

DISTRIBUSENSE® SENSORS

WLS-110

15 kV outdoor voltage and current combination line post sensor



The WLS-110 combination sensor is designed to connect with meters, relays, and grid 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.

Application

The WLS-110 combination sensor is designed to connect with meters, relays, and grid 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

- Accurate voltage sensing provides a 120 V output
- Accurate current sensing provides a 1 A output
- Effective fault current detection up to 12 kA
- Delivers accurate current wave forms
- Identifies power quality issues by measuring up to the 66th harmonic
- Small with excellent balance between current accuracy and weight; easy to install
- Performance is independent of primary conductor diameter
- Integrates with a wide variety of controllers
- Acts as a line post insulator, allowing for easy, live installation without primary taps or cutting the line

Construction features

The WLS-110 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 a 120 V output.

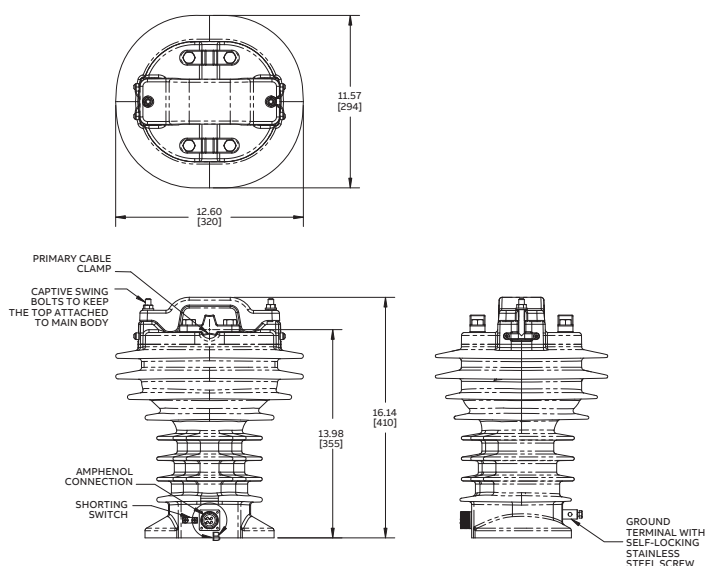
The WLS-110 current sensing design utilizes state-of-the-art, precision-cut, split-core current transformer technology to output a high accuracy secondary current signal at nominal and fault current levels. The swing bolt design allows for easy opening and closing of the split core during installation. After installation,

the core is protected by a water-tight EPDM gasket to prevent moisture intrusion and weather exposure. The open ends of the core are coated with dielectric grease, offering additional protection.

Installation

The WLS-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 IED. A separate, self-locking screw terminal provides an effective ground connection.

Unit dimensions (inches [mm])



WLS-110 selection guide

Primary voltage	Voltage ratio	Current ratio	Cable length	Style number
7200	60:1	600:1	5 m	E-923A531G01
			10 m	E-923A530G01
			15 m	E-923A529G01
			5 m	E-923A531G02
			10 m	E-923A530G02
			15 m	E-923A529G02
7620	63.5:1	600:1	5 m	E-923A531G03
			10 m	E-923A530G03
			15 m	E-923A529G03

Secondary volts: 120; alternate styles available with 10 V secondary.

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

Product details

System voltage (L-L)	15 kV
BIL	110 kV
Voltage	120 V output
Accuracy	<1%
Standard ratios*	60:1, 63.5:1, 70:1
Load instrument impedance	1 MΩ
Current	1 A output
Accuracy	<1% from 10% to 200% of rated current (60 A - 1200 A)
Standard ratios	600:1A
Frequency	60 Hz
Insulating material	Hydrophobic cycloaliphatic epoxy (HCEP)
Strike	13.1" (335 mm)
Creep	31.1" (790 mm)
Weight	50 lbs (22.7 kg)
Cantilever strength	2800 ft-lbs.
Temperature range	-40°C to 85°C
Power frequency withstand	34 kV
Installation	Live wire mountable
Conductor range	#4 AWG - 600 MCM
Mounting	Vertical only
Connector	Amphenol
Cable length	Up to 49' (15 m)

* Custom ratios available upon request

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

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