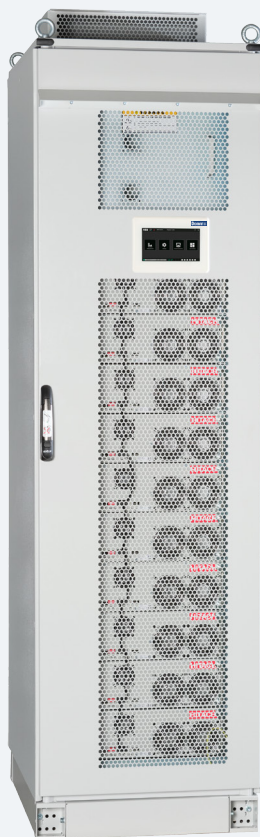


Brochure

PQactiF

Higher flexibility and modularity for improved power quality



30 years of active filters

Active filters from Dominit Belgium have been present globally in the market for more than 30 years. They make installations compliant with prevailing power quality regulations by mitigating harmonic pollution, load imbalance and reactive power demand.



The modular power quality filter PQactiF offers all these benefits with additional features



Flexibility



Modularity



Improved efficiency

for applications which are suffering from poor power quality.



We offer solution

not only for commercial segment, but for infrastructure and industrial segments also



Suitable for every segment

like mining, metal, paper, commercial and infrastructure, aluminum, steel and other metal industries



Experience

in vessel, port, ski resort and skyscrapers



Commissioning and

troubleshootingexperience worldwide



Local service teams

available to perform commissioning and site support



Factory service team

with global experience of more than 30 years



Continuous training

to service teams around the world

PQactiF: Features and benefits

Harmonic filtering

Individual harmonic selection capability and unique filtering efficiency due to three-level inverter and proven control system

PQactiF has an improved capability of filtering up to 25 harmonics simultaneously, between the orders H2 to H50.

Reactive power compensation

Stepless reactive power compensation for both inductive and capacitive loads, target settable

PQactiF can perform precise stepless reactive power compensation of both inductive and capacitive loads. The target power factor is programmable from 0.6 (inductive) to 0.6 (capacitive) which makes PQactiF a superior alternative to a conventional capacitor bank. This also allows compensation of loads fed by generators without the risk of overcompensation.

Load balancing

Balancing the load currents to address neutral to earth voltages and negative impact of voltage unbalance

Load balancing feature is available in both 3-wire and 4-wire systems between phases and between phase and neutral. This feature helps to improve voltage unbalance on the phases which increases the safety of the installation and allows sensitive loads to operate.

Enhanced communication features

Wi-Fi enabled modules allow users to monitor and set parameters via smartphone or computer

Parameter settings and simple diagnostics can be performed by a web server on a mobile device. The optional user-friendly HMI (called PQoptiM) interface offers direct access to filter control, programming and monitoring with its 7-inch touchscreen.

Adaptable



Compact
Small footprint



Modular
Up to 32 modules in parallel



Configurable
Module, wall-mounted or standalone cabinet

Efficient



3-level inverter
Energy efficient and compact



Closed loop control
Offering high accuracy



Resonance protection
Added operational stability

Easy to operate



Wi-Fi enabled
Control through PC or smartphone



User-friendly HMI
7-inch interactive touchscreen GUI



Reliable
Suited to both new and retrofit applications

PQactiF: Portfolio

PQactiF is offered in two different module ratings of 20 A and 40 A. Depending on the application, PQactiF is available in either as a module, a wall-mounted solution or a standalone cabinet.

PQactiF-M: Module

- Modular design: Suitable for OEMs, LV switchgear and drive manufacturers
- Very compact: Can be integrated into a small cubicle, either vertically or horizontally
- Low losses: Reduced losses and built-in forced air cooling
- Silent solution: <65dBA, perfect solution for installing on office floors

PQactiF-WM: Wall-mounted

- Distributed filtering: For building applications where space restrictions exist
- Easy to install thanks to wall-mounting kit
- Available up to 120 A

PQactiF-C: Standalone cabinet

- Complete solution: Fully factory-built, assembled and tested panel
- Flexibility: Rating can be extended in modular way from 20 A to 400 A in single cabinet

Sizing tools

Our online tool PQF Size enables our customers to size and select the active filter at maximum economic benefit. The tool also generates an automatic sizing report that allows customer to review the level of improvement before and after the application.

Please contact us for more information in PQF Size tool.

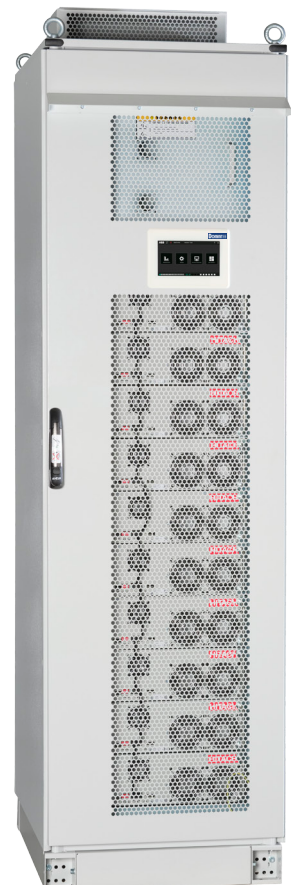
01 PQactiF - M Module



02 PQactiF - WM Wall-mounted



03 PQactiF - C Standalone cabinet



PQactiF: Technical specifications

Specifications	PQactiF - M Module	PQactiF - WM Wall-mounted	PQactiF - C Standalone cabinet ⁽¹⁾
Electrical characteristics			
Connection method	208 - 480 V (3-wire) 208 - 415 V (4-wire)	208 - 480 V (3-wire) 208 - 415 V (4-wire)	208 - 480 V (3-wire) 208 - 415 V (4-wire)
Network frequency (+/- 5%)	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Line current rating per base unit (A)	20 A, 40 A	20 A, 40 A	Max. 400 A per cabinet
Neutral current rating per base unit (A)	Programmable limit between 1x to 3x line current rating ⁽²⁾		
Inverter technology	Three-level inverter	Three-level inverter	Three-level inverter
Switching frequency of semiconductors	18 kHz	18 kHz	18 kHz
Modularity	Up to 32 modules can be combined. Different module rating allowed		
Redundancy	Any unit can become a master (defined as lowest ID that is operational). In case of master unit failure, next higher ID module takes the lead as master		
Equipment losses	<2.2% of the equipment power typically		
Filter characteristics			
Harmonic range	25 orders for 3-wire and 20 orders for 4-wire, between 2 nd to 50 th harmonic orders		
Harmonic attenuation factor (I _H (source)/ I _H (load))	<97% at nominal load	<97% at nominal load	<97% at nominal load
CT configuration	Closed loop	Closed loop	Closed loop
Reaction time	27 μs	27 μs	27 μs
Response time	2 networks cycles typically (10-90% filtering) <1 network cycle typically for fundamental compensation		
Reactive power characteristics ⁽³⁾			
Target power factor	Programmable from 0.6 (inductive) to 0.6 (capacitive)		
Load balancing characteristics ⁽³⁾			
Unbalanced current compensation	Up to 50% of nominal rating		
Programming/ communication			
Wi-Fi communication	Webserver on smartphone or computer for simple diagnostics and parameters setup		
USB	With dedicated optional software (servicing/programming)		
PQOptiM (Optional)	7-inch color TFT screen (800 x 480 pixels)		
	Dimensions (W x H x D): 198 x 141 x 40 mm		
	IP64 front side/IP20 backside		
	CAN 2B (internal) – RJ12 for communicating with units		
	Ethernet (Modbus TCP) – RJ45		
	USB 2.0 (for servicing only)		
	2 insulated digital inputs - 24 V (AC or DC)		
	6 digital NO outputs – 230 Vac/15 A (one common polarity), dry contacts		

Specifications	PQactiF - M Module	PQactiF - WM Wall-mounted	PQactiF - C Standalone cabinet ⁽¹⁾
Physical aspects			
Mounting	Module unit, suitable to integrate into a cabinet	Wall-mounted	Standalone cabinet
Approximate dimensions (W x D x H)	435 x 459 x 130 mm	438 x 198 x 525 mm	Full size cabinet: 600 x 800 x 2100 mm
Color	Surface treated metal frames Front side painted RAL 7035	Surface treated metal frames Optional HMI holder painted RAL 7035	RAL 7035
Installation aspects ⁽⁴⁾			
Altitude	Indoor installation in clean environment up to 1000 m altitude (1% derating for each 100 m above 1000 m. Maximum limited to 2000 m)		
Ambient temperature	-10°C to 40°C during operation (up to 50°C with auto-derating) ⁽⁵⁾ -27°C to 70°C during storage		
Humidity	Max. 95% non-condensing during operation Max. 85% non-condensing during storage		
Fixation	Special kit allows module to be integrated into cabinet	Wall-mounted	Floor fixation / lifting lugs provided
Cable entry	Rear for power cables Front for control cables	Top for power cables Bottom for control cables	Top / Bottom for both power and control cables
CT requirements	3 CTs are required (class 1.0 or better, 15 VA)		
IP protection	IP20 from front access	IP30 from top IP20 from front access	IP21 / NEMA 1 IP54 / NEMA 12
Compliance with standards			
General construction and safety aspects for PQactiF - M and PQactiF - WM	EN 62477-1 (2012) "Safety requirements for power electronic converter systems and equipment"		
General construction and safety aspects for PQactiF - C	EN 61439-1 (2011) "Low-voltage switchgear and control gear assemblies – Part 1: General rules"		
EMC immunity (CE version only)	EN/ IEC 61000-6-2, Industrial level		
EMC emissions (CE version only)	EN/ IEC 61000-6-4, Class A		
cUL compliance	UL recognized	UL508 certified	UL508 certified
Certification	CE, cUL, RCM	CE, cUL, RCM	CE, cUL, RCM

1. Cabinet configuration is available in both CE and cUL versions.
2. 4-wire application is valid for both CE and cUL versions.
3. Functions other than filtering, i.e. reactive power compensation and load balancing are performed based on the availability of spare capacity (amperes) of device after harmonics mitigation. Or, a priority function (kvar compention/ harmonics filtering) can be selected from device settings.
4. Environment conditions 3K20, 3K21, 3K22, 3B1, 3S5 and 3M11 as per IEC 60721 3-3 (2019).
5. Under full load conditions, the product may automatically derate beyond 45° C ambient temperature

Dominit Belgium Energy's Commitment

Quality assurance

At Dominit Belgium B.V., we are committed to providing the best products and services. Our products comply with or exceed the latest international standards. In addition to type tests in independent laboratories, our certified design and manufacturing processes guarantee the highest quality. We are certified according to the latest relevant ISO quality standards.

Sustainability

For Dominit Belgium B.V., sustainability is about balancing economic success, environmental stewardship and social progress to benefit all our stakeholders.

Sustainability considerations cover how we design and manufacture products, what we offer customers, how we engage suppliers, how we assess risks and opportunities, and how we behave in communities where we operate and towards one another, while striving to ensure the health, security and safety of our employees, contractors and others affected by our activities.



Dominit Belgium B.V.
www.dominit.be

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