AFQm

100 / 200 / 300 / 400

Active filter with multilevel technology

AFQm 100A

Description

The floor mounted AFQm multilevel active filters are the most complete solution for solving power quality problems in three-phase industrial, commercial or service installations caused by the presence of harmonics and the consumption of reactive power. These following characteristics and functions have been implemented in the cabinet type active filters:

- Filtering capacity per module of 100 A, capacity per cabinet between 100 A to 400 A
- Cabinets expandable with small-sized rack modules
- Range for installations with 3 wires (3W model) or 4 wires (4W model)
- Multi-range voltage and dual frequency (50/60 Hz)
- Reduction of harmonic currents up to the fiftieth harmonic (2,500 Hz)
- Selection of harmonic frequencies to be filtered for maximum filter effectiveness
- Power factor correction both inductive and capacitive
- Phase current balancing, improvement of consumption in neutral (4W model)
- If higher filtering capabilities are required, the system can be expanded using AFQm racks connected in parallel (all filters/racks must be of the same 3- or 4-wire model)

Applications

They are an ideal solution for installations with a large amount of single-phase and three-phase loads generating harmonics, such as computers, UPS units, lights, lifting equipment, air-conditioning systems with variable speed drives, etc.

They can also be used in installations that require a good power quality for the purpose of increasing production efficiency and improve supply continuity in the system.

AFQm 400A

Technical features

Electrical characteristics	Rated voltage		4 wires (4W) 3P+N: 208…400 V phase-phase ±10 % 3 wires (3W) 3P: 208…480 V phase-phase ±10 %			
	Frequency		50/60 Hz ± 5 %			
	Maximum THDv		25%			
	Models		**100 A**	**200 A**	**300 A**	**400 A**
Power	Maximum power	**4W (400V)**	69000 VA	138000 VA	207000 VA	276000 VA
		3W (480V)	76300 VA	152600 VA	228900 VA	305200 VA
	Average efficiency		> 97.2%	> 97.2%	> 97.2%	> 97.2%
	Maximum current (phase)		100 A (rms)	200 A (rms)	300 A (rms)	400 A (rms)
	Maximum current (neutral) only 4W		300 A (rms)	600 A (rms)	900 A (rms)	1200 A (rms)

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Features	Filtering	From the 2nd to the 50th harmonic, selectable time response < 0.1 ms			
	Phase compensation	Selectable			
	Power factor correction	Selectable from 0.7 inductive to 0.7 capacitive			
	Programming priority	Priority of filtering or balancing / Power factor correction, selectable			
	Models	**100 A**	**200 A**	**300 A**	**400 A**
	Parallel installation	· Up to 100 devices/racks · Connection of CTs to the master unit · Allows redundancy (system operation in the event of equipment failure)			
	Noise level	≤ 60 dBA	≤ 63 dBA	≤ 66 dBA	≤ 69 dBA
	User interface	3.5” colour touchscreen Web server and datalogger			
	RS-485	Modbus RTU, 9600, 1, No parity			
	Ethernet	TCP/IP (Modbus TCP)			
Installation	Category	CAT III (300 V)			
	Pollution rating	2			
	Working temperature	-10...+45ºC			
	Storage temperature	-20...+55ºC			
	Relative humidity	0...95% non-condensing			
	Altitude	3000 m (2000 m without derating)			
	Protection rating	IP 20 (or other protection degree upon request)			
Connection	Grid	M8 Ring terminal Maximum ring width 23 mm Tightening torque 8-10 Nm			
	CT	6-pole connector Maximum cable cross-section 2.5 mm^2 Spring clamp terminal block			
	RS485	3-pole connector Maximum cable cross-section 2.5 mm^2 Tightening torque 0.5-0.6 Nm			
	Ethernet	RJ45			
Standards	IEC 62477-1:2012, IEC 55011:2011, IEC 61000-6-2, IEC 61000-6-4:2007, IEC 61439-1:2011				

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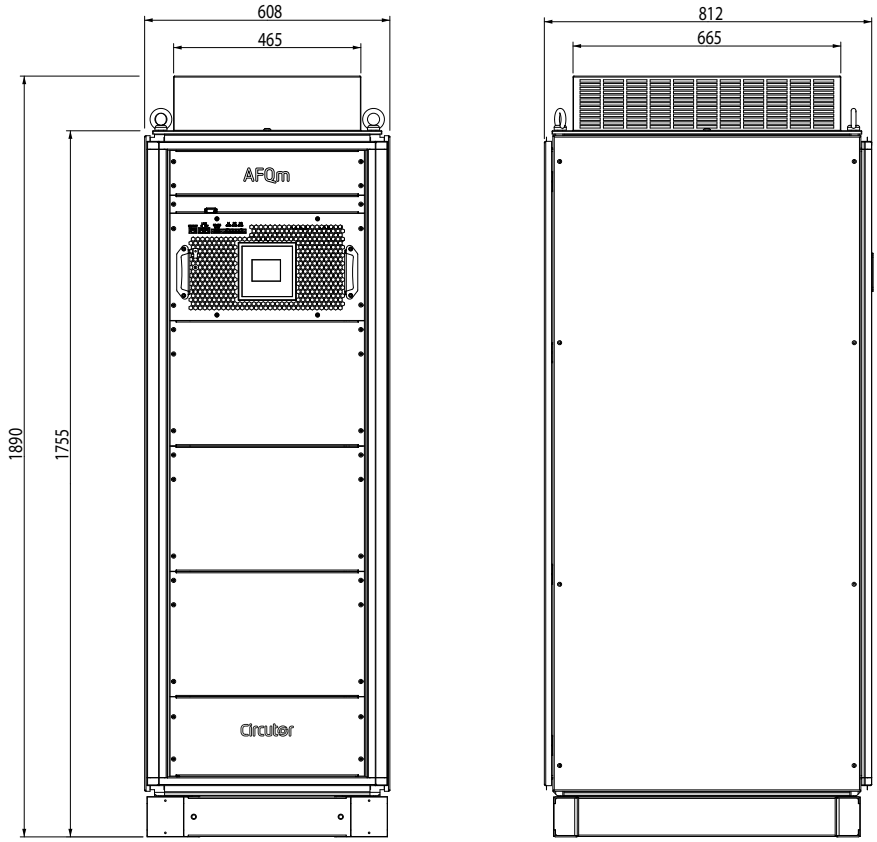
Dimensions

Type	Dimensions (Width x Height x Depth)	Weight (kg)
AFQm-3WF-100C-480	608 x 1890 x 812 mm	190
AFQm-3WF-200C-480		245
AFQm-3WF-300C-480		300
AFQm-3WF-400C-480		355
AFQm-4WF-100C-400		190
AFQm-4WF-200C-400		245
AFQm-4WF-300C-400		300
AFQm-4WF-400C-400		355

Dimensions of cabinet-type AFQm



AFQm

Active filter with multilevel technology

100 / 200 / 300 / 400

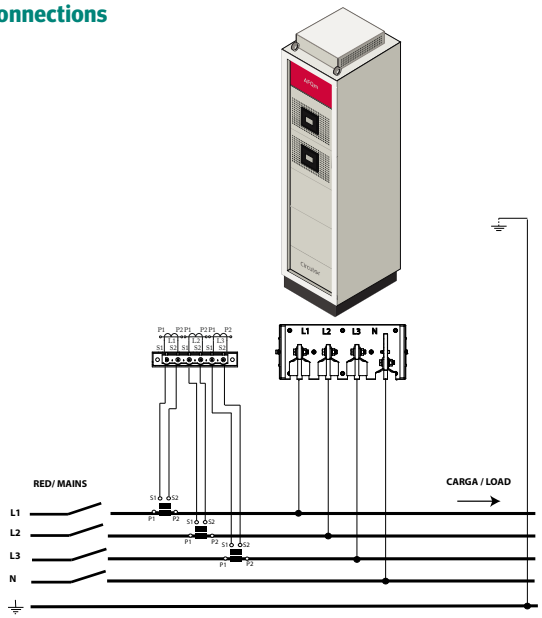
References

Active filters floor mounted cabinets for 3 wires (3W) and 4 wires (4W)

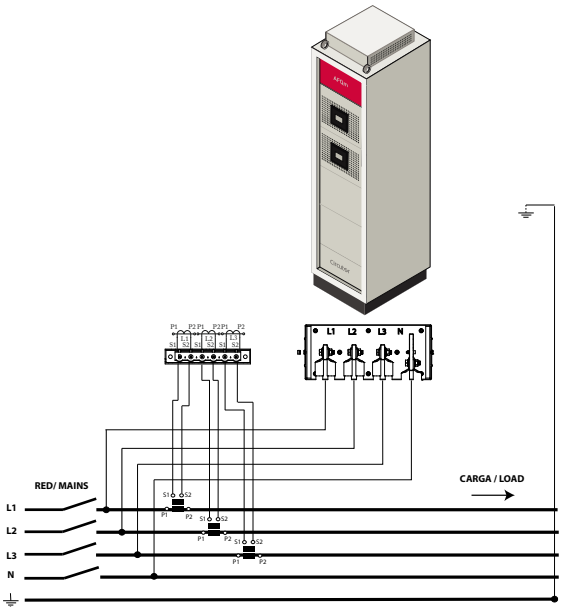
Phase current	Neutral current	System	Type	Code
100 A	-	3 wires 230V - 480 V	AFQm-3WF-100C-480	R7MF2F
200 A	-		AFQm-3WF-200C-480	R7MF3F
300 A	-		AFQm-3WF-300C-480	R7MF4F
400 A	-		AFQm-3WF-400C-480	R7MF5F
100 A	300 A	4 wires 230V - 400 V	AFQm-4WF-100C-400	R7RF2F
200 A	600 A		AFQm-4WF-200C-400	R7RF3F
300 A	900 A		AFQm-4WF-300C-400	R7RF4F
400 A	1200 A		AFQm-4WF-400C-400	R7RF5F

All active filters incorporate an EMI filter

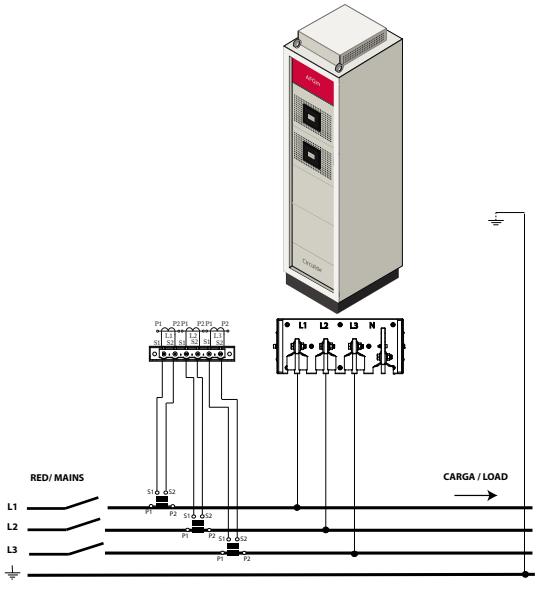
Connections



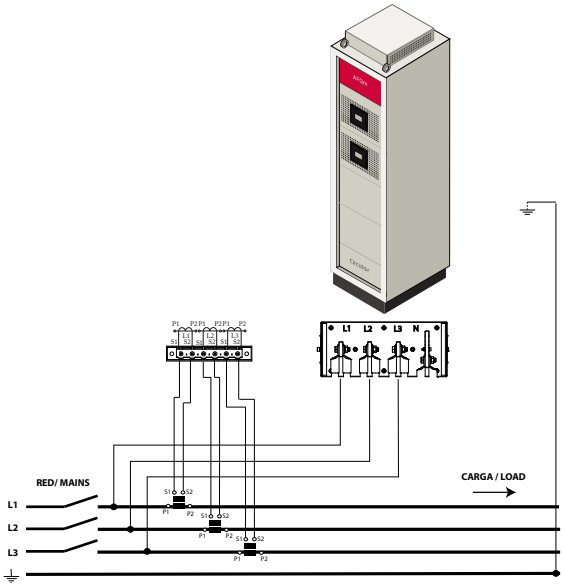
Three-phase measurement with 4 wire power connection and current measurement in mains side.



Three-phase measurement with 4 wire power connection and current measurement in load side.



Three-phase measurement with 3 wire power connection and current measurement in mains side.



Three-phase measurement with 3 wire power connection and current measurement in load side.