



Power Quality Solutions

Active Harmonic Filter PQSine™ S Series

Series/Type: 3P4W module / PQSM4090S408

Ordering code: B44066F4090S408

Date: August 2018

Version: 1

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Characteristics

- The active harmonic filter PQSine™ S Series system is designed to eliminate harmonic oscillations; it monitors the current permanently and compensates the unwanted elements of the measured current.
- 90A 3P4W (3-phase/4-wire) device for phase and neutral wire current correction.

■ Features

- User-friendly menu operation via TFT color touch screen
- Harmonic compensation up to 50th harmonic (individually selectable)
- Ultra-fast reactive power compensation
- Load balancing between phases and unloaded neutral wire
- Advanced digital control FFT Intelligent and instantaneous reactive power
- Ethernet system for interconnection and monitoring
- High performance and reliability
- Simple installation & commissioning

Typical applications

- Industries having variable frequency drives, inverters UPS, furnaces such as paper, steel rolling mills, textile, garment, software parks, automotive, battery manufacturing, continuous process plants, pharmaceutical industries, etc.
- Green power generation (e.g. photovoltaics and wind turbines)
- Data centers, hotels, hospitals, shopping malls and office buildings (3rd and triple harmonic cancellation and neutral conductor unloading)

Safety features

- Highest safety and reliability
- Overload protection
- Internal short-circuit protection
- Overheating protection
- Over-voltage and under-voltage protection
- Inverter bridge protection
- Resonance protection
- Fan fault alarm

Technical data and specifications AHF system

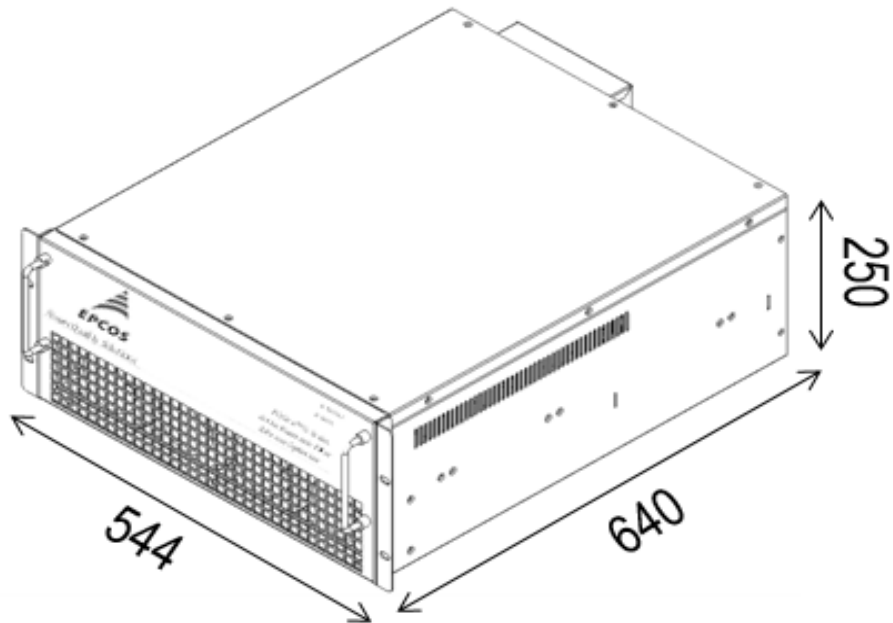
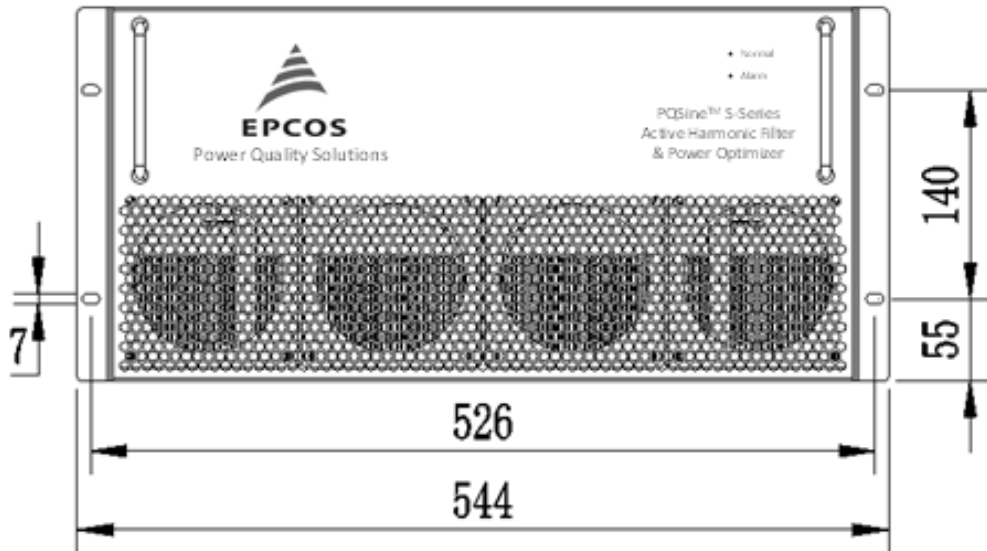
Type	PQSM4090S408
Ordering code	B44066F4090S408 (module)
System input / number of phases	3-phase/4-wire
Phase compensation current	90 A
Neutral conductor compensation current	270 A
Frequency	43 Hz to 62 Hz
Input voltage (min. / max.)	384V... 552V (480V -20% ~ +15%)
Inverter technology	12 IGBT three-level NPC topology
Process control	Three 32-bit DSP + CPLD
Reaction time	20 µs (immediate load change reaction)
Steady state response time	< 5 ms (steady state response time to full steady state compensation)
Switching / Control frequency	20 kHz
Signal processor	32 bit
Harmonic compensation	Up to 50th harmonic order, or specified harmonics 0-110%
Power factor correction	Fully inductive and capacitive current compensation from 0 ... 100%
Weight of a single unit	Approx. 66 kg
Dimensions of a single unit	Approx. 544 x 640 x 250 mm (w x d x h)
Current transformer	3 CTs are needed. Source or load-side selectable, primary current range 150 A ... 10000 A, secondary current 5 A (see details of choosing the right CT in the manual) External current transformers are mandatory needed, but not included in the active filter delivery.
Efficiency	> 97%*

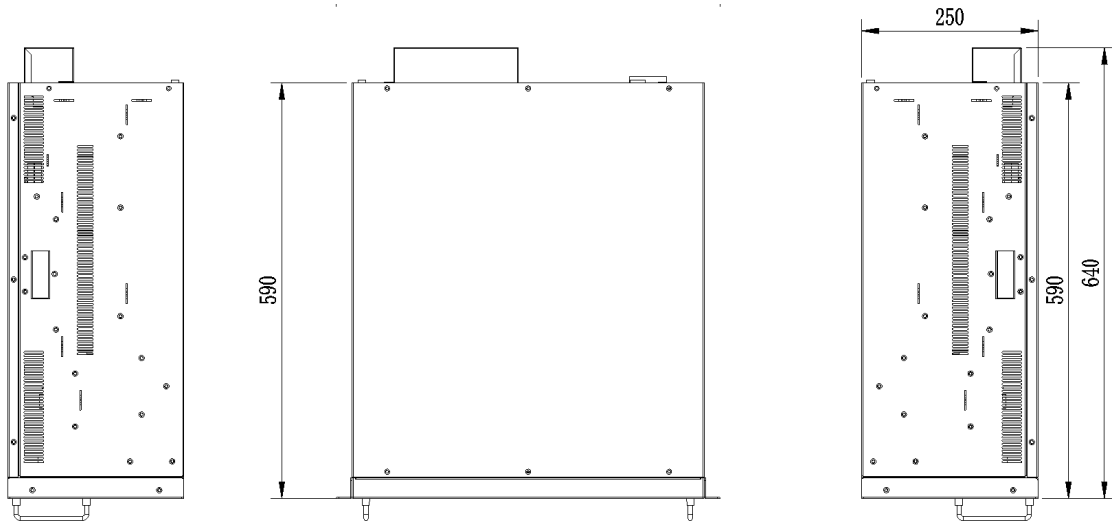
*for typical loads / harmonic order distortions

Technical data and specifications AHF system (cont.)

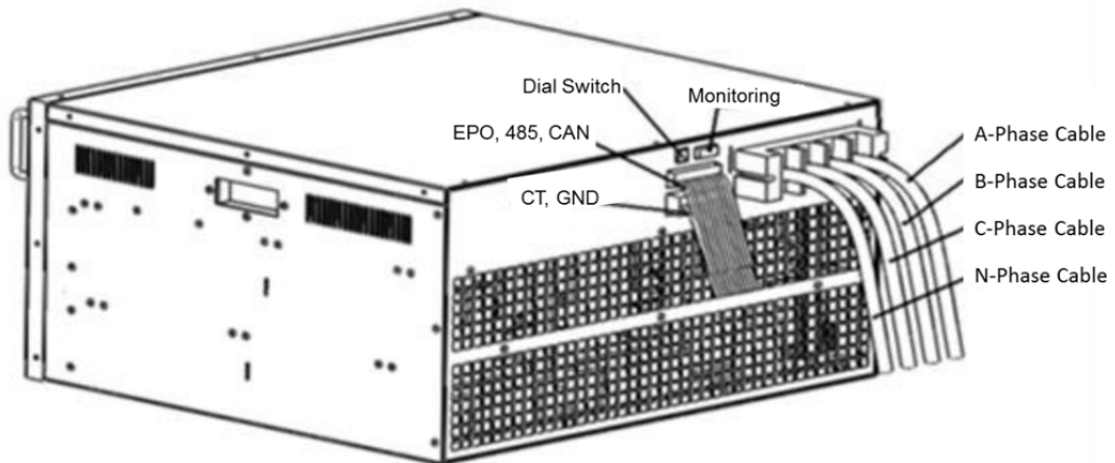
Recommended external AC mains protection (fuse or circuit breaker)	160 A (for details please see manual)
Mounting	Rack
Cooling	Forced cooling 359 L/sec
Interface	Modbus (RTU), TCP/IP (Ethernet)
Communication ports	RS485 and network port (RJ45)
Fault alarm	Available, max. 500 alarm records
Temperature	-10 ... +40 °C for operating temperature (may derate capacity if ambient temperature exceeds 40°C), -20...+70 °C for storage temperature
Protection class	IP20 according to IEC 529
Panel color	RAL7035 light grey
Humidity	5%~ 95%, non-condensing
Self-protection	Yes
Overheating protection	Yes
Over-voltage and under-voltage protection	Yes
Typical noise level	< 65 dB (depending on model and load conditions)
Altitude	1% up 1500 m. Between 1500 m to 4000 m, according to GB/T3859.2, the power decreases by 1% for every additional 100 m.
Standards / recommendations specifying limits for harmonics in networks or units	IEEE519, IEC 61000-3-6, ER G5/4
Design standards	IEC 61000-4-2, 4-3/4-4/4-5/4-6/4-8/4-11, IEC 60146, EN 55011 Class A, EN 50091-1, EN 50178 (type test report available upon request) after the standard EN 50178
Certificates	CE, ETL (UL/CSA)

Dimensional drawing – 90 A module system

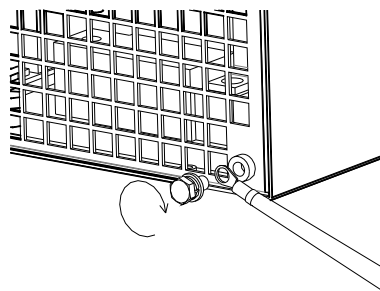




AC mains connection

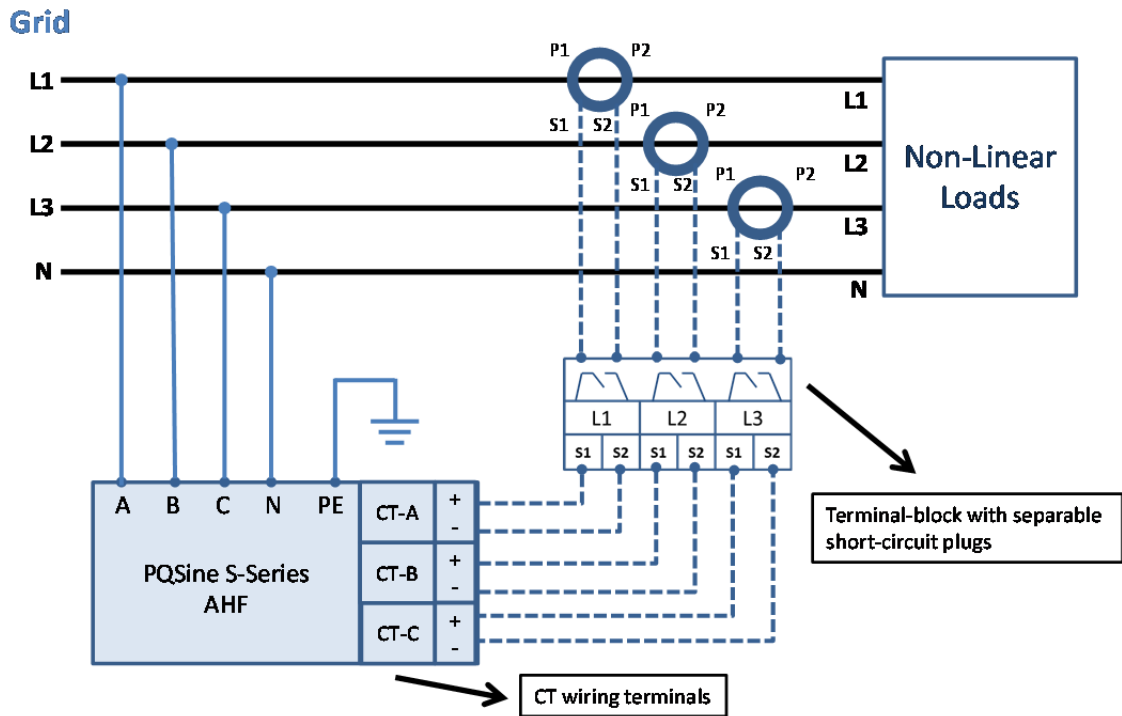


Wiring terminal



Installation of ground wire

Connection diagram



Note: Current transformers are not included in the delivery and must be purchased separately.

Please also carefully read the cautions, notes and warnings in the AHF S-Series operating and installation instructions manual!

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