Active Harmonic Filters

POWER BALANCE

PRODUCT TYPE

PBAF 690 - 560 liquid cooled

www.schaefer.com
The PB-SERIES is an active harmonic filter system for tower buildings as well as automation, windturbine and various other industrial applications eliminating harmonic oscillations and consequently costs for reactive energy. The filter monitors the current signal and compensates for the unwanted elements of the measured current. Thus, the filter ensures a harmonic suppression independent of the number of loads. Furthermore the filter corrects the power factor, improving the systems’ efficiency while reducing harmonic distortion.

Features

- Active Harmonic Filters from 60 to 1,000s of Amps
- Power Balance Series
- Cabinet system PBAF-R8
- Cabinet system System with max 4 plug-in filter modules
- Total compensation current 660 A Phase
- Internal cooling liquid cooled system
- External cooling air heat exchanger or cooling water intake
- Protection class IP5x dust protected against welding metal powder
- Pollution level PD 4
- Operating temperature range -10° C to +45° C full performance, +45° C to +55° C derating
- Relative Humidity 3k4 up to 95% non condensing, PCB are coated
- Storage conditions class 1K4 and 1K3
- Dimensions (W x H x D) mm 800 x 2000 x 600
- Weight cabinet w/o modules ~ 200 kg
- Weight module ~ 140 kg
- Altitude 2000 m without derating, 4000 m max with derating

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration unit operating</td>
<td>3 Hz to 15.8 Hz, 1 mm peak; 15.8 Hz to 150 Hz, IEC 60068-2-27</td>
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<tr>
<td>Shock unit transport</td>
<td>15 g; 11 ms, 1000 cycles, IEC 60068-2-27</td>
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<tr>
<td>Electromagnetic Compatibility</td>
<td>EN 61000-6-2, EN 61000-6-4, EN 61800-3 (C2)</td>
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<tr>
<td>Safety</td>
<td>EN 50178, IEC 62477-1, EN 61800-3 class C2, UL 508</td>
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<tr>
<td>Certificates</td>
<td>CE, ROHS</td>
</tr>
<tr>
<td>Filter Module plug-in</td>
<td>PBAF-AHF-690-M140</td>
</tr>
<tr>
<td>Line voltage</td>
<td>340 V - 600 V</td>
</tr>
<tr>
<td>Nominal frequency</td>
<td>47 Hz - 63 Hz</td>
</tr>
<tr>
<td>Connection type</td>
<td>3 Phase</td>
</tr>
<tr>
<td>Mains networks</td>
<td>IT, TT, TN-C, TN-S, TN-C-S</td>
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<tr>
<td>Rated compensation current</td>
<td>140 A Phase</td>
</tr>
<tr>
<td>Overload capability</td>
<td>330 A max. Phase for 10 ms</td>
</tr>
<tr>
<td>Harmonic current compensation</td>
<td>individual compensation up to 50th order, simultaneously selectable</td>
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<tr>
<td>Load balancing</td>
<td>140 A Phase</td>
</tr>
<tr>
<td>Inverter topology</td>
<td>3-Level IGBT</td>
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Without POWER BALANCE:
Harmonic disturbances caused by e.g. non-linear loads.

With POWER BALANCE:
Reactive power & harmonic oscillations are actively compensated.

Modular System: 2 cooling loops
- Primary cooling loop: liquid cooled IGBT + filter components
- Secondary cooling loop: liquid cooled heat exchanger, flow control, pressure monitoring
- IGBT flow temperature exactly adjustable
- Primary loop corrosion protected to increase persistence
- Internal cabinet cooling with air/liquid heat exchanger
- Emergency operation feature by loss of secondary cooling loop
- MTTR < 15min
- High redundancy, each filter modul with complete control system

Flexible system from 140A to 560A
Harmonic Filters | Total power electronic solutions

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