

SIMUREFR™ simulates three *generic* versions of *low-temperature* and *medium-temperature* refrigeration systems. These include a **reach-in case** with *random defrost*, a **reach-in freezer** with *electric defrost*, and a **walk-in freezer** with *hot-gas defrost*. The trainee may select the type of refrigerant for the simulated system. Box and ambient temperatures are adjustable and continuously updated and displayed on the screen. The cut-in and differential settings for the pressurestat, thermostat, and low-pressure switch are also adjustable, as well as the defrost and TXV settings.

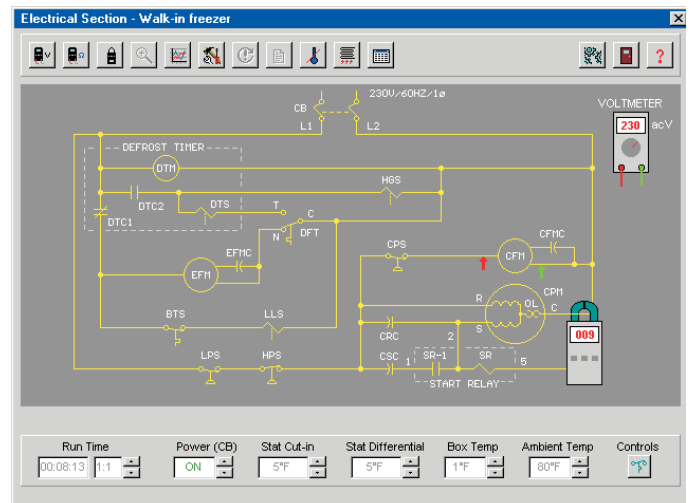
Animated mechanical and electrical schematic diagrams of the simulated refrigeration system are provided in “real-time”. The **mechanical diagrams** show refrigerant flow, as well as the *liquid*, *vapor*, *liquid/vapor*, and *superheated vapor* states of the refrigerant. Also, the liquid level in the 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 to understand how a refrigeration system is supposed to work.

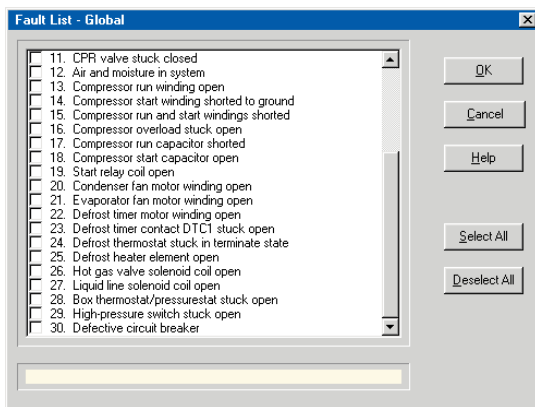
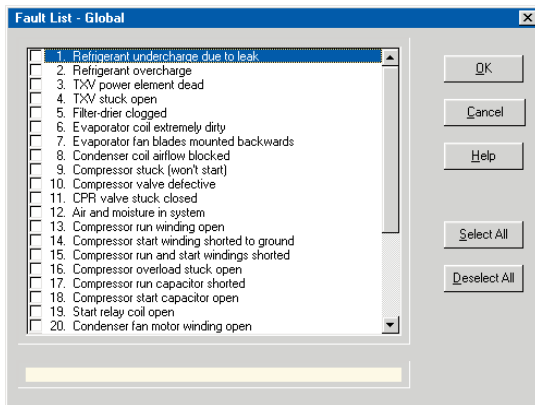
Pressure-temperature charts, specifications, and an electrical nomenclature are available on-screen. In addition, the trainee can “zoom” into the system to visually inspect various components, including dirt or ice on coils, and bubbles in the liquid sight glass.

Eight common refrigerants may be selected for the simulated system. These include:

- R-12
- R-134a
- R-404A
- R-502
- R-22
- R-402A
- R-409A
- R-507

SIMUREFR 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





°F	PSIG	°F	PSIG	°F	PSIG	°F	PSIG	°F	PSIG
-50	0.1	-10	23.9	24	60.9	58	120.0	92	208.7
-45	2.2	-8	25.6	26	63.7	60	124.3	94	215.0
-40	4.5	-6	27.3	28	66.5	62	128.8	96	221.4
-38	5.5	-4	29.1	30	69.5	64	133.3	98	228.0
-36	6.5	-2	30.9	32	72.5	66	138.0	100	234.7
-34	7.6	0	32.8	34	75.6	68	142.7	105	252.1
-32	8.7	2	34.8	36	78.8	70	147.5	110	270.3
-30	9.9	4	36.8	38	82.1	72	152.5	115	289.5
-28	11.1	6	38.9	40	85.5	74	157.6	120	309.7
-26	12.3	8	41.0	42	89.0	76	162.8	125	330.8
-24	13.6	10	43.3	44	92.5	78	168.1	130	353.0
-22	14.9	12	45.6	46	96.1	80	173.5	135	376.2
-20	16.3	14	48.0	48	99.9	82	179.1	140	400.5
-18	17.7	16	50.4	50	103.7	84	184.7	145	426.0
-16	19.2	18	52.9	52	107.7	86	190.5	150	452.5
-14	20.7	20	55.5	54	111.7	88	196.5		
-12	22.3	22	58.1	56	115.8	90	202.5		

Saturated Vapor (Dew Point)

SYSTEM REQUIREMENTS

SIMUREFR for Windows requires the following minimum IBM compatible PC computer:

- Pentium, Core, or equivalent processor (32 or 64-bit)
- Minimum RAM required by operating system
- Windows 95, 98, 2000, 2003, 2008, NT, Me, XP, Vista, or Windows 7 (32 or 64-bit)
- VGA/SVGA display
- Hard drive, 18MB available disk space
- Pointing device, such as Windows-compatible mouse

SIMUREFR network version is compatible with Novell and Windows NT/XP/Vista/7/2000/Server 2003/Server 2008

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

Up to 30 commonly encountered mechanical and electrical faults may be selected, as shown in the *Fault Lists* above.

SIMUREFR provides testing and troubleshooting of the devices listed below, commonly found in refrigeration systems.

- | | |
|----------------------|------------------------|
| Compressor | Run capacitor |
| Condenser coil | Start capacitor |
| Evaporator coil | Defrost heater |
| Receiver | Defrost timer motor |
| TX valve (TXV/TEV) | Defrost timer solenoid |
| CPR valve | Defrost thermostat |
| Filter-drier | Box thermostat |
| Sight glass | Box pressurestat |
| Condenser fan motor | Low pressure switch |
| Evaporator fan motor | High pressure switch |
| Start relay | Heater limit switch |
| Liquid line solenoid | Condenser fan switch |
| Hot gas solenoid | Circuit breaker |



ORDERING INFORMATION

SIMUREFR™ Commercial Refrigeration Simulator Version 5.2

MR-500	Stand-alone computer version, single license	\$695.00
MR-560	Network version, 25-user (seat) license	1,695.00
MR-570	Network version, 50-user (seat) license	2,295.00
TR-500	<i>REFRINST</i> ™ Instructor Interface, Version 5.1	195.00

For further prices and ordering information, please see Page 16

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 from receipt

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 stand-alone 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

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.



PRICE LIST – MULTIPLE LICENSES FOR STAND-ALONE COMPUTERS

PRODUCT	5 LICENSES	10 LICENSES	15 LICENSES	20 LICENSES
<i>SIMUAIR™</i>	\$1,095.00	\$1,595.00	\$1,795.00	\$1,995.00
<i>SIMUPUMP™</i>	1,295.00	1,795.00	1,995.00	2,195.00
<i>SIMUREFR™</i>	1,295.00	1,795.00	1,995.00	2,195.00
<i>SIMUMKT™</i>	1,695.00	2,195.00	2,395.00	2,595.00
<i>SIMUGAS™</i>	1,295.00	1,795.00	1,995.00	2,195.00
<i>SIMUOIL™</i>	1,495.00	1,995.00	2,195.00	2,395.00
<i>SIMUHYDRO™</i>	1,495.00	1,995.00	2,195.00	2,395.00

Prices shown include a stand-alone single-license version on CD-ROM (e.g. "5-Licenses" includes a single-license plus 4 additional licenses)

Quantity of licenses can not be combined for multiple products

For greater than 20 licenses or other quantities, please contact us for a quotation

Prices shown are in US Dollars

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