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Power Quality

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Power Quality



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Generator
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RGK600



RGK750


 RGK750 (2 modules)
 RGK800 (3 modules)
 RGK900 (4 modules)


RGK900

Automatic mains failure (AMF) gen-set controllers

- Engine protection
- Programmable inputs and outputs / alarm properties
- Automatic starting of generator and load switching to stand-by emergency source in case of mains failure
- Supervision in "open transition" for contactors, motorised circuit breakers and changeover switches

type	digital inputs	digital outputs	description	price
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RGK600 series 144 x 144 mm panel mounting

- Universal supply: 7...33 VDC
- Display: Graphic LCD 128 x 80 pixels with backlight
- Measurement voltage: 50...576 VAC / Rated voltage: 480 VAC L-L
- Current input: 3PH, /5A or /1A
- Single, two and three phase voltage control - L1-L2-L3-N
- IR programming port on front panel for communication with PC
- 3 analog resistance input for oil pressure, engine temperature or fuel level control
- Customisable alarm text (8 alarms)
- Non-volatile memory for event storage
- Modbus-RTU and Modbus-ASCII protocols with expansion modules (**RGK610**)

RGK600	4	6	basic AMF gen-set controller with "W" or magnetic "pickup" for engine speed reading (no CANbus)	9 870.00
RGK601	4	6	basic AMF gen-set controller with CANbus-J1939 (no "W" or magnetic "pickup")	10 500.00
RGK610*	4	6	basic AMF gen-set controller with "W" or magnetic "pickup" for engine speed reading (no CANbus)	10 900.00

* 1 slot to accept plug-in expansion modules **EXP1010/1011/1012**, see controller accessories

RGK700 series 180 x 240 mm panel mounting

As above **RGK600** but with the following additional features:

- Measurement voltage: 30...600 VAC / Rated voltage: 480 VAC L-L
- Rated voltage: RGK700 - 600 VAC L-L / RGK750 - 480 VAC L-L
- 1 USB/optical and Wi-Fi on front panel for programming and PC communication
- PLC logic for inputs, outputs and internal status
- Expansion bus with 2 slots for **EXP...** series expansion modules (**RGK750** only)
- Calendar-clock (RTC) with backup reserve energy

RGK700	6	7	grey AMF gen-set controller	11 000.00
RGK750	8	10	black AMF gen-set controller	12 200.00

RGK800 series 180 x 240 mm panel mounting

As above **RGK750** but with the following additional features:

- RS-485 communication (+ CANBUS)
- Neutral current measurement range: 0.050...6A or 1.2A
- 400Hz frequency support
- 1 programmable analog input
- Current leakage control
- Expandable with rear plug-in expansion (up to 3) modules (see controller accessories)

RGK800	8	10	fully featured AMF gen-set controller	13 900.00
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Paralleling controllers for (mains - mains) and (generator - generator)

- Engine protection
- Mains-generator "closed transition" synchronising
- Mains-generator load sharing with source peak demand control
- Generator paralleling supervision (island mode with load sharing)

RGK900 series 180 x 240 mm panel mounting

As above **RGK800** but with the following additional features:

- Voltage measurement range: 50-720 VAC / Rated voltage: 600 VAC L-L
- Frequency measurement range: 45...65Hz or 360...440Hz
- Display: Graphic LCD 128 x 112 pixels with backlight
- Customisable alarm text (16 alarms)
- Modbus-RTU, Modbus-ASCII and Modbus-TCP communication protocols
- 2 analog outputs for engine speed control (governor) / voltage regulator (AVR)
- Built-in buzzer, multi-level passwords, sleep function

RGK900SA	12	10	full featured stand alone gen-set controller	44 100.00
RGK900	12	10	mains-generator paralleling control	44 800.00

Control of mains, automatic transfer switching and paralleling on multiple generators controlled by **RGK900SA**

RGK900MC	13	10	Mains-ATS (Automatic Transfer Switching) controller	34 200.00
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Engine & Generator controllers

Sam1 **NFC** **X**press



NFC

RGK400SA



NFC

RGK420SA



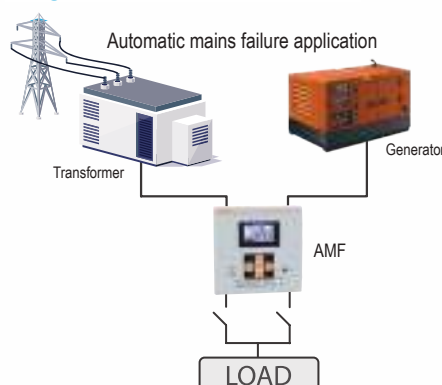
RGK600SA

Stand alone gen-set controllers

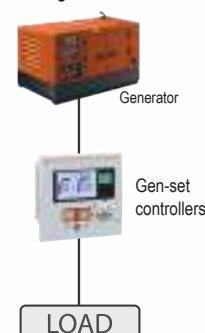
- Generator voltage and current control
- Engine protection
- Programmable inputs and outputs
- Programmable alarm properties

type	digital inputs	digital outputs	description	price
RGK400SA series			96 x 96 mm panel mounting	
RGK 400SA and RGK 420SA with NFC technology are suitable for simple applications where only control, motor starting and monitoring of the electrical power alternator (<i>stand-alone applications, i.e. without the presence of the network</i>) are required.				
- Universal supply: 12 / 24 VDC - Display: LCD icon display - Measurement voltage: 5...576 VAC - Rated voltage: 480 VAC L-L - Current Input: 1PH, /5A or /1A - Engine protection: With "W" or magnetic "pickup" for engine speed reading - 1 analog resistance input for oil pressure / engine temperature or fuel level control - Single, two and three phase voltage control - L1-L2-L3-N - Customisable alarm text (2 alarms) - IR programming port on front panel for communication with PC (CX01, see controller accessories) - NFC technology for parameter setup via smartphone or tablet				
RGK400SA	5+1 (E/stop)	5	stand alone gen-set controller	4 650.00
RGK420SA*	5+1 (E/stop)	5	stand alone gen-set controller	5 290.00
* Incorporates 3 position key switch (OFF, local start, remote start)				
RGK400SA accessories				
Expansion modules (<i>rear plug-in</i>)				
EXP1040			additional - 2 digital / resistance inputs, 2 static outputs	3 240.00
EXP1041			additional - 2 thermocouple inputs, 2 static outputs	3 390.00
EXP8005			housing gasket to increase protection to IP65	186.00
RGK600SA series			144 x 144 mm panel mounting	
As above RGK400SA but with following additional features:				
– Universal supply: 12 / 24 VDC – Display: Graphic LCD 128 x 80 pixels with backlight – Measurement voltage: 50...576 VAC – Rated voltage: 480 VAC L-L – Current Input: 3PH, /5A or /1A – Operating temperature: -30...+70°C – 3 analog resistance input for oil pressure, engine temperature or fuel level control – Customisable alarm text (8 alarms) – No NFC technology – Non-volatile memory for event storage – Modbus-RTU and Modbus-ASCII protocols				
RGK600SA	4	6	stand alone gen-set controller with "W" or magnetic "pickup" for engine speed reading (no CANbus)	9 250.00
RGK601SA	4	6	stand alone gen-set controller with CANbus-J1939 (no "W" or magnetic "pickup")	9 800.00

Engine / Generator controllers



Stand alone gen-set controllers





Scan to watch video

Automatic Transfer Switch (ATS) controllers

- Tie-breaker management
- Remote control and supervision / Event logging
- Supervision of two or three three-phase power sources
- Automatic non-priority load management (ATL800, ATL900)
- Emergency demand supervision for stand-by generating sets
- Modbus-RTU, Modbus-ASCII and Modbus-TCP communication protocols
- IR programming port on front panel for communication with PC (*NFC on some models*)

type	digital inputs	relay outputs	description	price
ATL100 series (econo) (no display) 54 mm DIN mounting				
ATL100 with its modular housing is suitable for monitoring two independent power sources and to manage switching between the two sources with single phase control.				
• Supply voltage: 110...230 VAC • Rated voltage: 110...230 VAC L-L • 2 single phase inputs and outputs L+N • Response thresholds of min and max voltage: 80% and 120% of nominal setting • LED indication: 2 x (green) presence of both input voltages, 1 x presence of output voltage 1 x (red) indicates presence voltage out of limits on inputs				
ATL100	2	3	single phase automatic transfer switch controller	7 000.00
ATL500 series (econo) (no display) 144 x 144 mm panel mounting				
The ATL500 is an automatic transfer switch that enables load commutation between two different source lines: a main line (LINE 1) and a standby or emergency secondary line (LINE 2).				
• Supply voltage: Self seeking power supply - 110...240 VAC LN • Measurement inputs: 3-ph+N (<i>suitable for 1 and 2 phase lines</i>) • Supported switching devices: Contactors and motorised changeovers • Output relay: 2 NO for contactors / 1 NC to start genset • Parameter setup: Via built-in NFC technology (<i>smartphone or tablet</i>) • Monitoring functions: Overvoltage, Undervoltage Phase failure Wrong phase sequence, Asymmetry, Over frequency Under frequency				
ATL500	2	3	3-ph+N automatic transfer switch controller	7 000.00
ATL600 series (with LCD) 144 x 144 mm panel mounting				
• AC power supply 110...240 VAC • Rated voltage: 100...480 VAC L-L • Management of two power sources • Measurement inputs for 3-ph+N voltage values (<i>suitable for 1 and 2-phase lines</i>) • 128 x 80 pixel backlit graphic LCD to view measurements, events and alarms				
ATL600	6	7	automatic transfer switch controller for 2 sources	13 600.00
ATL601*	6	7	automatic transfer switch controller for 2 sources	13 600.00
* With 12/24 VDC supply				
ATL610 series				
As above ATL600 but with following additional features:				
- Real time clock RTC - Dual power supply (110...240 VAC line and 12...24 VDC battery supply) - Expandable with I/O and communication modules				
ATL610*	6	7	automatic transfer switch controller for 2 sources	17 400.00
* 2 slot to accept plug-in expansion modules EXP1010/1011/1012/1013/1014 , see page F-6				
ATL800 series (with backlit LCD) 180 x 240 mm panel mounting				
As above ATL610 but with following additional features:				
- Rated voltage: 100...600 VAC L-L - With backlit graphic LCD display - Management of 2 energy sources and 1 tie breaker - Built-in NFC technology for parameter setup via smartphone or tablet - Built-in RS-485 communication / Built-in programmable PLC logic - Expandable with up to 3 rear plug-in expansion modules EXP... (see controller accessories)				
ATL800	8	7	automatic transfer switch controller for 2 sources	37 400.00
ATL900 series (with backlit LCD) 180 x 240 mm panel mounting				
As above ATL800 but with following additional features:				
- Management of 3 energy power sources and 2 tie breakers - 4 current inputs for the three phases and neutral - 14 preconfigured system layouts - 128 x 112 backlit graphic LCD to view measurements, events and alarms				
ATL900	12	11	automatic transfer switch controller for 3 sources	119 000.00



ATL100



ATL500



NFC



ATL601



ATL900



NFC

Automatic battery chargers



Battery chargers

- For lead acid battery
- Switching technology
- Automatic reset at end of alarm conditions
- Charging cycle in accordance with DIN 41773 standards

type	output voltage	output current	max. power consumption		description	dimensions (mm)			price
			VA	W		(H)	(W)	(D)	

BCF series Modular automatic switching battery chargers

- Alarm output relay (3A 250 VAC) AC1 duty
- Modular DIN rail mounting (*aligns with standard MCB's*) or chassis mount
- Wide auxiliary supply range 100...240 VAC ($\pm 10\%$) 50/60Hz
- Protection:
 - Mains input fuse (*non replaceable*)
 - Battery output fuse
 - Electronic lock in case of short circuit on battery terminals, reverse battery polarity and output overload
- LED indication of:
 - Correct output voltage
 - Reverse battery polarity

BCF025012	12V	2.5A	80	40	auto battery charger	96	90	56	2 010.00
BCF045012	12V	4.5A	150	70	auto battery charger	96	90	56	2 490.00
BCF012524	24V	1.25A	80	39	auto battery charger	96	90	56	2 010.00
BCF025024	24V	2.5A	150	77	auto battery charger	96	90	56	2 490.00

BCG series Rail mount switching battery chargers

- High efficiency
- Alarm output relay (5A 30 VDC duty)
- Wide auxiliary supply range 110...240 VAC ($\pm 10\%$) 50/60Hz
- DIN rail or chassis mounting (*can be mounted vertically with adaptor*)
- Boost signal controlled by external contact
- Hiccup function for battery recharging when its voltage is lower than 50% rated value
- Maximum charging current limiting trimmer 20...100% (*adjustable from front*)
- Protection:
 - Mains input fuse
 - Electronic lock in case of short circuit on battery terminals, reverse battery polarity and output overload
- LED indication of:
 - Power ON
 - Charging operation $I > 30\% I_c$
 - Overload or short circuit condition
 - Reverse battery polarity

BCG0612	12V	6A	230	97	auto battery charger	150	162	63	3 840.00
BCG1212	12V	12A	284	190	auto battery charger	150	213	63	7 430.00
BCG0524	24V	5A	364	158	auto battery charger	150	162	63	3 840.00
BCG1024	24V	10A	630	311	auto battery charger	150	213	63	7 430.00

Accessories for above BCG battery chargers

BCGX00	vertical side mount adaptor (<i>for space saving</i>) for BCG0612 and BCG0524								139.00
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BCE series Linear battery chargers

- Linear technology
- Auxiliary supply voltage: 220...240 VAC ($\pm 10\%$) 50/60Hz
- Charging current: 30 - 100% I_c (*adjustable*)
- Protection:
 - Mains input fuse (*except BCE2V524 and BCE0312*)
 - Battery output fuse
 - Electronic lock in case of short circuit on battery terminals, reverse Battery polarity output overload ($< 0.5 U_e$) and disconnected battery
- LED indication of:
 - Power ON
 - Charge ($I > 0.2 I_c$)
 - Alarm for protection tripping
- Alarm output: Static NPN transistor BCE2V5 and BCE03 - others relay (5A 250 VAC)

BCE0312	12V	3	117	—	auto battery charger	93	134	100	5 760.00
BCE0612	12V	6	222	—	auto battery charger	130	192	140	9 280.00
BCE1212	12V	12	400	—	auto battery charger	230	192	140	13 700.00
BCE2V524	24V	2.5	166	—	auto battery charger	93	134	100	6 110.00
BCE0524	24V	5	317	—	auto battery charger	130	192	140	9 990.00
BCE1024	24V	10	610	—	auto battery charger	230	192	140	15 200.00



BCF...



BCG ...



BCE...

Power factor controllers

DCRL / DCRG Power Factor Controllers

DCRL/DCRG controllers incorporate latest technological advanced monitoring to provide accurate measurement and control of network parameters in power factor correction applications, providing total protection of capacitors and systems.

General features:

- Suitable for medium voltage systems (with VT's)
- High accuracy (TRMS) measurements with configurable alarms
- Wide voltage measurement range: 50...720 VAC L-L, 50...415 VAC L-N
- Expandable through clip-in expansion modules (*I/Os, Comm ports etc.*)
- Front mounted optic interface port for programming, data download, diagnostics

type	number of steps	expand to:	description	dimensions (mm) (H) (W) (D)			price
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DCRL controllers 3, 5 and 8 step *(one CT connection)*

DCRL series power factor controllers with advanced functionality in a dedicated ultra compact housing, combine modern front design with ease of mounting and expendability.

- Reactive power measurement per step installed
- 3, 5 or 8 steps *(expandable with expansion module)*
- Voltage and current THD with single harmonic analysis up to 15° order
- Backlit icon LCD display *(alarm codes with scrolling text)* 128 x 80 pixels

3 and 5 step controllers*1 expansion slot*

DCRL 3	3 step	6 step	panel mount power factor controller	96	96	65	5 120.00
DCRL 5	5 step	8 step	panel mount power factor controller	96	96	65	5 920.00

8 step controllers*2 expansion slots*

DCRL 8	8 step	14 step	panel mount power factor controller	144	144	44	8 550.00
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DCRG controllers 8 step*single and three-phase CT connection*

DCRG series power factor controllers are designed to satisfy technical characteristics of modern electrical installation requirements in all industries and working conditions, to detect critical operating conditions and offer total protection of power factor systems.

- Recording of number of connections per step
- Capacitor over-current protection on all three phases
- Voltage and current THD with single harmonic analysis up to 31° order
- 8 steps *(expandable by up to another 10 steps with plug-in expansion modules)*
- Backlit graphic LCD display *(permits reading in bar-graph and wave form format)*
- Configurable for fast dynamic *(thyristor)* switching or a combination of static and relay
- Quick CT programming function / Automatic identification of direction of CT current flow
- Calendar-clock (RTC) with backup reserve for event logging: Alarms, setup changes, etc.
- Connection to 1/3 ph lines, 3 ph + N and co-generation systems with 4 quadrant operation
- Three current inputs permit per phase analysis of all electrical parameters in the installation

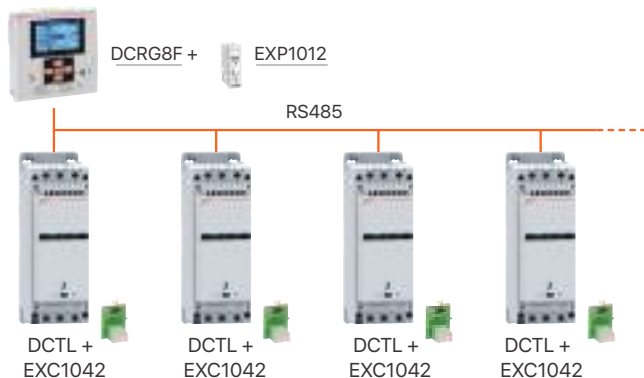
8 relay step controller*4 expansion slots*

DCRG 8	8 step	18 step	panel mount power factor controller	144	144	44	11 800.00
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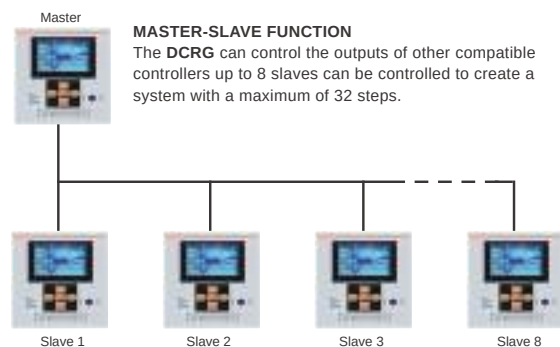
8 thyristor static step controller *(expandable up to 24 steps with expansion modules)*

DCRG 8F	8 step	24 step	static step power factor controller	144	144	44	13 700.00
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For expansion modules options, see **F-6**

DCRG - Power factor controllers

The thyristor modules type **DCTL** can be connected to the automatic power factor controller type **DCRG8F** with the RS485 optional port (code **EXC1042**), obtaining a simple and linear wiring.

**MASTER-SLAVE FUNCTION**

The **DCRG** can control the outputs of other compatible controllers up to 8 slaves can be controlled to create a system with a maximum of 32 steps.

Sam1 **NFC** **Xpress**



EXP...



CX02



CX01

Expansion modules for PFC controllers

EXP... series expansion modules add extra functionality to following panel mount products:

DMG 600/7000/8000/9000	- Digital multimeters and power analysers
DCRL and DCRG	- Automatic power factor controllers
ATL 610/800/900	- Automatic transfer controllers
RGK 400/600/750/800/900	- Generator controllers

type	inputs	outputs	description	price
EXP expansion modules <i>(plug into rear of controller to add more functionality)</i>				
Inputs/Outputs				
EXP1006	—	2 relay	to increase number of capacitor steps	1 140.00
EXP1007	—	3 relay	to increase number of capacitor steps	2 610.00
EXP1000	4 digital	—	opto-isolated digital inputs	2 310.00
EXP1001	—	4 static	opto isolated to increase static steps	2 310.00
EXP1002	2 digital	2 static	opto-isolated digital inputs and static outputs	2 760.00
EXP1003	—	2 relay	outputs rated 5A 250 VAC	2 760.00
EXP1004	2 analog	—	opto-isolated PT100, 0/4-20mA, 0-10V, 0...±5V	8 280.00
EXP1005	—	2 analog	opto-isolated 0/4-20mA or 0-10V or 0...±5V	8 280.00
EXP1016	3ph (A)	—	+ 2 x NTC for capacitor bank protection	7 450.00
Communication				
EXP1010	USB	—	opto-isolated USB interface	4 140.00
EXP1011	RS-232	—	opto-isolated RS-232 interface	4 140.00
EXP1012	RS-485	—	opto-isolated RS-485 interface	2 090.00
EXP1013	Ethernet	—	opto-isolated Ethernet with web server function	5 130.00
EXP1014	Profibus	—	opto-isolated Profibus-DP interface	17 200.00
Accessories				
51C2	PC - DCRL/DCRG connecting cable + EXP1011 module			1 260.00
C9 cable	PC - Analog modem connecting cable			3 020.00
CX01	PC - controller USB dongle with connecting cable			4 160.00
CX02	PC - Controller Wi-Fi dongle for programming, data download, diagnostics			10 400.00

Monitor the key aspects of your Power Factor Correction system



Enhance efficiency and control with advanced Polar Cloud remote monitoring solution for floor-standing power factor correction systems. Instantly access critical data, make quick adjustments, and optimise energy usage without the need for constant on-site supervision. Prevent costly downtimes and address potential issues proactively.

Polar Cloud allows you to monitor:

- Cos ϕ** **Power Factor:** View power factor and adjust power factor setpoints
- A_v** **Total Harmonic Distortion:** Monitor THDi and THDu levels
- ⚡** **Voltage and Current:** Gain instant access to voltage and current data
- 🌡️** **Temperature:** Keep your equipment safe by monitoring temperature levels remotely
- 🔍** **Capacitor Status:** Stay informed about the health of your capacitors

Monitor what matters most with Polar Cloud - available now on request

Power capacitors for power factor correction



275.525-701400



275.186-405600



275.396-715401



275.100-10120

MKPg-275 series - Three-phase cylindrical capacitors

MKPg-275 three-phase power capacitors, dry self-healing dielectric, gas filled (N₂) protecting windings from environmental influences extending life expectancy, permitting mounting in any position.

- Capacitance tolerance: -5...+10%
- Max. permissible current: 1.5...2 I_n
- Max. inrush current: 300 x I_n
- Dielectric losses: <0.25 W/kvar
- Impregnant (*filling*): Inert insulation gas (N₂) completely harmless to the environment
- Mounting: M12 base mounted fixing stud (*any position*)
- Protection: Overpressure disconnection facility
- Standards: IEC/EN 60831, VDE 0560-46/47, CSA C22.2 - 190-M1985, UL - 810, GOST 1282-88

type	kvar at:			CN μF 3 x	description	dimensions (mm)		price
	400V	440V	480V			(H)	Ø	

400...440V three-phase capacitors *Supplied with discharge resistors*

• Rated Voltage:	400...440V, 50 Hz							
• Temp category:	-50/D -50°C to +55°C Max. (24 hr average 45°C - annual average 35°C)							
• Duty:	Continuous (life expectancy > 100,000 h)							
275.548-408200	12.5	15	—	82	3-ph cylindrical capacitor	245	75	2 040.00
275.269-416600	25	30	—	166	3-ph cylindrical capacitor	280	95	3 060.00
275.39B-527400*	41	50	—	274	3-ph cylindrical capacitor	295	136	5 610.00
275.105-10068*	discharge resistor module for 275.39B-527400 capacitor						3 x 68 kΩ	99.00

400...480V three-phase industrial capacitors

- For PFC equipment in mains with severe operating conditions or substantial voltage fluctuations.

• Temp category:	60 -50°C...+60°C Max. (24 hr average 50°C - annual average 40°C)							
• Duty:	Continuous (life expectancy > 150,000 h)							
• Supplied with discharge resistors (except * require separate discharge module)								
275.523-502800	4.2	5	6.1	33	3-ph cylindrical capacitor	196	60	1 640.00
275.545-504000	6.2	7.5	8.7	40	3-ph cylindrical capacitor	164	75	1 900.00
275.546-505800	8.3	10	12.5	58	3-ph cylindrical capacitor	230	75	1 900.00
275.546-506800	10.0	12.5	15.0	68	3-ph cylindrical capacitor	230	75	2 070.00
275.256-508300	12.5	15.0	18.0	83	3-ph cylindrical capacitor	230	85	2 270.00
275.266-511100	16.8	20.0	24.1	111	3-ph cylindrical capacitor	230	95	2 830.00
275.278-513700	20.0	25.0	30.0	137	3-ph cylindrical capacitor	245	100	2 850.00
275.279-516600	25.0	30.0	36.0	166	3-ph cylindrical capacitor	280	100	2 980.00
275.389-519900*	30.0	36.0	43.0	199	3-ph cylindrical capacitor	280	116	3 620.00
275.389-522100*	33.3	40.0	48.0	221	3-ph cylindrical capacitor	280	116	4 030.00
275.100-10120*	discharge resistor module for 275.389-519900 capacitor						3 x 120 kΩ	90.00
275.105-10100*	discharge resistor module for 275.389-522100 capacitor						3 x 100 kΩ	105.00

525V three-phase capacitors

- Temperature category: **D** -40°C...+55°C (Max: 24 hr average 45°C - annual ave 35°C)
- Duty: Continuous (life expectancy 480V >150000 h 525V >100000 h)
- Supplied with discharge resistors (except * require separate discharge module)

type	kvar at:			CN μF 3 x	description	dimensions (mm)		price
	400V	480V	525V			(H)	Ø	
275.525-701400	2.2	3.0	3.6	14	3-ph cylindrical capacitor	164	60	1 480.00
275.535-601900	3	4.1	5	19	3-ph cylindrical capacitor	164	65	1 550.00
275.546-703800	6.2	8.3	10	38	3-ph cylindrical capacitor	230	75	1 930.00
275.548-605800	9.4	12.5	15	58	3-ph cylindrical capacitor	245	75	1 980.00
275.266-607700	12.5	16.7	20	77	3-ph cylindrical capacitor	230	95	2 690.00
275.269-611500	18.6	25.0	30	115	3-ph cylindrical capacitor	280	95	3 070.00
275.396-715401*	25	33.4	40	154	3-ph cylindrical capacitor	230	136	4 490.00
275.105-10100*	discharge resistor module for 40 kvar 525V capacitor						3 x 100 kΩ	105.00

690V three-phase capacitors

- Temperature category: **60** -40°C...+60°C (Max: 24 hr average 50°C - annual ave 40°C)
- Duty: Continuous (life expectancy > 150000 h)

type	kvar at:			CN μF 3 x	description	dimensions (mm)		price
	690V	760V	400			(H)	Ø	
275.185-402800*	12.5	15	—	27.6	3-ph cylindrical capacitor	164	116	3 100.00
275.186-405600*	25	30	—	56	3-ph cylindrical capacitor	230	116	3 650.00
275.39B-411100*	50	60	—	111	3-ph cylindrical capacitor	295	136	6 020.00
275.100-10300*	discharge resistor module for 12.5/25 kvar 690V capacitor						3 x 300 kΩ	87.00
275.105-10180*	discharge resistor module for 50 kvar 690V capacitor						3 x 180 kΩ	99.00



RC series - Power Factor Correction (PFC) rack system

RC series power factor racks (*single and double step versions*) are designed for direct panel mounting onto vertical supports within floor standing electrical panels. The 7% and 14% detuned harmonic reactors are available for networks with high level of harmonics.

RC series - Rack design incorporates the following:

- Sheet metal mounting frame for easy panel mounting
- Electronicon heavy duty "gas filled" cylindrical capacitors (*with integrated discharge resistors*)
- Special capacitor switching contactors 400VAC coil (*230V on request*)
- Three-phase busbar mounted fuse disconnecter with hinged fuse protection cover
- Suitably rated HRC fuses per phase of each capacitor bank
- Incorporated busbar, supports and inter-connecting busbar links

type	kvar at:			description	dimensions (mm)			price
	400V	440V	480V		(H)	(W)	(D)	

RC series - Racks (480V capacitors) *without harmonic reactors*

Single step racks - 480V capacitors - fuse protection

RCS01204	12.5	14	17	single step capacitor rack	270	545	320	9 140.00
RCS02504	25	28	34	single step capacitor rack	270	545	320	11 800.00
RCS05004	50	56	67	single step capacitor rack	270	545	320	16 500.00

Double step racks 480V capacitors - separate fuse protection for each bank

RCD02524	2 x 12.5	2 x 14	2 x 17	double step capacitor rack	270	545	320	14 200.00
RCD05024	2 x 25	2 x 28	2 x 34	double step capacitor rack	270	545	320	19 600.00
RCD10024	2 x 50	2 x 56	2 x 68	double step capacitor rack	270	545	320	29 100.00
RCD03734	12.5+25	14 + 28	17 + 34	double step capacitor rack	270	545	320	16 900.00
RCD07534	25 + 50	28 + 56	34 + 68	double step capacitor rack	270	545	320	24 400.00

type	kvar at:			description	dimensions (mm)			price
	400V	525V	550V		(H)	(W)	(D)	

Double-step racks - 690V capacitors *for use in 400/525/550V networks (230V coil)*

RCD64026	2 x 17	2 x 30	2 x 32	double step capacitor rack	270	545	320	32 600.00
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HR7 series - Racks (480V capacitors) with 7% detuned reactors

7% - 189 Hz Detuned reactors *for networks with a high level of 5th and 7th Harmonics*

type	kvar at:			description	dimensions (mm)			price
	400V	440V	480V		(H)	(W)	(D)	

Single step racks 480V capacitors - fuse protection

HRS013074	12.5	14	17	capacitor + 7% reactor rack	310	740	538	16 200.00
HRS025074	25	28	34	capacitor + 7% reactor rack	310	740	538	24 900.00
HRS050074	50	56	67	capacitor + 7% reactor rack	310	740	538	35 300.00

Double step racks 480V capacitors - separate fuse protection for each bank

HRD025274	2 x 12.5	2 x 14	2 x 17	capacitor + 7% reactor rack	310	740	538	26 100.00
HRD050274	2 x 25	2 x 28	2 x 34	capacitor + 7% reactor rack	310	740	538	43 300.00
HRD100274	2 x 50	2 x 56	2 x 68	capacitor + 7% reactor rack	310	740	538	64 400.00
HRD038374	12.5+25	14 + 28	17 + 34	capacitor + 7% reactor rack	310	740	538	34 700.00
HRD075374	25 + 50	28 + 56	34 + 68	capacitor + 7% reactor rack	310	740	538	54 000.00

HR14 series - Racks (525V capacitors) with 14% detuned reactors

14% - 134 Hz Detuned reactors *for networks with a high level of 3rd Harmonics*

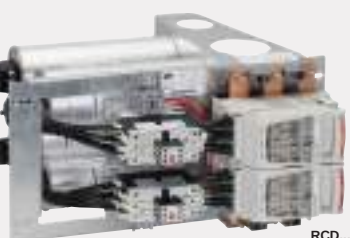
type	kvar at:			description	dimensions (mm)			price
	400V	440V	480V		(H)	(W)	(D)	

Single step racks 525V capacitors - fuse protection

HRS054144	50	56	68	capacitor + 14% reactor rack	310	740	538	44 200.00
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Double step racks 525V capacitors - separate fuse protection for each bank

HRD025144	2 x 12.5	2 x 14	2 x 17	capacitor + 14% reactor rack	310	740	538	32 500.00
HRD050144	2 x 25	2 x 28	2 x 34	capacitor + 14% reactor rack	310	740	538	56 100.00
HRD038144	12.5+25	14 + 28	17 + 34	capacitor + 14% reactor rack	310	740	538	44 200.00





Scan here



Scan above to try the PFC Calculator.



FMS...

FMS series - Power factor Correction (PFC) (automatic)

For applications with varying capacitor requirements. An automatic reactive controller monitors the network and only switches capacitor banks when required, avoiding potential over or under compensation in a network.

FMS series - Floor standing systems**Complete ready-to-install system comprising following:**

- Suitably ventilated floor standing enclosure (*thermostatically controlled roof mounted exhaust fan*)
- Mains isolator, door interlocking (*with early make/late break auxiliary contact*)
- **DCRG 8** high end reactive control relay (*incorporating digital display of all important network parameters*)
- Bottom cable entry (*top entry available on request*)
- RC series racks with heavy duty capacitors, fusegear, capacitor switching contactors and busbar system

Able to monitor all three phase voltage and current to providing accurate indication of:

- Active, Apparent Power as well as Active, Reactive, Apparent Energy monitoring
- Current and Voltage Harmonics analysis (*up to 31st harmonic*)
- Event logging: alarms, setup changes, events etc. (*internal memory stores last 250 events*)
- Internal panel temperature monitoring
- Expandable with up to 4 expansion modules for:

Analog Inputs/Outputs, RS-323, RS-485, Ethernet, optional remote monitoring

type	kvar at:		steps (kvar) at 400V				Expands to (kvar)	dimensions (mm)			price
	400V	440V	12.5	25	50	100		(H)	(W)	(D)	

FMS series - 400V Floor standing complete PFC systems (480V capacitors)

- Using 480V heavy duty capacitors with RC racks for use in 400V networks

400V floor standing complete power factor systems

FMS13804	138	165	1	1	2	—	475	2180	600	630	96 900.00
FMS17504	175	210	—	1	3	—	475	2180	600	630	105 000.00
FMS21304	213	255	1	2	3	—	475	2180	600	630	122 000.00
FMS23804	238	285	1	1	2	1	475	2180	600	630	126 000.00
FMS27504	275	330	—	1	3	1	475	2180	600	630	134 000.00
FMS31304	313	375	1	2	1	2	475	2180	600	630	151 000.00
FMS33804	338	390	1	1	2	2	475	2180	600	630	156 000.00
FMS37504	375	450	—	1	3	2	475	2180	600	630	163 000.00
FMS43804	438	525	1	1	2	3	475	2180	600	630	185 000.00
FMS47504	475	570	—	1	1	4	—	2180	600	630	193 000.00

Double floor standing panels*

FMS57524*	575	690	—	1	1	5	950	2180	1200	630	248 000.00
FMS67524*	675	810	—	1	1	6	950	2180	1200	630	290 000.00
FMS77524*	775	930	—	1	1	7	950	2180	1200	630	320 000.00
FMS87524*	875	1050	—	1	1	8	950	2180	1200	630	351 000.00

FMS series - 550V Floor standing complete PFC systems

- Using 690V heavy duty capacitors with RC racks for use in 400/525/550V networks

type	kvar at:				step		Expands to (kvar)	dimensions (mm)				price
	400V	525V	550V		kvar at 550V			(H)	(W)	(D)		
					32	64						
FMS12806	68	120	128	2	1	320	2180	600	630	117 000.00		
FMS19206	102	180	192	2	2	320	2180	600	630	149 000.00		
FMS25606	136	240	256	2	3	320	2180	600	630	182 000.00		
FMS32006	170	300	320	2	4	—	2180	600	630	214 000.00		
FMS38426*	204	360	384	2	5	640	2180	1200	630	287 000.00		
FMS44826*	238	420	448	2	6	640	2180	1200	630	321 000.00		
FMS51226*	272	480	512	2	7	640	2180	1200	630	353 000.00		
FMS57626*	306	540	576	2	8	640	2180	1200	630	386 000.00		
FMS64026*	340	600	640	2	9	—	2180	1200	630	420 000.00		
FMS70426**	374	660	704	2	10	960	2180	1800	630	491 000.00		
FMS76826**	408	720	768	2	11	960	2180	1800	630	523 000.00		
FMS83226**	442	780	832	2	12	960	2180	1800	630	556 000.00		
FMS89626**	476	840	896	2	13	960	2180	1800	630	588 000.00		
FMS96026**	510	900	960	2	14	—	2180	1800	630	621 000.00		

Larger systems are made up with two (*) or three (**) panels each incorporating an individual isolator requiring supply cable to be split between the isolators.

FHS series - Floor standing power factor systems (with anti-harmonic detuned reactors)

- For networks with THDU ≤6% and/or THDI ≤40%

Growing use of power electronic devices such as: variable speed drives, inverters, UPS systems, battery chargers, LED lighting etc. is causing increasing levels of harmonic distortion in electrical networks, often leading to problems with capacitor installations.

Installation of detuned (reactor-connected) capacitors designed to force the resonant frequency of the network below the frequency of the lowest harmonic present (usually the 5th) thereby ensuring no resonant circuit or amplification of harmonic currents. Such an installation also has a partial filtering effect, reducing the level of voltage distortion on the supply.

Detuned capacitors are safer than non-detuned capacitors and future-proof for conditions of more and more deteriorating power quality in modern mains.

Complete ready-to-connect floor standing power factor system comprising:

- Suitably ventilated floor standing enclosure with roof mounted exhaust fan
- Mains isolator, door interlocking (with early make/late break auxiliary contact)
- HR heavy duty racks comprising: capacitors, reactors, switchgear, fusegear and busbars
- High end reactive control relay DCRG 8 (incorporating digital display of all important network parameters)

Configurable to monitor three voltage and current phases and provide accurate indication of:

- Active, Apparent power as well as Active, Reactive, Apparent Energy monitoring
- Current and Voltage Harmonics analysis (up to 31st harmonic)
- Calendar-clock with backup reserve power
- Event logging: alarms, setup, changes, ect. (internal memory stores last 250 events)
- Internal panel temperature monitoring

- Expandable with up to 4 expansion modules for:

- Additional steps, Analog I/O's, RS-323, RS-485, Ethernet, optional - remote monitoring



DCRG 8 (Door mount)



FHS...

type	kvar at:		steps (kvar) at 400V				Expands to kvar	dimensions (mm)			price
	400V	440V	12.5	25	50	100		(H)	(W)	(D)	

Anti-harmonic systems incorporating 7% detuned reactors (480V capacitors)

- 7% - 189 Hz detuned reactors

for 400V networks with a high level of 5th and 7th Harmonic

FHS138074	138	165	1	1	2	—	375	2280	900	600	164 000.00
FHS175074	175	210	—	1	3	—	375	2280	900	600	184 000.00
FHS213074	213	255	1	2	3	—	375	2280	900	600	218 000.00
FHS238074	238	285	1	1	2	1	375	2280	900	600	229 000.00
FHS275074	275	330	—	1	1	2	375	2280	900	600	248 000.00
FHS313074	313	375	1	2	1	2	375	2280	900	600	283 000.00
FHS338074	338	405	1	1	2	2	375	2280	900	600	293 000.00
FHS375074	375	450	—	1	1	3	—	2280	900	600	313 000.00
FHS438074*	438	525	1	1	2	3	775	2280	1800	600	411 000.00
FHS475074*	475	570	—	1	1	4	775	2280	1800	600	431 000.00
FHS538074*	538	645	1	1	2	4	775	2280	1800	600	476 000.00
FHS575074*	575	690	—	1	1	5	775	2280	1800	600	495 000.00
FHS638074*	638	765	1	1	2	5	775	2280	1800	600	540 000.00
FHS675074*	675	810	—	1	1	6	775	2280	1800	600	560 000.00
FHS738074*	738	885	1	1	2	6	775	2280	1800	600	605 000.00
FHS775074*	775	930	—	1	1	7	—	2280	1800	600	625 000.00
FHS838074**	838	1005	1	1	2	7	975	2280	2700	600	723 000.00
FHS875074**	875	1050	—	1	1	8	975	2280	2700	600	742 000.00
FHS975074**	975	1170	—	1	1	9	—	2280	2700	600	807 000.00

Anti-harmonic systems incorporating 14% detuned reactors (525V capacitors)

- 14% - 134 Hz detuned reactors

for 400V networks with a high level of 3rd Harmonic

FHS138144	138	165	1	1	2	—	203	2280	900	600	198 000.00
FHS150144	150	180	—	2	2	—	203	2280	900	600	210 000.00
FHS200144	200	240	—	2	3	—	—	2280	900	600	254 000.00
FHS238144*	238	285	1	1	4	—	432	2280	1800	600	339 000.00
FHS288144*	288	345	1	1	5	—	432	2280	1800	600	383 000.00
FHS300144*	300	360	—	2	5	—	432	2280	1800	600	395 000.00
FHS350144*	350	420	—	2	6	—	432	2280	1800	600	440 000.00
FHS400144*	400	480	—	2	7	—	—	2280	1800	600	485 000.00
FHS450144**	450	540	—	2	8	—	648	2280	2700	600	529 000.00
FHS500144**	500	600	—	2	9	—	648	2280	2700	600	626 000.00
FHS550144**	550	660	—	2	10	—	648	2280	2700	600	670 000.00
FHS600144**	600	720	—	2	11	—	648	2280	2700	600	714 000.00

Larger systems are made up with two (*) or three (**) panels each incorporating an individual isolator requiring supply cable to be split between the isolators.



WMS...



HFRA...



EXP1011



PM-GW-LTE

**WMS series - Wall mount power factor systems (automatic) 400/440V**

For applications with varying capacitor requirements. An automatic reactive controller monitors the network and only switches capacitor banks when required, avoiding potential over or under compensation in a network.

Complete ready-to-install system comprising following:

- Reverse-flow fan ventilated wall mount enclosure, bottom cable entry (*top entry on request*)
- Mains isolator, door interlocking (*with early make / late break auxiliary*)
- Heavy duty three phase capacitors (*with internal discharge resistors*)
- Reactive control relay DCRL 5 (*digital display of all important electrical network parameters*)
- "Special" capacitor switching contactors incorporating limiting resistors
- HRC fuse protection (*per capacitor bank*)

type	kvar at:		steps (kvar) at 415V			Expands to (kvar)	dimensions (mm)			price
	400V	440V	12.5	25	50		(H)	(W)	(D)	

WM series - Wall mount complete PFC systems (440V capacitors)

WMS03804	37.5	45	1	1	—	87.5	950	700	270	34 300.00
WMS05004	50	60	2	1	—	87.5	950	700	270	38 900.00
WMS07504	75	90	2	2	—	87.5	950	700	270	47 500.00
WMS10004	100	120	2	1	1	150	950	700	270	54 100.00
WMS12504	125	150	2	2	1	150	950	700	270	58 900.00
WMS15004	150	180	—	2	2	—	950	700	270	65 900.00

HFRA series - Detuned anti-harmonic reactors 400V, 50Hz

Detuned reactors protect capacitors against harmonics, avoiding parallel resonance and amplification of harmonics flowing within the network.

- Insulation: F class insulation, 155°C
- Internal protection: Thermal cutout (125°C) incorporated (*on centre phase*)
- Reference standards: IEC/EN 60076-6, 61558-2-20

type	kvar at:		%	description	dimensions (mm)			price
	400V	440V			(H)	(W)	(D)	

7% - 189 Hz Detuned reactors for networks with a high level of 5th and 7th Harmonics

HFRA1207	12.5	15	7%	anti-harmonic reactors	215	210	120	5 250.00
HFRA2507	25	30	7%	anti-harmonic reactors	190	240	170	11 100.00
HFRA5007	50	60	7%	anti-harmonic reactors	240	300	180	15 800.00

14% - 134 Hz Detuned reactors for networks with a high level of 3rd Harmonic

HFRA1314	12.5	15	14%	anti-harmonic reactors	280	240	150	7 900.00
HFRA2714	25	30	14%	anti-harmonic reactors	250	330	220	15 400.00
HFRA5414	50	60	14%	anti-harmonic reactors	270	340	220	20 000.00

Communication modules for PFC systems

For remote monitoring and control of all electrical network parameters including harmonics, panel internal temperature, alarms, events and all setup parameters.

Communication modules simply plug-in to the controller and are automatically configured to offer various communication protocols.

EXP1011	opto-isolated	RS-232 plug-in communication	expansion module	4 140.00
EXP1012	opto-isolated	RS-485 plug-in communication	expansion module	2 090.00
EXP1013	opto-isolated	Ethernet with web server function	expansion module	5 130.00
EXP1014	opto-isolated	Profibus-DP plug-in communication	expansion module	17 200.00

Remote monitoring solutions for PFC systems

Polar Monitoring offers remote monitoring systems that enable (RS-485) devices to be securely viewed from anywhere via its comprehensive cloud platform. This provide an ideal solution to monitor generator controllers and Power Factor Correction systems.

General features:

- Remote programming, monitoring, trending
- Alerts and notifications (*SMS and email*)
- Error codes and reporting
- Multiple user access rights
- Device agnostic (*Supports multiple types of devices and applications in one platform*)

type	supply voltage	network connection	connector type	description	see
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PM-GW-LTE	9...36 VDC	2G/LTE	terminal	LTE - Gateway (<i>within South Africa</i>)	Cat G for pricing.
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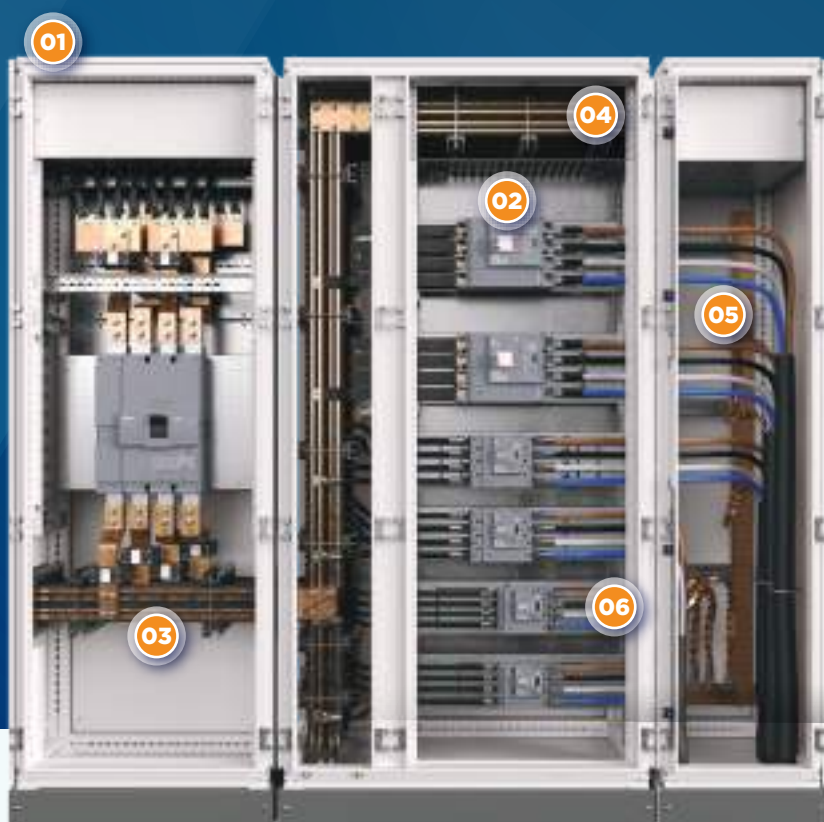
For more information, see **category G**

Introducing more possibilities

quadro evo.

The **New** Hager Main Distribution Board

A tested Hager solution, fully compliant with IEC 61439-1&2, up to 4000A, quadro evo now offers 4 safety classes. With segregations 1, 2b, 3b or 4b, there is a solution for projects of any dimension. The new quadro evo is a solution that will meet almost any challenge. Its many improvements make it the base of a main distribution that will endure. Choosing, configuring and building the quadro evo is now easier and more efficient.



- 01** Outside, the familiar Hager look, inside there's plenty more to see
- 02** New capabilities and more intelligence
- 03** New form segregations for up to 4b and new safety features
- 04** Ready for an all-new power busbar, allowing systems for up to 4000A
- 05** The new design allows for more space, making wiring and maintenance easier
- 06** Improved mounting kits, fewer screws and a clear positioning

hagercad software

A fully integrated, electrical planning software from Hager, offering maximum simplicity, speed, reliability and flexibility.



Automatic power loss and heat calculation feature



Simply generate your terminal plan



User-friendly function for device labels



Quickly generate circuit diagrams



Easily create and share your project



Windows 10 & 11 compatible with quick, automatic updates



Scan to learn more about quadro evo

Modular
SolutionUser Friendly
HMIComplete
Protection
FeaturesEfficient Heat
Dissipation

Active Power Filter (APF) systems

The increase of non-linear and other challenging loads in electrical grids today present unique power quality challenges. APF (Active Power Filter) provides a cost efficient solution to power quality problems, eliminating resonance problems, preventing amplified harmonic current and voltage, simultaneously compensating reactive power in real-time to maintain power factor at >0.99, enhancing equipment operating life whilst improving overall power system capacity.

APF systems provide multiple compensation functionality including:

- **Harmonic compensation** (filtering any order from 2nd to 50th harmonic)
- **Power Factor compensation** (compensating in real-time to maintain power factor at >0.99)
- **Phase Imbalance compensation** (reducing the peak current demand tariff on electricity bills)

Typical applications

Malls, shopping centres, office blocks, hospitals, printing works, processing plants, Data centres, pumping stations and all applications where Harmonic generating equipment such as variable speed drives (VSDs) rectifiers, battery charges, UPS's, Power supplies, LED lighting is utilised.

Benefits include: Reduced maintenance, a considerably longer lifespan

- Complete power quality improvement solution including real-time elimination of harmonics and flicker mitigation
- Provides dynamic step-less compensation instantaneously in real-time to each phase individually
- Only injects the kVar required in that moment with no possibility of over or under-compensation
- Voltage fluctuations (flicker) mitigation and reduction of voltage (sag and swell) variations
- Correcting phase imbalance (reducing the peak current reducing peak demand tariff on electricity bills)
- Maintenance free (with no electromechanical components)
- Expandable by paralleling up to 8 modules (unnecessary to over-dimension capacity to cater for future needs)
- Output current is unaffected by mains voltage fluctuations providing stable support for mains voltage

- Harmonic compensation: 2nd to 51st order
- Response time: <5ms
- Efficiency: ≥97%
- Communication port: RS-485 - Modbus-RTU protocol
- Display interface: 4.3" LCD
- Operating temp: -20°C...45°C
- Cooling: Forced air cooling (fan cooling)
- Protection class: IP20



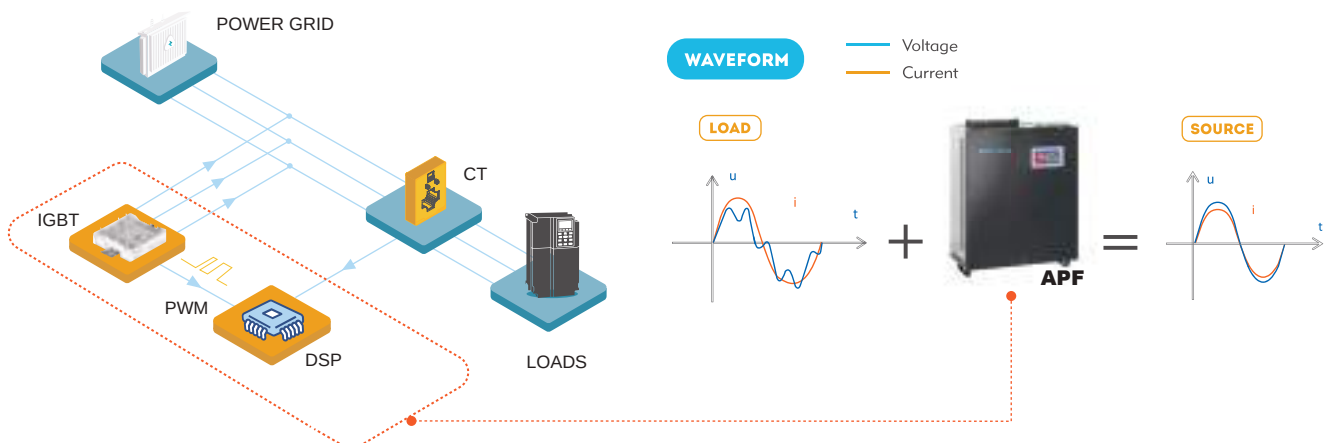
SFR-APF4...

type	rated current	description	rated input (V)	dimensions (mm)			price
				(H)	(W)	(D)	
Active Power Filters (APF) - Wall mount system (3-phase 4 wire) 400V							
SFR-APF4-30/0.4B	30A	Active Power Filter (APF)	400V ±15%	641	440	149	88 500.00
SFR-APF4-50/0.4B	50A	Active Power Filter (APF)	400V ±15%	641	440	149	112 000.00
SFR-APF4-75/0.4B	75A	Active Power Filter (APF)	400V ±15%	641	440	149	135 000.00
SFR-APF4-100/0.4B	100A	Active Power Filter (APF)	400V ±15%	753	520	230	158 000.00
SFR-APF4-150/0.4B	150A	Active Power Filter (APF)	400V ±15%	753	520	230	216 000.00

Larger sizes can be made up by paralleling up to 8 wall mount systems.

External protection (a circuit breaker is required)

Active Power Filter - Power factor correction



Static var generator



Modular
Solution



User Friendly
HMI



Complete
Protection
Features



Efficient Heat
Dissipation

Static Var Generator (SVG) systems

The increase of non-linear and other challenging loads in electrical grids today present unique power quality challenges. **SVG** (Static Var Generator) provides a cost effective, extremely fast solution to power quality problems, enhancing equipment operating life whilst improving overall power system capacity.

The **SVG** operates by detecting the load current, analysing the reactive content and then injecting the exact reverse reactive compensating current on an instantaneous real-time basis enabling perfect compensation on each phase for both inductive and capacitive loads.

Typical applications:

- Highly dynamic loads requiring rapid reactive power compensation, e.g: electric arc furnaces, or in big steps like cranes, sawmill machinery, etc.
- Electrical welding systems
- Renewable power generation (e.g. photovoltaics and wind turbines)
- Plastic industry machinery (e.g. extruders, injection moulders)
- Loads with low power factor: Motors, cables, lightly loaded transformers, lighting, etc.

SVG an IGBT based compensation device with the following advantages:

- Is a controllable current source, avoiding harmonic amplification which may be present
- Can dynamically and continuously compensate power factor according to the change of load. The module exports reactive power and can absorb reactive power, completely eliminating reactive power reverse transmission.
- With response time of $\leq 5\text{ms}$, and the conversion from conductive reactive power to inductive reactive power can be accomplished almost instantaneously and can be fully utilised for fast switching loads

Benefits include: Reduced maintenance, a considerably longer lifespan, compact size

- Complete power quality improvement solution including real-time elimination of harmonics and flicker mitigation
- Provides dynamic step-less compensation instantaneously in real-time to each phase individually
- Only injects the kVar required in that moment with no possibility of over or under-compensation
- Can maintain a PF of 0.99 lagging or unity (if required) for both inductive and capacitive loads
- Voltage fluctuations (flicker) mitigation and reduction of voltage (sag and swell) variations
- Correcting phase imbalance (reducing the peak current which reduces the peak demand tariff on electricity bills)
- Immune to harmonics, resonance and voltage level and is maintenance free (with no electromechanical components)
- Expandable by paralleling up to 8 modules (unnecessary to over-dimension capacity to cater for future needs)
- Output current is unaffected by mains voltage fluctuations providing stable support for mains voltage

Overall efficiency:	$\geq 97\%$
Overload capability:	120%
Response time:	$\geq 5\text{ms}$
Communication port:	RS-485 - Modbus-RTU protocol
Display interface:	4.3" LCD
Operating temp:	$-20^{\circ}\text{C} \dots 45^{\circ}\text{C}$
Cooling:	Forced air cooling (fan cooling)



SFR-SVG4...

type	kvar	description	rated input (V)	dimensions (mm)			price
				(H)	(W)	(D)	
Static Var Generator (SVG) - Wall mount system (3-phase 4 wire) 400V							
SFR-SVG4-30/0.4B	30 kvar	Static Var Generator (SVG)	$400\text{V} \pm 15\%$	641	440	149	101 000.00
SFR-SVG4-50/0.4B	50 kvar	Static Var Generator (SVG)	$400\text{V} \pm 15\%$	641	440	149	129 000.00
SFR-SVG4-75/0.4B	75 kvar	Static Var Generator (SVG)	$400\text{V} \pm 15\%$	753	520	230	158 000.00
SFR-SVG4-100/0.4B	100 kvar	Static Var Generator (SVG)	$400\text{V} \pm 15\%$	753	520	230	191 000.00

Larger sizes can be made up by paralleling up to 8 wall mount systems.

External protection (a circuit breaker is required)

Static Var Generator - Power factor correction

