ABB offers an innovative line voltage regulator that enables an automatic intervention on voltage fluctuations. This reliable and efficient solution is an economic alternative to the conventional network expansion, especially for wind and photovoltaic applications.

Innovative solution
The increasing amount of power generated by renewable resources, especially photovoltaics, causes changes to the structure of the energy supply. A traditionally centralized system with only a few big power producers has changed to a system with many small suppliers, who feed directly into the local distribution net. This can cause large voltage variations with an increased risk of the voltage exceeding the prescribed voltage range. Quite often the renewable power generation has to be limited or even interrupted.

Voltage regulators help to act reliable in case of large voltage variations and adjust the voltage to a permitted level. The ABB low voltage line voltage regulator solves this problem by using a “booster/feeder” technology in combination with mechanical switches. Energy losses are minimal. The voltage regulator consists of ABB’s high performance components. It fulfills the highest environmental requirements and can easily and quickly be installed as everything is mounted in a standard cable distribution cabinet.

Advantages at first sight
- Energy efficient and environmentally friendly, using proven ABB technologies
- Fireproof, completely free of oil
- Optimized voltage steps for a good voltage stability and a minimum of switching operations
- Autonomous voltage regulation to a given or load-dependent set point
- Possible to connect to the grid control system for remote control or monitoring of the grid
- Short delivery time
- No or simple authority approvals since mounted in cable distribution cabinet
- Simple and fast installation
- Economic solution as compared to grid expansion
Technical characteristics of the line voltage regulator

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power [kVA]</td>
<td>63, 125, 250</td>
</tr>
<tr>
<td>Frequency [Hz]/ Phases</td>
<td>50 / 3</td>
</tr>
<tr>
<td>Voltage [V] (Phase-Phase / Phase-Earth)</td>
<td>400 / 230</td>
</tr>
<tr>
<td>Insulation class [kV, AC]</td>
<td>3</td>
</tr>
<tr>
<td>Number of steps</td>
<td>11</td>
</tr>
<tr>
<td>Total voltage regulation range</td>
<td>±6 %, ±8 %</td>
</tr>
<tr>
<td>Step voltage</td>
<td>1.2 % (±5 x 1.2 %), 1.6 % (±5 x 1.6 %)</td>
</tr>
<tr>
<td>Number of switching operations (mechanical)</td>
<td>&gt;1'000'000</td>
</tr>
<tr>
<td>Installation location</td>
<td>Outdoor</td>
</tr>
<tr>
<td>Installation type</td>
<td>Cable distribution cabinet IP44, DIN size 2</td>
</tr>
<tr>
<td>Dimensions (L x W x H) [mm]</td>
<td>1136 x 478 x 1100 (without socket)</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>300 - 350</td>
</tr>
<tr>
<td>Control modes</td>
<td>Fixed set-point (adjustable) Option: load-dependent voltage set-point</td>
</tr>
<tr>
<td>Losses [W]</td>
<td>Depending on regulation step and the actual power. For 250 kVA: – max. 900 W at full load and 6 % regulation – 30 W at no-load (Eco mode)</td>
</tr>
<tr>
<td>By-pass switch</td>
<td>Contactor switch, fully by-passing the voltage regulator</td>
</tr>
<tr>
<td>Sound level Lp (1 m, max.) [dB(A)]</td>
<td>&lt; 40</td>
</tr>
<tr>
<td>Accessories</td>
<td>Temperature monitoring with overload protection Operating manual (English, German)</td>
</tr>
<tr>
<td>Options</td>
<td>Visualization of system monitoring and control Mounting base execution: – Plastic base – Concrete base – Concrete cable manholes</td>
</tr>
</tbody>
</table>

Note:
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