

GridAdvisor Insight RI series optical standoff insulator sensor system



GridAdvisor RI125 sensor

The GridAdvisor Insight optical standoff insulator voltage sensor utilizes a 100% "all optical" measurement platform for unparalleled accuracy and precision of voltage readings across multiple voltage classes. Specifically designed for installation in masonry switchgear, air-insulated switchgear (AIS) and for any phase to ground bus bar measurements. All signals from the sensor are connected via optical fiber connections to a "plug & play" (m410), modular optical sensor platform that is fully ruggedized and scalable.

Product overview

- 4 kV to 25 kV IP-65 rated, 125 kV BIL, 60 Hz
- Voltage sensing standoff insulator
- Sensing voltage: 4 kV to 25 kV
- Transients: 10 dB (10x steady-state condition)
- Harmonics: measurements to 50th voltage harmonic
- 4X 1/2-13 mounting nuts, top and bottom
- Approximate weight: 12 lb (5.4 kg)

Features and benefits

The GridAdvisor Insight optical standoff insulator voltage sensor is a direct replacement for standard resistive voltage divider sensors. Because of the "all optical" sensor design, there are no conductive materials used in the measurement of voltage as well as the transmission of the optical signals. The insulator body is cast in hydrophobic cycloaliphatic epoxy (HCEP) using a state-of-the-art injection molding process. HCEP construction provides superior arc track, ozone and ultraviolet-resistant properties while maintaining physical strength. The hydrophobic surface properties of HCEP ensure highly reliable performance in wet or humid conditions. All calibration and performance settings are stored in the ruggedized modular electronics enclosure at the base of the optical cable. When integrated with the m410 modular optical sensor processor, this provides for a "highly accurate" and "low cost" precision solution for distribution grid monitoring and control.

GridAdvisor optical features

All-optical solution for voltage and current measurements:

- RI125: one SKU for 4 kV to 25 kV voltage class
- RI135: one SKU for 4 kV to 35 kV voltage class
- RIC125/RIC135: insulator sensor with current ring for optical voltage and current sensing
- 6-, 7.5- and 10-inch standard insulator sizes
- Four 1/2-13 UNC mounts on top and bottom
- Calibration and offsets are contained within the RI series sensor

HCEP benefits

- Enhanced water shedding properties
- Reduced contamination-related leakage
- Improved product quality, reliability and UV protection

Installation

The GridAdvisor Insight optical standoff insulator voltage sensor installs directly on the conductor wire using conduction grade, aluminum wire clamps or direct mounting to the bus bar via eight 1/3-13 UNC bolts. Additional mounting options and sizes are available. Please contact an Eaton sales representative for more information.



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Performance

The GridAdvisor Insight optical standoff insulator voltage sensor provides both high accuracy and precision that remains constant regardless of applied voltage. Average accuracy and precision is $\pm 0.5\%$ within a temperature range of $-30\text{ }^{\circ}\text{C}$ ($-22\text{ }^{\circ}\text{F}$) to $+85\text{ }^{\circ}\text{C}$ ($+185\text{ }^{\circ}\text{F}$).

Specifications

Sensor

- Insulator body rating 15 kV/ 25 kV/35 kV, 20 ft (6 m) cable length
- 4X 1/2-13 UNC mounts (top and bottom)
- 1X 1/4-20 UNC electrical contact mount (top)
- Transients: 10 dB (10x steady-state condition) minimum
- Harmonics: measurements to 50th harmonic
- Accuracy: $\pm 0.5\%$ voltage and current
- Long-term stability: $\pm 0.25\%$

Environmental

- Operational: $-22\text{ }^{\circ}\text{F}$ to $+185\text{ }^{\circ}\text{F}$ ($-30\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$)
- Relative humidity: 5% to 95%

Typical included components

- Three GridAdvisor RI125 sensors
- Suggested insulation guide

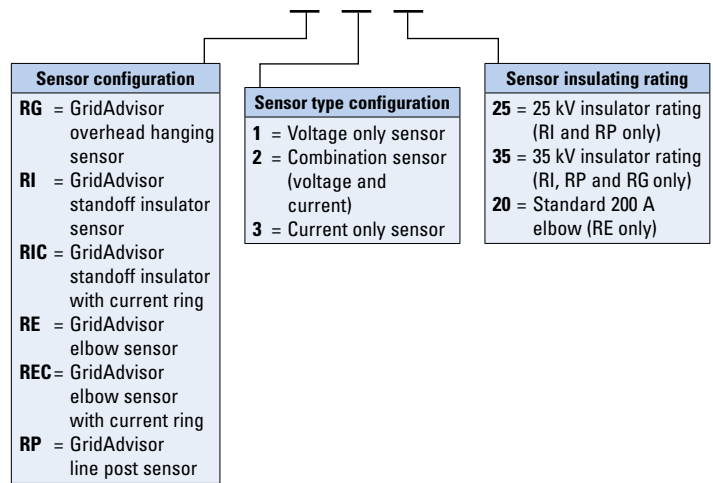
Test reports

Test reports are stored electronically and can be emailed in various formats at the time of shipment.

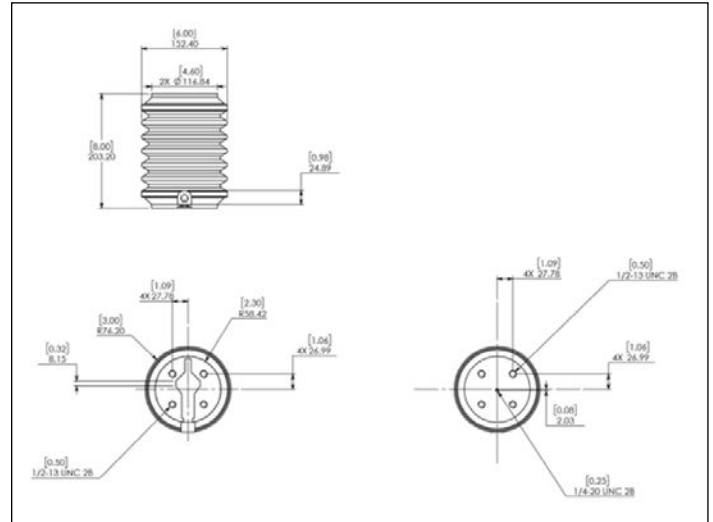
Certifications

- BIL: 125 kV full-wave lightning impulse
- Partial discharge per IEEE® Std. 4

GridAdvisor optical voltage and current configurator



Unit dimensions



SKU: RI125
 Additional styles available.
 Contact your Eaton sales representative.

Eaton
 1000 Eaton Boulevard
 Cleveland, OH 44122
 United States
 Eaton.com

Eaton's Energy Automation Solutions Division
 3033 Campus Drive
 Suite 350N
 Minneapolis, MN 55441
 Eaton.com/smartgrid

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