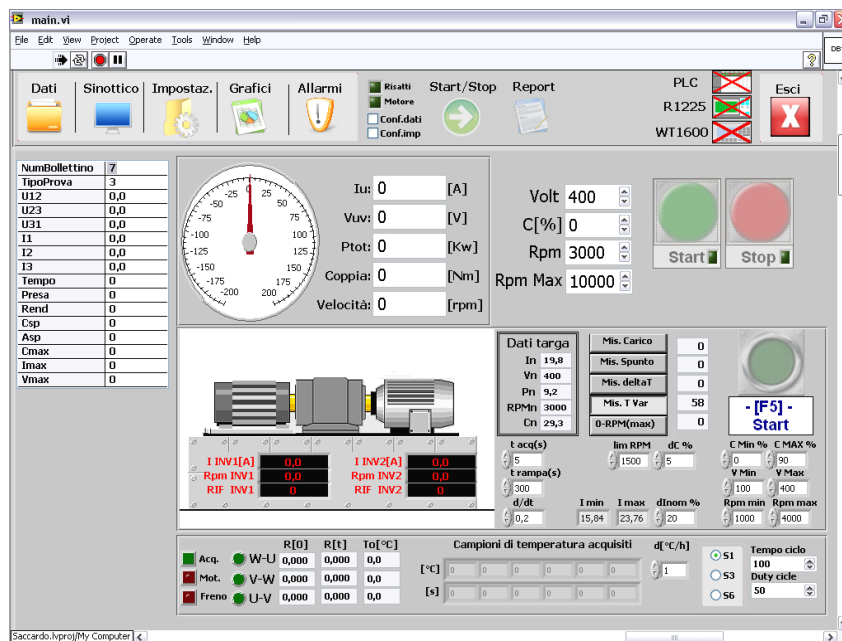


# MotorTEST LabVIEW®

LabVIEW-based software for  
ELECTRIC MOTORS TESTING  
IEC 60034-2-1 compliant

MotorTEST LabVIEW® software allows full characterization of electric motors on any dynamometer and is compatible with a wide range of data acquisition and control systems as well as industry standards instrumentation



## Main features

### Acquired values

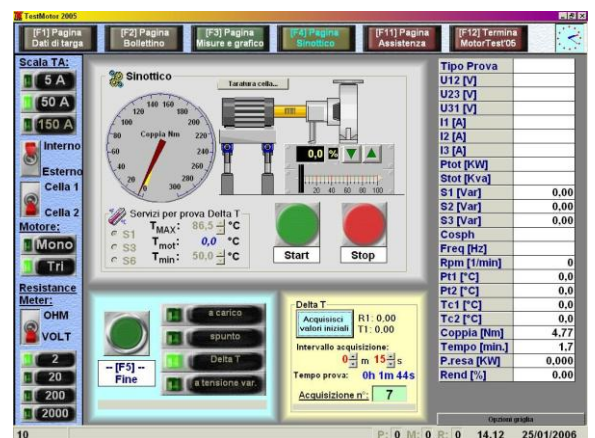
Speed, torque, power output, voltage, current, input power and apparent power, power factor, efficiency, mains frequency, temperature rise of windings, temperatures, vibration and frequency analysis of vibration, noise

### Database of motor nominal values and test bench setting parameters

Nominal data of the motors + parameters used for automatic setting of control inverters (braking inverter and an eventual driving inverter)

### No-load test

The motor is not loaded and it is powered at a lower voltage in the range 0 – to 100% of nominal value. Data acquisition is performed



**Blocked rotor test.** After setting current limit, voltage is varied 0 to 100% of  $V_{nominal}$  and data acquisition is performed at determined intervals

**Automatic load varying test**

The test is executed at constant nominal voltage and frequency but the load is automatically varied from 0 to 200% of nominal power.

**Max torque**

The test is performed at constant nominal voltage and frequency and with torque varying from 0 to max torque  $C_{max}$ . Output curve shows output torque Vs speed drift

**Temperature rise tests**

**Temperature test type S1**

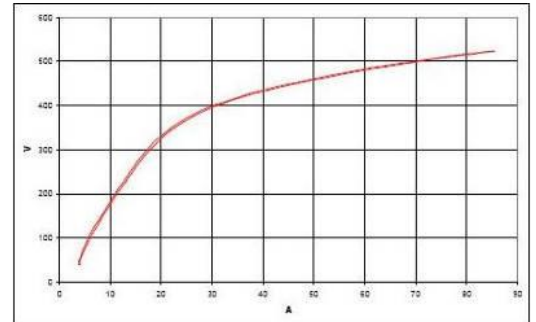
This test is done by measuring winding resistance variation before and after a duty test. Operator can set power or torque applied to the motor.

**Temperature test type S3**

Sequence of identical duty cycles, each including a working period at a constant load and a rest period. This test is performed so that the starting current does not affect the temperature rise significantly

**Temperature test type S6**

As per S1 but with an intermittent load with period setting (Es. 6 minutes load-on e 4 minutes load-off).



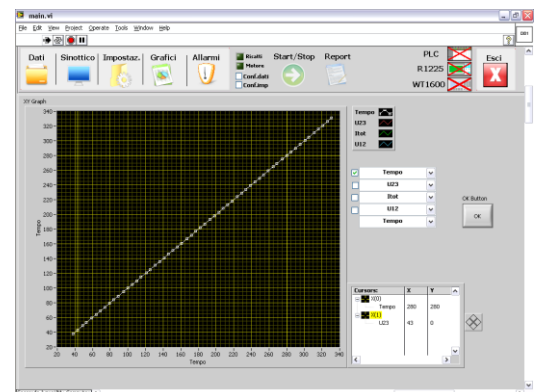
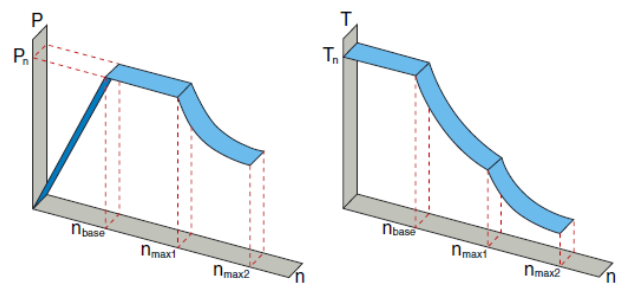
**Mechanical characteristic from 0 to RPMmax**

Main target is plot torque and power behavior along the complete speed range. The test can show type of behavior

**Constant torque behavior.** With frequency ranging from 0 to  $F_n$  nominal frequency and fixed nominal voltage (voltage can be set fro 0 to  $V_n$ ). Output torque is constant and the power rises proportionally with the frequency at a certain supply voltage.

**Constant power behavior.** With frequency ranging from  $F_n$  nominal frequency to  $F_{max}$  and fixed nominal voltage . Torque is inversely proportional to frequency/speed and output and input power are virtually constant.

**Behavior for speed/frequency higher than  $F_{max}$ :** at a high enough frequency (to be experimentally determined) performance of torque and power significantly decrease at the same power consumption. The test is automatic and will control the value of input current (adjustable). The output of this test is a table with the electrical and mechanical values and the graph of the power and torque vs frequency.



**Reports**

All test values are printed in letterhead reports with motor nominal values, dynamometer parameters and the used instrumentation with certification date. Data are in graphical and tabular form