

ET 512

Compressed air generation plant with piston compressor



Description

- compact compressed air generation plant
- single-stage piston compressor
- recording the compressor characteristic curve

Compressed air generation plants are used to apply compressed air as a source of energy. Compressed air is used instead of electrical energy in mining or in the chemical industry because there is a danger of explosion due to flammable gases. The central component of such plants is the compressor.

The ET 512 experimental unit contains all the components of a compressed air generation plant: a single-stage piston compressor, driven by an electric motor via a V-belt, a compressed air tank with manometer, pressure switch and safety valve. Any consumer can be connected to the compressed air tank via a quick-release coupling.

The ET 512 unit can also be used to test the function of the piston compressor. During the functional test, the pressure rise in the tank over time is recorded as a measure of the compressor's capacity.

A power meter records the drive motor data. The effective power is shown on a digital display. A stopwatch is included for time-dependent measurements.

Learning objectives/experiments

- familiarisation with a compressed air generation plant
- function test on a single-stage piston compressor
 - ▶ pressure rise in the compressed air tank over time
 - ▶ effective power of the drive motor as a function of pressure

Specification

- [1] familiarisation with a compressed air generation plant
- [2] single-stage piston compressor
- [3] pressure vessel with manometer, safety valve, valve for drainage and connection for consumers
- [4] digital display to show voltage, current, effective power

Technical data

Piston compressor, 1 cylinder, single-stage

- max. delivery pressure: 10bar
- intake capacity: 115L/min
- bore: 50mm
- stroke: 32mm
- displaced volume: 63cm³

Drive motor

- power consumption: 0,25kW
- speed: 1405min⁻¹

Pressure vessel

- content: 10L
- max. pressure: 10bar

Measuring ranges

- power consumption: 0...4kW
- manometer: 0...16bar
- stopwatch: 1/100s

230V, 50Hz, 1 phase
 120V, 60Hz, 1 phase
 230V, 60Hz, 1 phase
 UL/CSA optional
 LxWxH: 750x540x560mm
 Weight: approx. 38kg

Scope of delivery

- 1 experimental unit
- 1 set of instructional material

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Optional accessories

020.30009

WP 300.09

Laboratory trolley