PQactiF
Higher flexibility and modularity for improved power quality
ABB is a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner in ABB Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees.

ABB offers a wide range of products from 208 V up to 1200 kV that help enhance the reliability, efficiency and quality of power in transmission and distribution grids, power plants and industries while minimizing environmental impact. The wide product range is complemented by a comprehensive service offering.

Power quality is a major concern for transmission and distribution utilities, industries, and transport and infrastructure sectors. Poor power quality affects grid reliability, productivity, leads to higher operating costs and penalties for non-compliance with grid codes. ABB is a technology leader with a wide range of products, systems and services that improve power quality including capacitors and filters, power electronics-based compensators and software solutions, across the power value chain for low, medium and high-voltage applications, helping shape a stronger, smarter and greener grid.
Active filter PQF from ABB has been present in the market for more than 20 years, protecting critical industrial, residential and commercial applications, solving tough power quality problems for all types of applications and customers globally. It makes installations compliant with prevailing power quality regulations by mitigating harmonic pollution, load unbalance and reactive power compensation.

The new power quality filter PQactiF encompasses all these benefits with additional features such as

- Flexibility
- Modularity
- Improved efficiency

for applications which are suffering from poor power quality.

We offer solution not only for commercial segment, but for infrastructure and industrial segments also.

Continuous training to service teams around the world.

Suitable for each type of segment like mining, metal, paper, commercial and infrastructure, aluminum, steel and other metal industries.

Experience in vessel, port, ski resort and skyscrapers.

Local service teams available to perform commissioning and site support.

Commissioning & troubleshooting experience worldwide.

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Commissioning & troubleshooting experience worldwide.

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### Adaptable

- **Compact**
  - Small footprint

- **Modular**
  - Mix & match
    - 20A – 2400A

- **Configurable**
  - Module, wall-mounted or standalone cabinet

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### Efficient

- **3-level inverter**
  - Energy efficient and compact

- **Open and closed loop control**
  - Choice of speed and accuracy

- **Reasonance protection**
  - Added operational stability

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### Easy to operate

- **User-friendly HMI**
  - 7-inch interactive touchscreen GUI

- **Wi-Fi enabled**
  - Control through PC or smartphone

- **Reliable**
  - Suited to both new and retrofit applications

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PQactiF is offered in 4 different module ratings of 20 A, 40 A, 100 A and 150 A. Depending on the application, PQactiF is available in either as a module, a wall-mounted solution or a standalone cabinet.

**PQactiF - M - Module**
- Modular design: Suitable for OEMs, LV switchgear and drive manufacturers
- Very compact: Can be integrated into a small cubicle, either vertically or horizontally
- Low losses: Reduced losses and built-in forced air cooling

**PQactiF - WM - Wall-mounted**
- Distributed filtering: For building applications where space restrictions exist
- Easy to install thanks to wall-mounting kit
- Silent solution: <65dBA, perfect solution for installing on office floors

**PQactiF - C - Standalone cabinet**
- Complete solution: Factory made fully functional tested panel
- Flexibility: Rating can be extended in modular way from 20 A to 600 A in single cabinet

Sizing tools

Our online tool PQF Size enables our customers to size and select the active filter at maximum economic benefit. The tool also generates an automatic sizing report that allows customer to review the level of improvement before and after the application.

To register and use, please access the following link:

[power-quality-filter.configurator.abb.com](http://power-quality-filter.configurator.abb.com)
### Specifications

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<td>3-wire/ 4-wire</td>
<td>Wall-mounted</td>
<td>Standalone cabinet</td>
</tr>
<tr>
<td>Network voltage (v/- 10%)</td>
<td>208 - 480 V (3-wire)</td>
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<tr>
<td></td>
<td>208 - 415 V (4-wire)</td>
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<tr>
<td>Network frequency (1/- 5%)</td>
<td>50/ 60 Hz</td>
<td></td>
<td></td>
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<tr>
<td>Line current rating per base unit (A)</td>
<td>20 A, 40 A, 100 A, 150 A</td>
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<tr>
<td>Neutral current rating per base unit (A)</td>
<td>3 times the line current rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inverter technology</td>
<td>Three level inverter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switching frequency of semiconductors</td>
<td>18 kHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modularity</td>
<td>Up to 16 modules can be combined. Different module rating allowed</td>
<td></td>
<td></td>
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<tr>
<td>Redundancy</td>
<td>Any unit can become a master (defined as lowest ID that is operational). In case of failure, other unit takes the lead as master</td>
<td></td>
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</tr>
<tr>
<td>Equipment losses</td>
<td>~2.2% of the equipment power typically</td>
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<td></td>
</tr>
<tr>
<td><strong>Filter characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonic range</td>
<td>2nd to 50th order, 25 harmonic order selectable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonic attenuation factor</td>
<td>Better than 97% at nominal load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT configuration</td>
<td>Closed or open loop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time</td>
<td>110 µs</td>
<td></td>
<td></td>
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<tr>
<td><strong>Reactive power characteristics</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Target power factor</td>
<td>Programmable from 0.6 (inductive) to 0.6 (capacitive)</td>
<td></td>
<td></td>
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<tr>
<td>Load balancing characteristic</td>
<td>Up to 100% of nominal rating</td>
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<tr>
<td>Harmonic range</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Response time</td>
<td></td>
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<tr>
<td><strong>Programming/communication</strong></td>
<td></td>
<td></td>
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<tr>
<td>Wi-Fi communication</td>
<td>Webserver on smartphone or computer for simple diagnostics and parameters setup</td>
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<td></td>
</tr>
<tr>
<td>USB</td>
<td>With dedicated optional software (servicing/programming)</td>
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<tr>
<td>HMI</td>
<td>7-inch color TFT screen (800 x 480 pixels)</td>
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<tr>
<td></td>
<td>198 x 141 x 40 mm</td>
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<tr>
<td></td>
<td>IP65 front side/ IP20 backside</td>
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<tr>
<td></td>
<td>CAN 2B (external) – RS12 for communicating with units</td>
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<tr>
<td></td>
<td>Ethernet (Modbus TCP) – RS485</td>
<td></td>
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<tr>
<td></td>
<td>USB 2.0</td>
<td></td>
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<tr>
<td>Digital (I/O) on HMI</td>
<td>2 insulated digital inputs – 24 V (AC or DC)</td>
<td></td>
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<tr>
<td></td>
<td>6 digital NO outputs – 250 Vac/ 5 A (one common polarity), dry contacts</td>
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</tbody>
</table>

### Technical specifications

**PQactiF - M**

- **Module unit, suitable to integrate into a cabinet**
- **Approximate dimensions**: Module: 600 x 800 x 2100 mm

**PQactiF - WM**

- **Wall-mounted**

**PQactiF - C**

- **Standalone cabinet**

**Physical aspects**

- **Mounting**: Module unit, suitable to integrate into a cabinet
- **Approximate dimensions**: Module: 600 x 800 x 2100 mm

**Color**

- **Surface treated metal frames**

**Installation aspects**

- **Altitude**: Indoor installation in clean environment up to 1000 m altitude
- **Ambient temperature**: -10°C to 40°C during operation (up to 50°C with auto-derating)
- **Humidity**: Max. 95% non-condensing during operation
- **Fixed**: Special kit allows module to be integrated into cabinet
- **Cable entry**: Rear for power cables

**CT requirements**

- **3 CT’s are required (class 1.0 or better, 15 VA)**

**IP protection**

- **IP20 from front access**
- **IP30**

**Certification**

- **CE**

1. Functions other than filtering, i.e. reactive power compensation and load balancing are performed based on the availability of spare capacity (ampere) of device after harmonics mitigation. Or, a priority function (kvar compensation/ harmonics filtering) can be selected from device settings.
Quality assurance
At ABB, we are committed to providing the best products and services. Our products comply with or exceed the latest international standards. In addition to type tests in independent laboratories, our certified design and manufacturing processes guarantee the highest quality. We are certified according to the latest relevant ISO quality standards.

Sustainability
For ABB, sustainability is about balancing economic success, environmental stewardship and social progress to benefit all our stakeholders. Sustainability considerations cover how we design and manufacture products, what we offer customers, how we engage suppliers, how we assess risks and opportunities, and how we behave in communities where we operate and towards one another, while striving to ensure the health, security and safety of our employees, contractors and others affected by our activities. We are certified according to the latest relevant ISO quality standards.