

MOT100



ELECTRICAL MOTOR TEST UNIT



Experimental capabilities*

- Study of a simple synchronous / asynchronous motor control
- Study of a double-direction control for synchronous / asynchronous motor
- Study of star / delta switching
- Characterization of behavior of an asynchronous motor
- Characterization of the behavior of a synchronous motor
- Characterization of the behavior of a brushless motor
- Characterization of the behavior of a DC motor

(*): According to engines and electrical panel used

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Illustrations non contractuelles / Illustrations not contractual

version : FT-MOT100-STD-A

Operating principle

The electrical motor test unit is dedicated to the characterization of the behavior of motors of various types (asynchronous, synchronous, brushless and direct current), depending on the control and power circuit panel.

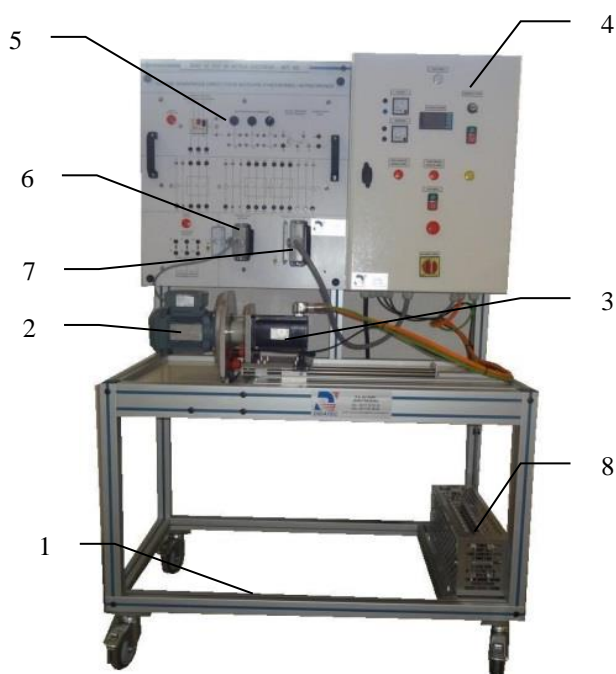
The unit consists of a basic modular structure compatible with to integration of different types of motors, and of different control and power circuit panel.

The wiring of the control and power panel is done with 4mm safety cords, with keying devices to prevent from crossing 24V control circuits and 230V or 400V circuits.

The unit is fully instrumented, including torque measurement, speed measurement and voltage / current / power measurement. It includes as well a charging motor allowing to apply to the characterized motor, a resistive torque or a driving torque adjustable by potentiometer.

The assembly is completely secured and prevents wrong use operation if all protective components are at their right place.

Illustrations



Technical details

1. Anodized aluminum **chassis** equipped with 4 castors wheels.
2. **Motor to characterize** : Attachment with buttonhole bracket. Magnetic safety sensor M30. Toggle mounted assembly - torque measurement by tangent force transducer with stress gauges. As basic version, the unit is supplied with an asynchronous motor. Other types of motors are available as an option.
3. **Load motor** (Schneider Lexium brushless type) - Nominal torque 5N.m, maximum speed limited, fitted on a linear bearing in order to be disconnected from the electrical motor to characterize, or to incorporate a flywheel in order to visualize dynamic effects. Clamped in working position by mechanical index.
4. **Electrical box and main control panel**. Main power supply-disconnector / differential and circuit breakers, main on / off button, control of frequency inverter for load motor, voltmeter, ammeter, display for torque, speed and power - Status lights.
5. **Control and power distribution board** for the motor / available in various versions (ref to the last part of this document) -in the basic version, the unit is delivered with a contactor plate for synchronous and asynchronous motors
6. **Industrial connector for motor connection** to the control and power board. The connector of each motor is equipped with keying devices, prohibiting their use with unsuitable control and power board.
7. **Industrial connector** allowing the connection of **the electrical control and power board to the main electrical** cabinet of the machine (different voltage supply, management of the safety loop ...
8. **Load motor dissipation resistor** (braking)

Services required

- Electrical supply : 400 Vac – 50/60 Hz – 10 A
- Electrical network : 3 phase(s) + Neutral + Earth.
- Dimensions: (LxWxH mm): 1500 x 800 x 1600
- weight (Kg): 100

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Configuration files (frequency inverter, display)
- Certificate of conformity CE

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Motors

- Asynchronous motors 0.25kW – approx 1400tr/min– 380/665V
- Synchronous motor 0.37KW – 1500tr/min – 230/400V
- Moteur à courant continu 0,25KW environ
- Moteur Brushless : 5N.m – 6000tr/min maxi - bridé
- Ref : MOT101 (S-S MOT100) / 1 coming with MOT100
- Ref : MOT102 (S-S MOT 100) / optional
- Ref : MOT103 (S-S MOT 100) / optional
- Ref : MOT 104 (S-S MOT 100) / optional

Other accessories

- Flywheel
- Ref : MOT110 (S-S MOT100) / optional

Electrical control and power boards

- Electrical control and power board for synchronous / asynchronous motors – contactors technology
- Electrical control and power board for DC motors
- Electrical control and power board for synchronous / asynchronous motors – frequency inverter technology
- Electrical control and power board for brushless motors
- Ref : MOT111 (S-S MOT100) / 1 coming with MOT100
- Ref : MOT113 (S-S MOT 100) / optional
- Ref : MOT121 (S-S MOT 100) / optional
- Ref : MOT124 (S-S MOT 100) / optional