

SIMOVERT MASTERDRIVES Motion Control

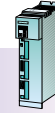
Motor selection

Motors with SIMOVERT MASTERDRIVES Motion Control

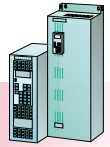
SIMOVERT MASTERDRIVES Motion Control converters are specially designed for driving various types of three-phase-motors.

They are optimally matched to the Siemens servo-motors, together with which they can be used to create high-performance drive systems.

Compact PLUS units



Compact and chassis units



Siemens servomotors

A drive system consisting of a SIMOVERT MASTERDRIVES Motion Control converter and a 1FT6/1FK synchronous motor or 1PH7/1PL6 compact asynchronous motor is the optimal drive for servo applications.

1PH4 water-cooled asynchronous motors with the high IP65 degree of protection can also be used for these applications.



1FK6 synchronous servomotor



Explosion-proof servomotor 1FS6



1PH7 asynchronous servomotor



1FK7 synchronous servomotor



1FT6 synchronous servomotor



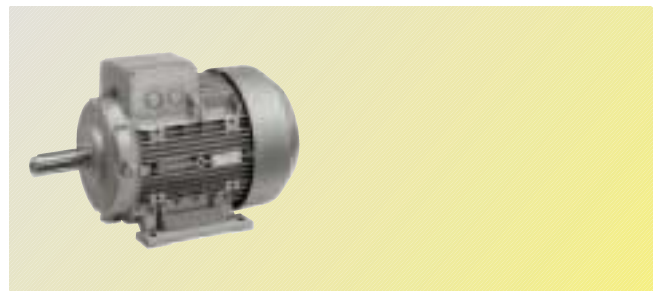
1PL6 asynchronous servomotor

Siemens standard asynchronous motors

The SIMOVERT MASTERDRIVES Motion Control converters can also be used with 1LA5/1LA6/1LA7 asynchronous motors. The drives can be operated in V/f control mode as well as in $n =$ speed control and $\tau =$ torque control modes. It should be remem-

bered that the 1LA motors will go into the field-weakening mode at about 15 % below the rated speed.

For a detailed selection of motors, refer to Catalog M11.



1LA . standard asynchronous motor

Synchronous motors for V/f operation

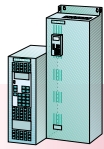
The " V/f control" mode is also possible with SIEMOSYN type 1FU motors, which are designed as internal rotors or external rotor designs. These motors are especially suitable for applications in the synthetic

and natural-fiber industry as well as in the printing industry.

For a detailed selection of motors, refer to Catalog DA 48.



SIEMOSYN motor



Compact and chassis units



Compact PLUS units

SIMOVERT MASTERDRIVES Motion Control Motor selection

Motors with
SIMOVERT MASTERDRIVES Motion Control

Motors from other manufacturers

SIMOVERT MASTERDRIVES Motion Control converters can be operated with motors from other manufacturers.

If motors from other manufacturers are used, the following applies:

- The insulation system must be designed for pulse-width modulation with 510 V to 650 V DC.
- The encoder system (e.g. incremental encoder, resolver) must be suitable for use with the SIMOVERT

MASTERDRIVES Motion Control converters.

- Temperature evaluation is possible with KTY 84 and PTC.

- It is recommended that a trial with SIMOVERT MASTERDRIVES Motion Control converters is carried out with a demonstration case, or in our test laboratories.

Overload capacity of the drives with 1FT6/1FK. motors

The overload capacity relates to the motor torque which is possible at 1.6 x or 3 x¹⁾ the rated current of the converter. Depending on the combination of converter

and motor, this motor torque may be limited due to the maximum permissible motor current. When higher speeds are approached, the overload ca-

capacity is limited by the voltage limit curve. The following relationship applies for the assignment of converter to 1FT6/1FK6/1FK7 motor:

$I_0 \leq I_{n \text{ conv}}$
with I_0 = stall current of the motor
and $I_{n \text{ conv}}$ = rated current of the converter.

Overload capacity of the drives with 1PH7 motors

The overload capacity relates to the motor torque which is possible at 1.6 x the rated converter current.

This only applies to the constant-flux range. The following relationship applies for the assignment of converter to 1PH7 motor:

$I_{\text{rated}} \leq I_{n \text{ conv}}$
With I_{rated} = rated current of the motor
and $I_{n \text{ conv}}$ = rated current of the converter.

Important supplementary information

The maximum output voltage of the SIMOVERT MASTERDRIVES Motion Control converters is 0.86 x the line voltage.

The maximum field-weakening mode with asynchronous motors is 1:2.

In this catalog, SIMOVERT MASTERDRIVES Motion Control converters are assigned to Siemens servomotors.

For the 1FT6 synchronous servomotors, so-called core types with appropriately short delivery times, have been suggested with the following features:

- IM B5 type of design (or IM V1, IM V3)
- Degree of protection IP65
- Sin/cos incremental encoder 1 V_{pp} or absolute-value encoder (EnDat)
- Without/with holding brake
- Smooth shaft extension
- Radial eccentricity tolerance N
- Level of vibration N
- Power socket connector, transverse, to the right.

1) Only with Compact PLUS units