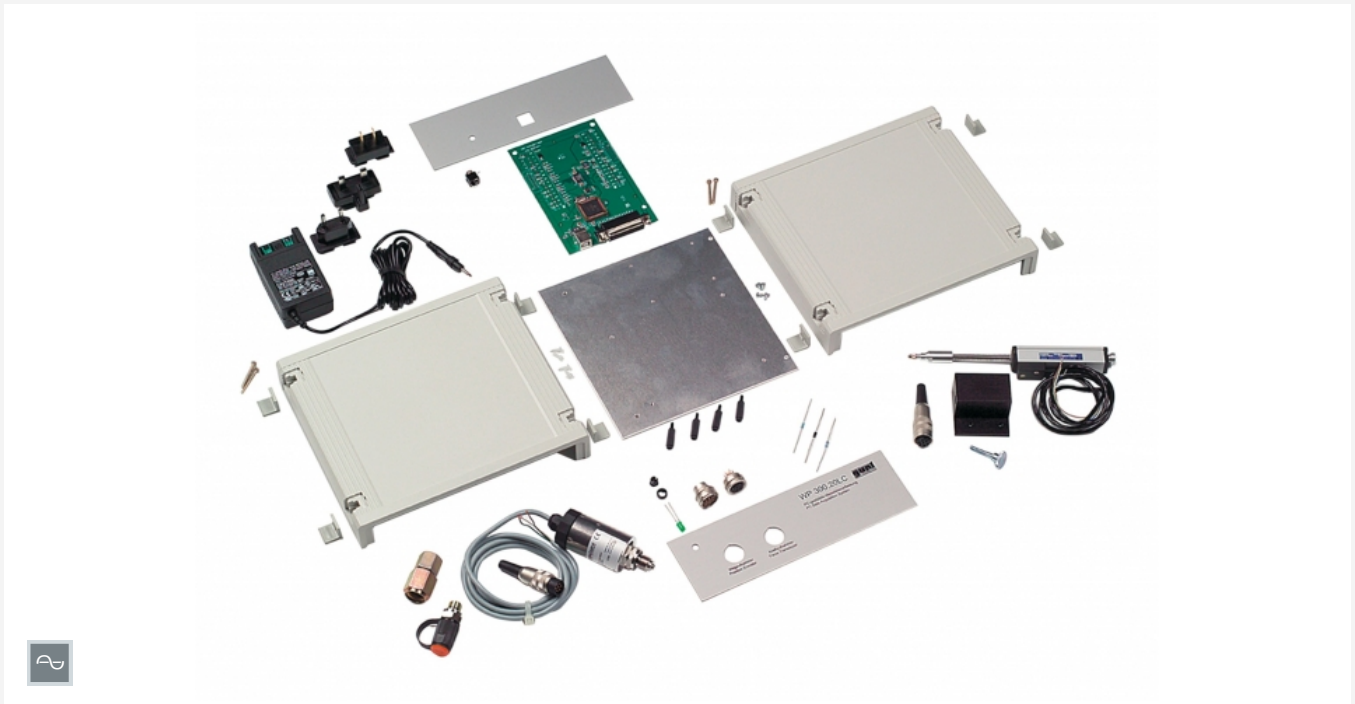


MT 190.01

Assembly data acquisition for materials tester



Description

- interdisciplinary and interlinking assembly kit from the fields of mechanics and electronics
- fully functional data acquisition system for a materials tester with USB connection and software

The MT 190.01 unit is supplied as an assembly kit and contains all components and materials to build a professional data acquisition system. Assembly comprises the mechanical structure and the wiring according to the circuit diagram. All tools and aids required are included, as well as extensive teaching materials.

The assembled MT 190.01 system represents a real, fully functional data acquisition system and can be used to measure pressure (forces) and changes in length.

These values are processed further on a PC by means of analysis software. The data acquisition system enhances the options of the MT 190 project considerably. Both projects together give a modern materials tester with data acquisition, which is suitable for a variety of experiments.

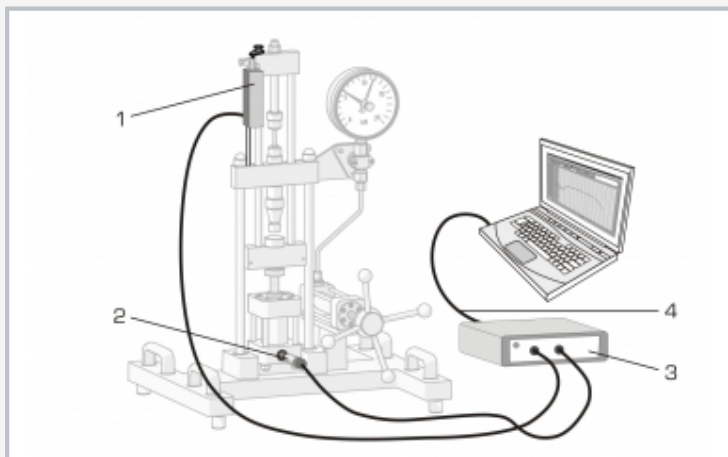
Using MT 190.01 students can learn about working on a complex project. This involves the planning, implementation and checking of processes related to assembly, commissioning and repair.

Learning objectives/experiments

- fundamentals of data acquisition: familiarisation with sensors, electronics for recording and outputting measured values, interfaces, software
- read and understand technical documentation
- plan and execute assembly steps and sequences
- commissioning and inspection of a data acquisition system following assembly
- system integration: connect materials tester and data acquisition
- together with MT 190
 - ▶ record load-extension diagrams or stress-strain diagrams
 - ▶ prepare, display and store data
 - ▶ output diagrams to printer

MT 190.01

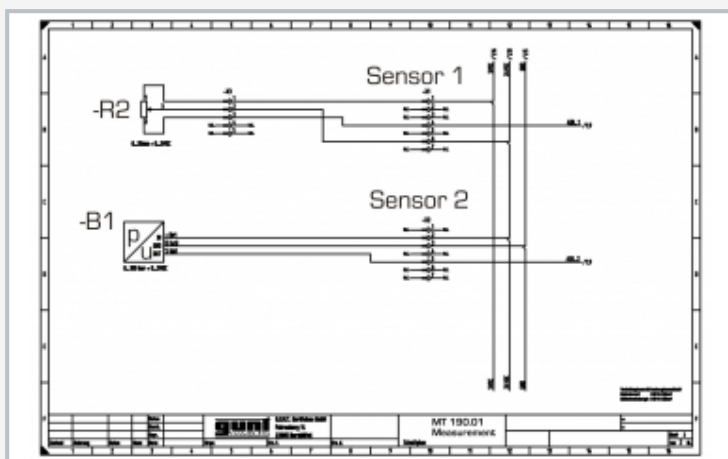
Assembly data acquisition for materials tester



Port for connecting data acquisition to the basic unit: 1 displacement sensor, 2 pressure sensor for force measurement, 3 measuring amplifier, 4 USB cable



Assembled data acquisition system with software CD; in the foreground: left: pressure sensor, right: displacement sensor



Circuit diagram: port for pressure and displacement sensor

Specification

- [1] assembly kit for building a data acquisition system for a materials tester
- [2] part of the GUNT-Practice Line for assembly, maintenance and repair
- [3] linear potentiometer for displacement measurement
- [4] force measurement by pressure sensor
- [5] GUNT software for data acquisition via USB under Windows 7, 8.1, 10
- [6] software for recording, preparing and storing stress-strain diagrams

Technical data

Pressure sensor for force measurement
 ■ 0...100bar

Displacement sensor
 ■ 0...50mm

Measuring amplifier with USB port
 ■ input: 0...5V
 ■ resolution: 12bit

230V, 50Hz, 1 phase
 120V, 60Hz, 1 phase; 230V, 60Hz, 1 phase
 UL/CSA optional
 LxWxH: 225x200x75mm (amplifier)
 Weight: approx. 5kg

Required for operation

PC with Windows

Scope of delivery

- 1 complete assembly kit of a data acquisition system
- 1 pressure sensor
- 1 displacement sensor
- 1 set of tools for assembly
- 1 GUNT software CD + USB cable
- 1 set of instructional material, comprising: technical system description, complete set of drawings with individual parts and parts list, circuit diagram, description of maintenance and repair operations, suggested exercises