Overview
Today, utilities experience unprecedented challenges associated with power delivery. An aging grid infrastructure coupled with satisfying increasing consumer demand, meeting stringent regulations, avoiding peak-time cost penalties, and integrating distributed energy sources into the grid are a handful of factors utilities must consider to improve power delivery and reliability.

More data collection points enabling greater grid intelligence are required from feeder locations beyond the substation to ensure the grid is optimized to address these challenges.

Current and voltage sensors are the critical sensor technology that enables feeder intelligence to drive 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 length of the feeder. The DistribuSense VLS-110 voltage sensor is a key component to deliver these benefits.

Applications
The VLS-110, part of the DistribuSense product family, can be applied in the following ways to enhance the effectiveness of new or existing distribution automation solutions:
- Sensing at capacitor banks for Volt/VAr optimization through voltage control
- Sensing at reclosers and overhead Switches for fault detection, isolation, and restoration schemes
- Feeder sensing at the head and end of the feeder for conservation voltage regulation

The voltage sensors are designed to connect with meters, relays, and various controllers for real time data acquisition to achieve grid modernization objectives.

Benefits
- Standard ratios provide 120V output for accurate voltage sensing
- Small, lightweight, and installs live
- Provides accurate, reliable voltage readings at points throughout the grid
- Integrates with a variety of controllers
- HCEP construction assures long product life

Construction features
The VLS-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 a 120V output.

For insulation and protection, sensors are cast in hydrophobic cycloaliphatic epoxy (HCEP). The HCEP material is widely recognized as the superior insulation material for outdoor electrical products. HCEP offers superior arc track, ozone, and ultraviolet-resistance while maintaining excellent physical strength. The hydrophobic surface properties of HCEP enhance water shedding to ensure highly reliable performance in most climates, including heavily polluted environments.

The VLS-110 is bolt mounted and easily installed. The voltage clamp at the top of the sensor is connected by tapping to the primary conductor. A built-in connector and secondary shielded cable attach the sensor to the controller. A separate, self-locking screw terminal provides the simple ground connection to the sensor.
For more information please contact:

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**VLS-110 selection guide**

<table>
<thead>
<tr>
<th>Primary volts</th>
<th>Voltage ratio</th>
<th>5 meter cable</th>
<th>10 meter cable</th>
<th>15 meter cable</th>
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</thead>
<tbody>
<tr>
<td>7200</td>
<td>60:1</td>
<td>E-923A527G01</td>
<td>E-923A526G01</td>
<td>E-923A523G01</td>
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<tr>
<td>7620</td>
<td>63.5:1</td>
<td>E-923A527G02</td>
<td>E-923A526G02</td>
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<tr>
<td>8400</td>
<td>70:1</td>
<td>E-923A527G03</td>
<td>E-923A526G03</td>
<td>E-923A523G03</td>
</tr>
</tbody>
</table>

Secondary volts: 120

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* Custom ratios available on request  
** Contact the factory for additional cable lengths  

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