Electric motor test bench

for repair, development and quality assurance

AT A GLANCE

approx. 15 min
Test time, depending on motor type and test program

AC, DC, BLDC
Motors and fans, from small motors to large machines

No load and load
Testing without load or at operating points

EtherCAT
internal measuring chain with low latencies



With the NIKLAS Motor Bench you test motors and fans from small motors to large machines, at no load and under load, in a guided sequence. We design the mechanics, measuring equipment and software for your test items.

Measurements

- Insulation resistance
- High-voltage test (dielectric strength)
- Winding resistance with phase comparison
- Speed
- Temperature and heating curve
- Vibration to ISO 20816 / DIN EN 60034-14
- Phase currents, voltage and power
- Run-down time after switch-off

Equipment

Fixtures and adapters for each test item
We design a dedicated fixture for each intended motor and fan, so the test item sits in the same position for every repeat test.

Agreed with the motor manufacturer
We define test profiles and limit values together with the motor manufacturer, so the results remain comparable.

Insulated test chamber
Electrical and mechanical tests as well as vibration measurements run at one station.

Guided operation
After an introduction, even staff without in-depth test engineering knowledge can operate the software. Additional parameters are available in expert mode.

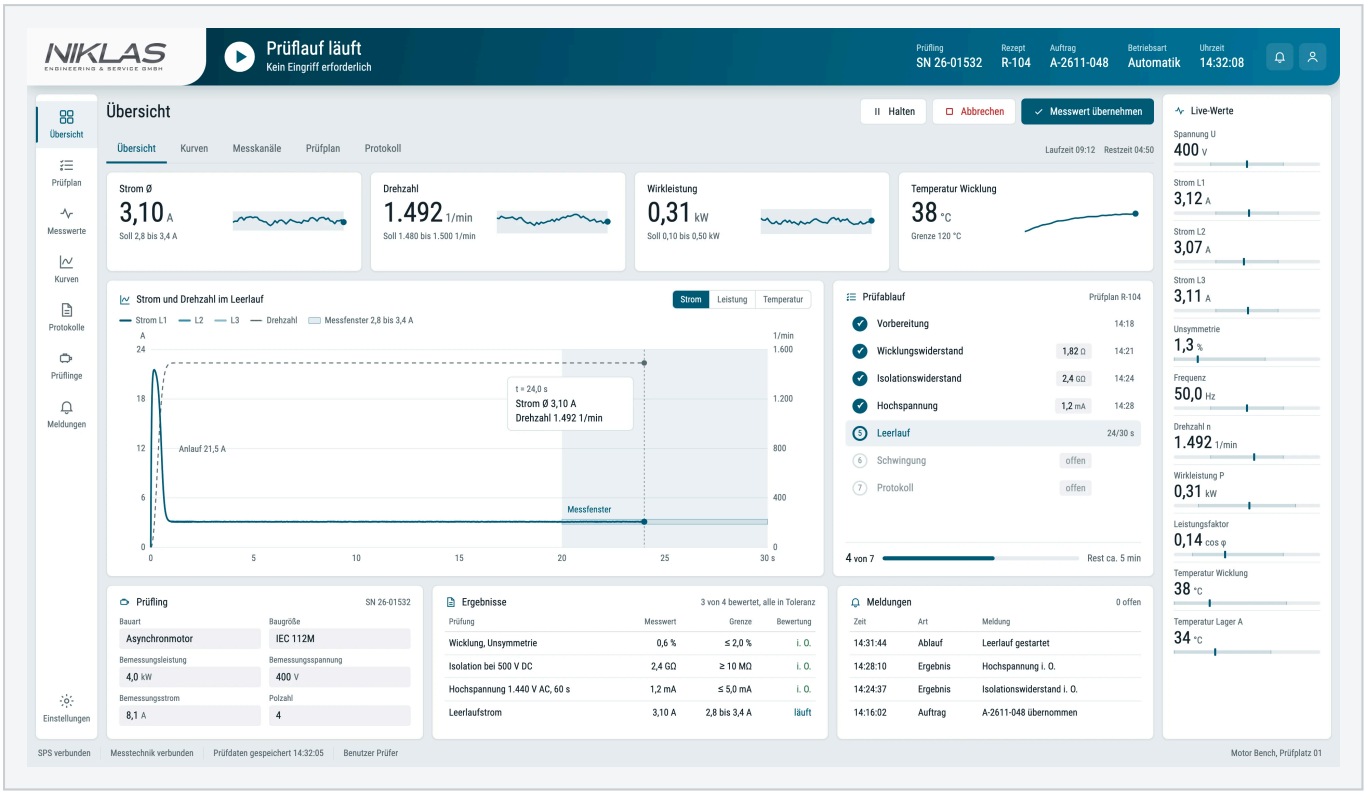
Technical data

Feature	Specification
Test items	Asynchronous, synchronous, DC and BLDC motors, fans
Current type	Three-phase, single-phase or direct current
Size	from small motors to large machines
Power range	approx. 5 W to 170 kW, at no load and under load, depending on configuration
Speed	0 to 36,000 1/min, depending on load machine and torque flange
Torque determination	calculated from electrical measured variables or measured directly with a torque flange (option)
Torque range	approx. 0.01 to 680 Nm, torque flange depending on range
High-voltage test voltage	up to 5 kV AC and up to 6 kV DC, insulation measurement 50 to 1,200 V DC
Operating modes	No load and load, also as a pure no-load test bench with frequency converter and adjustable voltage
Vibration assessment	to the appropriate standard, e.g. ISO 20816 or DIN EN 60034-14
Measuring chain	internal EtherCAT network with low latencies
Test time	about 15 minutes, depending on motor type and test program
Test report	digital, with data interface to the ERP system
Dimensions (W × D × H)	to customer specification
Mains connection	3/N/PE AC 400 V, 50 Hz, fuse protection 32 to 250 A depending on configuration

Options

- Torque flange for direct torque measurement (standard option)
- Surge test, integrated into software and test report
- AI condition assessment in the Health Monitor (depending on configuration)
- Trends and abnormalities compared with earlier measurements (depending on configuration)

Software



The test bench software guides you through the motor test and stores measured values and test history for each motor. Depending on the configuration, an AI in the Health Monitor assesses the condition and points out abnormalities over time.

Request a quotation

Tell us the motor types with voltage, power, frame size and shaft diameter (a photo of the rating plate is enough), plus torques, operating points, quantity, installation site and mains connection.

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