

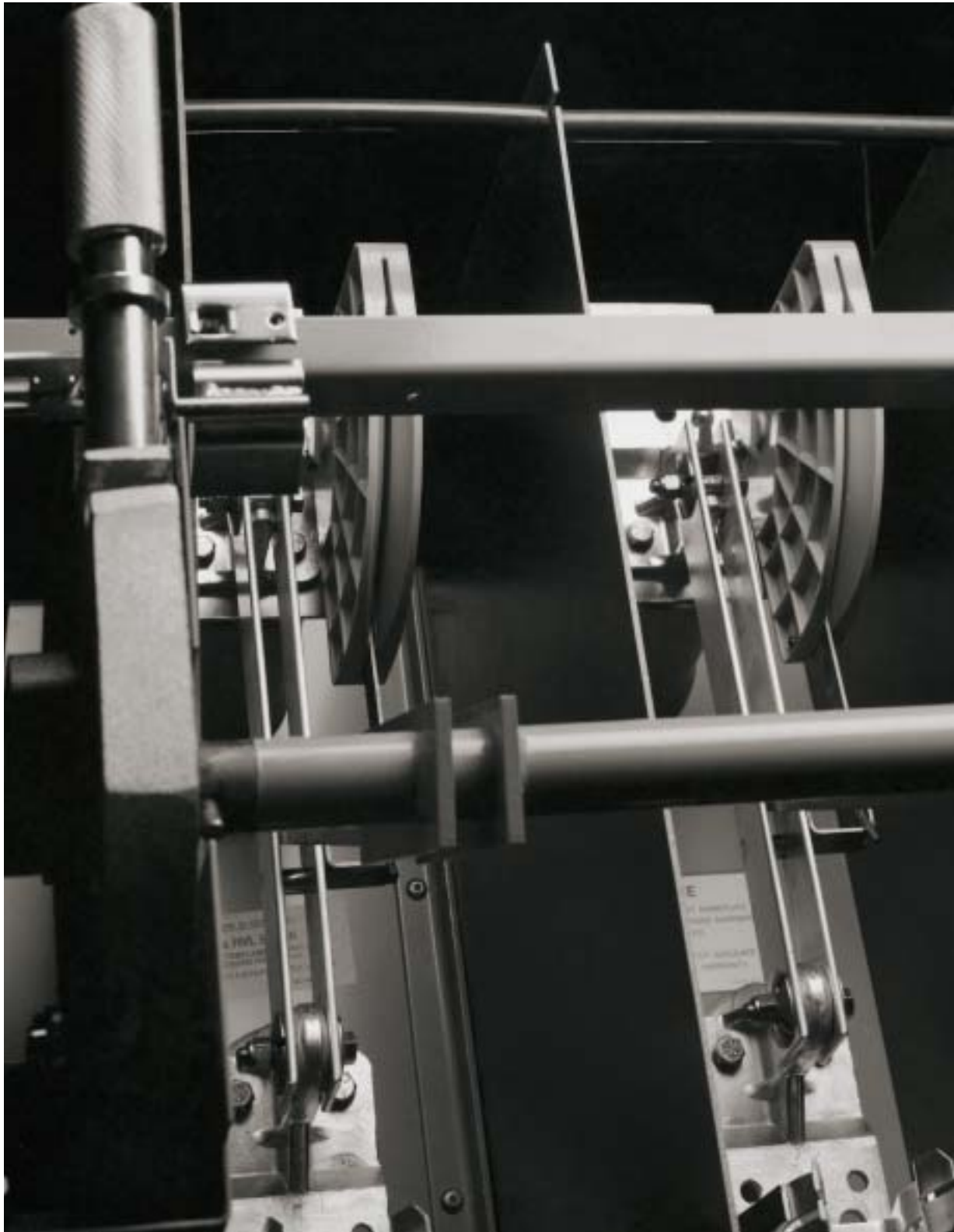
HVL™
5-38 kV Load Interrupter Switchgear

The standard for performance,
protection and dependability



SQUARE D
Schneider Electric

For a generation of engineers, High Voltage Load (HVL™) Interrupter Switchgear from Square D/Schneider Electric has set the standard for performance, protection, and dependability in metal-enclosed switchgear. From the beginning, we've had a reputation for quality, service, and technical innovation. Today, Square D continues to engineer, supply and service all the components of a unit substation. We believe in giving you choices.



Setting the Standard for Metal-Enclosed Switchgear

HVL™ 5-38 kV Load Interrupter Switchgear from Square D/Schneider Electric is the most popular ANSI-rated switchgear in its class in America. Among medium voltage interrupter switchgear, both the switch and the enclosure stand as industry benchmarks in the areas of design, manufacturing, and performance.

Load interrupter switchgear must perform a number of critical functions in a unit substation – protecting equipment and disconnecting faulted lines and transformers. Designed and tested to the latest applicable standards, HVL has been engineered to provide superior protection for your distribution system. That's why HVL switchgear is chosen for more installations than any other ANSI-rated load-interrupter equipment.

HVL switchgear is available for various applications and configurations, including:

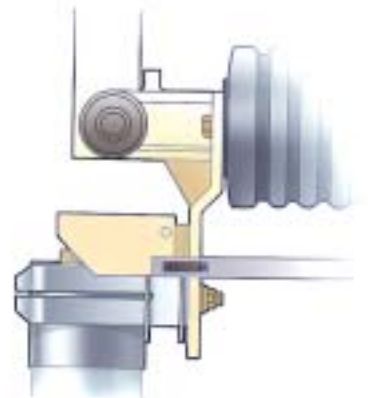
- Individual service entrance bays
- Multiple-bay lineups incorporating HVL load interrupters and optional VISI-VAC® Circuit Interrupters
- Substation primaries
- Main-tie-main VISI-VAC Circuit Interrupters with HVL Load Interrupter Switches as feeders

SQUARE D® metal-enclosed switchgear has become an industry standard for its better system performance, lower maintenance cost, easier system expansion, and reduced system expense.

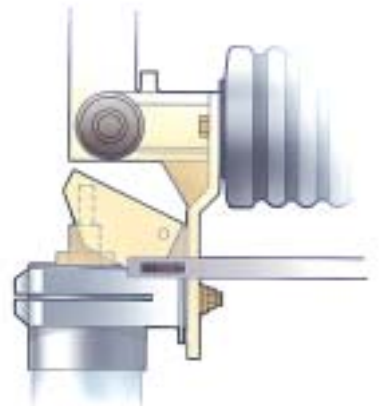
The SQUARE D medium voltage current limiting fuse sets the standard for features and protection. The extended travel blown fuse indicator provides more travel to positively operate the optional FUSELOGIC™ protection system.

The FUSELOGIC system prevents closing of the HVL switch if a fuse is blown or has not been installed. This reduces operator error and the potential of equipment damage due to single phasing. The FUSELOGIC system can be used to operate auxiliary contacts for optional local and/or remote indication.

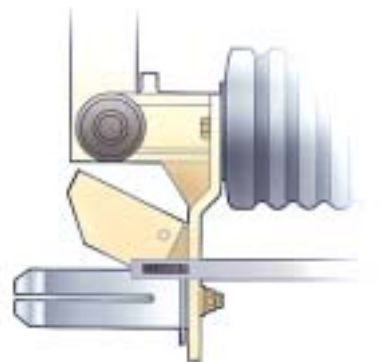
FuseLogic Direct Acting Fuse Tripping Sequence



Good Fuse in Place



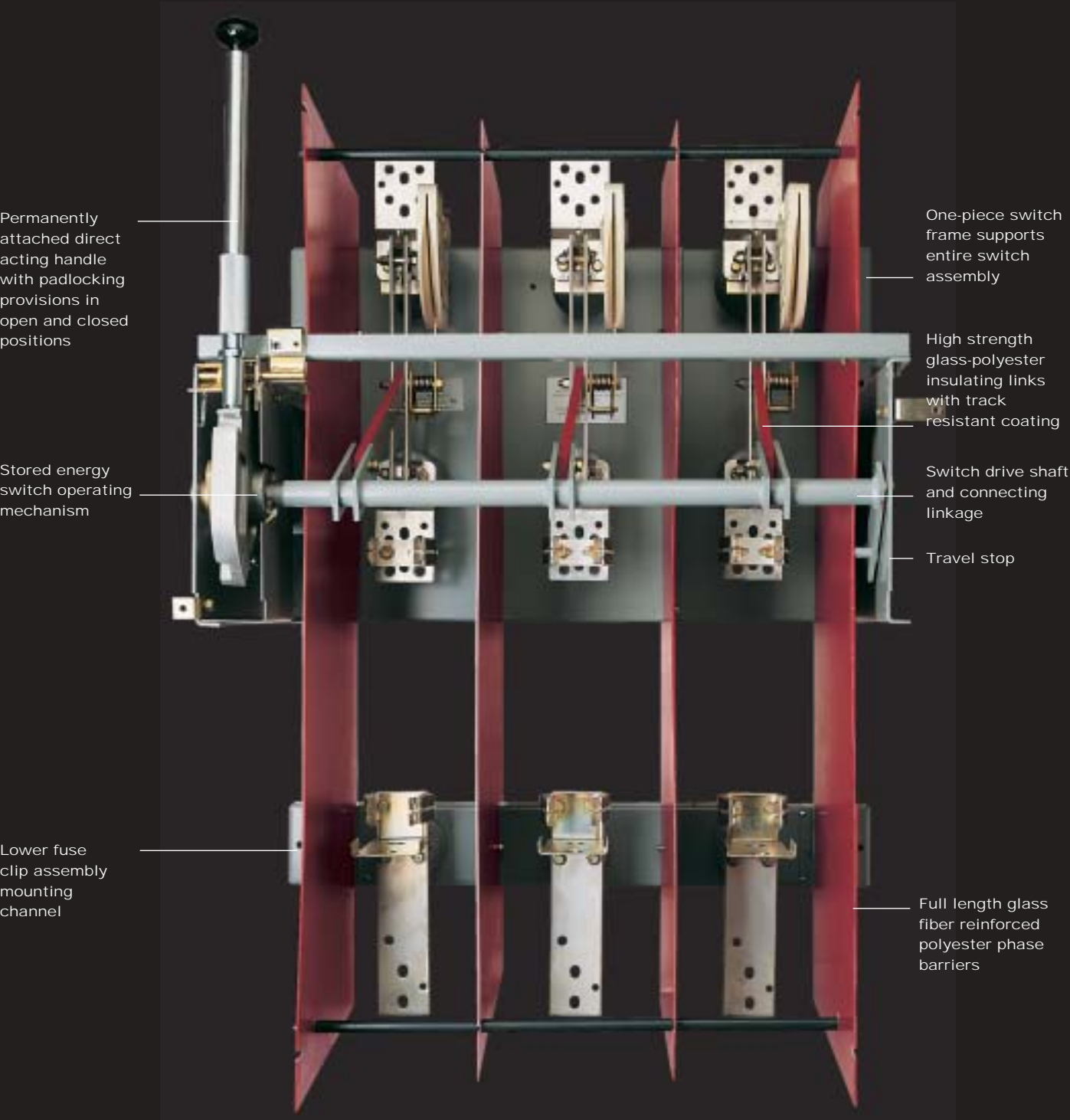
Blown Fuse
(Striker Pin Extended)



No fuse in Clip
(Switch Locked Open)

H V L TM S W I T C H

SQUARE D HVL 5-38 kV
Load Interrupter Switch



Open style switch shown.
The HVL switch is also available
for OEM customers.

SOLUTIONS

When it came time to choose a contractor for a new joint-venture steel plant, the purchasing manager gave the \$4 million contract to Square D. "I wanted the best engineering support, proven ability to meet schedules, technical contacts, open lines of communication and thorough follow-up," he said. "I wanted the best value." Square D provided 13.8 kV metal-clad and HVL™ Load Interrupter Switchgear, 13.8 kV single-ended indoor unit substations, 13.8 kV three-phase, dry-type and oil-filled transformers, and all the other equipment needed to handle more than fifty megawatts of electricity. The Square D reputation for quality was what made the difference, the purchasing manager said. "Our lines run 24 hours a day, seven days a week. The entire power distribution system has to work perfectly all the time."



Indoor NEMA Type 1, 5/15 kV

Outdoor NEMA Type 3R, 5/15 kV

The Best Engineered Enclosure

The enclosure for the HVL 5-38 kV Load Interrupter Switch is as carefully designed as the switch itself. It features the same rigorous engineering that goes into all SQUARE D® switchgear products. In fact, it's the same compact enclosure that's used for VISI-VAC® switchgear.

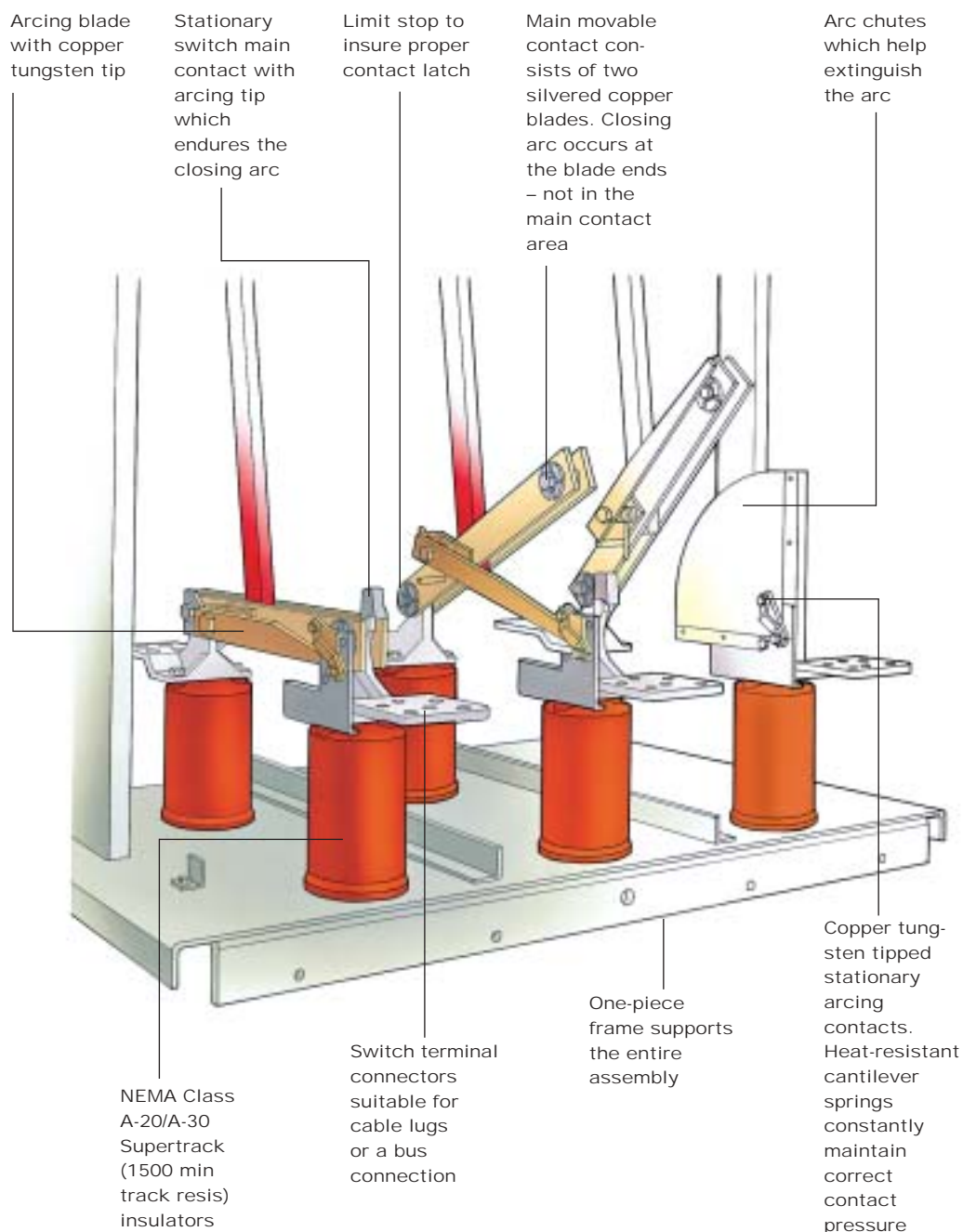
Our common enclosure, modular in construction, bolted and riveted for strength, allows for significant flexibility in configuring metal-enclosed switchgear. More flexibility gives you more options. For example, you can specify a duplex HVL configuration, and also include the increased function of a VISI-VAC Circuit Interrupter. In the same lineup, this common construction allows standardization of the cubicle and its associated components. It also permits the integration of the HVL Load Interrupter Switch and the VISI-VAC Circuit Interrupter into a continuous, modular, space-efficient lineup.

The Best Engineered Switch

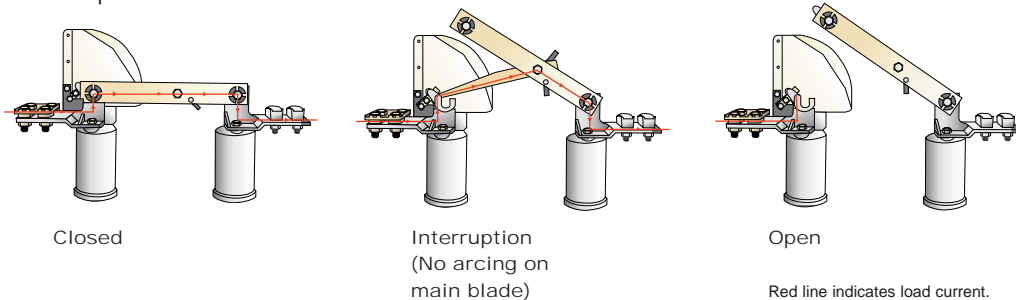
An important design feature is the HVL™ load interrupter's direct-drive operating mechanism. Our engineers concluded that chain-drive systems were simply too unreliable, so they created a chainless direct drive. The result is one of the most dependable and consistent load-interrupter switches in the industry.

The same spirit of engineering innovation can be seen in the way arc interruption is handled by the HVL switch. There are separate paths for current and for arcing. During the opening operation, the main blades completely disconnect and transfer the current to the arcing path. The arc is then forced to travel through the arc chute, where it is extinguished. This sequence of operation prevents erosion of the main contacts caused by arcing during the interruption of the load current.

To minimize the potential of catastrophic phase-to-phase faults, all live parts of HVL switchgear are mounted on insulators attached to the grounded sheet metal of the enclosure.



HVL Arc Interruption Sequence



The enclosure containing the HVL™ load interrupter is available in single- or multiple-bay configurations. It can be close-coupled to a transformer for unit substation applications or to HVL/cc™. There are HVL enclosures (including walk-in enclosures) for both indoor (NEMA Type 1) and outdoor (NEMA Type 3R) applications.

The enclosures are constructed of 11-gauge formed steel and have the toughest finish in the industry – SQUARE D® TGIC polyester powder paint. TGIC resins offer excellent mechanical properties, corrosion and exposure protection, edge coverage, and are also environmentally friendly. TGIC polyester powder paint has proven to be superior to any other paint system available today. In addition, the enclosure door of HVL switchgear gives access only to the fuses when the switch is open. The blades can be viewed through a Lexan window mounted in the permanently attached upper panel.

Option System Features

Transparent Ready™: **Web-Enabled Power and Control**

HVL 5-38 kV Load Interrupter Switchgear with POWERLOGIC® circuit monitors and Web-enabled Ethernet communication devices is a part of Square D/Schneider Electric's Transparent Ready power equipment family.

When specified as Transparent Ready, the power equipment is provided with a factory configured "plug and play" communications system that allows the authorized user access to equipment status and monitoring information using only a standard Web browser. Ask your local Square D field sales representative for details about TRANSPARENT READY™ power distribution equipment.



Optional Infrared Inspection Window

Ideal for installation in HVL 5-38 kV Load Interrupter Switchgear, the H.VIR COMET® Infrared Inspection Window enables permanent access for electrical component inspection without



Duplex Configuration
(Transformer connection on right)

The POWERLOGIC® Series 4000 Circuit Monitor (CM4000) features all basic and advanced metering functions while providing a 0.04% typical accuracy rate.



disturbing operations. Specially developed for infrared inspections and distributed exclusively by SQUARE D® Services, the window is made of a glass-like material that is transparent for infrared rays. This product is a

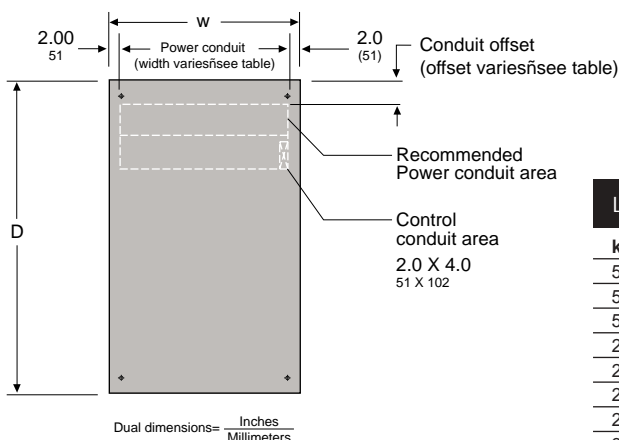


UL-recognized component for NEMA Type 3 and Type 12 equipment, and is available in 2-inch, 3-inch, and 4-inch diameters for either shortwave or longwave transmission.

The Best Service

Since a medium voltage load interrupter is essential to the dependable operation of a power distribution system, service and support are vital elements of a successful installation and continuing operation. Square D has one of the largest engineering and service teams in the industry to provide a level of support unmatched by any other manufacturer.

D I M E N S I O N S



Layout Dimensions Inches / Millimeters				
kV	Height	Width (W)	Depth (D)	Weight
5 / 15 Indoor	90.0 / 2286	38.00 / 965	54.50 / 1384	1200 lbs / 545 kg
5 / 15 Indoor	90.0 / 2286	38.00 / 965	46.50 / 1181	1000 lbs / 454 kg
5 / 15 Outdoor	97.5 / 2477	38.00 / 965	60.00 / 1524	1400 lbs / 636 kg
25 Indoor	114.0 / 2896	48.00 / 1219	80.00 / 2032	2000 lbs / 908 kg
25 Outdoor	121.0 / 3073	48.00 / 1219	86.00 / 2184	2500 lbs / 1135 kg
29 Indoor	114.0 / 2896	48.00 / 1219	80.00 / 2032	2000 lbs / 908 kg
29 Outdoor	121.0 / 3073	48.00 / 1219	86.00 / 2184	2500 lbs / 1135 kg
38 Indoor	120.0 / 3048	60.00 / 1524	80.00 / 2032	2200 lbs / 999 kg
38 Outdoor	127.0 / 3226	60.00 / 1524	86.00 / 2184	2700 lbs / 1226 kg

Recommended Power Conduit Area Inches / Millimeters				
kV Rating	Conduit Width		Conduit Offset	
	Indoor (NEMA 1)	Outdoor (NEMA 3)	Indoor (NEMA 1)	Outdoor (NEMA 3)
5-15 kV	34/864	34/864	4/102	6/152
25 kV	44/1118	40/1016	4/102	4/102
38 kV	56/1422	52/1321	4/102	4/102

HVL™ Load Interrupter Switch Ratings												
Nominal Voltage (kV) ^①	4.16			13.8			16.5	24.9			29.0	34.5
Maximum Design Voltage (kV)	4.76			15.0			17.0	25.8			29.0	38.0
BIL (kV)	60			95			95	125			125	150
Frequency (Hz)	50/60			50/60			50/60	50/60			50/60	50/60
Continuous Amperes	600	1200	1200	600	1200	1200	600	600	1200	600	1200	600
Interrupting Amperes	600	1200	1200	600	1200	1200	600	600	1200	400		400
Fault Close (kA Asymmetrical rms)	40	61	61	40	61	61	40	28			28	20
Fault Close (kA Symmetrical rms)	25	38	38	25	38	38	25	17.5			17.5	12.5
Momentary Current (kA Asymmetrical 10 Cycle)	40 ^②	61	80	40 ^②	61	80	40	40	61	40	61	40
Capacitor Switching (kVAR)	2400	2400	—	2400	2400	—	—	—			—	—
Short-Time Current (kA 2 Seconds)	25	38	48	25	38	48	25	25			25	25
Dielectric Withstand (kV 1 Minute)	19			36			36	60			60	80

① 5–15kV switches are UL Listed

② 61 kA momentary current rating is available as an option

Grayed areas are not UL Listed

As standard specifications and designs change from time to time, please ask for confirmation of the information given in this publication

For additional information on HVL 5-38 kV Load Interrupter Switchgear contact your local Square D sales representative, or call 1-888-SQUARED.

www.SquareD.com



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