

HVAC Control Systems

Educational Training Equipment for the 21st Century

Bulletin 236K

H-ACCS-1A Air Conditioning Control System



MODEL H-ACCS-1A Air Conditioning Control System
Dimensions: 75"H x 48"W x 30"D
Shipping Weight: 450 lbs



Right side view of **H-ACCS-1A** showing Fault Switch compartment and lockable access door

The Hampden **Model H-ACCS-1A** Air Conditioning Control System contains the actual components used in the control of commercial and residential heating/cooling systems. All components are prewired into a complete thermostat-actuated control system and then diagrammed to facilitate understanding and use.

The Hampden **H-ACCS-1A** helps students become familiar with the functions of each control component and how they work together to regulate summer cooling and winter heating. Students learn correct procedures for systematically checking-out and establishing settings on new installations, as well as developing the skill of diagnosing malfunctions based on a customer complaint. Integral fault switches provide "real world" troubleshooting experience.

The system is furnished completely wired and tested. It plugs into a standard single-phase supply. Fuse protection is provided for the line voltage circuit and the low voltage control signal circuit. Numerous test points are provided. Students never apply power to any of the binding post test points. Voltage readings may be taken while the system is energized. When de-energized, all components and devices may be isolated for resistance and continuity tests. Visually, the unit is comprised of three equipment sections

1. **Temperature Controlled Room** - contains a standard operating thermostat measuring the actual temperature which can be set for a temperature high enough to actuate heating control circuits or low enough to actuate cooling control circuits.
2. **Furnace** - contains the furnace, furnace fan, and respective controls. The control components, (high limit thermostat, static pressure switch, heat relay, and furnace fan relay) are real, while the furnace and fan motor are simulated with pilot lights to indicate operating conditions.
3. **Condensing Unit** - contains all of the controls and protective devices for the refrigeration cycle along with a simulated crankcase heater, compressor, and condenser fan.

Fault Switches

74 fault switches located behind a lockable door create short or open conditions for all components and devices (including simulated components). Also provided is a list of possible "customer complaints" and corresponding combinations of fault switches required to produce an appropriate symptom. Students work circuit diagrams, a multimeter, and an instruction manual to systematically isolate and identify the cause. Instruction manual also contains procedures for capacitor testing, motor lead identification and other problems encountered on the job.

Power required: 120V AC 1Ø 60Hz.

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



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