

SUPERBUTE™ JVW-3

OUTDOOR VOLTAGE TRANSFORMER

2400V to 4800V, 50/60Hz
60kV BIL



APPLICATIONS

Model JVW-3 is designed for outdoor service and suitable for operating meters, instruments, relays, and control devices. JVW-3 is rated Distribution Class with lighter burden and thermal rating for more efficient application to solid-state metering and other modern relay and control power installations. This model is available in a variety of voltage, ratio and bushing types as outlined in the unit selection table below. Additional designs are available upon request.

FEATURES

- Thermal Rating: 750VA (55°C rise above 30°C)
- Weight: 44lbs (unit), 48lbs (shipping)
- Dimensions: 12.75" (h) x 10.50" (w) x 7.56" (d)
- Creep Distance: 13.5" [342.9mm]
- Strike Distance: 9" [228.6mm]
- Insulation: HY-BUTE 60™ Butyl Rubber
- Insulation Class: 60kV BIL, Outdoor
- Primary Winding Style: Wound-Type
- Design Standard: IEEE C57.13
- Measurement Canada Approval: SD-EA.0391

UNIT SELECTION

| RATED PRIMARY VOLTAGE | RATIO | IEEE ACCURACY CLASS, 60Hz BURDEN ¹ | CATALOG NUMBER |
|--|-------|---|----------------|
| DOUBLE-BUSHING ² | | | |
| 2400/4160Y | 20:1 | 0.3 W, X, M, Y | 763X030001 |
| 4200/7280Y | 35:1 | 0.3 W, X, M, Y | 763X030002 |
| 4800/8320Y | 40:1 | 0.3 W, X, M, Y | 763X030003 |
| DOUBLE-BUSHING WITH EXTENDED CONDUIT BOX | | | |
| 2400/4160Y | 20:1 | 0.3 W, X, M, Y | 763X030009 |
| 4200/7280Y | 35:1 | 0.3 W, X, M, Y | 763X030011 |
| 4800/8320Y | 40:1 | 0.3 W, X, M, Y | 763X030012 |

1. Voltage transformers of this type are available for use in 50Hz applications for many ratings. However, IEEE C57.13 to which these transformers were designed and tested to does not apply to 50Hz. When ordering voltage transformers for 50Hz applications, provide an accuracy specification including Burden VA and Power Factor. If not specified, the transformer(s) will be tested per standard 60Hz test burdens.
2. Double bushing voltage transformers are suitable for operating line-to-line, line-to-ground or line-to neutral at a reduced voltage. The primary voltage under line-to-ground operation is the line-to-line voltage divided by $\sqrt{3}$, or approximately 58%. Contact GE for accuracy rating at reduced operating voltage.

REFERENCE DRAWINGS & ACCESSORIES

Reference Drawings

- Accuracy Curve at 120 Secondary Volts, 60Hz - 9689241268
- Excitation Curve - 5454043
- Outline Drawing - 8949945

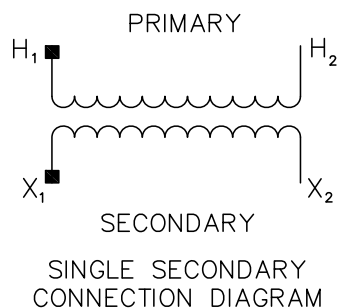
Accessories

- "L" Mounting Brackets - 8944634001
- Auxiliary "L" Mounting Brackets - 8944270001
- Channel Bracket - 5466227001
- Suspensions Hooks - 8944630001
- Secondary Conduit Box - 9689897001




SELECTION GUIDE

| PRODUCT CLASS | 5KV | 8.7KV | 15KV | 25KV | 35KV | 46KV | 69KV |
|----------------------|---------------|--------------|--------------|----------------|---------------|-----------------|-----------------|
| STATION CLASS | | JVW4 | JVW5 | JVS150 | JVS200 | JVS250 | JVS350 |
| | | | | JVT150 | JVT200 | JVT250 | JVS350 |
| BIL | | 75kV BIL | 110kV BIL | 150kV BIL | 200kV BIL | 250kV BIL | 350kV BIL |
| Accuracy, kVA Rating | | 0.3Z, 1.5kVA | 0.3Z, 1.5kVA | 0.3ZZ, 3kVA | 0.3ZZ, 3kVA | 0.3ZZ, 4.5-5kVA | 0.3ZZ, 4.5-5kVA |
| Creep Distance | | 20.4" Creep | 20.4" Creep | 27-27.5" Creep | 35-36" Creep | 48-50" Creep | 64-66" Creep |
| Net Weight | | 105lbs | 105lbs | 225-230lbs | 235-240lbs | 420-520lbs | 430-560lbs |
| DISTRIBUTION CLASS | JVW3 | | JVW110 | JVW6 | JVW7 | | |
| BIL | 60kV BIL | | 110kV BIL | 125-150kV BIL | 150-200kV BIL | | |
| Accuracy, kVA Rating | 0.3Y, 0.75kVA | | 0.3Y, 1kVA | 0.3Y, 0.75kVA | 0.3Y, 0.75kVA | | |
| Creep Distance | 13.5" Creep | | 20.4" Creep | 21" Creep | 26.5" Creep | | |
| Net Weight | 44lbs | | 100lbs | 105lbs | 140lbs | | |

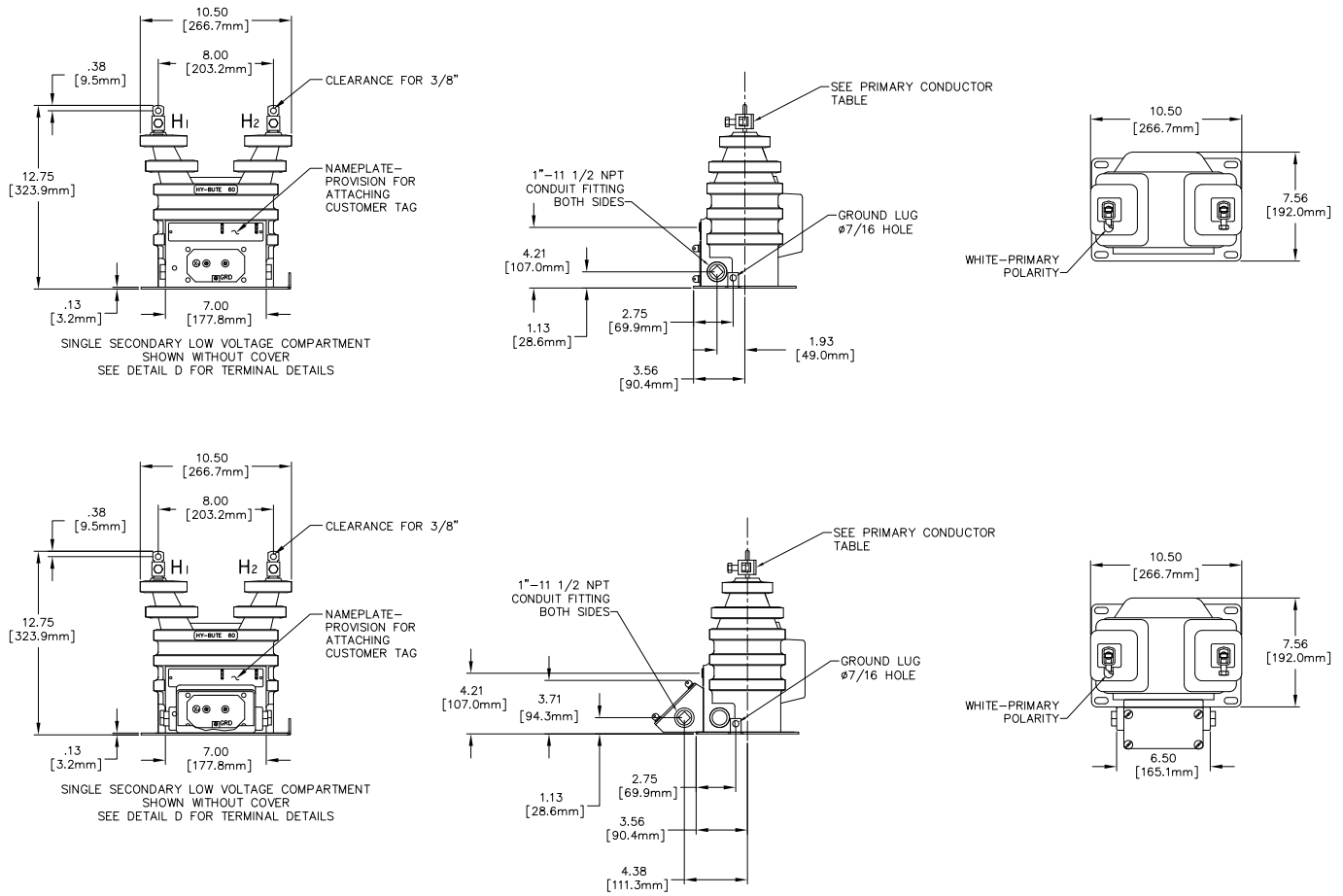
WIRING DIAGRAMS



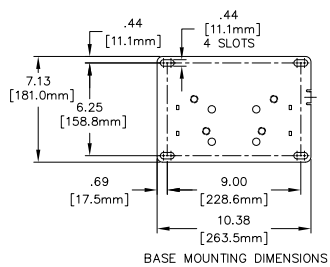
TYPICAL NAMEPLATE

| | | | | | |
|---|---------------------|-----------------|-------|---|---|
|  | Voltage Transformer | Type | Ratio |  |  |
| Bil 60 kV | 50-60 Hz | JVW-3 | 20:1 | | |
| 750 VA @ 30°C Amb | Pri Volts 2400 | | | | |
| Acc Cl @ 60 Hz 0.3 W, X, M, Y | | | | | |
| Caution: Read GEH-230 | | Cat. 763X030749 | | EB01147 | |
| | | | | Mfd. 11 14 | |
| | | | | Ser. 5853990 | |

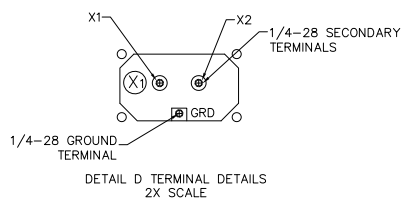
TWO BUSHING DIMENSION DRAWING



MOUNTING PLATE DRAWING



SECONDARY TERMINAL CONFIGURATION



CONSTRUCTION DETAILS

Insulation

The transformer design is constructed using GE's premium HY-BUTE 60 molded butyl rubber insulation for the transformer body. First introduced in 1955, GE's unique formulation is non-arc tracking and resistant to heat, chemicals, ozone and ultraviolet. This tough, resilient insulating material has proven to be superior in handling mechanical, electrical and environmental extremes, when compared against other insulation designs such as porcelain, urethane or epoxy.

Core & Coil

The internal primary windings are constructed with a LATTICE-type primary winding, originally patented by GE. The lattice-type design better distributes voltage stress across the windings, minimizes partial discharge, and maintains higher accuracy across the load range as compared to a traditional layer wound primary design. Outer electrostatic faraday shields act to further distribute steep voltage fronts across the coils. The finished primary coil is precast in epoxy resin prior to being molded in the outer HY-BUTE 60 insulation, for additional dielectric and mechanical strength. The core is made of high-quality silicon steel which is carefully selected, tested and annealed under rigidly controlled factory conditions. Enamel-insulated wire is used in both the primary and secondary coils.

Primary Terminals

The primary terminals are of the solder-less type. Made of hardened bronze, the terminal is fitted with a hard-copper collar and bronze pressure screw. The collar is semi-captive and may be turned 90-degrees in either direction for vertical or horizontal connection. With the collar in the vertical position, the maximum conductor sizes for copper are 250MCM and aluminum is 4/0. With the collar in the horizontal position, the maximum conductor sizes for copper are 3/0 and aluminum is 2/0. In either position, the minimum conductor size is AWG 10. A clearance hole for a 3/8 inch bolt is provided in the top of the terminal for additional flexibility in making connections. The complete terminal assembly is heavily electroplated with tin so that it is suitable for outdoor use.

Secondary Terminals

The secondary terminals are in a compartment molded in the side of the transformer. The compartment has a molded phenolic cover held by four brass, nickel-plated, captive thumbscrews, which engage a metal insert molded in the rubber. The thumbscrews are drilled to accommodate a seal wire. The compartment also has two openings for 1 inch conduit connection. The secondary terminals are the threaded type, each with cup washer, lock washer and nut. A manually operated, secondary short-circuiting switch is located between the secondary terminal studs.

Testing

Rigorous GE test requirements meet and exceed IEEE C57.13 routine requirements in order to ensure long term reliability. Test reports are saved electronically and can be e-mailed in various formats upon request.

Ground Terminal

A ground terminal is provided in the secondary compartment for making an optional connection to one of the secondary terminals. The 1/4-20 roundhead ground terminal is welded in the baseplate bracket, and is furnished with a nut, cup washer, flat washer, and lock washer.

Conduit Box

A detachable secondary conduit box is provided with the transformer. This die-cast aluminum conduit box is furnished attached to the transformer. Its use permits easy change out of transformers without dismantling rigid conduit structures. The box is provided with two 1 inch threaded conduit hubs on the sides and a 1 inch conduit knockout in the bottom. Each box is furnished complete with aluminum cover, gasket, four sealable cover screws, seal wire, four mounting screws with lock washers, and plastic pipe plugs.

Polarity

The permanently molded primary polarity markings H1 and H2 and the secondary polarity markings X1 and X2 are situated adjacent to their respective terminals, painted white for better visibility.

Baseplate and Mounting

The base is made of stainless-steel. A stainless-steel grounding lug is welded to the baseplate and provides a hole for attaching the grounding connector. Mounting holes or slots are located in each corner of the baseplate. Mounting hardware is supplied with the transformer. The transformer can be mounted with the primary terminals in any position—up, down, or horizontal. It can be bolted directly to a cross-arm attached by "U" bolts or suspension hooks, or mounted on double cross-arms, using channel brackets.

Nameplate

The nameplate is made of stainless-steel and located on the base of the transformer. Information is per IEEE designation, laser-engraved for easy-to-read form. Custom barcoding available upon request.

Rating Identification

The high-voltage rating is identified by large orange digits located on the insulation surface near the top of the transformer. This provides permanent identification that is clearly visible from a distance, and is resistant to fading and abrasion.

Maintenance

These transformers require no maintenance other than an occasional cleaning if installed in an area where air contamination is severe.