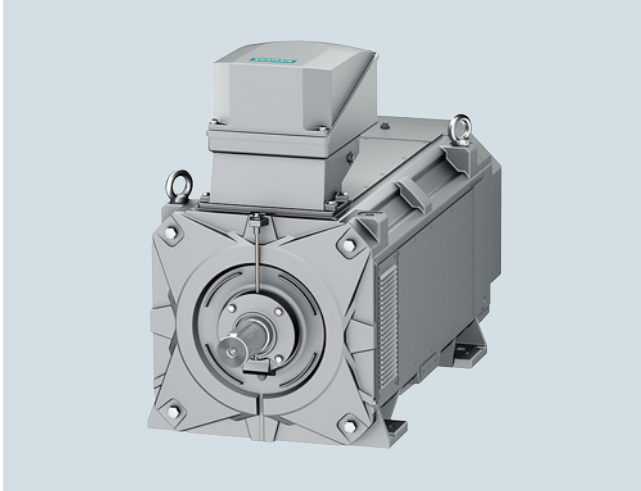


Technical information

Overview

SIMOTICS FD motor series



A wide range of requirements are placed on state-of-the-art, low-voltage motors with a high power rating. They should be energy efficient, able to be flexibly used, quiet in operation and optimally adapted to the converter, for example. All of these requirements are fulfilled by the SIMOTICS FD series of motors, which have been specifically developed for this purpose. As a result of their flexibility and the wide range of versions available, SIMOTICS FD motors are suitable for all industries.

Versions of the SIMOTICS FD motor series

1LM1/1MM1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with self-ventilation. They have been specifically designed for converter operation.

Note:

For frame size 355 (rated speeds above 3000 rpm) and from FS 400 (all rated speeds) a uni-directional shaft fan is used (Standard version with fan for clockwise rotation, for counter-clockwise rotation order code **K98** is required).

1LM1/1MM1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC411, self-ventilated
- Housing: cast iron

1LQ1/1MQ1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with forced ventilation. These motors can be operated with constant torque, also significantly below the rated speed, thanks to the forced ventilation. They have been specifically designed for converter operation.

1LQ1/1MQ1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- For the drive system and the separately driven fan motor the line voltage is specified by the 12th digit of the Article No.
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) or 85 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC416, force-ventilated
- Housing: cast iron

1LL1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, open version with self-ventilation. The internal cooling circuit is supplied with cooling air from the outside. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. They have been specifically designed for converter operation.

Note:

For frame size 355 (rated speeds above 3000 rpm) and from FS 400 (all rated speeds) a uni-directional shaft fan is used (Standard version with fan for clockwise rotation, for counter-clockwise rotation order code **K98** is required)

The 1LL1 motors are designed for indoor use. They must not be subjected to humid, salty or corrosive (e.g. hydrogen sulfide) atmospheres.

1LL1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- For the drive system and the separately driven fan motor the line voltage is specified by the 12th digit of the Article No.
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP23 degree of protection
- Cooling method IC01, self-ventilated
- Housing: cast iron

Overview (continued)1LP1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, open version with forced ventilation. The internal cooling circuit is supplied with cooling air from the outside. This is the reason why the power rating was able to be increased by approximately 35 % as compared to the 1LM1 motors. These motors can be operated with constant torque, also significantly below the rated speed, thanks to the forced ventilation. They have been specifically designed for converter operation.

1LP1 motors are designed for indoor use. They must not be subjected to humid, salty or corrosive (e.g. hydrogen sulfide) atmospheres.

1LP1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) or 85 dB(A) under no-load operation
- IP23 degree of protection
- Cooling method IC06, force-ventilated
- Housing: cast iron

1LH1/1MH1 motors

The motors are squirrel-cage induction motors with compact dimensions in an enclosed, water-cooled version. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. These motors can be operated with constant torque, significantly below the rated speed, as a result of the water cooling. They have been specifically designed for converter operation, and are also available in a version for line operation.

1LH1/1MH1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 78 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC71W, water-cooled
- Water-jacket cooling with either a copper or stainless steel jacket
- Housing: cast iron

1LH1/1MH1 for line operation

- Maximum A-weighted sound pressure level depending on the number of poles 68 to 72 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC71W, water-cooled
- Water-jacket cooling with either a copper or stainless steel jacket
- Housing: cast iron

1LN1/1MN1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with air-to-water heat exchanger. A separately driven fan is used to circulate air through the internal cooling circuit. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. These motors can be operated with constant torque, significantly below the rated speed, as a result of the forced ventilation with air-to-water heat exchanger. They have been specifically designed for converter operation.

1LN1/1MH1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC86W, air-to-water heat exchanger
- Housing: cast iron