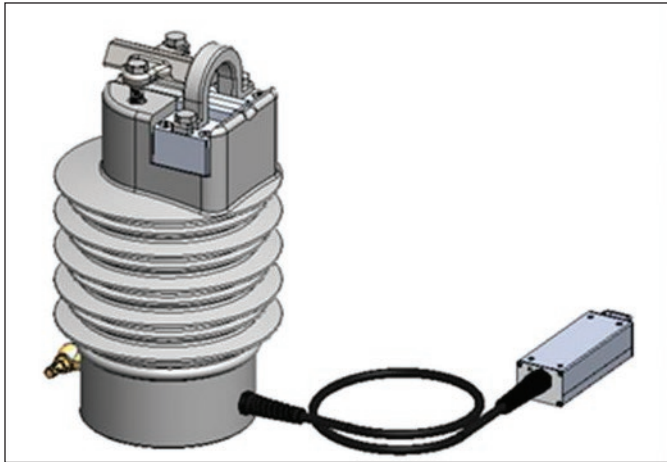


GridAdvisor Insight RP series optical line post medium-voltage and current sensor system



GridAdvisor RP225 sensor

Eaton's GridAdvisor Insight optical medium-voltage and current sensor system utilizes a 100% "all optical" measurement platform for unparalleled accuracy and precision of both voltage and current across multiple voltage classes. Installation time for a typical three-phase system is less than 3 hours, resulting in significant deployment savings. 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 35 kV outdoor rated, 200 kV BIL, 60 Hz
- Includes both current and voltage sensing
- Sensing voltage: 4 kV to 35 kV
- Sensing amperes: 5 A to 30 kA
- Transients: 10 dB (10x steady-state condition)
- Harmonics: measurements to 50th voltage harmonic
- Approximate weight: 37 lb (5.4 kg)

Features and benefits

The GridAdvisor Insight optical medium-voltage and current sensor is a direct replacement for standard power transformers and current transformers. Because of the "all optical" sensor design, there are no conductive materials used for the measurement of both voltage and current. The insulator body is casted in hydrophobic cycloaliphatic epoxy (HCEP) using a state-of-the-art injection molding process.

HCEP construction provides superior arc track, ozone and ultraviolet-resistive 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. The m410 modular optical sensor processor provides 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:

- Two SKUs for 15/25 kV or 35 kV voltage classes
- Modular, hot-swappable and plug & play
- Calibration and offsets are contained within the RP225 sensor
- Non-conductive fiber optic cable connection to sensor and sensor processor

HCEP benefits

- Enhanced water shedding properties
- Reduced contamination-related leakage
- Improved product quality and reliability
- Improved UV protection
- Results in a more consistent and reliable product

Installation

The RP225 is a post line mount insulator with a reversible mechanical conductor swing link clamp mounting system. The small groove has a conductor range of 0.19 inches through 0.69 inches and the large groove 0.69 inches through 1.16 inches. Overall, conductors from #6 AWG to 954 kcmil can be accommodated. Recommended primary bolt torque equals 28 ft-lb. A single 3/4-inch-10 bolt-hole in the base of the sensor is provided for mounting and grounding.



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Performance

The GridAdvisor Insight optical medium-voltage and current sensor provides both high accuracy and precision that remains constant regardless of applied voltage or current. 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
15/25 kV or 35 kV, 55 ft (17 m) cable length
- Wire clamp adjustable diameter 0.162 to 1.125 inches
- Transients: 10 dB (10x steady-state condition) minimum
- Harmonics: measurements to 50th harmonic
- Accuracy: $\pm 0.5\%$ voltage and $\pm 0.5\%$ current over entire operation
- Long-term stability: $\pm 0.25\%$
- Cantilever rating: 3000 lb

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 RP225 sensors
- Suggested insulation guide

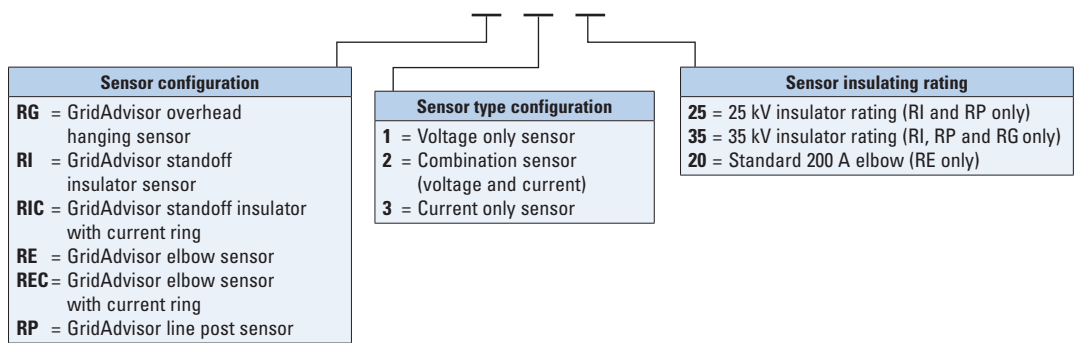
Test reports

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

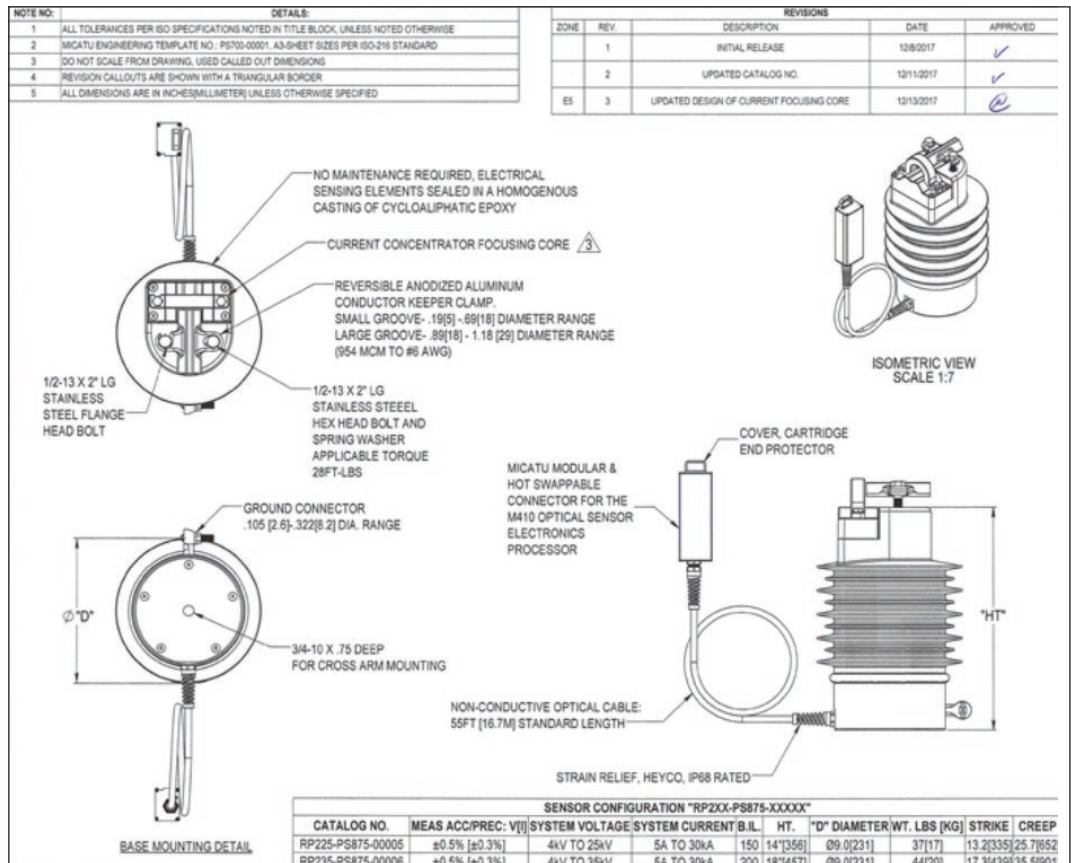
Certifications

- BIL: 200 kV full-wave lightning impulse
- Partial discharge per IEEE® Std. 4

GridAdvisor optical voltage and current configurator



Unit dimensions



Additional styles available. Contact your Eaton sales representative.

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