

7.2KV SL400 Withdrawable Vacuum Contactor-Fuse Combination Units





Automotive



Aerospace



Truck



Hydraulics



Electrical

Powering business worldwide

Eaton delivers the hundreds of power distribution 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, ANSI and GB / DL 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.

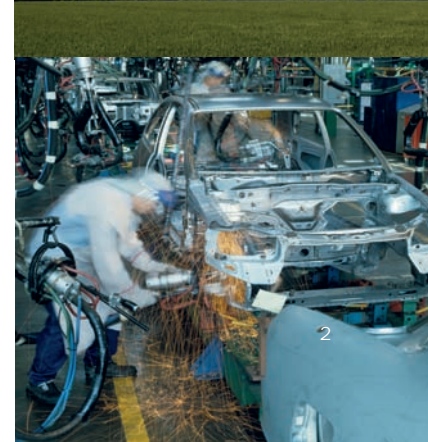
Part of Eaton's complete electrical PowerChain Solutions – which help businesses minimize risks while realizing greater reliability, cost efficiencies, capital utilization and safety – Eaton's medium voltage equipment meets all standards and certifications such as IEC, NEMA / ANSI, GB / DL, UL, IEEE,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

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

Eaton's range of
SF₆ free switchgear
for Medium Voltage



An Eaton Green Solution



7.2KV SL400 Withdrawable Vacuum Contactor-Fuse Combination Units



Overview

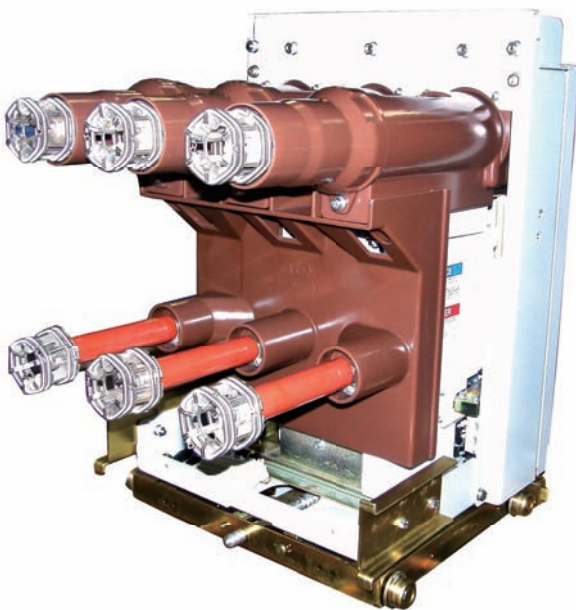
Introduction

Developed on cutting-edge technologies, Eaton's SL400 withdrawable type vacuum contactor-fuse combination units are world leading in terms of performance, safety and functionality.

SL400 vacuum contactor-fuse combination units are applicable in AC systems with voltages under 7.2kV and 50Hz frequency. They can be used in frequently operated heavy loads and harsh environment.

Product specification

SL 400 vacuum contactor-fuse combination units are central type with two configurations of electrical holding and mechanical Latching. They can be combined in use with fuses from 6A to 315A, providing users with flexible selections.



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Applications

SL400 vacuum contactor-fuse combination units 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

Utilization conditions

S L400 vacuum contactor-fuse combination units can be used normally in below conditions:

- Ambient temperature: -15 ~ +40
- Relative humidity: max. 95%, without condensing, monthly average 90%
- Altitude: up to 1000m
Please contact us for special requirements.

Design and testing standards

SL400 vacuum contactor-fuse combination units are fully in line with below standards:

- GB/T 14808-2001 High-voltage alternating current contactors and contactor-based motor-starters
- GB 15166.2-1994 Alternating current high voltage fuses-current-limiting fuses

Key technical features

The ratings for new SL400 vacuum contactor-fuse combination units:

- Voltage: 7.2kV
- Current: contactor current 400A, combination unit current depends on fuse
- Breaking: depending on fuse

Control voltage:

- 110VAC, 220VAC 50Hz
- 110VDC, 220VDC

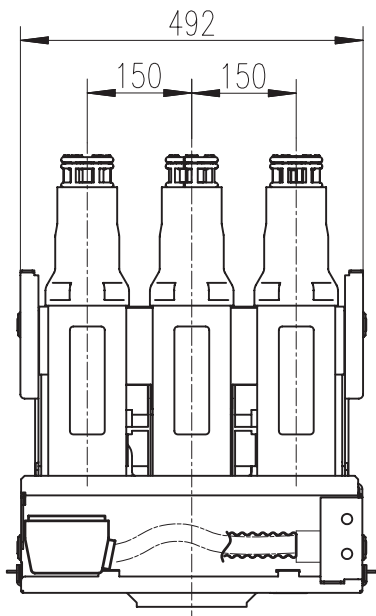
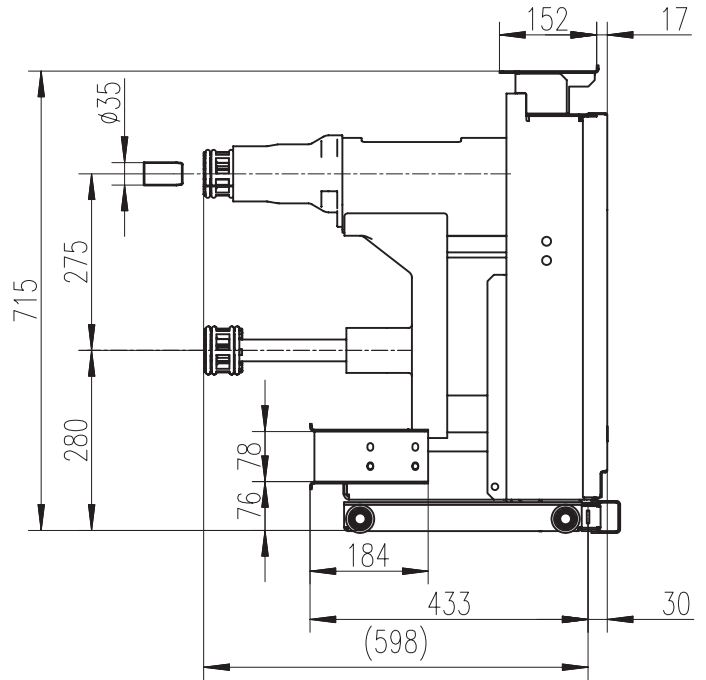
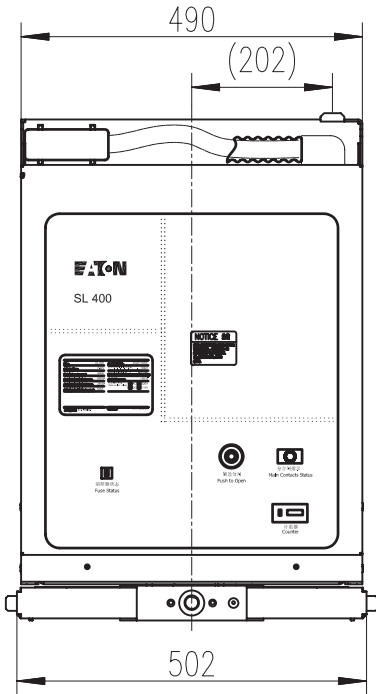
Service life:

- 300,000 electrical operations
- 2,500,000 mechanical operations
- * For detailed information, please refer to technical data table

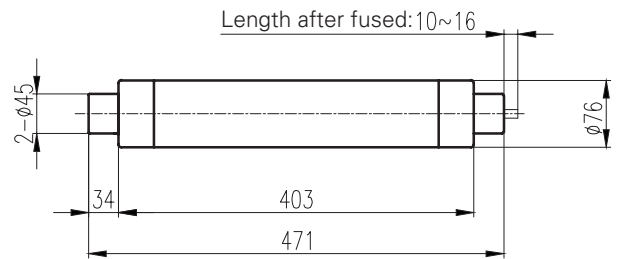
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Dimensions

SL400 mid-mounted type withdrawable vacuum contactor-fuse combination units



Maximum dimensions for fuse

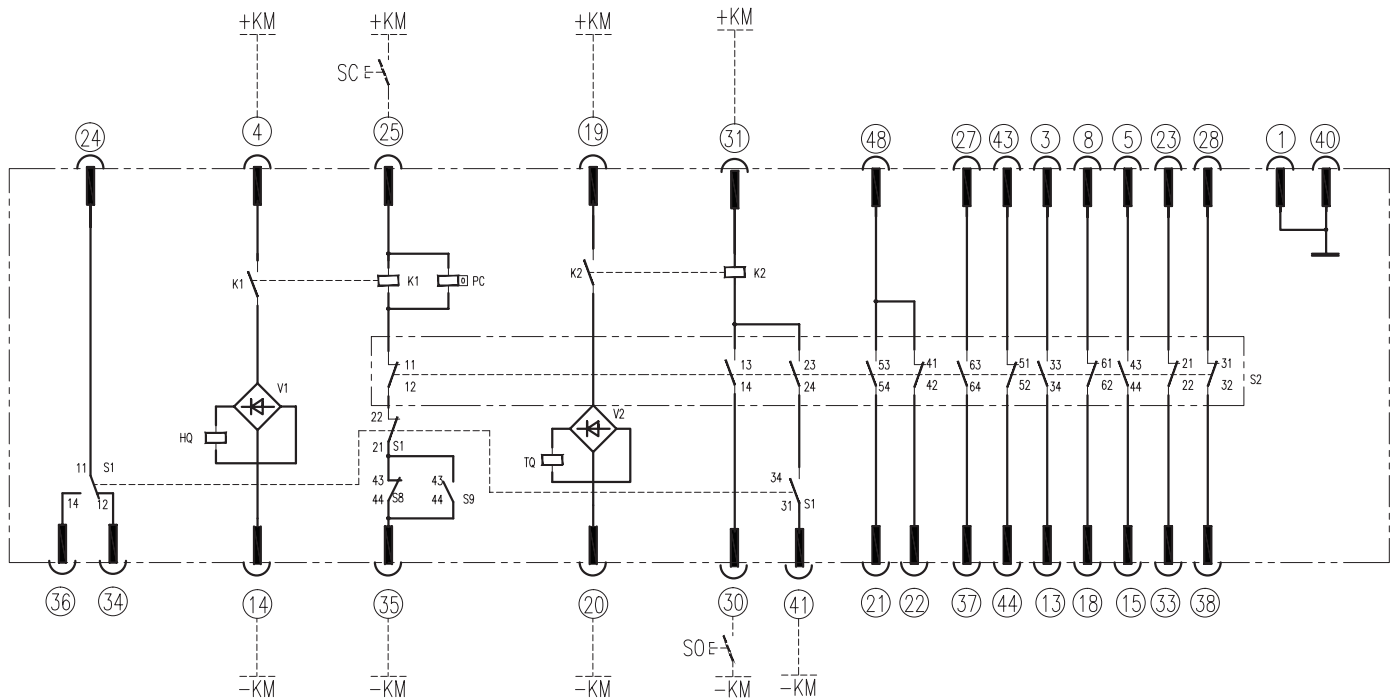


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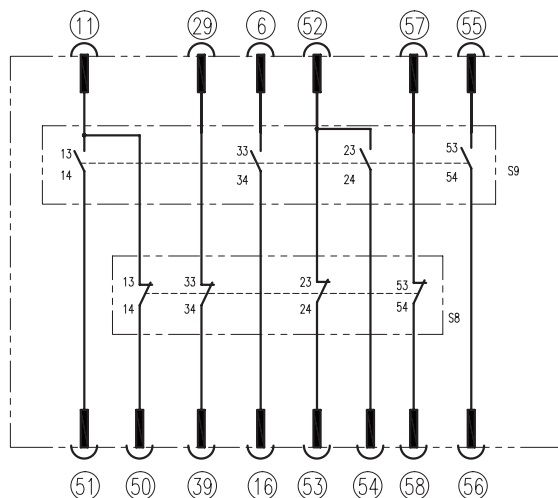
Electrical Wiring Diagram

Mechanical self-holding wiring diagram of SL400 central-type withdrawable vacuum contactor-fuse combination units

Fuse status indication circuit Closing circuit Opening circuit Contactor's auxiliary contact Housing earthing



Auxiliary contacts when the trolley is on Test Position or connected Position



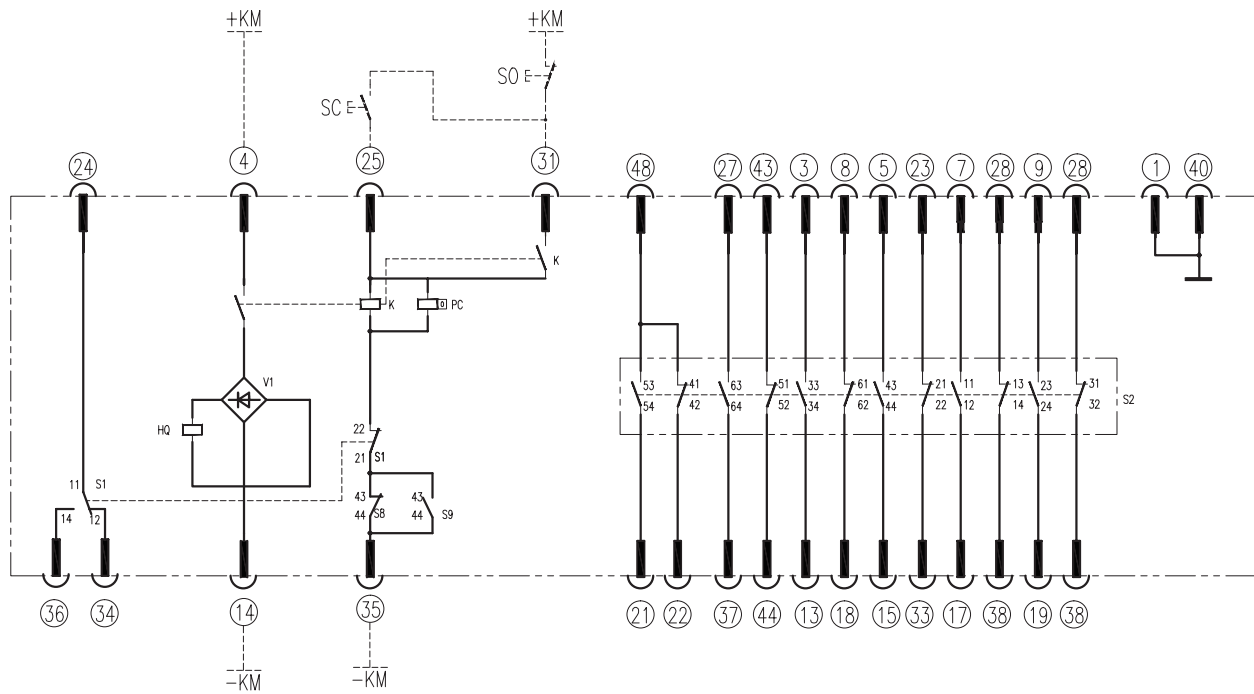
- S9: auxiliary contact (switching when the trolley is on connected Position)
- S8: auxiliary contact (switching when the trolley is on Test Position)
- S2: auxiliary contact (switching after contactor tripping)
- S1: auxiliary contact (switching after fuse is fused)
- HQ: closing coil
- TO: opening coil
- V1~V2: bridge rectifier (cancelled in DC condition)
- K1: closing relay
- K2: opening relay
- PC: electrical counter
- SC: closing button
- SO: opening button

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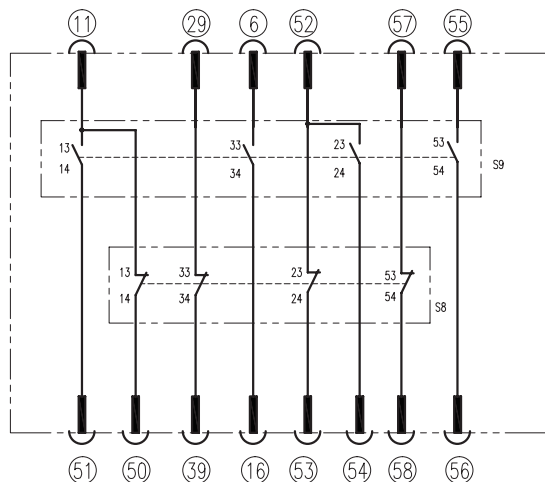
Electrical Wiring Diagram

Electrical self-holding wiring diagram of SL400 central-type withdrawable vacuum contactor-fuse combination units

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- S2: auxiliary contact (switching after contactor tripping)
- S1: auxiliary contact (switching after fuse is fused)
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- V1: bridge rectifier (cancelled in DC condition)
- K: closing relay
- PC: electrical counter
- SC: closing button
- SO: opening button

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Selection and Ordering Information

Rated data

Key technical data			Contactor	F-C combination units
	Rated voltage	kV	7.2	7.2
	Rated frequency	Hz	50	50
Rated insulation level	Rated power frequency withstand voltage 1min	kV	32	32
	Rated lightning impulse voltage	kV	60	60
	Rated current*	A	400	Depends on fuse
	Rated short-time withstand current (1s)	kA	6	6
	Rated peak withstand current	kA	15	15
	Rated short-circuit duration	s	1	1
	Maximum breaking current	kA	8.5(3次)	Depends on fuse
	Maximum making current	kA	4	Depends on fuse
Application range of rated load and over-sensitive feature	25 opening operations, Category	A	3200	3200
	100 closing operations, Category	A	4000	4000
	AC current of combined starter by release operation	A	—	3200
	Main circuit resistance	$\mu\Omega$	≤ 400	—
	Closing time	ms	≤ 90	≤ 90
	Opening time	ms	30(mechanical holding), 30/50/130/250/330 optional (electrical holding)	
	Electrical endurance (category AC3 and AC4)	Operations	300,000	300,000
	Mechanical endurance **	Operations	2,500,000	2,500,000
Operating power supply	Rated voltage		110V/220V DC/AC	
	Mechanical holding	Closing coil power	kVA	1(110V), 1.8(220V)
		Opening coil power	VA	400
	Electrical holding	Closing coil power	kVA	1(110V), 1.8(220V)
Holding coil power		VA	40(110V), 50(220V)	

* Note: Rated current refers to fixed type contactor's rated current; as for contactor-fuse combination units, rated current 250A shall be selected with a fuse of 315A rated current.

** Note: This refers to electrical-holding type vacuum contactor. As for mechanical holding type, self-holding mechanism need to be replaced every 250,000-operation circulation.

Ordering confirmation table for SL400 central type withdrawable vacuum contactor-fuse combination units

Product name	mid-mounted type withdrawable vacuum contactor-fuse combination units			
Product type no.	SL400			
Ordering quantity	Set			
Operating voltage (V)	DC110	AC110	DC220	AC220
Closing holding type	<input type="checkbox"/> electrical holding <input type="checkbox"/> mechanical latching			

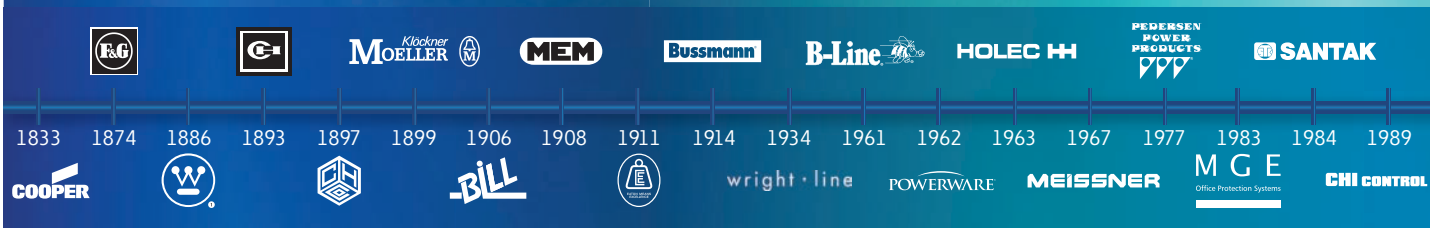
Fuses need to be ordered additionally by users; please make a remark for any special requirements.



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The power of fusion.



There's a certain energy at Eaton. It's the power of uniting some of the world's most respected names to build a brand you can trust to meet your every power management need.

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Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. Building on over 100 years of experience in electrical power management, the experts at Eaton deliver customized, integrated solutions to solve your most critical challenges. To learn more visit www.eaton.com/electrical.

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Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customer success a top priority. For more information, visit www.eaton.com/electrical.

Eaton Corporation
Asia Pacific Headquarter
No.3, Lane 280, Linhong Road,
Changning District,
Shanghai 200335
www.eaton.com.cn/electrical

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