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Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Reverse Cycle Refrigeration & AC Training Unit | PolarX - 536

Category: Refrigeration and Air Conditioning · **Country of Origin:** India

Product Overview

The Reverse Cycle Refrigeration & AC Training Unit PolarX - 536 runs two evaporators on a single compressor using an evaporator pressure regulator, demonstrating both refrigeration and air conditioning principles. This Reverse Cycle Refrigeration & AC Training Unit features an air-cooled condenser, water-cooled condenser with automated pressure regulator, and multiple flow control options including thermostatic expansion valves and capillary tube. A solenoid reversing valve enables dual-temperature operation, monitored by 7 Type-k temperature sensors and pressure gauges rated -1~25bar (delivery) and -1~16bar (suction). Optional LABVIEW-based DAQ software supports automated data measurement.

View this product online: https://scienticoindia.com/product/reverse-cycle-refrigeration-ac-training-unit-polarx-536/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Reverse Cycle Refrigeration & AC Training Unit PolarX - 536, Technical Specifications

Component	Type / Detail
Condensing Unit	High starting torque motor with built-in winding protector, air-cooled condenser, liquid receiver, water-cooled condenser
Forced Air Evaporator Coil Block	Copper tube with fins
Static Evaporator Coil Block	Same as free convection air evaporator
Flow Controls (Forced Air)	Automatic expansion valve, internal equalized thermostatic expansion valve, external equalized thermostatic expansion valve, selection by hand wheel valve
Flow Control (Static)	Capillary tube, selection by hand wheel valve
Reverse Cycle Operation	Evaporator pressure regulating valve for dual temperature operation, high pressure switch, low pressure switch, low pressure gauge, high pressure gauge, sight glasses, check valves, hand valves
Frame	Steel frame with stainless steel base and back panels
Condenser	Fan Cool, Continuous Tubing and External Finned
Evaporator	Forced Air, Heat Absorbed, Continuous Tubing and External Finned

Technical Data

Pressure Gauges

Parameter	Value
Suction Side (low pressure gauge)	-1~16bar
Delivery Side (high pressure gauge)	-1~25bar

Liquid Receiver

Parameter	Value
Maximum Working Pressure	450psig
Capacity	1.2L

Filter Drier

Parameter	Value
Maximum Working Pressure	450psig

Digital Multifunctional Power Meter

Parameter	Value
Range of AC Volt	0~500 volts
Range of AC Ampere	0~40 Ampere

Pressure Safety Switch

Side	Value
Suction Side	Not specified
Delivery Side	Not specified

Temperature Sensor

Parameter	Value
Range	-40~400°C
Type	Type-k
Total	07

Key Features

Key Features

- **Dual Evaporator Operation:** Two evaporators run on a single compressor via evaporator pressure regulator
- **Application:** Reverse Cycle Refrigeration & AC Training Unit for combined refrigeration and air conditioning study
- **Condensing Unit:** Air-cooled condenser, liquid receiver, high starting torque motor with built-in winding protector
- **Water-Cooled Condenser:** Automated condenser pressure regulator
- **Evaporator Coil Blocks:** Copper tube with fins (static and forced air)
- **Flow Control Options:** Automatic expansion valve, internal/external equalized thermostatic expansion valves, capillary tube
- **Reverse Cycle Function:** Solenoid reversing valve for dual-temperature operation
- **Safety Controls:** High and low pressure switches, high and low pressure gauges
- **Electrical Protection:** Overload and earth leakage circuit breaker
- **Temperature Sensors:** 7 x Type-k, range -40~400°C
- **Construction:** Steel frame with stainless steel base and back panels

Construction and Design

The Reverse Cycle Refrigeration & AC Training Unit PolarX - 536 is mounted in a steel frame with stainless steel base and back panels. The condensing unit includes a high starting torque motor with built-in winding protector, an air-cooled condenser, a liquid

receiver, and a water-cooled condenser with an automated condenser pressure regulator. Both the static and forced air evaporators use a copper tube coil block with fins. Flow controls are selected by hand valve and include the automatic expansion valve, internal and external equalized thermostatic expansion valves, and capillary tube. A solenoid reversing valve enables reverse cycle operation, while an evaporator pressure regulator allows the two evaporators to run at different pressures and temperatures. An electrical control box on the front panel houses the on/off switches, reverse cycle switch, overload, and earth leakage circuit breaker.

Software

PolarX - 536 (optional). A DAQ software package, specially designed in National Instruments LABVIEW environment, measures and calculates the results of the apparatus. When the software is used, a set of electronic sensors is included. The software can be run on any Windows environment.

Scope of Delivery

- 1 Experimental module
- 1 Instruction manual

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q: How does the unit operate two evaporators with one compressor?
A: An evaporator pressure regulator allows the two evaporators to run at various pressures and temperatures on a single compressor.

Q: What enables reverse cycle operation?
A: A solenoid reversing valve is used to operate the unit in reverse cycle.

Q: What flow control options are available for the forced air evaporator?
A: The automatic expansion valve, internal equalized thermostatic expansion valve, external equalized thermostatic expansion valve, all selected by hand wheel valve.

Q: What safety protections are built into the electrical control box?
A: The control box includes an overload and an earth leakage circuit breaker for protection against earth leakage, along with on/off switches for the evaporator and condenser and a reverse cycle switch.

Q: Is the DAQ software required to run the unit?
A: No. The PolarX - 536 software is optional, and a set of electronic sensors is included when the software is used.

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