

SL Series IEC Vacuum Contactors

Medium Voltage Contactors Technical Focus



EATON

Powering Business Worldwide



Automotive



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Powering business worldwide

Eaton delivers the power inside hundreds of products that are answering the demands of today's fast changing world.

We help our customers worldwide manage the power they need for buildings, aircraft, trucks, cars, machinery and entire businesses. And we do it in a way that consumes fewer resources.

Next generation transportation

Eaton is driving the development of new technologies – from hybrid drivetrains and emission control systems to advanced engine components – that reduce fuel consumption and emissions in trucks and cars.

Higher expectations

We continue to expand our aerospace solutions and services to meet the needs of new aviation platforms, including the high-flying light jet and very light jet markets.

Building on our strengths

Our hydraulics business combines localised service and support with an innovative portfolio of fluid power solutions to answer the needs of global infrastructure projects, including locks, canals and dams.

Powering Greener Buildings and Businesses

Eaton's Electrical Group is a leading provider of power quality, distribution and control solutions that increase energy efficiency and improve power quality, safety and reliability. Our solutions offer a growing portfolio of "green" products and services, such as energy audits and real-time energy consumption monitoring. Eaton's Uninterruptible Power Supplies (UPS), variable-speed drives and lighting controls help conserve energy and increase efficiency.



MV switchgear technology is in our DNA

Eaton Corporation is a worldwide leader in the design, manufacture, and sale of safe, reliable and high-performance medium voltage power distribution equipment in accordance with IEC, GB and ANSI standards.

Complete Global Medium Voltage Switchgear Solutions

Eaton, a premier leader in designing and manufacturing power distribution and protection equipment in the electrical industry, offers a comprehensive range of medium voltage (MV) solutions to meet the needs of virtually every application. From products that feature cutting-edge design that allow for easy access, maintenance and space savings, to arc-resistant products that enhance safety, Eaton's medium voltage solutions provide a variety of products for every need. Additionally, Eaton's global service network provides maximum customer support in all regions of the world.

As one of the few completely vertically integrated and diversified industrial manufacturers in the world, Eaton designs not only MV assemblies, but also the key components that comprise the MV solutions – from steel housing and circuit breaker compartments to vacuum interrupters, circuit breakers, bus systems and fuses.

Eaton's MV heritage, strengthened by acquisitions such as Westinghouse DCBU, Cutler Hammer, MEM and Holec, has resulted in breakthrough MV technologies and numerous international patents over the years.

Part of Eaton's complete electrical PowerChain Solutions – which help businesses minimize risks while realizing greater reliability, cost efficiencies, capital utilization and safety – Eaton's medium voltage equipment meets all applicable standards and certifications such as IEC, NEMA / ANSI, GB, UL, IEEE, KEMA and CSA.

When it comes to medium voltage solutions, you can trust the one name with a long history of proven performance: Eaton.



SL Series IEC Vacuum Contactors

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Features

"SL" Contactor Ratings

- Voltages of 2200 through 7200 volts.
- 160 to 800 amperes.
- Interrupting ratings as high as 8500 amperes.

Control Voltages (Field Adjustable)

- 110, 220 50 Hz Vac
- 120, 240 60 Hz Vac
- 125 Vdc

Drop-out Time (Field Adjustable)

- 30 ms
- 50 ms
- 130 ms
- 250 ms
- 330 ms

Global Acceptability

- IEC
- NEMA
- ANSI

Third-Party Verification

- KEMA
- CSA
- UL

Easy-to-Install Option Kits (Field Addition)

- Up to six extra auxiliary contacts.
- Mechanical latch — many coil voltages.

Long Life Guarantees High Quality

- 300,000 electrical operations.
- 2.5 million mechanical operations.

Note: Information may vary for 800 ampere units. Please see Page 7 for details.

History

In 1982, Eaton introduced its first Vacuum contactor. Used to replace popular air-break contactors of its day, the "SJ" Medium Voltage Contactor quickly revolutionized the world of Medium Voltage Control. Since that time, Vacuum contactors have become the standard of the industry and Eaton, a market leader.

Technology

The "SL" contactor family incorporates world-class Cutler-Hammer Vacuum Interrupters.



"SL" Contactor Family

Vacuum Interrupters provide:

- Increased safety, reliability and production.
- Improved performance, especially in dusty and corrosive environments.
- Reduce maintenance, downtime and unit weight.
- Quiet operation.
- Less wattage loss.
- High quality and long life.

Applications

Cutler-Hammer "SL" Medium Voltage Contactors starting applications:

- Squirrel-cage induction motors.
- Synchronous motors.
- Wound-rotor

Fully applicable to:

- Full voltage starting.
- Reduced voltage starting.

The perfect choice for harsh duty applications:

- Mining
- Pulp and paper
- HVAC
- Petrochemical
- Automotive
- Many others

Design and Test Standards

- IEC No. 60470
- CSA T.I.L. D-21, File No. LR28548
- ANSI/NEMA ICS 3, Part 2
- UL 347, File No. E63257

SL Series IEC Vacuum Contactors

Contactors Features (160 – 400 Amperes)

“SL” Series — 160 – 400 Amperes

Features

- A single family of contactors for any medium voltage control application. Voltage range of 2200 to 7200 volts.
- Amperage ratings from 160 through 400 amperes with Induction Motor kilowatt ranges from 450 kW to 3350 horsepower.
- Three different altitude versions.

Benefits

- Leading-edge vacuum technology.
- Fully complies with global standards.
- Third-party qualified by KEMA, CSA, UL.
- Long life — 300,000 electrical and over 2 million mechanical.
- Mounting flexibility — panel or pedestal mounting provisions are standard. Unit can be mounted in horizontal or vertical position.
- Field-selectable settings for coil voltage, ac/dc, and coil drop-out time.
- Field kits available for auxiliary contacts and mechanical latch. Accessories are common for all sizes.
- Special ordering allows unit to be factory pre-set to customer specification, including field kit installation.
- Highest quality available — All contactors manufactured within state-of-the-art “ISO Certified” facilities. 100% Made in America.

Note: Information may vary for 800 ampere units. Please see Page 7 for details.

“SL” Medium Voltage



Table 1. Control Voltage Settings

Setting	SW1	SW2	SW3
100 – 110 Vac/dc	Off	Off	Off
115 – 120 Vac/dc	On	Off	Off
125 Vac/dc	Off	Off	On
200 – 220 Vac/dc	Off	On	Off
230 – 250 Vac/dc	On	On	Off

Table 2. Drop-out Time Settings




Delay Setting	SW4	SW5	SW6
30 ms	Off	Off	Off
50 ms	On	Off	Off
130 ms	Off	On	Off
250 ms	On	On	Off
330 ms	Off	Off	On

Table 3. Altitude Designations ①

Altitude	Low	Standard	High
Meters	- 3500 to -1000	-1000 to +2000	+2000 to +4000
Feet	- 11,483 to -3281	-3281 to +6562	+6562 to +13,123

① Information may vary for 800 ampere units. Please see Page 7 for details.

Table 4. Catalogue Number Selection Chart

	Voltage	Ratings Motor Type	kW	Capacitor Switching (Amperes) ①	Catalogue Number Utilized Operating Elevation ^②		
					Standard	Low	High
					Low	High	High
160 Ampere 	2200 – 2500	Induction	450	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	2200 – 2500	Synchronous (0.8 PF)	450	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	2200 – 2500	Synchronous (1.0 PF)	600	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3000 – 3600	Induction	675	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3000 – 3600	Synchronous (0.8 PF)	675	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3000 – 3600	Synchronous (1.0 PF)	750	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3800 – 4800	Induction	900	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3800 – 4800	Synchronous (0.8 PF)	900	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	3800 – 4800	Synchronous (1.0 PF)	1050	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	6000 – 6900	Induction	1350	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	6000 – 6900	Synchronous (0.8 PF)	1350	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
	6000 – 6900	Synchronous (1.0 PF)	1650	120	SLC011S5A-220	SLC011L5A-220	SLC011H5A-220
200 Ampere 	2200 – 2500	Induction	600	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	2200 – 2500	Synchronous (0.8 PF)	600	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	2200 – 2500	Synchronous (1.0 PF)	750	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3000 – 3600	Induction	825	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3000 – 3600	Synchronous (0.8 PF)	825	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3000 – 3600	Synchronous (1.0 PF)	950	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3800 – 4800	Induction	1100	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3800 – 4800	Synchronous (0.8 PF)	1100	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	3800 – 4800	Synchronous (1.0 PF)	1300	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	6000 – 6900	Induction	1675	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	6000 – 6900	Synchronous (0.8 PF)	1675	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
	6000 – 6900	Synchronous (1.0 PF)	2050	150	SLC012S5A-220	SLC012L5A-220	SLC012H5A-220
360 Ampere 	2200 – 2500	Induction	1100	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	2200 – 2500	Synchronous (0.8 PF)	1100	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	2200 – 2500	Synchronous (1.0 PF)	1300	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3000 – 3600	Induction	1500	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3000 – 3600	Synchronous (0.8 PF)	1500	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3000 – 3600	Synchronous (1.0 PF)	1850	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3800 – 4800	Induction	1850	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3800 – 4800	Synchronous (0.8 PF)	1850	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	3800 – 4800	Synchronous (1.0 PF)	2250	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	6000 – 6900	Induction	3000	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	6000 – 6900	Synchronous (0.8 PF)	3000	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220
	6000 – 6900	Synchronous (1.0 PF)	3750	270	SLC013S5A-220	SLC013L5A-220	SLC013H5A-220

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

② Refer to Table 3 on Page 3. Information may vary for 800 ampere units. See Page 7 for details.

Note: Stock 160 – 400 ampere units are set to 120 Vac coil and 30 ms drop-out time, with 2NO and 2NC auxiliary contacts installed.

Coil voltage and drop-out time settings are field selectable. Additional auxiliary contacts and mechanical latch are available in kit form.

Units may be ordered with special settings and kits. See Pages 8 and 9 for details.

SL Series IEC Vacuum Contactors

Ordering Information

Table 4. Catalogue Number Selection Chart

400 Ampere



800 Ampere



Voltage	Ratings Motor Type	kW	Capacitor Switching (Amperes) ①	Catalogue Number Utilized Operating Elevation ^②		
				Standard	Low	High
2200 – 2500	Induction	1300	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
2200 – 2500	Synchronous (0.8 PF)	1300	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
2200 – 2500	Synchronous (1.0 PF)	1500	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3000 – 3600	Induction	1675	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3000 – 3600	Synchronous (0.8 PF)	1675	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3000 – 3600	Synchronous (1.0 PF)	1850	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3800 – 4800	Induction	2250	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3800 – 4800	Synchronous (0.8 PF)	2250	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
3800 – 4800	Synchronous (1.0 PF)	2600	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
6000 – 6900	Induction	3350	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
6000 – 6900	Synchronous (0.8 PF)	3350	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
6000 – 6900	Synchronous (1.0 PF)	4100	295	SLC014S5A-220	SLC014L5A-220	SLC014H5A-220
2200 – 2500	Induction	2250	550	SLN018S1A-220	N/A	SLN018H1A-220
2200 – 2500	Synchronous (0.8 PF)	2250	550	SLN018S1A-220	N/A	SLN018H1A-220
2200 – 2500	Synchronous (1.0 PF)	2600	550	SLN018S1A-220	N/A	SLN018H1A-220
3000 – 3600	Induction	3000	550	SLN018S1A-220	N/A	SLN018H1A-220
3000 – 3600	Synchronous (0.8 PF)	3000	550	SLN018S1A-220	N/A	SLN018H1A-220
3000 – 3600	Synchronous (1.0 PF)	3750	550	SLN018S1A-220	N/A	SLN018H1A-220
3800 – 4800	Induction	3750	550	SLN018S1A-220	N/A	SLN018H1A-220
3800 – 4800	Synchronous (0.8 PF)	3750	550	SLN018S1A-220	N/A	SLN018H1A-220
3800 – 4800	Synchronous (1.0 PF)	4500	550	SLN018S1A-220	N/A	SLN018H1A-220
6000 – 6900	Induction	6000	550	SLN018S1A-220	N/A	SLN018H1A-220
6000 – 6900	Synchronous (0.8 PF)	6000	550	SLN018S1A-220	N/A	SLN018H1A-220
6000 – 6900	Synchronous (1.0 PF)	7500	550	SLN018S1A-220	N/A	SLN018H1A-220

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

② Refer to Table 3 on Page 3. Information may vary for 800 ampere units. See Page 7 for details.

Note: Stock 160 – 400 ampere units are set to 120 Vac coil and 30 ms drop-out time, with 2NO and 2NC auxiliary contacts installed.

Coil voltage and drop-out time settings are field selectable. Additional auxiliary contacts and mechanical latch are available in kit form. Units may be ordered with special settings and kits. See Pages 8 and 9 for details.

“SL” Series – Accessory Kits – 160 – 400 Amperes

Mechanical Latch Kit - “SL” Vacuum Contactor Sizes 160 - 400 Amperes

Field mount to 160 – 400 amperes “SL” Vacuum Contactor. Coil voltages available in a wide range of ac and dc selections. Easy to install on new and existing units.

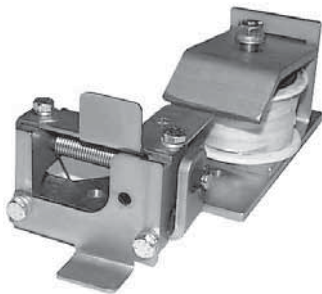
Auxiliary Contact Kit - “SL” Vacuum Contactor Sizes 160 - 400 Amperes

Field mount auxiliary contact kits for 160 – 400 amperes “SL” Vacuum Contactor. Contact kits are available in many configurations of NO-NC.

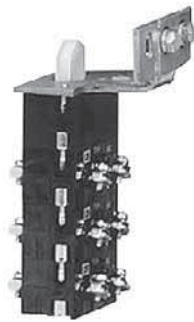
Mechanical Interlock Kit - “SL” Vacuum Contactor Sizes 160 - 400 Amperes

Field mount mechanical interlock kits for 160 – 400 amperes “SL” Vacuum Contactor.

Mechanical Latch Kit Ordering Information



Auxiliary Contact Kit Ordering Information



Mechanical Interlock Kit Ordering Information



Table 5. Mechanical Latch Kit - 160 - 400 Amperes

Coil Voltage	Catalogue Number
24 Vdc	SLA-ML24
32 Vdc	SLA-ML32
48 Vdc	SLA-ML48
110/50, 120/60, 125 dc	SLA-ML120
220/50, 240/60	SLA-ML240

Table 6. Auxiliary Contact Kit - 160 - 400 Amperes

Coil Voltage	Catalogue Number
3NO-3NC Additional	SLA-AS33
6NO Additional	SLA-AS60
6NC Additional	SLA-AS06
5NO-1NC Additional	SLA-AS51
4NO-2NC Additional	SLA-AS42
2NO-4NC Additional	SLA-AS24
1NO-5NC Additional	SLA-AS15

Table 7. Mechanical Interlock Kit 160 - 400 Amperes

Coil Voltage	Catalogue Number
Vertical or Horizontal Arrangement	SLA-MI

Electrical Connections Diagrams

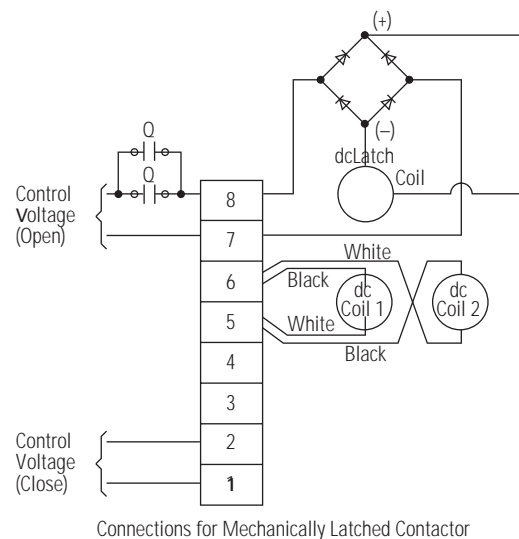
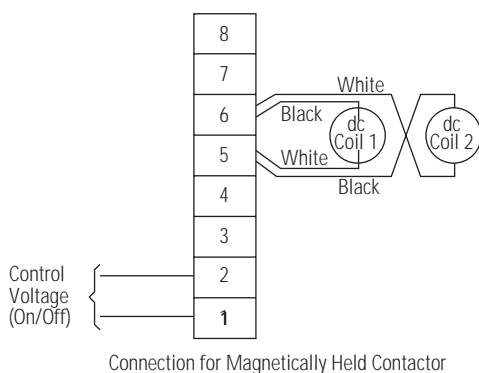
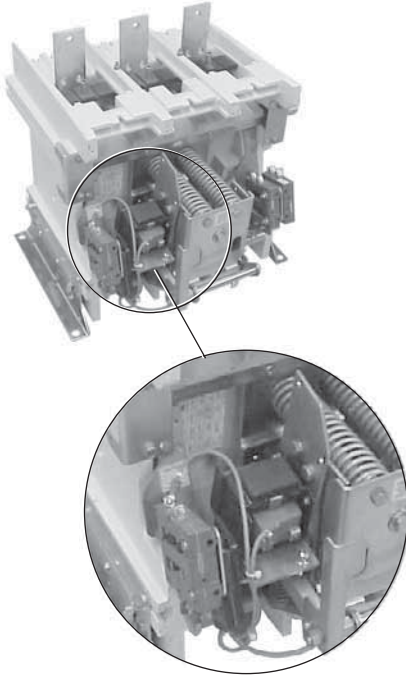


Figure 1. Electrical Connection Diagrams

SL Series IEC Vacuum Contactors

Ordering Information

Mechanical Latch Assembly 800 Amperes



“SL” Series — Accessory Options — 800 Amperes

Mechanical Latch Option — “SL” Vacuum Contactor Size 800 Amperes

Factory installed for 800 ampere “SL” Vacuum Contactor. Coil voltages available in a wide range of ac and dc selections. Dual Solenoid Latch also available.

Table 8. Mechanical Latch Coil Voltages

Coil Voltage	
24 Vdc	Double Solenoid Latch also available. Consult factory for details.
48 Vdc	
96 – 125 Vdc	
110/50, 120/60	
220/50, 240/60	

Table 9. Altitude Designations

Altitude	Low	Standard	High
Meters	N/A	-1000 to +3600	+3600 to +4900
Feet	N/A	-3281 to +11,811	+11,811 to +16,076

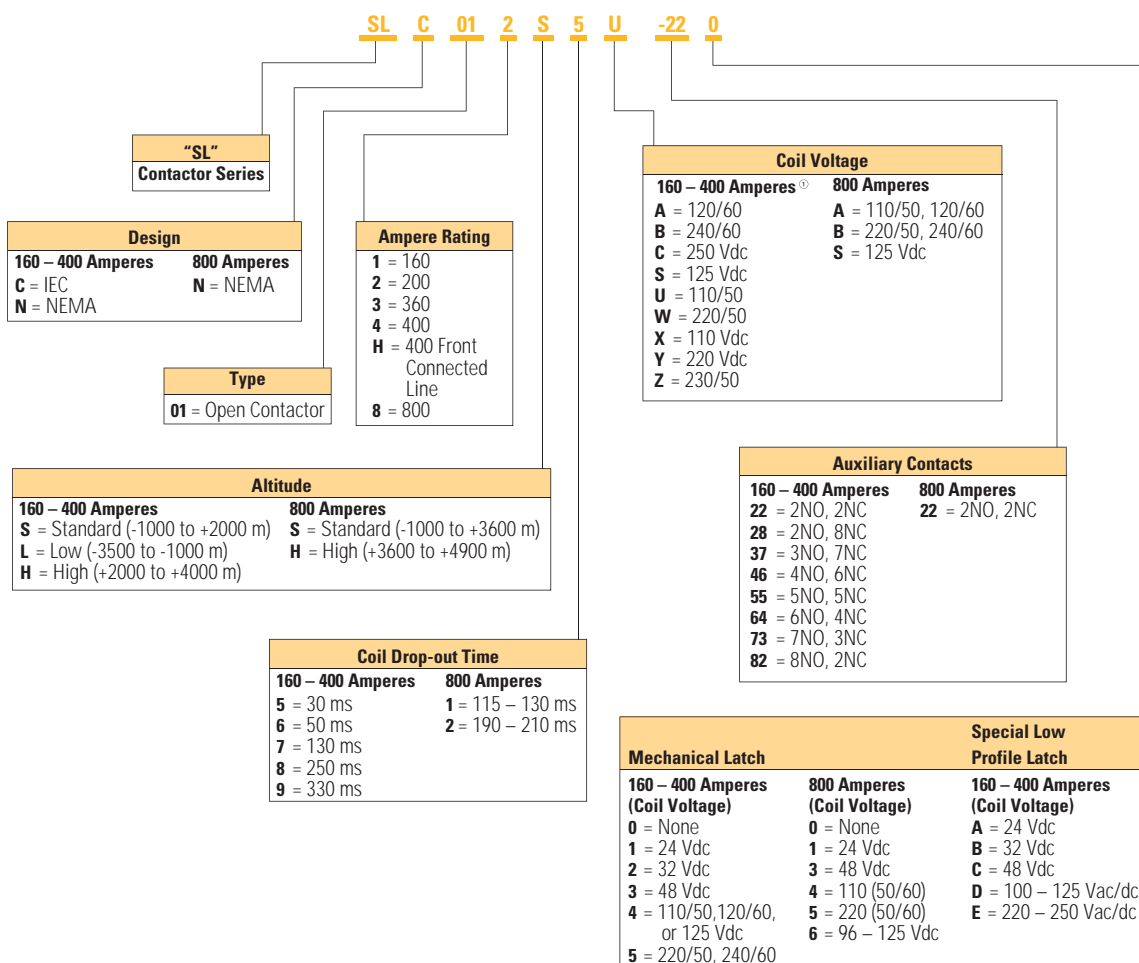
Table 10. Contactor Application Ratings

Rated Current Open	Enclosed	Maximum Interrupting	Short Time Current (1 Second)	Impulse Withstand
800	A720	A13,200	A10,800	A60 kV

Table 11. Coil Settings/Drop-out Times

Factory Settings Coil Voltages			Drop-out Time	
110/50, 120/60	220/50, 240/60	125Vdc	115 – 130 ms	190 – 210 ms

Table 12. Catalogue Number Selection Guide



① Field selectable.

SL Series IEC Vacuum Contactors

Ordering Information

“SL” Series Factory Modifications

When Ordering Specify

- Refer to Catalogue Number Selection Guide.
- Select Option Codes required.
- Select Base Unit Price.
- Add Pricing for options required.

Design and Test Standards

- IEC No. 60470 (160 – 400 A only).
- CSA T.I.L. D-21, File No. LR28548.
- ANSI/NEMA ICS 3, Part 2.
- UL 347, File No. E63257.

Table 13. Factory Modifications

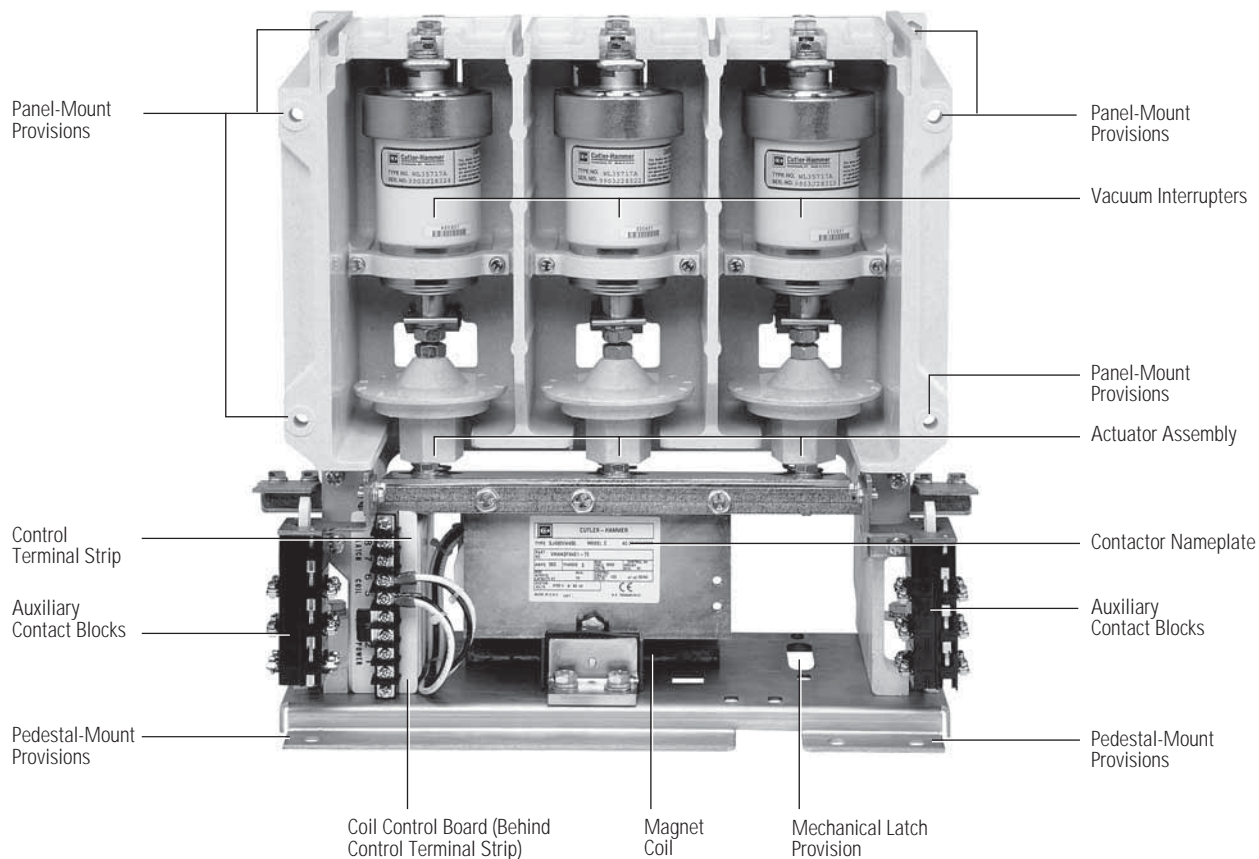
Description	Option Code
Base Price	
160 Ampere “SL” Contactor	1
200 Ampere “SL” Contactor	2
360 Ampere “SL” Contactor	3
400 Ampere “SL” Contactor	4
400 Ampere “SL” Contactor with Front Connected Line Terminals	H
800 Ampere “SL” Contactor	8
Enclosure	
Open	01
Coil Voltage	
100 – 110 Vac/dc	U
115 – 120 Vac/dc	A, X
125 Vac/dc	S
200 – 220 Vac/dc	W, Y
230 – 250 Vac/dc	B, C, Z
Coil Drop-out Time ^①	
30 ms (160 – 400 Amperes Only)	5
50 ms (160 – 400 Amperes Only)	6
130 ms (160 – 400 Amperes Only)	7
250 ms (160 – 400 Amperes Only)	8
330 ms (160 – 400 Amperes Only)	9
115 – 130 ms (800 Amperes Only)	1
190 – 210 ms (800 Amperes Only)	2
Auxiliary Contacts	
2NO – 2NC	22
2NO – 8NC (160 – 400 Amperes Only)	28
3NO – 7NC (160 – 400 Amperes Only)	37
4NO – 6NC (160 – 400 Amperes Only)	46
5NO – 5NC (160 – 400 Amperes Only)	55
6NO – 4NC (160 – 400 Amperes Only)	64
7NO – 3NC (160 – 400 Amperes Only)	73
8NO – 2NC (160 – 400 Amperes Only)	82
Mechanical Latch ^①	
None	0
24 Vdc Coil	1
32 Vdc Coil (160 – 400 Amperes Only)	2
48 Vdc Coil	3
96 – 125 Vdc Coil (800 Amperes Only)	6
110/50, 120/60 Coil, 125 Vdc Coil (160 – 400 Amperes Only) / 110 (50/60) (800 Amperes Only)	4
220/50, 240/60, Coil	5
Special Low Profile Mechanical Latch (160 – 400 Amperes)	
24 Vdc	A
32 Vdc	B
48 Vdc	C
100 – 125 Vac/dc	D
220 – 250 Vac/dc	E

^① Information for 800 ampere units may vary. Please see Page 7 for details.

SL Series IEC Vacuum Contactors

Contactors Component Identification

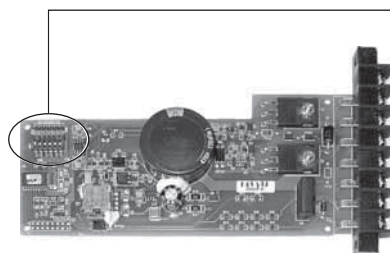
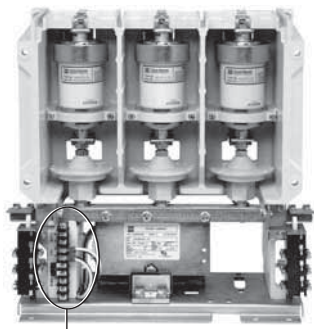
"SL" Series — 160 – 400 Amperes



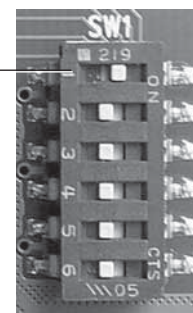
Control Settings



Control Terminal Strip



Coil Control Board



DIP Switches

SL Series IEC Vacuum Contactors

Technical Information

"SL" Series Ratings

Table 14. Type "SL" Vacuum Contactor Ratings 160 Ampere Frame

Rated Utilization Voltage	Interrupting Rating(kA)		Application Table			Transformer (kVA)	Capacitor (Amperes) ①	Maximum Insulation Voltage
	Unfused	Fused	Induction Motor (kW)	Synchronous Motor (kW)				
				(0.8 PF)	(1.0 PF)			
2200 – 2500	4.5	50	450	450	600	600	120	7200
3000 – 3600	4.5	50	675	675	750	800		
3800 – 4800	4.5	50	900	900	1050	1000		
6000 – 6900	4.5	50	1350	1350	1650	1600		

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

Specifications

Maximum Interrupting Current

(3 Operations) 4500 Amperes

Rated Current 160 Amperes Enclosed

IEC Make-Break Capability-AC4

Make 1600 Amperes

Break 1280 Amperes

Short Time Current

30 Second 2400 Amperes

1 Second 6000 Amperes

8.7 ms (0.5 Cycle) 63 kA Peak

Normal Service Altitude -1000 to +2000 meters

Mechanical Life 2.5 Million

Electrical Life

AC3 300,000 Operations

AC4 300,000 Operations

Impulse Withstand 60 kV (1.2 x 50 Microseconds)

Dielectric Strength 20 kV rms (1 Minute)

Closing Time 80 Milliseconds
(Energization to Contact Touch)

Opening Times (Selectable) 30 – 330 ms

Note: Approximate values. Refer to Table 2, Page 3 for specific ranges.

Arcing Time 12 ms or Less

Pickup Voltage 80% Rated Coil Voltage

Dropout Voltage 60% Rated Coil Voltage

Control Voltages

ac/Hz 110/50, 120/60, 220/50, 240/60

dc 125

Control Circuit Burden

Closing 100 – 125 V 1 kVA

200 – 240 V 1.8 kVA

Holding 100 – 125 V 40 VA

200 – 240 V 50 VA

Auxiliary Contact Rating

Voltage (Maximum) 600 Volts

Continuous Current 10 Amperes

Making Capacity (ac) 7200 VA

(dc) 125 VA

Breaking Capacity (ac) 720 VA

(dc) 125 VA

Latch (when Specified)

Mechanical Life 250,000 Operations

Trip Voltage(dc) 24 Volts

(dc) 125 Volts

(ac) 110/120 Volts

Minimum Trip Voltage 80% Rated Coil Voltage

Trip Burden 400 VA

Trip Time 30 ms

Weight 21.4 kg

“SL” Series Ratings (Continued)

Table 15. Type “SL” Vacuum Contactor Ratings 200 Ampere Frame

Rated Utilization Voltage	Interrupting Rating(kA)		Application Table			Transformer (kVA)	Capacitor (Amperes) ①	Maximum Insulation Voltage
	Unfused	Fused	Induction Motor (kW)	Synchronous Motor (kW)				
				(0.8 PF)	(1.0 PF)			
2200 – 2500	4.5	50	600	600	750	750	150	7200
3000 – 3600	4.5	50	825	825	950	1000		
3800 – 4800	4.5	50	1100	1100	1300	1250		
6000 – 6900	4.5	50	1675	1675	2050	2000		

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

Specifications

Maximum Interrupting Current

(3 Operations) 4500 Amperes

Rated Current 200 Amperes Enclosed

IEC Make-Break Capability-AC4

Make 2000 Amperes

Break 1600 Amperes

Short Time Current

30 Second 2400 Amperes

1 Second 6000 Amperes

8.7 ms (0.5 Cycle) 63 kA Peak

Normal Service Altitude -1000 to +2000 meters

Mechanical Life 2.5 Million

Electrical Life

AC3 300,000 Operations

AC4 300,000 Operations

Impulse Withstand 60 kV (1.2 x 50 Microseconds)

Dielectric Strength 20 kV rms (1 Minute)

Closing Time 80 Milliseconds
(Energization to Contact Touch)

Opening Times (Selectable) 30 – 330 ms

Note: Approximate values. Refer to Table 2, Page 3 for specific ranges.

Arcing Time 12 ms or Less

Pickup Voltage 80% Rated Coil Voltage

Dropout Voltage 60% Rated Coil Voltage

Control Voltages

ac/Hz 110/50, 120/60, 220/50, 240/60

dc 125

Control Circuit Burden

Closing 100 – 125 V 1 kVA

200 – 240 V 1.8 kVA

Holding 100 – 125 V 40 VA

200 – 240 V 50 VA

Auxiliary Contact Rating

Voltage (Maximum) 600 Volts

Continuous Current 10 Amperes

Making Capacity (ac) 7200 VA

(dc) 125 VA

Breaking Capacity (ac) 720 VA

(dc) 125 VA

Latch (when Specified)

Mechanical Life 250,000 Operations

Trip Voltage(dc) 24 Volts

(dc) 125 Volts

(ac) 110/120 Volts

Minimum Trip Voltage 80% Rated Coil Voltage

Trip Burden 400 VA

Trip Time 30 ms

Weight 21.4 kg

SL Series IEC Vacuum Contactors

Technical Information

“SL” Series Ratings (Continued)

Table 16. Type “SL” Vacuum Contactor Ratings 360 Ampere Frame

Rated Utilization Voltage	Interrupting Rating(kA)		Application Table			Transformer (kVA)	Capacitor (Amperes) ①	Maximum Insulation Voltage
	Unfused	Fused	Induction Motor (kW)	Synchronous Motor (kW)				
				(0.8 PF)	(1.0 PF)			
2200 – 2500	4.5	50	1100	1100	1300	1200	270	7200
3000 – 3600	4.5	50	1500	1500	1850	1600		
3800 – 4800	4.5	50	1850	1850	2250	2000		
6000 – 6900	4.5	50	3000	3000	3750	3200		

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

Specifications

Maximum Interrupting Current

(3 Operations) 4500 Amperes

Rated Current 360 Amperes Enclosed

IEC Make-Break Capability-AC4

Make 3600 Amperes

Break 2880 Amperes

Short Time Current

30 Second 2400 Amperes

1 Second 6000 Amperes

8.7 ms (0.5 Cycle) 63 kA Peak

Normal Service Altitude -1000 to +2000 meters

Mechanical Life 2.5 Million

Electrical Life

AC3 300,000 Operations

AC4 300,000 Operations

Impulse Withstand 60 kV (1.2 x 50 Microseconds)

Dielectric Strength 20 kV rms (1 Minute)

Closing Time 80 Milliseconds
(Energization to Contact Touch)

Opening Times (Selectable) 30 – 330 ms

Note: Approximate values. Refer to Table 2, Page 3 for specific ranges.

Arcing Time 12 ms or Less

Pickup Voltage 80% Rated Coil Voltage

Dropout Voltage 60% Rated Coil Voltage

Control Voltages

ac/Hz 110/50, 120/60, 220/50, 240/60

dc 125

Control Circuit Burden

Closing 100 – 125 V 1 kVA

200 – 240 V 1.8 kVA

Holding 100 – 125 V 40 VA

200 – 240 V 50 VA

Auxiliary Contact Rating

Voltage (Maximum) 600 Volts

Continuous Current 10 Amperes

Making Capacity (ac) 7200 VA

(dc) 125 VA

Breaking Capacity (ac) 720 VA

(dc) 125 VA

Latch (when Specified)

Mechanical Life 250,000 Operations

Trip Voltage(dc) 24 Volts

(dc) 125 Volts

(ac) 110/120 Volts

Minimum Trip Voltage 80% Rated Coil Voltage

Trip Burden 400 VA

Trip Time 30 ms

Weight 21.4 kg

“SL” Series Ratings (Continued)

Table 17. Type “SL” Vacuum Contactor Ratings 400 Ampere Frame

Rated Utilization Voltage	Interrupting Rating(kA)		Application Table			Transformer (kVA)	Capacitor (Amperes) ①	Maximum Insulation Voltage
	Unfused	Fused	Induction Motor (kW)	Synchronous Motor (kW)				
				(0.8 PF)	(1.0 PF)			
2200 – 2500	8.5	50	1300	1300	1500	1500	295	7200
3000 – 3600	8.5	50	1675	1675	1850	2000		
3800 – 4800	8.5	50	2250	2250	2600	2500		
6000 – 6900	8.5	50	3350	3350	4100	4000		

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

Specifications

Maximum Interrupting Current

(3 Operations) 8500 Amperes

Rated Current 300 Amperes Enclosed

IEC Make-Break Capability-AC4

Make 3000 Amperes

Break 3200 Amperes

Short Time Current

30 Second 2400 Amperes

1 Second 6000 Amperes

8.7 ms (0.5 Cycle) 63 kA Peak

Normal Service Altitude -1000 to +2000 meters

Mechanical Life 2.5 Million

Electrical Life

AC3 300,000 Operations

AC4 300,000 Operations

Impulse Withstand 60 kV (1.2 x 50 Microseconds)

Dielectric Strength 20 kV rms (1 Minute)

Closing Time 80 Milliseconds
(Energization to Contact Touch)

Opening Times (Selectable) 30 – 330 ms

Note: Approximate values. Refer to Table 2, Page 3 for specific ranges.

Arcing Time 12 ms or Less

Pickup Voltage 80% Rated Coil Voltage

Dropout Voltage 60% Rated Coil Voltage

Control Voltages

ac/Hz 110/50, 120/60, 220/50, 240/60

dc 125

Control Circuit Burden

Closing 100 – 125 V 1 kVA

200 – 240 V 1.8 kVA

Holding 100 – 125 V 40 VA

200 – 240 V 50 VA

Auxiliary Contact Rating

Voltage (Maximum) 600 Volts

Continuous Current 10 Amperes

Making Capacity (ac) 7200 VA

(dc) 125 VA

Breaking Capacity (ac) 720 VA

(dc) 125 VA

Latch (when Specified)

Mechanical Life 250,000 Operations

Trip Voltage(dc) 24 Volts

(dc) 125 Volts

(ac) 110/120 Volts

Minimum Trip Voltage 80% Rated Coil Voltage

Trip Burden 400 VA

Trip Time 30 ms

Weight 21.4 kg

SL Series IEC Vacuum Contactors

Technical Information

"SL" Series Ratings (Continued)

Table 18. Type "SL" Vacuum Contactor Ratings 800 Ampere Frame

Rated Utilization Voltage	Interrupting Rating(kA)		Application Table			Transformer (kVA)	Capacitor (Amperes) ①	Maximum Insulation Voltage
	Unfused	Fused	Induction Motor (kW)	Synchronous Motor (kW)				
				(0.8 PF)	(1.0 PF)			
2200 – 2500	13.2	50	2250	2250	2600	2500	550	7200
3000 – 3600	13.2	50	3000	3000	3750	3500		
3800 – 4800	13.2	50	3750	3750	4500	4500		
6000 – 6900	13.2	50	6000	6000	7500	6000		

① Ratings not applicable for back-to-back switching. Consult factory for back-to-back switching applications.

Specifications

Maximum Interrupting Current
(3 Operations) 13200 Amperes

Rated Current 800 Amperes Enclosed

IEC Make-Break Capability-AC4

Make 8000 Amperes
Break 6400 Amperes

Short Time Current

30 Second 4320 Amperes
1 Second 10800 Amperes
8.7 ms (0.5 Cycle) 86 kA Peak

Normal Service Altitude -1000 to +2000 meters

Mechanical Life 2.5 Million

Electrical Life

AC3 300,000 Operations
AC4 300,000 Operations

Impulse Withstand 60 kV (1.2 x 50 Microseconds)

Dielectric Strength 20 kV rms (1 Minute)

Closing Time 80 Milliseconds
(Energization to Contact Touch)

Opening Times (Selectable) 30 – 330 ms

Note: Approximate values. Refer to Table 2, Page 3 for specific ranges.

Arcing Time 12 ms or Less

Pickup Voltage 80% Rated Coil Voltage

Dropout Voltage 60% Rated Coil Voltage

Control Voltages

ac/Hz 110/50, 120/60, 220/50, 240/60
dc 125

Control Circuit Burden

Closing 100 – 125 V 1 kVA
200 – 240 V 1.8 kVA
Holding 100 – 125 V 40 VA
200 – 240 V 50 VA

Auxiliary Contact Rating

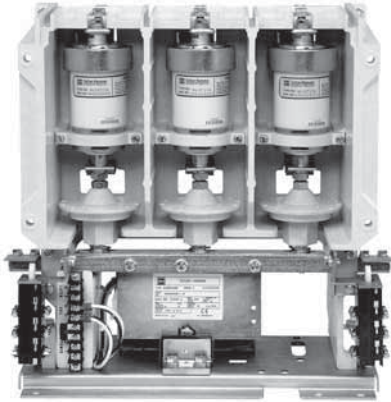
Voltage (Maximum) 600 Volts
Continuous Current 10 Amperes
Making Capacity (ac) 7200 VA
(dc) 125 VA
Breaking Capacity (ac) 720 VA
(dc) 125 VA

Latch (when Specified)

Mechanical Life 250,000 Operations
Trip Voltage(dc) 24 Volts
(dc) 125 Volts
(ac) 110/120 Volts
Minimum Trip Voltage 80% Rated Coil Voltage
Trip Burden 400 VA
Trip Time 30 ms
Weight 21.4 kg

“SL” Series – 160 – 400 Amperes

Front View 160 – 400 Amperes



Rear View 160 – 400 Amperes

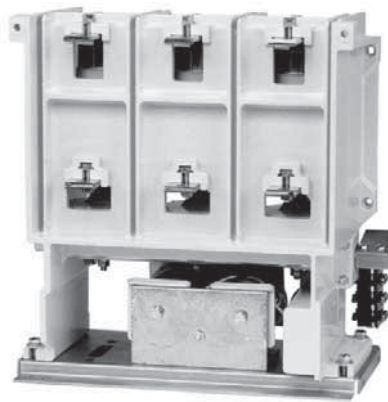


Table 19. Dimensions and Weights

Ampere Size	Mounting	Weight	
		kg	Lbs.
160	Panel or Pedestal	21.4	47
200	Panel or Pedestal	21.4	47
360	Panel or Pedestal	21.4	47
400	Panel or Pedestal	22.2	49

Dimensional Drawings 160 – 400 Amperes in mm (Inches)

Figure 2. Front Dimensions 160 – 400 Amperes

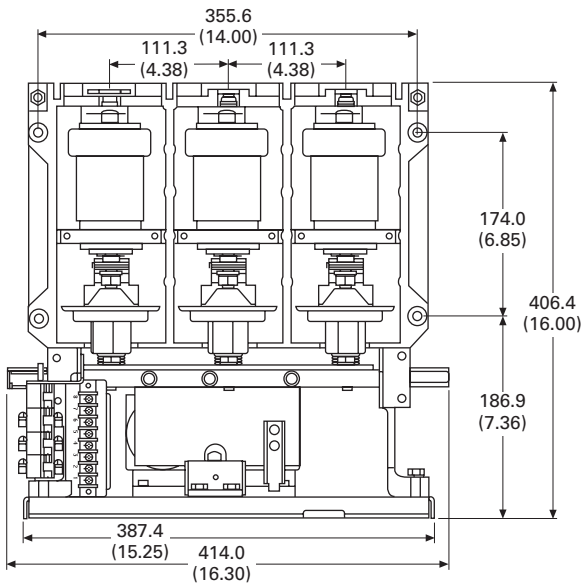


Figure 4. Rear Dimensions 160 – 400 Amperes

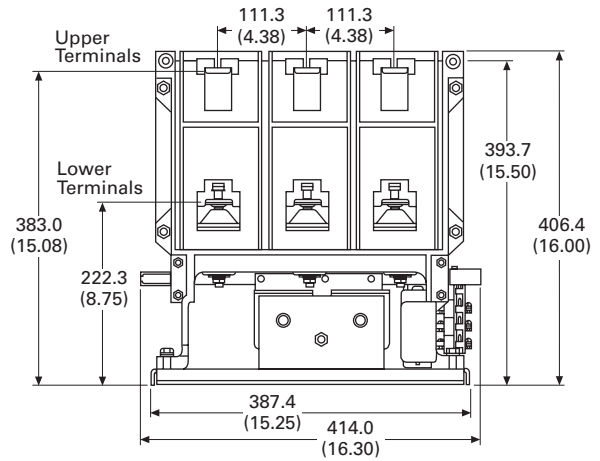


Figure 3. Base Plate Dimensions 160 – 400 Amperes

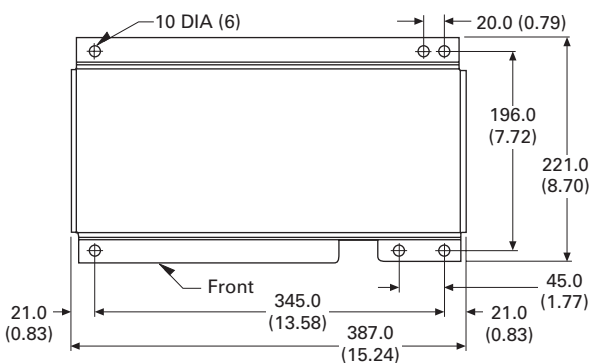
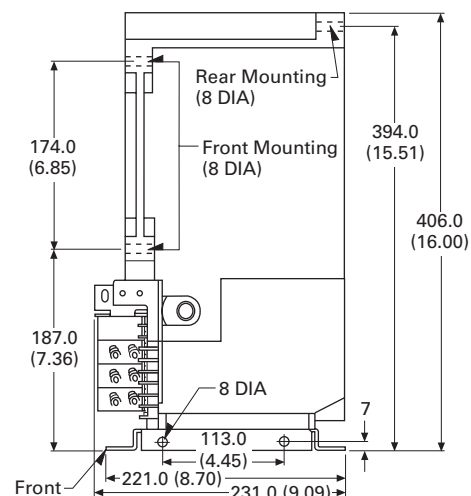


Figure 5. Side Dimensions 160 – 400 Amperes

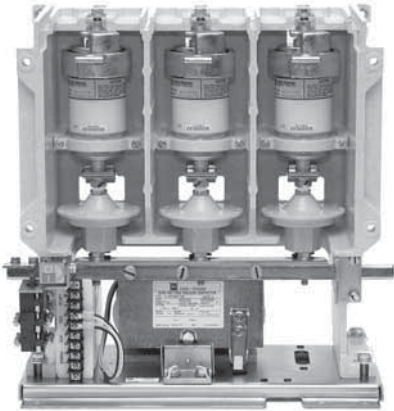


SL Series IEC Vacuum Contactors

Dimensions and Weights

“SL” Series – 400 Amperes (with Special Front Connected Upper Terminals)

Front View 400 Amperes



Rear View 400 Amperes



Table 20. Dimensions and Weights

Ampere Size	Mounting	Weight	
		kg	Lbs.
400	Panel or Pedestal	22.2	49

Dimensional Drawings 400 Amperes in mm (Inches)

Figure 6. Front Dimensions 400 Amperes

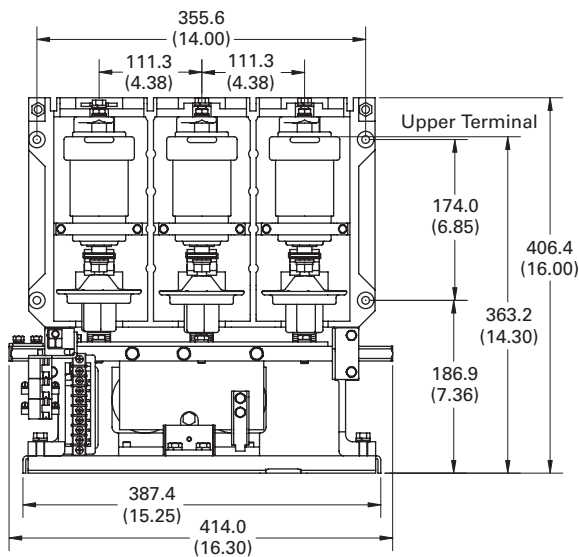


Figure 8. Rear Dimensions 400 Amperes

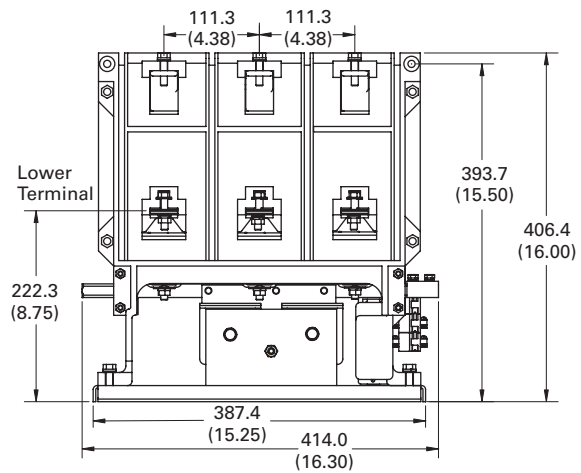


Figure 7. Base Plate Dimensions 400 Amperes

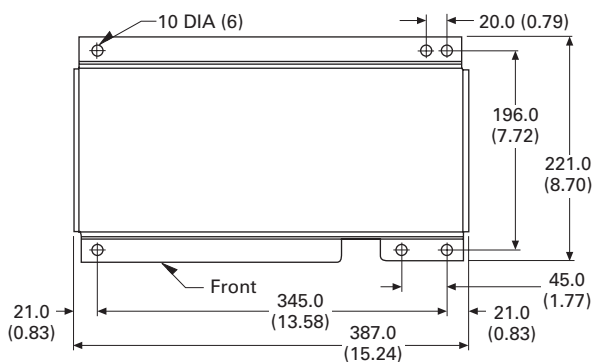
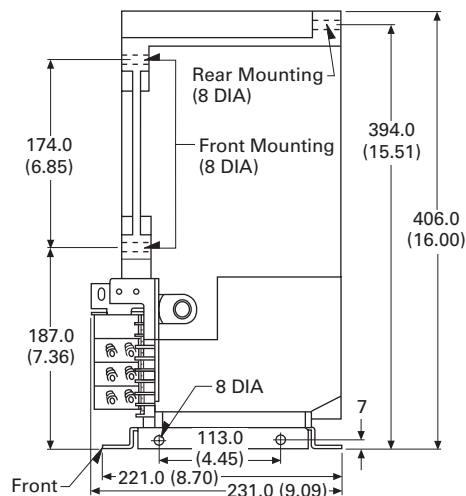


Figure 9. Side Dimensions 400 Amperes

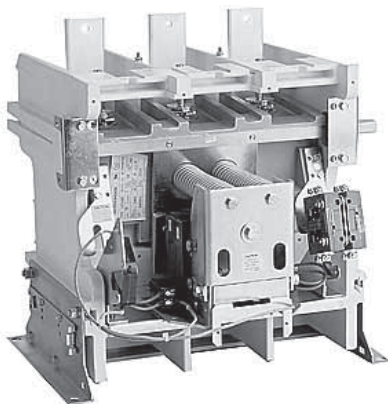


SL Series IEC Vacuum Contactors

Dimensions and Weights

“SL” Series – 800 Ampere

Front View 800 Amperes



Rear View 800 Amperes

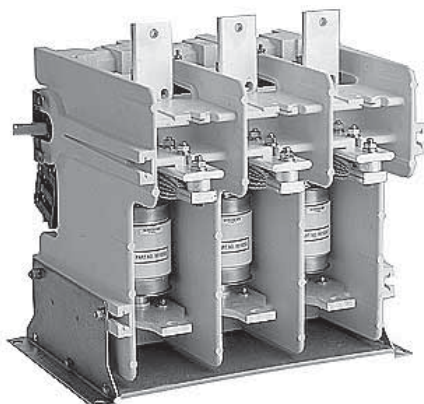


Table 21. Dimensions and Weights

Ampere Size	Mounting	Weight	
		kg	Lbs.
800	Pedestal	43.2	95

Dimensional Drawings 800 Amperes in mm (Inches)

Figure 10. Front Dimensions 800 Amperes

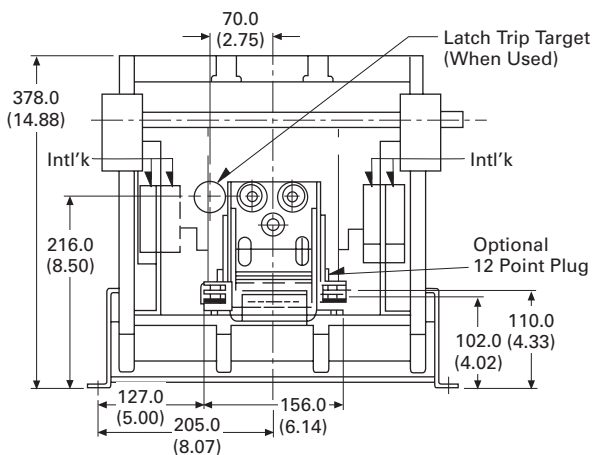


Figure 12. Top Dimensions 800 Amperes

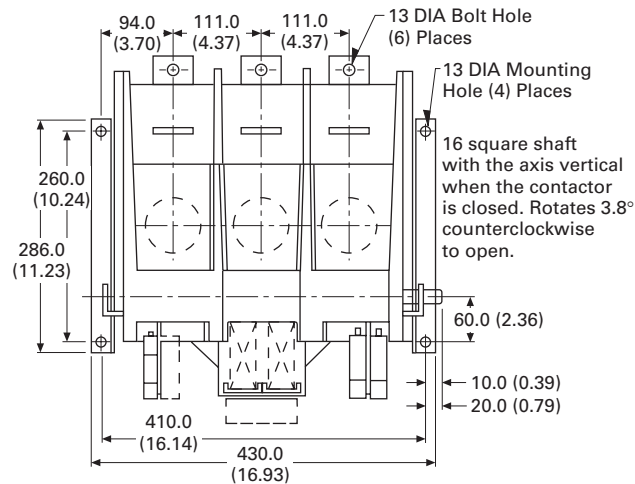
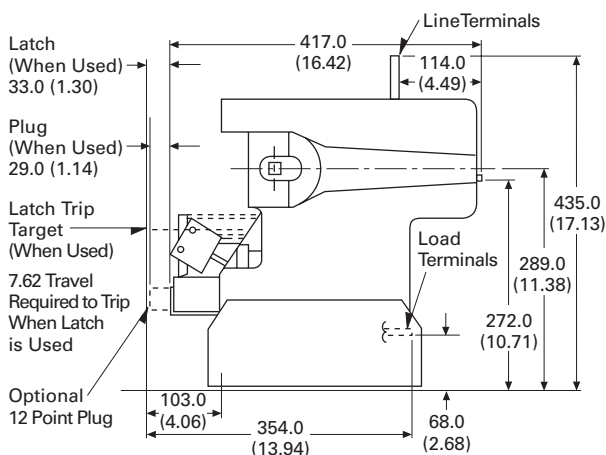


Figure 11. Side Dimensions 800 Amperes



SL Series IEC Vacuum Contactors

Dimensions and Weights

Lug Terminal

Lug Terminal

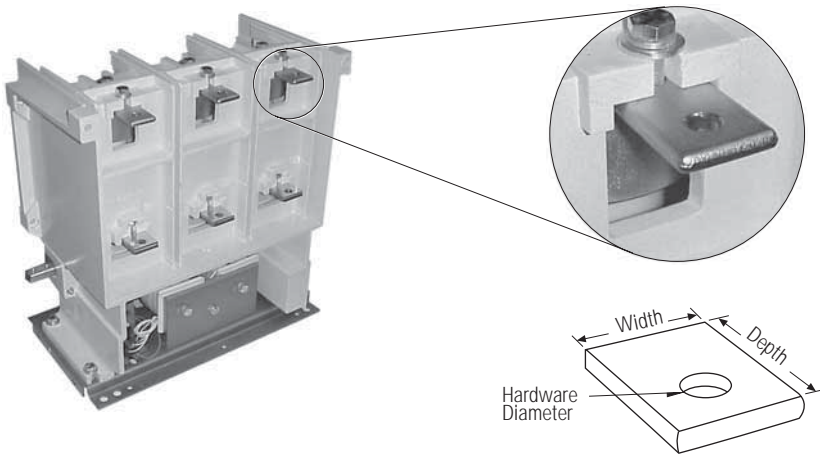


Table 22. Lug Terminal Dimensions

in mm (Inches)

Contactor Ampere Rating	Width	Depth	Hardware (Bolt Diameter)
Upper Terminal			
160	19.1 (0.75)	33.3 (1.31)	10
200	25.4 (1.00)	33.3 (1.31)	10
360	25.4 (1.00)	33.3 (1.31)	10
400	25.4 (1.00)	33.3 (1.31)	10
800	44.5 (1.75)	50.8 (2.00)	10
Lower Terminal			
160	31.8 (1.25)	27.9 (1.10)	10
200	31.8 (1.25)	27.9 (1.10)	10
360	31.8 (1.25)	27.9 (1.10)	10
400	31.8 (1.25)	27.9 (1.10)	10
800	38.1 (1.50)	38.1 (1.50)	10

Figure 13. Contactor Label

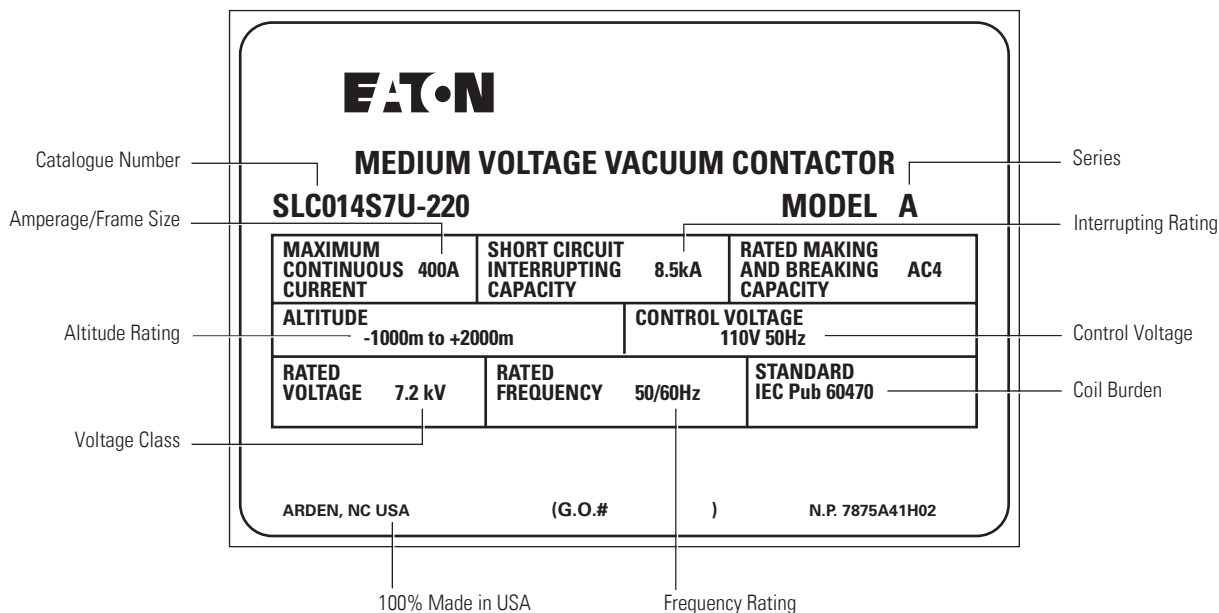
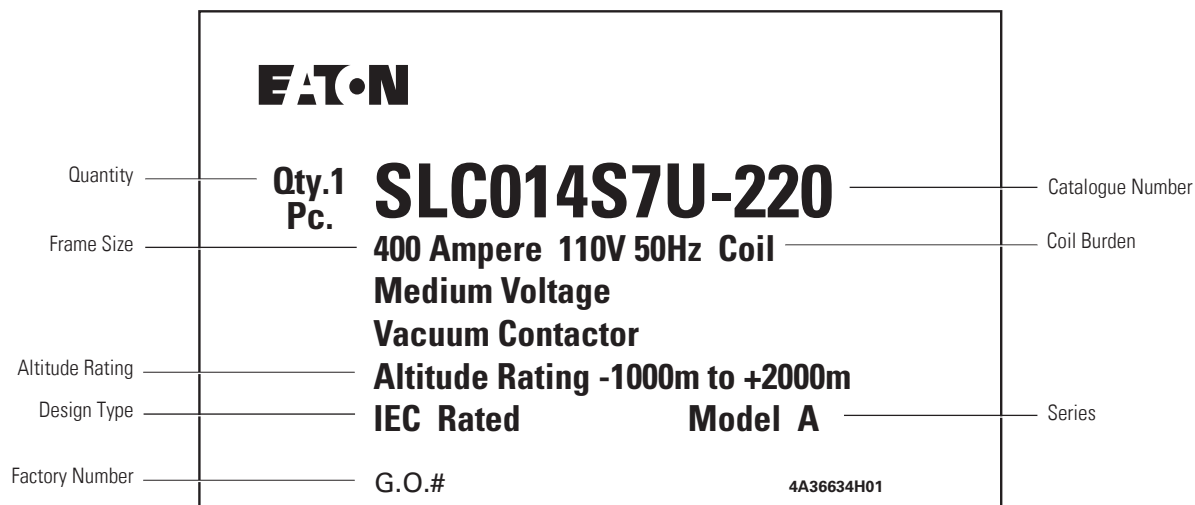


Figure 14. Carton Label



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