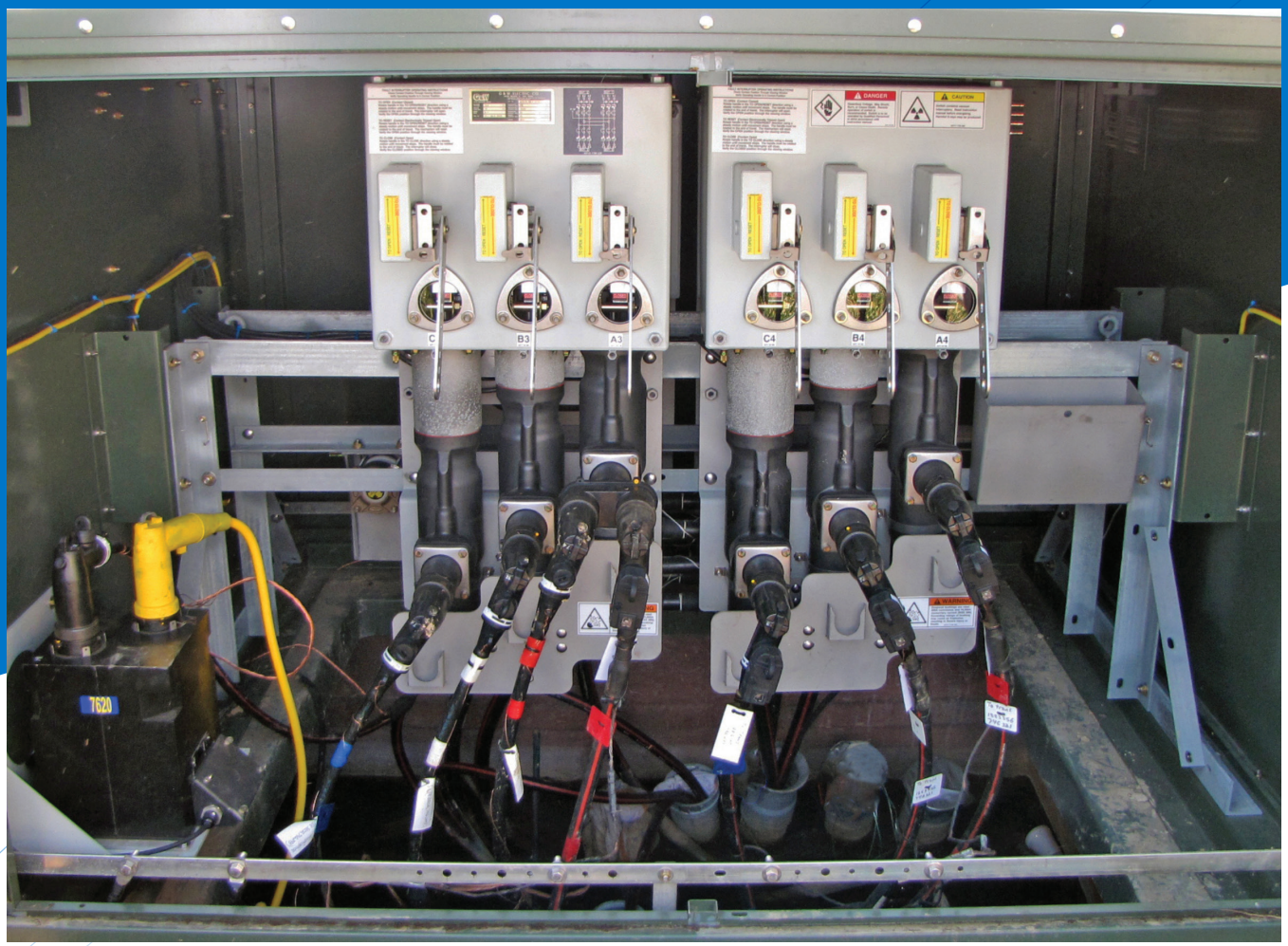


Trident® Spring-Operated Solid Dielectric Switchgear

G&W Electric

Engineered to order. Built to last.

Our Trident® solid dielectric insulated switches offer more flexibility, leading to a longer-lasting solution for your unique applications.

The Trident Solution

Trident switches provide the safety and maintenance benefits of an environmentally friendly dead-front design, which utilizes G&W's time proven, submersible epoxy insulation to fully encapsulate load and fault interrupters. This eliminates the dielectric integrity degradation associated with oil and air insulated switches.

Trident is available in any combination of load break switch and fault interrupter ways and configurations. The fault interrupter features a trip-free mechanism, providing interruption independent of the operating handle when closing into a fault. Viewing windows provide visible indication of the contact position.

Trident-S

Trident-S is a three phase, spring-assisted load break or fault interrupting switch. Its side-mounted handles can be positioned with a hookstick eye on top or bottom, providing the ideal mechanical advantage for either vertical or horizontal mounting.

Trident-ST

Trident-ST is a three phase load break or fault interrupting switch with single phase switched ways. Each phase of the mechanism can be independently opened or tripped and reset, providing the ability to maintain energization of the other phases in the case of a single phase outage or fault. A mechanically ganged reset handle is available.

Trident-SP

Trident-SP is a single phase, spring-assisted load break or fault interrupting switch. It provides fault protection through vacuum interrupters with integral current transformers and overcurrent control options. Both vertical or horizontal mounting options
are available.

Trident-S

Trident-S w/SafeVu™

Available up to 29.3kV

Trident-ST

Available up to 27kV

Trident-SP

Available up to 27kV

Trident-SP w/SafeVu

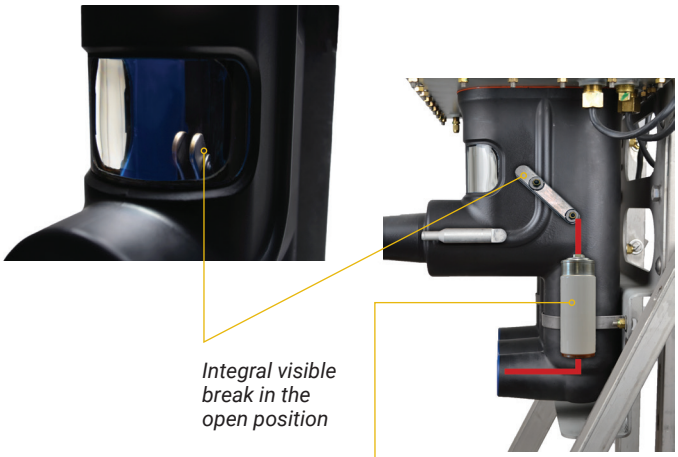
Available up to 15.5kV

Additional Features

The innovative SafeVu visible break feature is built into Trident switch modules, eliminating the need to remove elbows or use externally mounted components for a visible open. SafeVu is gas, oil and maintenance free. The SafeVu operating handle is operable by hookstick or rope rigging, making it ideal for subsurface applications where space or safety practices prevent operators from entering the vault to create a visible break.

Automation Flexibility

The Trident switch series was specifically designed to adapt to motor automation. Switches can be configured with motors or motor provisions and are available with various control packages to provide the features required for a wide variety of applications.



Integral visible break in the open position

Internal components are shown outside the model as reference

Components

Overcurrent Protection	Fault interrupters are equipped with an encapsulated 500:1 or 1000:1 current transformer and G&W self-powered vacuum interrupter control. Alternatively, fault interrupters without SafeVu are available with encapsulated 200:1 or 400:1 current transformers. 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 (PTs) are available for use with protective relay packages.
Operating Handle	Handles are operable using hookstick or rope rigging. G&W will select the appropriate handle based on the application.
Key Interlocks	Key interlocks may be used to ensure safe coordination of equipment. All Trident ways can be equipped with provisions for key interlocks. If required, key interlocks can be factory installed.
Auxiliary Contacts	Auxiliary contacts are mounted inside the mechanism housing to provide remote indication of switch contact position. One normally open and one normally closed Form C contact is provided. A junction box is available with terminal strip connections for up to three auxiliary contacts.
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. Compared to potential transformers, the VS bushing system offers these benefits: • Significant cost savings • Cleaner, less cumbersome installation • Less space required • Fewer add-on components • Installed and tested prior to shipment Voltage sensors are available as low energy analog or 120VAC output. Capacitive voltage sensors encapsulated within the bushings permit voltage reading for network reconfiguration while eliminating the need for add-on sensors and cabling. The phase angle accuracy is +/-1° throughout the full temperature range.

Output	Temperature	Accuracy
0-8VAC	-20°C (-4°F) to +40°C (104°F)	+/- 2%
	-60°C (-76°F) to +65°C (149°F)	+/- 4%
0-120VAC	-60°C (-76°F) to +65°C (149°F)	+/- 5%

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. Padmount switch enclosures are designed per C57.12.28 or C57.12.29. Certified test reports are available upon request.

Voltage Class (kV)	15	25	35
Max. System Voltage (kV)	15.5	27‡	38
BIL (kV)	110Δ	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.	53	78	103
Momentary Current, RMS, Asym (kA)	20	20	20
Fault Close 3 Times, Asym (kA)	20	20	20
Current, Sym (kA), 1 Sec.	12.5	12.5	12.5
Fault Interrupting Current, Sym (kA)	12.5	12.5	12.5
Vacuum Interrupter Mechanical Operations	2,000	2,000	2,000

Note:
Δ BIL impulse rating is 95kV when using the SafeVu 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

Part Number Configuration

Character	1	2	3	4	5		6	7	8		9		10	11	12	13
Sample Part Number	P	L	S	3	2	-	3	7	6	-	12	-	6	FA	VU	-A

1. Type of Installation

P = Padmount (enclosure)
V = Vault (no enclosure)

2. Type of Load Break Switches

L = Trident-S or Trident-SP (depends on number of phases)
M = Trident-SR*

Leave blank if no load break switches
Consult factory for other options or combinations of options shown here

**See Trident Automated Solid Dielectric Switchgear Brochure (GW10-2019)*

3. Type of Fault Interrupter

S = Trident-S or Trident-SP (depends on number of phases)
T = Trident-ST (single-phase trip capability)
F = Trident-S and Strident-ST combination
R – Trident-SR**
U = Unswitched bushings directly on bus

Leave blank if no fault interrupters or no un--switched bushings directly on bus
***See Trident Automated Solid Dielectric Switchgear Brochure (GW10-2019)*

4. Number of Ways

Enter a number 2 through 6

Consult factory for other options or combinations of options shown here

5. Number Fault Interrupters

Enter a number 2 through 6, up to the number of ways.

6. Number of Phase

1 = Single phase switch
3 = Three phase switch

7. Voltage Class (maximum system voltage, Ph-Ph)

7 = 15.5kV
8 = 27kV*
9 = 38kV

**Consult factory for 29.3kV options*

8. Continuous Current

6 = 630A
8 = 800A*
9 = 900A*

**Consult factory for limitations*

9. Fault Interrupting or Momentary Rating

12 = 12.5kA sym. For all switches with fault interrupters

20 = 20kA asym. For all switches without fault interrupters

10. Model

3 = Single load break way
4 = Single fault interrupting way
6 = 3 way with 2 load break, 1 fault interrupter
7 = 3 way with 1 load break, 2 fault interrupter
9 = 4 way with 2 load break, 2 fault interrupter
10 = 4 way with 4 load break, 0 fault interrupter
11 = 4 way with 3 load break, 1 fault interrupter
12 = 4 way with 1 load break, 3 fault interrupter
13 = 3 way with 3 load break, 0 fault interrupter

For all other configurations, model is same as digit 4 and 5

11. Configuration (access style)

FA = Front access to bushings and operators
FB = Front access to bushings and back access to operators

Consult factory for additional options

12. SafeVu Included

VU = SafeVu included* (available up to 29.3kV)

Leave blank if SafeVu not included

**Advise factory if not all ways include SafeVu*

13. Automated

-A = Motor and Control Included

Leave blank if not automated

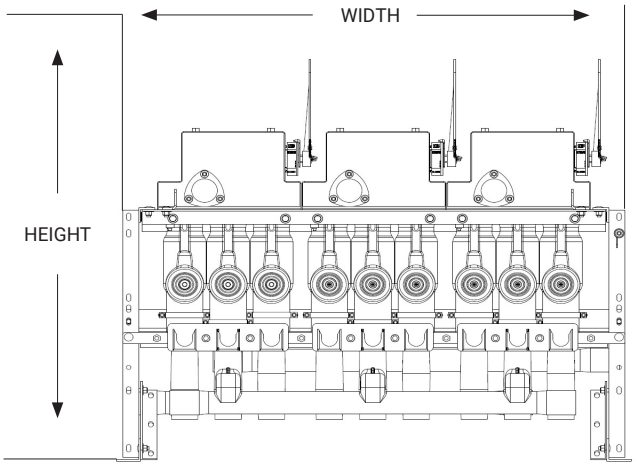
Trident-S

	VAULT FRONT ACCESS		PADMOUNT FRONT ACCESS		PADMOUNT FRONT/BACK ACCESS	
# Ways	Width inches (mm)	Weight lbs (kg)	Width inches (mm)	Weight lbs (kg)	Depth inches (mm)	Weight lbs (kg)
3	63 (1,600)	850 (400)	71 (1,800)	1,750 (800)	77 (1,960)	1,900 (900)
4	81 (2,060)	900 (400)	89 (2,260)	1,800 (800)	77 (1,960)	2,100 (1,000)
5	99 (2,510)	1,250 (600)	107 (2,720)	2,150 (1,000)	***Consult Factory***	
6	117 (2,970)	1,700 (800)	125 (3,180)	2,600 (1,200)	***Consult Factory***	

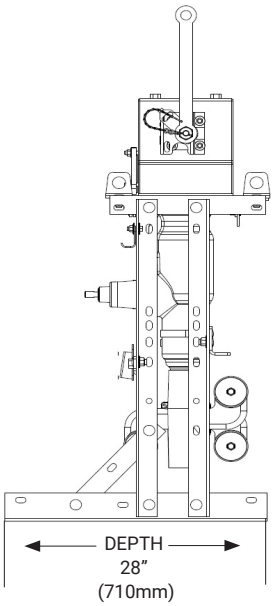
Consult factory for size and weight of configurations with Trident-ST (single phase trip)
Do not use for construction

Vault Front Access

FRONT



SIDE



Height =

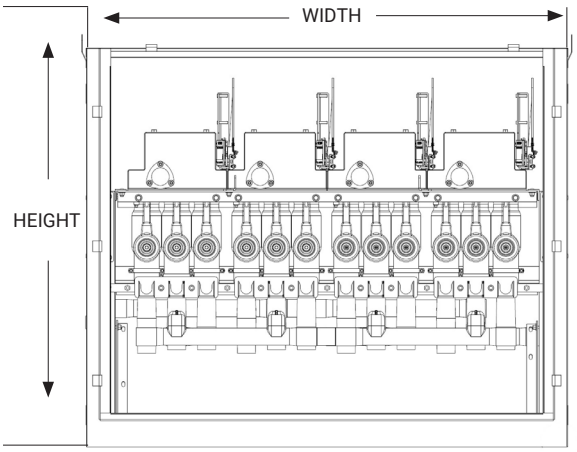
55" (1,400 mm) with standard 24" bushing height.

60" (1,525 mm) with standard 24" bushing height with 29.3kV SafeVu feature.

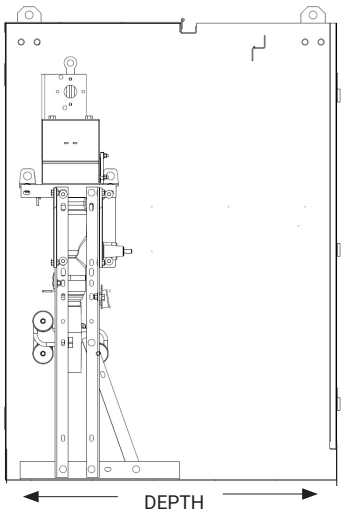
Dimensions are approximate. Do not use for construction. Consult factory for height with Trident-ST.

Padmount Front Access

FRONT



SIDE



With Standard 24" cable compartment
42" (1,070 mm) without SafeVu
48" (1,220 mm) with SafeVu feature at 15kV
50" (1,270 mm) with SafeVu feature at 29.3kV

Height =

57" (1,450 mm) with standard 24" bushing height.

60" (1,525 mm) with standard 24" bushing height with 29.3kV SafeVu feature.

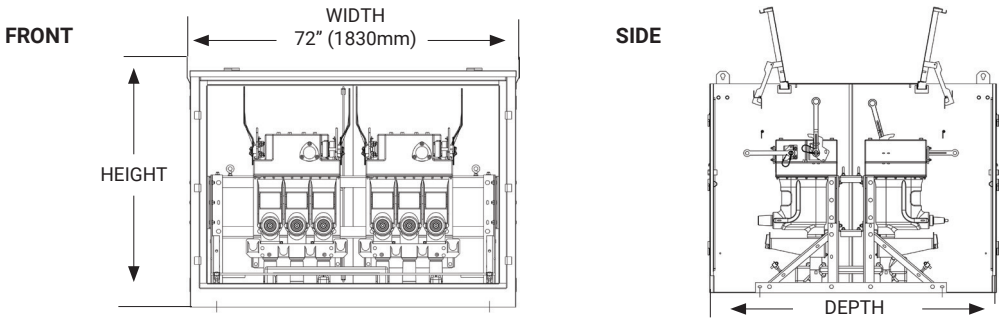
Dimensions are approximate. Do not use for construction. Consult factory for height with Trident-ST.

Trident-S w/ SafeVu

		VAULT FRONT ACCESS		PADMOUNT FRONT ACCESS		PADMOUNT FRONT/ BACK ACCESS	
# Ways	Voltage Class	Width inches (mm)	Weight lbs (kg)	Width inches (mm)	Weight lbs (kg)	Depth inches (mm)	Weight lbs (kg)
3	15kV	63 (1,600)	950 (400)	71 (1,800)	1,850 (800)	92 (2,340)	2,100 (1,000)
	29.3kV	83 (2,100)	1,535 (700)	91 (2,310)	2,435 (1,100)	95 (2,410)	2,840 (1,300)
4	15kV	81 (2,060)	1,000 (500)	89 (2,260)	1,900 (900)	92 (2,340)	2,400 (1,100)
	29.3kV	107 (2,720)	1,780 (800)	115 (2,920)	2,680 (1,220)	95 (2,410)	3,260 (1,500)
5	15kV	99 (2,510)	1,400 (600)	107 (2,720)	2,300 (1,000)	*Consult Factory*	
	29.3kV	132 (3,350)	2,375 (1080)	140 (3,550)	3,275 (1,490)	*Consult Factory*	
6	15kV	117 (2,970)	1,900 (900)	125 (3,180)	2,800 (1,300)	*Consult Factory*	
	29.3kV	156 (3,960)	3,070 (1,400)	164 (4,160)	3,970 (1,800)	*Consult Factory*	

Consult factory for size and weight of configurations with Trident-ST (single phase trip). Do not use for construction.

Padmount Front/Back Access



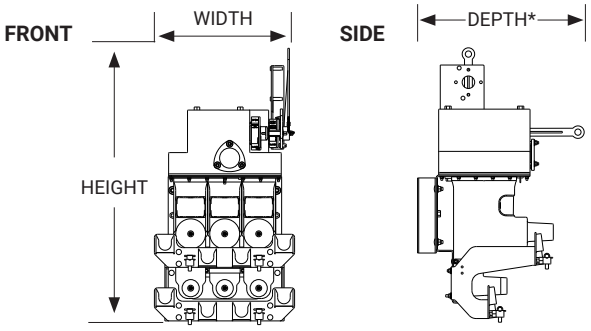
Height = 57" (1,450 mm) with standard 24" bushing height.
60" (1,525 mm) with standard 24" bushing height with 29.3kV SafeVu feature.

Two-way Trident-S and Trident-S w/ SafeVu

TWO-WAY VAULT					
SafeVu	Voltage Class	Depth inches (mm)	Width inches (mm)	Height inches (mm)	Weight lbs (kg)
Non SafeVu	15-38kV	21 (530)	20 (510)	44 (1,118)	200 (90)
SafeVu	15kV	24 (610)	22 (560)	44 (1,118)	275 (125)
SafeVu	29.3kV	27 (690)	27 (690)	50 (1,256)	420 (190)

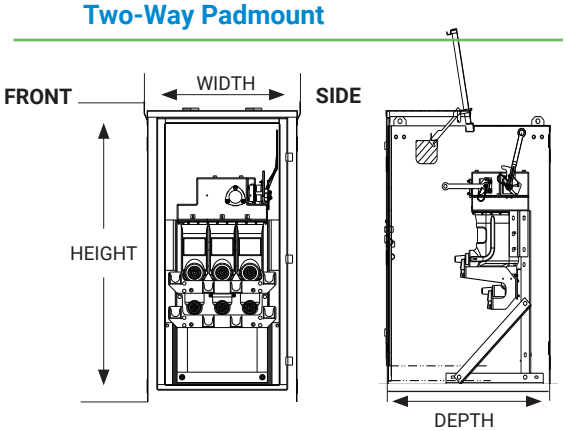
TWO-WAY PADMOUNT					
SafeVu	Voltage Class	Depth inches (mm)	Width inches (mm)	Height inches (mm)	Weight lbs (kg)
Non SafeVu	15-38kV	36 (910)	28 (710)	58 (1,458)	800 (365)
SafeVu	15kV	40 (1,010)	28 (710)	58 (1,458)	875 (400)
Safevu	29.3kV	50 (1270)	38 (960)	61 (1,550)	1070 (480)

Two-Way Vault



**Depth includes full length of handle travel*

Two-Way Padmount



Trident-SP

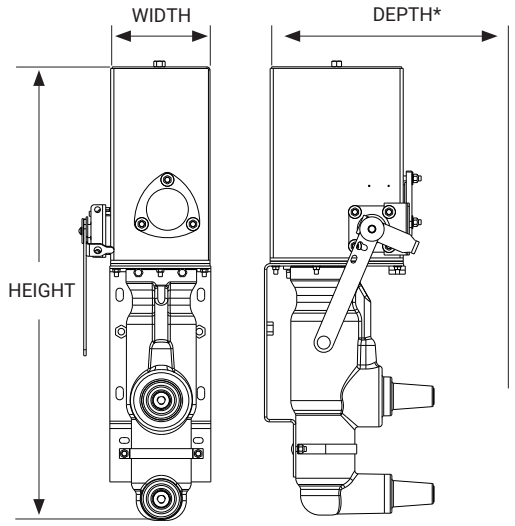
TWO-WAY VAULT					
SafeVu	**Voltage Class**	**Depth inches (mm)**	**Width inches (mm)**	**Height inches (mm)**	**Weight lbs (kg)**
Non SafeVu	15-38kV	13 (305)	10 (245)	35 (889)	75 (34)
SafeVu	15kV	25 (614)	15 (381)	36 (909)	150 (68)

TWO-WAY PADMOUNT					
SafeVu	**Voltage Class**	**Depth inches (mm)**	**Width inches (mm)**	**Height inches (mm)**	**Weight lbs (kg)**
Non SafeVu	15-38kV	31 (787)	38 (965)	24 (610)	75 (34)
SafeVu	15kV	31 (787)	38 (965)	24 (610)	150 (68)

Do not use for construction

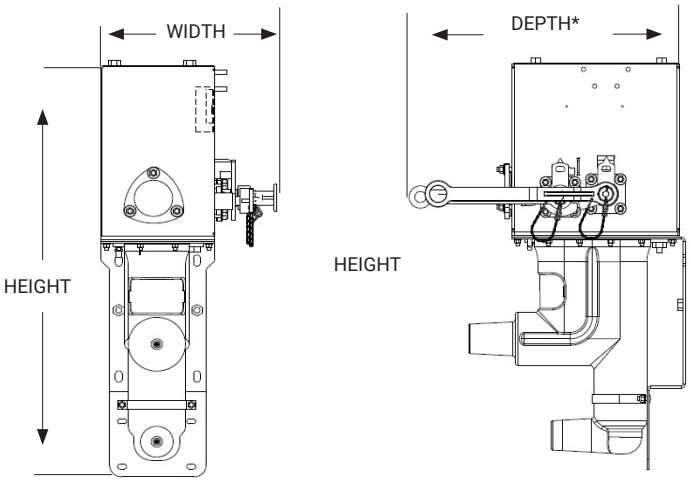
Two-Way Vault

FRONT **SIDE**



**Depth includes full length of handle travel*

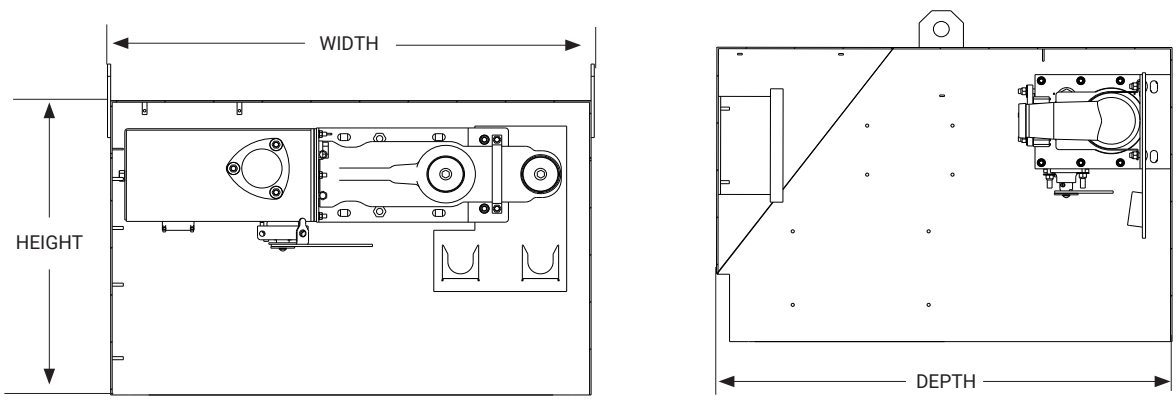
FRONT **SIDE**



**Depth includes full length of handle travel*

Two-Way Padmount

FRONT **SIDE**



G&W Electric

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.

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