

# Air Conditioning Training Systems

Educational Training Equipment for the 21st Century

Bulletin 233-1K

## H-ACD-2A Recirculating Air Conditioning Demonstrator

### Purpose

The Hampden **Model H-ACD-2A** Recirculating Air Conditioning Demonstrator is designed to demonstrate the principles of air conditioning. Students can investigate the theoretical performance of the R-410a refrigeration system (other refrigerants available) along with the various treatments utilized in the air flow distribution cycle including: heating, cooling, humidification, de-humidification, recirculation, and mixing.

The Hampden **H-ACD-2A** Recirculating Air Conditioning Demonstrator consists of eight basic segments:

- |               |               |
|---------------|---------------|
| 1. Blower     | 5. Preheater  |
| 2. Manometers | 6. Humidifier |
| 3. Damper     | 7. Evaporator |
| 4. Mixers     | 8. Reheater   |

All controls are centrally located with analog or digital display for monitoring.

### Services Required

- 208V AC, 3Ø, 4W, 60Hz
- Water Supply

This unit comes complete with operating instructions, experiment, and teacher's manuals.

### Experiments

- Air Flow Measurement
- Wet Bulb Temperature Measurement
- Air Density and Velocity Flow Rate Calculations
- Humidity and Dew Point
- The Refrigeration Cycle
- Effect of Humidity on Refrigeration
- Refrigeration Controls
- Air Conditioning Process
- Removing Sensible and Latent Heat



**MODEL H-ACD-2A with CDL package**  
(Shown with H-RST-DMB Option)  
Dimensions: 70"H x 88"W x 31"D  
Shipping Weight: 1450 lbs

### Options

◆ The Hampden **Model H-ACD-2A-CDL** Recirculating Air Conditioning Demonstrator with Computer Data Logging package includes the following:

- Thermocouples (13), Type "T"
- Air Velocity Transmitter with a 4–20mA output
- Pressure Transmitters (2) with 4–20mA output
- Differential Low Pressure Transmitters (2) with 4–20mA output
- Wattmeters (2) with 4–20mA output

- Interface Modules and Windows® Software

◆ The Hampden **Model H-ACD-CDL-L** National Instruments Modules with LabView Software

◆ The Hampden **Model H-ACD-FP-16E** Electrical Fault Package

◆ The Hampden **Model H-RST-DMB** Digital Manifold with Bluetooth

*Options must be specified at time of original order*



All Hampden units are available for operation at any voltage or frequency

**Hampden**  
ENGINEERING CORPORATION

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