ENGINEERING TOMORROW

Fact Sheet

VLT® Refrigeration Drive FC 103

Regardless if you want to operate compressors, pumps or fans, the VLT® Refrigeration Drive FC 103 provides you the possibility to save energy and extend the lifetime of the components.

Speed control provides many benefits in all motor driven parts of refrigeration applications. The VLT® Refrigeration Drive moves the user in the position to profit from this in a very simple way.

One drive for all

The VLT® Refrigeration Drive FC 103 covers a power range between 1.1-315 kW. Available in a variety of protection classes the drive suits the needs of pump, fan and compressor applications. Every application and power size can be operated and programmed with the same common user interface.

Easy commissioning

The VLT® Refrigeration Drive FC 103 offers a setup Wizard, using common refrigeration terms rather than computer language, making installation quick and easy for service technicians and installers.

The wizard menu also supports the commissioning engineers if they encounter any problems. The menu will help the engineer troubleshoot and offer solutions to get the drive up and running again if there is a problem.

Product range

3 x 200 – 240 V.....1.1 – 45 kW
3 x 380 – 480 V.....1.1 – 450 kW
3 x 525 – 600 V.....1.1 – 630 kW
With 110% overload torque

Dedicated to refrigeration application

Designed to suit fans, pumps and compressors in any kind of refrigeration application.

Feature	Benefit
General features	
Robust single enclosure	Maintenance free
Protection classes IP 20/21/55/66	Fits every application
Coated electronics (class 3C2 or 3C3)	Withstands challenging environments
Max. ambient temp. 50° C without derating (D-frame 45° C)	No external cooling or oversize necessary
Software features	
Sleep mode	Optimum system efficiency
Thermostat/Pressostat function	System protection
Fieldbus (AKD LON, Modbus RTU…)	Open for all kind of controllers
Velocity-to-flow conversion	Saves costs
Day/Night Control	Reduces wear and energy consumption
Advanced energy monitoring	Overview of energy consumption
Pressure to temperature conversion	Saves costs
Compressors features	
High starting torque	Operates all types of compressor
PO optimization	Optimum system efficiency
Injection on/off	Improves refrigeration processes
Discharge temperature monitor	Protects the compressor
Pack controller	Saves energy and reduce maintenance
Neutral zone controller	Handling of unsymmetrical zones
Pump features	
Pump cascade controller	Saves energy and reduce maintenance
Dry pump protection and end of curve	Protects the pump
Flow compensation	Saves energy
Fan features	
Broken belt detection	Protects the system
Operate induction motors in parallel	Reduces investment cost
Automatic Energy Optimizer AEO function	Saves energy
No EMC concerns	
Integrated DC link harmonic filters	Low harmonic load on mains
Integrated EMC filters	No external filters required

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Available enclosure ratings

IP 20 (NEMA 1)..... 1.1 – 400 kW
IP 21 (NEMA 1)..... 1.1 – 630 kW
IP 54 (NEMA 12)..... 110 – 630 kW
IP 55 (NEMA 12)..... 1.1 – 90 kW
IP 66 (NEMA 4X)..... 1.1 – 90 kW
Standard coating providing extra protection for aggressive environments.

Options

A wide range of VLT® Refrigeration FC 103 options are available mounted and tested from the factory or as plug-and-play options for update.

VLT® General Purpose I/O MCB 101
3 digital inputs, 2 digital outputs,
1 analogue current output,
2 analogue voltage inputs

VLT® Relay Card MCB 105
3 relay outputs

VLT® Analog I/O MCB109
3 Pt1000/Ni1000 inputs,
3 analogue voltage outputs
Buffer for Real Time Clock

VLT® 24 V External Supply MCB 107
24 V DC external supply can be connected to supply control- and option cards.

Power options

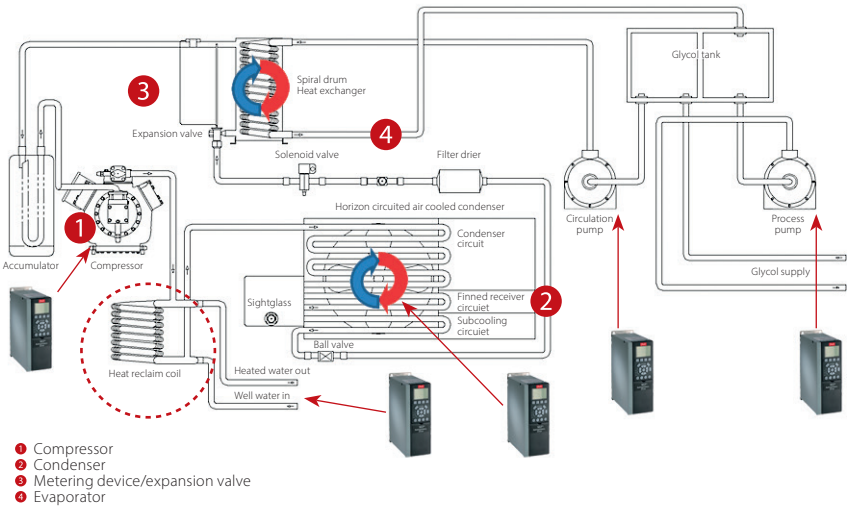
- **VLT® Advanced Harmonic Filter**
  For critical demands on harmonic distortion
- **VLT® dU/dt Filter**
  For special demands on motor isolation protection
- **VLT® Sine Wave Filter**
  For noiseless motor or special demands on motor isolation protection

PC software tools

- **VLT® Motion Control Tool MCT 10**
  Ideal for commissioning and servicing the drive

Specifications

Mains supply (L1, L2, L3)	
Supply voltage	200 – 240 V ±10% 380 – 480 V ±10% 525 – 600 V ±10%
Supply frequency	50/60 Hz
Displacement power factor (cos φ) near unity	(> 0.98)
Switching on input supply L1, L2, L3	1–2 times/min.
Output data (U, V, W)	
Output voltage	0 – 100% of supply voltage
Switching on output	Unlimited
Ramp times	1–3600 sec.
Output frequency	0–590 Hz
Digital inputs	
Programmable digital inputs	6*
Logic	PNP or NPN
Voltage level	0 – 24 VDC
** 2 can be used as digital outputs*	
Relay outputs	
Programmable relay outputs	2 (240 VAC, 2 A and 400 VAC, 2 A)
Analogue input	
Analogue inputs	2
Modes	Voltage or current
Voltage level	0 V to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Fieldbus communication	
Standard built-in: FC Protocol Modbus RTU N2 Metasys	Optional: LonWorks for AKD (MCA 107) Profibus DP V1 (MCA 101) Profinet SRT (MCA 120)



VLT® Refrigeration Drive FC 103 provides speed control of all motor driven components and interacts with the major components

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