



### Features

- Real refrigerant compressor from practice1
- Investigation of important electrical components from refrigeration1
- Simulation of 15 faults

Identifying electrical faults in refrigeration systems requires comprehensive knowledge. This knowledge includes the design and operation of the individual electrical components as well as the reading of circuit diagrams. Tesca Electrical Faults in Refrigerant Compressors 32434 helps to acquire this knowledge.

The electrical components for the start and operation of a refrigerant compressor are clearly visibly arranged in a transparent showcase and already wired. The capacitor and start-up relay required for the motor are examined. Typical protection devices, such as circuit breaker and automatic fuse, are also arranged clearly visible.

The simulation of 15 different faults, e.g. coil fracture in the motor, short circuit in the operating capacitor or welded contacts in the start-up relay, is possible. For fault indication, voltages and resistances are checked at the lab jacks with the multimeter. The depiction of the circuit diagram on the front panel facilitates the allocation of the measuring points.

The well-structured instructional material sets out the fundamentals and provides a step-by-step guide through the experiments.

### Specifications

- Experimental unit from the Tesca practical series for the training of mechatronics engineers for refrigeration
- Investigation of the electrical components for the operation of a refrigerant compressor
- Real refrigerant compressor from practice
- Electrical components for the start and operation of the compressor arranged in the transparent switch cabinet
- General safety devices mounted clearly visible
- Circuit diagram depicted on the front panel
- Identification of 15 faults: multimeter measures voltages or resistances at the lab jacks

### Technical Specifications

- Refrigerant compressor

Note: Specifications are subject to change.

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- Power consumption: approx. 870W
- Electrical components for the compressor
  - Start-up capacitor
  - Start-up relay
  - Operating capacitor
  - Overheat protection (bimetallic)
- General safety devices
  - Main contactor
  - Automatic fuse

### Experiments

- Electrical connection of refrigerant compressors
- Read and understand electrical circuit diagrams
- Design and operation of the electrical components of a refrigerant compressor
  - ♦ Start-up capacitor
  - ♦ Start-up relay
  - ♦ Operating capacitor
  - ♦ Overheat protection
  - ♦ Main contactor
  - ♦ Automatic fuse
- Fault finding in electrical components
  - ♦ In idle state
  - ♦ Under mains voltage

### Requirements

- 220 – 240V, 50Hz, 1 phase Power Supply

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