

REVERSIBLE WATER CHILLER



Experimental capabilities

- Identification of the components of a water chiller unit
- Commissioning and adjusting
- Verification of system operation
- Study of the thermodynamic cycle of the refrigerant
- Evaluation of coefficients of performance
- Energy balances to the exchangers.

Operating principle

The GEG 106 unit allows the study of an industrial chilled water production system. It is composed of a reversible chilled water unit, a buffer tank and the instrumentation necessary for the complete study of the system. The students will have to identify the different components of the system (refrigerant and water) and then put it into service. They will then be able to take measurement readings to check that it is working properly and calculate the powers involved. The rugged design of this equipment makes it perfectly suited for use in a school setting. Its anodized aluminum structure on wheels gives it a very high robustness as well as great flexibility of integration into your premises. The manufacture of this equipment complies with the European Machinery Directive. This equipment can be used alone or in combination with other compatible equipment in our range (see last part of this document).

Technical details

Frame

- The chiller is installed on an anodized aluminum profile chassis equipped with four braked, directional castors

Reversible chiller

- Cooling capacity: 9kw
- Hermetic scroll compressor with inverter speed variation
- Variable speed condenser fan
- Expansion valve
- Reversing Cycle Valve
- Plate exchanger and water circulation pump
- Water filling valve with pressure gauge
- Transparent walls to visualize the inside of the system
- Fluorescent lamps for indoor lighting
- Digital controller for operating mode and setpoint temperature management

Buffer Tank

- Material: Steel
- Volume: 25L
- Automatic air drain at high point
- Blue protective cover
- Low point drain valve

Hydraulic system

- Two self-sealing quick couplings for water connection to other units
- Primary hydraulic system with balancing valve
- Secondary hydraulic system with balancing valve and circulator
- Filling circuit with shut-off valve and pressure gauge

Instrumentation

- Two energy meters measuring flow
- Four dial thermometers 0-60°C
- A 0-4 bar water pressure gauge
- Low pressure pressure gauge with double temperature/pressure scale
- High pressure pressure gauge with double temperature/pressure scale
- A portable thermometer with contact probe and room probe
- Four thermocouples placed on the cold circuit and linked to connectors on the front panel
- Four supply voltage measuring sockets
- Four wires for measuring the current consumed
- A multimeter with clamp meter

Services required

- Electrical supply : 400 Vac – 50 Hz – 16 A
- Electrical network: 3 phase(s) + Neutral + Earth.
- Water supply : filling – 2 bars
- Dimensions : (LxWxH mm): 2400 x 790 x 1275
- weight (Kg): 250

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

Documentation

- Instruction manual
- Technical documentation of components
- Practical work
- Electrical diagram
- Hydraulic diagram
- Enthalpy diagram
- CE Certificate of Conformity

Recommended equipment

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| <ul style="list-style-type: none">• Air conditioning unit with instrumentation• Heater 33KW• Fan convectors | <ul style="list-style-type: none">• Ref : CRA546• Ref : AER033• Ref : TCF124 |
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