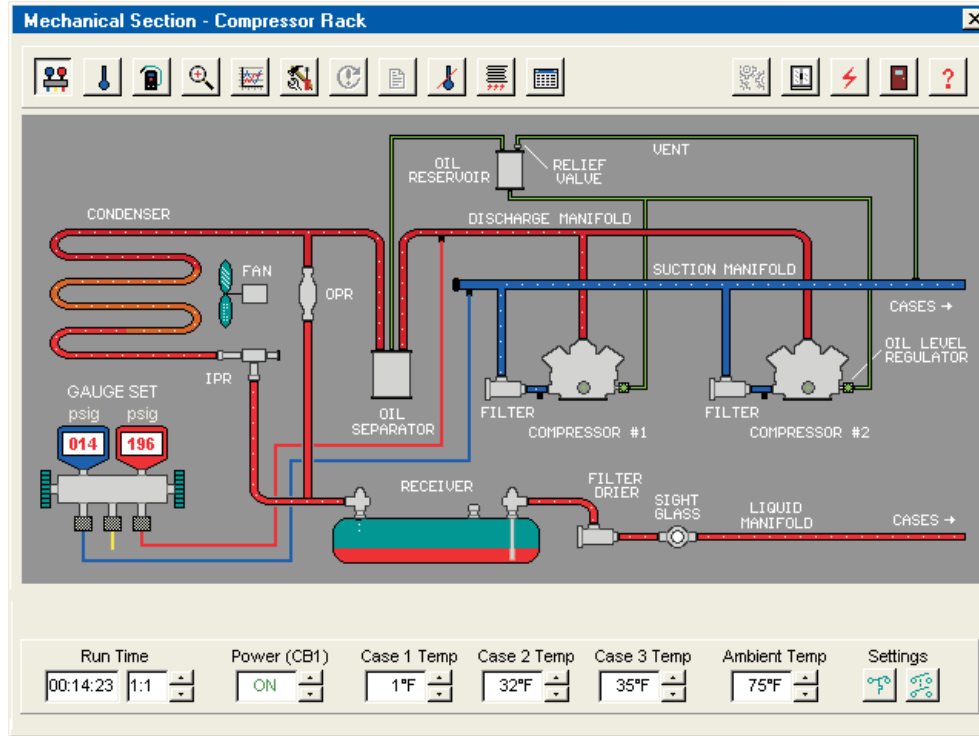
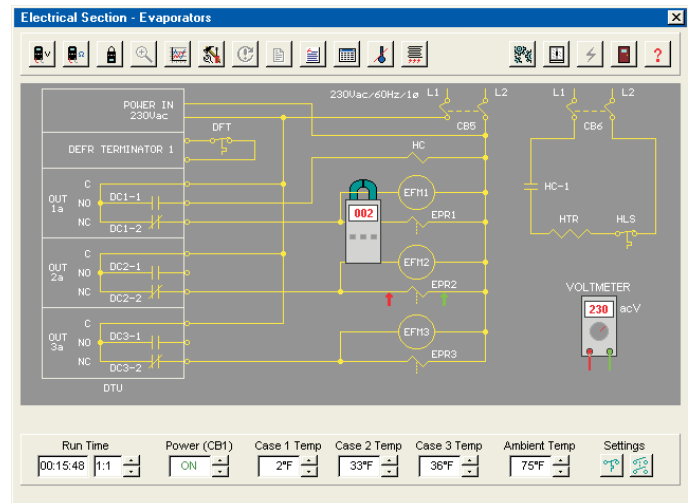
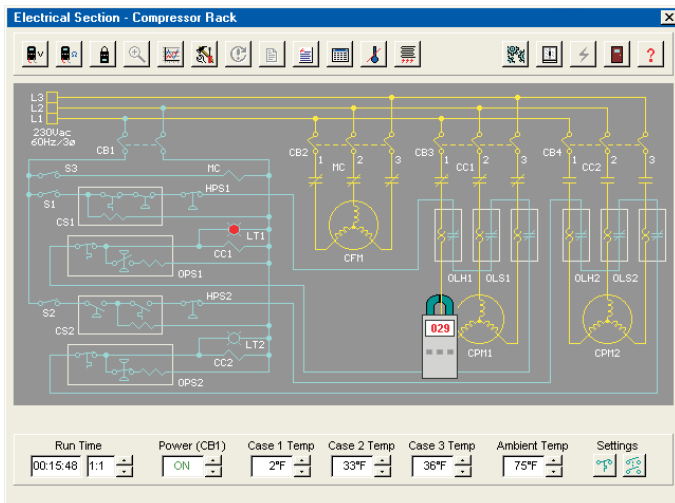


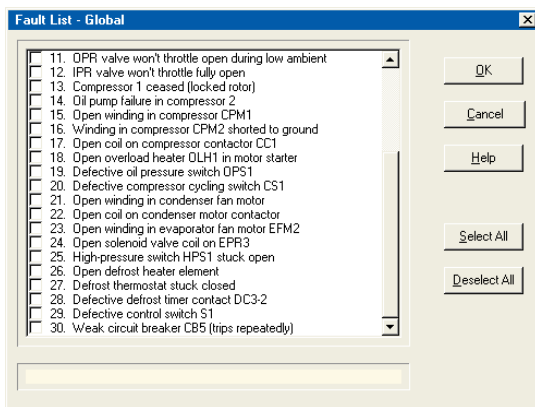
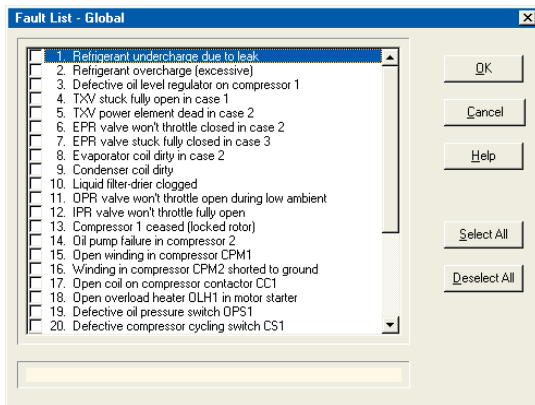
# SUPERMARKET REFRIGERATION SIMULATOR *SIMUMKT*<sup>TM</sup>



*SIMUMKT*<sup>TM</sup> simulates a typical parallel-type multi-evaporator supermarket refrigeration system. Normally, a parallel system contains many display cases and walk-in coolers, but for simplicity, *SIMUMKT* contains three display cases. One case is **low-temperature** with *electric defrost*, the others are **medium-temperature** with *off-cycle defrost*. Two 3-phase semi-hermetic compressors, with capacity cycling, are included. A specific refrigerant may be selected for simulation, which includes **R-22, R-402A, R-404A, R-422D, R-502, and R-507**.

Animated mechanical and electrical schematic diagrams of the simulated refrigeration system are provided in “real-time”. The **mechanical diagrams** show refrigerant flow and the *liquid, vapor, liquid/vapor, and superheated vapor* states of the refrigerant. Also, the liquid level in the receiver is shown. In the **electrical ladder diagrams**, the controls and switch contacts constantly change state as the system operates. Providing a means of visually tracing the refrigerant and current flow during system operation, makes it much easier for the trainee





- |                         |                            |
|-------------------------|----------------------------|
| Compressor              | Compressor motor (3-phase) |
| Condenser coil          | Condenser fan motor        |
| Evaporator coil         | Evaporator fan motor       |
| Liquid receiver         | Contactator                |
| Oil reservoir           | Defrost timer unit         |
| Oil separator           | Motor starter              |
| Oil level regulator     | Defrost heater             |
| Oil level sight glass   | Defrost thermostat         |
| Filter-drier            | Compressor-cycling switch  |
| Liquid-line sight glass | High-pressure switch       |
| OPR valve               | Oil pressure switch        |
| IPR valve               | Heater limit switch        |
| EPR valve               | Control switch             |
| TX valve (TXV/TEV)      | Circuit breaker            |

*SIMUMKT* provides testing and troubleshooting of the devices listed above, commonly found in refrigeration systems.

## SYSTEM REQUIREMENTS

*SIMUMKT* 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

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

to understand how the system is supposed to work. Up to 30 commonly encountered mechanical and electrical faults may be selected, as shown in the *Fault Lists* above.

Setpoints for the EPR valves and TXVs can be adjusted for each case, as well as the compressor-cycling control and defrost settings. Case and ambient temperatures are adjustable, and continuously updated and displayed on the screen. All temperature and pressure values can be set and displayed in either *imperial* or *metric*.

Pressure-temperature charts for the refrigerants, specifications, and an electrical nomenclature are available *on-screen*. In addition, the trainee can “zoom” into the system to visually inspect various components, including dirty or iced-up coils, and liquid and compressor oil level sight glasses.

*SIMUMKT* provides easy-to-use “point-and-click” selection of meters and test points, which 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 | • Voltmeter        |
| • Thermometers       | • Ohmmeter         |
| • Leak detector      | • Clamp-on ammeter |



## ORDERING INFORMATION

### *SIMUMKT*<sup>™</sup> Supermarket Refrigeration Simulator

#### Standalone Licenses

MS-500	1 computer license	\$895.00
MS-505	5 computer licenses	\$1,595.00
MS-511	10 computer licenses	\$1,995.00
MS-515	15 computer licenses	\$2,295.00
MS-520	20 computer licenses	\$2,595.00

#### Network Licenses

MS-540	10 seats	\$1,895.00
MS-560	25 seats	\$2,095.00
MS-570	50 seats	\$2,895.00

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.