

CT 110 SERIES: TEST STAND FOR SINGLE CYLINDER ENGINES WITH POWER OUTPUT OF UP TO 7.5 KW



The CT 110 test stand can be used for a wide range of experiments on small internal combustion engines with a power output of up to 7.5 kW. There is a choice of 4 different engines, which can be mounted on the base plate in the test stand as required. A test engine can be installed in just a few minutes.

A load is applied to the engines by an air-cooled asynchronous motor, which is actuated by a frequency converter.

The engines can be investigated under full and partial load. A variable load and speed is used to determine the characteristic diagram for the engine. The interaction of the brake and the engine can also be investigated.

The test stand is ideal for both demonstrations and for independent experiments by students. The powerful software provides excellent support for the learning process. The comprehensive and well structured instructional material sets out the basic technological principles and provides a step-by-step guide to the experiments.

The test stand can be operated in normal laboratory facilities. Noise emissions are within an acceptable range. The exhaust gases are vented externally via a hose.

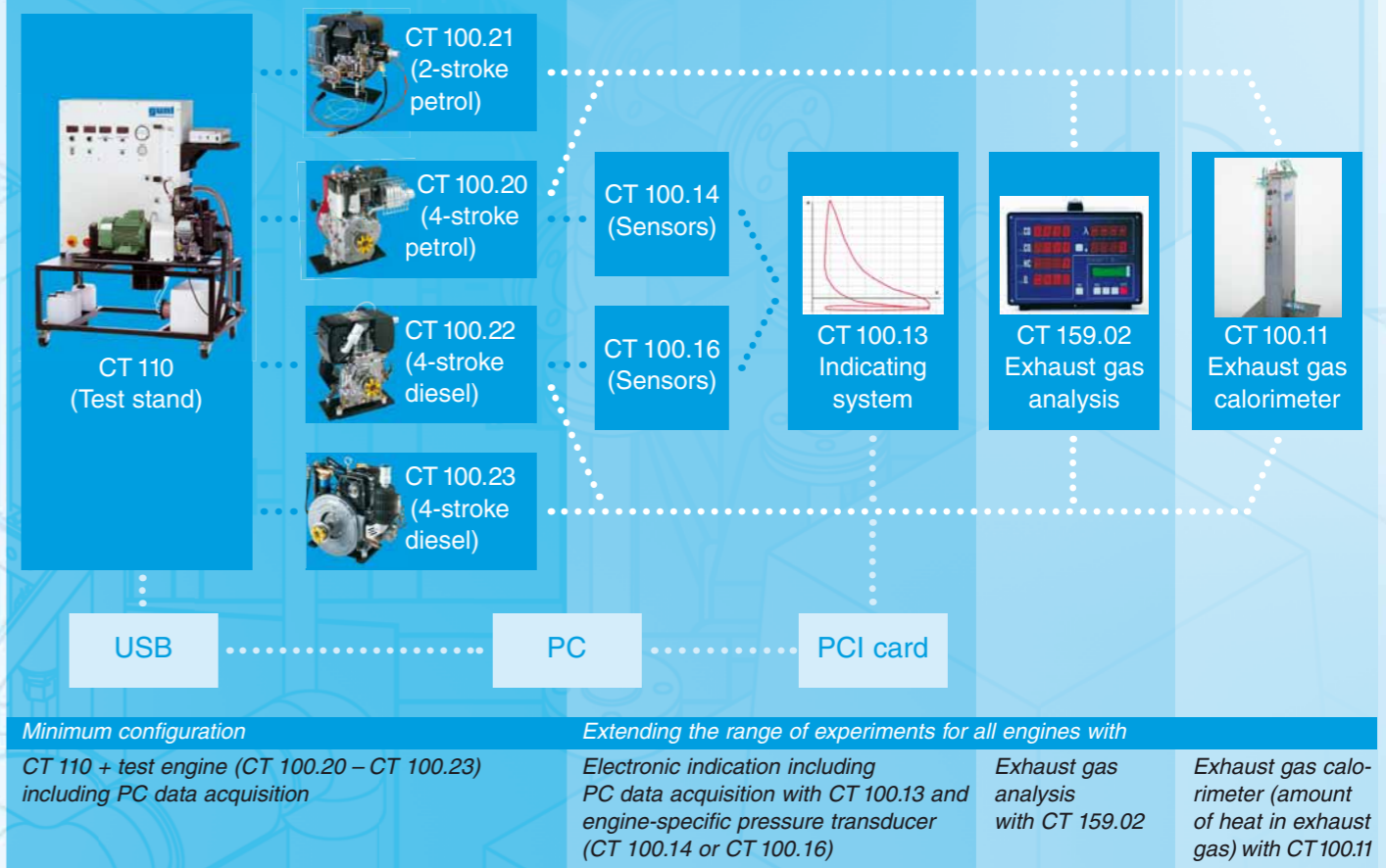
Learning content/Exercises

- Familiarisation with a two-stroke petrol engine
- Familiarisation with a four-stroke petrol engine
- Familiarisation with a two-stroke diesel engine
- Characteristic curves at full and partial load
 - ▶ Plotting of torque and power curves
 - ▶ Specific fuel consumption
 - ▶ Volumetric efficiency
 - ▶ Excess air factor
- Determination of engine friction loss (passive mode with asynchronous motor)
- Comparison of diesel and petrol engines
- Comparison of two-stroke and four-stroke engines

In conjunction with other accessories

- Exhaust gas analysis with CT 159.02 and CT 100.11
- Electronic indication (CT 100.13) with appropriate set of sensors for engine (CT 100.14/.16)
 - ▶ p-V diagram
 - ▶ p-t diagram
 - ▶ Pressure curve for gas cycle
 - ▶ Determination of indicated power
 - ▶ Determination of mechanical efficiency

CONFIGURATIONS



SOFTWARE FOR CT 110

Modern LabVIEW software under Windows with comprehensive visualisation functions

- Process diagrams for exhaust gas calorimeter and all engines with real time display of all measured and calculated variables
- Calculated variables
 - ▶ Specific fuel consumption
 - ▶ Intake air volumetric flow
 - ▶ Mechanical power
 - ▶ Efficiency
 - ▶ Volumetric efficiency
 - ▶ Excess air factor
- Representation of up to four characteristic curves simultaneously
- Characteristic curve representation: freely selectable assignment of axes
- Storage of measured data
- Four preselectable languages
- Simple connection to PC via USB

