Class 6040, 6046

5 And 15 kV HVL And VISI/VAC® Metal-Enclosed Switchgear

New Standardized Enclosure FOR HVL AND VISI/VAC

Square D metal-enclosed switchgear is now housed in a standardized 11-gauge steel enclosure that is common to both the HVL load interrupter switch and the VISI/VAC circuit interrupter. This common construction allows standardization of the cubicle and its associated components. It also permits integration of the HVL load interrupter switch and VISI/VAC circuit interrupter into a continuous, seamless, space-efficient lineup.

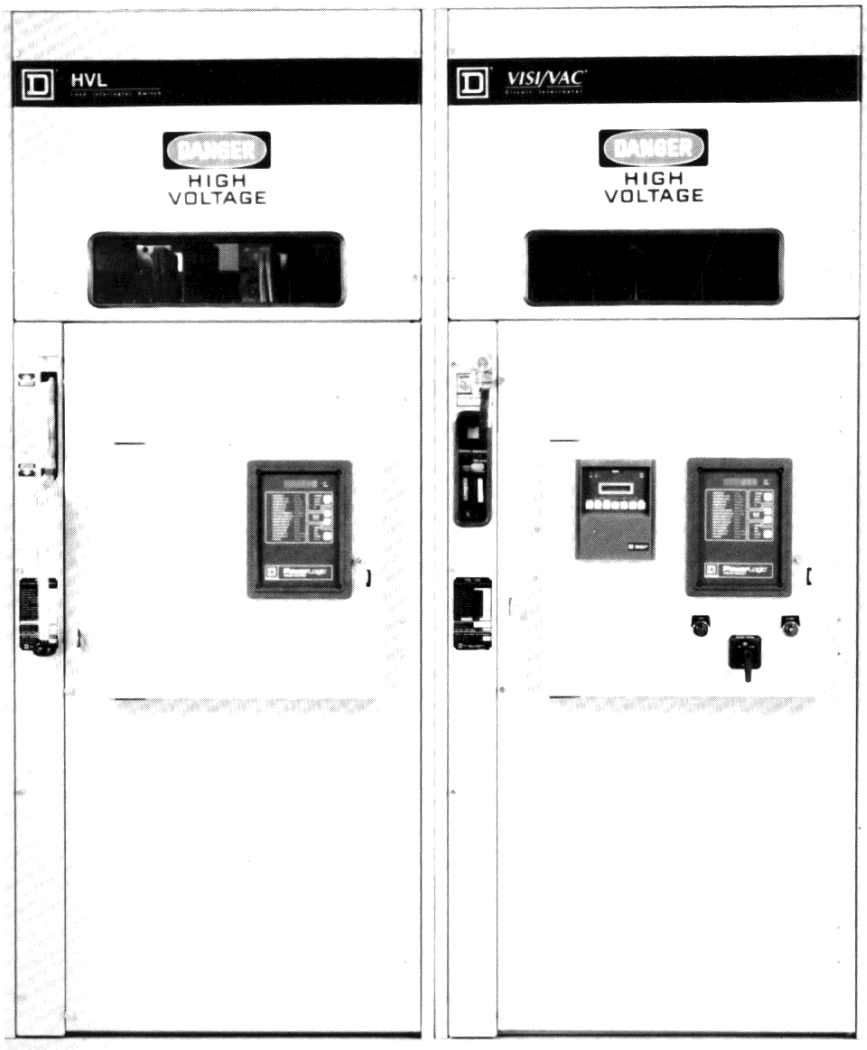
This equipment is available for various applications and configurations. Some of them are:

- Individual service entrance bays
- Multiple bay lineups incorporating HVL load interrupters and/or VISI/VAC circuit interrupters
- Substation primaries
- Main-Tie-Main VISI/VAC circuit interrupters and HVL load interrupter switches as feeders

Square D metal-enclosed switchgear is available in both indoor (NEMA Type 1) and outdoor (NEMA Type 3R) construction.

Square D metal-enclosed switchgear is a prime component in medium voltage power distribution systems. It has become an industry standard for many reasons, including:

- better system performance
- lower maintenance costs
- easier system expansion
- reduced system expense



HVL load interrupter and VISI/VAC circuit interrupter in new standardized enclosure

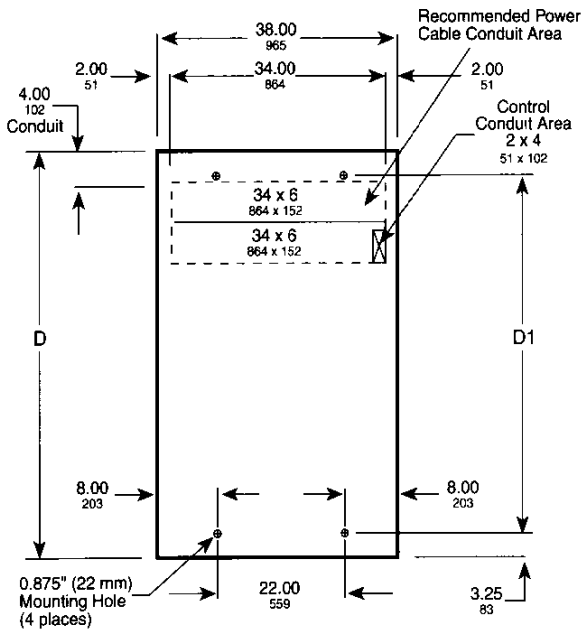
SQUARE D COMPANY
REGISTERED TO ISO 9002
CERTIFICATE NO. A2211

Square D metal-enclosed switchgear is manufactured in a facility that is Quality Systems Registered by Underwriters Laboratories to ISO 9002.

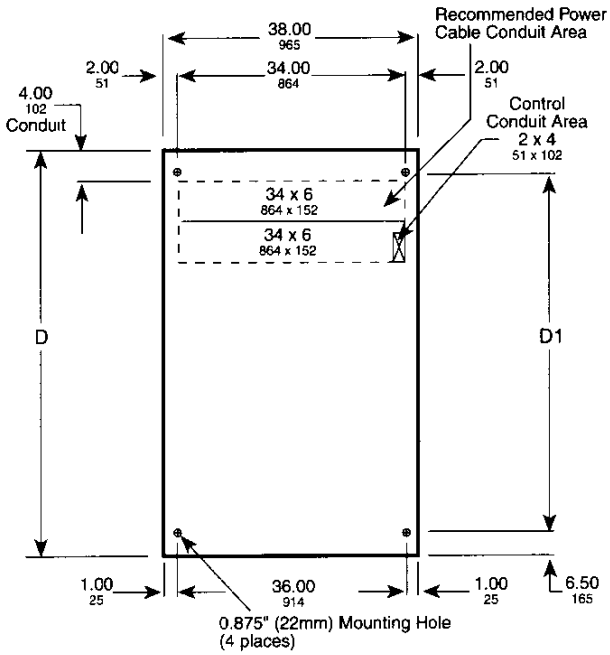
SQUARE D
GROUPE SCHNEIDER

5 And 15 kV HVL And VISI/VAC Metal-Enclosed Switchgear

Typical Base Plan For HVL Load Interrupter Switches And VISI/VAC Circuit Interrupters



Standard Outdoor Floor Detail



Standard Indoor Floor Detail

HVL Weight	VISI/VAC Weight
1200 545	1400 636
1000 454	1200 545
1400 636	1600 726

Dual Dimensions: Pounds / Kilograms

Enclosure Type	Width	D	D1
Indoor	38.00 965	54.50 1384	43.50 1105
Indoor	38.00 965	46.50 1181	43.50 902
Outdoor	38.00 965	60.00 1524	53.50 1359

Dual Dimensions: INCHES / Millimeters

Note: Not for construction. Use contract drawings for construction.

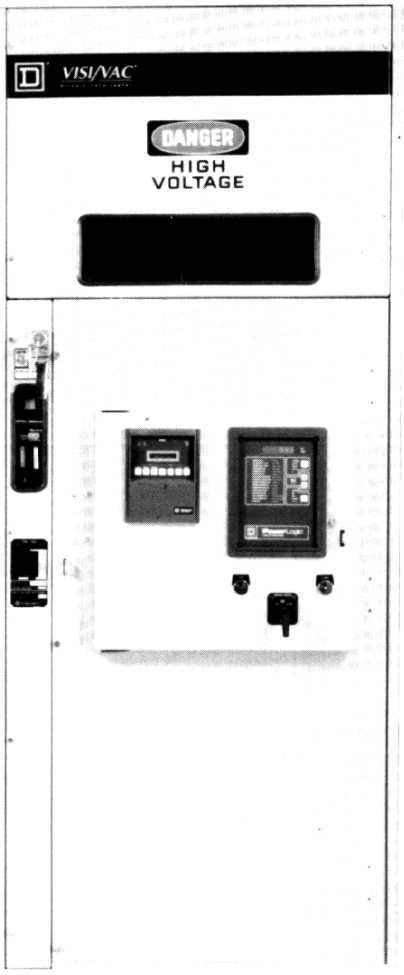
HVL Load Interrupter Switch Ratings

Nominal Voltage (kV)	4.16			13.8			16.5
Maximum Design Voltage (kV)	4.76			15.0			17.0①
BIL (kV)	60			95			95
Frequency (Hz)	50/60			50/60			50/60
Continuous Amperes	600	1200	1200②	600	1200	1200②	600
Interrupting Amperes	600	1200	1200	600	1200	1200	600
Fault Close (kA Asymmetrical)	40	61	61	40	61	61	40
Fault Close (kA Symmetrical)	25	38	38	25	38	38	25
Momentary Current (kA Asymmetrical 10 Cycle)	40③	61	80	40③	61	80	40
Capacitor Switching (kVAR)	2400	2400	—	2400	2400	—	—
Short Time Current (kA 2 Seconds)	25	38	48	35	38	48	25
Dielectric Withstand (kV 1 Minute)		19			36		36

① For fused versions only, S&C 16.5 kV boric acid fuses can be used.
② Not UL Listed and not priced in SW7.
③ 61 kA momentary current rating is available as an option.

VISI/VAC Circuit Interrupter Type C

The VISI/VAC circuit interrupter Type C is the latest in the evolution of this unique medium voltage electrical switching device; it brings together the best features of two technologies for the protection of distribution systems. The VISI/VAC circuit interrupter combines the economical construction and visible disconnect blades of metal-enclosed switchgear with the relay overload and fault protection associated with circuit breakers.



Type C VISI/VAC circuit interrupter

In fact, the enclosure construction meets the requirements of the latest proposed ANSI Standard, C37.20.4-199X for metal-enclosed interrupter switchgear. The circuit interrupter has been tested according to the following circuit breaker standards: ANSI C37.04-1979, C37.06-1979, and C37.09-1979 (except reclosing duty).

In the unfused configuration, the VISI/VAC circuit interrupter carries up to 800 amperes continuously at up to 15 kV, and has an interrupting capability of 12.5 kA sym.

In its fused current limiting configuration, it has an interrupting capability of 63 kA sym. This unique circuit interruption/isolation system combines automatic visible isolation blades in series with a vacuum interrupter. During the opening operation, arcing and interruption occur within the vacuum interrupter, after which
the unique camming configuration opens the isolation blades automatically and provides visible isolation.

This latest generation of mechanisms has additional standard features that were previously optional or simply not available. The following are now standard features for the Type C operating mechanism:

- Stored energy operator:
  - Close latch with close coil
  - Trip latch with trip coil
  - Motor operator
  - Mechanical "spring charged/ spring discharged" indicators
  - Mechanical "open/closed" indicators
  - Mechanical operation counter
  - Local mechanical "pull to close/push to trip" operating lever
  - 3 N/O and 4 N/C spare auxiliary contacts
  - Automatic spring discharge handle which discharges the mechanism prior to opening the cubicle door
- Tested in accordance with ANSI C37.09 circuit breaker standard, with exception of reclosing duty (O-CO-15 sec-CO).
- Door is interlocked and cannot be opened when the VISI/VAC circuit interrupter is closed.
- Mechanism is mechanically and electrically locked out when the cubicle door is open.
- A mechanism test feature bypasses the mechanical lockout, allowing authorized personnel to manually operate the circuit interrupter to verify its operation.
- The stored energy mechanism makes the VISI/VAC circuit interrupter suitable for automatic throw-over schemes.

  This standard electrically operated stored energy mechanism makes the VISI/VAC circuit interrupter better suited for remote operation, as well as for protective relaying and transfer schemes. The electrically operated mechanism makes operation convenient and simple.

5 And 15 kV HVL And VISI/VAC Metal-Enclosed Switchgear

VISI/VAC Circuit Interrupter Ratings

Nominal Voltage (kV)	4.16					13.8		
Maximum Design Voltage (kV)	4.76					15.0		
BIL (kV)	60					95		
Frequency (Hz)	50/60					50/60		
Continuous Amperes	600	800	600			600	800	600
Switchgear Type	Unfused		Fused			Unfused		Fused
Interrupting Amps Unfused (kA Symmetrical)	12.5	12.5	—	—	—	12.5	12.5	—
Fault Close Unfused (kA Symmetrical)	12.5	12.5	—	—	—	12.5	12.5	—
Current Limiting Fuse Rating①	—	—	To 175E②	200E②	250E②	—	—	To 300E③
Interrupting Amperes Fused (kA Symmetrical)④	—	—	63	40	25	—	—	40
Fault Close Fused (kA Symmetrical)④	—	—	63	40	25	—	—	40
Momentary Current (kA Asymmetrical 10 Cycle)	20	20	—	—	—	20	20	—
Capacitor Switching (kVAR) Single Bank Only	Consult Headquarters							
Short Time Current (kA 2 Seconds)	12.5	12.5	—	—	—	12.5	12.5	—
Dielectric Withstand (kV 1 Minute)	19		19			36		36
Closing Time⑤	5 cycles							
Opening Time⑤	3 cycles							
Endurance (Operations):								
Mechanical (Close-Open)	5000							
Electrical Full Load (600 ampere)	2500							
Electrical Short Circuit (12.5 kA)	30							
Spring Charging Time⑤	6–8 seconds							
Transfer Time (between 2 VISI/VAC circuit interrupters)	8–10 cycles							
Dead Bus Time⑤	6 cycles (approximate)							
Control Voltages	120 and 240 Vac; 24, 48, 125, and 250 Vdc							

① Cannot coordinate with boric acid fuses.
② Gould CS3 fuses.
③ Gould CS3 fuses to 100E. GE fuses to 300E.
④ An intentional time delay may be required for coordination between relay and fuse.
⑤ At 100% control voltage.

Order No. 6000HO9303 December 1993 5M DL 12/93

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