

EPCOS Product Brief 2017

Power Quality Solutions

Static Var Generator (SVG) PQvar Series

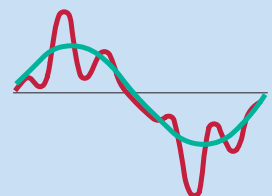
EPCOS has been committed to providing a range of Power Factor Correction (PFC) of critical components and Power Quality Solutions (PQS). On behalf of the rapid development of industry and infrastructure the use of power electronic loads in operating conditions is every time more and more used. Conventional capacitive tuning reactance compensation and contactors or thyristors, cannot fully meet the higher requirements of customers, especially the reactive power rapidly changing situations. At the same time as the traditional reactive power compensation step group stepped switching, compensation capacity cannot be continuously adjusted, easily lead to over-fill and under-fill of the case.

The Static Var Generator (SVG) PQvar series

- Fast response, time < 15 ms, with a good low-voltage characteristics
- Efficient compensation, after compensating the target power factor can reach a value of 1
- Run loss, more energy-efficient, long-term safe and reliable operation
- Modular design, compact structure, small footprint, simple operation, easy maintenance



PQS



Static Var Generator (SVG) PQvar Series

EPCOS Static Var Generator (SVG) PQvar series is a Flexible AC Transmission Systems (FACTS) controller, whose capacitive or inductive output current can be controlled independently of the AC system voltage.

The SVG PQvar is a parallel device in grid system and the main circuit is based on a three-phase voltage-source converter (VSI) topology. External CT measures system load current, external DSP helps calculate

and analyze the reactive current. SVG PQvar controls PWM signals and sends control message to IGBT modules, generate reactive current, to improve system power factor.

SVG PQvar provides faster compensation compared to conventional compensation systems such as capacitor banks. Thus, it is an ideal solution especially for fast loads of inductive or capacitive power.

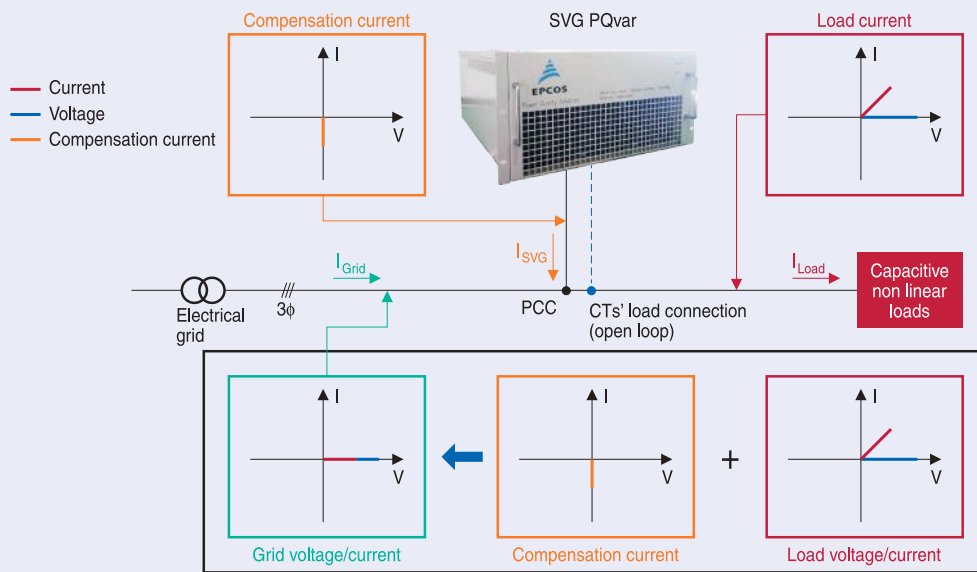
Static Var Generator (SVG) PQvar series

Operating principle of SVG PQvar

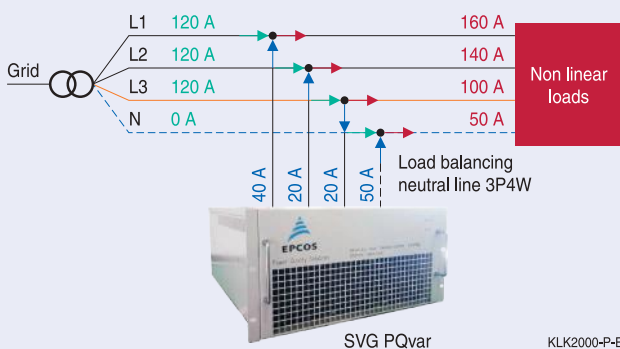


SVG PQvar generates a compensation current working as a dynamic current source, monitoring the power factor value of power system, and generates real-time compensation current in order to ensure to reach the set target $\cos \phi$.

Compensation of reactive power with SVG



SVG PQvar load balancing for 3P3W and 3P4W



SVG PQvar can balance load between phases and unloaded neutral wire for input voltage connection systems such as three phase wires (3P3W) and three phase four wires (3P4W). Therefore, it is suitable for applications with unbalanced loads and reactive power as present in industry, electricity distribution in rural areas and much more.

Static Var Generator (SVG) PQvar Series

General information

The SVG PQvar series is a static synchronous compensator (STATCOM) system designed to reduce the reactive power improving the power factor and consequently reduce costs. SVG PQvar series monitors the current signal and compensates the unwanted elements of the measured current.

Features

- PQvar SVG can be considered as controllable reactive current source, power factor value can be achieved more than > 0.99 , meanwhile, no over and under-compensation happens.
- Extremely rapid dynamic compensation, reaction time is less than $50 \mu\text{s}$, state response time is less than 15 ms.
- PQvar SVG output reactive power, no need the traditional capacitor bank, no change of system impedance; it means that no resonant could happen. SVG is an active compensation device; this reactive current generator can avoid resonance.
- PQvar SVG can compensate both inductive reactive power and capacitive reactive power, when installed with traditional capacitor banks, it can compensate reactive power in any scope.
- PQvar SVG is an active power compensation device in which its compensation is almost not affected by the grid. Thus, if the system voltage drops down, PQSine SVG can compensate the required reactive power tracking power quality requirements.
- PQvar SVG real compensation capacity is equal to the installed capacity, and reaches the same compensation result, SVG installed capacity can be 20% to 30% lower compare to capacitor banks.

Typical applications

Fast reactive power suppression e.g. for:

- Data centers
- UPS systems
- Green power generation (e.g. photovoltaics and wind turbines)
- Sensitive equipment manufacturing (e.g. silicon wafer production, semiconductor production)
- Industrial production machines
- Electrical welding systems
- Plastic industry machinery (extruders, injection molders)

Safety features

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

Static Var Generator (SVG) PQvar Series

Depending on your needs, EPCOS offers either complete panels, wall mounted cabinets or modules. The state of the art modular design of SVG PQvar series offers the advantage that in case of service need, the downtime keeps at a minimum.

PQvar wall-mounted panel



PQvar floor-mounted panel



PQvar module

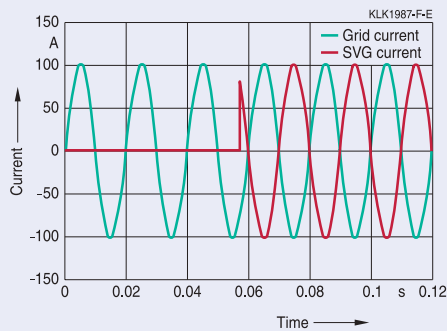


Low Voltage Static Var Generator (SVG) PQvar LV-Series

SVG PQvar compensation performance

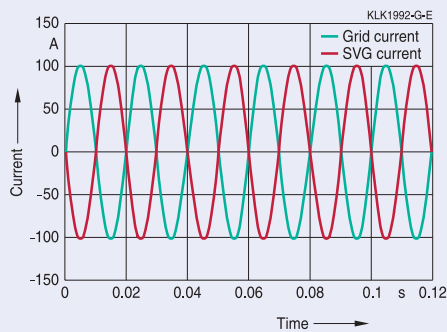
Fast reaction

Extremely rapid reactive power generation, achieve PF target right at the SVG PQvar switch on.



Perfect compensation

SVG PQvar generates the same value as system reactive but opposite angel compensation current to the system, ensure perfect compensation result.



High performance

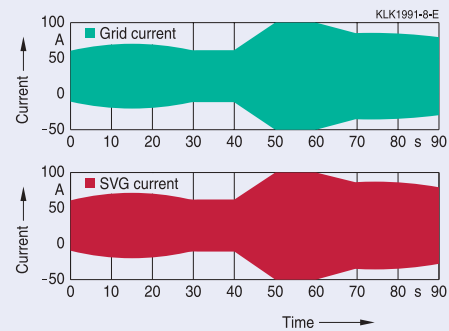
- Reactive power compensation up to $\cos \varphi = 0.99$
- Load balancing between phases
- Fully inductive and capacitive current compensation from 0 ... 100%

Fast compensation response

- Compensation in real-time with steady state response time less than 15 ms
- Immediate load change of reaction time less than 50 μ s
- Accurate power factor control, no over-compensation, no under-compensation, no system harmonic resonance. Capacity will not be affected in case of system voltage drop, output also equal to rated capacity itself.

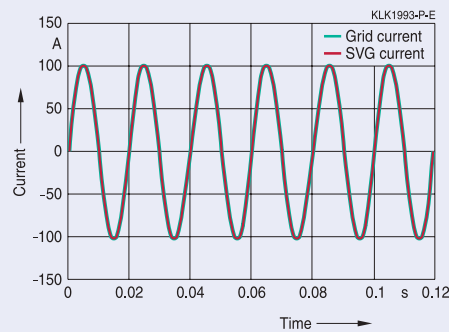
Real-time tracking

While system reactive current changes, SVG PQvar also can generate dynamic real time compensation current to satisfy the changing power system requirement.



Reverse and overlapping

Reactive current generated by SVG PQvar, reversed waveform overlaps with the power system reactive current.



Modular design, independent for easy installation and commissioning

- SVG PQvar modular design is based on concept of components, the application just like traditional power factor compensation mode
- Maximum rated capacity of one single module is 100 kvar, one single panel support 500 kvar output capacity
- Customizable cabinet
- Easily to operate, maintain and transport

Different combinations

- SVG PQvar
- SVG PQvar with capacitor banks
- SVG PQvar with AHF (reactive power and harmonic compensation)

Low Voltage Static Var Generator (SVG) PQvar LV-Series

Technical data and specifications of low-voltage SVG PQvar series		
Rated voltage	400 V; -40% ~ +20%	
Mains frequency	50/60 Hz (range: 45 ~ 63 Hz)	
Parallel operation	Unlimited	
Response time	< 15 ms	
Overall efficiency	> 97%	
Power grid structure	3P3W / 3P4W	
Current transformers	150/5 ~ 10000/5	
Circuit topology	3-level	
Single-module compensation capacity	30/50 kvar	100 kvar
Module net weight	35 kg	48 kg
Dimensions (W × D × H mm)	30 kvar: 440 × 445 × 150 (module) 50 kvar: 500 × 510 × 190 (module)	100 kvar: 500 × 470 × 270 (module)
Cooling mode	Smart air cooling: 220 L/sec	Smart air cooling: 405 L/sec
Target power factor	Adjustable from -1 to +1	
Cabinet mounting	Floor-mounted, wall-mounted	
Communication ports	RS485, CAN, and network port	
Communication protocols	Modbus and PMBus	
Noise level	< 65 dB (depending on the model)	
Protection functions	Over-voltage, under-voltage, short-circuit, inverter bridge inverse, over-compensation, and so on	
Operating temperature	-10 to +40 °C	
Relative humidity	5% ... 95%, non-condensing	
Protection class	IP20 (other IP classes are customizable)	
Panel color	RAL7035 light grey	
Altitude	1500 m, 1% derating per 100 m plus	
General safety requirements for SVG PQvar use and operation area	EN 50178:1997/ IEC 50178:1997	
SVG PQvar EMC requirements	EN 61000_6_2(2005)/ EN55011, GROUP1, CLASS A IEC 61000_6_2(1999)/ CISPR11, GROUP1, CLASS A	
SVG PQvar performance requirements	EN 50091-3/ IEC 62040-3/ AS 62040-3(VFI SS 111)	

Low Voltage Static Var Generator (SVG) PQvar LV-Series



400 V PQvar series – 3P4W systems¹⁾

Type	Reactive power kvar	System min./max. voltage V		Mounting variant	Approx. weight kg	Approx. dimensions (W x D x H) mm	Ordering code
PQSF8030V344	30	240	480	Wall-mounted	35	440 x 150 x 445	B44066F8030V344
PQSF8050V344	50	240	480	Wall-mounted	35	500 x 190 x 560	B44066F8050V344
PQS8100V344	100	240	480	Wall-mounted	48	504 x 267 x 545	B44066F8100V344
PQSF8100V315	100	240	480	Floor-mounted	198	600 x 1000 x 2200	B44066F8100V315
PQSF8200V315	200	240	480	Floor-mounted	246	600 x 1000 x 2200	B44066F8200V315
PQSF8250V315	250	240	480	Floor-mounted	281	600 x 1000 x 2200	B44066F8250V315
PQSF8300V315	300	240	480	Floor-mounted	294	600 x 1000 x 2200	B44066F8300V315
PQSF8400V315	400	240	480	Floor-mounted	342	600 x 1000 x 2200	B44066F8400V315
PQSF8500V315	500	240	480	Floor-mounted	540	2 x 600 x 1000 x 2200	B44066F8500V315
PQSF8600V315	600	240	480	Floor-mounted	588	2 x 600 x 1000 x 2200	B44066F8600V315
PQSF8750V315	750	240	480	Floor-mounted	671	2 x 600 x 1000 x 2200	B44066F8750V315

400 V PQvar series – 3P3W systems¹⁾

Type	Reactive power kvar	System min./max. voltage V		Mounting variant	Approx. weight kg	Approx. dimensions (W x D x H) mm	Ordering code
PQSF6030V344	30	240	480	Wall-mounted	35	440 x 150 x 445	B44066F6030V344
PQSF6050V344	50	240	480	Wall-mounted	35	500 x 190 x 560	B44066F6050V344
PQSF8100V344	100	240	480	Wall-mounted	48	504 x 267 x 545	B44066F8100V344
PQSF6100V315	100	240	480	Floor-mounted	198	600 x 1000 x 2200	B44066F6100V315
PQSF6200V315	200	240	480	Floor-mounted	246	600 x 1000 x 2200	B44066F6200V315
PQSF6250V315	250	240	480	Floor-mounted	281	600 x 1000 x 2200	B44066F6250V315
PQSF6300V315	300	240	480	Floor-mounted	294	600 x 1000 x 2200	B44066F6300V315
PQSF6400V315	400	240	480	Floor-mounted	342	600 x 1000 x 2200	B44066F6400V315
PQSF6500V315	500	240	480	Floor-mounted	540	2 x 600 x 1000 x 2200	B44066F6500V315
PQSF6600V315	600	240	480	Floor-mounted	588	2 x 600 x 1000 x 2200	B44066F6600V315
PQSF6750V315	750	240	480	Floor-mounted	671	2 x 600 x 1000 x 2200	B44066F6750V315

400 V SVG PQvar series – modules

Type	Reactive power kvar	System min./max. voltage V		Connection variant	Approx. weight kg	Approx. dimensions (W x D x H) mm	Ordering code
PQVM8030V300	30	240	480	3P4W	35	440 x 445 x 150	B44066F8030V300
PQVM8050V300	50	240	480	3P4W	35	500 x 510 x 190	B44066F8050V300
PQVM8100V300	100	240	480	3P4W	48	500 x 470 x 270	B44066F8100V300
PQVM6030V300	30	240	480	3P3W	35	440 x 445 x 150	B44066F6030V300
PQVM6050V300	50	240	480	3P3W	35	500 x 510 x 190	B44066F6050V300
PQVM6100V300	100	240	480	3P3W	48	500 x 470 x 270	B44066F6100V300

Accessories

Product description	Ordering code
Extra-large HMI Color LCD Display, 7 inch, including 4 m connection cable	B44066F9999V230

Other types/designs upon request

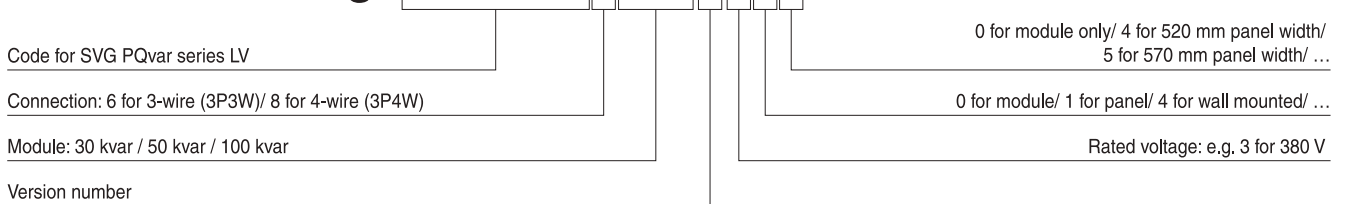
¹⁾ In case of floor-mounted systems include a 7" TFT color control display. In case of wall-mounted systems include a 4.3" LCD touch color screen. External current transformers are not included.

Low Voltage Static Var Generator (SVG) PQvar LV-Series

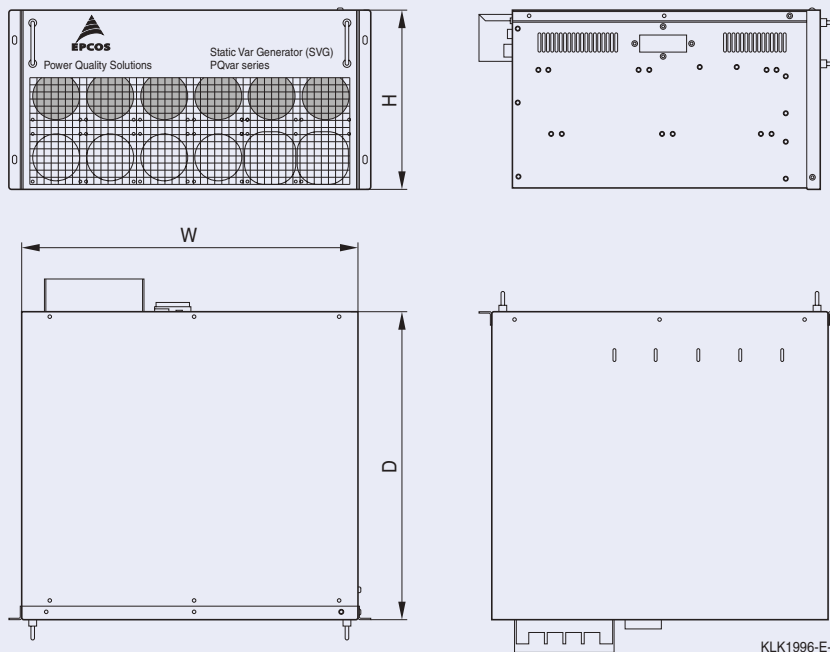
Display of ordering codes for EPCOS products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications and the website of EPCOS, 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.epcos.com/orderingcodes.

E.g. B44066F8050V300



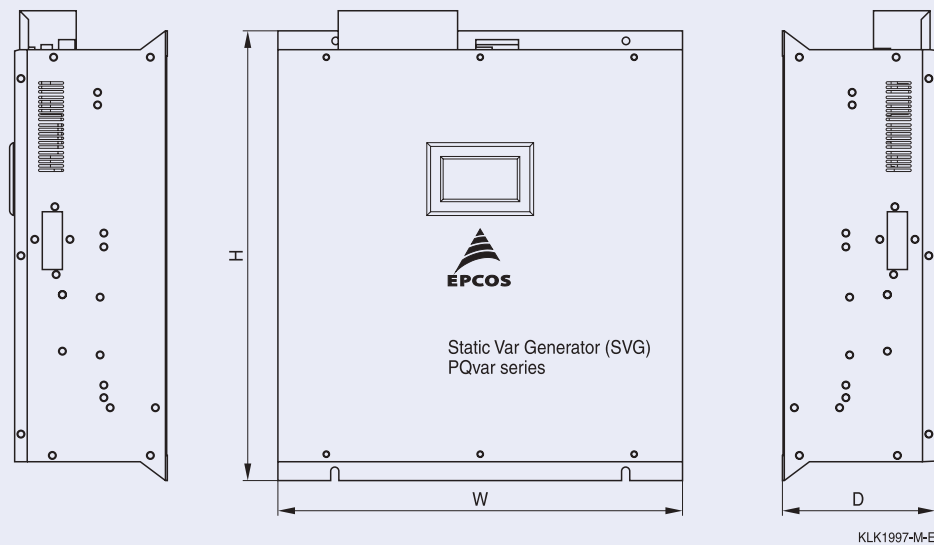
PQvar module 30 kvar, 50 kvar and 100 kvar



Model	W (width) mm	D (depth) mm	H (high) mm
30 kvar module	440	405	150
50 kvar module	500	510	190
100 kvar module	500	470	269

Hybrid PFC-Solution, PQvar and Classic PFC, Managed by Advanced Multi Controller (AMC)

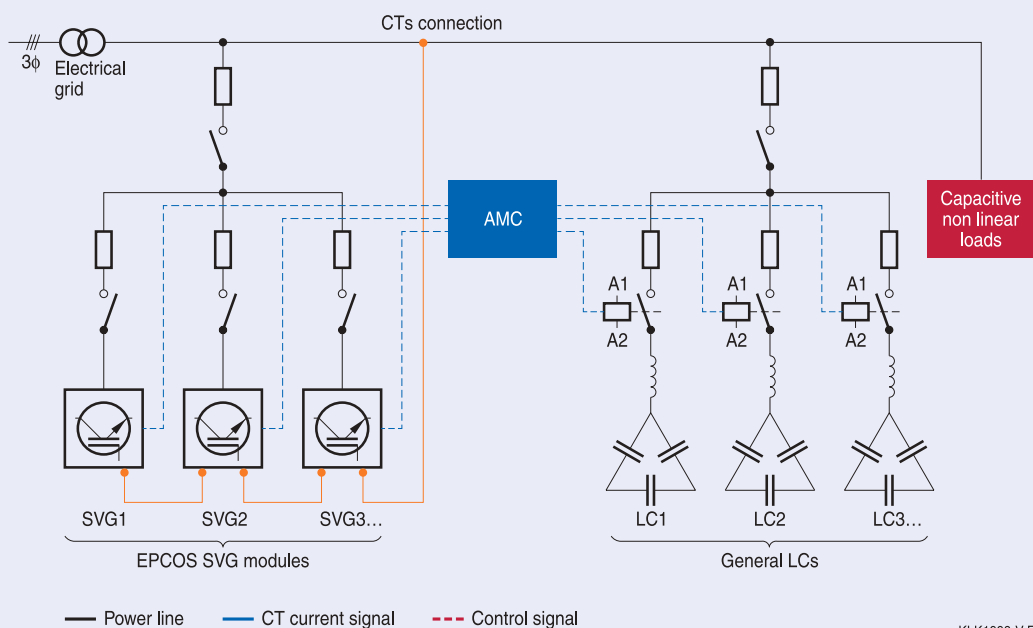
PQvar wall-mounted 30 kvar, 50 kvar and 100 kvar



Model	W (width) mm	D (depth) mm	H (high) mm
30 kvar wall-mounted	440	160	481
50 kvar wall-mounted	500	191	560
100 kvar wall-mounted	504.5	545	271

SVG PQvar series plus discrete compensation (SVG modules plus LC reactive compensation)

Operating principle of SVG with LC banks and AMC



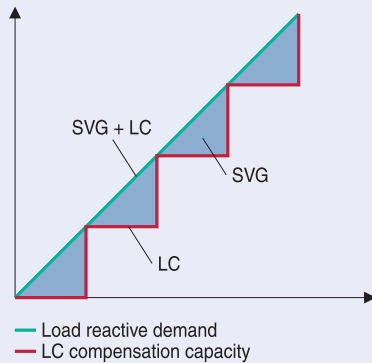
Hybrid PFC-Solution, PQvar and Classic PFC, Managed by Advanced Multi Controller (AMC)

SVG PQvar series plus discrete compensation (SVG modules plus LC reactive compensation)

Performance comparison between SVG with LC banks discrete compensation and traditional reactive compensation

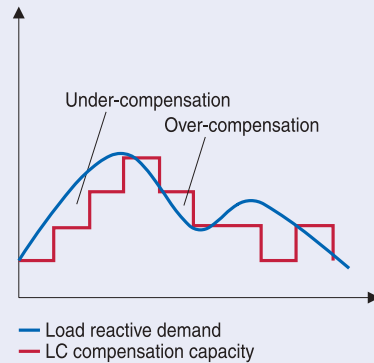
In SVG with LC banks

- LCs can implement stepwise switching compensation
- SVG modules can cover all blind points and implements stepless switching



In traditional reactive compensation

- It may cause over-compensation and/ or under-compensation



KLK1988-N-E

Technical data and specifications of PQvar Advanced Multi Controller (AMC) unit

Operating voltage | 24 V DC

Compensation performance

Target PF | -1 to +1
 Reactive power compensation rate | > 99% (target PF is 1)
 Response time | < 15 ms
 Reaction time | < 50 μ s

Capacitor switching performance

Compensation method | Three-phase/ split/ mixed compensation
 Capacitance coding method | Optional
 Capacitor switching method | Stack/ normal/ cycle/ individual
 Switching manner | Auto/ manual

External ports

RS-485 port 1 | Communication with SVG modules
 RS-485 port 2 | External communication port
 Network port | External communication port
 USB port | Code upgrading port
 Temperature detection | Measuring system's operating temperature or ambient temperature
 Fan controlling dry contact | Controlling SVC cooling fan
 Alarm indicator dry contact | For reserved external alarm indicator

Hybrid PFC-Solution, PQvar and Classic PFC, Managed by Advanced Multi Controller (AMC)

Technical data and specifications of PQvar Advanced Multi Controller (AMC) unit

External ports

Control output contact	Control outputs, up to 18 at most Contact support: 120 V AC / 10 A, 220 V AC / 8 A, 400 V AC / 3 A, 110 V DC / 0.2 A, 60 V DC / 0.6 A, 24 V DC / 5 A Level signal: 12 V DC / 30 mA
Reserved dry contact	One input and one output
Communication protocol	MODBUS
Protection functions	Under-voltage, over-voltage, under-frequency, over-frequency, phase failure, high harmonic voltage, SVG over-load, SVG over-temperature and others
Display	7-inch touch screen

Installation requirements

Power consumption	< 25 W
Protection class	IP41 for the front panel, and IP20 for the rear panel

Operating environment

Operating temperature	-20 °C to +60 °C
Altitude	≤ 2500 m
Humidity	≤ 95%
Storage temperature	-40 °C to +70 °C
CT ratio	150/5 ~ 10000/5



PQvar AMC (Advanced Multi Controller)

Product description	Ordering code
EPCOS Advanced Multi Controller (AMC) unit – HMI colour display 7 inch for switching thyristors	B44066F9989V230
EPCOS Advanced Multi Controller (AMC) unit – HMI colour display 7 inch for switching contactors	B44066F9988V230

Component selection table for detuned PFC (classic)

Selection table

De-tuning factor %	Effect. filter output kvar	Capacitor ordering code	Reactor ¹⁾ ordering code	Contactore ordering code	Cable ²⁾ cross section mm ²	Fuse ²⁾ rating A
Grid voltage: 400 V – 50 Hz detuned filters components selection table						
5.67	12.5	1xB25667C4237A375	B44066D5012*400	B44066S1810J260	6	35
5.67	25	1xB25667C4467A375	B44066D5025*400	B44066S3210J230	16	63
5.67	50	2xB25667C4467A375	B44066D5050*400	B44066S6210J230	50	125
5.67	100	4xB25667C4467A375	B44066D5100*400	B44066S9910J230	120	250
7	25	1xB25667C4467A375	B44066D7025*400	B44066S3210J230	16	63
7	50	2xB25667C4467A375	B44066D7050*400	B44066S6210J230	50	125
7	10	4xB25667C4467A375	B44066D7100*400	B44066S9910J230	120	250
14	20	1xB25667C4347A375	B44066D1420*400	B44066S2410J230	10	50
14	25	1xB25667C4417A365	B44066D1425*400	B44066S3210J230	16	63
14	50	2xB25667C4417A365	B44066D1450*400	B44066S6210J230	50	125
14	100	4xB25667C4417A365	B44066D1499*400	B44066S9910J230	120	250

Hybrid PFC-Solution, PQvar and Classic PFC, Managed by Advanced Multi Controller (AMC)



Component selection table for dynamic PFC (classic)

Selection table						
De-tuning factor %	Effect. filter output kvar	Capacitor ³⁾ quantity and ordering code	Reactor ¹⁾ quantity and ordering code	Contactore ordering code	Cable ⁴⁾ cross section mm ²	Fuse ⁴⁾ rating A
Grid voltage: 400 V – 50 Hz detuned filters components selection table						
5.67	25	2xB25667C5237A375	1xB44066D5025*400	1xB44066T0025E402	16	63
5.67	50	2xB25667C5347A375	1xB44066D5050*400	1xB44066T0050E402	50	125
7	12.5	2xB25667C5237A375	1xB44066D7012*400	1xB44066T0010E402	10	35
7	25	2xB25667C5237A375	1xB44066D7025*400	1xB44066T0025E402	16	63
7	50	2xB25667C5347A375 1xB25667C5237A375	1xB44066D7050*400	1xB44066T0050E402	50	125
7	100	4xB25667C5347A375 2xB25667C5237A375	1xB44066D7100*400	1xB44066T0100E402	120	250
14	12.5	1xB25667C5966A375 1xB25667C5127A375	1xB44066D1412*400	1xB44066T0010E402	10	35
14	25	1xB25667C5167A375 1xB25667C5237A375	1xB44066D1425*400	1xB44066T0025E402	16	63
14	50	3xB25667C5287A375	1xB44066D1450*400	1xB44066T0050E402	50	125
14	100	5xB25667C5347A375	1xB44066D1499*400	1xB44066T0100E402	120	250

¹⁾ EPCOS offers reactors with slightly different specifications (e.g. dimensions) that can be used for the same application although sometimes with slightly different resulting performances. These types are distinguished by different letters at digit 12 of the product code.

²⁾ The above mentioned values are guidelines for operation in normal conditions at ambient temperatures up to +35 °C. Various parameters such as temperature inside the cabinet, cable quality, maximum cable insulation temperature, single or multi core cable, cable length and laying system have to be considered for a proper selection. Upgrade/ downgrade accordingly if conditions differ. Additionally do not forget to consider the regulations and standards which are valid for your country.

³⁾ In some cases special interconnection of the single-phase capacitors needed; in case you are not familiar please contact our sales office for further details.

⁴⁾ The above mentioned values are guidelines for operation in normal conditions at ambient temperatures up to +35 °C. Various parameters such as temperature inside the cabinet, cable quality, maximum cable insulation temperature, single or multi core cable, cable length and laying system have to be considered for a proper selection. Upgrade/ downgrade accordingly if conditions differ. Additionally do not forget to consider the regulations and standards which are valid for your country.

PQvar Advanced Multi Controller (AMC) unit



Medium Voltage Static Var Generator (SVG) PQvar MV-Series

Technical data and specifications of medium voltage SVG PQvar MV-series			
Rated voltage ¹⁾	6 × (1±20%) kV	10 × (1±20%) kV	35 × (1 ± 20%) kV
Mains frequency	50 Hz (±2 Hz) / 60 Hz (±2 Hz) (not adaptive)		
Parallel operation	It is available to meet the demand of larger capacity		
Overall efficiency	> 99.2% (excluding transformer)		
Power grid structure	Three-phase, three-wire (3P3W)		
Circuit topology	2 level H-bridge series		
Single-module compensation capacity	2, 3, 3.5, 4, 5, 6, 7, 8, 9, 10, 12 Mvar		
Full response time	< 5 ms (10% ... 90%)		
Target power factor	Meet design requirements within capacity range		
Active power loss	< 0.8% rated power		
Mounting	Cabinet		
Cabinet weight	2000 kg (2 kvar / 6 kV), 3000 kg (3 kvar / 6 kV), 4500 kg (5 kvar / 6 kV), 5500 kg (7 kvar / 6 kV), 3500 kg (3.5 kvar / 10 kV), 4500 kg (5 kvar / 10 kV), 6000 kg (8 kvar / 10 kV), 7500 kg (12 kvar / 10 kV)		
Cooling mode	Air cooling		
Communication ports	RS485/ Ethernet communication protocol: modbus TCP/IP or RTU		
Noise level	< 70 dB (A)		
Operation mode	Constant power factor, constant reactive and constant voltage control are optional		
Communication interface	Optional remote RS485-interface		
Operation display	Operation parameter setting, touch key-press operation, multiple parameter display, operation data recording, fault recording and broadcasting, parameter and record data backup, remote control and parameter downloading, remote update of controller software		
Display accuracy	±2% FS		
Expansion capability	Parallel operation is available to meet the demand of larger capacity		
Protection functions	Over-voltage, under-voltage, fault-phase and default phase of power grid, equipment overcurrent, overvoltage of DC busbar, automatic current limiting protection in case of overload, overcurrent protection of power module, control power supply anomaly protection, communication fault protection, controller anomaly protection, control system power-off protection		
Operating temperature	-10 to +45 °C		
Storage temperature	-20 to +65 °C		
Relative humidity	< 90% (when the temperature is +25 °C)		
Protection class	IP20		
Panel color	RAL7035 light grey		
Altitude	< 2500 m		
General safety requirements for SVG use and operation area	EN ISO 13849-1		
SVG EMC requirements	IEC 61000-4-5:2005		

¹⁾ Other voltages upon request

Medium Voltage Static Var Generator (SVG) PQvar MV-Series



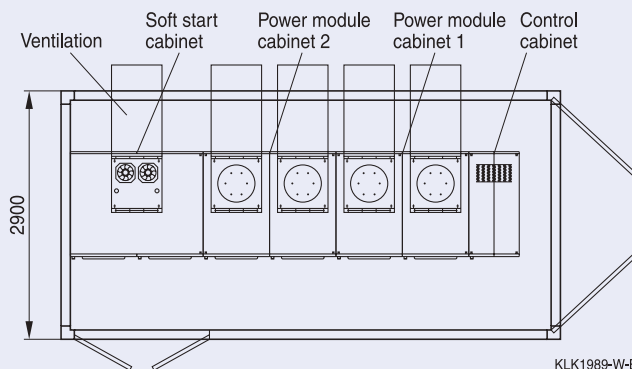
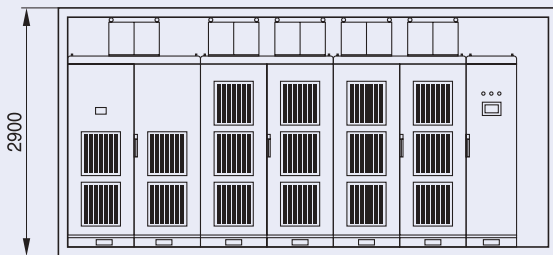
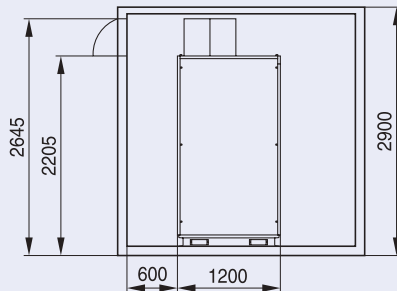
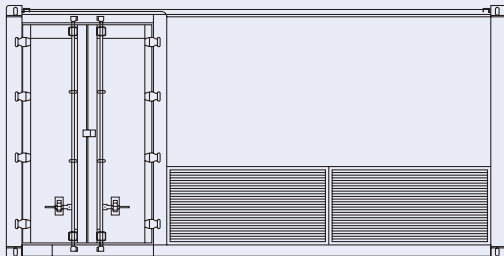
6 kV SVG PQvar series – 3P3W systems					
Type	Rated module reactive power kvar	Voltage class kV	Mounting variant	Approx. dimensions (W × D × H) mm	Ordering code
PQSF6020X061	2000	6	Floor-mounted	3400 × 1200 × 2200	B44066F6020X061
PQSF6030X061	3000	6	Floor-mounted	5400 × 1200 × 2200	B44066F6030X061
PQSF6035X061	3500	6	Floor-mounted	5400 × 1200 × 2200	B44066F6035X061
PQSF6040X061	4000	6	Floor-mounted	5400 × 1200 × 2200	B44066F6040X061
PQSF6050X061	5000	6	Floor-mounted	5400 × 1200 × 2200	B44066F6050X061
PQSF6060X061	6000	6	Floor-mounted	5400 × 1200 × 2200	B44066F6060X061
PQSF6070X061	7000	6	Floor-mounted	5400 × 1200 × 2200	B44066F6070X061
PQSF6080X061	8000	6	Floor-mounted	7000 × 1200 × 2200	B44066F6080X061
PQSF6090X061	9000	6	Floor-mounted	7000 × 1200 × 2200	B44066F6090X061
PQSF6100X061	10000	6	Floor-mounted	7000 × 1200 × 2600	B44066F6100X061
PQSF6120X061	12000	6	Floor-mounted	7000 × 1200 × 2600	B44066F6120X061

10 kV SVG PQvar series – 3P3W systems					
Type	Rated module reactive power kvar	Voltage class kV	Mounting variant	Approx. dimensions (W × D × H) mm	Ordering code
PQSF6020X101	2000	10	Floor-mounted	4800 × 1200 × 2200	B44066F6020X101
PQSF6030X101	3000	10	Floor-mounted	4800 × 1200 × 2200	B44066F6030X101
PQSF6035X101	3500	10	Floor-mounted	7000 × 1200 × 2200	B44066F6035X101
PQSF6040X101	4000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6040X101
PQSF6050X101	5000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6050X101
PQSF6060X101	6000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6060X101
PQSF6070X101	7000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6070X101
PQSF6080X101	8000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6080X101
PQSF6090X101	9000	10	Floor-mounted	7000 × 1200 × 2200	B44066F6090X101
PQSF6100X101	10000	10	Floor-mounted	7000 × 1200 × 2600	B44066F6100X101
PQSF6120X101	12000	10	Floor-mounted	7000 × 1200 × 2600	B44066F6120X101

35 kV SVG PQvar series – 3P3W systems					
Type	Rated module reactive power kvar	Voltage class kV	Mounting variant	Approx. dimensions (W × D × H) mm	Ordering code
PQSF6020X351	2000	35	Floor-mounted	4800 × 1200 × 2200	B44066F6020X351
PQSF6030X351	3000	35	Floor-mounted	4800 × 1200 × 2200	B44066F6030X351
PQSF6035X351	3500	35	Floor-mounted	7000 × 1200 × 2200	B44066F6035X351
PQSF6040X351	4000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6040X351
PQSF6050X351	5000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6050X351
PQSF6060X351	6000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6060X351
PQSF6070X351	7000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6070X351
PQSF6080X351	8000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6080X351
PQSF6090X351	9000	35	Floor-mounted	7000 × 1200 × 2200	B44066F6090X351
PQSF6100X351	10000	35	Floor-mounted	7000 × 1200 × 2600	B44066F6100X351
PQSF6120X351	12000	35	Floor-mounted	7000 × 1200 × 2600	B44066F6120X351

Medium Voltage Static Var Generator (SVG) PQvar MV-Series

SVG PQvar MV-series



KLK1989-W-E

Display of ordering codes for EPCOS products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications and the website of EPCOS, 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.epcos.com/orderingcodes.

E.g. B44066F6050X061

Code for SVG PQvar series MV

Connection: 6 for 3-wire (3P3W)

Module: 20 for 2000 kvar/ 35 for 3500 kvar/ ...

Version number

1 for panel/ 2 for container

Rated voltage: e.g. 6 for 6 kV/ 10 for 10 kV/ 35 for 35 kV

Important information: 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. We expressly point out that these statements cannot be regarded as binding statements about the suitability of our products for a particular customer application. It is incumbent on the customer to check and decide whether a product is suitable for use in a particular application. This publication is only a brief product survey which may be changed from time to time. Our products are described in detail in our data sheets. The *Important notes* (www.epcos.com/ImportantNotes) and the product-specific *Cautions and warnings* must be observed. All relevant information is available through our sales offices.