

Fact Sheet

VLT® Refrigeration Drive FC 103



tions. 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

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 applica-

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 |

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) |

