

Frequency inverters DF51, DV51, DF6, DV6

xStart



The need for variable speed drives is increasing consistently, for example, in optimization of manufacturing and production processes or for saving energy. The frequency inverters of the DF51, DF6, DV51 and DV6 series are ideally suited for this purpose. They match the required speed of a standard three-phase asynchronous motor to the drive requirements; be it as compact devices or modular system devices. They reliably assure the required sequence of movements of the drive motor and thus guarantee operational reliability and cost savings. A high level of functionality need not be complex to operate: with their user-friendly design they feature – depending on the demands of the application – differing functional characteristics in a power range from 0.18 kW to 132 kW. Approvals from global standards allow them to be used worldwide.



DF51, DF6 – the versatile ones

DF51 and DF6 provide the economical solution for many machine and processing sequences for which it is sufficient to vary the rotational speed using a V/f control. Among these are pump and fan applications where the DF51 or DF6 inverters can contribute significantly to saving power and reducing cost. Functions, such as PID control loops or a thermistor input for motor protection, that normally require external components, are already built in. The devices can be used immediately, as they are supplied, without the need for programming, and the built-in keypad with setpoint potentiometer enables easy configuration and local operation.

DV51, DV6 – the powerful ones

DV51 and DV6 expand the scope of the DF series by numerous additional functions. Wherever more dynamics and higher torque levels are involved, the vector control provides the required motor torque at just the right moment. This brings safety and reliability of drives and optimum efficiency for the processing sequence. The various analog and digital configurable inputs and outputs offer a great deal of flexibility because they can be matched precisely to the requirements of individual machines and systems.



DEX-KEY-6/-61, DEX-KEY-10 Keypads

DEX-KEY-6/-61:
For device "on-site operation" and parametric programming.
DEX-KEY-10:
in addition to comfortable parameter transfer (copying) within the DF/DV51 or DF/DV6 series.
Both are suitable for front panel mounting, e.g. in a control panel door, etc.

Features of the DEX-KEY-10:

- Plain text display
- Back-lit LCD display
- Multi-language



DV51 & DV6 powerful dynamics; Sensorless vector control

The special sensorless vector control of the DV51 & DV6 series provides high drive quality where just standard asynchronous motors – even without feedback (open-loop circuit) – are used. The DV51 requires no further setting to develop its drive power.

Special features:

- Greater than 200% motor starting torque
- Rapid correction of speed fluctuation at changes in load
- Great constancy of speed and high level of smooth running



DEV51-NET-TC, DE51-NET-DP, DE51-NET-CAN Communication circuits

Optional modules which are available enable integration of the DF51 and DV51 in differing standardized communication systems. Regardless of it being MODBUS-RTU, PROFIBUS-DP or CAN-Open, the plug-in module transforms DV51 and DF51 to a unit with communication features.

Features:

- Plug on to the DV51
- Bus address and baud rate setting via DIP switch
- Status LED for diagnostics

Frequency Inverters DF51, DF6 V/f



DF51

Application examples

- Speed control of three-phase motors up to 7.5 kW
- General pump and fan applications in buildings or industrial premises
- Standard drives on machine tools, as well as on processing and packaging machines in the foodstuffs and beverages industries

Mains connection

1x 230 V, 50/60 Hz
3x 230 V, 50/60 Hz
3x 400 V, 50/60 Hz

Rating range

0.18 kW to 2.2 kW (at 230 V)
DF51-322-..., (DF51-320-...)
0.37 kW to 7.5 kW (at 400 V)
DF51-340-...

Features

- Compact device
- V/f characteristic control
- Built-in keypad with potentiometer
- Thermistor input
- PID controller
- RS-422/ RS485 Modbus RTU, interface
- Fieldbus connection to PROFIBUS-DP, CAN Open (external options)
- Automatic voltage monitoring
- Overload: 1.5 times starting torque for 60 s, every 600 s
- 5 configurable digital inputs
- 2 configurable outputs
- 1 relay output (changeover contacts)
- 2 analog inputs
- 1 analog output
- Global approval to standards (CE, UL, c-UL, cTick)



DF6

Application examples

- Speed control of three-phase motors up to 132 kW
- General pump and fan applications (square-law load characteristic)
- Through-put regulation in process engineering

Mains connection:

3 x 400 V, 50/60 Hz

Rating range

11 kW up to 132 kW (at 400 V),
DF6-340-...

Features

- V/f characteristic control
- 1.2 times starting torque for 60 s, every 600 s
- Integral braking transistor (at 15 kW)
- Can be parameterized
 - 5 digital inputs
 - 2 relay outputs (make, NO)
 - 1 relay output (changeover contacts)
 - 3 analog inputs
 - 2 analog outputs
 - 1 PWM output
- Thermistor input (PTC)
- Removable keypad with potentiometer
- PID control loop
- Automatic energy-saving mode
- RS485 and RS422 interfaces
- Fieldbus connection to PROFIBUS-DP (internally pluggable option)
- User-macro parameter memory
- Automatic voltage monitoring
- Function expansion by means of plug-in modules
- Global approval to Standards (CE, UL, c-UL, cTick)

The DF/DV, 51/6 drive package, an excellent choice

With everything ranging from the mains fuse to the sinusoidal filter, a comprehensive range of accessories is available to introduce the DF/DV, 51/6 to various fields, applications and systems. Networking modules such as the DE51-NET-DP, DE51-NET-CAN, DE6-NET-DP or the "closed loop" – operating mode extension DE6-IOM-ENC for the DV6 additionally enhance the fields of application.

"MOELLER DRIVES" How to choose...

A complete selection guide with all types and accessories of the "MOELLERDRIVES" can be found in our main catalogue, in the selection slider (VKF 8230-460 D/GB) or on the Internet.



www.moeller.net/select

Moeller offers everything from switchgear and controlgear to complete solutions to do with motors.



Motor-protective circuit breaker



Contactor



Mains choke



Frequency inverter with filter module

Vector Frequency Inverters DV51, DV6



DV51

Application examples

- Speed and sensorless torque control of three-phase motors up to 7.5 kW
- Versatile application options for the textile, paper and printing industries
- Manufacturing and processing machines in the metal industry
- Drives in mechanical handling, as well as crane and hoist systems
- Applications with enhanced demands in terms of starting torque and the speed/torque characteristic

Mains connection:

1x 230 V, 50/60 Hz
3x 230 V, 50/60 Hz
3x 400 V, 50/60 Hz

Rating range

0.18 kW to 2.2 kW (at 230 V):
DV51-322-..., (DV51-320-...)
0.37 kW to 7.5 kW (at 400 V):
DV51-340-...

Features

- Modular system device
- Sensorless vector control
- Built-in keypad with potentiometer
- Thermistor input
- PID controller
- Highly dynamic current limit control
- RS-422/ RS485 Modbus RTU, interface
- Fieldbus connection to PROFIBUS-DP, CAN Open (plug-in options)
- Automatic voltage monitoring
- Full torque from 0.5 Hz to 400 Hz
- Overload: 1.5 times starting torque for 60 s, every 600 s
- Starting torque > 200% at approx. 1 Hz
- Integrated brake chopper
- 6 configurable digital inputs
- 2 configurable outputs
- 1 relay output (changeover contacts)
- 2 analog inputs
- 1 analog output
- Global standards (CE, UL, c-UL, cTick)



DV6

Application examples

- Speed and torque control of three-phase motors up to 132 kW
- Versatile application options for the textile, paper and printing industries
- Machine tools
- Manufacturing and processing machines in the metal industry
- Drives in mechanical handling, as well as crane and hoist systems

Mains connection:

3 x 400 V, 50/60 Hz

Rating range

0.75 kW up to 132 kW (at 400 V)
DV6-340-...

Features

- Sensorless vector control (open loop/ closed loop optional with DE6-IOM-ENC)
- 1.5 times starting torque for 60 s, every 600 s
- Integral braking transistor (up to 11 kW)
- Auto-tuning (automatic acquisition of motor parameters)
- 32 Bit processor
- Full torque at near to 0 Hz (open loop)
- Starting torque up to more than 200%
- Multi-motor operation possible with SLV
- Can be parameterized
 - 8 configurable digital inputs
 - 5 configurable outputs
 - 1 relay output (changeover contacts)
 - 3 analog inputs
 - 2 analog outputs
 - 1 PWM output
- Thermistor input (PTC)
- Removable keypad with potentiometer
- PID control loop
- RS485 and RS422 interfaces
- Fieldbus connection to PROFIBUS-DP (internally pluggable option)
- User-macro parameter memory
- Variable speed and synchronisation control (DE6-IOM-ENC internally pluggable option)
- Global approval to Standards (CE, UL, c-UL, cTick)

The drive under control with "DrivesSoft2"

"DrivesSoft2" parameter software is an efficient tool for handling the entire range of DF/DV functions. Application-specific parameters can be individually compiled in a clear overview in their own window which enables fast and immediate access to the relevant parameters. Online device control enables direct control of the frequency inverter. The comparator function highlights altered parameter settings whether for documentation or management purposes.

The "monitor function" graphically displays the development of the most important drive data and thus helps to optimise the drive.

