The PB-SERIES is an active harmonic filter system for large buildings as well as automation, wind turbine and various other industrial applications eliminating harmonic oscillations and consequently costs for reactive energy. The filter monitors the current signal & compensates for the unwanted elements of the measured current. Thus, the filter ensures a harmonic suppression independently of the number of loads. Furthermore the filter corrects the power factor, improving the system efficiency while reducing harmonic pollution.

**Key Features:**
- Modular system 60A to 300A parallelable
- Harmonic compensation for 3-wire and 4-wire technology
- Up to 50th harmonic each individually selectable
- Ultrafast reactive power compensation
- Flicker compensation
- Load balancing between phases and unload neutral wire
- Grid resonancy detection
- Ethernet and Ethercat system for interconnection
- Subsystems Display control unit, Active sensor unit, ModBus, PQ Analyzer …

**Without POWER BALANCE:**
Harmonic disturbances caused by e.g. non-linear loads.

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

**Modular System:**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB 10060</td>
<td>60 Amps Module</td>
<td>consisting of one module, 1 sensor unit &amp; 1 display</td>
</tr>
<tr>
<td>PB 10120</td>
<td>120 Amps Module</td>
<td>consisting of two modules, 1 sensor unit &amp; 1 display</td>
</tr>
<tr>
<td>PB 10180</td>
<td>180 Amps Module</td>
<td>consisting of three modules, 1 sensor unit &amp; 1 display</td>
</tr>
<tr>
<td>PB 10240</td>
<td>240 Amps Module</td>
<td>consisting of four modules, 1 sensor unit &amp; 1 display</td>
</tr>
<tr>
<td>PB 10300</td>
<td>300 Amps Module</td>
<td>consisting of five modules, 1 sensor unit &amp; 1 display</td>
</tr>
</tbody>
</table>

**Wall Mount Version:**

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**Power Balance Series**

[Schaefner Power Solutions: Robust, Reliable Power Solutions]
### Specifications

#### Input & Output Parameters

<table>
<thead>
<tr>
<th>Connectivity</th>
<th>3-wire: 3 phase</th>
<th>4-wire: 3 phase + neutral lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase compensation current</td>
<td>60A</td>
<td>120A</td>
</tr>
<tr>
<td>Neutral lead compensation current</td>
<td>180A</td>
<td>360A</td>
</tr>
<tr>
<td>Input voltage</td>
<td>3-wire: 200V - 480V ± 10%</td>
<td>4-wire: 200V - 400V ± 10%</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60Hz ± 3Hz</td>
<td></td>
</tr>
<tr>
<td>Reaction time</td>
<td>21µs (immediate load change reaction)</td>
<td></td>
</tr>
<tr>
<td>Steady state response time</td>
<td>&lt; 300µs (steady state response time to full steady state compensation)</td>
<td></td>
</tr>
<tr>
<td>Switching frequency</td>
<td>24kHz</td>
<td></td>
</tr>
<tr>
<td>Control frequency</td>
<td>48kHz</td>
<td></td>
</tr>
<tr>
<td>Digital control algorithm</td>
<td>Selective Direct Control algorithm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compensation up to 49th harmonic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individually selectable degree of compensation</td>
<td></td>
</tr>
<tr>
<td>Control functions</td>
<td>Harmonic compensation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reactive power compensation, adjustable power factor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reactive power injection (overcompensation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Load balancing</td>
<td></td>
</tr>
</tbody>
</table>

#### Power factor correction
- Fully inductive and reactive current compensation from 0 to 100%
- Overload current: 150A @cf2.5, 300A @cf2.5, 450A @cf2.5, 600A @cf2.5, 750A @cf2.5

#### Current transformer
- Source or Load side selectable, Primary current range 100A – 10000A, secondary current 1A

#### Maximum power losses (W)
- 530W, 1100W, 1700W, 2000W, 2800W

#### Weight
- Single unit: 130lb
- Weight including cabinet: 200lb, 330lb, 460lb, 600lb, 730lb

#### Dimensions
- Single unit: 19" x 26.7" x 8.75" (W x D x H)
- Dimensions including cabinet: 22.4" x 32" x 31.8", 22.4" x 32" x 40.75", 22.4" x 32" x 50", 22.4" x 32" x 58.5", 22.4" x 32" x 67"

#### Air flow rate
- 470 cfm, 940 cfm, 1410 cfm, 1880 cfm, 2350 cfm

#### Interface
- Ethercat 100Mbit/s, USB, Active sensor bus, Display bus

#### Ambient temperature
- -10°C to +40°C full performance, up to +55°C derating 2%/K

#### Cooling
- Includes temperature controlled fans

#### Humidity
- 95% non condensing

### Options

#### TFT 07 7" TFT control unit
- Input: 5 key navigation
- Operating system: embedded Linux
- Communication: Ethercat Master, Ethernet TCP/IP
- Interface: USB, Digital I/O, Display bus
- Dimensions (W x D x H): 12" x 1.77" x 5.3"
- Basic functionality: parameter setting, status indication, alarming, monitoring, event logging

#### TFT 12 12.1" TFT control unit
- Input: touchscreen
- Operating system: embedded Linux
- Communication: Ethercat Master, Ethernet TCP/IP
- Interface: USB, Digital I/O, Display bus
- Dimensions (W x D x H): 12" x 2" x 9.5"
- Basic functionality: parameter setting, status indication, alarming, monitoring, event logging
- Extended functionality: power quality analyzer

#### SU Active sensor unit
- Interface: Active sensor bus
- Dimensions (W x D x H): 7.3" x 3.54" x 1.38"
- Basic functionality: Source or Load side selectable, primary current range 100A – 10000A, secondary current 1A