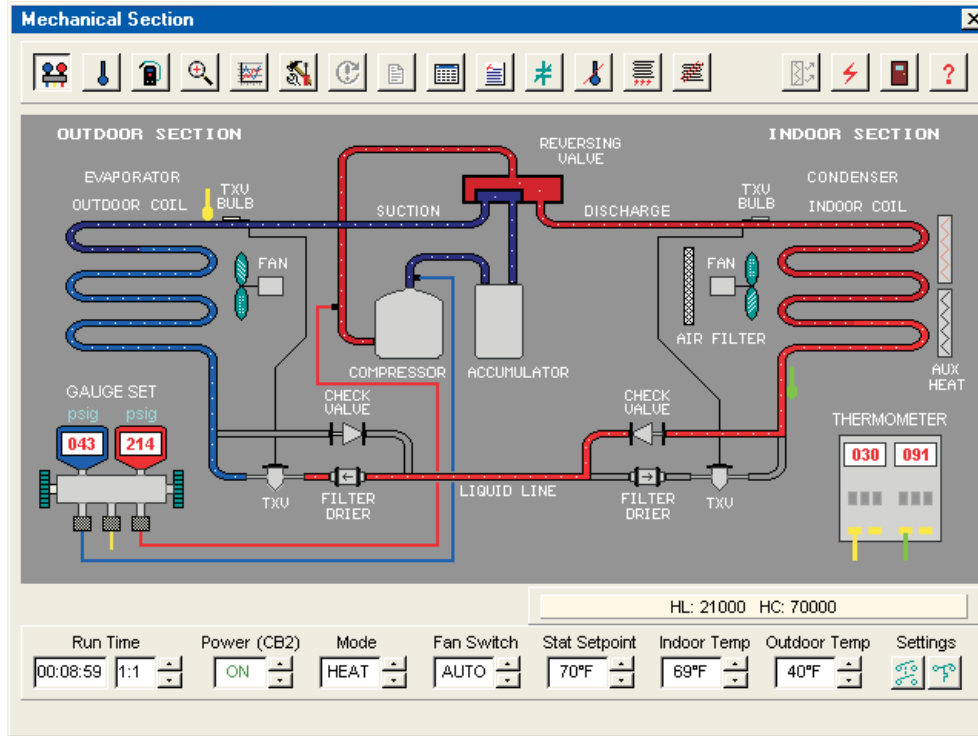


# HEAT PUMP SIMULATOR *SIMUPUMP*™



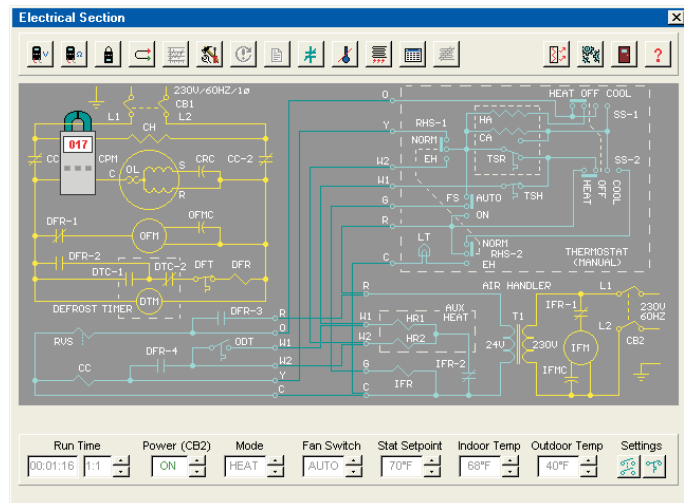
*SIMUPUMP*™ simulates a generic residential/light-commercial type *air-to-air* split-system heat pump, using either R-22 or R-410A refrigerant. The trainee may select heating, cooling, or emergency heat modes. Indoor and outdoor temperatures are adjustable, and continuously updated and displayed on the screen. Settings for thermostats, TXVs, defrost frequency, and building heatloss are also adjustable. With the capability of changing operating temperatures, a heat pump may be observed under various environmental conditions; something very difficult to do with real mechanical equipment.

Animated mechanical and electrical schematic diagrams of the simulated heat pump are provided in “real-time”. The **mechanical diagram** shows refrigerant flow, as well as the *liquid*, *liquid/vapor*, and *superheated vapor* states of the refrigerant. In the **electrical ladder diagrams**, the controls and switch contacts constantly change state as the system operates. Providing a means of visually tracing refrigerant and current flow during operation, makes it much easier for the trainee to understand how a heat pump is supposed to work.

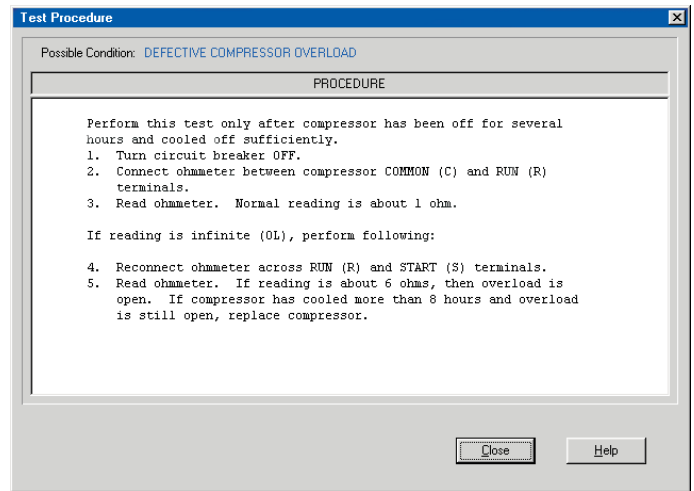
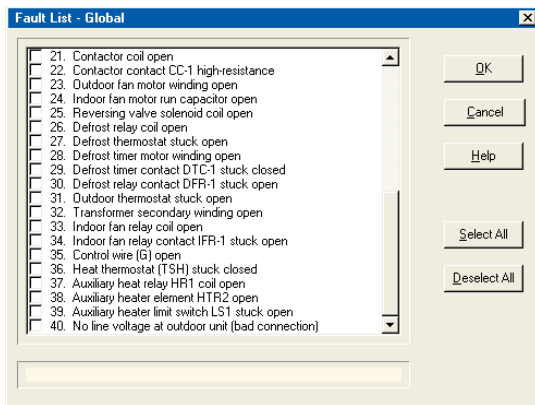
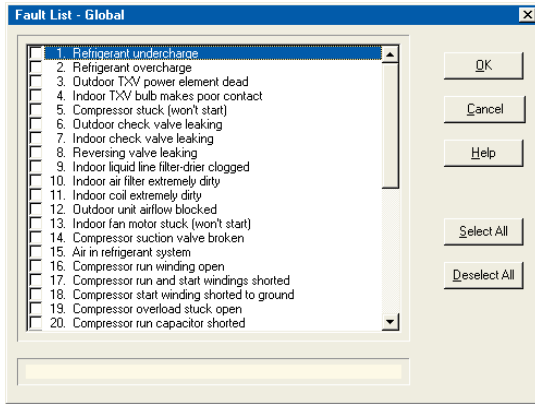
Pressure-temperature charts, performance charts, specifications, and an electrical nomenclature are available on-screen. In addition, the trainee can “zoom” into the system to visually inspect various components, including dirt or ice on the coils, a dirty air filter, and a blocked outdoor unit.

*SIMUPUMP* provides easy-to-use “point-and-click” selection of meters and test points, and are saved to an *Instrument Log* to monitor the users’ troubleshooting skill. Temperatures may be displayed in either *Fahrenheit* (°F) or *Celsius* (°C), and pressures may be displayed in either *imperial* (psig) or *metric* (kPa/barg). The on-screen test instruments include:

- Gauge manifold set
- Thermometers
- Leak detector
- Voltmeter
- Ohmmeter
- Clamp-on ammeter



# HEAT PUMP SIMULATOR *SIMUPUMP*<sup>™</sup>



## SYSTEM REQUIREMENTS

*SIMUPUMP* requires the following minimum IBM compatible computer:

- Pentium, Core, or equivalent processor (32 or 64-bit)
- Windows XP, Vista, 7, 8, 8.1, 10
- Hard drive, 18MB available disk space

*SIMUPUMP* network version is compatible with Novell and Windows Server 2003, Server 2008, Server 2012

Up to 40 commonly encountered mechanical and electrical faults may be selected, as shown in the *Fault Lists* above.

*SIMUPUMP* provides testing and troubleshooting of the devices shown below, which are commonly found in heat pumps.

|                          |                          |
|--------------------------|--------------------------|
| Compressor               | Transformer              |
| Condenser coil           | Defrost timer            |
| Evaporator coil          | Auxiliary heater element |
| Accumulator              | Crankcase heater         |
| TX valve (TXV/TEV)       | Run capacitor            |
| Check valve              | Fan motor capacitor      |
| Filter-drier             | Room thermostat          |
| Air filter               | Heat thermostat          |
| Outdoor fan              | Outdoor thermostat       |
| Indoor fan               | Defrost thermostat       |
| Reversing valve          | Emergency heat switch    |
| Compressor contactor     | Fan switch               |
| Indoor fan relay         | Limit switch             |
| Defrost relay            | Fused link               |
| Heater relay             | Circuit breaker          |
| Reversing valve solenoid |                          |



## ORDERING INFORMATION

### *SIMUPUMP*<sup>™</sup> Heat Pump Simulator

#### Standalone Licenses

|        |                      |            |
|--------|----------------------|------------|
| MP-500 | 1 computer license   | \$695.00   |
| MP-505 | 5 computer licenses  | \$1,295.00 |
| MP-511 | 10 computer licenses | \$1,695.00 |
| MP-515 | 15 computer licenses | \$1,995.00 |
| MP-520 | 20 computer licenses | \$2,295.00 |

#### Network Licenses

|        |          |            |
|--------|----------|------------|
| MP-540 | 10 seats | \$1,595.00 |
| MP-560 | 25 seats | \$1,895.00 |
| MP-570 | 50 seats | \$2,695.00 |

For further prices and ordering information, please see Page 20

# ORDERING INFORMATION

## METHODS OF ORDERING

### MAIL

Simutech Systems, Inc.  
PO Box 7212  
Beaverton OR 97007 (U.S.A.)

### PHONE

(800) 648-6209 (USA & Canada)  
(503) 649-9076  
Hours: 8:00 am to 5:00 pm Pacific Time

### FAX

(503) 649-8972

### ON-LINE STORE / E-MAIL

www.simutechsystems.com  
sales@simutechsystems.com

## METHODS OF PAYMENT

### U.S. CUSTOMERS

- Purchase Order from government agency, school, or corporation (OAC), Net 30-days
- Visa, MasterCard, or American Express
- Prepaid by check



### CANADA & INTERNATIONAL CUSTOMERS

- Purchase Order from government agency or school, Net 30-days, payable in U.S. funds
- Visa, MasterCard, or American Express
- Prepaid by International Bank Check, payable in U.S. funds

## SHIPPING

All orders are shipped *FOB shipping point* and a shipping charge is added to invoice. Shipment is normally via *UPS ground* in USA and *UPS Air* to Canada and international. *Next-day* or *second-day air* is available upon request. For Canada and international orders, GST, local taxes, and duty are not included in our prices.

**Orders are normally shipped within 24-hours**

## SYSTEM CONTENTS

Each simulator system includes the following:

- CD-ROM
- User's Manual
- Instructor's Manual
- Technical Support, unlimited, with toll-free number (USA and Canada)

- (1) Additional licenses are required if simulators are installed and used on more than one standalone computer at same campus or training facility
- (2) Network versions are valid for installation on a LAN server at one campus or training facility, for concurrent use by maximum licensed users
- (3) Network versions for more than 50 users are also available
- (4) May be used on tablets and iPads when a remote access server is used

### Prices are subject to change without notice

Note: Simutech reserves the right to refuse any order, including shipment to countries where prohibited by U.S. export laws or lacking proper international copyright protection. Export, reshipment, or resale is prohibited without prior written permission, subject to U.S. export laws.

## INSTRUCTOR INTERFACE MODULES

These *optional* programs are installed on the instructor's computer to *preselect faults* for all users at one time. Using a CD or flash drive, the faults are then uploaded to each workstation. In addition, when a printer isn't available at each workstation, these interfaces can be used to download reports, for display and printout at the instructor's computer. **These are recommended when six or more workstations are utilized without a network.** Prices are shown below:

| DESCRIPTION            | PART NO. | UNIT PRICE |
|------------------------|----------|------------|
| ACINST™ Version 5.1    | TA-500   | \$ 195.00  |
| HPINST™ Version 5.1    | TP-500   | \$ 195.00  |
| REFRINST™ Version 5.1  | TR-500   | \$ 195.00  |
| MKTINST™ Version 5.1   | TS-500   | \$ 195.00  |
| GASINST™ Version 5.1   | TF-500   | \$ 195.00  |
| OILINST™ Version 5.1   | TO-500   | \$ 195.00  |
| HYDROINST™ Version 1.1 | TB-500   | \$ 195.00  |
| GEOINST™ Version 1.0   | TG-500   | \$ 195.00  |

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iPad is a registered trademark of Apple Inc.