

# High Accuracy Current & Voltage Sensors



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The industry is evolving at a rapid pace and the dynamics of the traditional grid are changing significantly. Initiatives such as distributed energy resources (DERs) and optimizing energy efficiency & resiliency are driving a need for high precision sensing technologies that can effectively monitor the state of the modern grid. G&W Electric's sensor technology provides solutions for the modern grid with its customizable, high precision low power instrument transformers (LPITs).

G&W Electric's voltage sensing technology is a high accuracy, temperature compensated capacitive divider with high frequency measurement bandwidth. The galvanic isolation of the capacitive technology and the low-power outputs provide a safe solution for equipment operators.

G&W Electric's current sensing technology utilizes Rogowski coils that are capable of measuring a wide range of current measurements with high accuracy, from dynamic system loads to fault currents. Rogowski sensors are intrinsically safe with no hazardous secondary voltages in the event of an open secondary circuit.

## **Features and Benefits**

- · Versatility with one sensor for metering and protection applications
- High accuracy up to 0.5 class over the temperature range
- High frequency measurement bandwidth
- · Safety with low energy outputs and galvanic isolation from primary
- · Light-weight, compact size for easy installation and retrofits
- Reliability with no ferro resonance

# **Applications**

G&W sensor technologies are designed to cover a wide range of applications from metering-class measurements & analytics to protection. These high accuracy sensors assist in making critical decisions for optimizing the grid and can be integrated with protection equipment, enabling grid reliability and resilience. The wide frequency measurement bandwidth of the capacitive voltage sensor technology can be utilized to detect harmonics issues as well as high frequencies associated with partial discharge.

#### **Versatile Protection & Metering**

- Factory integrated Viper recloser & Accusense sensor solution
  Protection & power quality measurements in one device
  - DER point of common coupling solution (IEEE 1547)
- Retrofit reclosers and switches in the field
  - Current & voltage monitoring for protection and metering
  - Fault location, isolation, service restoration (FLISR)

#### **DER and Microgrid**

- · Monitor DER interconnections with precision and no ferro resonance
- Detect harmonics issues with wide bandwidth voltage sensors
- Monitor grid stability with high accuracy voltage sensors
- Monitor dynamic system loads with Rogowski current sensing

#### **Other Grid Solutions**

- Compact, lightweight alternative to inductive transformers
  - Stand-alone, high accuracy voltage & current measurementSubstation metering
  - End of line, mid-point, critical load metering
- Retrofit capacitor banks
- Volt-VAR Optimization (VVO) power quality initiatives
- Conservation Voltage Reduction (CVR) to reduce peak demand, line losses, carbon emissions
- Partial discharge measurements for checking system integrity



Protection and Metering: 27kV Accusense install on G&W Electric Viper-ST Recloser (VS-27-0)



Combination current voltage sensor in a pole-top switch retrofit application (CVS-24-0)

## **Outdoor Solutions**

G&W Electric's sensors are suitable for installation in pole-mounted and substation applications and are available as a voltage only (VS) or a combination current voltage sensor (CVS).

- · Typically mounted on reclosers, switches or as a stand alone unit
- Options available for high accuracy voltage measurement over a large frequency band (wide band WB option)
- Options available for high frequency measurement with class 1 accuracy from 20Hz-300kHz and class 5 accuracy up to 1MHz for fault location and partial discharge application (high frequency – HF option)



38kV Accusense Voltage Sensor (VS-38-0)



Stand alone Accusense® Voltage Metering System



Combination current and voltage sensor (CVS-24-0)



Installation in airbreak switch application (CVS-24-0)

# **Indoor Solutions**

G&W Electric's sensors are suitable for installation in air or SF6 insulated switchgear and are available as a voltage only (VS) or a combination current voltage sensor (CVS).

- Typically mounted on copper busbars replacing post insulators
- Available with optional additional output for voltage presence indication
- Options available for high accuracy voltage measurement over a large frequency band (wide band – WB option)
- Options available for high frequency measurement with class 1 accuracy from 20Hz-300kHz and class 5 accuracy up to 1MHz for fault location and partial discharge applications (high frequency – HF option)



24kV Voltage Sensor (VS-24-I)



24kV Voltage Sensor installed in switchgear application



Combination Current and Voltage Sensor (CVS-24-I)



Voltage Sensor (VS-24-I - top) & Current Voltage Sensor (CVS-24-I- bottom) installed in switchgear application

Contact us today 708.388.5010 or info@gwelec.com



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, Brazil and Italy. 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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