

Manufactured by:

SCHAEFER

Active Harmonic Filters

Innovation made in Germany



The PB-SERIES is an active harmonic filter system for tower buildings, data centers, hospitals 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 independently of the number of loads. Furthermore the filter corrects the power factor, improving the systems' efficiency while reducing harmonic pollution.

20 1995 - 2015
Years
 efficient electricity solutions

**pazifik
power**

www.ppi.ph

ExI
 Systems, Inc.



POWER BALANCE solutions are easily installed, commissioned and individually combined for customers power requirements.

Features

- Modular system 60 A to 300 A extendable
- 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 resonance detection
- Ethernet and Ethercat system for interconnection
- Subsystems Display control unit, Active sensor unit, ModBus, PQ Analyzer ...

Specifications

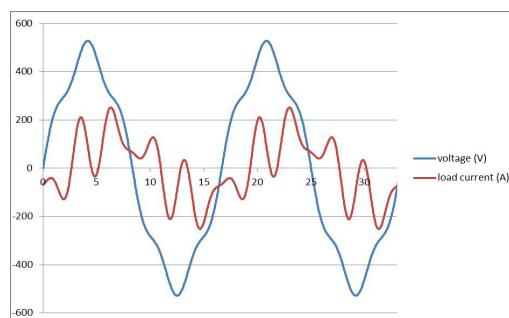
Input & Output Parameters

Connectivity	3-wire: 3 phase 4-wire: 3 phase + neutral lead				
Phase compensation current	60A	120A	180A	240A	300A
Neutral lead compensation current	180A	360A	540A	720A	900A
Input voltage	3-wire: 200 V - 480 V \pm 10% 4-wire: 200 V - 400 V \pm 10%				
Frequency	50/60 Hz \pm 3 Hz				
Response time max.	< 300 μ s correction time				
Switching frequency	24 kHz				
Control frequency	48 kHz				
Harmonic compensation	Up to 50th harmonic, 50 active harmonic orders simultaneous selectable				
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 100 A – 2500 A, secondary current 1 A				
Typical power losses (W)	530	1100	1700	2000	2800
Weight single unit	60 kg				
Weight including cabinet	90kg	150kg	210kg	270kg	330kg
Dimensions single unit	482 x 678 x 222 mm (W x D x H)				
Dimensions including cabinet (mm)	570 x 815 x 808	570 x 815 x 1035	570 x 815 x 1260	570 x 815 x 1485	570 x 815 x 1710
Air flow rate	470 cfm	940 cfm	1410 cfm	1880 cfm	2350 cfm
Interface	Ethercat 100 Mbit/s, USB, Active sensor bus, Display bus				
Ambient temperature	-10°C to + 40°C full performance, up to +55°C derating 2% / K				
Humidity	95% non condensing				

PB Active Harmonic Filter

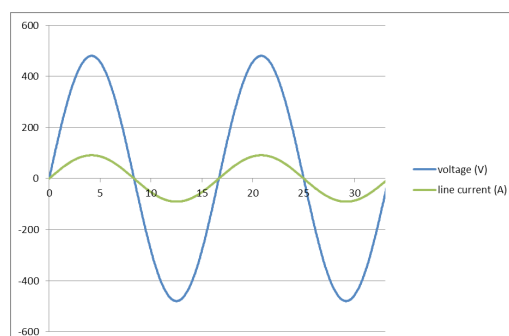
■ Without POWERBALANCE:

Harmonic disturbances caused by e.g. non-linear loads.



■ With POWER BALANCE:

Reactive power and harmonic oscillations are actively compensated.

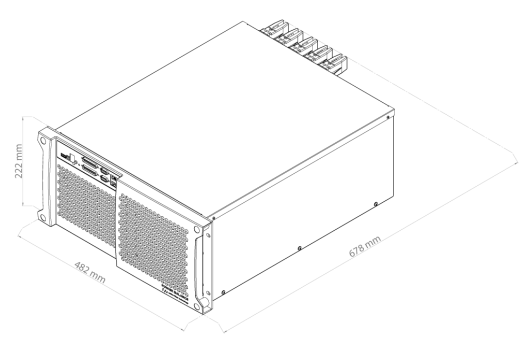


Modular System

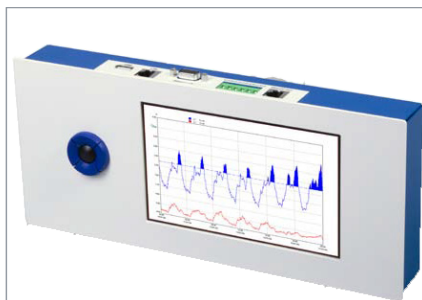


PB10060	60 Amps Module consisting of <ul style="list-style-type: none"> • one module • 1 sensor unit • 1 display
PB10120	120 Amps Module consisting of <ul style="list-style-type: none"> • two modules • 1 sensor unit • 1 display
PB 10180	180 Amps Module consisting of <ul style="list-style-type: none"> • three modules • 1 sensor unit • 1 display
PB 10240	240 Amps Module consisting of <ul style="list-style-type: none"> • four modules • 1 sensor unit • 1 display
PB 10300	300 Amps Module consisting of <ul style="list-style-type: none"> • five modules • 1 sensor unit • 1 display

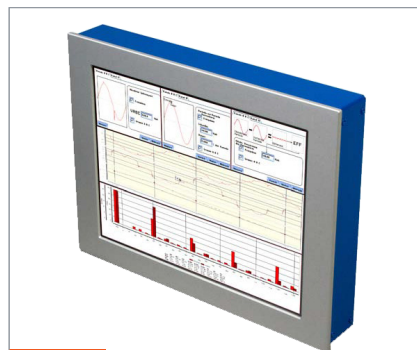
Dimensions

PB	Dimensional Drawing  <p> Standard version: Eurocassette (pluggable module for 19" sub-rack) Weight: approx. 60 kg </p>
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Control & Monitoring



TFT 07	7" TFT control unit <ul style="list-style-type: none"> • Resolution: 800 x 480 • 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): 308 x 45 x 135 mm • Weight: 1 kg • Ambient temperature: -10°C to +55°C working condition • Humidity: 95% non condensing • Basic functionality: parameter setting, status indication, alarming, monitoring, event logging
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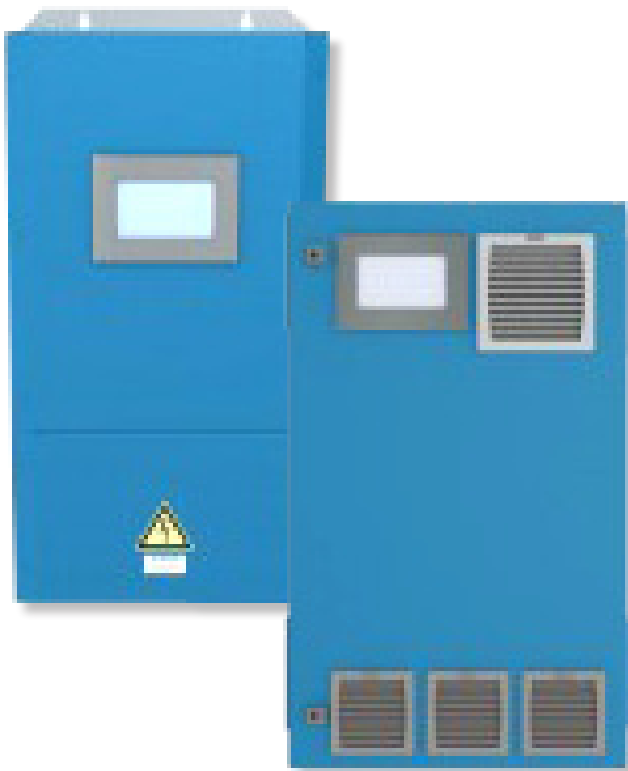


TFT 12	12.1" TFT control unit <ul style="list-style-type: none"> • Resolution: 1024 x 768 • Input: touchscreen • Operating system: embedded Linux • Communication: Ethercat Master, Ethernet TCP/IP • Interface: USB, Digital I/O, Display bus • Dimensions (W x D x H): 308 x 50 x 240 mm • Weight: 2 kg • Ambient temperature: -10°C to +55°C working condition • Humidity: 95% non condensing • Basic functionality: parameter setting, status indication, alarming, monitoring, event logging • Extended functionality: power quality analyzer
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SU	Active sensor unit <ul style="list-style-type: none"> • Interface: Active sensor bus • Dimensions (W x D x H): 186 x 90 x 35 mm • Weight: 0.5 kg • Basic functionality: Source or Load side • selectable, primary current range 100 A – 2500 A, • secondary current 1A
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Wall mount system



60 Amps Module

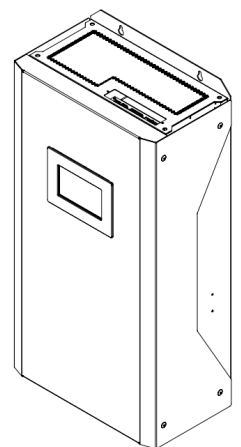
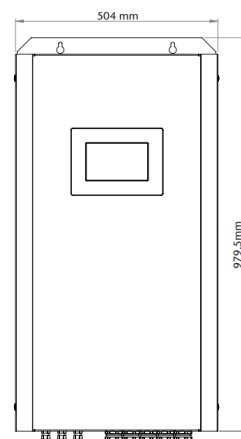
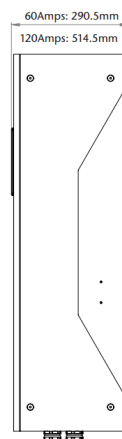
consisting of

- one module
- 1 sensor unit
- 1 display

120 Amps Module

consisting of

- two modules
- 1 sensor unit
- 1 display



Plug & Play plug-in modules

← Airflow



PBAF 400-60-QL

60A | 480V | Air cooled (transverse)

- Dimensions w x d x h (mm): 590 x 495 x 222
- Weight: 60kg
- Protection class: IP 43 system unit
- System unit compensation current: 60A Phase, 180A neutral lead
- Connection type: 3 phase; 3 phase + neutral lead
- Inverter topology: 3-Level IGBT with DC Voltage link
- Modulation frequency: 24kHz
- Control frequency: 48kHz
- Response time: 21µs
- Settling time: << 300 µs
- 3 or 4 conductors



PBAF 400-60-QW

60A | 480V | Water cooled (transverse)

- Dimensions w x d x h (mm): 590 x 495 x 222
- Weight: 60kg
- Protection class: IP 20 system unit
- System unit compensation current: 60A Phase, 180A neutral lead
- Connection type: 3 phase; 3 phase + neutral lead
- Inverter topology: 3-Level IGBT with DC Voltage link
- Modulation frequency: 24kHz
- Control frequency: 48kHz
- Response time: 21µs
- Settling time: << 300 µs
- 3 or 4 conductors



ACTIVE HARMONIC FILTER

SCHAEFER protect your power and your business processes against critical network disturbances, harmonics, Net-zunsymmetrien, inductive and capacitive reactive power, flicker-noise & resonance effects.

60A Power Balance Harmonic Filter

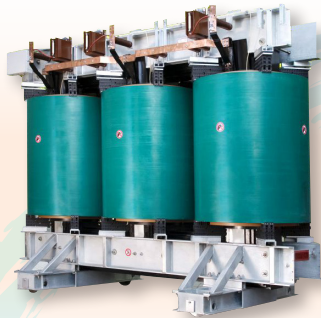


**2 x 240A Power Balance
Harmonic Filter**

Solutions from one source
Plug & Play plug-in modules | Cabinet Solutions | wall modules

*Images are from the Installed Schaefer harmonic filter in the Philippines

POWER QUALITY IMPROVEMENT / COMMERCIAL METERS



Dry-type Cast Resin Transformers
Glass Fibre reinforced Vacuum Technology (GVT)



Ingeteam
Spain

Protection Relay
Complete Protection Solutions
Control and Measurement



Medium Voltage Switchgears
Hermetically sealed and SF6 Insulated
Compact Switchgear
Voltage rating up to 36 kV and current
rating up to 2,500 A



**Landis
Gyr**
manage energy better

Commercial Meters
Next generation meters for the Philippines

Efficient Electricity Solutions

PPI Pazifik Power, Inc. (PPI) is a company with more than twenty (20) years of successful operation in the Philippines.

Over the years, PPI has developed and actively supplied an extensive and full power line of products and services from the best manufacturers in Europe. Among its most sought top-of-the-line products are: Turnkey projects in the supply of substations with rated voltage of up to 230kV, electricity meters, meter test equipment, instrument transformers, power transformers, disconnectors, fault indicators, surge arresters, switchgears, oil testers, cable diagnostics, batteries, harmonic filters, and automation systems, among others.

PPI's commitment is to establish closer customer relationship, so as to understand its customer's power solution requirements. More importantly, PPI's cutting edge is its high quality, durable and innovative power solution equipment coupled with its unparalleled delivery of reliable on-time service performance by its seasoned professional Electrical Engineers.

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