

Manufactured by:

SCHAEFER

Active Harmonic Filters

Innovation made in Germany



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 resonancy detection
- Ethernet and Ethercat system for interconnection
- Subsystems Display control unit, Active sensor unit, ModBus, PQ Analyzer ...

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

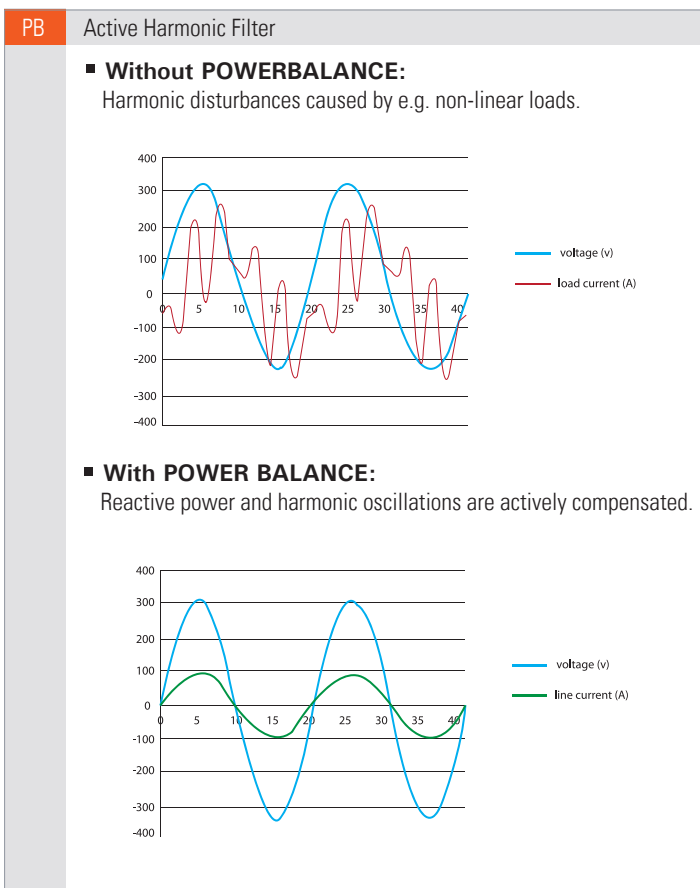
General Information

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 independently of the number of loads. Furthermore the filter corrects the power factor, improving the systems' efficiency while reducing harmonic pollution.

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 – 10000 A, secondary current 1 A				
Maximum 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				



Modular System



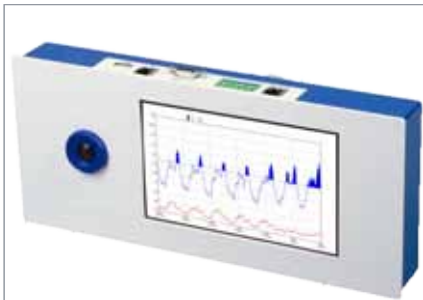
PB10060	60 Amps Module consisting of <ul style="list-style-type: none"> • one module • 1 sensor unit • 1 display
PB10120	120 Amps Module consisting of <ul style="list-style-type: none"> • two modules • 1 sensor unit • 1 display
PB 10180	180 Amps Module consisting of <ul style="list-style-type: none"> • 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
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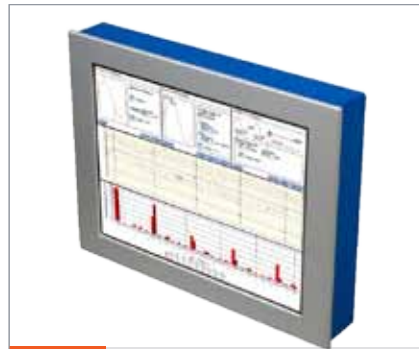
Standard version:
 Eurocassette (pluggable module for 19" sub-rack)
 Weight: approx. 60 kg

Control & Monitoring



TFT 07	7" TFT control unit
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- Resolution: 800 x 480
- 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): 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



TFT 12	12.1" TFT control unit
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- 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



SU	Active sensor unit
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- 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 – 10000 A, secondary current 1A

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