



## Power Quality Solutions

### Active Harmonic Filter PQSine S

<b>Series/Type:</b>	<b>3P3W &amp; 3P4W Rack/Wall/Floor Mounted / PQS*S</b>
<b>Ordering code:</b>	<b>B44066F*S</b>
<b>Date:</b>	<b>May 2024</b>
<b>Version:</b>	<b>3</b>

## Description

- Designed to mitigate / reduce harmonic distortions
- Monitors the current and compensates the selected harmonics of the measured current
- Compensates for the fundamental reactive power  
→ both inductive and capacitive
- Load balancing, including neutral current compensation  
( in case of 4 wire configuration)



## Features

- User-friendly menu operation via TFT color touch screen
- Harmonic compensation up to the 51<sup>st</sup> harmonic
- Ultra-fast reactive power compensation
- Load balancing between phases
- Advanced digital control FFT
- Intelligent and instantaneous reactive power
- Ethernet system for interconnection and monitoring
- High performance and reliability
- Simple installation and commissioning



## Applications

- Industrial applications with non-linear loads such as variable frequency drives, inverters, UPS, Furnaces
- Renewable energy (e.g. photovoltaics and wind turbines)
- Buildings (hotels, hospitals, shopping malls)
- Data Centers, IT/ITES
- EV Charging Stations

## Safety Characteristics

- Very high safety and reliability
- Overload protection
- Short-circuit protection
- Overtemperature protection
- Overvoltage and undervoltage protection
- Converter bridge reverse protection
- Resonance protection
- Fan fault alarm

**Technical data and specification 200 V<sup>1</sup> & 400 V**

Item	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
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**System parameter**

Grid voltage	200 V (176 V ... 263 V) & 400 V (228 V ... 456 V)				
Grid frequency	45 Hz ... 62.5 Hz				
Network configuration	3P3W / 3P4W				
Setting of CT Ratio	150/5...10000/5				
Topology	Three-level IGBT				
Harmonic compensation	Supported				
Reactive compensation	Supported				
Unbalance compensation	Supported				

**Performance indicator**

Rated capacity	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Rated comp. current of phase wire	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Rated comp. current of neutral line	75 A / 105 A	150 A / 180 A	225 A	300 A	450 A
Filtering range	2 <sup>nd</sup> ... 51 <sup>st</sup>				
Individual Harmonics Selection	Available between 2 <sup>nd</sup> ... 51 <sup>st</sup>				
Individual Harmonics Magnitude	Adjustable between 0 - 100%				
Harmonic attenuation rate	> 97% (for signature harmonic spectrum)				
Overall efficiency (100% load)	≥ 97%(depending on the load and operating conditions)				
Typical power losses	< 3% (depending on the load and operating conditions)				
Reaction time*	< 50 μs				
Response time	< 5 ms				
Target power factor	Adjustable between – 1... + 1				
Control algorithm	FFT algorithm, intelligent FFT algorithm, instantaneous reactive algorithm				
Switching frequency	20 kHz				
Cooling mode (smart cooling)	151 L/s	115 L/s	222 L/s	336 L/s	360L/s
Noise level	< 56 dB	< 56 dB	< 56 dB	< 56 dB	< 65 dB

Technical data and specification 200 V <sup>1</sup> & 400 V					
Item	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Communication, protection, monitoring and display					
Communication interface	RS485 / Network interface (RJ45)				
Communication protocol	Modbus protocol, TCP/IP				
Protective function for	Overvoltage, under voltage, short-circuit, inverter bridge reverse protection, over temperature, overcompensation, DC-Link, Resonance				
CT Monitoring alarm	available				
Fault alarm	Active and history of alarms available				
Display	- Rack mounted units do not include a built-in display. An additional 7 inch HMI display is necessary. - Wall mounted units include a built-in 4.3 inch HMI display - Floor mounted cabinets include a centralized 7 inch HMI display				
Display parameters	Simultaneous display of Grid and Load side [Voltage, Current, Power Factor, I <sub>thd</sub> %, V <sub>thd</sub> %, Active, Reactive and Apparent Power] Compensation current of AHF in absolute values and %				
Physical characteristics					
Mounting	Rack, Wall and Floor Mounting				
Net weight (wall / rack module)	18 kg	18 kg	23 kg	35 kg	44 kg
Color	Light gray, cabinet RAL7035				
Environmental requirement					
Altitude	≤ 1500 m, between 1500 ... 4000 m, in accordance with national standard GB/T3859.2, power reducing by 1% for every additional 100 m				
Operating temperature	-10 °C ... + 50 °C <sup>2</sup> (Unit's output will be derated if inlet temperature of air is > 40 °C)				
Relative humidity	95 %, non-condensing				
Protection class	IP20, customized IP classes available upon request				
Storage temperature	- 40 °C ... + 70 °C				
Certifications, compliances, reference standards					
Certifications	CE				
Compliances / Reference Standards	LV Directive 2014/35/EU EU Directive 2011/65/EU RoHS EMC Directive 2014/30/EU			EN 62477-1:2012 / A11:2014 EN 61000-6-4:2007 / A1:2011 EN 61000-6-2:2005	

<sup>1</sup> The complete range is also available in 200 V (176 V ... 263 V)

<sup>2</sup> For derating details reach out to TDK representative for further details

**Characteristics and ordering codes**

<b>200 V PQSine S series – 3P3W systems</b>							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM3025S200	25	176	263	Rack	18	440 x 470 x 150	B44066F3025S200
PQSM3035S200	35	176	263	Rack	18	440 x 470 x 150	B44066F3035S200
PQSM3050S200	50	176	263	Rack	23	500 x 515 x 180	B44066F3050S200
PQSM3060S200	60	176	263	Rack	23	500 x 515 x 180	B44066F3060S200
PQSM3075S200	75	176	263	Rack	28	500 x 546 x 190	B44066F3075S200
PQSM3100S200	100	176	263	Rack	35	500 x 575 x 285	B44066F3100S200
PQSM3150S200	150	176	263	Rack	44	500 x 605 x 270	B44066F3150S200
<b>Wall mounted units<sup>4</sup></b>							
PQSW3025S244	25	176	263	Wall	18	440 x 150 x 485	B44066F3025S244
PQSW3035S244	35	176	263	Wall	18	440 x 150 x 485	B44066F3035S244
PQSW3050S244	50	176	263	Wall	23	500 x 180 x 540	B44066F3050S244
PQSW3060S244	60	176	263	Wall	23	500 x 180 x 540	B44066F3060S244
PQSW3075S244	75	176	263	Wall	28	500 x 190 x 585	B44066F3075S244
PQSW3100S244	100	176	263	Wall	35	500 x 200 x 599	B44066F3100S244
PQSW3150S244	150	176	263	Wall	44	500 x 273 x 638	B44066F3150S244
<b>Floor mounted units<sup>5</sup></b>							
PQSF3100S215	100	176	263	Floor	285	600 x 1000 x 2200	B44066F3100S215
PQSF3150S215	150	176	263	Floor	294	600 x 1000 x 2200	B44066F3150S215
PQSF3200S215	200	176	263	Floor	320	600 x 1000 x 2200	B44066F3200S215
PQSF3250S215	250	176	263	Floor	329	600 x 1000 x 2200	B44066F3250S215
PQSF3300S215	300	176	263	Floor	338	600 x 1000 x 2200	B44066F3300S215
PQSF3350S215	350	176	263	Floor	364	600 x 1000 x 2200	B44066F3350S215
PQSF3400S215	400	176	263	Floor	373	600 x 1000 x 2200	B44066F3400S215
PQSF3450S215	450	176	263	Floor	382	600 x 1000 x 2200	B44066F3450S215
PQSF3500S215	500	176	263	Floor	408	600 x 1000 x 2200	B44066F3500S215
PQSF3550S215	550	176	263	Floor	417	600 x 1000 x 2200	B44066F3550S215
PQSF3600S215	600	176	263	Floor	426	600 x 1000 x 2200	B44066F3600S215
PQSF3750S225	750	176	263	Floor	720	1200 x 1000 x 2200	B44066F3750S225
PQSF3900S225	900	176	263	Floor	764	1200 x 1000 x 2200	B44066F3900S225
PQSF3115S225	1150	176	263	Floor	843	1200 x 1000 x 2200	B44066F3115S225
PQSF3120S225	1200	176	263	Floor	852	1200 x 1000 x 2200	B44066F3120S225

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> All wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> All floor mounted cabinets include a 7-inch HMI display

200 V PQSine S series – 3P4W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM4025S200	25	176	263	Rack	18	440 x 470 x 150	B44066F4025S200
PQSM4035S200	35	176	263	Rack	18	440 x 470 x 150	B44066F4035S200
PQSM4050S200	50	176	263	Rack	23	500 x 515 x 180	B44066F4050S200
PQSM4060S200	60	176	263	Rack	23	500 x 515 x 180	B44066F4060S200
PQSM4075S200	75	176	263	Rack	28	500 x 546 x 190	B44066F4075S200
PQSM4100S200	100	176	263	Rack	35	500 x 575 x 200	B44066F4100S200
PQSM4150S200	150	176	263	Rack	44	500 x 605 x 270	B44066F4150S200
<b>Wall mounted units<sup>4</sup></b>							
PQSW4025S244	25	176	263	Wall	18	440 x 150 x 485	B44066F4025S244
PQSW4035S244	35	176	263	Wall	18	440 x 150 x 485	B44066F4035S244
PQSW4050S244	50	176	263	Wall	23	500 x 180 x 540	B44066F4050S244
PQSW4060S244	60	176	263	Wall	23	500 x 180 x 540	B44066F4060S244
PQSW4075S244	75	176	263	Wall	28	500 x 190 x 585	B44066F4075S244
PQSW4100S244	100	176	263	Wall	35	500 x 200 x 599	B44066F4100S244
PQSW4150S244	150	176	263	Wall	44	500 x 273 x 638	B44066F4150S244
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF4100S215	100	176	263	Floor	285	600 x 1000 x 2200	B44066F4100S215
PQSF4150S215	150	176	263	Floor	294	600 x 1000 x 2200	B44066F4150S215
PQSF4200S215	200	176	263	Floor	320	600 x 1000 x 2200	B44066F4200S215
PQSF4250S215	250	176	263	Floor	329	600 x 1000 x 2200	B44066F4250S215
PQSF4300S215	300	176	263	Floor	338	600 x 1000 x 2200	B44066F4300S215
PQSF4350S215	350	176	263	Floor	364	600 x 1000 x 2200	B44066F4350S215
PQSF4400S215	400	176	263	Floor	373	600 x 1000 x 2200	B44066F4400S215
PQSF4450S215	450	176	263	Floor	382	600 x 1000 x 2200	B44066F4450S215
PQSF4500S215	500	176	263	Floor	408	600 x 1000 x 2200	B44066F4500S215
PQSF4550S215	550	176	263	Floor	417	600 x 1000 x 2200	B44066F4550S215
PQSF4600S215	600	176	263	Floor	426	600 x 1000 x 2200	B44066F4600S215
PQSF4750S225	750	176	263	Floor	720	1200 x 1000 x 2200	B44066F4750S225
PQSF4900S225	900	176	263	Floor	764	1200 x 1000 x 2200	B44066F4900S225
PQSF4115S225	1150	176	263	Floor	843	1200 x 1000 x 2200	B44066F4115S225
PQSF4120S225	1200	176	263	Floor	852	1200 x 1000 x 2200	B44066F4120S225

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

400 V PQSine S series – 3P3W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM3025S300	25	228	456	Rack	18	440 x 470 x 150	B44066F3025S300
PQSM3035S300	35	228	456	Rack	18	440 x 470 x 150	B44066F3035S300
PQSM3050S300	50	228	456	Rack	23	500 x 515 x 180	B44066F3050S300
PQSM3060S300	60	228	456	Rack	23	500 x 515 x 180	B44066F3060S300
PQSM3075S300	75	228	456	Rack	28	500 x 546 x 190	B44066F3075S300
PQSM3100S300	100	228	456	Rack	35	500 x 575 x 200	B44066F3100S300
PQSM3150S300	150	228	456	Rack	44	500 x 605 x 270	B44066F3150S300
<b>Wall mounted units<sup>4</sup></b>							
PQSW3025S344	25	228	456	Wall	18	440 x 150 x 485	B44066F3025S344
PQSW3035S344	35	228	456	Wall	18	440 x 150 x 485	B44066F3035S344
PQSW3050S344	50	228	456	Wall	23	500 x 180 x 540	B44066F3050S344
PQSW3060S344	60	228	456	Wall	23	500 x 180 x 540	B44066F3060S344
PQSW3075S344	75	228	456	Wall	28	500 x 190 x 585	B44066F3075S344
PQSW3100S344	100	228	456	Wall	35	500 x 200 x 599	B44066F3100S344
PQSW3150S344	150	228	456	Wall	44	500 x 273 x 638	B44066F3150S344
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF3100S315	100	228	456	Floor	285	600 x 1000 x 2200	B44066F3100S315
PQSF3150S315	150	228	456	Floor	294	600 x 1000 x 2200	B44066F3150S315
PQSF3200S315	200	228	456	Floor	320	600 x 1000 x 2200	B44066F3200S315
PQSF3250S315	250	228	456	Floor	329	600 x 1000 x 2200	B44066F3250S315
PQSF3300S315	300	228	456	Floor	338	600 x 1000 x 2200	B44066F3300S315
PQSF3350S315	350	228	456	Floor	364	600 x 1000 x 2200	B44066F3350S315
PQSF3400S315	400	228	456	Floor	373	600 x 1000 x 2200	B44066F3400S315
PQSF3450S315	450	228	456	Floor	382	600 x 1000 x 2200	B44066F3450S315
PQSF3500S315	500	228	456	Floor	408	600 x 1000 x 2200	B44066F3500S315
PQSF3550S315	550	228	456	Floor	417	600 x 1000 x 2200	B44066F3550S315
PQSF3600S315	600	228	456	Floor	426	600 x 1000 x 2200	B44066F3600S315
PQSF3750S325	750	228	456	Floor	720	1200 x 1000 x 2200	B44066F3750S325
PQSF3900S325	900	228	456	Floor	764	1200 x 1000 x 2200	B44066F3900S325
PQSF3115S325	1150	228	456	Floor	843	1200 x 1000 x 2200	B44066F3115S325
PQSF3120S325	1200	228	456	Floor	852	1200 x 1000 x 2200	B44066F3120S325

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

<b>400 V PQSine S series – 3P4W systems</b>							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM4025S300	25	228	456	Rack	18	440 x 470 x 150	B44066F4025S300
PQSM4035S300	35	228	456	Rack	18	440 x 470 x 150	B44066F4035S300
PQSM4050S300	50	228	456	Rack	23	500 x 515 x 180	B44066F4050S300
PQSM4060S300	60	228	456	Rack	23	500 x 515 x 180	B44066F4060S300
PQSM4075S300	75	228	456	Rack	28	500 x 546 x 190	B44066F4075S300
PQSM4100S300	100	228	456	Rack	35	500 x 575 x 200	B44066F4100S300
PQSM4150S300	150	228	456	Rack	44	500 x 605 x 270	B44066F4150S300
<b>Wall mounted units<sup>4</sup></b>							
PQSW4025S344	25	228	456	Wall	18	440 x 150 x 485	B44066F4025S344
PQSW4035S344	35	228	456	Wall	18	440 x 150 x 485	B44066F4035S344
PQSW4050S344	50	228	456	Wall	23	500 x 180 x 540	B44066F4050S344
PQSW4060S344	60	228	456	Wall	23	500 x 180 x 540	B44066F4060S344
PQSW4075S344	75	228	456	Wall	28	500 x 190 x 585	B44066F4075S344
PQSW4100S344	100	228	456	Wall	35	500 x 200 x 599	B44066F4100S344
PQSW4150S344	150	228	456	Wall	44	500 x 273 x 638	B44066F4150S344
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF4100S315	100	228	456	Floor	285	600 x 1000 x 2200	B44066F4100S315
PQSF4150S315	150	228	456	Floor	294	600 x 1000 x 2200	B44066F4150S315
PQSF4200S315	200	228	456	Floor	320	600 x 1000 x 2200	B44066F4200S315
PQSF4250S315	250	228	456	Floor	329	600 x 1000 x 2200	B44066F4250S315
PQSF4300S315	300	228	456	Floor	338	600 x 1000 x 2200	B44066F4300S315
PQSF4350S315	350	228	456	Floor	364	600 x 1000 x 2200	B44066F4350S315
PQSF4400S315	400	228	456	Floor	373	600 x 1000 x 2200	B44066F4400S315
PQSF4450S315	450	228	456	Floor	382	600 x 1000 x 2200	B44066F4450S315
PQSF4500S315	500	228	456	Floor	408	600 x 1000 x 2200	B44066F4500S315
PQSF4550S315	550	228	456	Floor	417	600 x 1000 x 2200	B44066F4550S315
PQSF4600S315	600	228	456	Floor	426	600 x 1000 x 2200	B44066F4600S315
PQSF4750S325	750	228	456	Floor	720	1200 x 1000 x 2200	B44066F4750S325
PQSF4900S325	900	228	456	Floor	764	1200 x 1000 x 2200	B44066F4900S325
PQSF4115S325	1150	228	456	Floor	843	1200 x 1000 x 2200	B44066F4115S325
PQSF4120S325	1200	228	456	Floor	852	1200 x 1000 x 2200	B44066F4120S325

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display



**Technical data and specification 480 V range (based on 400 V design only available in 3P3W)**

Item	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
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**System Parameter**

Grid voltage	480 V (383 V ... 525 V)				
Grid frequency	45 Hz ... 62.5 Hz				
Network configuration	3P3W				
Setting of CT Ratio	150/5...10000/5				
Topology	Three-level topological structure				
Harmonic compensation	Supported				
Reactive compensation	Supported				
Unbalance compensation	Supported				

**Performance Indicator**

Rated capacity	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Rated comp. current of phase wire	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Rated comp. current of neutral line	75 A / 105 A	150 A / 180 A	225 A	300 A	450 A
Filtering range	2 <sup>nd</sup> ... 51 <sup>st</sup>				
Individual Harmonics Selection	Available between 2 <sup>nd</sup> ... 51 <sup>st</sup>				
Individual Harmonics Magnitude	Adjustable between 0 - 100%				
Harmonic attenuation rate	> 97% (for signature harmonic spectrum)				
Overall efficiency (100% load)	≥ 97%(depending on the load and operating conditions)				
Typical power losses	< 3% (depending on the load and operating conditions)				
Reaction time*	< 50 μs				
Response time	< 5 ms				
Target PF	Adjustable between – 1... + 1				
Control algorithm	FFT algorithm, intelligent FFT algorithm, instantaneous reactive algorithm				
Switching frequency	20 kHz				
Cooling mode (smart cooling)	151 L/s	115 L/s	222 L/s	336 L/s	360 L/s
Noise level	< 56 dB	< 56 dB	< 56 dB	< 56 dB	< 65 dB

Technical data and specification 480 V range (based on 400 V design only available in 3P3W)					
Item	25 A / 35 A	50 A / 60 A	75 A	100 A	150 A
Communication, protection, monitoring, and display					
Communication interface	RS485 / Network interface (RJ45)				
Communication protocol	Modbus protocol, TCP/IP				
Protective function for	Overvoltage, under voltage, short-circuit, inverter bridge reverse protection, over temperature, overcompensation, DC-Link, Resonance				
CT Monitoring alarm	available				
Fault alarm	Active and history of alarms available				
Display	- Rack mounted units do not include a built-in display. An additional 7 inch HMI display is necessary. - Wall mounted units include a built-in 4.3-inch HMI display - Floor mounted cabinets include a centralized 7-inch HMI display				
Display parameters	Simultaneous display of Grid and Load side [Voltage, Current, Power Factor, I <sub>thd</sub> %, V <sub>thd</sub> %, Active, Reactive and Apparent Power], Compensation current of AHF in absolute values and %				
Physical Characteristics					
Mounting	Rack, Wall and Floor Mounting				
Net weight (wall / rack module)	18 kg	18 kg	23 kg	35 kg	44 kg
Color	Light gray, cabinet RAL7035				
Environmental requirement					
Altitude	≤ 1500 m, between 1500 ... 4000 m, in accordance with national standard GB/T3859.2, power reducing by 1% for every additional 100 m				
Operating temperature	-10 °C ... + 50 °C <sup>6</sup> (Unit's output will be derated if inlet temperature of air is > 40 °C)				
Relative humidity	95 %, non-condensing				
Protection class	IP20, customized IP classes available upon request				
Storage temperature	- 40 °C ... + 70 °C				
Certifications, Compliances, Reference Standards					
Certifications	CE				
Compliances / Reference Standards	LV Directive 2014/35/EU EU Directive 2011/65/EU RoHS EMC Directive 2014/30/EU			EN 62477-1:2012 / A11:2014 EN 61000-6-4:2007 / A1:2011 EN 61000-6-2:2005	

<sup>6</sup> For derating details reach out to TDK representative for further details

## Characteristics and ordering codes

480 V PQSine S series – 3P3W systems (based on 400 V design)							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM9025S400	25	372	526	Rack	18	440 x 470 x 150	B44066F9025S400
PQSM9035S400	35	372	526	Rack	18	440 x 470 x 150	B44066F9035S400
PQSM9050S400	50	372	526	Rack	23	500 x 515 x 180	B44066F9050S400
PQSM9060S400	60	372	526	Rack	23	500 x 515 x 180	B44066F9060S400
PQSM9075S400	75	372	526	Rack	28	500 x 546 x 190	B44066F9075S400
PQSM9100S400	100	372	526	Rack	35	500 x 575 x 200	B44066F9100S400
PQSM9150S400	150	372	526	Rack	44	500 x 605 x 270	B44066F9150S400
<b>Wall mounted units<sup>4</sup></b>							
PQSW9025S444	25	372	526	Wall	18	440 x 150 x 485	B44066F9025S444
PQSW9035S444	35	372	526	Wall	18	440 x 150 x 485	B44066F9035S444
PQSW9050S444	50	372	526	Wall	23	500 x 180 x 540	B44066F9050S444
PQSW9060S444	60	372	526	Wall	23	500 x 180 x 540	B44066F9060S444
PQSW9075S444	75	372	526	Wall	28	500 x 190 x 585	B44066F9075S444
PQSW9100S444	100	372	526	Wall	35	500 x 200 x 599	B44066F9100S444
PQSW9150S444	150	372	526	Wall	44	500 x 273 x 638	B44066F9150S444
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF9100S415	100	372	526	Floor	285	600 x 1000 x 2200	B44066F9100S415
PQSF9150S415	150	372	526	Floor	294	600 x 1000 x 2200	B44066F9150S415
PQSF9200S415	200	372	526	Floor	320	600 x 1000 x 2200	B44066F9200S415
PQSF9250S415	250	372	526	Floor	320	600 x 1000 x 2200	B44066F9250S415
PQSF9300S415	300	372	526	Floor	329	600 x 1000 x 2200	B44066F9300S415
PQSF9350S415	350	372	526	Floor	364	600 x 1000 x 2200	B44066F9350S415
PQSF9400S415	400	372	526	Floor	373	600 x 1000 x 2200	B44066F9400S415
PQSF9450S415	450	372	526	Floor	382	600 x 1000 x 2200	B44066F9450S415
PQSF9500S415	500	372	526	Floor	408	600 x 1000 x 2200	B44066F9500S415
PQSF9550S415	550	372	526	Floor	417	600 x 1000 x 2200	B44066F9550S415
PQSF9600S415	600	372	526	Floor	426	600 x 1000 x 2200	B44066F9600S415
PQSF9750S425	750	372	526	Floor	720	1200 x 1000 x 2200	B44066F9750S425
PQSF9900S425	900	372	526	Floor	764	1200 x 1000 x 2200	B44066F9900S425
PQSF9115S425	1150	372	526	Floor	843	1200 x 1000 x 2200	B44066F9115S425
PQSF9120S425	1200	372	526	Floor	852	1200 x 1000 x 2200	B44066F9120S425

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

Technical data and specification 480 V / 600 V / 690 V (based on UL design) <sup>7</sup>			
Item	50 A	75 A	100 A
System Parameter			
Grid voltage	480 V (384 V ... 552 V) / 600 V (420 V...690 V) / 690 V (483 V... 793 V)		
Grid frequency	45 Hz ... 62 Hz		
Network configuration	3P3W / 3P4W		
Setting of CT Ratio	150/5...10000/5		
Topology	Three-level topological structure		
Harmonic compensation	Supported		
Reactive compensation	Supported		
Unbalance compensation	Supported		
Performance Indicator			
Rated capacity	50 A	75 A	100 A
Rated comp. current of phase wire	50 A	75 A	100 A
Rated comp. current of neutral line	150 A	225 A	300 A
Filtering range	2 <sup>nd</sup> ... 51 <sup>st</sup>		
Individual Harmonics Selection	Available between 2 <sup>nd</sup> ... 51 <sup>st</sup>		
Individual Harmonics Magnitude	Adjustable between 0 – 100%		
Harmonic attenuation rate	> 97% (for signature harmonic spectrum)		
Overall efficiency (100% load)	≥ 95%		
Typical power losses	< 3% (depending on the load and operating conditions)		
Reaction time*	< 50 μs		
Response time	< 5 ms		
Target PF	Adjustable between – 1... + 1		
Control algorithm	FFT algorithm, intelligent FFT algorithm, instantaneous reactive algorithm		
Switching frequency	20 kHz		
Cooling mode (smart cooling)	342 L/s	359 L/s	359 L/s
Noise level	< 65 dB		

Technical data and specification 480 V / 600 V / 690 V (Based on UL Design) <sup>7</sup>			
Item	50 A	75 A	100 A
Communication, Protection, Monitoring, and Display			
Communication interface	RS485 / Network interface (RJ45)		
Communication protocol	Modbus protocol, TCP/IP		
Protective function for	Overvoltage, under voltage, short-circuit, inverter bridge reverse protection, over temperature, overcompensation, DC-Link, Resonance		
CT Monitoring alarm	available		
Fault alarm	Active and history of alarms available		
Display	- Rack mounted units do not include a built-in display. An additional 7 inch HMI display is necessary. - Wall mounted units include a built-in 4.3-inch HMI display - Floor mounted cabinets include a centralized 7-inch HMI display		
Display parameters	Simultaneous display of Grid and Load side [Voltage, Current, Power Factor, I <sub>thd</sub> %, V <sub>thd</sub> %, Active, Reactive and Apparent Power] Compensation current of AHF in absolute values and %		
Physical Characteristics			
Mounting	Rack, Wall and Floor Mounting		
Net weight (wall / rack module)	40 kg	70 kg	70 kg
Color	Light gray, cabinet RAL7035		
Environmental requirement			
Altitude	≤ 1500 m, between 1500 ... 4000 m, in accordance with national standard GB/T3859.2, power reducing by 1% for every additional 100 m		
Operating temperature	-10 °C ... + 50 °C <sup>8</sup> (Unit's output will be derated if inlet temperature of air is > 40 °C)		
Relative humidity	95 %, non-condensing		
Protection class	IP20, customized IP classes available upon request		
Storage temperature	- 40 °C ... + 70 °C		
Certifications, Compliances, Reference Standards			
Certifications	CE		
Compliances / Reference Standards	LV Directive 2014/35/EU EU Directive 2011/65/EU RoHS EMC Directive 2014/30/EU	EN 62477-1:2012 / A11:2014 EN 61000-6-4:2007 / A1:2011 EN 61000-6-2:2005	

<sup>7</sup> UL Approval Pending

<sup>8</sup> For derating details reach out to TDK representative for further details

## Characteristics and ordering codes

480 V PQSine S series based on UL design – 3P3W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM3050S400	50	384	552	Rack	40	500 x 540 x 180	B44066F3050S400
PQSM3075S400	75	384	552	Rack	70	500 x 675 x 250	B44066F3075S400
PQSM3100S400	100	384	552	Rack	70	500 x 675 x 250	B44066F3100S400
<b>Wall mounted units<sup>4</sup></b>							
PQSW3050S444	50	384	552	Wall	40	500 x 184 x 627	B44066F3050S444
PQSW3075S444	75	384	552	Wall	70	500 x 250 x 723	B44066F3075S444
PQSW3100S444	100	384	552	Wall	70	500 x 250 x 723	B44066F3100S444
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF3100S435	100	384	552	Floor	320	800 x 1000 x 2200	B44066F3100S435
PQSF3150S435	150	384	552	Floor	360	800 x 1000 x 2200	B44066F3150S435
PQSF3200S435	200	384	552	Floor	390	800 x 1000 x 2200	B44066F3200S435
PQSF3250S435	250	384	552	Floor	430	800 x 1000 x 2200	B44066F3250S435
PQSF3300S435	300	384	552	Floor	460	800 x 1000 x 2200	B44066F3300S435
PQSF3350S435	350	384	552	Floor	500	800 x 1000 x 2200	B44066F3350S435
PQSF3400S435	400	384	552	Floor	530	800 x 1000 x 2200	B44066F3400S435

480 V PQSine S series based on UL design – 3P4W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM4050S400	50	384	552	Rack	40	500 x 540 x 180	B44066F4050S400
PQSM4075S400	75	384	552	Rack	70	500 x 675 x 250	B44066F4075S400
PQSM4100S400	100	384	552	Rack	70	500 x 675 x 250	B44066F4100S400
<b>Wall mounted units<sup>4</sup></b>							
PQSW4050S444	50	384	552	Wall	40	500 x 184 x 627	B44066F4050S444
PQSW4075S444	75	384	552	Wall	70	500 x 250 x 723	B44066F4075S444
PQSW4100S444	100	384	552	Wall	70	500 x 250 x 723	B44066F4100S444
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF4100S435	100	384	552	Floor	320	800 x 1000 x 2200	B44066F4100S435
PQSF4150S435	150	384	552	Floor	360	800 x 1000 x 2200	B44066F4150S435
PQSF4200S435	200	384	552	Floor	390	800 x 1000 x 2200	B44066F4200S435
PQSF4250S435	250	384	552	Floor	430	800 x 1000 x 2200	B44066F4250S435
PQSF4300S435	300	384	552	Floor	460	800 x 1000 x 2200	B44066F4300S435
PQSF4350S435	350	384	552	Floor	500	800 x 1000 x 2200	B44066F4350S435
PQSF4400S435	400	384	552	Floor	530	800 x 1000 x 2200	B44066F4400S435

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

600 V PQSine S series based on UL design – 3P3W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM3050S600	50	420	690	Rack	40	500 x 540 x 180	B44066F3050S600
PQSM3075S600	75	420	690	Rack	70	500 x 675 x 250	B44066F3075S600
PQSM3100S600	100	420	690	Rack	70	500 x 675 x 250	B44066F3100S600
<b>Wall mounted units<sup>4</sup></b>							
PQSW3050S644	50	420	690	Wall	40	500 x 184 x 627	B44066F3050S644
PQSW3075S644	75	420	690	Wall	70	500 x 250 x 723	B44066F3075S644
PQSW3100S644	100	420	690	Wall	70	500 x 250 x 723	B44066F3100S644
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF3100S635	100	420	690	Floor	320	800 x 1000 x 2200	B44066F3100S635
PQSF3150S635	150	420	690	Floor	360	800 x 1000 x 2200	B44066F3150S635
PQSF3200S635	200	420	690	Floor	390	800 x 1000 x 2200	B44066F3200S635
PQSF3250S635	250	420	690	Floor	430	800 x 1000 x 2200	B44066F3250S635
PQSF3300S635	300	420	690	Floor	460	800 x 1000 x 2200	B44066F3300S635
PQSF3350S635	350	420	690	Floor	500	800 x 1000 x 2200	B44066F3350S635
PQSF3400S635	400	420	690	Floor	530	800 x 1000 x 2200	B44066F3400S635

600 V PQSine S series based on UL design – 3P4W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM4050S600	50	420	690	Rack	40	500 x 540 x 180	B44066F4050S600
PQSM4075S600	75	420	690	Rack	70	500 x 675 x 250	B44066F4075S600
PQSM4100S600	100	420	690	Rack	70	500 x 675 x 250	B44066F4100S600
<b>Wall mounted units<sup>4</sup></b>							
PQSW4050S644	50	420	690	Wall	40	500 x 184 x 627	B44066F4050S644
PQSW4075S644	75	420	690	Wall	70	500 x 250 x 723	B44066F4075S644
PQSW4100S644	100	420	690	Wall	70	500 x 250 x 723	B44066F4100S644
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF4100S635	100	420	690	Floor	320	800 x 1000 x 2200	B44066F4100S635
PQSF4150S635	150	420	690	Floor	360	800 x 1000 x 2200	B44066F4150S635
PQSF4200S635	200	420	690	Floor	390	800 x 1000 x 2200	B44066F4200S635
PQSF4250S635	250	420	690	Floor	430	800 x 1000 x 2200	B44066F4250S635
PQSF4300S635	300	420	690	Floor	460	800 x 1000 x 2200	B44066F4300S635
PQSF4350S635	350	420	690	Floor	500	800 x 1000 x 2200	B44066F4350S635
PQSF4400S635	400	420	690	Floor	530	800 x 1000 x 2200	B44066F4400S635

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7-inch HMI display is necessary

<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

690 V PQSine S series based on UL design – 3P3W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM3050S700	50	483	793	Rack	40	500 x 540 x 180	B44066F3050S700
PQSM3075S700	75	483	793	Rack	70	500 x 675 x 250	B44066F3075S700
PQSM3100S700	100	483	793	Rack	70	500 x 675 x 250	B44066F3100S700
<b>Wall mounted units<sup>4</sup></b>							
PQSW3050S744	50	483	793	Wall	40	500 x 184 x 627	B44066F3050S744
PQSW3075S744	75	483	793	Wall	70	500 x 250 x 723	B44066F3075S744
PQSW3100S744	100	483	793	Wall	70	500 x 250 x 723	B44066F3100S744
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF3100S735	100	483	793	Floor	320	800 x 1000 x 2200	B44066F3100S735
PQSF3150S735	150	483	793	Floor	360	800 x 1000 x 2200	B44066F3150S735
PQSF3200S735	200	483	793	Floor	390	800 x 1000 x 2200	B44066F3200S735
PQSF3250S735	250	483	793	Floor	430	800 x 1000 x 2200	B44066F3250S735
PQSF3300S735	300	483	793	Floor	460	800 x 1000 x 2200	B44066F3300S735
PQSF3350S735	350	483	793	Floor	500	800 x 1000 x 2200	B44066F3350S735
PQSF3400S735	400	483	793	Floor	530	800 x 1000 x 2200	B44066F3400S735

690 V PQSine S series based on UL design – 3P4W systems							
Type	Rated filter current A	Voltage (min) V	Voltage (max) V	Mounting variant	Weight (approx.) kg	Dimensions (approx.) (W x D x H) mm	Ordering code
<b>Rack mounted units<sup>3</sup></b>							
PQSM4050S700	50	483	793	Rack	40	500 x 540 x 180	B44066F4050S700
PQSM4075S700	75	483	793	Rack	70	500 x 675 x 250	B44066F4075S700
PQSM4100S700	100	483	793	Rack	70	500 x 675 x 250	B44066F4100S700
<b>Wall mounted units<sup>4</sup></b>							
PQSW4050S744	50	483	793	Wall	40	500 x 184 x 627	B44066F4050S744
PQSW4075S744	75	483	793	Wall	70	500 x 250 x 723	B44066F4075S744
PQSW4100S744	100	483	793	Wall	70	500 x 250 x 723	B44066F4100S744
<b>Floor mounted cabinets<sup>5</sup></b>							
PQSF4100S735	100	483	793	Floor	320	800 x 1000 x 2200	B44066F4100S735
PQSF4150S735	150	483	793	Floor	360	800 x 1000 x 2200	B44066F4150S735
PQSF4200S735	200	483	793	Floor	390	800 x 1000 x 2200	B44066F4200S735
PQSF4250S735	250	483	793	Floor	430	800 x 1000 x 2200	B44066F4250S735
PQSF4300S735	300	483	793	Floor	460	800 x 1000 x 2200	B44066F4300S735
PQSF4350S735	350	483	793	Floor	500	800 x 1000 x 2200	B44066F4350S735
PQSF4400S735	400	483	793	Floor	530	800 x 1000 x 2200	B44066F4400S735

<sup>3</sup> Rack mounted units do not include a built-in display. An additional 7 inch HMI display is necessary

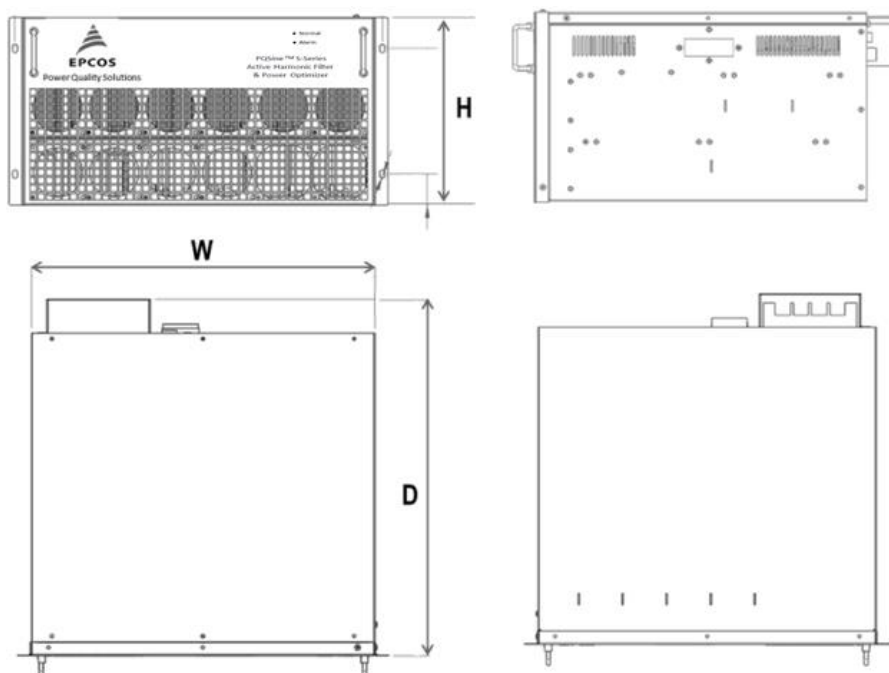
<sup>4</sup> Wall mounted units include a built-in 4.3-inch HMI display

<sup>5</sup> Floor mounted cabinets include a 7-inch HMI display

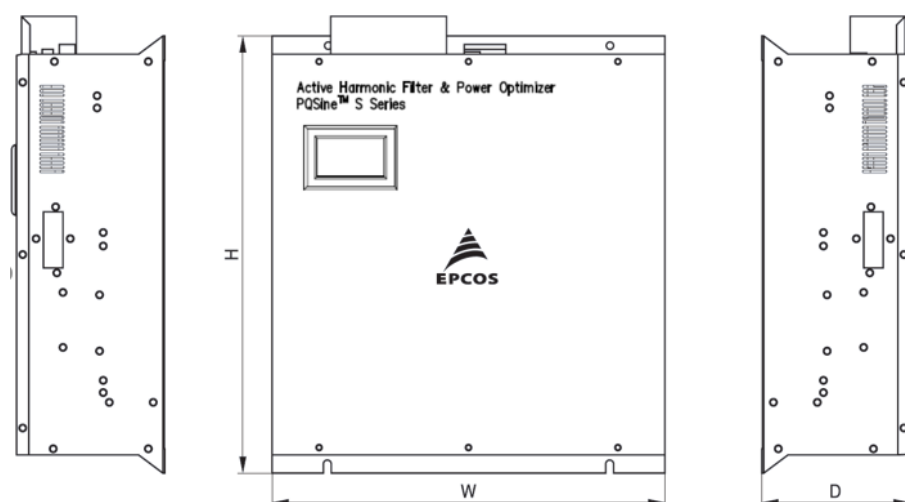


## Dimensional drawings

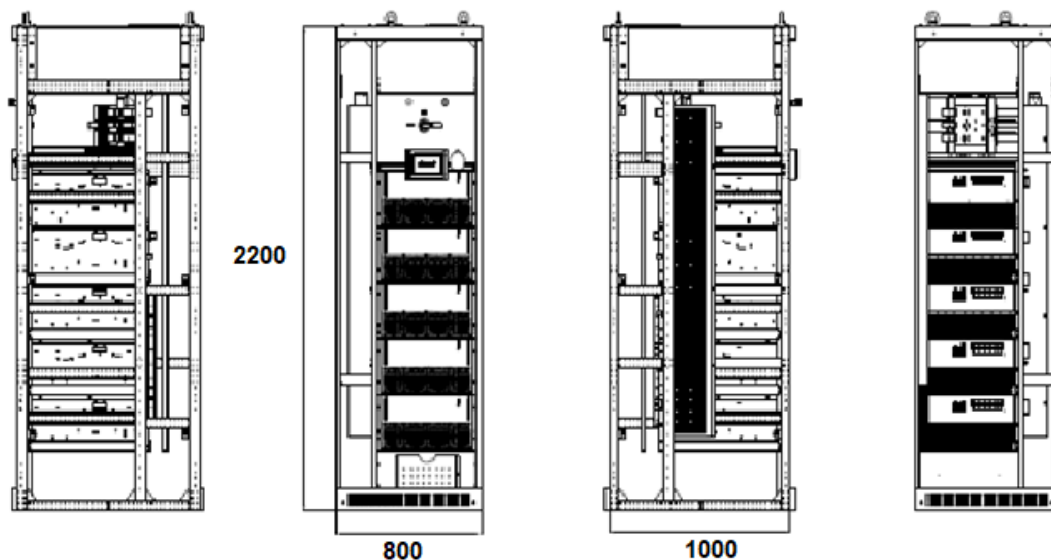
### a) Rack modules



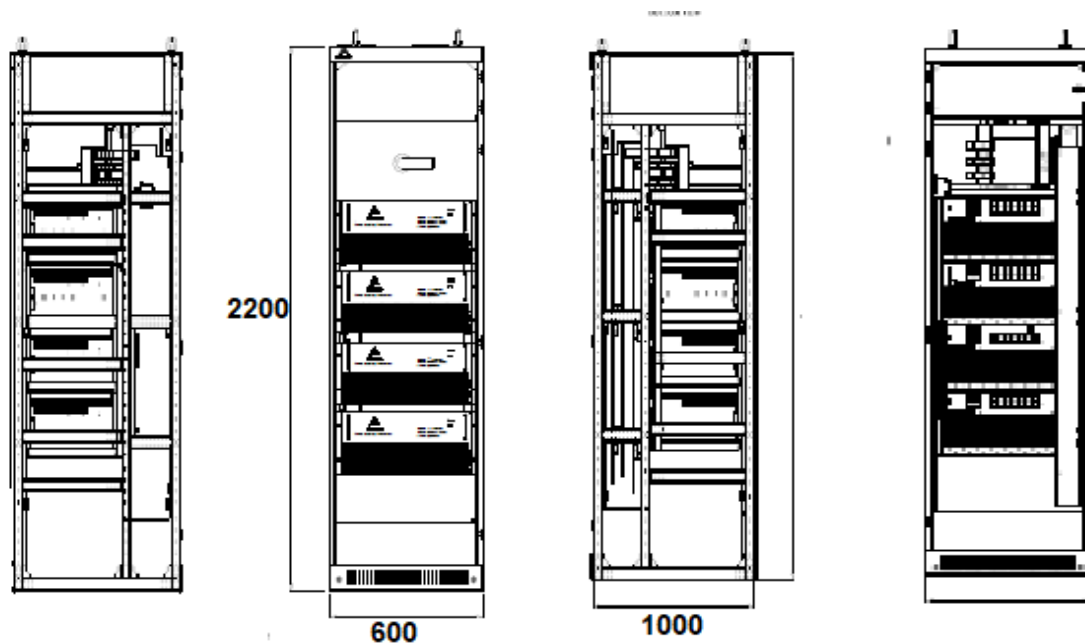
### b) Wall modules



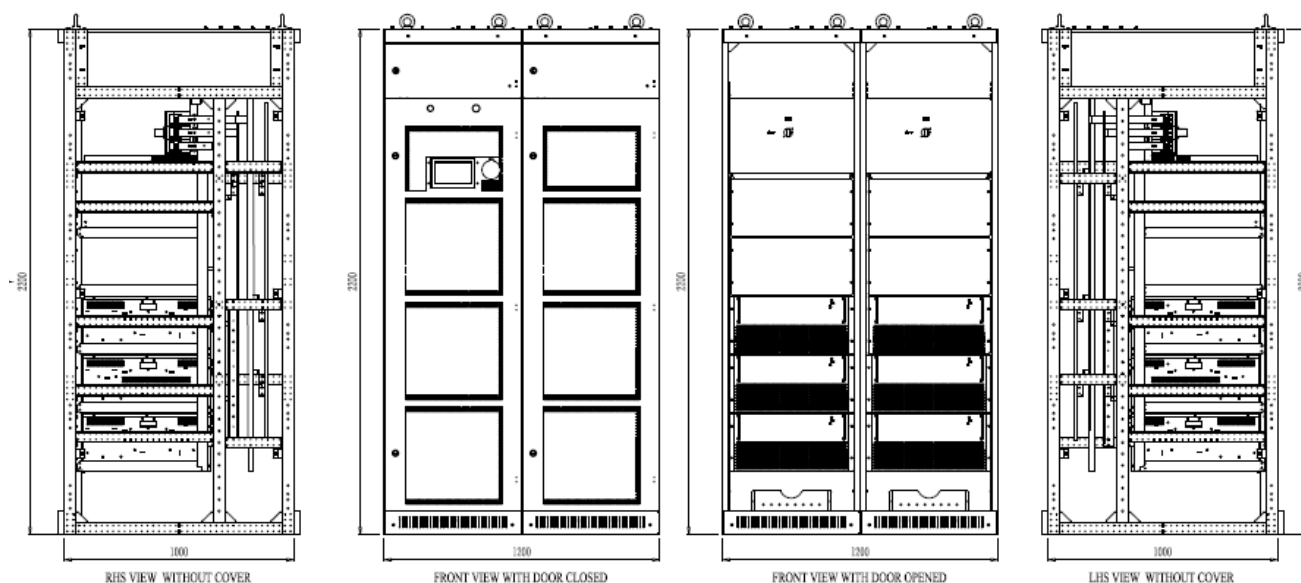
c) Cabinet with 800 mm width



d) Cabinet with 600 mm width



### e) Multicabinet drawings (1200 mm / 1600 mm width) \*



\*For all the cabinets the default cable entry is from top, however bottom cable entry can also be possible on special request  
The standard cabinet installation should have a minimum clearance of 600mm at front and rear side in order to ensure uninterrupted air flow and proper ventilation. The module arrangement in all the cabinet pictures above is a sample representation of how the rack modules are arranged inside. The actual design depends on the number of module inside each respective cabinets.

### Selection of cable and accessories

Rated current	25 A 35 A	50 A 60 A	75 A 90 A 100 A	150 A	200 A 250 A	300 A 350 A	400 A	450 A	500 A	550 A	600 A
Power terminal screw	M6	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8
PE terminal screw	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6	M6
Rated current of Breaker	50 A	80 A	120 A	200 A	300 A	400 A	630 A	630 A	630 A	630 A	800 A
CT cable	Below 15 m: RVVSP 2 * 2.5 mm <sup>2</sup> ; 15 ... 30 m: RVVSP 2 * 4 mm <sup>2</sup> ; above 30 m: contact TDK Recommended twisted pair cable, do not install in parallel with power cable in order to avoid										
Range of CT ratio	150/5 ... 10000/5										
CT accuracy class	0.5 or better (open loop/load side) and 0.2 or better (closed loop/grid side)										
CT output power	Minimum 5 VA										
Quantity of CTs	2 CT units for 3P3W and 3 CT units for 3P4W										

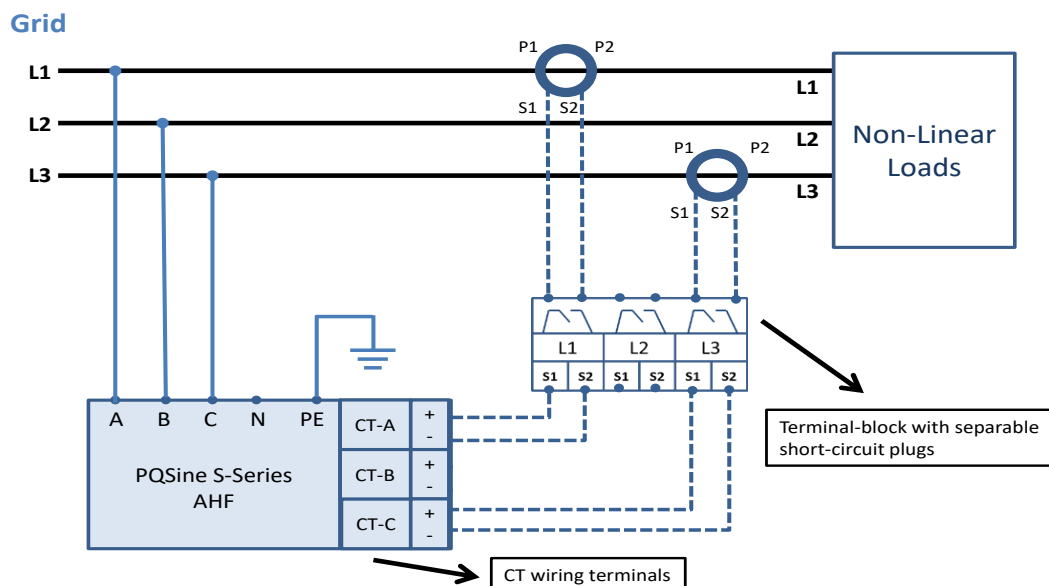
#### Remarks:

1. The cable size selection of N phase should be capable of carrying up to 3 times to phase if the zero-sequence harmonic as a main part of total harmonic current.
2. The CT rated primary current should be 1.5 to 4 times of the maximum load current and rated secondary current should be 5 A.
3. The rated current selection of breaker should be 1.2 to 2 times of the AHF rated capability.
4. For all specific information about the cable, breaker, CT selection, which is not included in the table, please contact TDK Electronics.

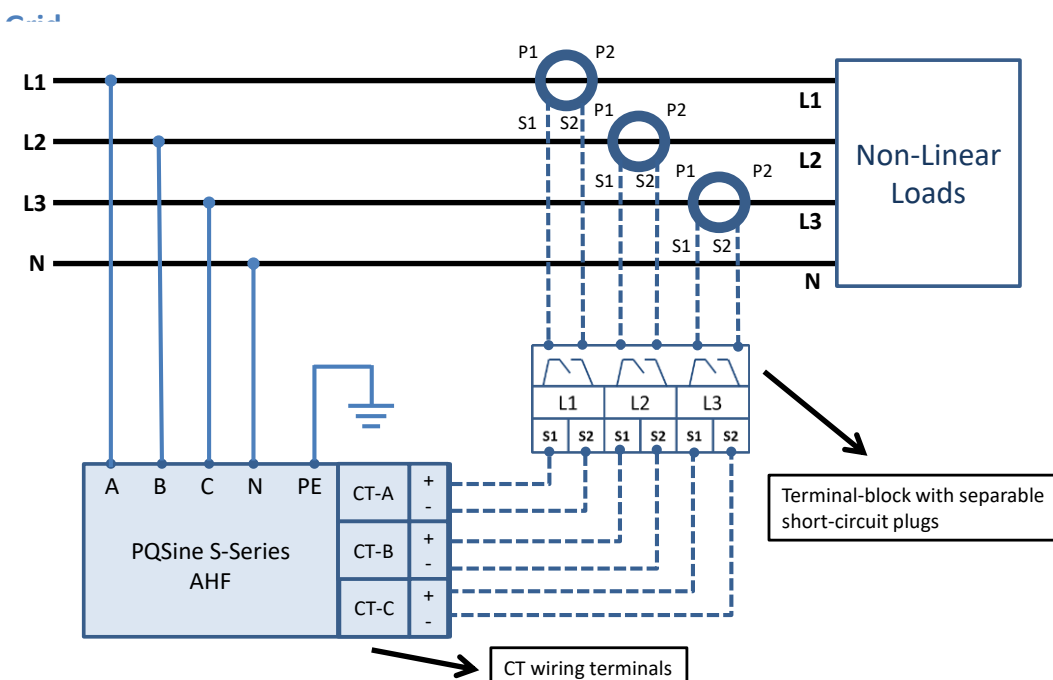
**Note: Current transformers are not included in the delivery and must be purchased separately**

## Connection diagram

### a) 3P3W

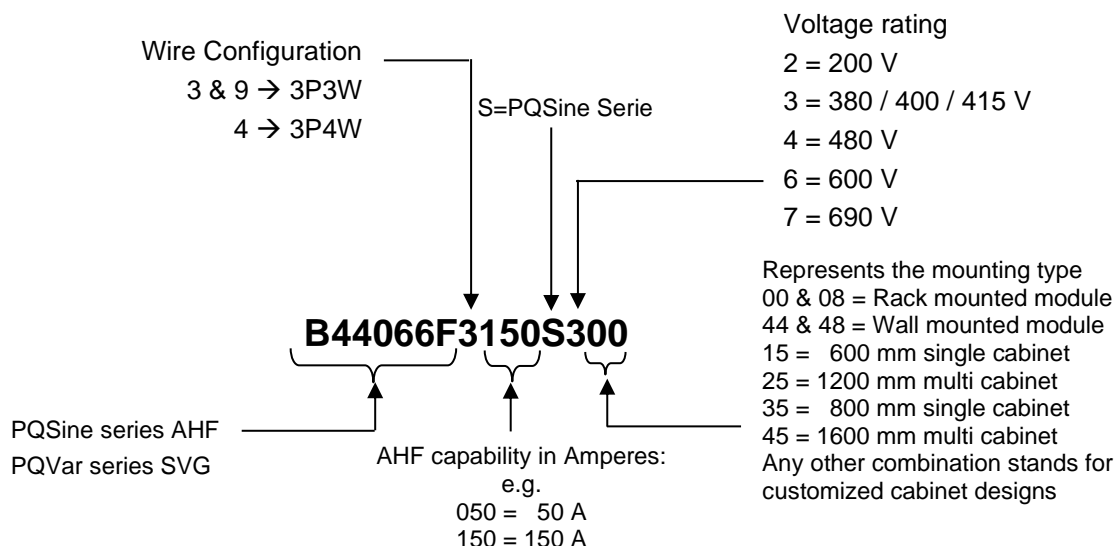


### b) 3P4W



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

## Ordering code nomenclature and decoding table



## Display of ordering codes for TDK Electronics products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.** Detailed information can be found on the Internet under [www.tdk-electronics.tdk.com/orderingcodes](http://www.tdk-electronics.tdk.com/orderingcodes).

## Cautions and Warnings

- Please also read and follow the cautions and warnings in the AHF S-series operating and installation instruction manual
- The active harmonic filter (AHF) is applicable to industrial occasion, in parallel connection with harmonic source in power grid and serving the purpose of harmonic suppression.
- Please ensure that no power-factor compensation systems, **which are not de-tuned**, are connected to the same grid. Otherwise, interactions between the AHF and the compensation systems could occur.



**HIGH VOLTAGE: Risk of death due to short circuits and electric shock if the active filter is opened while connected to the AC mains or for up to 30 minutes after being disconnected.**

- All interventions involving opening the device cover, removing or installing the connection cable may only be performed by qualified personnel.
  - Make sure the filter is grounded. Good grounding is required to prevent any risk from leakage current.
  - Keep away from liquids.
  - Avoid exposure to excessive humidity.
  - Switch off the power before removing or opening the covers/doors.
- Installation of the active filter, inspections for proper operation, and certain troubleshooting measures may only be performed by qualified personnel. All other measures may be performed by people who have read these instructions.
- All AHF must be installed in a clean, dry location, e.g. in sufficiently ventilated or air-conditioned electric cabinets or closed electric rooms.
- Contaminants such as oils, liquids, corrosive vapors, abrasive debris, dust and aggressive gases must be kept out of the filter enclosure.



**Conductive dust may cause damage to AHF.** Ensure that installation site of AHF is free of conductive dust.

- The AHF is used to compensate reactive power, so AHF capacity should be considered in accordance with harmonic content. Insufficient capacity affects the performance of compensation.
  - For AHF to compensate, external CTs are required to detect the current.
  - To ensure AHF has good reliability and to avoid overheating, do not block or cover the air inlet/outlet
  - Make sure that no corrosive gas and conductive dust exist in work environment and that the working temperature is ranged between -10 °C and +40 °C. AHF current will start to derate if operated outside this temperature range.
  - User needs to specify it particularly when grid voltage distortion rate is higher than 15% so that the possibility of other alternate/add on solutions can be discussed.
  - The ventilation clearance requirement varies from case to case, depending on the panel design, number of units in the panel, horizontal / vertical/ wall mounting etc. So please make sure to seek expert opinion on ventilation requirement needed for the selected solution. Sufficient ventilation should be provided to the modules/wall mounted units /cabinets! For the standard enclosure having horizontal modules mounted horizontally a minimum clearance of 600 mm should be allowed on the front and rear side of the enclosure
- Seal the AHF in its original packing materials to avoid damage. If you don't install AHF immediately after you receive it, do store it in a dry, well-ventilated indoor environment. Make sure the temperature is between -40°C~70°C, and relative humidity between 5%~95%.

## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet ([www.tdk-electronics.tdk.com/material](http://www.tdk-electronics.tdk.com/material)). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.
7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements ("CSR") TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.

## Important notes

8. The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, FilterCap, FormFit, InsuGate, LeaXield, MediPlas, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PiezoBrush, PlasmaBrush, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SurfIND, ThermoFuse, WindCap, XieldCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at [www.tdk-electronics.tdk.com/trademarks](http://www.tdk-electronics.tdk.com/trademarks).

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