HL 356
Demo unit, gas burner

Description

- **electronic simulation of the operation of a forced air gas burner**
- **PLC controlled simulation of nine faults on individual components**

The HL 356 demonstrates the basic functioning of an original gas burner and its typical behaviour in case of faults. Standard industrial components are used. All operating states of the burner are simulated, allowing this demo unit to be operated without gas and flames. The unit is therefore totally non-hazardous and has no gas or waste gas lines.
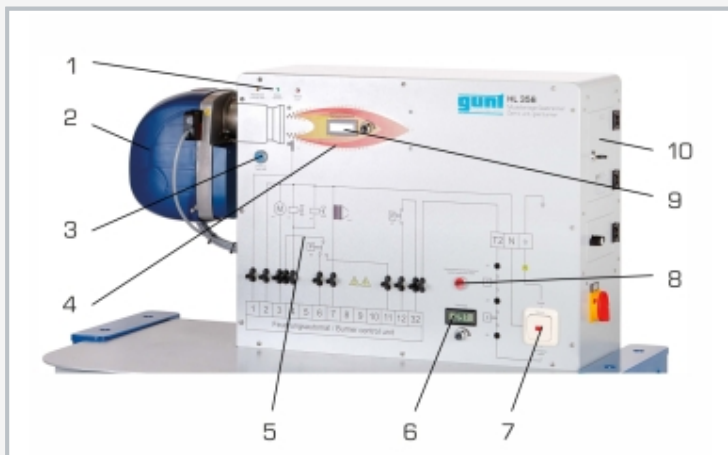
On the front panel is a graphical representation of the controller unit connection. Important electrical monitoring points (controller unit terminals) on the burner are accessible for fault analysis using lab jacks and bridges on the front panel. Faults can thus be checked either during operation under voltage or with no voltage as an isolated component.

Learning objectives/experiments

- specification of boiler temperature at the thermostat (reference variable) using potentiometer
- specification of boiler water temperature using potentiometer
- representation of flame aspect and burner operating state displays
- possible faults (activated using push-buttons):
  - air pressure control device
  - boiler temperature controller
  - flame safeguard
  - gas solenoid valve
  - fan motor
  - gas pressure control device
  - safety temperature limiter
  - ignition transformer
  - current supply control unit

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1 display elements, 2 forced air burner, 3 "reset" button, 4 flame simulation, 5 circuit diagram, 6 temperature display thermostat, 7 emergency switch heating system, 8 reset button for temperature limiter, 9 temperature display boiler water, 10 fault buttons

Specification

[1] simulation model of a forced air gas burner and all burner operating states
[2] fault simulation: 9 fault buttons in lockable box
[3] additional actual system components: flame safeguard, gas pressure and air pressure control devices, ignition transformer, thermostat, safety temperature limiter, gas solenoid valves, fan motor, emergency switch heating system
[4] important electrical monitoring points on burner accessible via lab jacks and measuring bridge connectors for fault analysis

Technical data

Fully automatic air forced gas burner for natural gas
- power: 15...45kW
- connection load: approx. 160W
- motor power: 70W

PLC
- 16 digital inputs
- 14 digital outputs
- 2 analogue inputs
- 1 analogue output

Digital multimeter
- for direct or alternating current

230V, 50Hz, 1 phase
230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase
UL/CSA optional
LxWxH: 1330x790x1360mm
Weight: approx. 105kg

Scope of delivery

1 trainer
1 multimeter
1 set of cables
1 manual

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