COMPRESSOR TEST STAND

Automated test stand for end-of-line (EoL) quality testing of electric refrigerant compressors for automotive applications. The test stand is controlled via the OCEAN software platform and enables fast, resource efficient end-of-line testing.

Application
- End-of-line testing for electric refrigerant compressors and heat pump compressors
- Ensuring quality, performance, and tightness before delivery
- Quality assurance

Test Components
- Electric compressors (DC high voltage compressors up to 1000 V DC)
- Heat pump compressors for cabin conditioning and battery thermal management
- Refrigerants: R134a, R1234yf, CO_2 (optional)
- Optional: additional thermal management components

<< TECHNICAL DATA

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Automated Test Procedures

- Functional testing
- Performance testing
- Leak testing
- Integration of customer specific test parameters
- Logging and data export

Hydraulic Functions

- Conditioning of the medium (temperature control and filtration)
- Oil mist atomization for lubrication and oil separation of the test specimen
- Automated monitoring of oil tank level, filter status, and oil temperature
- Quick release couplings

Test Setup

- Compact test station with modular architecture
- Media supply: refrigerant, oil, cooling water
- Electrical connection: automatic contacting for both HV system and CAN bus
- Control via PLC and HMI with intuitive user interface, or fully automatic operation
- Control cabinet

Safety

// HV protection concept according to ISO 17409

// Emergency stop system and interlocks

// Leakage monitoring

// CE Declaration of Conformity

On Request

- Automated handling
  - Robot integration for loading/unloading
  - Integration into conveyor systems
- Automated test door
- Automated clamping systems
- Automated electrical contacting
- Higher pressures
- Higher flow rates

TECHNICAL DATA

- Test Medium
  Testing with dried compressed air
  Medium temperature: –20 to +80 °C
  Mass flow: up to 3000 NL/min
- Hydraulic Data
  Load pressure up to 12 bar
  Medium: SPA2 oil (for lubrication of the test specimen)
  Pressure: up to 30 bar
  Micro dosing: 0.1–10 ml/min
- Electrical Supply
  Connection: 3×400 V AC, 50 Hz
  Test specimen supply up to 1000 V DC
  Power: 10 kW
- Measurement Technology:
  Pressure measurement: ±0.1% FS
  Flow measurement: specifications for non lubricating media on request
- Control:
  OCEAN software platform
- Cycle Time:
  < 2 Minuten
- Ambient Temperature:
  15–40 °C

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