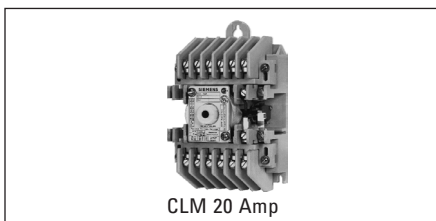


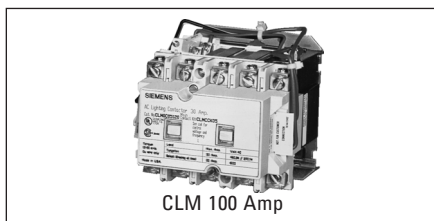
Lighting and Heating Contactors

Mechanically and Magnetically Held Lighting Contactors

General



CLM 20 Amp



CLM 100 Amp

Mechanically Latched Lighting and Heating Contactor

The CLM Lighting Contactors can be used with metal halide, mercury vapor, quartz halogen, tungsten and fluorescent lighting. They provide reliable and convenient lighting control in numerous applications, such as industrial plants, schools, hospitals, office buildings, shopping centers, airports, stadiums . . . literally everywhere lighting is required.

The CLMs are listed under UL 508 with no derating when used open or enclosed. Combination lighting contactors are listed for UL service entrance. UL listed File #E14900
CSA Certified File LR 6535

Maximum AC/DC Voltage and Amp Ratings

Load Type	Amperes Continuous	Poles to Load	
		1 for 1 Phase	2 for 1 Phase 3 for 3 Phase
Tungsten	20	250V AC	480V AC (L-L) 277V AC (L-N)
Ballast	20	347V AC	600V AC
General	30	347V AC	600V AC
General	20	125V DC	250V DC

Inrush Current Over Fuse Size (amps RMS) at AC Control Voltage					
Amps	120V	240V	277V	347V	480V
Inrush	5.0	2.5	2.2	1.8	1.3
Fuse	2.0	1.0	1.0	0.75	0.5

Type CLM 20 Amp Lighting Contactor Solid State Control Modules

The CLM 20 amp lighting contactor is an electromagnetically operated, mechanically latched three wire control contactor. The most commonly used method of control is a three position momentary contact switch with a center-off position. The controlling device must be able to make the coil inrush current but need not break it. The coil current is interrupted by the control contacts within the CLM contactor. Power for the control line may come from a separate source or directly from the line side of the CLM contactor. The CLM contactor can also be controlled by devices such as:

- Break-glass control stations
- Timers having single-pole, double throw contacts
- Photo-electric cells[Ⓞ]
- Energy management systems[Ⓞ]
- Microprocessors[Ⓞ]
- Occupancy sensors[Ⓞ]The functions of our Solid State Control Modules for the 20 amp CLM are as follows:

Control modules make it possible to use a controlling device that does not have enough current-carrying capacity to control the CLM contactor directly. Control modules are also used when the control station is to be located at a distance greater than the allowable contactor line run.

Another use for control modules occurs when the controlling device is only available as a single-pole single-throw contact necessitating a two wire control line.

Still another application for control modules is when start-stop three wire control is needed.

Control modules also can make it possible to operate the CLM coil from its own incoming line at one voltage while providing the control at a second, perhaps lower voltage.

Two Wire Control Module (Accessory 47)

The advantages of two wire controls are:

1. Control station can have lower ampacity rating.
2. Control station can be located an extended distance from the CLM contactor.
3. Control module can frequently be controlled directly from microprocessor.
4. Control devices can be two wire single-pole, single-throw types.
5. Control voltage may be different than the CLM coil circuit and at a lower voltage level.

Note: If the control power to the solid state control module is lost while the module is energized the lighting contactor will open. If the line power to the lighting contactor is lost while the contactor is energized the contactor will not change state with return of line voltage. Power will be restored to the load if the control module is still energized. Control station should be the maintained type.

Three Wire Control Module (Accessory 48)

The advantages of three wire control are:

1. The accessory 48 consists of two relays with contacts appropriately interconnected which provides for an interlocking that prevents both relays from being energized simultaneously.
2. This module has similar characteristics to the two wire module (Accessory 47) except there is no change of switch contact position upon loss of control line power. Control stations should be the momentary type.

Stop-Start Control Module (Accessory 49)

Stop-start three wire maintained control is an arrangement used mostly when controlling motors, but can be used in lighting applications.

Any number of momentary contact control stations consisting of normally open start buttons and normally closed stop buttons can be used. Start buttons are connected in parallel and stop buttons in series.

Operation (Magnetic Latch)

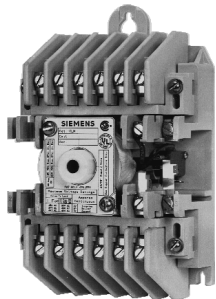
A permanent magnet is built into the contactor structure of the 30A, 60A, 100A, and 200A contactors that will maintain the contactor in its energized state indefinitely without using control power. When energized, a DC current is applied that produces a magnetic field that reinforces the polarity of the permanent magnet, and the contactor pulls in immediately. The current to the coil is disconnected by the coil clearing interlock. In order to drop out the contactor, it is necessary to apply a field through the OFF coil in the reverse direction to the permanent magnet. This momentarily cancels the magnetic attraction and the contactor drops out. Coil and module failures are possible when used with solid state relays and PLC outputs. 24-volt systems are ok to use, but 120 volts and above should be discouraged. If higher values cannot be avoided, an interposing relay should be used.

[Ⓞ]Operation through control modules.

Lighting Control

Mechanically and Magnetically Held Lighting Contactors, Class CLM

Selection

	Ordering Information	Coil Table	
	<ul style="list-style-type: none"> ▶ Replace *** with a number from the coil table. ▶ Technical data see www.sea.siemens.com/controls. ▶ Field modification kits see page 6/71. ▶ Factory modifications see page 6/83. ▶ Dimensions see page 6/101. ▶ Replacement parts see page 6/135. 	60Hz Voltage	Number
		24 ^②	024
		120	120
		208	208
		240	240
		277	277
		480	480
		600	600

Open and Non-combination Enclosed Contactors

Max Amp Rating	Number of Poles	Open Type		Enclosure					
		Catalog No	Price \$	NEMA 1 General Purpose		NEMA 12 NEMA 3/3R ^③ Industrial Use Weatherproof		NEMA 4/4X Stainless Steel ^③ Watertight, Dusttight, Corrosion Resistant, 304 Stainless Steel	
				Catalog No	Price \$	Catalog No	Price \$	Catalog No	Price \$
20 ^④	2	see table below		CLM1B02***		CLM2B02***		CLMSB02***	
	3			CLM1B03***		CLM2B03***		CLMSB03***	
	4			CLM1B04***		CLM2B04***		CLMSB04***	
	6			CLM1B06***		CLM2B06***		CLMSB06***	
	8			CLM1B08***		CLM2B08***		CLMSB08***	
	10			CLM1B10***		CLM2B10***		CLMSB10***	
30	2	CLM0C02***		CLM1C02***		CLM2C02***		CLMSC02***	
	3	CLM0C03***		CLM1C03***		CLM2C03***		CLMSC03***	
	4	CLM0C04***		CLM1C04***		CLM2C04***		CLMSC04***	
	5	CLM0C05***		CLM1C05***		CLM2C05***		CLMSC05***	
	12								
60	2	CLM0D02***		CLM1D02***		CLM2D02***		CLMSD02***	
	3	CLM0D03***		CLM1D03***		CLM2D03***		CLMSD03***	
	4	CLM0D04***		CLM1D04***		CLM2D04***		CLMSD04***	
	5	CLM0D05***		CLM1D05***		CLM2D05***		CLMSD05***	
	12								
100	2	CLM0E02***		CLM1E02***		CLM2E02***		CLMSE02***	
	3	CLM0E03***		CLM1E03***		CLM2E03***		CLMSE03***	
	4	CLM0E04***		CLM1E04***		CLM2E04***		CLMSE04***	
	5	CLM0E05***		CLM1E05***		CLM2E05***		CLMSE05***	
	12								
200	2	CLM0F02***		CLM1F02***		CLM2F02***		CLMSF02***	
	3	CLM0F03***		CLM1F03***		CLM2F03***		CLMSF03***	
	4	CLM0F04***		CLM1F04***		CLM2F04***		CLMSF04***	
	5	CLM0F05***		CLM1F05***		CLM2F05***		CLMSF05***	
	12								
300	2	CLM0G02***		CLM1G02***		CLM2G02***		—	
	3	CLM0G03***		CLM1G03***		CLM2G03***		—	
400	2	CLM0H02***		CLM1H02***		CLM2H02***		—	
	3	CLM0H03***		CLM1H03***		CLM2H03***		—	

Open 20 Amp Contactors

Max Amp Rating	Number of Poles ^①	110–120V Coil 50/60Hz		208–240V Coil 50/60Hz		265–277V Coil 50/60Hz		440–480V Coil 50/60Hz	
		Catalog No	Price \$	Catalog No	Price \$	Catalog No	Price \$	Catalog No	Price \$
20 ^④	2	CLM22031		CLM22061		CLM22071		CLM22091	
	3	CLM32031		CLM32061		CLM32071		CLM32091	
	4	CLM42031		CLM42061		CLM42071		CLM42091	
	6	CLM62031		CLM62061		CLM62071		CLM62091	
	8	CLM82031		CLM82061		CLM82071		CLM82091	
	10	CLM102031		CLM102061		CLM102071		CLM102091	
	12	CLM122031		CLM122061		CLM122071		CLM122091	

① Contactors with 2–6 poles will be assembled with all poles located in the top portion of the contactor. Contactors with 8–12 poles will be assembled with 6 poles in the top portion and the remaining poles in the bottom portion of the contactor.

② 24 volt coils are not available on 20, 300 and 400 amp contactor sizes. For 24 volt control of 20 amp contactor select solid state control module from page 6/65.

③ For conduit hubs and conversion instructions, see page 6/77.

④ 20A mechanically held lighting contactors require a solid-state control module. See page 6/65, 'Solid-State Control Module Kits'.