



## **RVFF series - Variable frequency drives**

# **Switches**

# RVFF series

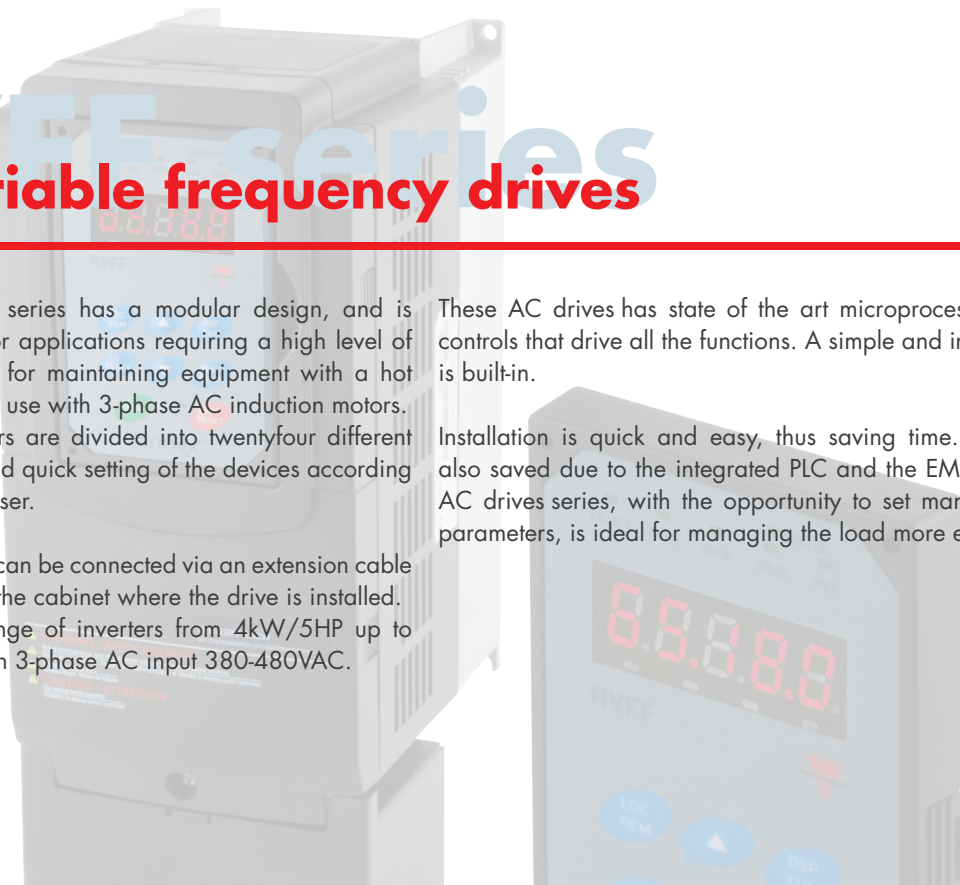
## AC Variable frequency drives

The VariFlex<sup>3</sup> RVFF series has a modular design, and is intended not only for applications requiring a high level of protection, but also for maintaining equipment with a hot plug display. It is for use with 3-phase AC induction motors. The drive parameters are divided into twentyfour different groups for simple and quick setting of the devices according to the needs of the user.

The keypad display can be connected via an extension cable and placed outside the cabinet where the drive is installed. There is a wide range of inverters from 4kW/5HP up to 160kW/215HP with 3-phase AC input 380-480VAC.

These AC drives has state of the art microprocessor digital controls that drive all the functions. A simple and intuitive PLC is built-in.

Installation is quick and easy, thus saving time. Costs are also saved due to the integrated PLC and the EMI filter. This AC drives series, with the opportunity to set many different parameters, is ideal for managing the load more efficiently.



## High performance and short installation time

### Conformity

All VariFlex<sup>3</sup> AC drives conform to the relevant European and North American safety standards. Including EMI radio standard, EMC immunity standard (EN 61800-3) and LVD EN61800-5-1.

### Main features

- AC variable frequency drive for use with AC induction motors
- Sensorless vector control or V/F, SLV, PMSLV with space vector PWM mode
- Input voltage range: 3-PH 480 VAC
- 150%/1 Hz (vector mode) starting torque
- Simple built-in PLC function
- PID function
- Conforms to EMI radio standard and EMS immunity standard EN61800-3 for industrial sites
- 6 different frame sizes
- Speed setting via buttons and knob

- Memory stick option for fast and accurate drive to drive parameter transfer and storage
- NPN/PNP digital inputs
- DIN rail or panel mounting and keypad extension available on all models
- Frequency control range 0.1 Hz~400.0 Hz
- Carrier frequency range 2 - 16 kHz

### Communication

- All parameters accessible via both keypad and PC
  - RS232 or RS485 ModBus RTU/ASCII serial communications available on all models.
- Communication interface modules for Profibus DeviceNet Ethernet (TCP/IP)/CANopen/Bacnet

**RoHS**  
COMPLIANT





## Water treatment pumps

The built-in multi-pump control mode automatically coordinates the pumps according to the load of the water in the system. It distributes running hours evenly across master and slave pumps to increase system efficiency and extend the life of the pump.

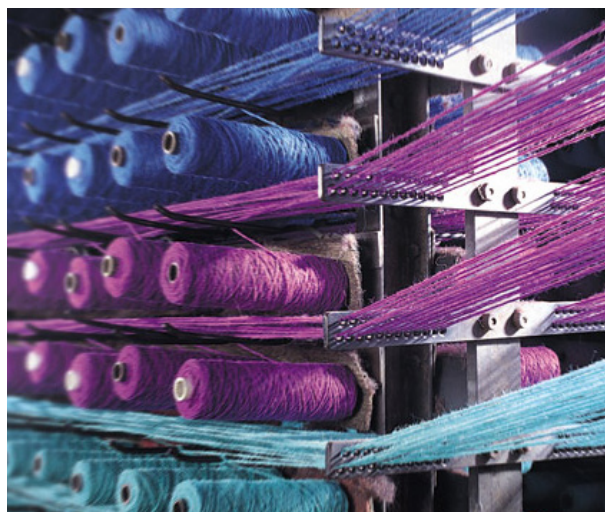
- Master & Slave operation of 1 to 8 pumps, with DOL, soft starters or inverters as slaves. PLCs or other controls are not necessary.
- Once the master pump reaches its upper or lower limit frequency due to increase or decrease in demand, one or more of the slaves are started or stopped.
- In the case of failure of the motor/pumps, the next-in-line slave unit comes into operation, so avoiding downtime and saving costs.
- The RVFF can detect any clogging of the pump and give an alarm to prevent overload pressure from damaging the pipes.



## Fans, conveyors and textile machinery

The latest additions to the RVFF family of AC drives combine the powerful performance and flexible control expected from Carlo Gavazzi drives with some new unique features to help optimize the application. Whether you're looking for a compact drive with application versatility or a high performance solution with a broad asset of features, we have the industry-leading drives and convenient features you need to help maintain a competitive advantage.

- Highly efficient fan control, with safe torque OFF function and fire override mode for emergency.
- With its frequency, RVFF can avoid vibration by means of quick parameter setting, preventing mechanical damage to system and fans.



## HVAC

RVFF can avoid resonance by means of quick parameter setting, so preventing mechanical damage the system.

- Ultra low motor noise: soft PWM technology reduces standard voltage to significantly reduce EMI and motor noise.
- RTC function / simple PLC
- Automatic energy saving. The RVFF can automatically adjust the output voltage, and lower the output current of the drive according to the load. The output power changes in proportion to the load.



# RVFF series

## AC Variable frequency drives

### Features and benefits



- **Energy Saving Mode (V/F mode).**

Set by parameter Group 11. RVFF offers manual & auto energy saving modes selectable by parameters. Energy saving mode should be used when motor is not fully loaded typically below 70%. The saving increases with decrease in load.

- **Auto mode (AES) Auto mode is enabled by parameter**

Output voltage & current are automatically adjusted based on the load. Output power changes proportional to the load. The function can be set with the parameters.

- **PID mode**

Built in Carlo Gavazzi protocol multi-pump control mode up to 3 pumps

Pumps are controlled depending on demand. Master & slave alternation based on hours run to distribute load to extend life and improve system efficiency. Pump shut off on pump dry protection based on system pressure to protect against pump overheating & damage. Pump shut off with PID Sleep mode for low flow to extend drive, motor & pump life. Alarm on pump blockage detection.

**One solution for different motor category**

**Three in one**

The RVFF is able to control three different motor driving technology.

- Induction motor (IM)
- Surface permanent magnet motor (SPM)
- Interior permanent magnet motor (IPM)

**Interior permanent magnet motor (IPM)**

- High efficiency
- High power density
- With reluctance torque



**Induction motor (IM)**

- High cost competitive
- High mechanical robustness



**Surface permanent magnet motor (SPM)**

- High efficiency
- High power density
- Low cogging torque





# RVFF series

## AC Variable frequency drives



### Dimensions



Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFA3400400F	140 (5.51)	385 (15.16)	177 (6.97)
RVFFA3400550F	140 (5.51)	385 (15.16)	177 (6.97)
RVFFA3400750F	140 (5.51)	385 (15.16)	177 (6.97)
Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFB3401100F	210 (8.27)	416.5 (16.40)	215 (8.46)
RVFFB3401500F	210 (8.27)	416.5 (16.40)	215 (8.46)
Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFC3401850F	265 (10.43)	500 (19.69)	225 (8.86)
RVFFC3402200F	265 (10.43)	500 (19.69)	225 (8.86)
RVFFC3403000F	265 (10.43)	500 (19.69)	225 (8.86)
Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFD3403700F	284 (11.18)	679 (26.73)	252 (9.92)
RVFFD3404500F	284 (11.18)	679 (26.73)	252 (9.92)
RVFFD3405500F	284 (11.18)	679 (26.73)	252 (9.92)
Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFE3407500	348.5 (13.72)	740 (29.13)	300 (11.81)
RVFFE3409000	348.5 (13.72)	740 (29.13)	300 (11.81)
Model	W (mm/inch)	H (mm/inch)	D (mm/inch)
RVFFF34011000	463.5 (18.25)	1105 (43.50)	324.5 (12.78)
RVFFF34013200	463.5 (18.25)	1105 (43.50)	324.5 (12.78)
RVFFF34016000	463.5 (18.25)	1105 (43.50)	324.5 (12.78)

## Main specifications

Model RVFF	<b>RVFFA3400400F</b>	<b>RVFFA3400550F</b>	<b>RVFFA3400750F</b>	<b>RVFFB3401100F</b>
Nominal motor power	4.0 kW	5.5 kW	7.5 kW	11.0 kW
Horsepower rating	5 HP	7.5 HP	10.0 HP	15.0 HP
Input current	9.6 A	11.6 A	18.2 A	24 A
Rated output current	9.2 A	12.1 A	17.5 A	23 A
Rated capacity	7 kVA	8.4 kVA	13 kVA	18 kVA
AC supply voltage and frequency	3-phase; 380 V÷480 V, +10% to 15%; 50/60 Hz, ± 5%			
Output voltage and frequency	3-phase; 380÷480 V; 0.1÷400 Hz			

Model RVFF	<b>RVFFB3401500F</b>	<b>RVFFC3401850F</b>	<b>RVFFC3402200F</b>	<b>RVFFC3403000F</b>
Nominal motor power	15.0 kW	18.5 kW	22.0 kW	30.0 kW
Horsepower rating	20.0 HP	25.0 HP	30.0 HP	40.0 HP
Input current	32.3 A	41.3 A	47.8 A	58.7 A
Rated output current	31.0 A	38.0 A	44.0 A	54.0 A
Rated capacity	24.0 kVA	29.0 kVA	34.0 kVA	41.0 kVA
AC supply voltage and frequency	3-phase; 380 V÷480 V, +10% to 15%; 50/60 Hz, ± 5%			
Output voltage and frequency	3-phase; 380÷480 V; 0.1÷400 Hz			

Model RVFF	<b>RVFFD3403700F</b>	<b>RVFFD3404500F</b>	<b>RVFFD3405500F</b>	<b>RVFFE3407500</b>
Nominal motor power	37.0 kW	45.0kW	55.0 kW	75.0 kW
Horsepower rating	50.0 HP	60.0HP	75.0 HP	100 HP
Input current	75.0 A	95.7.0A	112.0 A	141.0 A
Rated output current	73.0 A	88.0A	103.0 A	145.0 A
Rated capacity	55.0 kVA	67.0 kVA	78.0 kVA	110.0 kVA
AC supply voltage and frequency	3-phase; 380 V÷480 V, +10% to 15%; 50/60 Hz, ± 5%			
Output voltage and frequency	3-phase; 380÷480 V; 0.1÷400 Hz			

Model RVFF	<b>RVFFE3409000</b>	<b>RVFFE34011000</b>	<b>RVFFE34013200</b>	<b>RVFFE34016000</b>
Nominal motor power	90.0 kW	110.0 kW	132.0 kW	160.0 kW
Horsepower rating	125.0 HP	150.0 HP	175.0 HP	215.0 HP
Input current	181.0 A	229.0 A	275.0 A	325.0 A
Rated output current	168.0 A	208.0 A	250.0 A	296.0 A
Rated capacity	125.0 kVA	158.0 kVA	190.0 kVA	225.0 kVA
AC supply voltage and frequency	3-phase; 380 V÷480 V, +10% to 15%; 50/60 Hz, ± 5%			
Output voltage and frequency	3-phase; 380÷480 V; 0.1÷400 Hz			

## OUR SALES NETWORK IN EUROPE

### AUSTRIA

Carlo Gavazzi GmbH  
Ketzergrasse 374,  
A-1230 Wien  
Tel: +43 1 888 4112  
Fax: +43 1 889 10 53  
office@carlogavazzi.at

### FRANCE

Carlo Gavazzi Sarl  
Zac de Paris Nord II, 69, rue de la Belle Etoile,  
F-95956 Roissy CDG Cedex  
Tel: +33 1 49 38 98 60  
Fax: +33 1 48 63 27 43  
french.team@carlogavazzi.fr

### ITALY

Carlo Gavazzi SpA  
Via Milano 13,  
I-20020 Lainate  
Tel: +39 02 931 761  
Fax: +39 02 931 763 01  
info@gavazziacbu.it

### SPAIN

Carlo Gavazzi SA  
Avda. Iparraguirre, 80-82,  
E-48940 Leioa (Bizkaia)  
Tel: +34 94 480 4037  
Fax: +34 94 431 6081  
gavazzi@gavazzi.es

### BELGIUM

Carlo Gavazzi NV/SA  
Mechelsesteenweg 311,  
B-1800 Vilvoorde  
Tel: +32 2 257 4120  
Fax: +32 2 257 41 25  
sales@carlogavazzi.be

### GERMANY

Carlo Gavazzi GmbH  
Pfnorstr. 10-14  
D-64293 Darmstadt  
Tel: +49 6151 81000  
Fax: +49 6151 81 00 40  
info@gavazzi.de

### NETHERLANDS

Carlo Gavazzi BV  
Wijkermeerweg 23,  
NL-1948 NT Beverwijk  
Tel: +31 251 22 9345  
Fax: +31 251 22 60 55  
info@carlogavazzi.nl

### SWEDEN

Carlo Gavazzi AB  
V:a Kyrkogatan 1,  
S-652 24 Karlstad  
Tel: +46 54 85 1125  
Fax: +46 54 85 11 77  
info@carlogavazzi.se

### DENMARK

Carlo Gavazzi Handel A/S  
Over Hadstenevej 40,  
DK-8370 Hadsten  
Tel: +45 89 60 6100  
Fax: +45 86 98 15 30  
handel@gavazzi.dk

### GREAT BRITAIN

Carlo Gavazzi UK Ltd  
4.4 Frimley Business Park,  
Frimley, Camberley, Surrey GU16 7SG  
Tel: +44 1 276 854 110  
Fax: +44 1 276 682 140  
sales@carlogavazzi.co.uk

### NORWAY

Carlo Gavazzi AS  
Melkeveien 13,  
N-3919 Porsgrunn  
Tel: +47 35 93 0800  
Fax: +47 35 93 08 01  
post@gavazzi.no

### SWITZERLAND

Carlo Gavazzi AG  
Verkauf Schweiz/Vente Suisse  
Sumpfstrasse 3,  
CH-6312 Steinhausen  
Tel: +41 41 747 4535  
Fax: +41 41 740 45 40  
info@carlogavazzi.ch

### FINLAND

Carlo Gavazzi OY AB  
Petaksentie 2-4,  
FI-00630 Helsinki  
Tel: +358 9 756 2000  
Fax: +358 9 756 20010  
myynti@gavazzi.fi

### PORTUGAL

Carlo Gavazzi Lda  
Rua dos Jerónimos 38-B,  
P-1400-212 Lisboa  
Tel: +351 21 361 7060  
Fax: +351 21 362 13 73  
carlogavazzi@carlogavazzi.pt

## OUR SALES NETWORK IN THE AMERICAS

### USA

Carlo Gavazzi Inc.  
750 Hastings Lane,  
Buffalo Grove, IL 60089, USA  
Tel: +1 847 465 6100  
Fax: +1 847 465 7373  
sales@carlogavazzi.com

### CANADA

Carlo Gavazzi Inc.  
2660 Meadowvale Boulevard,  
Mississauga, ON L5N 6M6, Canada  
Tel: +1 905 542 0979  
Fax: +1 905 542 22 48  
gavazzi@carlogavazzi.com

### MEXICO

Carlo Gavazzi Mexico S.A. de C.V.  
Calle La Montaña no. 28, Fracc. Los Pastores  
Naucalpan de Juárez, EDOMEX CP 53340  
Tel & Fax: +52.55.5373.7042  
mexicosales@carlogavazzi.com

### BRAZIL

Carlo Gavazzi Automação Ltda.  
Av. Francisco Matarazzo, 1752  
Conj 2108 - Barra Funda - São Paulo/SP  
Tel: +55 11 3052 0832  
Fax: +55 11 3057 1753  
info@carlogavazzi.com.br

## OUR SALES NETWORK IN ASIA AND PACIFIC

### SINGAPORE

Carlo Gavazzi Automation  
Singapore Pte. Ltd.  
61 Tai Seng Avenue  
#05-06 UE Print Media Hub  
Singapore 534167  
Tel: +65 67 466 990  
Fax: +65 67 461 980  
info@carlogavazzi.com.sg

### MALAYSIA

Carlo Gavazzi Automation  
(M) SDN. BHD.  
D12-06-G, Block D12,  
Pusat Perdagangan Dana 1,  
Jalan PJU 1A/46, 47301 Petaling Jaya,  
Selangor, Malaysia.  
Tel: +60 3 7842 7299  
Fax: +60 3 7842 7399  
sales@gavazzi-asia.com

### CHINA

Carlo Gavazzi Automation  
(China) Co. Ltd.  
Unit 2308, 23/F.,  
News Building, Block 1, 1002  
Middle Shennan Zhong Road,  
Shenzhen, China  
Tel: +86 755 83699500  
Fax: +86 755 83699300  
sales@carlogavazzi.cn

### HONG KONG

Carlo Gavazzi Automation  
Hong Kong Ltd.  
Unit 3 12/F Crown Industrial Bldg.,  
106 How Ming St., Kwun Tong,  
Kowloon, Hong Kong  
Tel: +852 23041228  
Fax: +852 23443689

## OUR COMPETENCE CENTRES AND PRODUCTION SITES

### DENMARK

Carlo Gavazzi Industri A/S  
Hadsten

### MALTA

Carlo Gavazzi Ltd  
Zejtun

### ITALY

Carlo Gavazzi Controls SpA  
Belluno

### LITHUANIA

Uab Carlo Gavazzi Industri Kaunas  
Kaunas

### CHINA

Carlo Gavazzi Automation (Kunshan) Co., Ltd.  
Kunshan

## HEADQUARTERS

Carlo Gavazzi Automation SpA  
Via Milano, 13  
I-20020 - Lainate (MI) - ITALY  
Tel: +39 02 931 761  
info@gavazziautomation.com



**CARLO GAVAZZI**  
Automation Components

*Energy to Components!*

www.gavazziautomation.com

