



## AFQm-4WP-140C-550

AFQm-4WP-140C-550, Active multifunctionfilter

Code: R7NF7P.

- > System: 4 wires, 400...550 V
- > Phase current (A): 140
- > Peak current (A): 280
- > Max.neutral current (A): 420
- > Mounting: Floor-mounted

### 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 (400 ... 480 Vac) and 70 A (550 ... 690 Vac), capacity per cabinet between 100 ... 400 A (400 ... 480 Vac) and 70 ... 280 A (550. ... 690 Vac).
- Cabinets expandable with small-sized rack modules.
- Range for installations with 3 wires (3W model to 690 Vac) or 4 wires (4W model to 550 Vac).
- 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).

### Application

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.



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## Specifications

### AC power supply

|                       |                             |
|-----------------------|-----------------------------|
| Installation category | 4 kV, CAT III Class 1       |
| Frequency             | 50 / 60 Hz (± 5 %)          |
| Nominal voltage       | 208 ... 690 V~ F-F (± 10 %) |

### Mechanical characteristics

|                                  |                                                                                                                            |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Size (mm) width x height x depth | 608 x 1890 x 812 (mm)                                                                                                      |
| Noise                            | < 73 dBA                                                                                                                   |
| Connection type                  | Network: M8 ring terminal, Ground: M10 ring terminal, Current: 6-pole connector, RS-485: 3-pole connector, Ethernet: RJ-45 |
| Weight (kg)                      | 248                                                                                                                        |

### Environmental characteristics

|                                          |                                |
|------------------------------------------|--------------------------------|
| Protection class                         | IP 21 (IP 41 on demand) / IK10 |
| Relative humidity (without condensation) | 0 ... 95 %                     |
| Storage temperature                      | -20 ... +50 °C                 |
| Working temperature                      | -10 ... +45 °C                 |

### Electrical characteristics

|                                            |             |
|--------------------------------------------|-------------|
| Conditional short-circuit current (Icc)    | 40 kA       |
| Rated peak current Ipk                     | 84 kA       |
| Current crest factor                       | 2:1         |
| Maximum phase current                      | 140 A (RMS) |
| Maximum neutral current                    | 420 A (RMS) |
| Rated diversity factor (RDF), simultaneity | 1           |
| Earthing system                            | TN, TT      |

### Current measurement circuit

|                      |                 |
|----------------------|-----------------|
| Transformation ratio | 5 ... 5000 / 5A |
|----------------------|-----------------|

### Communication Network

|                        |                    |
|------------------------|--------------------|
| Protocol               | TCP/IP, Modbus TCP |
| Technology / Interface | Ethernet           |

### Standards

|                                       |                                                                      |
|---------------------------------------|----------------------------------------------------------------------|
| Electrical safety, Maximum height (m) | 5000                                                                 |
| Standards                             | IEC 61000-6-4, UNE-EN 55011, IEC 61000-6-2, IEC 62477-1, IEC 61439-1 |

### User interface

|              |                             |
|--------------|-----------------------------|
| Display type | TFT color, 3.5" touchscreen |
|--------------|-----------------------------|



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## Measurement accuracy

|                         |            |
|-------------------------|------------|
| Voltage harmonics (THD) | 25 % (max) |
|-------------------------|------------|

## Features / performance

|                                    |                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phase compensation                 | Selectable                                                                                                                                                                                                                                                                                                                                   |
| Reactive power compensation (Kvar) | Selectable                                                                                                                                                                                                                                                                                                                                   |
| Filtering / Response time          | 2° ... 50° harmonic (selectable) / < 100 µs                                                                                                                                                                                                                                                                                                  |
| Parallel assembly/installation     | Up to 100 units, with different gauges. CTs connection only to the "master" unit<br>Advanced management algorithm: Maximizes the life of the devices (alternate operation of devices). Maximises operational efficiency (Only the necessary filters are activated). Allows redundancy (system operation in the event of device malfunction). |
| Priority scheduling                | Selectable                                                                                                                                                                                                                                                                                                                                   |

## Power supply output

|       |           |
|-------|-----------|
| Power | 133400 VA |
|-------|-----------|

## Serial communication

|                   |              |
|-------------------|--------------|
| Protocol          | Modbus / RTU |
| Technology / Type | RS-485       |

### AFQm-C

Active multifunction filter

| CODE                                        | TYPE              | System               | Phase current (A) | Peak current (A) | Max.neutral current (A) |
|---------------------------------------------|-------------------|----------------------|-------------------|------------------|-------------------------|
| <b>3 wires 480 V, Floor-mounted cabinet</b> |                   |                      |                   |                  |                         |
| R7MF2P.                                     | AFQm-3WP-100C-480 | 3 wires, 230...480 V | 100               | 200              | -                       |
| R7MF3P.                                     | AFQm-3WP-200C-480 | 3 wires, 230...480 V | 200               | 400              | -                       |
| R7MF4P.                                     | AFQm-3WP-300C-480 | 3 wires, 230...480 V | 300               | 600              | -                       |
| R7MF5P.                                     | AFQm-3WP-400C-480 | 3 wires, 230...480 V | 400               | 800              | -                       |
| <b>3 wires 690 V, Floor-mounted cabinet</b> |                   |                      |                   |                  |                         |
| R7JF6P.                                     | AFQm-3WP-070C-690 | 3 wires, 400...690 V | 70                | 140              | -                       |
| R7JF7P.                                     | AFQm-3WP-140C-690 | 3 wires, 400...690 V | 140               | 280              | -                       |
| R7JF8P.                                     | AFQm-3WP-210C-690 | 3 wires, 400...690 V | 210               | 420              | -                       |
| R7JF9F.                                     | AFQm-3WF-280C-690 | 3 wires, 400...690 V | 280               | 560              | -                       |
| R7JF9P.                                     | AFQm-3WP-280C-690 | 3 wires, 400...690 V | 280               | 560              | -                       |
| <b>4 wires 400 V, Floor-mounted cabinet</b> |                   |                      |                   |                  |                         |
| R7RF2P.                                     | AFQm-4WP-100C-400 | 4 wires, 230...400 V | 100               | 200              | 300                     |
| R7RF3P.                                     | AFQm-4WP-200C-400 | 4 wires, 230...400 V | 200               | 400              | 600                     |
| R7RF4P.                                     | AFQm-4WP-300C-400 | 4 wires, 230...400 V | 300               | 600              | 900                     |
| R7RF5P.                                     | AFQm-4WP-400C-400 | 4 wires, 230...400 V | 400               | 800              | 1200                    |
| <b>4 wires 550 V, Floor-mounted cabinet</b> |                   |                      |                   |                  |                         |



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|---------|-------------------|----------------------|-------------------|------------------|-------------------------|
| R7NF6P. | AFQm-4WP-070C-550 | 4 wires, 400...550 V | 70                | 140              | 210                     |
| R7NF7P. | AFQm-4WP-140C-550 | 4 wires, 400...550 V | 140               | 280              | 420                     |

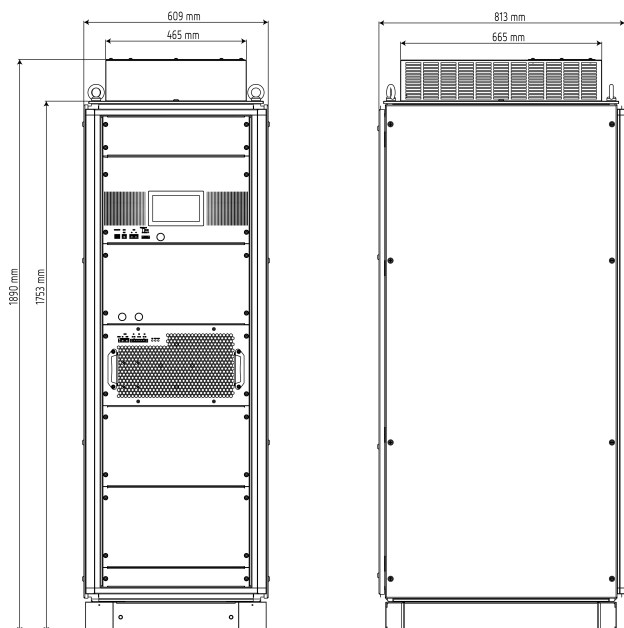
Please contact our technical department for networks with high THD(V) levels.  
All equipment has built-in EMI filters



## AFQm-4WP-140C-550

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### Dimensions



### Connections

