

QUALIMASTER – Measuring system for Torque, Force and other Quantities



- Measuring system for torque, force and other quantities which must be processed as a function of time, an angle or displacement
- Large, lighted LCD graphic screen for a clearer display of measurement curves and numerical results
- User-friendly graphical interface
- Manual evaluation of the recorded measurement curve with cursors
- Automated evaluation of results with respect to programmable tolerances
- Memory for 10 automated test cycles
- Possibility to record, display and evaluate up to 4 analogue measurement signals in parallel
- Programmable motor control for rotary and linear motion using a DC servomotor
- RS 232 interface to print measured values or to send them to a PC
- Piece counter
- Versatile, can be connected to many different sensors and transmitters
- Automatic recognition and parameter set-up of the connected sensor (Plug and Play)



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TECHNICAL DESCRIPTION

General Introduction

The Qualimaster is a compact and versatile measuring instrument. It exists in two basic versions, one with and one without motor control.

The large, lighted LCD graphic screen with 640 x 200 pixels offers a comfortable graphical user interface and displays the measurements.

Evaluation of Results

Both manual and automatic measurement evaluation provide such features as measurement trigger, measurement cursors as well as range and window tolerances. The pass/fail evaluation is displayed on the LCD and with an LED.

There is also an I²C bus or RS-232 output interface.

Piece Counter

The integrated piece counter indicates the number of pieces manufactured and faults which occur.

Communication

The numerical measurement results can be output on a printer or to a PC through a RS-232 interface.

Measurements

The Qualimaster is normally used for performing torque and force measurements. The measurement range and the accuracy are defined by the sensor used. The simultaneous recording of up to 4 analogue measured quantities is normally performed according to time, the rotation angle or the displacement.

Motor Control

The Qualimaster system with programmable motor control is suitable for test tasks which require the test sample to be driven, positioned or adjusted. It is possible to carry out all possible motion sequences by choosing a suitable drive unit.

Custom Applications

The Qualimaster can also be used as the core of a customer-specific test facility. It can be adapted to the corresponding requirements with optional accessories and software.

The system can be used for manual operation or with Automated Test Equipment.

MEMORY

- Program memory for 10 measuring programs.
- Measured value memory for 40000 values.
- Result memory for 1000 measurements
- Memory for sensor-specific or SI-Box (Sensor-Interface-Box) parameters.

DATA ACQUISITION

3 separate connections with the following features:

- Input for analogue measurement signals ± 10 V.
- Measurement accuracy ± 0.1 % FSR.
- ± 12 bit resolution.
- Acquisition rate of 100, 1000 or 5000 measurements per second and channel.
- Sensor supply: Earth, 5 V, ± 12 or ± 15 V / 100 mA.
- Connection for the I²C bus.
- 1 measurement channel for torque measurement based on motor current. Same specifications as the other measuring channels (connection with special motor circuitry).

MOTOR CONTROL

Connection for DC motor or a measuring head

- Output for directly driving a DC motor ± 10 V / 1 A (<10 W).
- Measuring head for torque measurement based on motor current.
- Input for digital encoder (with line driver).
- Connection for the I²C bus.

Connection for an External Servo Amplifier

- Output for driving an external servo amplifier, control signal ± 10 V / 10 mA.
- Output 0 - 10 V / 10 mA for additional functions.
- Digital output for sense of rotation (TTL).
- Digital output for brake or stop (TTL).
- Digital output On/Off (TTL).
- Digital input for faults (TTL).
- Reserved input (TTL).

INTERFACES

- 2 x RS-232 interface, D-Sub 9-pin.
- Connection for I²C bus, D-Sub 9-pin.

CLOCK

- Real-time clock with time and date.

MAINS CONNECTION

- Plug-in supply adapter for 230 V~ or 120 V~.
- Output: 12 V DC / 1A or 12 V DC / 2 A.

ACCESSORIES

- PLC interface (through I²C) with digital inputs and outputs.
- External servo amplifier for motors with increased power.
- Customer-specific interface circuits.
- Custom mechanical test add-ons.
- PC software for configuration & measurement acquisition.
- Tape printer for graphics and text.

Sensors and Transducers

- Manual static and rotating torque sensors.
- Tension and force sensors.
- Angle and displacement transducers.