W-SLC Medium Voltage fused contactor truck
A safe, reliable and efficient motor starter
Automotive
Aerospace
Truck
Hydraulics
Electrical

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 localized 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.

"Automotive"
"Aerospace"
"Truck"
"Hydraulics"
"Electrical"
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, Holec and Bussmann, has resulted in breakthrough MV technologies and numerous international patents over the years.

Integral to Eaton’s complete electrical PowerChain Solutions – which help businesses increase reliability, efficiency 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.
Developed with cutting-edge technologies, Eaton’s W-SLC withdrawable type vacuum contactor-fuse combination units are world leading in terms of performance, safety and functionality. The W-SLC vacuum contactor-fuse combination units are available in two versions: electrical and mechanical latch, for applications in AC systems with voltages up to 12kV and 50/60Hz. They are ideally suited for use in applications where frequent operations, heavy loads and harsh environments are the norm.
Key technical features*

The ratings for new vacuum contactor-fuse combination units:

- Voltage: 7.2kV and 12kV
- Current: Contactor continuous current: 400 A
- Combination Continuous current: 200 A
- Breaking: up to 50 kA with fuse
- 8500 A interrupting rating without fuse at 7.2kV
- 4000 A interrupting rating without fuse at 12kV

Control voltages:

- 110/220 Vac, 50 Hz
- 120/240 Vac, 60 Hz
- 110/120 Vdc
- Optional on-board CPT:
  - 12kV 10/0.11kV or 11/0.11kV - 400VA
  - 12kV 10/0.22kV or 11/0.22kV - 400VA
  - 7.2kV 6/0.11kV or 6.6/0.11kV - 400VA
  - 7.2kV 6/0.22kV or 6.6/0.22kV - 400VA

Service life:

- 300,000 electrical operations
- 1,000,000 mechanical operations

* For detailed information, please refer to technical data table

Suitable for:

- Full voltage starting
- Reduced voltage starting

The perfect choice for all applications

- Oil&Gas
- HVAC
- Mining
- Automotive
- Petrochemical
- Pulp and Paper
- Pumps, Fans, Conveyors and Crushers

Applications

W-SLC vacuum contactor-fuse combination motor starting applications:

- Squirrel-cage induction motors
- Synchronous motors
- Wound-rotor motors
Design and testing standards

Eaton’s vacuum contactor-fuse combination units are fully in line with IEC standards.

- IEC 62271-1
- IEC 62271-106

Utilization conditions

Eaton’s vacuum contactor-fuse combination units are suitable for use in the following conditions:

- Ambient temperature: -15°C to +40°C
- Relative humidity: max. 95%, non-condensing
- Altitude: up to 1000 m

Please contact Customer service for special requirements

W-SLC IEC 7.2kV and 12kV

Medium voltage vacuum contactor

The W-SLC is an IEC medium voltage withdrawable contactor fuse combination switching unit for applications at 7.2kV and 12kV. It works in combination with fuses, for short-circuit protection, to control medium voltage equipment such as 3-phase motors, transformers, capacitor banks and is especially used in applications where frequent operations are required.

The W-SLC is designed to perfectly fit in medium voltage switchgear manufactured by panel builders and OEMs.
L-Frame
The W-SLC L-Frame is designed for fast installation by panel builders and OEMs. It ensures full alignment of the contactor contacts with the L-Frame primary contacts that allow for busbar or cable connections. The independently operated shutters are automatically aligned within the L-Frame, facilitating the smooth operation of the shutter mechanism. The shutters can be locked in the closed position for additional safety when the contactor is withdrawn from the switchgear.

Operation principle
Electrical latch:
Electromagnetic operating mechanism makes the contactor close. The electromagnetic operation is via a single closing coil which when energised holds the contactor closed. The coil is continuously rated and when the coil is de-energised the contactor opens under the control of an opening spring.

Mechanical latch:
For contactors with mechanical latch, there are two operating coils, one for closing and one for opening the contactor. To close the contactor a pulse signal is sent to the closing coil and to open the contactor a pulse signal is sent to the opening coil.

Product safety features
The contactor is prevented from closing and a panel indication is provided when:
- Fuse is blown or Fuse is not fitted

Additional interlock options are available to interface with the panel if appropriate panel designs are incorporated such that:
- The truck is prevented from being racked in if:
  - The front door is open
  - The earth switch is ON
- The earth switch cannot be switched ON if the truck is in the Service Position.
- The panel door cannot be opened if the truck is in the Service Position.

Motorized Levering in (MLi-W)
The MLi-W system allows the operator to move the W-SLC contactor inside of the panel, between the connected–test–disconnected positions from a remote control station. This remote operation enhances safety by removing the operator from a potential arc flash exposure point. In addition, the MLi-W provides improved control and operational capability of the switchgear. The MLi-W system is installed in the W-SLC cradle, without any dimensional changes to the breaker or the panel/L-Frame system.
### Specifications and technical data

Key specifications and technical data are shown in below tables:

#### Specifications

<table>
<thead>
<tr>
<th>No.</th>
<th>Characteristics</th>
<th>Units</th>
<th>Withdrawable Contactor-7.2</th>
<th>Withdrawable Contactor combined with Fuse-7.2</th>
<th>Withdrawable Contactor-12</th>
<th>Withdrawable Contactor combined with Fuse-12</th>
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<tr>
<td>1</td>
<td>Rated voltage</td>
<td>kV</td>
<td>7.2</td>
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<td>12</td>
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<td>2</td>
<td>Rated frequency</td>
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<td>50~60</td>
<td>50~60</td>
<td>50~60</td>
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<td>Rated insulation level</td>
<td>Power frequency withstand voltage(min)</td>
<td>kV</td>
<td>20</td>
<td>20</td>
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<tr>
<td></td>
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<td>Lightning withstand voltage</td>
<td>kV</td>
<td>60</td>
<td>60</td>
<td>75</td>
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<tr>
<td>4</td>
<td>Rated current</td>
<td>A</td>
<td>400</td>
<td>Max 200A with 355A fuse</td>
<td>400</td>
<td>Max 200A with 250A fuse</td>
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<td>Rated short-time withstand current (1s)</td>
<td>kA</td>
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<td>6</td>
<td>Rated short-time withstand current (30s)</td>
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<td>7</td>
<td>Rated duration of short-circuit</td>
<td>s</td>
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<td>8</td>
<td>Maximum breaking capacity</td>
<td>kA</td>
<td>8.5 (3 times)</td>
<td>50</td>
<td>4 (2 times)</td>
<td>50</td>
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<td>9</td>
<td>Rated load and overload characteristics</td>
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<td>10</td>
<td>Take-over current for release-operated combination</td>
<td>A</td>
<td>--</td>
<td>5000*</td>
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<td>4000</td>
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<td>11</td>
<td>Closing time</td>
<td>ms</td>
<td>≤150</td>
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<td>≤150</td>
<td>≤150</td>
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<tr>
<td>12</td>
<td>Mechanical latch</td>
<td>ms</td>
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<td>≤70</td>
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<tr>
<td>13</td>
<td>Electrical operating</td>
<td>ms</td>
<td>50~330 (selectable)</td>
<td>50~330 (selectable)</td>
<td>50~330 (selectable)</td>
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<td>14</td>
<td>Electrical life (category AC3 and AC4)</td>
<td>operations</td>
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<td>15</td>
<td>Mechanical life</td>
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<td>16</td>
<td>Control Power Supply</td>
<td>Rated voltage</td>
<td>110/220 Vac, 50 Hz</td>
<td>110/220 Vac, 50 Hz</td>
<td>110/220 Vac, 50 Hz</td>
<td>110/220 Vac, 50 Hz</td>
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<td>Closing coil power</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
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<tr>
<td></td>
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<td>Opening coil power</td>
<td>550VA</td>
<td>550VA</td>
<td>550VA</td>
<td>550VA</td>
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<td></td>
<td>Electrical operating</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
<td>1 (110V), 1.8 (220V)</td>
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<tr>
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<td></td>
<td>Holding coil power</td>
<td>40 (110V), 50 (220V)</td>
<td>40 (110V), 50 (220V)</td>
<td>40 (110V), 50 (220V)</td>
<td>40 (110V), 50 (220V)</td>
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<td>Auxiliary contact ratings</td>
<td>Voltage (max.)</td>
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<td>Current</td>
<td>A</td>
<td>10</td>
<td>10</td>
<td>10</td>
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<td>Making capacity (DC)</td>
<td>VA</td>
<td>125</td>
<td>125</td>
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<td></td>
<td>Making capacity (AC)</td>
<td>VA</td>
<td>7200</td>
<td>7200</td>
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<tr>
<td></td>
<td>Breaking capacity (DC)</td>
<td>VA</td>
<td>125</td>
<td>125</td>
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<tr>
<td></td>
<td>Breaking capacity (AC)</td>
<td>VA</td>
<td>720</td>
<td>720</td>
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<td>18</td>
<td>Utilization category</td>
<td>AC-3, AC-4</td>
<td>AC-3, AC-4</td>
<td>AC-3, AC-4</td>
<td>AC-3, AC-4</td>
<td>AC-3, AC-4</td>
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<tr>
<td>19</td>
<td>Weight (without fuses)</td>
<td>kg</td>
<td>96</td>
<td>96</td>
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<td>96</td>
</tr>
</tbody>
</table>

#### Descriptions of style numbers

- **W-SLC - 12 A 1 SLG014S 5 Y 66 5 M 2 1 PT**
- **On-board Control PT. (28-29)**
- **Type (1-6)**
  - W-SLC = IEC standard draw-out contactor
  - Rated Voltage: (7&8) 12 = 12kV
  - Thermal Current: (9) A ≤ 315A (combined with fuses) / 400A (fuses replaced by conductors)
  - Fuse Option: (10)
    - 1 = with fuse
    - 6 = fuses replaced by conductors
  - Motor controller voltage: (26)
    - 1 = 110V AC 50Hz, 110V DC
    - 2 = 220V AC 50Hz, 220VDC
    - 3 = 125V DC
    - 4 = None
  - Cradle Type: (25)
    - M = Motorized lev-in
    - S = Standard lev-in
  - Grounding: (27)
    - 1 = Ground below
    - 2 = Ground right side
    - 3 = Ground left & right sides
  - On-board Control PT: (28-29)
    - 1 = No CPT
    - 2 = CPT

- **Coil voltage (19&20)**
  - A = 120 Vac 60Hz
  - B = 240 Vac 50Hz
  - U = 110 Vac 50Hz
  - W = 220 Vac 50Hz
  - X = 110 Vdc
  - Y = 220 Vdc

- **Contactor’s auxiliary contact (21&22)**
  - 56 = 6NC, 6NC

- **Mechanical latch (Coil voltage) (23 & 24)**
  - 0 = None
  - 1 = 110 Vac 50Hz, 120 Vac 60Hz, 110Vdc
  - 2 = 220 Vac 50Hz, 240 Vac 60Hz, 220Vdc

- **Coil drop-out time: (18)**
  - 5 = 30ms
  - 6 = 50ms
  - 7 = 130ms
Dimensions

Eaton’s mid-mounted type withdrawable vacuum contactor-fuse combination units

Dimensions W-SLC 7.2kV and 12kV

Fuses – The fuse dimension has to be according to the DIN 43625 standards with maximum cartridge size e=442mm.
Electrical Operation Wiring Diagram of W-SLC withdrawable vacuum contactor-fuse combination units

### Fuse status
- Indication Circuit
- Closing Circuit
- Opening Circuit
- Auxiliary Contact Circuits
- Housing Earthing

#### Note:
This drawing is shown with the Contactor Truck in the withdrawn 'Test' Position, de-energised, with fuses fitted and healthy.

#### K1: Closing/Holding Relay
#### PC: Operations Counter
#### Q1: Auxiliary Contact (Switching when the contactor closes or trips)
#### SC: Closing button
#### SO: Opening button
#### S1: Auxiliary Switch (Switching when fuse is blown or not fitted)
#### S8: Auxiliary Contact (Switching when the cradle is on Test Position)
#### S9: Auxiliary Contact (Switching when the cradle is on Connected Position)
#### Ve: Control Supply
#### V1: Bridge rectifier (not included for DC applications)
#### Y1: Closing coil

Contactor control voltage power supply with on-board CPT option.
Mechanical latching option
Wiring Diagram

Mechanical latching Wiring Diagram of W-SLC withdrawable vacuum contactor-fuse combination units

<table>
<thead>
<tr>
<th>Fuse status</th>
<th>Closing Circuit</th>
<th>Opening Circuit</th>
<th>Auxiliary Contact Circuits</th>
<th>Housing Earthing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication Circuit</td>
<td></td>
<td></td>
<td></td>
<td>64 Pin Secondary Disconnect</td>
</tr>
</tbody>
</table>

Note: This drawing is shown with the Contactor Truck in the withdrawn ‘Test’ Position, de-energised, with fuses fitted and healthy.

K1: Closing Relay
K2: Trip Relay
PC: Operations Counter
Q1: Auxiliary Contact (Switching when the contactor closes or trips)
SC: Closing button
SO: Opening button
S1: Auxiliary Contact (Switching when fuse is blown or not fitted)
S8: Auxiliary Contact (Switching when the cradle is on Test Position)
S9: Auxiliary Contact (Switching when the cradle is on Connected Position)
Ve: Control Supply
V1: Bridge rectifier (not included for DC applications)
V2: Bridge rectifier
Y1: Closing coil
Y2: Trip coil
As a global diversified power management company, we help customers worldwide manage the power needed for buildings, aircraft, trucks, cars, machinery and businesses.

Eaton’s innovative technologies help customers manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably.

We provide integrated solutions that help make energy, in all its forms, more practical and accessible.

With 2015 sales of $20.9 billion, Eaton has approximately 97,000 employees around the world and sells products in more than 175 countries.
Eaton is a power management company with approximately 97,000 employees. The company provides energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton sells products to customers in more than 175 countries. For more information, visit www.eaton.com.

Eaton medium voltage products in the energy chain