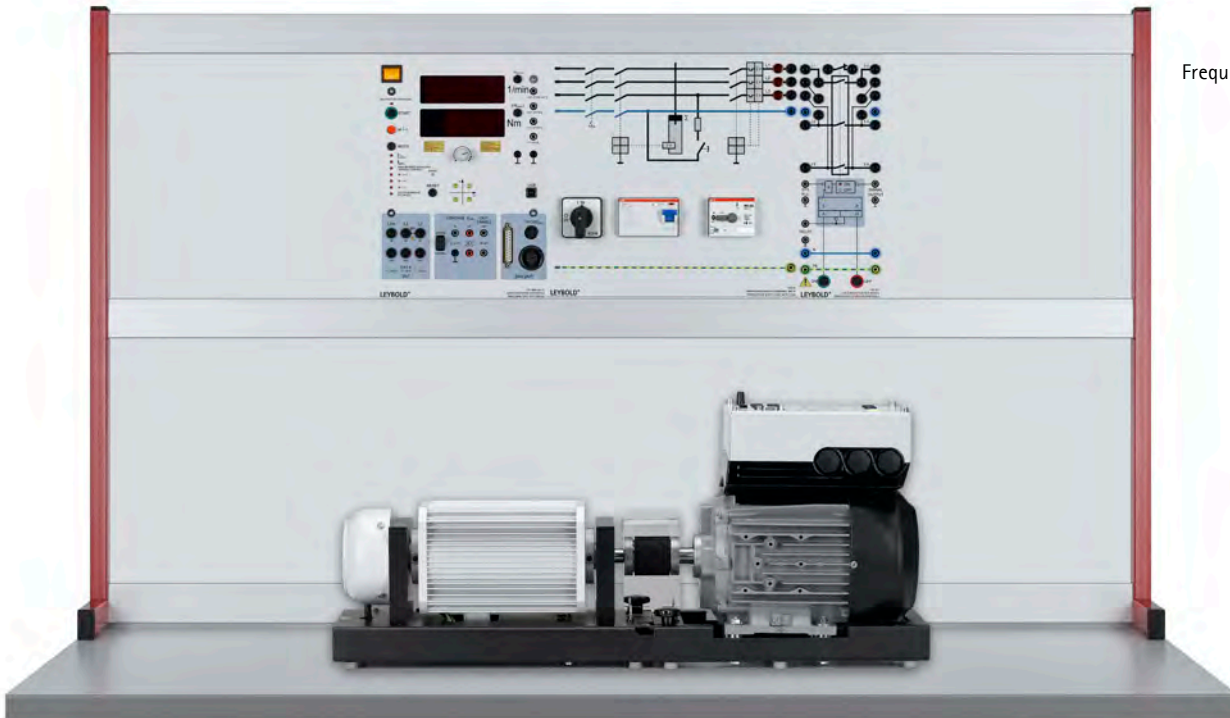


Mechatronic Motors 300 W

E2.2.6.1
Motor with
Frequency Converter 0.3



Motor with Frequency Converter 0.3 (E2.2.6.1)

Similar to illustration

Cat. No.	Description	E2.2.6.1
732 46	Frequency converter motor 0.3	1
735 314	LCP2 local control panel	1
531 282	Multimeter Metrahit Pro	3
731 989USB	Machine test system 0.3	1
728 421	CBM10 MOMO/FCCP	1
726 09	Panel frame T130, two-level	1
726 75	Three-phase supply unit with ELCB	1
731 06	Coupling 0.3	1
731 081	Coupling guard 0.3 transparent	1
500 59	Safety bridging plugs, black, set of 10	1
500 591	Safety bridging plugs, yellow/green, set of 10	1
500 854	Safety leads, set of 20	1
735 315USB	USB/RS 485 interface converter	1*
775 350DE	LIT: E2.2.6.1 Motor with Frequency Converter 0.3 (German)	1
775 350EN	LIT: E2.2.6.1 Motor with Frequency Converter 0.3	1*

* additionally recommended

The experiments are carried out using machines of industrial manufacture. All the test machines are equipped with a special base for attachment to the Machine test system 0.3. The system allows the characteristics of the machines under test to be recorded. Power for the machines under test is provided either directly from the mains or via special laboratory power supplies.

Objectives

- Protective measures and electrical safety
- Setting up electrical machines and putting them into operation
- Use of starting circuits
- Assessment of electrical machine characteristics

The machine to be tested is an industrial frequency converter motor consisting of a four-pole asynchronous three-phase motor with a power rating of 0.55 kW including an integrated frequency converter. The motor and the converter are optimally fine-tuned to one another. The experiment investigates the features of the operating response in comparison to other types of machine without built-in power electronics. More advanced topics such as positioning control or non-linear load characteristics (winding machines, fans etc.) are investigated in E2.6, Servo technology.

Features

- In order to protect against overheating, the stator windings of the test machines are equipped with temperature sensors
- Should overheating occur, the machine testing system automatically shuts down the machine under test, thus preventing any damage to it.
- The test machines are equipped with an educationally designed terminal board with the winding configuration printed on it.
- The ends of all the windings are connected to the terminal board and can be accessed via 4-mm safety sockets
- Computer-supported acquisition of measurement data provides for meaningful measurement results.

The individual equipment set is equally suitable for student experiments in laboratories with low voltage supplies (400 V three-phase) and for setting up on a mobile trolley for demonstration by teachers in a classroom. The procedures for the experiments are provided in a printed manual.

The target group is made up of commercial apprentices and students of electrical machine construction. The course offers experiments at an intermediate level and also allows for the necessary insight into machine behaviour for scientific interpretation at undergraduate level.

Topics

- Design and function of a frequency converter controlled motor
- Operation with a power amplifier
- Run-up and operating characteristics
- How speed depends on frequency
- How speed depends on load: fan, pump, winding machine, flywheel