

Powerful Reliability Meets Design Flexibility

Trident® Solid Dielectric Insulated Switches



After a century of engineering exceptionally long lasting medium-voltage distribution products, G&W Electric knows power. And more importantly, we know the power of listening. By taking time to understand your application and asking the right questions, we develop a solution that precisely matches your needs. The answer may be our time-tested switches that keep power running seamlessly in mission-critical industries, or an advanced automation system for next-generation smart grids. Whatever your challenge, you'll experience decades of high-performance engineering to meet your needs.

The Trident® Solution

We are dedicated to delivering proven solutions that meet — and exceed — your needs. That's why our engineers ask you questions and listen to find the right solution. Our Trident solid dielectric insulated switches do not require preventative maintenance while offering more flexibility, leading to a longer-lasting solution that can be designed for your unique application.

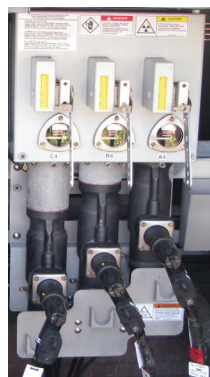
Trident switches provide the total lifecycle cost and operational benefits of fuseless, electronically controlled, resettable overcurrent protection, with the safety and maintenance benefits of an environmentally friendly dead-front design.

Utilizing G&W's time-proven, submersible epoxy insulation, Trident's load and fault interrupting vacuum interrupters are fully encapsulated. This solid dielectric insulation eliminates the degradation of dielectric integrity commonly associated with oil and air insulated switchgear.



TRIDENT SERIES*

SPRING OPERATED



Trident-ST



Trident-S



Trident-S with SafeVu
Available up to 15.5kV



Far-Reaching Capabilities

The Trident family of products is available for both padmount and vault solutions. Enclosures comply with IEEE C57.12.28 and C57.12.29 and are available in a variety of colors.

Trident is ideal for harsh environments, such as wet vaults, with its ability to withstand extended periods of submersion and meets IP68 for 20 feet over 20 days.



Trident-SP
Available up to 27kV



Trident-SP with SafeVu
Available up to 15.5kV

MAGNETICALLY ACTUATED



Trident-SR



Trident-SR with SafeVu
Available up to 15.5kV

**Trident Series can be designed for various solutions. See your sales representative for the various configurations.*

Key Features



OVERCURRENT PROTECTION

Our engineers equip fault interrupters with an encapsulated 500:1 or 1000:1 current transformer and a G&W self-powered Vacuum Interrupter Control. Alternately, a wide variety of protective relay packages are available, including relays from SEL and other leading relay suppliers.

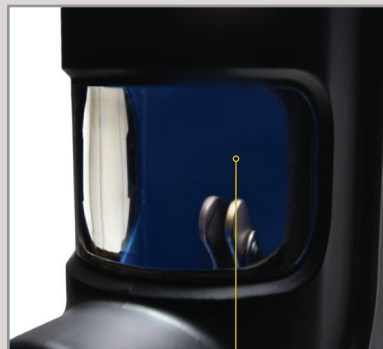


EXTERNAL CTs AND EXTERNAL PTs

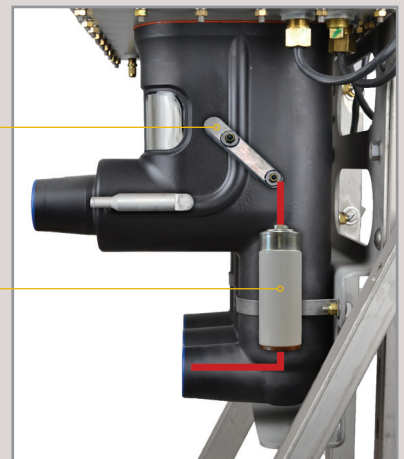
Metering or relaying accuracy current and potential transformers are available for use with protective relay packages.

SAFEVU™

G&W introduced the first visible break — known as SafeVu — to the market in 2012. This innovative feature is built into the Trident switch modules, eliminating the need to remove elbows or use externally mounted components to provide a visible open. The visible open SafeVu feature is gas and oil free, without the need for maintenance or monitoring. The SafeVu operating handle is operable via hook stick or rope rigging, making it ideal for subsurface applications where space or safety practices prevent the operator from entering the vault to create a visible break.



Integral visible break
in the open position.



Internal components
are shown outside the
model as reference.



OPERATING HANDLE

G&W will select the appropriate handle based on the application. Handles are operable via hook stick or rope rigging. Picture shows one example of handles used.



KEY INTERLOCKS

Key interlocks may be used to ensure safe coordination of equipment. All Trident ways can be factory equipped with key interlocks or provisions for key interlocks.

AUTOMATION

Automation begins with adding motor actuators to a manual switch, or with a magnetically actuated Trident-SR. Motors can be factory installed on new equipment or retrofitted to pre-existing switchgear.



We offer motor operated automatic transfer solutions that perform in 10 seconds and magnetically actuated transfer switches that perform in 10 cycles or less.

For fast-acting applications, the Trident-SR series switches offer speeds of just 3.5 cycles for both load and fault interrupting operations.



VOLTAGE SENSING

G&W's Voltage Sensing (VS) Bushings are available in dead break apparatus or 200A deepwell. The VS is a temperature compensated, built-in voltage measuring system that eliminates the need for PTs in analog phase to ground voltage monitoring.

AUXILIARY CONTACTS

Auxiliary contacts are available and are mounted internal to the mechanism housing to provide remote indication of switch contact position. One normally open and one normally closed Form C contact is provided.

Trident Overview

TRIDENT SERIES OVERVIEW

TRIDENT SERIES	SINGLE OR 3-PHASE OPERATION	AUTOMATION	SAFEVU VISIBLE BREAK	VOLTAGE SENSING	BENEFITS	APPLICATIONS
TRIDENT-S	3-phase	Motor optional	✓‡	✓	No maintenance or monitoring Dead-front design eliminates exposure to live parts Epoxy is inert No fuses or fuse links Fully encapsulated current transformers; no external power source or PT required	Padmount, Dry Vault and Submersible Installations
TRIDENT-SR	3-phase	Magnetic actuator	✓‡	✓		System Fault Protection and Curve Coordination
TRIDENT-SP	Single Phase	Motor optional	✓‡	—		Radial and Loop Switching
TRIDENT-ST	Single or 3-phase	—	—	—		Automation with Communicating and Non-communicative Schemes

Note:
‡ Available up to 15.5kV

IEEE C37.60 FAULT INTERRUPTING DUTY FOR VAULT AND AUTOMATED

PERCENT OF MAXIMUM INTERRUPTING RATING	APPROXIMATE INTERRUPTING CURRENT, AMPS	NUMBER OF FAULT INTERRUPTIONS
15-20%	2,000	44
45-55%	6,000	56
90-100%	12,500	16
Total Number of Fault Interruptions: 116		

RATINGS FOR TRIDENT

The switch is designed, tested and built per IEEE C37.74 for load break switching, IEEE C37.60 for fault interrupting, IEEE 386 for bushing specification, and IEC 60529 for environmental protection rating. Certified test reports are available.

Voltage Class (kV)	15	25	35
Max. System Voltage (kV)	15.5	27 [±]	38
BIL (kV)	110 ^Δ	125	150
Continuous Current (A)	630 [§]	630 [§]	630 [§]
Load Break Current (A)	630	630	630
AC Withstand, 1 min. (kV)	35	60	70
AC Withstand, Productions, 1 min. (kV)	34	40	50
DC Withstand, 15 min. (kV)	53	78	103
Momentary Current, RMS, asym (kA)	20	20	20
Fault Close 3 times, asym (kA)	20	20	20
1 second Current, sym (kA)	12.5	12.5	12.5
Fault Interrupting Current, sym (kA)	12.5	12.5	12.5
Vacuum Interrupter Mechanical Operations for Spring Operated	2,000	2,000	2,000
Vacuum Interrupter Mechanical Operations for Magnetically Actuated	10,000	10,000	10,000

Note:

Δ BIL impulse rating is 95kV when using integrated visible break feature

± Up to 29.3kV max. system voltage available

§ Up to 900A available on In/Out without SafeVu; up to 800A available on multiway

Trident without SafeVu



A RELIABLE PARTNER

G&W combines unmatched design and manufacturing expertise, as well as extensive research and development, with ISO 9001 certified quality systems across the entire design and manufacturing process. Our suite of products is designed to the latest industry standards and backed by over a century of engineering and manufacturing expertise. The result? Time proven, reliable performance.

With a commitment to listening to our customers and delivering on their needs, G&W has built a long-standing reputation for delivering quality solutions and superior service. This commitment to putting our customers first has kept us ahead of a changing industry, allowing us to continue powering the world.

Contact your nearest G&W sales representative or corporate headquarters for additional information.

Contact us today

708.388.5010 or info@gwelec.com



Engineered to order. Built to last.

Since 1905, G&W Electric has been a leading provider of innovative power grid solutions, including the latest in load and fault interrupting switches, reclosers, system protection equipment, power grid automation and transmission and distribution cable terminations, joints and other cable accessories. G&W is headquartered in Bolingbrook, Illinois, U.S.A., with manufacturing facilities and sales support in more than 100 countries, including China, Mexico, Canada, UAE, India, Singapore and Brazil. We help our customers meet their challenges and gain a competitive edge through a suite of advanced products and technical services.