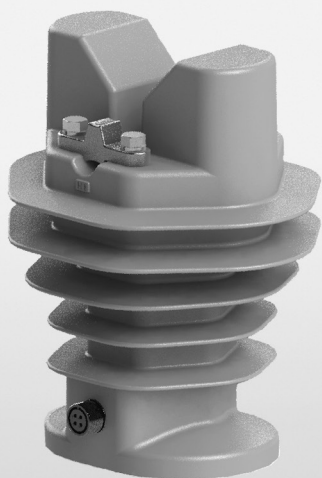


DISTRIBUSENSE® SENSORS

VCS-110

15 kV outdoor voltage and current combination line post sensor



The VCS-110 voltage and current combination line post sensor is designed to connect with meters, relays, and capacitor bank controllers for real time data acquisition.

Overview

Today, utilities experience unprecedented challenges associated with power delivery. An aging grid infrastructure coupled with increasing consumer demand, stringent regulations, avoiding peak-time cost penalties, and integrating alternative energy sources into the grid are factors utilities must consider to improve power delivery and reliability. More data collection points, enabling greater grid intelligence, are required. Collecting from feeder locations to substations ensures the grid is optimized to address these challenges.

Current and voltage sensors are ideal for providing feeder intelligence that drives decision-making for a variety of important grid modernization applications. Utilities benefit from increased reliability and efficiency by decreasing energy costs, protecting revenue, avoiding costly regulatory penalties, and boosting customer satisfaction. Maximizing these benefits requires understanding grid conditions throughout the entire feeder network.

Applications

The VCS-110 combination sensor is designed to connect with meters, relays, and capacitor bank controllers for real time data acquisition and is used in the following distribution automation solutions:

- Sensing at capacitor banks for Volt/Var optimization
- Sensing at overhead switches for fault detection, isolation, and restoration schemes
- Feeder sensing at the head and end of the feeder for conservation voltage regulation

To ensure accurate measurement and proper performance, the sensor and IED must be compatible. Due to the wide variety of relays and controllers offered in the market today, contact the factory or your ABB sales representative to ensure sensor compatibility.

Benefits

- Standard ratios provide several outputs for accurate voltage sensing
- Accurate current sensing provides a 10 V output
- Compact design, with excellent balance between current accuracy and weight
- Integrates with a wide selection of intelligent electronic devices
- Sensor utilizes technology to improve performance by avoiding the impacts of current cross talk
- The sensor acts as a line post insulator, per ANSI/NEMA C29.9 (Table 1), allowing for installation without primary taps or cutting the line

Construction features

The VCS-110 design implements embedded resistive voltage divider technology. This provides the voltage output directly proportional to the primary line-ground voltage with high linearity and accuracy. Standard distribution voltage ratios are available with various voltage outputs.

The current sensing design utilizes hybrid Rogowski coil technology to output a high accuracy secondary voltage signal. This technology allows for robust protection against short circuit conditions and protects downstream controllers.

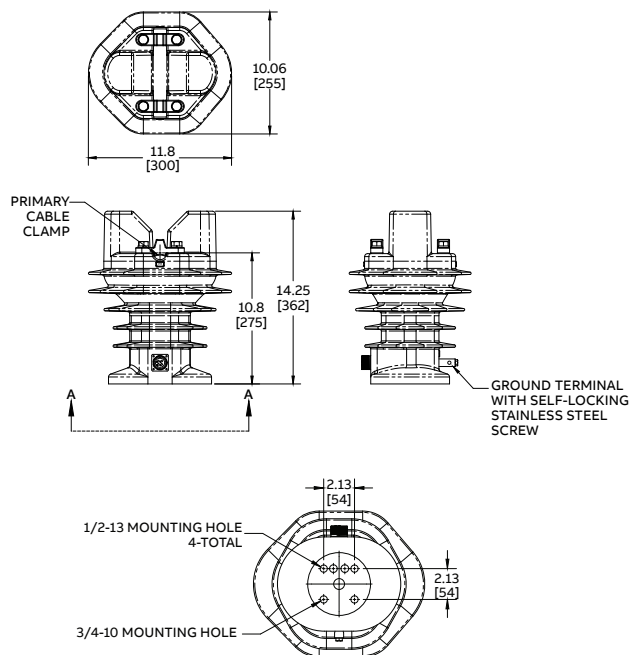
Optional feature

The VCS-110 is also available with fault current measurement up to 12 kA.

Installation

The VCS-110 can be installed on the existing cross-arm or on a variety of mounting racks. The separate secondary shielded cable and connector makes the connection from the low-end of the sensor to the controller. A separate, self-locking screw terminal provides an effective ground connection.

Unit dimensions (inches [mm])



View A

Product details

System voltage (L-L)	15 kV
BIL	110 kV
Voltage	
Accuracy	<1%
Load instrument impedance	1 MΩ
Phase error	<1.5°
Current	
Accuracy* (without correction factors)	+/-1% from 1.6% to 200% of rated current (10 - 1200 A)
Standard ratios	600 A:10 V
Phase error	<1°
Frequency	60 Hz
Insulating material	HCEP
Strike	8.9" (226 mm)
Creep	22.2" (564 mm)
Weight	35 lbs. (16 kg)
Cantilever strength	2800 ft-lbs.
Temperature range	-50°C to 70°C
Power frequency withstand	34 kV
Installation	Live wire mountable
Conductor range	#4 AWG - 600 MCM
Mounting	Vertical or cantilever
Connector	Amphenol
Cable length	Up to 49' (15 m)

* Contact the factory for 6 - 10 A accuracy

Note: Performance is optimized with cable length provided from the factory. Cutting or using a different cable can impact accuracy. Contact factory before modifying the cable.

VCS-110 selection guide

Primary Voltage	Voltage ratio	Voltage output	Cable length	Style number
7200	1400:1	5.14-6	5 m	E-923A594G05
			10 m	E-923A595G05
			15 m	E-923A596G05
7200	60:1	120	5 m	E-923A594G02
			10 m	E-923A595G02
			15 m	E-923A596G02
7620	63.5:1	120	5 m	E-923A594G03
			10 m	E-923A595G03
			15 m	E-923A596G03
8400	70:1	120	5 m	E-923A594G04
			10 m	E-923A595G04
			15 m	E-923A596G04

Available with 3-in-1 cable to connect 3-phase sensors to IED using one cable.

Additional styles and cable lengths available upon request. Contact your ABB sales representative or call +1-252-827-3212 for more information.