Voltage Sensing Bushings

G&W Electric

Engineered to order. Built to last.

G&W Electric's Voltage Sensing Bushings are a temperature compensating, built-in, voltage measuring system that eliminates the need for potential transformers (PTs) when analog phase-to-ground voltage monitoring is required. The voltage sensing bushing can be used on both SF6 and solid dielectric (Trident®) switchgear on grounded wye systems up to 38kV. Compared to potential transformers, the voltage sensing bushing offers:

- Cost savings
- Cleaner, less cumbersome installation
- Less space required
- Fewer add-on components
- Factory installed and tested
- Capable of field recalibration

1Arc Resistant TNI - SF6 Switch

OPERATION

The voltage sensing bushing utilizes a capacitively coupled screen which is embedded within the epoxy bushing. The internal screens and Low Energy Analog (LEA) inputs can be directly read by various relays. Alternatively, the output is amplified by integral circuitry, resulting in a 0-120 VAC analog output suitable for direct connection to any relay, IED or RTU. The circuitry incorporates built-in calibration and temperature compensation which improves accuracy.

CONSTRUCTION

Bushings are designed to ANSI/IEEE 386 standards and available in either 600A Apparatus or 200A Deepwell interface capable of accepting conventional elbow style connectors (elbows must be ordered separately).

APPLICATIONS

Voltage sensing bushings are ideal for applications that require monitoring the presence or absence of voltage on one or more phases of a primary cable.

- Metering
- Automatic transfer and automatic loop restoration schemes
- Submersible vaults

Specifications

General Ratings for Grounded Wye Systems

- Operating temperature: -40°C to +65°C /-40°F to 149°F
- Storage temperature: -50°C to +65°C / -58°F to 149°F

Input Voltage Range (Phase-to-Ground) Options:

- Low Energy: 1.2 - 4.61 or 4.62 - 21.9kV
- Amplified: 1.7 - 6.2 or 6.2 - 21.9
- Frequency range: 48Hz - 61.2Hz

Output Ratings

- Low Energy output voltage: 8 VAC
- Low Energy Relay Input Impedance: 1M Ω
- Nominal amplified output voltage: 120 VAC with digital output contact (1 per 3 phase set)
- Digital pick-up voltage:
    - o 90% of Vnom (on all phases) Digital drop-off voltage:
    - o 75% of Vnom (on any phase)

Maximum burden (per output): 0.06VA

- Low Energy accuracy: +/- 4% from -40°C to 65°C (+/- 2% from -20°C to 65°C)
- Amplified accuracy: +/- 5% from -40°C to 65°C

2 Trident (R) Switch with internal voltage sensor bushings

Amplification Circuitry Calibration Information

Communication port: RS 232

Communication protocol:

- Hyper Terminal
- Windows XP

Contact us today

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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; sensors; system protection equipment; power grid automation; transmission and distribution cable terminations; and joints and other cable accessories. G&W Electric is headquartered in Bolingbrook, Illinois, U.S.A., with manufacturing facilities and sales support in more than 100 countries, including Canada, Italy, China, Mexico, Brazil, India and Singapore. 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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