

## *Advanced Training Unit*

### *For Fault Location*

**811**



- *Demonstrates multi-evaporator system operating at different temperatures*
- *Incorporates 25 typical system faults, each activated by a push-button switch.*
- *Allows practical fault detection and location.*
- *Introduces students to 3 phase systems.*
- *Two year Warranty.*

## ***Introduction***

The Advanced Training Unit for Fault Location 811 is a fully operational refrigeration unit with two visible evaporators simulating freezing and cooling rooms, operating from a single semi-hermetic condensing unit.

The unit is constructed entirely from standard commercial components, including all of the necessary primary and safety controls and will give students valuable experience of system adjustment and fault finding on a multi-evaporator three phase refrigeration system.

A combination of **25 refrigerant circuit and electrical circuit faults** can be activated by the instructor allowing both normal and fault condition operation to be investigated. The faults include:-

- Compressor valve fault
- Oil separator fault
- Overcharge
- Undercharge
- Check valve leak
- Evaporator pressure controller fault
- Thermostatic expansion valve not operating – freezer evaporator
- Thermostatic expansion valve fault – freezer evaporator
- Thermostatic expansion valve not operating – cold room evaporator
- Thermostatic expansion valve fault – cold room evaporator
- Suction line freezer evaporator – frosted
- Suction line cooler evaporator – frosted
- Filter dryer restriction
- Discharge pressure fault
- Hot gas defrosting fault
- Suction pressure too low - decreasing evaporator capacity
- Suctions pressure too high
- One phase fault
- Two phase fault
- One contact set (motor overload protection) disconnected
- Two contact sets (motor overload protection) disconnected
- Thermal overload protection of motor switch box
- Coil fault – motor protection – starter box
- Thermostatic fault – freezing room – not working
- Thermostat fault – cooling room – not working

## ***Description***

The 811 is one of a range of trainers designed to provide practical training in the fields of Refrigeration and Air Conditioning.

Each trainer has been carefully designed to provide instruction in specific topic areas that trainees are required to study as part of most Refrigeration and Air Conditioning courses.

On the model 811 all standard components are visible, mounted on a steel frame with stainless steel panels. Instrumentation includes condensing, evaporating and suction pressures, mechanical and digital temperature measurement, digital multi-meter and optional refrigerant flow meters. The system includes reverse gas defrost, suction accumulator, oil separation and variable speed evaporator and condenser fans. Instructor controlled faults are induced by internal components which are hidden from student view.

A standard Student Tool Kit, and Test and Service Equipment Package are available as optional items.

Further details available on request.

### **Student Tool Kit**



### **Test & Service Equipment**





## Specification

### Detailed

The unit is mounted on a wheeled steel frame with stainless steel base and back panels and incorporates:-

- Compressor: Semi-Hermetic, 0.37 kW. 1450 rpm
- Condenser: Air-cooled, aluminium finned, copper coil
- Evaporators: Display-case evaporators. Aluminium finned, copper coils with hot gas defrosting
- Injection controls: 2 thermostatic expansion valves
- Liquid receiver
- Control equipment: Low and high-pressure control, thermostatic control, evaporator pressure control, capacity control, condensing pressure control and crankcase pressure control, low pressure switch, high pressure switch
- Measuring equipment: Digital temperature indicator with 10 ways selector switch
- 4 pressure gauges (3 compound, 1 high pressure)
- 2 dial thermometers.
- Hand-held digital multi-meter

Refrigerant: R134a.

25 switches located on the side panel under a hinged cover allow combinations of faults to be activated by the instructor.

An electrical control box is mounted on the panel and includes accessible three phase relays, fuses and an overload protector. An internal three phase residual current device protects against earth leakage. Fan speed controls and defrost switch with indicator are also panel mounted.

### Operating Manual

A comprehensive operating manual includes:

- Notes on theory and principles
- Instructor's guide notes
- Student test papers and sample answers
- Electrical wiring diagram.

## Dimensions

Height: 1700mm Depth: 700mm  
Width: 2160mm  
Shipping Weight: 425kg

## Services Required

### Electrical

Either: **A:** 7Amp.380-440 Volts, Three Phase, 50Hz  
(With earth/ground).

### OR

**B:** 13Amp.210-220 Volts, Three Phase, 60Hz  
(With earth/ground).

## Optional Equipment

- Student Tool Kit
- Test And Service Equipment
- Maintenance And Student Package

## Ordering Information

**Order as:** Advanced Training Unit for fault Location 811

## Electrical Specification

Either: **A:** 380-440 Volts, Three Phase 50Hz  
(With earth/ground).

### OR

**B:** 210-220 Volts, Three Phase 60Hz  
(With earth/ground).

## Language

Either: English, Spanish or French

## Shipping Specification (Approx)

Net Weight:	263 kg
Gross Weight:	425 kg.
Packing Case Dimensions:	232 x 85 x 190 cm
Packing Case Volume:	3.7648m <sup>3</sup>

## Also Available on Request

- Further detailed specification
- Additional copies of instruction manual
- Recommended list of spares for 5 years operation

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