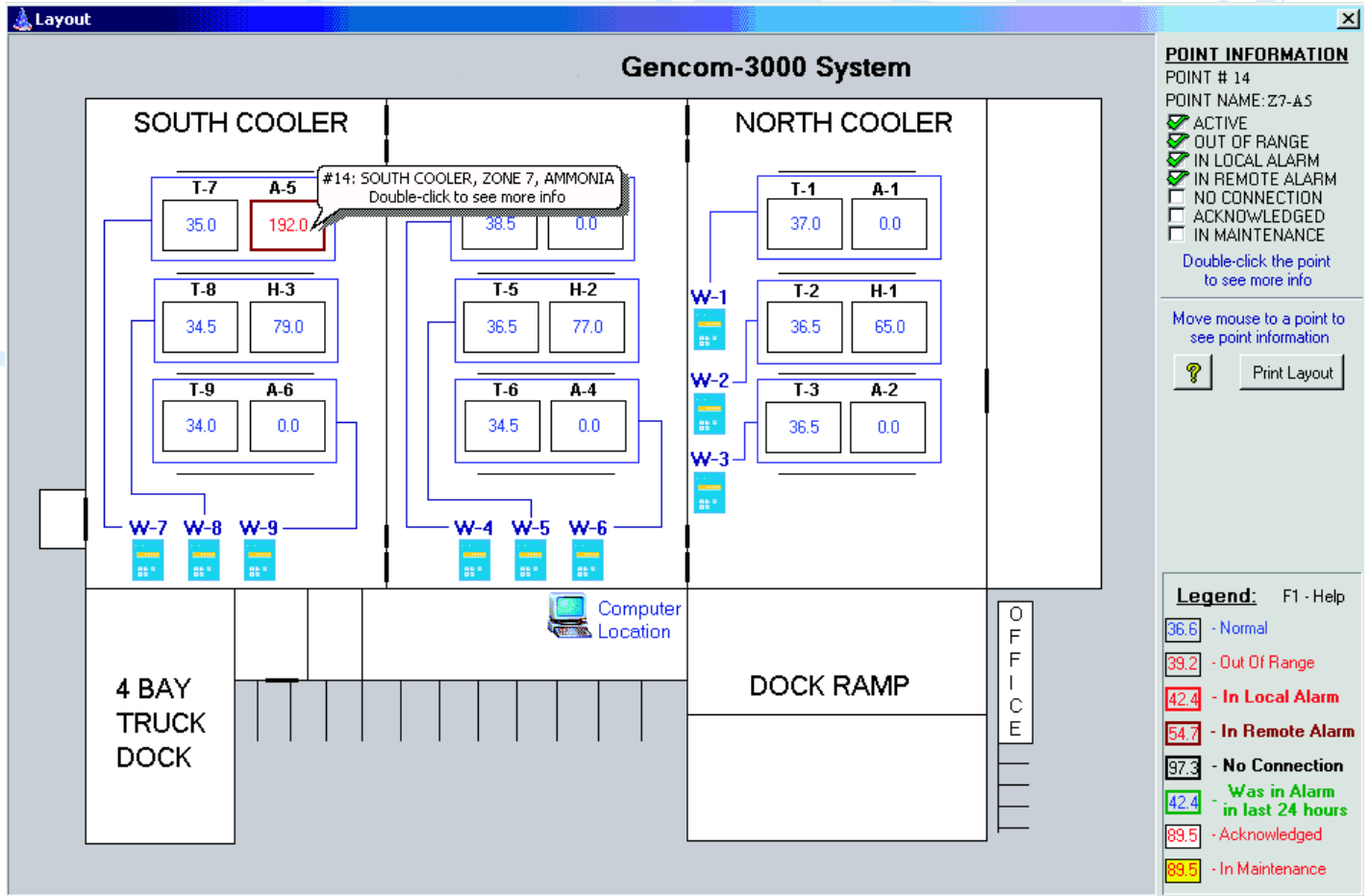


# GENCOM 3000

## SUPERVISORY AND ALARMING

### COMPUTER SYSTEM



COMPLETE PLANT PROTECTION FROM A CENTRALIZED  
COMPUTER SCREEN



**GENESIS INTERNATIONAL INC.**

# GENCOM 3000 Facility Monitoring Computer System

The GenCom 3000 Supervisory and Alarming Computer is a facility monitoring and alarming computer system. The GenCom 3000 Computer can be used to monitor and alarm at a central location most Genesis controls. A minimum system consists of a Pentium class computer, one I/O panel with 16 data input / 8 alarm relay output board and a GenCom 3000 software package. The GenCom 3000 Computer can monitor an unlimited number of data points. Each data point can be:

- 1) Temperature
- 2) Pressure
- 3) Humidity
- 4) AC or DC current
- 5) Power Consumption Meter
- 6) Flow meter
- 7) On-Off switches
- 8) Data point within all Genesis manufactured control systems
- 9) User specified sensor

The GenCom3000 stores the point data on the monitoring computer. The user can review, graph and print the point data at any time. Remote access is possible through a dial up MODEM local LAN or internet access. Local and remote users can review and graph this information.

The computer will allow the user to display the floor plan of the facility with each data point designated and the current reading displayed. During normal operations, the GenCom 3000 compares these values to two sets of high and low alarms for each individual data type. If a data point exceeds one of these limits for a specified period of time, The GenCom 3000 will initiate one of eight alarm routines for each data point activating pre-assigned alarm relays.

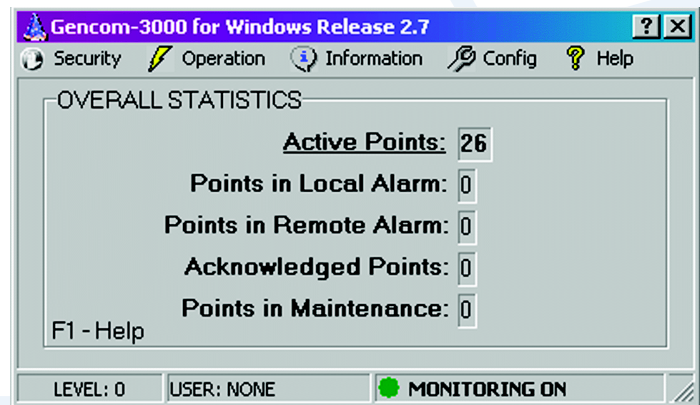
## Communication Wire Specifications:

- 2-22 AWG Twisted, Shielded, Belden 8451 for short runs
- 2-18 AWG Twisted, Shielded, Belden #8760 for runs over 200 feet. (Please refer to individual controls for Sensor wiring specifications.)

## Operations

### Main Window

Overall statistics on data points and access to different menus



This window contains the **Main Menu** and **Overall Statistics** window.

**Main Menu** has the following sections:

*Security* - user level control.

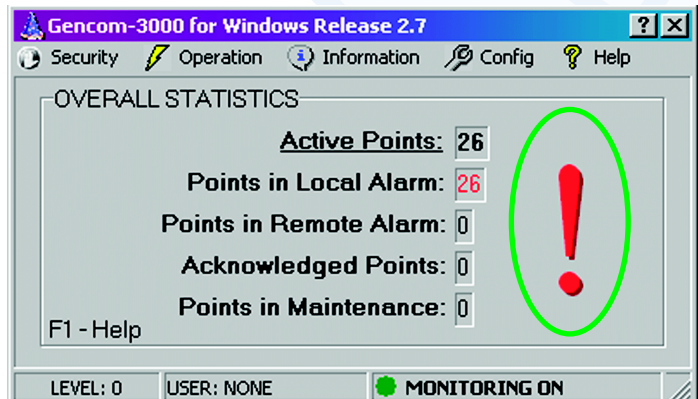
*Operation* - different forms to control and view the monitored points

*Information* - log file and general information

*Config* - configuration screens.



Start and stop Monitoring from this Screen and Immediately see alarming.

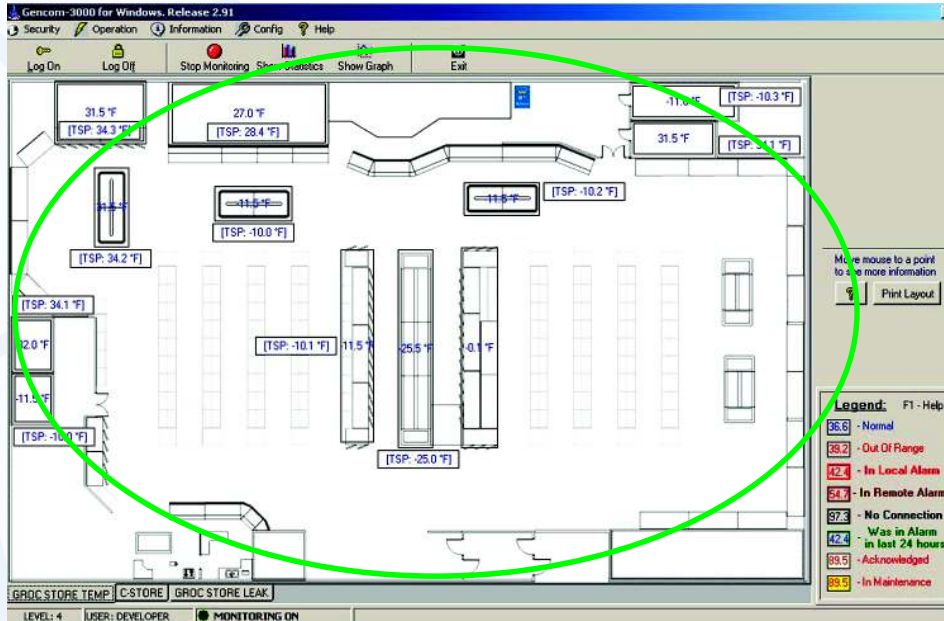


# GENCOM 3000 Layout Screens

## Layout screen

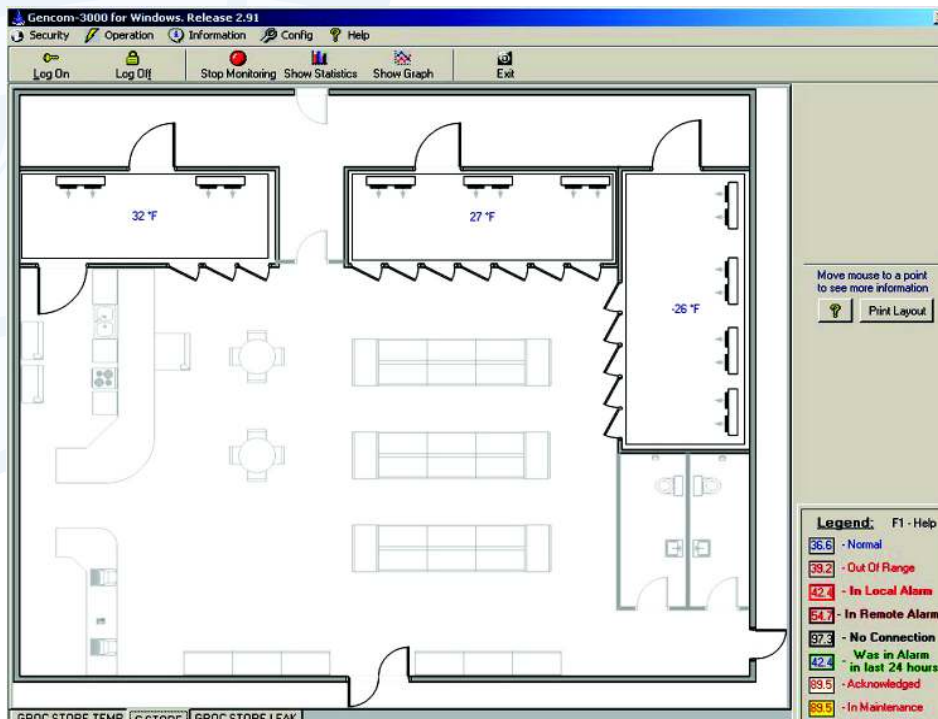
The **Layout screen** shows the layout of sensors in the building(s) and allows the users to view and control points' states. The main "Layout" window can be divided into 3 separate sections: The *Facility Layout Area*, The *Statistics or Point Information Area* and The *Legend Area*.

In the **Facility Layout Area** (Circled in green below) the user "sees" the visual locations of all the points being monitored by the GenCom 3000 computer and where each Genesis control is located. If you have a high enough user level you can also look at the details of each point by double-clicking on an active point or by using the context menu and by a right mouse button click. Either way will get you to the "Point Manager" dialog window. The point manager dialog window is covered on the next page.



GROCERY STORE LAYOUT

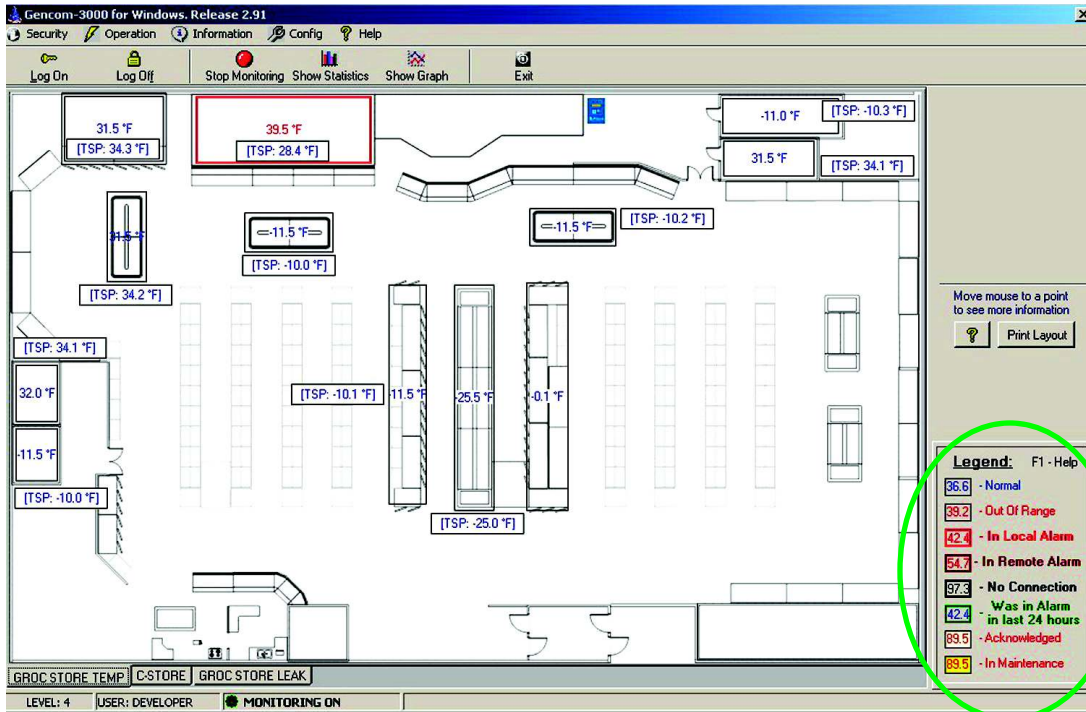
Below is another example of a typical Facility Layout.



CONVENIENCE STORE LAYOUT

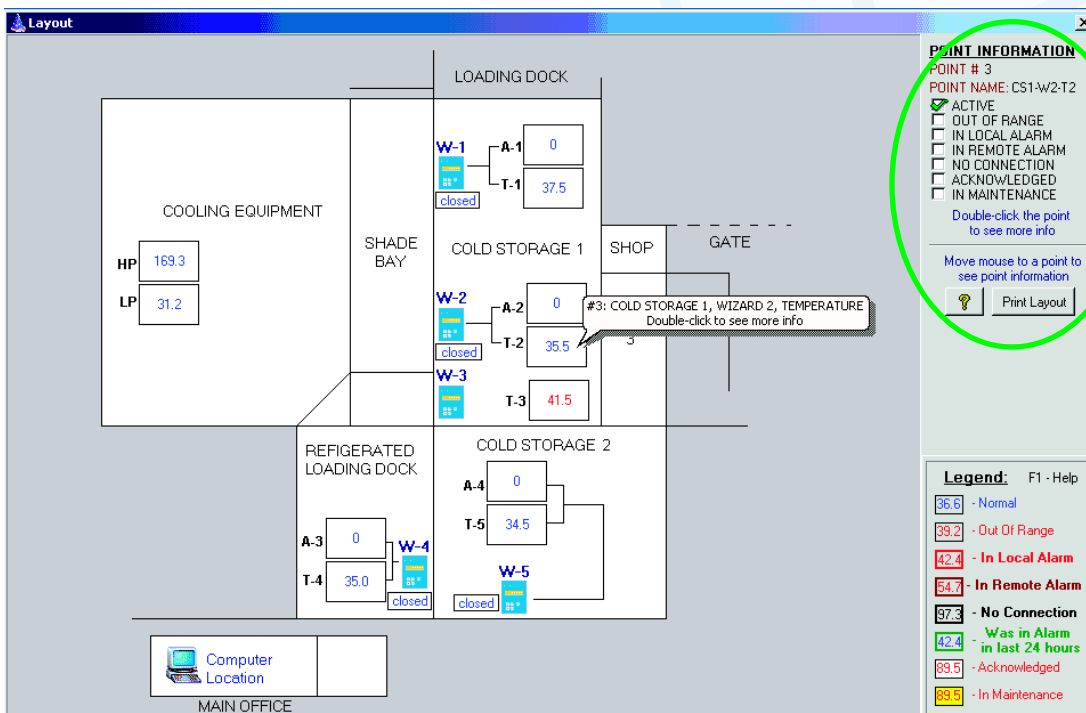
# GENCOM 3000 Layout Screens

The Legend Area (Circled in green below) describes how to read the visual representation of the points. The picture below shows a point in alarm as indicated by the red square around the zone in alarm.



GROCERY STORE LAYOUT

The Statistics Area (Circled in green below) is dynamic and depends on mouse cursor position. When the user moves the mouse cursor to a point a pop up bubble appears showing information about the point and the statistics area specific to that point appears. This area reflects the state of this point such as: active or not, in alarm or not, in what kind of alarm etc. When the state of the point is changed the data in this area is refreshed as well.



INDUSTRIAL REFRIGERATION WAREHOUSE STORAGE LAYOUT

# GENCOM 3000 Point Manager & User Levels

## Point Manager

The **Point Manager** dialog shows the detailed point information and also allows to control point's state. This dialog may be accessed with double-clicking on the point image on "Layout" screen. The Point Manager window allows the user to turn off alarms for the selected point, by putting it in Acknowledged state (up to 3 times, periods are set up in "Setup Constants"), or by setting "In Maintenance" state for the point. Also the user is able to set the alarms for the point by pressing "Force alarms..." button. Changing state will immediately be reflected in the Layout Area. It shows the following values for the selected point:

- Last reading - the last read value
- All enabled limits (values and delays)
- All 5 alarms statuses: "No Connection" alarm and 4 "Out-Of-Range" alarms
- The controls for setting the point into "Acknowledged" state or into "In Maintenance" state.

## Test Points

**Test/Read Point** dialog allows the user to get an immediate value from the sensor. User may pick one of the pre-defined points or define custom communication values, using "Test Custom Point" checkbox. If it is one of pre-defined points then also Translated Value will be shown (infor-

mation about how to represent the data is taken from Setup Points Data Sensor), if it is a custom point then Translated Value field is disabled.

## User Levels

System has User Levels, which can be set up in "Users" dialog window.

There are:

Level	Nickname	Rights
3	SUPERVISOR	Full control is allowed
2	SUPERUSER	Cannot clear logs or setup users
1	USER	Cannot clear logs, setup users, setup points, start/stop monitoring, exit.
0	NONE	Default user level, just allowed to view monitoring

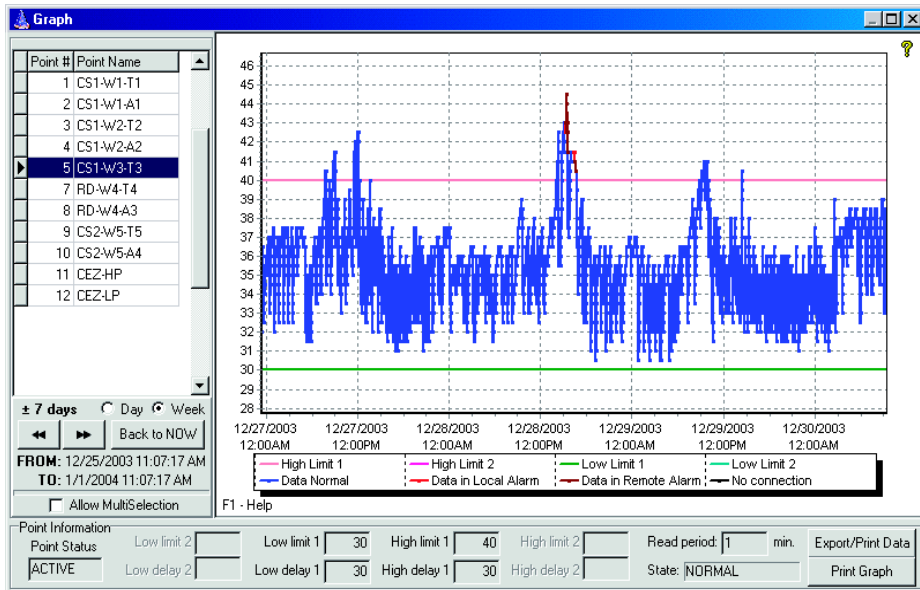
For the all users Timeout is set as 120 minutes, after which the system will log out current user.

# GENCOM 3000 Point Graphing & Control Parameters

## Data Point graph

Selected data point is shown in graphic format. X-axis is the time and date. User can zoom in, zoom out or pan to an area within the graph. Up to seven days of data can be shown in one screen. The graph can be printed out or exported to a file.

nance staff the ability to identify and fix most problems prior to activating any call out alarm procedures. If the problem is not solved or is beyond the capabilities of the local staff, the Gencom3000 Monitoring System will then activate the "Call Out" or "Remote" alarm procedures.



The Local Alarm should normally consist of an audio-visual alarm device located within the facility that will alert the facility personnel of an alarm condition.

The Call Out or Remote Alarm activates a relay contact that should be connected to an alarm monitoring panel or dial out device.

## Interface the control through the Computer

All control operational parameters can be accessed and changed by simply clicking the refrigeration zone you wish to access. A "worksheet" representing the Genesis Control's operating parameters will appear. You can make all the necessary changes to the control at this worksheet, and click the "Upload" button. The new changes will be loaded to the specific controller automatically.

## Alarm

All data, once collected, is compared to a unique list of parameters. All parameters have alarming time delays. Data point to be greater than or less than the alarm level for a minimum amount of time before activating the alarming routines. Each data point may exceed its alarm values briefly during normal operations, then recover to normal levels. Not all equipment parameters have to be set to activate alarms, some can be monitored to provide a serviceman additional data to solve problems. Alarm log keeps history of local and remote alarms set and reset events.

Data point alarms can be grouped together as alarm groups. Each alarm group has local alarm and remote alarm. Each alarm group can activate up to four alarm relays. The Gencom3000 Alarm Schemes are designed to allow the local mainte-

# GENCOM 3000 Control Data Sources & Descriptions

Data points GenCom3000 can monitor may include:

Source	Data Type	Data Range	Alarm_ Yes/No	Source	Data Type	Data Range	Alarm Yes/No
<b>GenCom3000 RP1</b>				<b>EPC2000 Parallel Multiplexed Rack Control System</b>			
<b>Analog Data I/O Board</b>				<b>Low Side Suction</b>			
(Inputs analog, temperature or pressure or digital)				analog 0-200psi Yes			
Inputs 1 through 16	analog/digital	Various	Yes	High Side Suction	analog	0-200psi	Yes
Outputs 1 through 8	digital	Yes/No	Yes	Head Pressure	analog	0-500psi	Yes
<b>Wizard Evaporator (WEC, W2EC, W4EC, W2EC-L) Control System</b>				Outside Temperature			
Defrost Status	digital	Yes/No	No	Liquid Line Temperature	analog	-40°-158°F	No
Alarm	digital	Yes/No	Yes	# of Compressors On	numerical	0 - 8	No
Refrigerant Gas Sensor	analog	0-1500ppm	Yes	# of Condenser Fans On	numerical	0 - 8	No
Temp. Control Sensor	analog	-50°-150°F	Yes	Split Condenser	digital	Yes/No	No
Defrost Temp. Sensor	analog	-50°-150°F	Yes	Defrost Status	digital	Yes/No	No
Auxiliary Temp. Sensor	analog	-50°-150°F	Yes	Alarm	digital	Yes/No	Yes
Load Shedding Status	digital	Yes/No	No	Switchback	digital	Yes/No	Yes
<b>Wizard Compressor Control System (WCC &amp; WCC-P)</b>				Condenser Switchback			
Suction Pressure	analog	0-200psi	Yes	Alarm #1 (Dry contact)	digital	Yes/No	Yes
Head Pressure	analog	0-500psi	Yes	Alarm #2 (Dry contact)	digital	Yes/No	Yes
Oil Pressure	analog	0-200psi	Yes	<b>EPC100 Conventional, Condensing Unit Control</b>			
# of Compressors On	numerical	up to 12	No	Suction Pressure	analog	0-200psi	Yes
Room Temperature	analog	-40°-158°F	Yes	Head Pressure	analog	0-500psi	Yes
Satellite Temperature	analog	-40°-158°F	Yes	Case/Room Temperature	analog	-40°-158°F	Yes
Alarm	digital	Yes/No	Yes	# of Compressors On	numerical	0 - 2	No
<b>Wizard Condenser Fan (WCFC &amp; WCFC-13) Control System</b>				Condenser Fans Status			
Head Pressure	analog	0-500psi	Yes	Defrost Status	digital	Yes/No	No
Outside Temperature	analog	-40°-158°F	No	Alarm	digital	Yes/No	Yes
Liquid Line Temperature	analog	-40°-158°F	Yes	<b>Sherlock Refrigerant Gas Sensor Infrared or CMOS</b>			
Condenser Fans Status	numerical	0 - 13	No	Refrigerant Level	numerical	0-1500ppm	Yes
Split Condenser	digital	Yes/No	No	<b>Sherlock Refrigerant (SHER402, 802, 204, 404, 804) Monitoring System</b>			
Defrost Status	digital	Yes/No	No	Leak Level 1 Alarm Status	digital	Yes/No	Yes
Alarm	digital	Yes/No	Yes	Leak Level 2 Alarm Status	digital	Yes/No	Yes
<b>Comfort Miser (CM1-12, CM1-12-VSD) Air Handler Control</b>				Leak Level 3 Alarm Status			
Outside Air Temperature	analog	-40°-158°F	No	Zone Isolation Sensors A-H	digital	Yes/No	Yes
Indoor Air Temperature	analog	-40°-158°F	Yes	Sensors A-H	analog	0-1500ppm	Yes
Outdoor Humidity	numerical	0 - 100	No	<b>Alarm Parameters and Delays:</b>			
Indoor Humidity	numerical	0 - 100	Yes	All data, once collected, is compared to a unique list of parameters. All parameters have alarming time delays. An alarm delay forces the particular data point to be greater than or less than the alarm level for a minimum amount of time before activating the alarming routines. Each data point may exceed its alarm values briefly for a short duration during normal operations, then recover to normal levels.			
Number of AC Stages On	numerical	0 - 8	No	<b>Communication Wire Specifications:</b>			
Heat Reclaim Stages On	numerical	0 - 8	No	- 2-22 AWG Twisted, Shielded, Belden 8451 for short runs			
Booster Heat Stages On	numerical	0 - 8	No	- 2-18 AWG Twisted, Shielded, Belden #8760 for runs over 200 feet. (Please refer to individual controls for sensor wiring specifications.)			
Blower Fans On	numerical	0 - 2	No				
Damper/Economizer Status	digital	Open/Closed	No				
Mode: Cooling/Heating	digital	Cool/Heat	No				
Fan Proofing Switch	digital	Yes/No	Yes				
Load Shedding Status	digital	Yes/No	No				
Auxiliary Heater Status	digital	Yes/No	No				
Anti-Sweat Heater Status	digital	Yes/No	No				
Alarm	digital	Yes/No	Yes				

# GENCOM 3000 Hardware & Software Specifications

## Hardware (Computer) Specifications

The computer will allow an operator to display the floor plan of the facility with each data zone designated and the current value displayed. Should any of the zone data exceed preset alarm levels, the "zone" will indicate an alarm condition and activate centralized alarm circuits.

This computer will be developed and built by GENESIS, pre-loaded with the software and tested prior to shipment. The warranty is for one year from date of start up or fifteen months from date of shipment. Therefore, we are suggesting that the product be shipped as late as possible to the job site. The warranty will be supported by the GENESIS technical staff and the ability to ship a backup computer or components within 24 hours.

### COMPUTER:

### SOFTWARE:

The system will include the following installed software:

- Windows XP Professional Operating System with Manuals
- GENCOM 3000 Facility Monitoring Software
- GenCom Communications Software
- Internet Access Software
- Remote Terminal Access Software
- Miscellaneous Additional Software

### SUPPORT

The system will be configured, tested, and burned-in by Genesis for at least 72 hours using the same controls to be monitored with the computer. Start-up procedure instructions and toll free technical support over the phone for six months.

Parts Warranty for 15 months.

### HARDWARE:

The GenCom 3000 COMPUTER designed by Genesis International includes, at the minimum, the following components:

- Pentium Dual Core 2.8 GHz class processor with PCI BUS (or Better)
- 2 GB Memory (or Better)
- 80 GB Hard Drive (or Larger)
- High Speed PCI Video Card
- DVD+RW / CD-RW Drive
- High Speed Serial Port / USB Ports
- Parallel Port
- Ethernet T-base 10-100 Interface
- PS2 Optical Mouse
- 56k Baud Internal Modem
- 101 Key Board
- 250-Watt Power Supply
- Tower Case
- 19" Flat Panel Color LCD Monitor DVI-D or 15 Pin VGA Connector
- GENESIS Isolated Communication Board with Signal Conversion Circuit - RS485/RS422
- An Uninterrupted Power Supply (UPS) - A UPS-Signal Conditioner will protect the computer from power surges and noise induction and will operate the system for approximately 15 minutes after power is lost.



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