poles in Series*	....	250DC	....	250DC	....	250DC	....	....
Control Circuit (Coil) Voltage	12-600AC Type L, 24-277AC Type LL 24, 32, 115/125, and 230/250DC Type L (6 poles max.)		6-600AC		6-600AC Type SP, 24-600AC Types SQ & SV, 120-600AC Type SX		120-600AC	

▲ Types L and LL contactors also have a ballast lamp rating of 15 amperes 347VAC when connected 1 Pole to Load and 600VAC when connected 2 Poles to Load on 1φ and 3 Poles to Load on 3φ.
* For tungsten lamp or resistance loads only.

TABLE 1 — 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
480 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)

TABLE 2 — 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

TABLE 3 — 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. Mo- tor HP	Max. Non- Motor Amp.	Max. Mo- tor HP	Max. Non- Motor Amp.	Max. Mo- tor HP	Max. Non- Motor Amp.	Max. Mo- tor HP
200 V. 3 Phase	30	0	7½	7.5	5	15	3	22.5	1½
	60	0	10	15	10	30	7½	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	7½	7.5	7½	15	3	22.5	2
	60	0	15	15	10	30	10	45	3
	100	0	30	25	25	50	15	75	7½
	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	7½	15	7½	22.5	3
	60	0	25	15	20	30	15	45	7½
	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	7½	15	7½	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	1½	15	¾	22.5	½
	60	0	3	15	3	30	2	45	¾
	100	0	7½	25	5	50	3	75	2
230 V. Single Phase	30	0	3	7.5	2	15	2	22.5	¾
	60	0	7½	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.

TUNGSTEN LAMP LOADS

Tungsten lamps have a positive resistance characteristic (resistance to the flow of electric current increases as its operating temperature increases), thus exhibiting an increase in resistance when the lamp is energized. Therefore, these lamps have a high inrush current of up to 18 times normal current resulting from the low cold resistance of the tungsten. Examples of tungsten lamps include incandescent lamps, iodine lamps, quartz-iodine lamps and infrared lamps.

BALLAST LIGHTING LOADS

A ballast lighting load consists of electric discharge (vapor) lamps. All types of vapor lamps possess a negative resistant characteristic. The resistance within the lamp decreases with an increase in current, and vice versa. Without some form of current limiting device in the electric circuit, the current would rise quickly until lamp failure occurred. This current limiting element is known as the ballast. A ballast is an impedance used to stabilize the current in a vapor lamp. It has the property of increasing in resistance as current through it increases and decreasing in resistance as current decreases. Thus it tends to maintain a constant current through it. Types of ballast lighting include high intensity discharge (HID) lamps — mercury vapor, metal halide and high pressure sodium — and fluorescent lamps.

RESISTANCE LOADS

Square D lighting contactors are fully rated for resistance loads up to 600 volts, Table 1. They can be used on resistance-type boilers, electric furnaces, electric water heaters and snow melting cables and panels.

MOTOR LOADS

This load consists of motors having an inrush current, or locked-rotor current, of approximately 6 times the full-load current. Square D Type S lighting contactors are fully rated for motor loads and have a horsepower rating equal to the equivalent NEMA-Size motor contactor, Table 2.

MIXED LOADS

All Type S lighting contactors are rated to handle mixed loads, consisting of a combination of lighting, resistance and motor loads. Table 3 was developed to make selection of lighting contactors for mixed loads easier. Simply follow these steps:

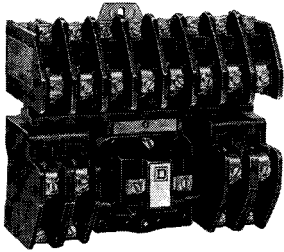
1. Determine the total load by summing the lighting, resistance and motor (full load currents of each motor) loads.
2. Calculate the lighting and resistance (total non-motor) load as a percentage of the total load.
3. From that percent column in Table 3, determine the size lighting contactor required at the specified motor voltage.

ELECTRICALLY HELD LIGHTING CONTACTORS

FOR TUNGSTEN & BALLAST LIGHTING AND RESISTANCE HEATING LOADS

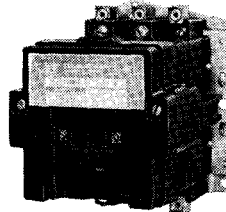
Electrically held lighting contactors are used in areas where the arc of a continuously energized coil would not be annoying (factories, outdoors, etc.) or wherever a high rate of operation is encountered. They are normally operated from a 2 wire, maintained contact input device.

TYPE L



- 2-12 Poles
- Convertible Contacts with N.O. and N.C. Indicators
- Silver Alloy Double Break Contacts
- Industrial Duty
- Adder Pole Kits Available
- DC Coils are Available (6 Poles Max.)

TYPE S



- 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 (pages 6 and 7)

50-60 HERTZ		ORDERING INFORMATION — Page 6						MAXIMUM VOLTAGE RATINGS — Page 3					
Ampere Ratings	No. of Poles	General Purpose Enclosure NEMA Type 1		Flush Mounting General Purpose Enclosure with Plaster Adjustment		Watertight, Dusttight and Corrosion-Resistant Glass-Polyester Enclosure NEMA Type 4X		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4		Dusttight and Driptight Industrial Use Enclosure NEMA Type 12†		Open Type	
		Type	Price*	Type	Price*	Type	Price*	Type	Price*	Type	Price*	Type	Price*
200	2	LG-20	\$ 124.	LF-20	\$ 192.	Use 30 Ampere Type S		LW-20	\$ 256.	LA-20	\$ 240.	LO-20	\$ 112.
	3	LG-30	136.	LF-30	204.			LW-30	268.	LA-30	252.	LO-30	124.
	4	LG-40	172.	LF-40	240.			LW-40	304.	LA-40	288.	LO-40	160.
	6	LG-60	248.	LF-60	288.	Consult local Square D Field Office		LW-60	352.	LA-60	336.	LO-60	208.
	8	LG-80	324.	LF-80	364.			LW-80	428.	LA-80	412.	LO-80	284.
10	LG-1000	372.	LF-1000	412.	LW-1000			476.	LA-1000	460.	LO-1000	332.	
	12	LG-1200	428.	LF-1200	468.			LW-1200	532.	LA-1200	516.	LO-1200	388.
30	2	SMG-1	132.	SMF-1	184.	SMW-21	\$ 276.	SMW-1	276.	SMA-1	180.	SMA-1	124.
	3	SMG-2	144.	SMF-2	196.	SMW-22	288.	SMW-2	288.	SMA-2	192.	SMA-2	136.
	4	SMG-3	176.	SMF-3	228.	SMW-23	320.	SMW-3	320.	SMA-3	224.	SMA-3	168.
	5	SMG-4	232.	SMF-4	284.	SMW-24	376.	SMW-4	376.	SMA-4	280.	SMA-4	224.
60	2	SPG-1	272.	SPF-1	340.	SPW-21	560.	SPW-1	560.	SPA-1	360.	SPO-1	232.
	3	SPG-2	288.	SPF-2	356.	SPW-22	576.	SPW-2	576.	SPA-2	376.	SPO-2	248.
	4	SPG-3	360.	SPF-3	428.	SPW-23	760.	SPW-3	760.	SPA-3	448.	SPO-3	320.
	5	SPG-4	520.	SPF-4	588.	SPW-24	920.	SPW-4	920.	SPA-4	608.	SPO-4	480.
100	2	SOQ-1	448.	SOQ-1	564.	SQW-21	1070.	SQW-1	856.	SQA-1	552.	SQO-1	368.
	3	SOQ-2	480.	SOQ-2	596.	SQW-22	1110.	SQW-2	888.	SQA-2	584.	SQO-2	400.
	4	SOQ-3	592.	.....	.....	.....	.....	SQW-3	1112.	SQA-3	696.	SQO-3	512.
	5	SOQ-4	848.	.....	.....	.....	.....	SQW-4	1368.	SQA-4	952.	SQO-4	768.
200	2	SVG-1	1056.	SVF-1	1136.	SVW-21	2190.	SVW-1	1752.	SVA-1	1400.	SVO-1	888.
	3	SVG-2	1128.	SVF-2	1208.	SVW-22	2280.	SVW-2	1824.	SVA-2	1472.	SVO-2	960.
	4	SVG-3	1504.	.....	.....	.....	.....	SVW-3	2488.	SVA-3	1968.	SVO-3	1336.
300	2	SXG-1	2232.	.....	.....	.....	.....	SXW-1	3112.	SXA-1	3120.	SXO-1	1924.
	3	SXG-2	2400.	.....	.....	.....	.....	SXW-2	3280.	SXA-2	3280.	SXO-2	2092.
400▲	2	SYG-1	5844.	.....	.....	.....	.....	SYW-1	7844.	SYA-1	6924.	SYO-1	4576.
	3	SYG-2	6608.	.....	.....	.....	.....	SYW-2	8608.	SYA-2	7688.	SYO-2	5340.
600▲	2	SZG-1	7174.	.....	.....	.....	.....	SZW-1	9174.	SZA-1	8254.	SZO-1	5862.
	3	SZG-2	8060.	.....	.....	.....	.....	SZW-2	10060.	SZA-2	9140.	SZO-2	6746.
800▲	2	SJG-1	8504.	.....	.....	.....	.....	SJW-1	10540.	SJA-1	9504.	SJO-1	7148.
	3	SJG-2	9512.	.....	.....	.....	.....	SJW-2	11512.	SJA-2	10592.	SJO-2	8152.

* Price does not include holding circuit interlock.
 Ⓞ Factory conversion of N.O. contacts to any combination of N.C., add \$12 to list price.
 † NEMA Type 12 enclosures may be field modified for outdoor applications. For details, see Class 9991.
 ‡ Separate enclosures are available for these devices. Order open type contactor and separate Class 9991 enclosure from page 9.
 ▲ Form FT is provided as standard; include line voltage when ordering. Control voltage is 120V/60HZ. For separate control, add Form S to Type Number.

FACTORY MODIFICATIONS FOR ELECTRICALLY HELD LIGHTING CONTACTORS

(For additional modifications refer to Factory Modifications and Forms.)

Description	En-closure Type	Form Letter	20 Amp.	30 Amp.	60 Amp.	100 Amp.	200 Amp.	300 Amp.	400, 600 & 800 Amp.
"On-Off" push button — includes holding circuit interlock	1	A12	\$132.■	\$ 76.	\$ 76.	\$ 76.	\$ 76.	\$ 76.	\$132.
"On-Off" selector switch	4, 12	A12	132.■	132.	132.	132.	132.	132.	132.
"Hand-Off-Auto" selector switch	1	C6	88.	88.	88.	88.	88.	88.	88.
	4, 12	C6	88.	88.	88.	88.	88.	88.	88.
Pilot Lights: one light only	Any	P▲	60.	60.	60.	60.	60.	60.	60.
	Each	Any	108.	108.	108.	108.	108.	108.	108.
two or more lights	Each	P▲	120.	120.	120.	120.	120.	120.	120.
push-to-test	Each	Any	48.	48.	48.	48.	48.	48.	48.
Operating interlock for pilot lights: Add to price of each pilot light	Any	★	88.	88.	88.	88.	88.	88.	88.
Fused control circuit (1 fuse)	Any	F	88.	88.	88.	88.	88.	88.	88.
Control circuit transformer with fused secondary (50 or 60 Hz)	Any	FT	108.	108.	152.	224.	272.	308.	Std.
Electrical interlocks (specify number of N.O. and N.C.)	Each	Any	X	44.	44.	44.	44.	44.	44.
Addition of 24 hour time clock (120-277 V only)	1, 4, 12	K14	336.	336.	336.	336.	336.	336.	336.
Addition of 24 hour time clock with day omission (120-277 V only)	1, 4, 12	K14-1	336.	336.	336.	336.	336.	336.	336.
Addition of 7 day time clock (120-277 V only)	1, 4, 12	K14-2	384.	384.	384.	384.	384.	384.	384.
Addition of terminal block for solid neutral	Any	N	32.	32.	32.	48.	96.	200.	240.
Addition of DC coil to Type L — max. of 6 poles (specify voltage — see pg. 3)	Any	Y48	68.	N/A	N/A	N/A	N/A	N/A	N/A
Auxiliary interlock installed on combination lighting contactor disconnect switch or circuit breaker operating mechanism (1 N.O.-1 N.C. Contact)	Any	Y74	N/A	44.	44.	44.	44.	116.	116.
Addition of photoelectric receptacle	4, 12	G10	52.	52.	52.	52.	52.	52.	52.
With photoelectric cell installed (120-277 V only)	4, 12	G10-1	112.	112.	112.	112.	112.	112.	112.
Substitute Class R rejection type fuse clips for standard fuse clips on combination lighting contactor	1, 4, 12	Y107-1	N/A	6.	6.	12.	12.	28.	N/A

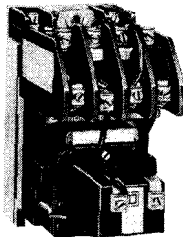
▲ Indicate pilot light color as Form P (Red) or Form P (Green), etc., and how pilot light is to be wired into the circuit. Insert "Push-To-Test" before color if applicable.
 ★ DO NOT use Form X for any interlock which is wired in series with pilot light, but DO specify how pilot light and interlock are to be wired into the circuit.
 † Order device with additional poles — interlocks not available.
 ■ Not available on 12 pole device; use "On-Off" selector switch (Form C6).

MECHANICALLY HELD LIGHTING CONTACTORS FOR TUNGSTEN & BALLAST LIGHTING AND RESISTANCE HEATING LOADS

CLASS
8903

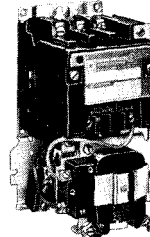
Mechanically held lighting contactors are used wherever quiet operation is required (offices, hospitals, theatres, etc.) or where excessive control distances are encountered. As standard, Square D mechanically held lighting contactors are provided with coil clearing contacts, assuring that the coils will be de-energized even if the control device is held closed.

TYPE LL



- 2-10 Poles
- Convertible Contacts with N.O. and N.C. Indicators
- Silver Alloy Double Break Contacts
- Industrial Duty
- Adder Pole Kits Available
- Coil Clearing Contacts Standard

TYPE S



- 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 (Page 6)
- Coil Clearing Contacts Standard

50-60 HERTZ		ORDERING INFORMATION — Page 6								MAXIMUM VOLTAGE RATINGS — Page 3			
Ampere Ratings	No. of Poles	General Purpose Enclosure NEMA Type 1		Flush Mounting General Purpose Enclosure with Plaster Adjustment		Watertight, Dusttight and Corrosion-Resistant Glass Polyester Enclosure NEMA Type 4X		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4		Dusttight and Driptight Industrial Use Enclosure NEMA Type 12#		Open Type	
		Type	Price	Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
20	2	LLG-20	\$ 172.	LLF-20	\$ 240.	Use 30 Ampere Type S		LLW-20	\$ 304.	LLA-20	\$ 288.	LLO-20	\$ 160.
	3	LLG-30	184.	LLF-30	252.			LLW-30	316.	LLA-30	300.	LLO-30	172.
	4	LLG-40	192.	LLF-40	260.			LLW-40	324.	LLA-40	308.	LLO-40	180.
	6	LLG-60	332.	LLF-60	372.	Consult local Square D Field Office		LLW-60	436.	LLA-60	420.	LLO-60	292.
	8	LLG-80	368.	LLF-80	408.			LLW-80	472.	LLA-80	456.	LLO-80	328.
	10	LLG-1000	408.	LLF-1000	448.			LLW-1000	512.	LLA-1000	496.	LLO-1000	368.
30	2	SMG-10	176.	SMF-10	228.	SMW-31	\$ 320.	SMW-10	320.	SMA-10	224.	SMO-10	168.
	3	SMG-11	188.	SMF-11	240.	SMW-32	332.	SMW-11	332.	SMA-11	236.	SMO-11	180.
	4	SMG-12	200.	SMF-12	252.	SMW-33	344.	SMW-12	344.	SMA-12	248.	SMO-12	192.
	5	SMG-13	256.	SMF-13	308.	SMW-34	400.	SMW-13	400.	SMA-13	304.	SMO-13	248.
	6	SPG-10	416.	SPF-10	492.	SPW-31	704.	SPW-10	704.	SPA-10	504.	SPO-10	384.
60	3	SPG-11	432.	SPF-11	508.	SPW-32	720.	SPW-11	720.	SPA-11	520.	SPO-11	400.
	4	SPG-12	512.	SPF-12	588.	SPW-33	912.	SPW-12	912.	SPA-12	600.	SPO-12	480.
	5	SPG-13	672.	SPF-13	748.	SPW-34	1072.	SPW-13	1072.	SPA-13	760.	SPO-13	640.
	2	SQG-10	584.	SQF-10	628.	SQW-31	1240.	SQW-10	992.	SQA-10	688.	SQO-10	512.
	3	SQG-11	616.	SQF-11	660.	SQW-32	1280.	SQW-11	1024.	SQA-11	720.	SQO-11	544.
100	4	SQG-12	736.	.....	.....	.....	.....	SQW-12	1256.	SQA-12	840.	SQO-12	664.
	5	SQG-13	992.	.....	.....	.....	.....	SQW-13	1512.	SQA-13	1096.	SQO-13	920.
	2	SVG-10	1496.	SVF-10	1512.	SVW-31	2740.	SVW-10	2192.	SVA-10	1840.	SVO-10	1264.
	3	SVG-11	1688.	SVF-11	1704.	SVW-32	2980.	SVW-11	2384.	SVA-11	2032.	SVO-11	1368.
	4	SVG-12	2064.	.....	.....	.....	.....	SVW-12	3048.	SVA-12	2528.	SVO-12	1744.
300	2	SXG-13	2616.	.....	.....	.....	.....	SXW-13	3496.	SXA-13	3496.	SXO-13	2120.
	3	SXG-14	2872.	.....	.....	.....	.....	SXW-14	3752.	SXA-14	3752.	SXO-14	2192.
400	2	SYG-16	6344.	.....	.....	.....	.....	SYW-16	8344.	SYA-16	7424.	SYO-16	5076.
	3	SYG-17	7108.	.....	.....	.....	.....	SYW-17	9108.	SYA-17	8188.	SYO-17	5840.
600	2	SZG-18	7674.	.....	.....	.....	.....	SZW-18	9674.	SZA-18	8754.	SZO-18	6362.
	3	SZG-19	8560.	.....	.....	.....	.....	SZW-19	10560.	SZA-19	9640.	SZO-19	7246.
800	2	SJG-10	9004.	.....	.....	.....	.....	SJW-10	11040.	SJA-10	10084.	SJO-10	7648.
	3	SJG-11	10012.	.....	.....	.....	.....	SJW-11	12012.	SJA-11	11092.	SJO-11	8652.

- ⊕ Factory conversion of N.O. contacts to any combination of N.C., add \$12 to list price.
- ⊕ NEMA Type 12 enclosures may be field modified for outdoor applications. For details, see Class 9991.
- Separate enclosures are available for these devices. Order open type contactor and separate Class 9991 enclosure from page 9.

FACTORY MODIFICATIONS FOR MECHANICALLY HELD LIGHTING CONTACTORS (For additional modifications refer to Factory Modifications and Forms.)

Description	Enclosure Type	Form Letter	20 Amp.	30 Amp.	60 Amp.	100 Amp.	200 Amp.	300 Amp.	400, 600 & 800 Amp.
"On-Off" (momentary contact) push button	Any	A3	\$ 88.	\$ 88.	\$ 88.	\$ 88.	\$ 88.	\$ 88.	\$ 88.
"On-Off" selector switch	Any	C6	88.	88.	88.	88.	88.	88.	88.
"Hand-Off-Auto" selector switch	Any	C	88.	88.	88.	88.	88.	88.	88.
Pilot Lights: one light only with operating interlock	Any	P▲▲	108.	108.	108.	108.	108.	108.	108.
two or more lights with operating interlock	Any	P▲▲	156.	156.	156.	156.	156.	156.	156.
push-to-test with operating interlock	Each	P▲▲	168.	168.	168.	168.	168.	168.	168.
Fused control circuit (1 fuse)	Any	F	88.	88.	88.	88.	88.	88.	88.
Control circuit transformer with fused secondary (50 or 60 Hz)	Any	FT	108.	108.	152.	224.	272.	308.	308.
Electrical interlocks (specify number of N.O. and N.C.)	Each	†	44.	44.	44.	44.	44.	44.	44.
Addition of 24 hour time clock (120-277 V. only)	1, 4, 12	K14	336.	336.	336.	336.	336.	336.	336.
Addition of 24 hour time clock with day omission (120-277 V. only)	1, 4, 12	K14-1	336.	336.	336.	336.	336.	336.	336.
Addition of 7 day time clock (120-277 V. only)	1, 4, 12	K14-2	384.	384.	384.	384.	384.	384.	384.
Sound proof enclosure and shock mounted panel	Any	G4	390.	390.	448.	470.	648.	820.	1060.
Addition of terminal block for solid neutral	Any	N	32.	32.	32.	48.	96.	200.	240.
Auxiliary interlock installed on combination lighting contactor disconnect switch or circuit breaker operating mechanism (1 N.O.-1 N.C. Contact)	Any	Y74	N/A	44.	44.	44.	44.	116.	116.
Addition of 2 pole relay for use with 1 pole pilot device	1, 4, 12	R6	204.	204.	204.	204.	320.	360.	360.
Addition of photoelectric receptacle (includes Form R6)	4, 12	G10R6	256.	256.	256.	256.	372.	412.	412.
With photoelectric cell installed (120-277 V. only)	4, 12	G10-1R6	316.	316.	316.	316.	432.	472.	472.
Substitute Class R rejection type fuse clips for standard fuse clips on combination lighting contactor	1, 4, 12	Y107-1	N/A	6.	6.	12.	12.	28.	N/A

- ▲ Indicate pilot light color as Form P (Red) or Form P (Green), etc., and how pilot light is to be wired into the circuit. Insert "Push-To-Test" before color if applicable.
- ★ DO NOT use Form X for any interlock which is wired in series with pilot light, but DO specify how pilot light and interlock are to be wired into the circuit.
- † Order device with additional poles — interlocks not available.
- Not required if Form FT is also specified.

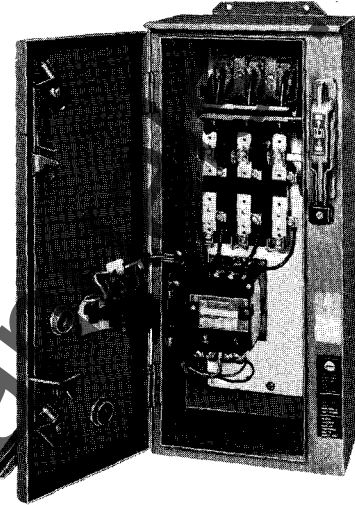
COMBINATION LIGHTING CONTACTORS

FOR TUNGSTEN & BALLAST LIGHTING AND RESISTANCE HEATING LOADS

Com

FUSIBLE OR NON-FUSIBLE DISCONNECT SWITCH

MAX. VOLT RATINGS — Page 3			3 POLE				50-60 HERTZ			
Con-tactor Ampere Rating	Fuse Clip Size (Amps.)	Fuse Clip Spacing (Volts)	General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4†		Dusttight, Oiltight Driptight, Industrial Use Enclosure NEMA Type 12			
			Type	Price*	Type	Price*	Type	Price*		
ELECTRICALLY HELD										
30	None	....	SMG-60	\$ 364.	SMW-60	\$ 748.	SMA-60	\$ 460.	
	30	600	SMG-61	384.	SMW-61	768.	SMA-61	480.		
	30	250	SMG-62	376.	SMW-62	760.	SMA-62	472.		
60	None	....	SPG-60	572.	SPW-60	1164.	SPA-60	708.	
	60	600	SPG-61	600.	SPW-61	1192.	SPA-61	736.		
	60	250	SPG-62	588.	SPW-62	1180.	SPA-62	724.		
100	None	....	SQG-60	952.	SQW-60	1984.	SQA-60	1128.	
	100	600	SQG-61	1012.	SQW-61	2044.	SQA-61	1188.		
	100	250	SQG-62	992.	SQW-62	2024.	SQA-62	1168.		
200	None	....	SVG-60	1860.	SVW-60	3180.	SVA-60	2348.	
	200	600	SVG-61	1944.	SVW-61	3264.	SVA-61	2432.		
	200	250	SVG-62	1928.	SVW-62	3248.	SVA-62	2416.		
300	None	....	SXG-60	3904.	SXW-60	7272.	SXA-60	5088.	
	400	600	SXG-61	4048.	SXW-61	7416.	SXA-61	5232.		
	400	250	SXG-62	4048.	SXW-62	7416.	SXA-62	5232.		
MECHANICALLY HELD										
30	None	....	SMG-70	408.	SMW-70	792.	SMA-70	504.	
	30	600	SMG-71	428.	SMW-71	812.	SMA-71	524.		
	30	250	SMG-72	420.	SMW-72	804.	SMA-72	516.		
60	None	....	SPG-70	724.	SPW-70	1316.	SPA-70	860.	
	60	600	SPG-71	752.	SPW-71	1344.	SPA-71	888.		
	60	250	SPG-72	740.	SPW-72	1332.	SPA-72	876.		
100	None	....	SQG-70	1096.	SQW-70	2128.	SQA-70	1272.	
	100	600	SQG-71	1156.	SQW-71	2188.	SQA-71	1332.		
	100	250	SQG-72	1136.	SQW-72	2168.	SQA-72	1312.		
200	None	....	SVG-70	2268.	SVW-70	3588.	SVA-70	2756.	
	200	600	SVG-71	2352.	SVW-71	3672.	SVA-71	2840.		
	200	250	SVG-72	2336.	SVW-72	3656.	SVA-72	2824.		
300	None	....	SXG-70	4004.	SXW-70	7372.	SXA-70	5188.	
	400	600	SXG-71	4148.	SXW-71	7516.	SXA-71	5332.		
	400	250	SXG-72	4148.	SXW-72	7516.	SXA-72	5332.		



Type SMA-62

It is often desirable to install the branch-circuit protective device and lighting contactor, combining switching and over-current protection, in one enclosure. Combination lighting contactors are particularly well suited for industrial, highway and area lighting applications, or where a lighting circuit may have to be disconnected for periodic maintenance. They may also be used for resistance heating loads.

Combination lighting contactors provide many advantages over a separate branch-circuit device and contactor. The single unit occupies less space, makes a neater installation, is quicker to install, and provides added protection for operating personnel.

- Disconnect Switch and Circuit Breaker Types
- Rugged Flange Operator
- Industrial Duty
- Room to Spare for Modifications

FACTORY MODIFICATIONS — Pages 4 and 5

APPLICATION DATA — Pages 3 and 10

REPAIR PARTS KITS — Class 9998

MODIFICATION KITS — Class 9999

ORDERING INFORMATION REQUIRED

1. Class and type number.
2. Line voltage, frequency and phase.
3. Control voltage and frequency, if different from line voltage.
4. Any special features required.

CIRCUIT BREAKER

MAX. VOLT RATINGS — Page 4			3 POLE				50-60 HERTZ			
Con-tactor Ampere Rating	Circuit Breaker		General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel (60-300 Amp.) NEMA Type 4†		Dusttight, Oiltight, Driptight, Industrial Use Enclosure NEMA Type 12			
	Ampere Rating	Maximum Volts	Type	Price*	Type	Price*	Type	Price*		
ELECTRICALLY HELD										
30	30	600	SMG-81	\$ 508.	SMW-81	\$ 892.	SMA-81	\$ 604.		
		240	SMG-82	392.	SMW-82	776.	SMA-82	488.		
60	60	600	SPG-81	712.	SPW-81	1304.	SPA-81	848.		
		240	SPG-82	596.	SPW-82	1188.	SPA-82	732.		
100	100	600	SQG-81	1028.	SQW-81	2060.	SQA-81	1204.		
200	200	600	SVG-81	2296.	SVW-81	3616.	SVA-81	2784.		
300	300	600	SXG-81	5060.	SXW-81	8428.	SXA-81	5940.		
400♦	400	600	SYG-81	11256.	SYW-81	13256.	SYA-81	12336.		
600♦	600	600	SZG-81	12662.	SZW-81	14662.	SZA-81	13742.		
MECHANICALLY HELD										
30	30	600	SMG-91	552.	SMW-91	936.	SMA-91	648.		
		240	SMG-92	436.	SMW-92	820.	SMA-92	532.		
60	60	600	SPG-91	864.	SPW-91	1456.	SPA-91	1000.		
		240	SPG-92	748.	SPW-92	1340.	SPA-92	884.		
100	100	600	SQG-91	1172.	SQW-91	2204.	SQA-91	1348.		
200	200	600	SVG-91	2704.	SVW-91	4024.	SVA-91	3192.		
300	300	600	SXG-91	5160.	SXW-91	8528.	SXA-91	6040.		
400	400	600	SYG-91	11756.	SYW-91	13756.	SYA-91	12836.		
600	600	600	SZG-91	13122.	SZW-91	15162.	SZA-91	14242.		

*Price does not include holding circuit interlock.

♦Form F-1 is standard; include line voltage when ordering. Control voltage is 120V/60 Hz. For separate control order "Form S."

†For **NEMA Type 4X** Watertight, Dusttight, and Corrosion-Resistant Glass-Polyester enclosure, consult field office.

NIGHT-MASTER™

CLASS
8903

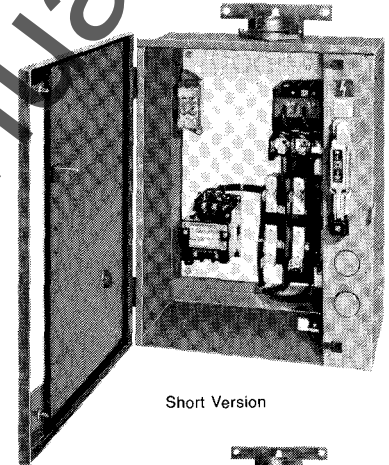
OUTDOOR LIGHTING CONTROLLER

NIGHT-MASTER™ Outdoor Lighting Controllers offer disconnecting means, overcurrent protection and a lighting contactor in one NEMA Type 3R Rainproof enclosure. These combination units satisfy requirements of the National Electrical Code and UL 508 for service entrance equipment.

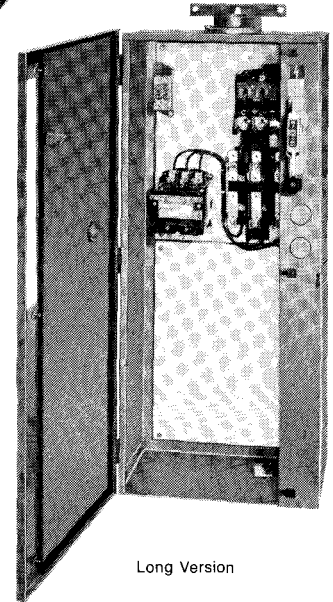
NIGHT-MASTER Outdoor Lighting Controllers offer an advantage over enclosed safety switches or circuit breakers. The electrically held lighting contactor provides the opportunity for automatic or remote control of all types of lighting. When used with photoelectric cells, time clocks or other control devices, they offer an economical means of controlling outdoor lighting. Typical installations include lighting of streets, parking lots and billboards, and recreational lighting such as tennis courts, stadiums, country clubs and parks.

Many standard and special modifications, either factory or field addable, are available with the NIGHT-MASTER Outdoor Lighting Controller. All factory installed modifications shown below are UL listed. The short version is suitable for most applications. The long version is used for certain factory installed accessories, or for adding your own special modifications in the field. It has a lower panel that is removable for easy field addition of accessories.

UL APPROVED FOR SERVICE ENTRANCE



Short Version



Long Version

MAX. VOLTAGE RATINGS — Page 3 DISCONNECT SWITCH TYPE 3 POLE

Contactor Ampere Rating	Fuse Clip Size (Amperes)	Fuse Clip Spacing (Volts)	Short Version		Long Version	
			Class 8903 Type	Price	Class 8903 Type	Price
30	30	600	SMC-61	\$ 510.	SMC-63	\$ 586.
	30	250	SMC-62	502.	SMC-64	578.
60	60	600	SPC-61	694.	SPC-63	770.
	60	250	SPC-62	686.	SPC-64	762.
100	100	600	SQC-61	1130.	SQC-63	1206.
	100	250	SQC-62	1106.	SQC-64	1182.
200	200	600	SVC-61	2094.	SVC-63	2394.
	200	250	SVC-62	2078.	SVC-64	2378.

MAX. VOLTAGE RATINGS — Page 3 CIRCUIT BREAKER TYPE 3 POLE

Contactor Ampere Rating	Circuit Breaker		Short Version		Long Version	
	Ampere Rating	Maximum Volts	Class 8903 Type	Price	Class 8903 Type	Price
30	30	600	SMC-81	\$ 646.	SMC-83	\$ 722.
60	60	600	SPC-81	806.	SPC-83	882.
100	100	600	SQC-81	1146.	SQC-83	1222.
200	200	600	SVC-81	2446.	SVC-83	2746.

FACTORY MODIFICATIONS ▲ (ALL FACTORY INSTALLED MODIFICATIONS SHOWN BELOW ARE UL LISTED)

Description	Form Letter	Price
"Hand-Off-Auto" Selector Switch Flange Mounted Internally Mounted	C CG53	\$ 88. 88.
"On-Off" Selector Switch Flange Mounted Internally Mounted	C6 C6G53	88. 88.
Pilot Light (Specify Color)	P	60.
Fused Control Circuit	F	88.
Control Circuit Transformer With Fused Secondary 30 Ampere (Type SMC) 60 Ampere (Type SPC) 100 Ampere (Type SQC) 200 Ampere (Type SVC)	FT	108. 152. 224. 272.
Program Time Clock* (120-277V. only) 24 Hour 24 Hour With Day Omission 7 Day	K14* K14-1* K14-2*	220. 220. 268.
Auxiliary Interlocks — Specify number of N.O. and N.C. (Each)	X	44.
Lightning Arrester	Y153-2	160.
Auxiliary Interlocks Installed On Disconnect Switch Or Circuit Breaker Operating Mechanism (1 N.O. — 1 N.C.)	Y74	44.

REPAIR PARTS KITS — Class 9998
MODIFICATION KITS — Class 9999

ORDERING INFORMATION REQUIRED

1. Class and type number.
2. Line voltage, frequency and phase.
3. Control voltage and frequency, if different from line voltage.
4. Any special features required.

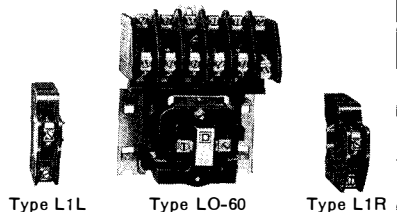
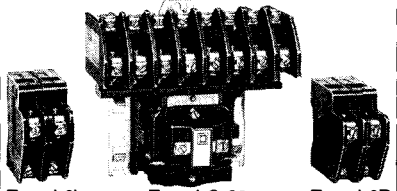
NIGHT-MASTER is a Trademark of Square D Company

▲Some combinations of factory modifications may require long version. Consult local Square D Field Office.
*Available in long version only.

POWER POLE ADDER KITS

FOR TYPE L

The kits below are used to add 20 ampere power poles to existing Type L contactors when additional circuits are required. Type L lighting contactors are supplied with mounting brackets, so that adder poles may be mounted from the front by a single captive screw. Adder poles are supplied as standard with N.O. contacts which are convertible to N.C.

Note: One power pole kit, either single- or double-pole, must be added to both the left and right hand side of the contactor.	May be Added to Contactor Type	Power Pole Adder Kit	
		Class 8903 Type	Price
 <p>Type L1L Type LO-60 Type L1R</p>	LO-60	Single Pole	
	LO-80	L1L	\$24.
	LLO-30	L1R	24.
	LLO-40		
	LLO-60		
 <p>Type L3L Type LO-80 Type L3R</p>	LO-80	Double Pole	
	LO-1000★	L3L	48.
	LLO-60	L3R	48.
	LLO-80★		

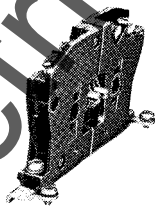
★Single pole power pole must be removed before double pole power pole can be installed.

D1A DISCOUNT

ELECTRICAL INTERLOCKS

Additional electrical interlocks can be added to Type S lighting contactors. The interlocks mount on either side of the basic contactor. The contacts of the electrical interlocks can be changed from N.O. to N.C. or vice versa in the field.

Electrical Interlock Kit Description	Class 9999	
	Type	Price
External Electrical Interlock with 1 N.O. contact, L.H. or R.H. mounting	SX-6	\$24.
External Electrical Interlock with 1 N.C. contact, L.H. or R.H. mounting	SX-7	24.
External Electrical Interlock with 1 N.O. and 1 N.C. isolated contacts, L.H. or R.H. mounting	SX-8	32.
External Electrical Interlock with 1 N.O. overlapping contact, L.H. or R.H. mounting*	SX-9	24.
External Electrical Interlock with 1 N.C. overlapping contact, L.H. or R.H. mounting*	SX-10	24.



Class 9999 Type SX-8

*Types SX-9 and SX-10 must be used together and are suitable for applications where it is necessary for a normally open interlock contact to overlap a normally closed interlock contact.

CONTROL CIRCUIT FUSE HOLDER

The control circuit fuse holder is designed to be used on Type S lighting contactors when either one or two control circuit fuses (1³/₃₂"x1¹/₂"), 6 amperes maximum, are required.

The fuse holder is supplied mounted to the same bracket used on the external interlocks on the 30 and 60 ampere sizes and is mounted directly to the baseplate on the lighting contactor on the 100-800 ampere sizes.

Description	Class 9999	
	Type	Price
Single Fuse Unit*	SF-3	\$16.
Two Fuse Unit*	SF-4	24.

*Fuses not included.

FOR TYPE S

A single-pole or double-pole kit can be added to any 2 or 3 pole 30 or 60 ampere Type S lighting contactor to make a 4 or 5 pole device. Factory assembled 4 and 5 pole contactors utilize the basic 3 pole device with a single or double-pole kit installed. Only one power pole can be added per contactor. Sufficient room is provided in all enclosure styles for the addition of a power pole kit.

To add the power pole to a 60 ampere contactor, it is necessary to replace the coil. Select a 4-5 pole coil from the coil table in Class 9998.

The 30 or 60 ampere power pole can be added to 100-800 ampere contactors by using the special adapter bracket.

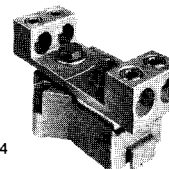
Amperage Rating	Description	Class 9999 Type	Price
30	One N.O.	SB-6	\$ 44.
	One N.C.	SB-7	44.
	One N.O. and One N.C.	SB-8	88.
	Two N.O.	SB-9	88.
	Two N.C.	SB-10	88.
60	One N.O.	SB-21*	80.
	One N.C.	SB-22*	80.
	One N.O. and One N.C.	SB-23*	160.
	Two N.O.	SB-24*	160.
	Two N.C.	SB-25*	160.
.....	Adapter Bracket for mounting 30 or 60 ampere kit above on 100, 200, 300, 400, 600 or 800 ampere contactor.	SBT-1	6.

Class 9999 Type SB-6 One N.O. Power Pole Adder

*When power pole is added to 60 ampere contactor, a 4 pole coil is also required. Order from Coil Table in Class 9998. 60 ampere power poles are suitable for use with copper or aluminum wire.

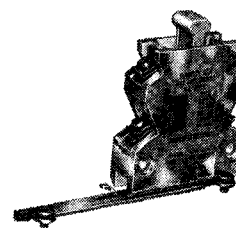
SOLID NEUTRAL

The Class 9999 Type SN kit can be used on Type S lighting contactors and other controllers where field addition of a solid neutral is required. Each kit has lugs suitable for both copper and aluminum wire, and mounts with two screws.



Class 9999 Type SN-4

No. of Lugs	Wire Capacity Per Lug (Cu/Al)	Class 9999	
		Type	Price
4	#14-2/0	SN-1	\$32.
3	(1) #4-600 MCM or (2) #1/0-250 MCM	SN-2	96.
	(2) #2-600 MCM	SN-3	152.
2 (Dual)	(2) #6-350 MCM	SN-4	96.



Class 9999 Type SF-4

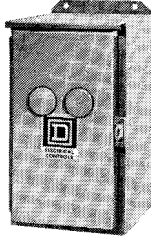


LIGHTING CONTACTORS

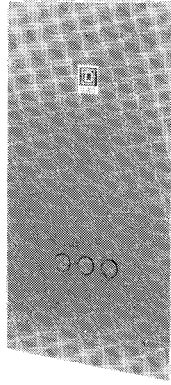
APPLICATION DATA

CLASS
8903

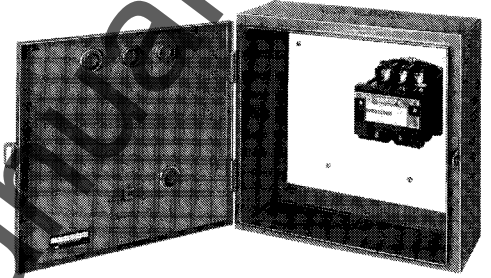
CLASS 9991 SEPARATE ENCLOSURES FOR NON-COMBINATION LIGHTING CONTACTORS



Class 9991 Type SCA-11



Class 9991 Type SEF-11



Class 9991 Type SDG-3

For Use With Class 8903	Types (All Pole Arrangements)	Size	Enclosure Classification																	
			Watertight and Dusttight Stainless Steel NEMA Type 4				Watertight Dusttight and Corrosion-Resistant Glass-Polyester NEMA Type 4X				Dusttight and Driptight Industrial Use Enclosure NEMA Type 12*				Flush Mounting General Purpose (Components)					
			Standard		With Two Cover Mtd. Closing Plates		Standard		With Two Cover Mtd. Closing Plates		Standard		With Two Cover Mtd. Closing Plates		Flush Plates		Mounting Strap		Pull Box	
			Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price
L & LLO	20 Amp.	LW-1	\$144.	....	....	....	....	LA-1	\$128.	....	....	LF-1	\$80.	Enclosure Complete (Std. Flush & Pull Box)						
SM*	30 Amp.	SCW-1	152.	SCW-11	\$160.	SCW-20	\$152.	SCA-1	56.	SCA-11	\$ 64.	Electrically Held	SCF-11	16.	SCF-12♦	\$ 56.	SCF-2	\$20.	SCF-1	\$24.
SP*	60 Amp.	SDW-1	328.	SDW-11	336.	SDW-20	328.	SDA-1	128.	SDA-11	136.	Mechanically Held	SCF-13	....	....	....	....	....	....	....
SQ*	100 Amp.	SEW-1	488.	SEW-11	496.	....	....	SEA-1	184.	SEA-11	192.	Electrically Held	SDF-11	48.	SDF-12♦	108.	SDF-2	28.	SDF-1	32.
SV	200 Amp	....	....	....	....	....	....	....	....	....	....	Mechanically Held	SDF-13	....	....	....	....	....	....	....
												SEF-11	248.	(Enclosure Complete)						
												SEF-11	248.	(Enclosure Complete)						

- ★ Replace reset assembly with proper closing plate. For NEMA 4 use Class 9001 Type K52, for NEMA 12 use Class 9001 Type K51 and for Flush Mounting (except Types LF-1 and SEF-11) use Class 9991 Type SG-2.
- ✚ NEMA Type 12 enclosures may be field modified for outdoor applications. For details refer to Class 9991.
- ♦ For Type S electrically held lighting contactors only. Consult field office for Type S mechanically held.
- Separate NEMA Type 1 surface mounted enclosure available. Specify Class 9991 Type LG-1, \$40.

OVERSIZE ENCLOSURES

The enclosures listed below are for use with electrically and mechanically held open type Class 8903 Type L 20 ampere and Type S 30 and 60 ampere lighting contactors. These enclosures include a panel with space and drilling for an open type contactor and fused control circuit transformer (Form FT) and/or an auxiliary relay for

use with single pole pilot devices (Form R6). In addition, three closing plates are provided as standard for easy installation of Class 9001 Type K oiltight control units.

Select transformer from selection table. When auxiliary relay is required, use either a Class 8501 Type DO-22 or Type LO-11 relay.

For Use With		Enclosure					
Class	Type	General Purpose Enclosure NEMA Type 1		Watertight and Dusttight Enclosure Stainless Steel NEMA Type 4		Dusttight and Driptight Industrial Use Enclosure NEMA Type 12*	
		Class 9991 Type	Price	Class 9991 Type	Price	Class 9991 Type	Price
8903	LO, LLO, SMO, SPO	20 Amp. SDG-3	\$112.	30 Amp. SDW-3	\$328.	60 Amp. SDA-3	\$192.

- * Suitable for NEMA 3 raintight and sleet resistant and 3R rainproof and sleet resistant applications. For details refer to Class 9991.
- ** Class 9991 Type SCG-1 separate enclosure can also be used for Class 8903 Type SMO 30 ampere electrically held lighting contactor if Form FT (control transformer) with or without cover control units is required. (See Class 9991).

TRANSFORMER AND RELAY SELECTION

For Use With				Standard Transformer		Fuse Block	Auxiliary Relay
Class	Type	Ampere Rating	No. of Poles	Class 9070 Type*	V.A.	Class 9080 Type	Class 8501 Type
8903	LO, LLO	20	All	E0-1	50	PF-1	DO-22 or LO-11
	SMO	30	2-3	E0-1	50		
			4-5	E0-2	100		
SPO	60	2-5	E0-2	100			

*Class 9080 Type PF-1 fuse block is utilized to provide fusing of the transformer secondary.

WIRING TERMINALS

In general, all Square D lighting contactors, 60-800 amperes, manufactured after February, 1978, are provided with lugs suitable for both copper and aluminum wire. Type L 20 ampere multi-pole and Type S 30 ampere devices have lugs suitable for copper wire only. All devices have control terminals suitable for copper wire only.

If lugs suitable for copper wire only are required on the 60-800 ampere devices, order lighting contactor with Form Y-157, no additional charge.

Ampere Rating	Type	Type of Lug	Line Terminals On Disconnect of Combination Lighting Contactor		Power Terminals On Lighting Contactor†		Control Terminals On All Lighting Contactors	
			Wire Size Min.-Max.		Type of Lug	Wire Size Min.-Max.	Type of Lug	Wire Size Min.-Max.
			Switch	Circuit Breaker				
20	L & LL	....	....	....	Clamp	#18—#12 Copper	Clamp	#18—#12 Copper
30	SM	Screw Lug	#14—#2 Copper #10—#2 Aluminum	#14—#4 Copper or Aluminum	Clamp	#14—#8 Copper	Clamp	#16—#12 Copper
60	SP	Screw Lug	#14—#2 Copper #10—#2 Aluminum	#10—#1/0 Copper or Aluminum	Screw Lug	#14—#2 Copper or Aluminum	Clamp	#16—#12 Copper
100	SQ	Screw Lug	#4—#1/0 Copper or Aluminum	#10—#1/0 Copper or Aluminum (FA Breaker)	Screw Lug	#14—#00 Copper or Aluminum	Clamp	#16—#12 Copper
				#4—300 MCM Copper or Aluminum (KA Breaker)				
200	SV	Screw Lug	#6-300 MCM Copper or Aluminum	#4—300 MCM Copper or Aluminum	Screw Lug	#6—350 MCM Copper or Aluminum	Clamp	#16—#12 Copper
300	SX	Screw Lug	#3/0—750 MCM Copper or Aluminum	One 600 MCM Copper or Aluminum or Two #1—250 MCM Copper or Aluminum	Screw Lug	One #4—600 MCM or Two #0—250 MCM Copper or Aluminum	Clamp	#16—#12 Copper
400	SY	Screw Lug	....	One #1—600 MCM or Two #1—250 MCM Copper or Aluminum	Screw Lug	One or Two #6—350 MCM Copper or Aluminum	Clamp	Elec. Held #16—#14 Copper Mech. Held #16—#12 Copper
600	SZ	Screw Lug	....	One, Two or Three #3/0—500 MCM Copper or Aluminum	Screw Lug	One or Two #2—600 MCM 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 MCM Copper or Aluminum	Clamp	Elec. Held #16—#14 Copper Mech. Held #16—#12 Copper

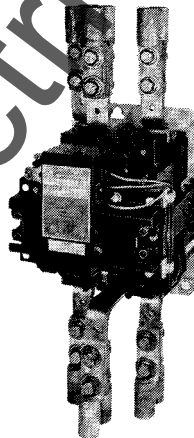
†Line and load electrically and mechanically held. Load side only on combination.

COMPRESSION LUGS

Square D Versa-Crimp® compression lugs for Type S lighting contactors, 100-800 amperes, are available factory installed (Form Y157-4) or as a field modification kit (see table at right). They are suitable for both copper and aluminum wire.

One VCEL lug (one or two on the 400 & 600 ampere devices) is required for each line or load terminal. Each Class 9999 Type AL hardware kit includes mounting hardware for 3 terminals, line or load side.

EXAMPLE: To install compression lugs on a 300 ampere 3 pole device, line and load sides, order six (6) VCEL-060-12H1 lugs and two (2) Class 9999 Type AL-11 hardware kits.



For Use With		Versa-Crimp Catalog Number	Wire Range Min.—Max.	Hardware Kit Class 9999	
Ampere Rating	Type			Type	Price
100	SQ	VCEL-021-14S1	#8—1/0 AL/CU	▲	....
200	SV	VCEL-022-516H1	#1—2/0 AL/CU	▲	....
		VCEL-024-516H1	2/0—4/0 AL/CU		
		VCEL-030-516H1	#4—300 MCM AL/CU		
300	SX	VCEL-050-12H1	2/0—500 MCM AL/CU	AL-11	\$15.
		VCEL-060-12H1	400—600 MCM AL 400—500 MCM CU		
		VCEL-075-12H1	500—750 MCM AL 500 MCM CU		
400 & 600	SY & SZ	VCEL-060-12H2*	400—600 MCM AL 400—500 MCM CU	AL-12	30.
		VCEL-075-12H2*	500—750 MCM AL 500 MCM CU		
800	SJ	Compression lugs for 800 ampere lighting contactors are available only as factory installed modification. Order Form Y157-4. Price is \$60, list 0 per lug. Specify wire size up to maximum of 750 MCM AL and 500 MCM CU, and number of terminals.			

▲ Not required. Use hardware from standard lugs supplied with contactor.

* One or two lugs may be mounted on each terminal.

● D1A Discount.

LIGHTING CONTACTORS

APPROXIMATE DIMENSIONS

CLASS
8903

OPEN TYPE

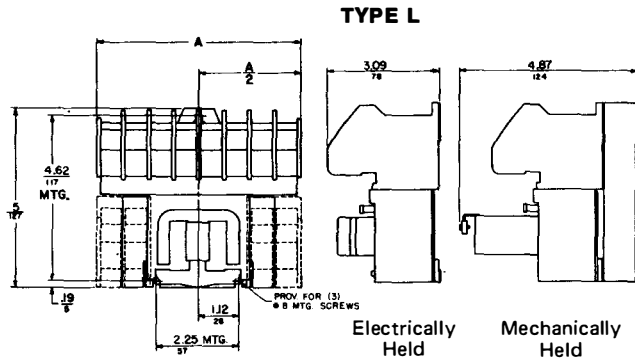


Figure 1

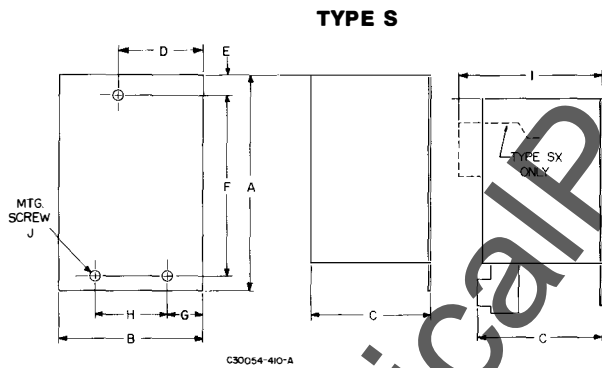


Figure 2

Electrically Held Mechanically Held
30-100 & 300 Amperes

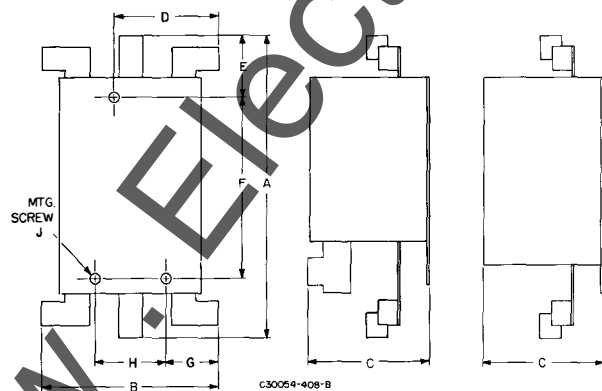


Figure 3

Electrically Held Mechanically Held
200 Ampere

ELECTRICALLY HELD

Ampere Rating	Type	Figure No.	Number of Poles	Dimensions										
				A	B	C	D	E	F	G	H	J		
20	LO	1	2-4	2.88										
			6	4.25	108
			8-12	5.63	143									
30	SMO	2	2-3	4.34	3.22	4.22	1.63	.22	3.94	1.63	...	#10		
			4-5	4.34	4.25	4.22	2.63	.22	3.94	2.63	...	#10		
60	SPO	2	2-3	5.13	4.91	4.94	2.16	.22	4.59	1.63	1.06	#10		
			4-5	5.13	5.63	4.94	3.47	.22	4.59	2.92	1.06	#10		
100	SQO	2	2-3	7.09	5.47	6.50	3.59	.31	6.03	.34	4.75	1/4		
			4-5	7.88	9.75	6.50	5.81	.31	7.00	.34	9.06	5/16		
200	SVO	3	2-3	13.12	8.00	6.50	4.94	2.74	7.00	1.34	5.31	5/16		
			3-4	13.12	11.81	6.50	6.84	2.74	7.00	1.38	9.06	5/16		
			4-5	13.31	300	165	174	70	178	35	230			
300	SXO	2	2-3	12.31	8.66	8.75	5.41	.63	11.13	.66	7.25	1/2		
400	SYO	4	2-3	27.78	9.30	9.00	1.03	2.50	4.94	18.56	7.25	1/2		
600	SZO	4	2-3	706	236	229	26	64	125	471	184			
800	SJO	4	2-3	42.70	9.30	11.94	.67	2.50	9.30	22.38	7.25	1/2		
				1085	236	303	17	64	236	568	184			

MECHANICALLY HELD

Ampere Rating	Type	Figure No.	Number of Poles	Dimensions										
				A	B	C	D	E	F	G	H	I	J	
20	LLO	1	2	2.88										
			3-4	4.25	108
			6-10	5.63	143									
30	SMO	2	2-3	7.15	3.79	4.68	1.90	.22	6.25	1.40	1.00	...	#10	
			4-5	7.15	4.54	4.68	1.90	.22	6.25	1.40	1.00	...	#10	
60	SPO	2	2-3	8.00	4.61	5.23	2.45	.22	7.34	1.95	1.00	...	#10	
			4-5	8.00	5.90	5.23	2.45	.22	7.34	1.95	1.00	...	#10	
100	SQO	2	2-3	10.13	5.94	6.72	3.59	.31	6.03	.31	4.75	...	1/4	
			4-5	10.56	9.75	6.72	5.82	.31	7.03	.35	9.06	...	5/16	
200	SVO	3	2-3	13.12	8.00	6.72	5.44	2.74	7.03	1.85	5.31	...	5/16	
			4	13.62	11.81	6.72	6.85	2.74	7.03	1.38	9.06	...	5/16	
300	SXO	2	2-3	12.31	9.16	...	5.99	.63	11.13	1.24	7.25	10.50	1/2	
400	SYO	4	2-3	21.00	8.66	10.50	.67	2.50	4.94	11.12	7.25	...	1/2	
600	SZO	4	2-3	533	220	267	17	64	125	282	184	...		
800	SJO	4	2-3	35.35	8.66	11.94	.67	2.50	9.94	15.47	7.25	...	1/2	
				898	220	303	17	64	252	393	184	...		

Dual Dimensions: INCHES
Millimeters

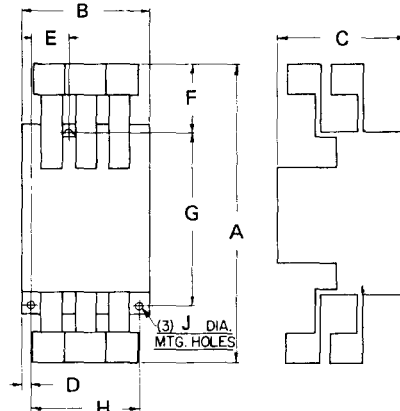


Figure 4

400-800 Amperes
Electrically
and
Mechanically Held

LIGHTING CONTACTORS

APPROXIMATE DIMENSIONS

JANUARY, 1981

NEMA TYPE 1

Ampere Rating	Type	Number of Poles	Form(s)	Figure Number	Dimensions											
					A	B	C	D	E	F	G	H	I	J	K	
20	LG, LLG	Any	Standard, Y48	5	7.53 191	9.78 248	5.91 150	8.38 213	6.13 156	.28 7	.75 19	.69 17
			A3, A12, C, C6, F, FT, P, R6	7	11.88 302	11.88 302	7.44 189	9.75 248	1.06 27	1.06 27	9.75 248	1.06 27	1.06 27	.31 8
30	SMG	2-5	Electrically Held Std., A12, C, C6, P, X	6	6.00 152	10.00 254	5.28 134	3.00 76	.88 22	8.13 206	1.00 25	.94 24	4.13 105	5.00 127
			Mechanically Held Std., X	6	6.34 161	15.88 403	5.19 132	14.38 365	4.66 118	.28 7	.75 19	.84 21
		Electrically Held FT	5	6.34 161	15.88 403	5.19 132	14.38 365	4.66 118	.28 7	.75 19	.84 21	...	...	...	...
		Mechanically Held A3, C, C6, FT, P, R6	7	14.88 378	14.12 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	1.06 27	.31 8	...	...
60	SPG	2-5	Electrically Held Std., A12, C, C6, P, X	6	7.81 198	12.69 322	6.03 153	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143
			Mechanically Held Std., X	6	7.81 198	12.69 322	6.03 153	...	1.09 28	10.50 267	1.09 28	1.09 28	5.63 143	5.75 146	1.09 28	5.63 143
		Electrically Held FT, N	7	14.88 378	14.12 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	1.06 27	.31 8	...	...
		Mechanically Held A3, C, C6, FT, N, P, R6	7	14.88 378	14.12 359	7.56 192	12.75 324	1.06 27	1.06 27	12.00 305	1.06 27	1.06 27	.31 8	...	...
100	SQG	2-3	Electrically Held Std., A12, C, C6, FT, P, X	6	11.44 291	21.81 554	7.75 197	...	1.44 37	18.75 476	1.44 37	1.44 37	8.38 213	7.50 191	1.44 37	8.38 213
			Mechanically Held Std., X	6	16.13 410	24.13 613	8.50 216	13.50 343	1.31 33	1.31 33	21.50 546	1.31 33	.44 11	.44 11
		Electrically Held N	7	16.13 410	24.13 613	8.50 216	13.50 343	1.31 33	1.31 33	21.50 546	1.31 33	.44 11	.44 11	...	...
		Mechanically Held A3, C, C6, FT, N, R6	7	22.38 568	32.50 826	10.00 254	19.50 495	29.50 749	.44 11	...	...	...	...	...	...
200	SVG	2-3	With or without any forms	7	16.13 410	24.13 613	8.50 216	13.50 343	1.31 33	1.31 33	21.50 546	1.31 33	.44 11	.44 11
		4	With or without any forms	8	22.38 568	32.50 826	10.00 254	19.50 495	29.50 749	.44 11	...	...	...	...	...
300	SXG	2-3	With or without any forms	8	17.63 448	35.69 906	10.91 277	13.00 330	31.00 784	.56 14	...	...	...	...	...
400	SYG	2-3	With or without any forms	8	20.22 514	33.75 861	13.13 333	11.00 279	62.50 1588	.69 17	...	...	...	...	...
600	SZG	2-3	With or without any forms	8	34.50 876	53.00 1341	23.50 597	...	...	...	...	...	...	...
800	SJG	2-3	With or without any forms	8	34.50 876	53.00 1341	23.50 597	...	...	...	...	...	...	...

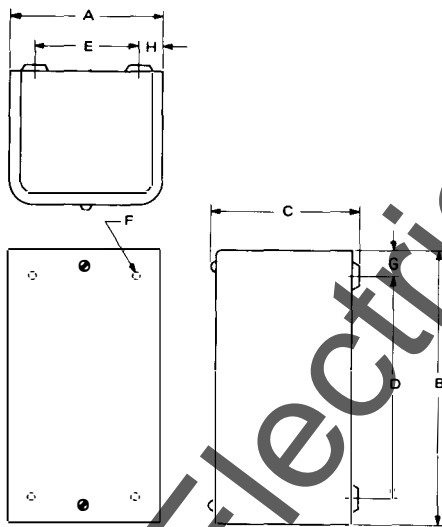


Figure 5

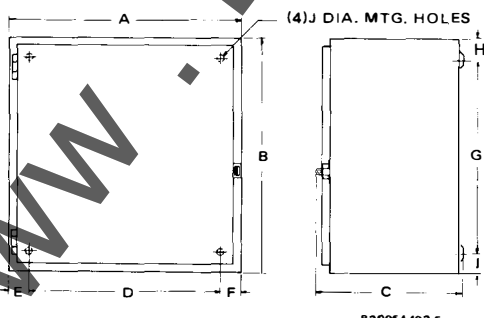


Figure 7

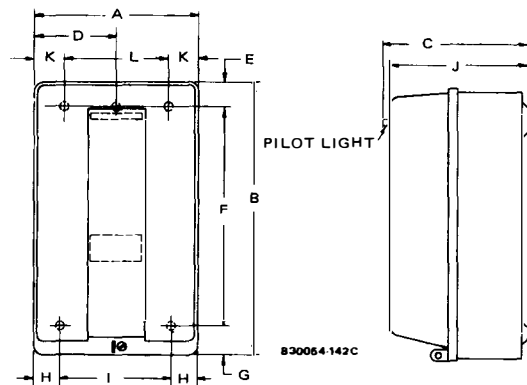


Figure 6

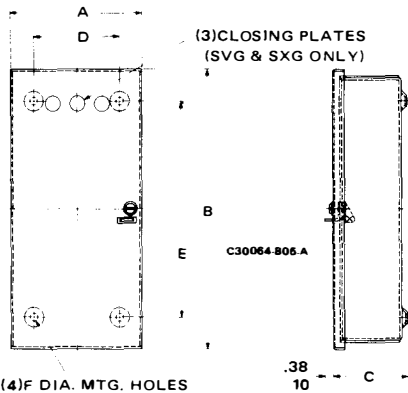


Figure 8

Dual Dimensions: INCHES
Millimeters

LIGHTING CONTACTORS APPROXIMATE DIMENSIONS

CLASS
8903

FLUSH MOUNTED — FIGURE 9

Ampere Rating	Type	Form(s)	Dimensions							
			A	B	C	D	E	F	G	H
20	LF, LLF	Standard, Y48	12.56 319	8.50 216	7.50 191	9.94 252	5.31 935	...	...	.63 16
		A3, A12, C, C6, F, FT, P, R6	24.00 610	17.50 445	15.00 381	19.25 489	5.75 146	...	...	.38 10
30	SMF	Electrically Held Std., A12, C, C6, P, X	13.44	7.19	5.88	11.13	4.75	9.19	4.50	.38
		Mechanically Held Std., X	341	183	149	283	121	233	114	10
		Electrically Held FT, N	24.00	17.50	15.00	19.25	5.75	...	...	.38
		Mechanically Held A3, C, C6, FT, N, P, R6	610	445	381	489	146	...	...	10
60	SPF	Electrically Held Std., A12, C, C6, P, X	15.19	8.94	7.63	12.88	5.44	10.94	5.13	.38
		Mechanically Held Std., X	386	227	194	327	138	278	130	10
		Electrically Held FT, N	24.00	17.50	15.00	19.25	5.75	...	...	.38
		Mechanically Held A3, C, C6, FT, N, P, R6	610	445	381	489	146	...	...	10
100	SQF	With or without any forms	31.00	16.75	14.25	26.25	8.00	...	...	.18
200	SVF	With or without any forms	787	425	362	667	203	...	...	5

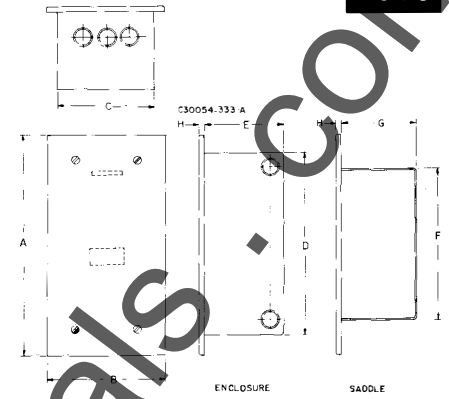


Figure 9

Dual Dimensions: INCHES
Millimeters

NEMA TYPE 4

Ampere Rating	Type	Number of Poles	Form(s)	Figure Number	Dimensions													Bottom Hub Only	Top & Bottom Hub
					A	B	C	D	E	F	G	H	I	J	K	L	W			X
20	LW LLW	Any	Standard, Y48	10	7.75 197	6.13 156	11.75 298	1.13 29	5.38 143	10.50 267	.63 16	...	...	1.93 49	...	.31 8	3/4"	1"
			A3, A12, C, C6, F, FT, P, R6	11	12.62 321	7.81 198	14.69 373	4.19 106	4.25 108	13.50 343	.63 16	5.00 127	18.44 468	1.69 43	2.31 59	.31 8	3/4"	1"	
30	SMW	2-5	Electrically Held Std., A12, C, C6, P, X	10	6.38 162	7.11 181	13.19 331	1.31 33	4.25 108	12.00 305	.63 16	1.67 42	11.81 300	1.63 41	2.31 59	.31 8	3/4"	1"	
			Mechanically Held Std., F, X	10	6.38 162	7.11 181	13.19 331	1.31 33	4.25 108	12.00 305	.63 16	1.67 42	11.81 300	1.63 41	2.31 59	.31 8	3/4"	1"	
		Electrically Held FT, N, R6	11	12.63 322	7.11 181	14.69 373	4.19 106	4.25 108	13.50 343	.63 16	4.80 122	18.50 470	1.64 42	2.31 59	.31 8	3/4"	1"		
		Mechanically Held A3, C, C6, FT, N, P, R6	11	14.88 378	7.25 184	16.31 414	5.31 135	4.25 108	15.00 381	.63 16	5.92 150	20.88 530	2.06 52	2.63 67	.31 8	3/4"	1 1/2"		
60	SPW	2-5	Electrically Held Std., A12, C, C6, P, X	10	8.13 206	7.88 200	13.69 348	1.93 33	4.25 108	12.50 318	.63 15	3.25 95	14.31 363	2.00 51	1.93 49	.31 8	3/4"	1 1/2"	
			Mechanically Held Std., X	10	8.13 206	7.88 200	13.69 348	1.93 33	4.25 108	12.50 318	.63 15	3.25 95	14.31 363	2.00 51	1.93 49	.31 8	3/4"	1 1/2"	
		Electrically Held FT, N	11	14.88 378	8.25 210	15.75 400	5.31 135	4.25 108	15.00 381	.63 16	6.63 168	20.88 530	2.06 52	2.63 67	.31 8	3/4"	1 1/2"		
		Mechanically Held A3, C, C6, FT, N, P, R6	11	14.88 378	8.25 210	15.75 400	5.31 135	4.25 108	15.00 381	.63 16	6.63 168	20.88 530	2.06 52	2.63 67	.31 8	3/4"	1 1/2"		
100	SQW	2-3	Electrically Held With or without any forms	10	11.38 289	8.89 226	27.26 692	3.56 90	4.25 108	25.00 635	1.10 28	5.00 127	18.19 461	2.56 65	3.19 81	.31 8	3/4"	2 1/2"	
			Mechanically Held Std., X	10	11.38 289	8.89 226	27.26 692	3.56 90	4.25 108	25.00 635	1.10 28	5.00 127	18.19 461	2.56 65	3.19 81	.31 8	3/4"	2 1/2"	
		Electrically Held A3, C, C6, FT, N, P, R6	11	16.13 410	8.64 219	24.76 629	3.56 90	9.00 229	23.00 584	.88 22	4.95 126	22.75 578	2.56 65	3.19 81	.44 11	3/4"	2 1/2"		
		Mechanically Held A3, C, C6, FT, N, P, R6	11	16.13 410	8.64 219	24.76 629	3.56 90	9.00 229	23.00 584	.88 22	4.95 126	22.75 578	2.56 65	3.19 81	.44 11	3/4"	2 1/2"		
		Electrically Held Std., A12, C, C6, P, X	10	11.38 289	8.89 226	27.26 692	3.56 90	4.25 108	25.00 635	1.10 28	5.00 127	18.19 461	2.56 65	3.19 81	.31 8	3/4"	2 1/2"		
		Mechanically Held Std., X	10	11.38 289	8.89 226	27.26 692	3.56 90	4.25 108	25.00 635	1.10 28	5.00 127	18.19 461	2.56 65	3.19 81	.31 8	3/4"	2 1/2"		
200	SVW	2-3	With or without any forms	11	16.13 410	7.81 198	24.19 614	3.56 90	9.00 229	23.00 584	.63 16	3.93 100	23.06 586	2.56 65	3.19 81	.44 11	3/4"	2 1/2"	
		4	With or without any forms	10	22.13 562	9.31 237	35.19 894	3.63 92	15.00 381	34.00 864	.63 15	7.00 177	31.13 791	2.00 51	2.87 73	.31 8	3/4"	2 1/2"	
300	SXW	2-3	With or without any forms	10	17.25 413	11.50 292	38.13 968	4.13 29	9.00 229	36.50 927	.81 21	4.75 121	27.31 694	3.00 76	5.75 146	.44 11	3/4"	3 1/2"	
400	SYW	2-3	With or without any forms	10	20.25 514	13.13 333	63.75 1619	4.63 117	11.00 279	62.50 1588	.63 16	6.19 157	30.93 786	2.69 68	4.50 114	.69 17	3/4"*	Two 3"*	
800	SJW	2-3	With or without any forms	10	34.50 876	23.50 597	101.00 2565	...	...	...	...	...	...	...	...	...	...	...

*X hub is 1/4" left of center. W hub shown is another X hub. K dimension is distance between two X hubs. Actual W hub is located 3 3/8" to the right of X hub shown.

Dual Dimensions: INCHES
Millimeters

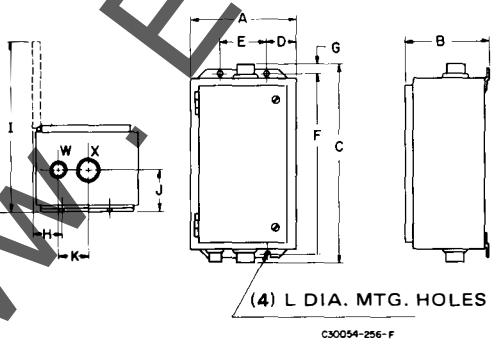


Figure 10

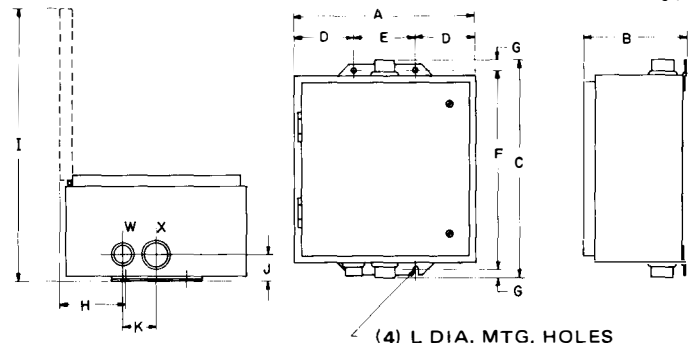


Figure 11

LIGHTING CONTACTORS
APPROXIMATE DIMENSIONS

NEMA TYPE 12

Ampere Rating	Type	Number of Poles	Form(s)	Figure Number	Dimensions										
					A	B	C	D	E	F	G	H	I	J	
20	LA LLA	Any	Standard, Y48	12	7.75 197	7.06 179	11.25 286	1.75 44	4.25 108	10.50 267	.38 10	2.13 54	13.13 333	.31 8	
			A3, A12, C, C6, F, FT, P, R6	13	11.88 302	7.75 197	13.50 343	3.81 97	4.25 108	12.75 324	.38 10	4.94 125	18.12 460	.31 8	
30	SMA	2-5	Electrically Held Std., A12, C, C6, P, X	12	6.38 162	8.54 217	12.75 324	1.06 27	4.25 108	12.00 305	.38 10	4.94 125	18.40 467	.31 8	
			Mechanically Held Std., F, X												
			Electrically Held FT, N, R6	13	11.88 302	8.13 207	13.50 343	3.82 97	4.25 108	12.75 324	.38 10	4.44 113	18.05 458	.31 8	
			Mechanically Held A3, C, C6, FT, N, P, R6	13	14.88 378	8.67 220	15.75 400	5.31 135	4.25 108	15.00 381	.38 10	6.46 164	21.75 540	.31 8	
60	SPA	2-5	Electrically Held Std., A12, C, C6, P, X	12	8.13 206	8.50 216	13.25 337	1.93 49	4.25 108	12.50 318	.38 10	3.06 77	14.75 375	.31 8	
			Mechanically Held Std., X												
			Electrically Held FT, N												
			Mechanically Held A3, C, C6, FT, N, P, R6	13	14.88 378	7.88 200	15.75 400	5.31 135	4.25 108	15.00 381	.38 10	6.41 163	21.75 540	.31 8	
100	SQA	2-3	Electrically Held With or without any forms Std., X	12	11.38 289	9.75 222	20.50 521	3.56 90	4.25 108	4.25 108	25.50 648	.38 10	4.81 121	18.00 457	.31 8
			Mechanically Held A3, C, C6, FT, N, P, R6	13	16.13 410	8.38 213	26.50 673	3.56 90	9.00 229	25.50 648	.50 13	3.75 95	23.44 595	.44 11	
			Electrically Held Std., A12, C, C6, P, X	12	11.38 289	9.29 222	25.75 654	3.56 90	4.25 108	25.00 635	.38 10	4.69 119	18.95 481	.31 8	
			Mechanically Held Std., X	12	11.38 289	8.74 222	25.75 654	3.56 90	4.25 108	25.00 635	.38 10	4.25 108	18.95 481	.31 8	
		4-5	Electrically Held FT, N, R6	13	22.15 563	10.26 261	35.00 889	3.58 91	15.00 381	34.00 864	.50 13	4.31 109	30.88 784	.56 14	
			Mechanically Held A3, C, C6, FT, N, P, R6	13	22.15 563	10.81 275	35.00 889	3.58 91	15.00 381	34.00 864	.50 13	4.75 121	30.88 784	.56 14	
			With or without any forms	13	16.13 410	8.38 213	26.50 673	3.56 90	9.00 229	25.50 648	.50 13	3.75 95	23.44 597	.44 11	
			With or without any forms	12	22.25 565	9.87 251	35.00 889	3.63 92	15.00 381	34.00 864	.50 13	3.00 76	31.00 787	.56 14	
200	SVA	2-3	With or without any forms	13	17.25 478	12.13 307	38.25 972	4.13 105	9.00 229	36.50 927	.50 13	4.87 123	26.31 668	.43 11	
300	SXA	2-3	With or without any forms	12	20.25 514	13.13 333	63.75 1619	4.63 117	11.00 279	62.50 1588	.63 16	6.81 173	30.93 786	.69 17	
400	SYA	2-3	With or without any forms	12	20.25 514	13.13 333	63.75 1619	4.63 117	11.00 279	62.50 1588	.63 16	6.81 173	30.93 786	.69 17	
600	SZA	2-3													
800	SJA	2-3													

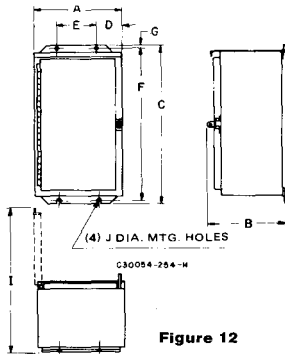


Figure 12

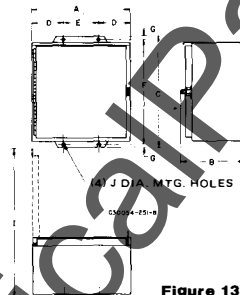


Figure 13

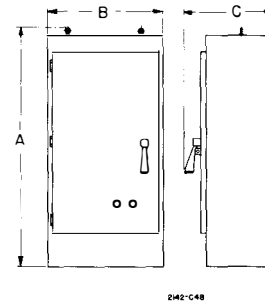


Figure 14

NIGHT-MASTER™ OUTDOOR LIGHTING CONTROLLER

SHORT VERSION

Ampere Rating	Description	Type Number	B	C	D	E	F	G	H	Cond. J	K	L	M	Knockouts			
														N	P	Q	
30	Disconnect Switch & Circuit Breaker Types	SMC-61, -62 & -81	23.50	15.88	8.42	10.42	20.30	22.38	7.00	2.18	2.13	2.13	2.13	1/2-3/4	1-1/4-1/2	1/2-3/4	
60	Disconnect Switch & Circuit Breaker Types	SPC-61, -62 & -81	39.77	403	214	265	516	568	178	55	1 1/2	54	54	54	1/2-3/4	1 1/2	1/2-3/4
100	Disconnect Switch & Circuit Breaker Types	SQC-61, -62 & -81	34.53	20.88	8.42	10.42	31.33	33.41	7.00	2.18	2	2.68	2.68	3.44	1/2-3/4	1-1/4-2-2 1/2	1-1 1/4-1 1/2
200	Disconnect Switch Type	SVC-81	877	530	214	265	796	849	178	55	2 1/2	68	68	87	1/2-3/4	2-2 1/2	1 1/2-2
200	Disconnect Switch Type	SVC-61 & -82	44.37 1128	19.88 506	9.12 232	11.10 282	41.78 1062	43.25 1100	7.00 178	2.18 55	2 1/2	2.68 68	2.68 68	3.44 87	1/2-3/4	1-1/4-2-2 1/2	1-1 1/4-1 1/2

LONG VERSION

Ampere Rating	Description	Type Number	A	B	C	D	E	F	G	H	Cond. J	K	L	M	Knockouts		
															N	P	Q
30	Disconnect Switch & Circuit Breaker Types	SMC-63, -64 & -83	38.88	15.88	8.42	10.42	35.68	37.75	7.00	2.18	1 1/2	2.13	2.13	2.13	1/2-3/4	1-1/4-1 1/2	1/2-3/4
60	Disconnect Switch & Circuit Breaker Types	SPC-63, -64 & -83	998	403	214	265	906	959	178	55	1 1/2	54	54	54	1/2-3/4	1 1/2	1/2-3/4
100	Disconnect Switch & Circuit Breaker Types	SQC-63, -64 & -83	42.53	20.88	8.42	10.42	39.33	41.41	7.00	2.18	2	2.68	2.68	3.44	1/2-3/4	1-1/4-2-2 1/2	1-1 1/4-1 1/2
200	Disconnect Switch Type	SVC-83	1080	530	214	265	999	1052	178	55	2 1/2	68	68	87	1/2-3/4	2-2 1/2	1 1/2-2
200	Disconnect Switch Type	SVC-63 & -64	54.37 1383	19.88 506	9.12 232	11.10 282	51.78 1317	53.25 1354	7.00 178	2.18 55	2 1/2	2.68 68	2.68 68	3.44 87	1/2-3/4	1-1/4-2-2 1/2	1-1 1/4-1 1/2

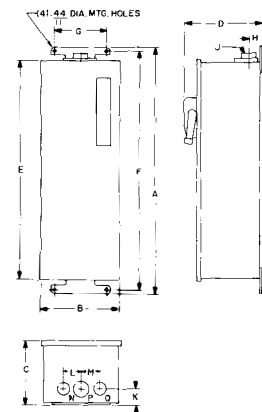


Figure 15

Dual Dimensions: **INCHES**
Millimeters

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SQUARE D COMPANY



AC LIGHTING CONTACTORS FOR TUNGSTEN, FLUORESCENT, and MERCURY ARC LAMPS

AC 480 VOLTS MAXIMUM LINE VOLTAGE

DC 250 VOLTS MAXIMUM LINE VOLTAGE

COIL — 24-480 VOLTS AC												
	Ampere Ratings	No. of Poles	General Purpose Enclosure NEMA Type 1		Flush Mounting General Purpose Enclosure with Plaster Adjustment		Dust-tight Enclosure NEMA Type 12		Water-tight Enclosure NEMA Type 4		Open Type	
			Type	Price	Type	Price	Type	Price	Type	Price	Type	Price
ELEC. HELD (Without Interlock)	30	2	MG-1	\$ 33.	MF-1	\$ 45.	MA-1	\$ 45.	MW-1	\$ 69.	MO-1	\$ 31.
		3	MG-2	36.	MF-2	48.	MA-2	48.	MW-2	72.	MO-2	34.
		4	MG-3	44.	MF-3	56.	MA-3	56.	MW-3	80.	MO-3	42.
	60	2	PG-1	68.	PF-1	83.	PA-1	90.	PW-1	140.	PO-1	58.
		3	PG-2	72.	PF-2	87.	PA-2	94.	PW-2	144.	PO-2	62.
		4	PG-3	90.	PF-3	105.	PA-3	112.	PW-3	190.	PO-3	80.
	100	2	QG-1	112.	QF-1	131.	QA-1	138.	QW-1	214.	QO-1	92.
		3	QG-2	120.	QF-2	139.	QA-2	146.	QW-2	222.	QO-2	100.
		4	QG-3	148.	QF-3	167.	QA-3	174.	QW-3	278.	QO-3	128.
	200	2	VG-1	264.	VF-1	294.	VA-1	350.	VW-1	438.	VO-1	222.
		3	VG-2	282.	VF-2	312.	VA-2	368.	VW-2	456.	VO-2	240.
		4	VG-3	376.	VF-3	406.	VA-3	492.	VW-3	622.	VO-3	334.
	300	2	XG-1	558.	.....	.....	XA-1	778.	XW-1	778.	XO-1	481.
		3	XG-2	600.	.....	.....	XA-2	820.	XW-2	820.	XO-2	523.
		4	XG-3	1115.	.....	.....	XA-3	1357.	XW-3	1357.	XO-3	961.
MECH. HELD (With Coil Clearing Contacts)	30	2	MG-10	44.	MF-10	62.	MA-10	82.	MW-10	80.	MO-10	42.
		3	MG-11	47.	MF-11	65.	MA-11	85.	MW-11	83.	MO-11	45.
		4	MG-12	50.	MF-12	68.	MA-12	88.	MW-12	86.	MO-12	48.
	60	2	PG-10	104.	PF-10	124.	PA-10	152.	PW-10	156.	PO-10	96.
		3	PG-11	108.	PF-11	128.	PA-11	156.	PW-11	180.	PO-11	100.
		4	PG-12	128.	PF-12	148.	PA-12	184.	PW-12	228.	PO-12	120.
	100	2	QG-10	146.	QF-10	180.	QA-10	204.	QW-10	248.	QO-10	128.
		3	QG-11	154.	QF-11	188.	QA-11	212.	QW-11	256.	QO-11	136.
		4	QG-12	184.	QF-12	218.	QA-12	266.	QW-12	314.	QO-12	166.
	200	2	VG-10	374.	VF-10	424.	VA-10	460.	VW-10	548.	VO-10	316.
		3	VG-11	422.	VF-11	472.	VA-11	508.	VW-11	596.	VO-11	342.
		4	VG-12	516.	VF-12	556.	VA-12	594.	VW-12	690.	VO-12	436.
	300	2	XG-13	654.	.....	.....	XA-13	827.	XW-13	874.	XO-13	530.
		3	XG-14	718.	.....	.....	XA-14	845.	XW-14	938.	XO-14	548.
		4	XG-15	1155.	.....	.....	XA-15	1406.	XW-15	1406.	XO-15	1010.

Prices do not include push button stations. Prices do not include holding circuit interlock.

ORDERING INFORMATION REQUIRED

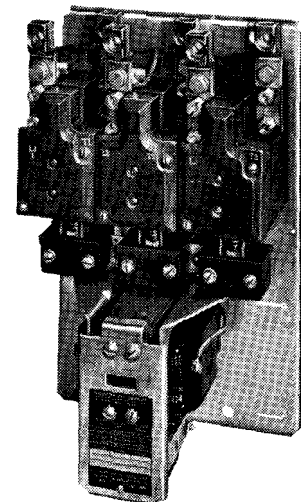
- 1—Class and Type number.
- 2—Voltage and frequency of coil.
- 3—Additions or special features required.

**Additions and Special Features—
 Refer to Tab "Additions and Special Features"**

MAXIMUM WIRE SIZE

Contactors will accept copper wire of the maximum sizes indicated below:

CONTACTOR RATING				
30 A.	60 A.	100 A.	200 A.	300 A.
1—#8	1—#4	1—#1/0	1—350 MCM	2—350 MCM



200 Ampere electrically held lighting contactor

www.ElectricalPartManuals.com



AUGUST, 1961

AC LIGHTING CONTACTORS

•APPLICATION

A lighting contactor is an electric switch operated by the action of an electromagnet. The contacts on the switch are used to make and break the currents to tungsten, fluorescent and mercury arc lamps. With the use of these contactors, relatively large load currents can be safely and conveniently controlled by small pilot duty devices, such as push buttons and toggle switches.

Gas-filled tungsten lamps have inrush currents approximately 15 to 17 times their normal operating currents. Standard motor control contactors must be de-rated when used on tungsten lamp loads, in order to prevent possible welding of the contacts on the high initial current. However, Square D Class 8903 lighting contactors, being specifically designed for such loads are applied at their full ratings.

Although primarily intended for use on AC, lighting contactors for use on DC are also available on special order.

RATINGS

Amperes — Class 8903 AC lighting contactors are built in five sizes, from 30 amperes through 300 amperes.

Poles — All sizes of contactors are available in 2, 3, or 4 pole construction.

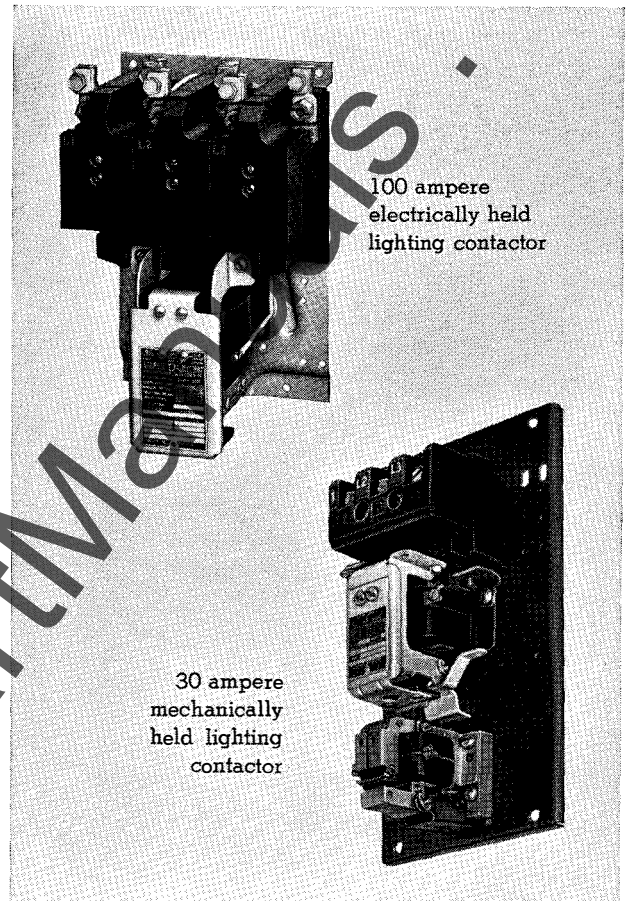
Volts — These contactors are suitable for use with AC loads having a maximum rating of 277 volts from line to neutral, 480 volts line to line.

Magnet coils are available for all AC voltages from 24 volts through 600 volts. They will operate the contactors satisfactorily on line voltages fluctuating as much as 15% below and 10% above the nominal coil rating.

Frequency — Standard magnet coil frequencies are 60, 50, and 25 cycles. If coils for other frequencies or for use in abnormal ambient temperatures are required, the Factory should be contacted.

•CONTROL

Remote Control — It is frequently convenient to control a number of lights at some distance from the load. Rather than run heavy power wiring from the source to a large manual switch within reach of the operator, and then to the load, lighting contactors are mounted near the load, thus eliminating long runs of power wiring. This not only effects economy of installation, but also reduces operating costs and improves performance because of reduced voltage drop in the wiring. Since only two or three small connecting wires are required, each pilot switch may be located for the greatest convenience and installation economy. A load may be controlled from several remote locations by using a number of push buttons or pilot switches with each contactor.



100 ampere
electrically held
lighting contactor

30 ampere
mechanically
held lighting
contactor

Electrically held contactors close when the magnet coil is energized and open when the magnet coil is de-energized. A maintained contact pilot switch is normally used to open and close the magnet coil circuit. When a contactor is to be operated from more than one pilot switch, momentary contact ON (normally open) and OFF (normally closed) push buttons must be used. This also necessitates the addition of a normally open electrical interlock to the contactor.

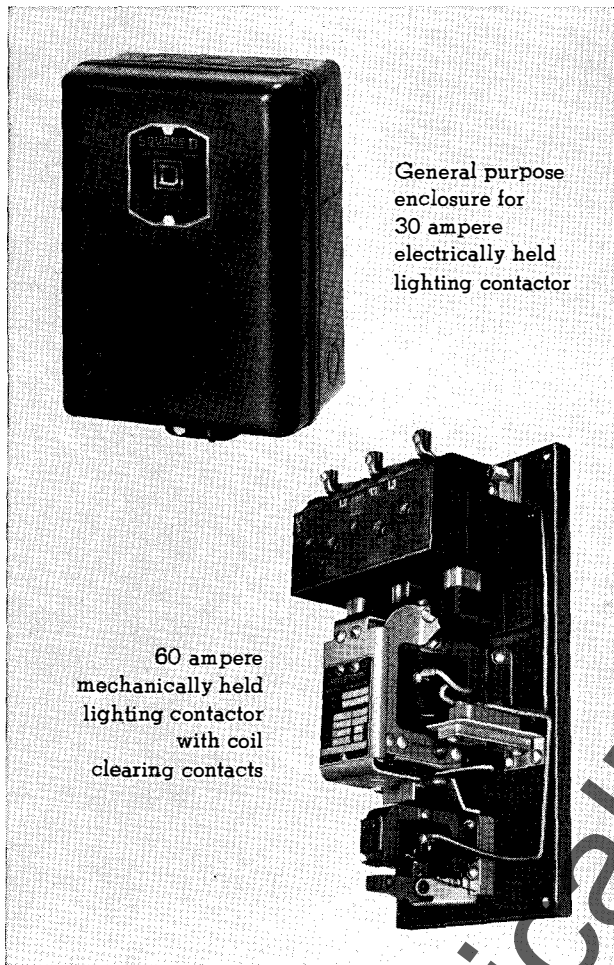
When maintained contact pilot switches are used, the contactor will open if the voltage fails, and immediately reclose when the voltage returns. With momentary contact pilot switches the contactor opens upon loss of voltage, but will not reclose after the voltage returns until the ON push button is operated.

Mechanically Held contactors close when the latch coil is energized, and remain closed until the unlatch coil is energized. Normally open momentary contact ON and OFF push buttons are used. Since each magnet coil is de-energized as soon as its push button is released, there is no distracting AC magnetic hum present. These contactors are, therefore, recommended for use in hospitals, schools, and other applications where noiseless operation is required.



AC LIGHTING CONTACTORS

AUGUST, 1961



General purpose enclosure for 30 ampere electrically held lighting contactor

60 ampere mechanically held lighting contactor with coil clearing contacts

Coil clearing contacts should be added to mechanically held contactors controlled by maintained contact pilot switches. These contacts de-energize the magnet coils after operation of the contactor has been completed. The desirable feature of complete absence of AC magnetic hum is thus retained.

CONSTRUCTION

Class 8903 contactors in all sizes are the vertical action type, employing double break silver contacts which do not corrode and never need cleaning or dressing.

All contactors are provided with shading coils, embedded in the magnet frame, to reduce the AC hum to a minimum.

FEATURES

Accessibility—One of the foremost features of Square D lighting contactors is accessibility for maintenance or repair.

All electrical equipment needs maintenance and replacement attention at regular intervals. That equipment which is easy to inspect and maintain receives more maintenance service and enjoys longer life. Thus, double economy is realized. All renewable parts of Square D lighting contactors can be inspected with a minimum of time and labor, using only a screwdriver and pliers.

Some of the outstanding features of Class 8903 contactors are:

1. Contacts replaceable without disturbing line and load wiring.
2. All parts front-mounted. It is unnecessary to remove the contactor from its enclosure for maintenance or replacement of any part.
3. Molded coils. Coils are less subject to mechanical injury. Coils operate cooler because of better heat transfer, thus last longer.

Class 8903 contactors are available with many special features, some of which are:

Push button in cover—Class 8903 contactors in all sizes are available with ON-OFF momentary contact push buttons mounted in the cover of the enclosure for external operation. (Electrically held contactors require the addition of a normally open electrical interlock). Where this arrangement is convenient from the operating standpoint, installation economies are obtained through the elimination of a separate push button station and its wiring. Separately mounted push buttons may also be connected in parallel with the one included with the contactor.

Electrical Interlocks—are available in arrangement and number to satisfy every practical need. They will be installed at the Factory if specified on the order, but can be easily installed in the field on all contactors. Interlocks for installation by users are listed in Catalog Section Class 9999. For 30 ampere lighting contactors, use the same interlocks as listed for Size 1 starters; for 60 ampere contactors, use Size 2 interlocks; for 100 ampere contactors, use Size 3 interlocks; for 200 ampere contactors, use Size 4 interlocks and for 300 ampere contactors use Size 5 interlocks.

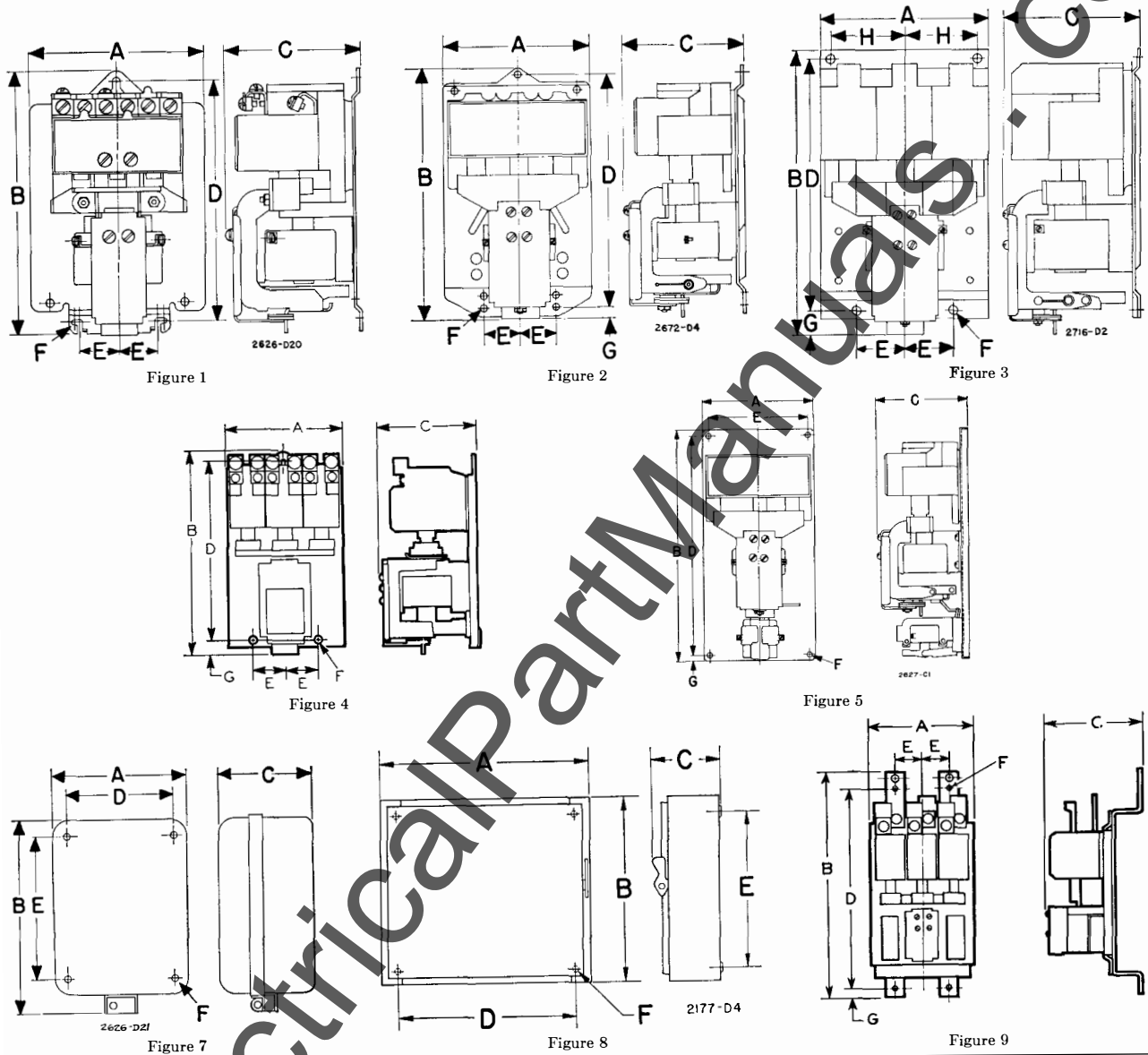
ENCLOSURES

General Purpose Enclosures—NEMA 1—are intended to prevent accidental contact with live parts are suitable for general indoor use where normal atmospheric conditions prevail.

These surface mounting enclosures are constructed of heavy sheet steel, finished in gray enamel. All covers have latches with provisions for padlocking. ON-OFF momentary contact push buttons may be easily mounted in the covers of 30 through 200 ampere contactor enclosures, by removing either a cover knockout or cover plate.



AC LIGHTING CONTACTORS
 Approximate Dimensions — Not for Construction



APPROXIMATE DIMENSIONS CLASS 8903

		ELECTRICALLY HELD									MECHANICALLY HELD									
		30 Amp.		60 Ampere		100 Ampere		200 Ampere		300 Ampere			30 Amp.		60 Ampere		100 Ampere		200 Ampere	
Enclosure	Dimension	Fig. 1		Figure 2		Figure 3		Figure 4		Figure 9			Fig. 5		Figure 5		Figure 5		Figure 5	
		2 to 4 Poles	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 Pole	3 Pole	4 Pole	2 to 4 Poles	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole		
Open Type	A	5 ⁵ / ₁₆	6	7 ³ / ₄	6 ⁷ / ₈	9 ⁵ / ₁₆	7	9 ⁵ / ₁₆	7 ¹ / ₄	10 ¹ / ₄	13 ¹ / ₂	5 ¹ / ₂	6 ¹ / ₄	7 ³ / ₈	7 ⁷ / ₈	9 ³ / ₈	14 ¹ / ₁₆	9 ³ / ₈	17 ¹ / ₁₆	9 ³ / ₁₆
	B	7 ¹ / ₂	10 ¹ / ₄	10 ³ / ₄	11 ⁷ / ₈	11 ⁷ / ₈	12 ³ / ₈	12 ³ / ₈	23 ¹ / ₂	23 ¹ / ₂	23 ¹ / ₂	10 ¹ / ₄	12 ³ / ₄	12 ³ / ₄	14 ¹ / ₁₆	14 ¹ / ₁₆	17 ¹ / ₁₆	17 ¹ / ₁₆	17 ¹ / ₁₆	17 ¹ / ₁₆
	C	3 ¹¹ / ₁₆	4 ³ / ₄	4 ³ / ₄	5 ⁵ / ₈	5 ⁵ / ₈	6 ⁵ / ₃₂	6 ⁵ / ₃₂	9 ¹ / ₁₆	9 ¹ / ₁₆	9 ¹ / ₁₆	3 ⁷ / ₈	4 ¹ / ₈	4 ¹ / ₈	5 ¹ / ₁₆	5 ¹ / ₁₆	6 ³ / ₈	6 ³ / ₈	6 ³ / ₈	6 ³ / ₈
	D	6 ¹ / ₂	9 ³ / ₈	9 ³ / ₈	10 ¹ / ₄	10 ¹ / ₄	11	11	20 ³ / ₁₆	20 ³ / ₁₆	20 ³ / ₁₆	9 ¹ / ₂	12	12	13 ³ / ₈	13 ³ / ₈	13 ³ / ₈	13 ³ / ₈	13 ³ / ₈	13 ³ / ₈
	E	1	1 ¹ / ₂	1 ¹ / ₂	2	2	2	2	2	2 ³ / ₄	2 ³ / ₄	4 ¹ / ₄	5 ¹ / ₂	7 ³ / ₈	6 ³ / ₈	8 ¹ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₁₆	8 ¹ / ₁₆
	F	1 ⁷ / ₃₂	1 ⁷ / ₃₂	1 ⁷ / ₃₂	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	1 ¹ / ₁₆	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂	5 ⁹ / ₃₂
	G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	H	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
NEMA Type 1 Surface Mounting General Purpose Enclosure	Dimension	Fig. 7		Figure 7		Figure 7		Fig. 7		Figure 8			Fig. 8		Figure 8		Figure 8		Figure 8	
		2 to 4 Poles	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 Pole	3 Pole	4 Pole	2 to 4 Poles	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2 or 3 Pole	4 Pole	2, 3 or 4 Pole	
	A	6 ⁵ / ₁₆	8 ⁵ / ₈	10 ³ / ₄	10 ⁷ / ₈	12 ³ / ₈	14 ¹ / ₄	14 ¹ / ₄	11 ³ / ₁₆	17 ³ / ₁₆	17 ³ / ₁₆	7 ⁵ / ₈	9 ⁵ / ₈	11 ¹ / ₂	10 ⁷ / ₈	12 ¹ / ₂	12 ¹ / ₂	14 ¹ / ₂	14 ¹ / ₂	
	B	9 ³ / ₈	14 ³ / ₄	14 ³ / ₄	19 ¹ / ₈	19 ¹ / ₈	25 ³ / ₈	25 ³ / ₈	39	39	39	13 ⁵ / ₈	18 ¹ / ₂	18 ¹ / ₂	20 ³ / ₄	20 ³ / ₄	25 ³ / ₈	25 ³ / ₈	25 ³ / ₈	
	C	4 ¹ / ₂	5 ³ / ₄	5 ³ / ₄	7	7	7 ⁵ / ₈	7 ⁵ / ₈	13 ⁷ / ₈	13 ⁷ / ₈	13 ⁷ / ₈	5 ⁷ / ₈	6 ¹ / ₂	6 ¹ / ₂	7 ³ / ₈	7 ³ / ₈	7 ³ / ₈	7 ³ / ₈	7 ³ / ₈	
	D	4 ³ / ₈	6 ¹ / ₈	6 ¹ / ₈	8 ³ / ₄	8 ³ / ₄	10	10	12	12	12	5 ¹ / ₂	7 ¹ / ₂	7 ¹ / ₂	8 ³ / ₄	8 ³ / ₄	10	10	12	
	E	6 ³ / ₈	11 ¹⁵ / ₁₆	11 ¹⁵ / ₁₆	16 ¹ / ₄	16 ¹ / ₄	22 ¹¹ / ₁₆	22 ¹¹ / ₁₆	37	37	37	11 ¹ / ₂	16	16	18 ³ / ₄	18 ³ / ₄	22 ¹¹ / ₁₆	22 ¹¹ / ₁₆	22 ¹¹ / ₁₆	
F	

NOTE — Dimensions are in inches.

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Revised.

Dimensions Subject to Change without Notice.

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