



Item no. 12 022 100

Manual 75 pages	
Digital work orders	
399 x 200 x 297 mm	
110 V - 240 V AC	
EQF level	2 3

Automotive Electric Motors Trainer

Innovative laboratory trainer for basic knowledge of electrical machines. The types of electric motors and generators relevant in automotive engineering are set up in function and presented transparently.

Features

- Demonstrate the operation of the following electric motor types:
 - Permanent magnet motor
 - Series-wound motor
 - Asynchronous squirrel cage motor
 - Synchronous three-phase motor
- All operating values in the low voltage range of < 24V
- Drive unit for controlling all motor types with display and rotary controller

Equipment

- Drive unit with mounting flange and shaft for motor type assembly.
- Shaft with coupling for belt drive for external drive - Drilling machine with connection adapter included - enables generator function
- Speed sensor integrated, all electrical connections as 4mm safety sockets, 6 x lamps as load unit

- Components in practical storage case:
 - 3 x coil with pole shoe and 4mm connections, 2 x permanent magnet with pole shoe red and green, rotor with permanent magnet red and green.
 - Rotor with electromagnet, short-circuit anchor, centring ring as mounting aid, carbon brush holder transparent with 4mm connections.
 - Drive belt and socket spanner, measuring and connection cables



Permanent magnet motor



Series-wound motor



Asynchronous squirrel cage motor



3-phase synchronous motor

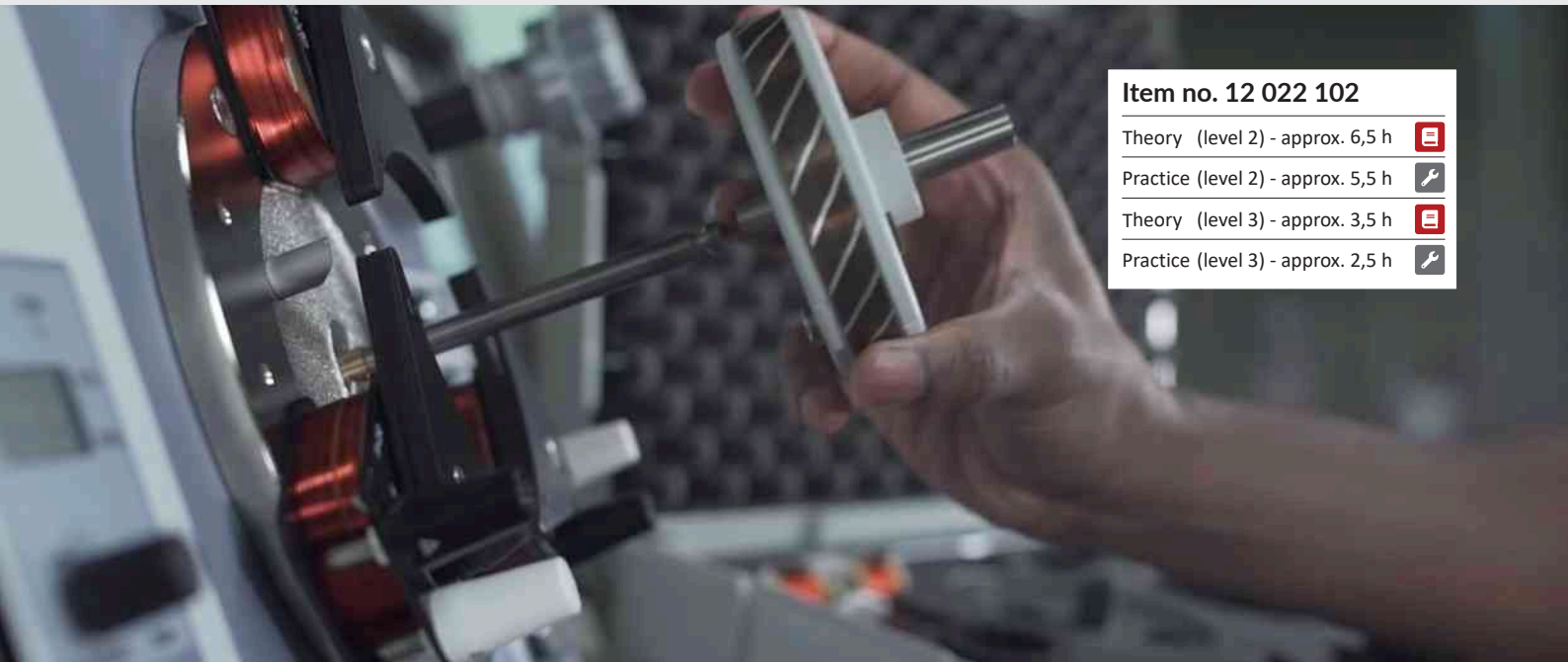
Also available as a training package: Item no. 14 025 030

With a training package, you can get started immediately. You will receive the desired learning system with all accessories as well as the appropriate digital work orders for the device.



12 022 100

12 022 102



Item no. 12 022 102	
Theory (level 2) - approx. 6,5 h	
Practice (level 2) - approx. 5,5 h	
Theory (level 3) - approx. 3,5 h	
Practice (level 3) - approx. 2,5 h	

Digital work orders Automotive Electric Motors Trainer

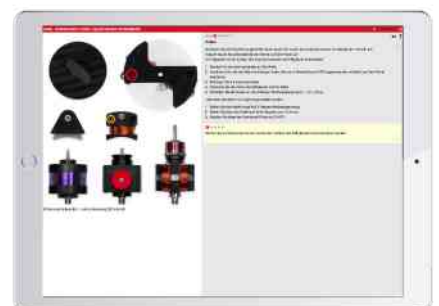
After completing the practical tasks, you will be able to: identify the type of voltage, indicate how the direction of rotation of an electric motor can be changed; identify the construction of different electric motors; explain how different electric motors work; carry out measurements on an electric motor and evaluate them.

Preliminary theory *

- Electric motor
- Lorentz force
- Magnetism
- Induction
- Permanent magnet motor
- Rotating magnetic field
- Permanent magnet synchronous motor
- Squirrel cage induction motor

Practical tasks

- Permanent magnet motor
- Series-wound motor
- Asynchronous squirrel cage motor
- Synchronous three-phase motor Motor
- Permanent magnet motor as generator
- Series-wound motor as generator
- Squirrel cage motor as generator
- Synchronous three-phase motor as generator



Try it out now!



Course layout



Licence: You acquire a licence for use for as many students and teachers as you wish with a term of 10 years. This can be extended individually after expiry. The software is activated on your Electude e-learning domain.

* A separate licence may be required for the preliminary theory.