HVL/cb
vacuum circuit breaker switchgear

The new standard for performance, protection, and dependability.

Square D™ by Schneider Electric™ metal-enclosed switchgear is the most popular ANSI-rated switchgear in its class in America. Among medium-voltage (MV) metal-enclosed switchgear, both the switch and the enclosure stand as industry benchmarks in the areas of design, manufacturing, and performance. HVL/cb is a product line extension of the popular HVL/cc MV switchgear that has been in existence for over 15 years. Fusing the technologies of the SF6 disconnect and a vacuum circuit breaker, HVL/cb has been engineered to provide superior protection for your distribution system.

schneider-electric.us/hvlc
For a compact, robust solution to suit your needs, Schneider Electric has something for you . . .

As a global specialist in energy management, Schneider Electric has been at the forefront of software and hardware development for energy distribution. As an extension of the Schneider Electric MV, metal-enclosed product line, HVL/cb combines qualities of current MV load interrupter switchgear with controllable, fast-acting MV vacuum circuit breaker technology in one compact package.

Reduce your expenditures without compromise

HVL/cb maximizes your productivity without hitting your wallet. Compared to the price of traditional metalclad switchgear, HVL/cb offers multiple components and enclosures that are designed to provide a cost-effective solution for a wide range of applications. While reducing capital expenditures remains a main driver of project decisions, operational or maintenance expenditures are often overlooked. Web-enabled, onboard system monitoring and fixed mounted breakers allow for longer maintenance intervals through condition-based maintenance. By continuously monitoring the condition of equipment remotely, end users can better plan maintenance, reduce operational costs, and minimize downtime.

HVL/cb is SMART with Small, Modular, and Arc-Resistant Technology. Space-saving features allow for installation in tight spaces and can reduce the size of electrical rooms and Power Zone™ Centers. Modular design enables configurations for a wide range of applications from transformer primary to main-tie-main configurations, and arc-resistant features ensure the safety of personnel. The integral arc plenum requires no changes to the dimension or weight of the cubicle, allowing for reduced labor.

Integrate safety

Safety is the top priority in the modern workplace. With that in mind, enclosures are designed to be arc resistant without increasing footprint. HVL/cb is designed with interlocked compartments, setting a sequence of operation that only allows access to compartments in a de-energized and grounded state. Integral grounding allows for grounding of the main bus as well as cables and feeders.

Reduce footprint

Front accessibility of the switchgear reduces the required working space distance for placement against the wall. The compact Evolis™ breaker and LBS switch allow for the smallest footprint in the industry in its equipment class. By implementing HVL/cb one can see up to 35% footprint savings compared to traditional air-insulated switchgear.

5 – 10 arc flash explosions occur in electrical equipment every day in the United States.

>35% potential footprint savings compared to traditional air-insulated switchgear.
Setting the standard for evolutionary switchgear

Square D™ by Schneider Electric metal-enclosed switchgear is the most popular ANSI-rated switchgear in its class in America. Among medium-voltage (MV), metal-enclosed switchgear, both the switch and the enclosure stand as industry benchmarks in the areas of design, manufacturing, and performance. HVL/cb is a product line extension of the popular HVL/cc MV switchgear that has been in existence for over 15 years. Fusing the technologies of the SF6 disconnect and a vacuum circuit breaker, HVL/cb has been engineered to provide superior protection for your distribution system.

HVL/cb incorporates a smaller footprint with a safe and reliable design. This superior technology allows for a reduction in capital expenditures and operational expenditures. Uninterrupted system availability is maximized by featuring the fixed-mounted Evolis breaker and vibration-resistant bus bar mounting hardware, which together extend the maintenance interval to 10 years. Noted for its versatility and durability, this switchgear is designed to meet your application needs.

The Evolis breaker continues to the Square D tradition of 3-cycle performance, which means the interruption occurs within 50 ms of the start of a protection event.
HVL/cb metal-enclosed switchgear

1. Low-voltage wire panels
2. Integrated mimic bus
3. Breaker auxiliary cables
4. Evolis vacuum circuit breaker
5. VT/CPT fuse chambers
6. VT/CPT truck
7. Low-voltage door
8. Disconnect viewing window
9. Breaker trip & close buttons
10. Integral arc flash plenum duct
11. Compartmentalization barriers
12. Ground bar
Sample application one-lines

Figure 1. Simplest available HVL/cb single-section with overload & short circuit protection

Figure 2. Typical HVL/cb single-section with groundingswitch, overcurrent & residual measurement, and self-generated power from an onboard CPT

Figure 3. HVL/cb single-section with groundingswitch, current protection, voltage and frequency protection, self-generated power, and zonal protection
### Ratings
- Up to 1200 A, 25 kA, 15.0 kV, 95 kV BIL

### Enclosure
- NEMA Type 1 enclosure (indoor)
- Optional type 2B arc-resistant construction

### Components*
- Evolis vacuum circuit breaker
- Load break switch/disconnect
- 1200A rating is a disconnect, not a switch, hence no load break operation

### Standards
- Switchgear – Metal-enclosed IEEE C37.20.3, C37.20.7
- Breaker – IEEE C37.04, C37.06, C37.09

### Accessories
- Tin-plated copper bus
- Voltage transformers from 2.4 – 15 kV
- Current transformers — maximum 4 (2 on line side, 2 on load side)
- Control power transformers from 1 – 15 kVA
- Protective relaying using MiCOM\textsuperscript{TM}, SEPAM\textsuperscript{TM}, or equivalent
- Breaker and disconnect switch remote control via handheld pendant or contacts
- Live line indicators
- Animated mimic bus
- Surge suppressors 3 – 18 kV

### Monitoring options
- Temperature monitoring system
- Powerlogic\textsuperscript{TM} PM and ION metering
- Arc flash detection system

---

*1200A disconnect, not used as a load breaker operator

---

**Ideal for:**
- Transformer primary application
- Virtual main application
- Duplex main for transfer pair
- Fused feeder primary breaker switchgear
- Motor control primary breaker switchgear
- Main-tie-main
- Ring network

---

**Applications**

- Buildings
- Industry
- W/WW
- Oil & Gas (small/medium)
- Healthcare
- Federal
- Education
- Commercial
- Data Centers

---

Life Is On by Schneider Electric
Dimensions and ratings

Virtual main disconnect breaker (e.g., transformer secondary breaker)

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>4.16</th>
<th>13.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum design voltage (kV)</td>
<td>4.76</td>
<td>15.0</td>
</tr>
<tr>
<td>BIL (kV)</td>
<td>60</td>
<td>95</td>
</tr>
<tr>
<td>Frequency (HZ)</td>
<td>50/60</td>
<td>50/60</td>
</tr>
<tr>
<td>Continuous amperes</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>Interrupting amperes</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>Interrupting current (kA asymmetrical rms)</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Asymmetrical rating factor</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Range factor (k)</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Close latch (kA)</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Interrupting cycle time (s)</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section type</th>
<th>Height (h)</th>
<th>Width (w)</th>
<th>Depth (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>Main/feeder section</td>
<td>90.3</td>
<td>2286</td>
<td>24</td>
</tr>
<tr>
<td>Transition/auxiliary section</td>
<td>90.3</td>
<td>2286</td>
<td>17</td>
</tr>
</tbody>
</table>

Dimensions listed above are for information purpose only.