



Power Quality Solutions

Active Harmonic Filter PQSine™ S Series

Series/Type: 3P4W Module / PQSM4100S300

Ordering code: B44066F4100S300

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.
- 100 A for 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
- 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
- Overvoltage and undervoltage protection
- Inverter bridge protection
- Resonance protection
- Fan fault alarm

Technical data and specifications AHF system

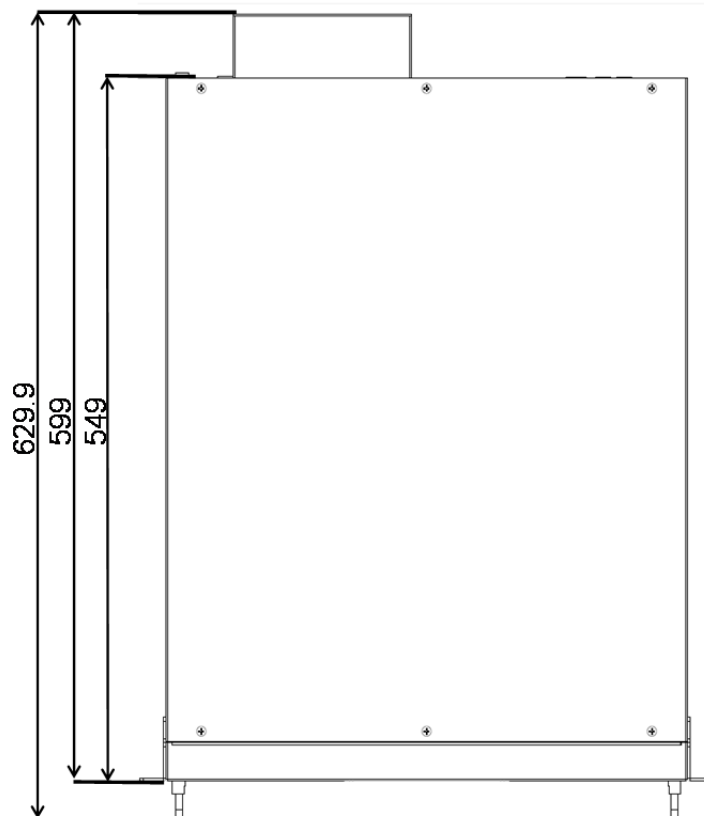
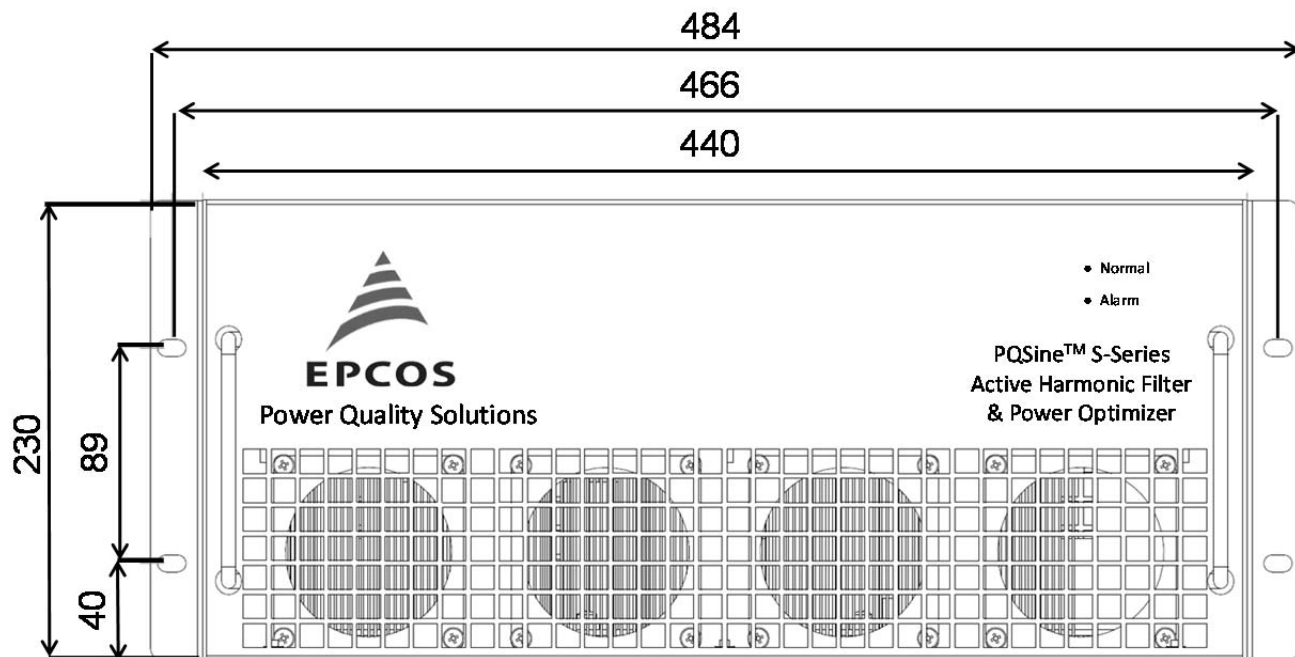
Type	PQSM4100S300
Ordering code	B44066F4100S300 (module)
System input / number of phases	3-phase/4-wire
Phase compensation current	100 A
Neutral conductor compensation current	300 A
Frequency (min. / max.)	45 / 62 Hz
Input voltage (min. / max.)	228 / 456 V
Inverter technology	12 IGBT three-level NPC topology
Process control	Three 32-bit DSP + CPLD
Reaction time	Approx. 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 50 th harmonic order (selectable)
Power factor correction	Fully inductive and capacitive current compensation from 0 ... 100%
Weight	Approx. 46 kg
Dimensions	Approx. 484 x 630 x 230 mm (w x d x h)
Current transformer	3 CTs are needed. Source or load-side selectable, primary current range 150 ... 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

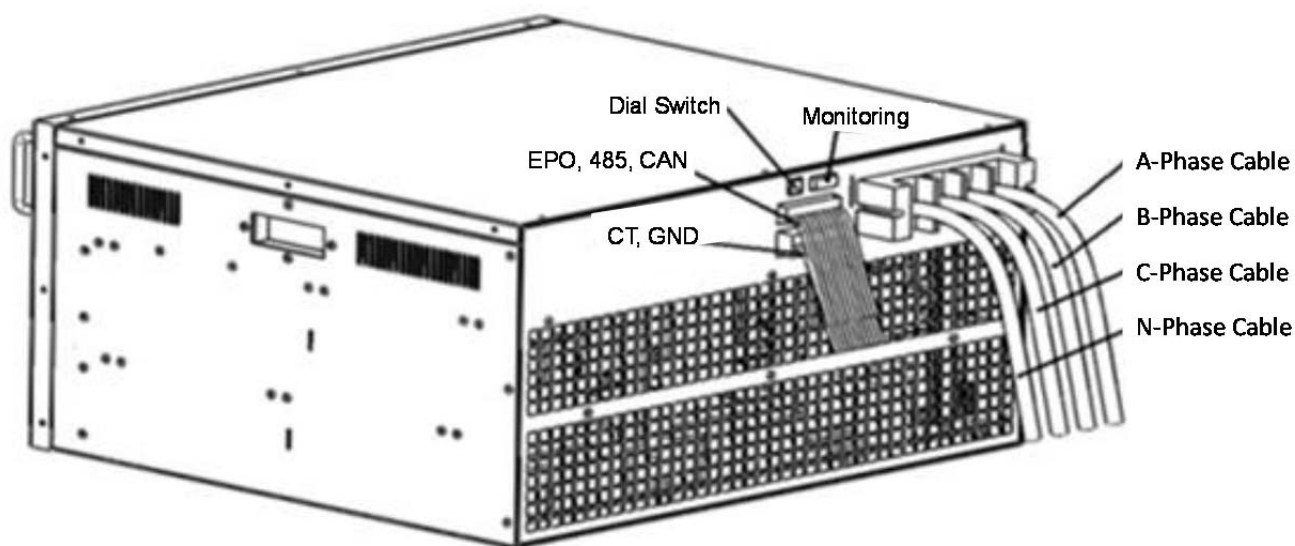
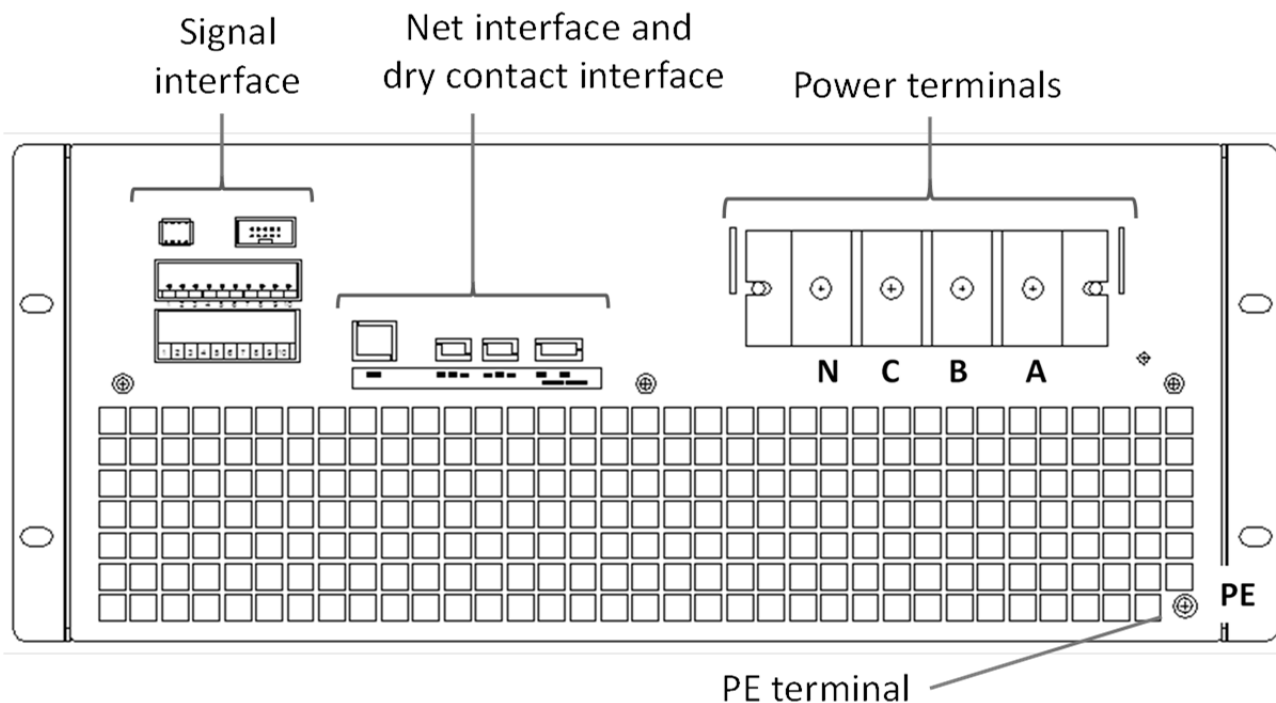
Technical data and specifications AHF system (cont.)

Recommended external AC mains protection (fuse or circuit breaker)	140 A (for details please see manual)
Mounting	Rack
Cooling air demand (at full load)	Forced cooling 300 L/sec
Interface	Modbus (RTU), TCP/IP(Ethernet)
Communication ports	RS485 and network port (RJ45)
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
Overvoltage and undervoltage protection	Yes
Typical noise level	< 56 dB (depending on model and load conditions)
Altitude	1% up 1500 m. Between 1500 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

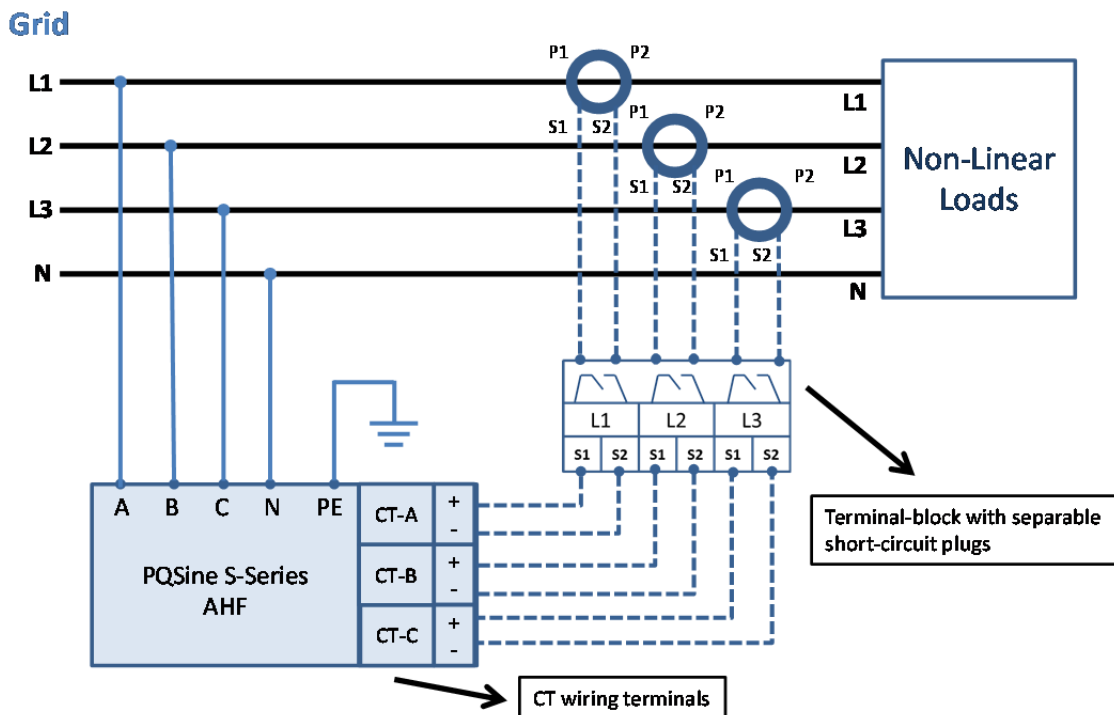
Dimensional drawings – 100 A module system



AC mains connection



Connection diagram



Wiring single power module

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 PQSine AHF operating and installation instructions manual!

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