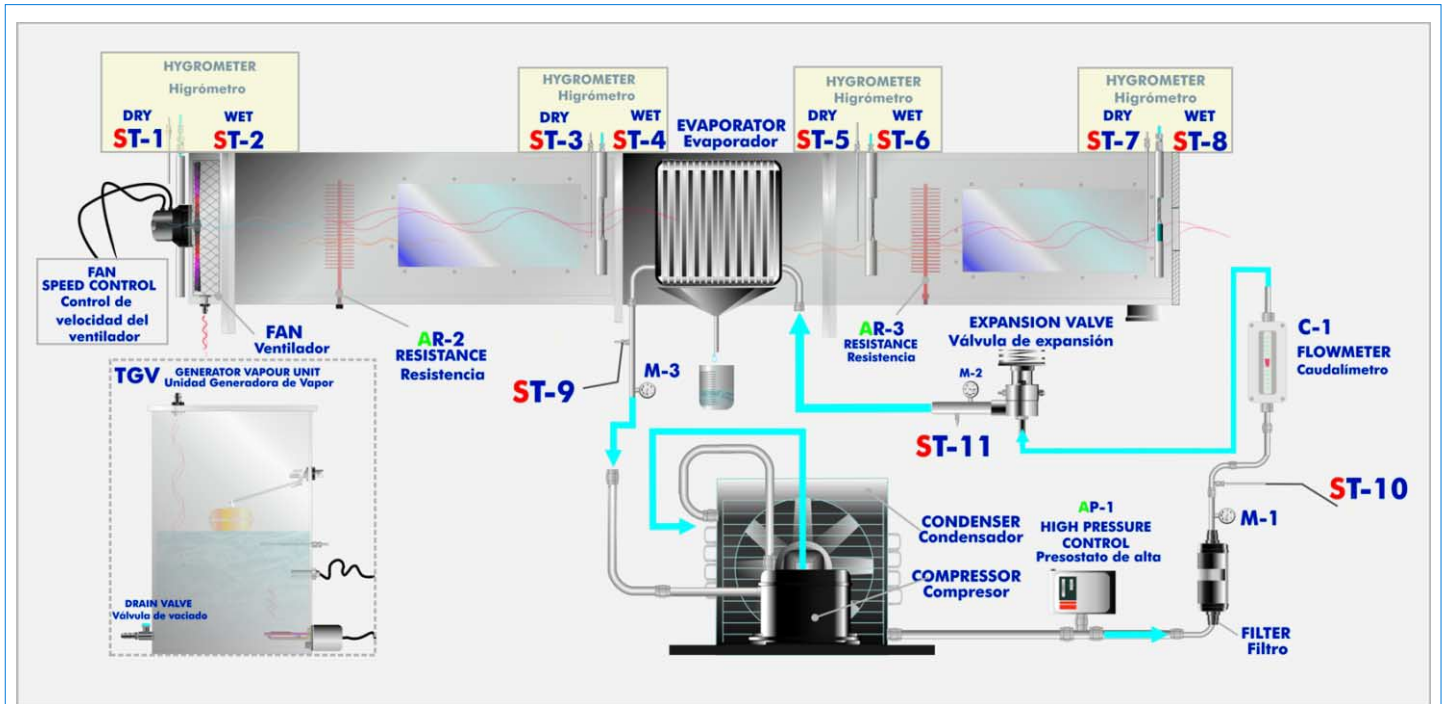


www.edibon.com
 Products
 Products range
 Units
 9.-Thermodynamics & Thermotechnics



Electronic Console

PROCESS DIAGRAM AND ELEMENTS ALLOCATION



Note: ST: Temperature sensor. M: Pressure meter (manometer).



ISO:9001-2000 Certificate of Approval. Reg. No. E204034



European Union Certificate



Certificates ISO 14001: 2004 and ECO-Management and Audit Scheme (environmental management)



Worlddidac Quality Charter Certificate Worlddidac Member

DESCRIPTION

This unit has as objective to introduce the student in the world of the air conditioning installations, as well as to study and determine the good parameters for the unit operation in function of the environmental demands (humidity, heat, temperature and refrigeration, etc).

SPECIFICATIONS

Unit:

Anodized aluminium structure and panels in painted steel.

Main metallic elements in stainless steel.

Diagram in the front panel with similar distribution to the elements in the real unit.

Tunnel of 300 x 300 x 1600 mm. , made in stainless steel with 2 windows of 200 x 300 mm. to visualize the tunnel inside.

2 Electrical heating resistances: one of 2000W (pre-heater) to the inlet of the evaporator and other of 1000 W (re-heater) to the outlet of the evaporator.

4 Hygrometers placed along the tunnel, formed each one by 2 temperature sensors (wet and dry bulb).

Fan, with speed variation, 0.25KW, 2500 r.p.m, Qmax 2160 m³/h.

Evaporator.

Compressor, 1/2 CV.

Condenser unit. At 5°C = 1591W. 980 m³/h.

High-pressure cut-out, tared at 14 bar.

Filter dryer.

Bourdon manometers (3):

1 Bourdon manometer (outlet of the condenser).

1 Bourdon manometer (inlet of the evaporator).

1 Bourdon manometer (outlet of the evaporator).

Manometer for air flow measurement.

Temperature sensors (11):

4 dry bulb "J" type.

4 wet bulb "J" type.

1 "J" type (inlet of the evaporator).

1 "J" type (outlet of the evaporator).

1 "J" type (outlet of the condenser).

Sensors range: -40 to 750° C.

Flow meter for refrigerant flow measurement.

Psychometric chart and Enthalpy diagram of R134a.

The unit incorporates wheels for mobility.

Electronic Console:

Metallic box.

Temperature sensors connections.

Selector for temperature sensors.

Digital display for temperature sensors.

Resistances controllers.

Compressor switch.

Fan regulator.

High pressure control connection.

Cables and accessories, for normal operation.

Manuals:

This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

EXERCISES AND PRACTICAL POSSIBILITIES

Some Practical Possibilities of the Unit:

- 1.- Demonstration of the processes and components used in heating, cooling, humidification, de-humidification of an airstream.
- 2.- Obtaining of the steam generator efficiency curve.
- 3.- Energy balance in the steam generator.
- 4.- Efficiency determination of the preheating resistance.
- 5.- Preheating effect in an air conditioning installation.
- 6.- Dehumidification process study.
- 7.- Material balance in the evaporator.
- 8.- Energy balance in the evaporator.
- 9.- Re-heat effect.
- 10.- Experimental determination of the air specific heating capacity.
- 11.- Usage of psychrometric chart.
- 12.- Example of the air properties determination.
- 13.- Usage of psychrometric chart.
- 14.- Determination of the airflow.
- 15.- Calibration.
- 16.- Enthalpy-Pressure diagram for the refrigerant R134a.

Other possible practices:

11.- Psychrometric chart.

12.- Example of the air properties determination.

REQUIRED SERVICES

- Electrical supply: 220V, 1-phase + neutral + ground, 50 Hz., or 110V., 1-phase + neutral + ground, 60Hz. and 3 CV max.
- EDIBON Steam Generator (TGV), or steam generator with similar characteristics.
- Water supply and drainage.

DIMENSIONS & WEIGHTS

- Unit: -Dimensions: 1600 x 570 x 1500 mm. approx.
-Weight: 200 Kg. approx.
- Electronic Console: -Dimensions: 490 x 330 x 310 mm. approx.
-Weight: 10 Kg. approx.

RECOMMENDED ACCESSORIES

For refilling R134a refrigerant and maintenance, we recommend:

- T/KIT1. Maintenance Kit, containing: vacuum pump, hoses and manometers.
- T/KIT2. Maintenance Kit, containing: leakage detector.
- R134a refrigerant (to be acquired by the customer locally).

AVAILABLE VERSIONS

Offered in this catalogue:

-TAAB. **Air Conditioning Laboratory Unit.**

Offered in other catalogue:

-TAAC. **Computer Controlled Air Conditioning Laboratory Unit.**

* Specifications subject to change without previous notice, due to the convenience of improvements of the product.



C/ Del Agua, 14. Polígono San José de Valderas. 28918 LEGANES. (Madrid). SPAIN.
Phone: 34-91-6199363 FAX: 34-91-6198647
E-mail: edibon@edibon.com WEB site: www.edibon.com

REPRESENTATIVE: