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InterLOGIC dbc/OS32+ Reference Manual

Refrigeration Controls

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InterLOGIC

REFRIGERATION CONTROLS REFERENCE GUIDE

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Introduction

The following publication describes the InterLOGIC Refrigeration Control System features and is designed for those who are unfamiliar with Signal Server based control systems.

The system is menu driven and in most cases the selection of an item from a menu will display another menu from which selection may be made. This method of operation allows the system to be operated without personnel trained in computer programming or computer operation.

The hardware used by the control system is state of the art. By careful selection of components, LOGIC Technologies, Inc. has been able to use advanced technologies as they become available while retaining the use of a well defined existing software base.

We encourage all system administrators and operators to provide feedback and suggestions about items not mentioned that you would like to see in this publication.

Signal Server Technologies

"Signal Server Technologies" consist of the best of two worlds, the computer processor and PLC rack structures. The computer allows for an operating environment to execute powerful process tasks while maintaining a rugged real world interface to plant equipment. This architecture provides fault tolerant systems using localized or distributed control concepts. All control procedures are open architecture and allow the system administrator to change any sequence of operations.



Refrigeration Control Screens

System Utility & Setup Screens

Engineering Console

Section II

Refrigeration Systems Screens

Section I of this manual describes the main statistical information screens from the refrigeration control programs.



Button Access Sequence: Initial Startup Screen/LOG On Screen

• Upon system startup and logoff, this window is displayed. The logon window allows entry of current user information. This information tells the system what information should be made available for display and allowed to be changed by the user.

Example: Using the keyboard to enter a user number:

12 - for user number.

mac - for user name.

and the password which is shown as "*" for each character entered.

NOTE: To add, remove or modify a User name, ID or password, refer to page SCR-29.





Button Access Sequence: Main Selection Menu

One of the greatest benefits from a **Signal Server** based control system comes from its continuous monitoring of the refrigeration system. Timely and accurate information on all system components, in text and graphical format, is available for use by the system operator.

The main system menu is displayed after logon entry. This screen categorizes control by areas of system function. All selections are initiated from this screen.

Operators may access any of the sub menus by moving the mouse cursor on top of any of the numeric buttons and pressing the left mouse button. It may also be accessed by pressing the appropriate F key.

nsole ¥iew - Lab Systen	n	
Process Displ	ays	- v Technologies inc
<f1></f1>	- View Current Analog Values.	<esc>ape</esc>
<f2></f2>	- View Valve Groups Conditions.	This Menu.
<f3></f3>	- View Condensing System Conditions.	
<f4></f4>	- View Current Compressor Information.	
<f5></f5>	- View Current Vessel Conditions.	
<f6></f6>	- View Current Purger Status.	
<f7></f7>	- View Defrost Log.	
<f8></f8>	- View Current System Power Demands	
<f9></f9>	- View Gas Detection Status.	

Button Access Sequence: Main Menu, F1

(1) The System Status Menu breaks down the system components into nine (9) group selectable items. Each item displays the current status information for that group. In the following pages each group is described with a sample screen display. Select the desired item by manually entering its associated button number or click the mouse on the desired button.

To access this item of your Main Menu choose Button F1 on the screen.

Console View - Lab System System Analog Status Display			LOGIC Technologies Inc.
Num. Signal 1 Disch Press Set-Point 2 Discharge Pressure 3 Disch Press Rise Rate 4 +20F MPR-1 Vari-Level	Current 145.00 142.96 -0.81 20.00	====== 24 Hrs ==== High L 145.00 145. 131.71 131. -0.54 -0. 19.10 19.	== Units ow 00 Psig 71 Psig 54 Psi/Min 10 % Probe
5 +20F MPR-1 Suction 6 +20F MPR-1 Pump Diff 7 +20F Rise Rate 8 -25F LPR-1 Vari-Level 9 -25F LPR-1 Suction 10 -25F LPR-1 Pump Diff 11 -25F Rise Rate 12 -35F ACC-1 Vari-Level	36.00 59.00 19.60 3.50 26.50 -6.00 20.00	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	00 Psig 00 Psid 00 Psi/Min 50 % Probe 50 Psig 50 Psid 00 Psi/Min 00 % Probe
13 -35F ACC-1 Suction 14 -35F ACC Rise Rate 15 EC-TR-1 Vari-Level 16 Ambient Humidity 17 Energy Center NH3 18 Condenser Relief 19 Energy Center Relief 20 Condenser Relief	0.00 0.00 5.00 86.82 0.00 0.00 0.00 0.42	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	00 Psig 00 Psi/Min 00 % Probe 82 % RH 00 PPM 00 PPM 00 PPM 42 PPM
Select Item From This Page.		14 Pages.	Page: 1
Press CESC>ape For Menu.	<pgup></pgup>	<pgdn> <p< td=""><td>>age Select</td></p<></pgdn>	>age Select

Button Access Sequence: Main Menu F1, F1

(1) **View Current Analog Values** - This selection is used to monitor all system analog measuring devices such as pressure transducers, temperature sensors, ammonia detectors, or other devices which provide variable voltage or current feedback signals. Depending upon your system, you may have a large number of analog measuring devices which cannot be displayed on one text page. To view the remaining pages, use the mouse and left click the page button at the bottom of the page. Then enter the page number from the keyboard or screen keypad displayed. Page up and page down also allow screen changing.

This is the top level analog status screen. Shown above is a list of analog signals which are controlling different parts of the refrigeration process. The information provided shows the analog reference number, signal description, current value of the signal, the high and low readings for the previous 24 hour period starting at midnight, and the engineering units descriptor.

If more information is desired, place the mouse pointer on the line displaying the signal and left click or press $\langle F1 \rangle$ on the keyboard. Then enter the analog reference number. This screen is described on the following page.

Refrigeration System Screens

Console View - Lab System
Analog Signal Setup Utility
<pre>(1) Description: Disch Press Set-Point Raw Value: NDF Current Value: 145.00 Psig (2) IO Point: 0 = No Signal Definition Collaborate (3) Scan Active Flag: INACTIVE (4) Alarm Mode Change: None (INA) CAlarm Monitor Delay: 0 Mins (5) . Min\Max Active Flag: ACTIVE 0.00 Dead Band: 0.00 Job: Vc: 0 (6) Low Alarm: 0.00 Dead Band: 0.00 Job: Vc: 0 (7) High Alarm: 0.00 Dead Band: 0.00 Job: Vc: 0 Alarm Status: NO ALARM Time: Date: Minimum Value: 145.00 Time: 23:59:00 Span: 0.00</pre>
(8) Control: 0 & 0 On > 0.00 Dead Band: 0.00 Job: 0 & 0 Off > 0.00 Dead Band: 0.00 Job:
Analog Point # 1 Scan = 0.00 04-14-2004 09:42:31 Last Message : Scan Deactivated - 10-30-2003 00:49:43 <esc>ape To Menu, <p>revious , <n>ext <e>dit <t>rend</t></e></n></p></esc>
On-line Using Network Adaptor.

Button Access Sequence: Main Menu, 1, 1, Analog

If the operator selects an analog signal from the "View Current Analog Values" screen, this screen is displayed. Each field in the signal information record may be modified by placing the cursor on the field and selecting with mouse or by pressing $\langle E \rangle$ for edit and entering the line definition number on the left of the field description. The following describes the analog definition screen.

- (1) **Description** allows the operator to change the name and engineering units of the actual control point.
- (2) I/O Point defines which elementary system identification number to use in converting the signal.
- (3) Scan Active Flag starts or stops the automatic monitoring of the actual control point.
 - **CAUTION:** By deactivating this option, the InterLOGIC Control System will no longer monitor this analog signal!

(4) - Alarm Mode Change selects current alarm monitor mode. High, Low and High & Low monitoring are allowed. The <A>larm Monitor Button activates or deactivates the currently selected mode.

(5) - Min\Max Active Flag starts or stops 24 hour high and low recording on each system scan interval.

CAUTION: By deactivating this option of the system, it will no longer keep 24 hour history of this control point.

(6) - Low Alarm allows setup of low alarm trigger value, deadband, job to activate, and voice code.

(7) - High Alarm allows setup of high alarm trigger value, deadband, job to activate, and voice code.

(8) - Control Parameters allow control of single point devices based on the current analog value.

Line one will activate the device when the current analog value is greater than the selected value and deactivate the device when the current value is less than the selected value minus the deadband value. Line two will deactivate the device when the current analog value is less than the selected value and activate the device when the current that the selected value plus the deadband value.

The **Current Value** field may be changed after signal scanning is deactivated. This is accomplished by selecting the descriptor area or entering edit mode and selecting 99 as the edit field. Upon display of the input box, the initial value will be displayed. This information may be deleted and reentered to reflect a new value. The new value will remain active and available to all system resources until the scan flag is reactivated.

<C>alibration button is used to calibrate the signal of the current analog point (pressure, temperature, %, etc.) which is described on the following pages.

Console Yiew - La	b System	OGIC chnologies Inc.
Analo (1)	Current Value: 59.00 Raw Value: 0 Sensor Range: 0.00 To 0.00	0
(4) A (5) . Min (6) (7)	Zero Offset: 0.00 <f>ornula</f> <l>ov</l> <h>id</h> <h>igh</h> Calb. (!io[%io]-819)*0.06105-14.7	lay: 0 Mins 0.0 Cur Vc: 0 Vc: 0 :
(8) co	<d>ifferentialActiveDiff. ANA#:5<a>veragingIn-Active<s>etFormula<r>angeInformation<z>eroCalibrateFa<u>ltAlarmZero <c>lipInactive<esc>apeTo Definition Screen</esc></c></u></z></r></s></d>	: 0.00 Job: Job:
Analog Po Last Mess	oint # 6 Scan = 0.00 04-14-2004 sage : Scan Reactivated - 11-14-2002 14:13:27	09:43:56
<esc>ape</esc>	To Menu, (P)revious , (N)ext (E)dit	<t>rend</t>

Button Access Sequence: Main Menu, F1, F1, Analog #, Calibration

If the $\langle C \rangle$ *alibration* button is selected, the calibration window is displayed. This allows entry of information to determine signal conversion characteristics. $\langle A \rangle$ *veraging* selects if the current scan is averaged with the previous scan results, to smooth noisy information, or converted directly. Averaging levels may be up to 9 times the previous reading. $\langle R \rangle$ *ange* allows the high and low active sensor range to be entered. If conversion produces information outside this area, a system alarm is initiated and the sensor number is presented to the operator. $\langle L \rangle$ *ow*, $\langle M \rangle$ *id*, $\langle H \rangle$ *igh* allows entry of user collected information to determine the range/offset to achieve optimal sensor range. After entry of the collected data the $\langle S \rangle$ *et* formula creates a new formula for the selected signal. $\langle Z \rangle$ *ero* will ask for the current value to be entered and calculate the zero intercept for the formula created or entered.

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When *<L>ow*, *<M>id*, *<H>igh*, or *<Z>ero* are pressed the *Cur. Value:* prompt is displayed. The current value of the signal should be read from a known calibration source and entered at this prompt.

From time to time sensor span will change in relation to the signal transmitted to server. This requires the creation of a new formula.

Steps to create a new formula:

1 - Lower the real signal value (pressure, temperature etc.) Select < L > ow and enter the current real value.

2 - Allow the real signal value to rise to a value at the on the top end of the scale. Select $\langle M \rangle id$ and enter the current real value. Do not use the $\langle H \rangle igh$ setting. This is used to verify device linearity.

3 - Press *S*>*et* Formula to create a new formula based on the previous entered data.

4 - Select *<Z>ero* and enter the current signal value. This reading may be any point on the signal scale.

5- Select *Fa<U>lt* to shutdown

6- Pressing the *Zero* <*C*>*lip* button allows the user to change the active or inactive status.

Allow signal to rise and fall to verify calibration.

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Pressing $\langle H \rangle$ istory on the Analog Definition Editor will display a trend graph for the selected signal. The $\langle + \rangle$ and $\langle - \rangle$ buttons will go forward or back in time in 12 hour increments. Selecting one of the hours buttons, example $\langle 2 \rangle 4$ Hours, will display a trend with a total span of 24 hours. The hours buttons may be selected by pressing 1 for 12 hours, 2 for 24 hours, 4 for 48 hours and 9 for 96 hours.

Canada Barris Lak Custom					
Econsole View-Lab System Refrigeration Valve Group Stat	us				es Inc.
<pre>(Next Startup In 0.0 Secon (Next Frost Init 0.0 Minut Grp Description 1 -20F Ice Cream PH1 3 -20F Ice Cream PH1 4 -20F Ice Cream PH1 5 -10F Freezer PH2 6 -10F Freezer PH2 7 -10F Freezer PH2 9 -10F Freezer PH3 10 -10F Freezer PH3 11 -10F Freezer PH3 12 -10F Freezer PH3 13 +34F Dairy/Deli PH4 14 +34F Dairy/Deli PH4 15 +34F Dairy/Deli PH4 16 +34F Dairy/Deli PH4 17 +34F Dairy/Deli PH5 18 +34F Dairy/Deli PH5 19 +34F Dairy/Deli PH6 20 +34F Dairy/Deli PH6 21 +34F Dairy/Deli PH6 22 +34F Dairy/Deli PH6 23 +29F Variety PH7 Press <esc> For Menu or </esc></pre>	ds) es) Tag EV-1 EV-2 EV-3 EV-4 EV-5 EV-6 EV-7 EV-8 EV-9 EV-10 EV-11 EV-12 EV-13 EV-14 EV-15 EV-16 EV-17 EV-18 EV-19 EV-19 EV-20 EV-21 EV-22 EV-23 CI-3> For Pag	1 HG 0 Ai Temp. Setpoint -20.00 -20.00 -20.00 -10.00 -10.00 -10.00 -10.00 -10.00 -10.00 -10.00 35.00	r Defrost Temp. F Current n -19.63 * -19.63 * -19.63 * -10.03 * -10.03 * -9.81 * -9.81 * -9.81 * -9.81 * 36.19 * 36.19 * 36.19 * 35.98 * 35.98 * 35.71 * 29.28 *	Scanning Status Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Off Cycle Cooling Off Cycle Off Cy	28 SSAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
On-line Using Network Adaptor.					

Button Access Sequence: Main Menu, F1, F2

(2) View Valve Group Conditions - This selection is used to monitor all single and multi-valved air units by displaying the valve group number, description, current temperature, control setpoint, current zone temperature, fan status, valve group status, and seconds remaining in any defrost cycle. If more than one page is available, selection buttons are provided across the bottom of the screen for page selection. Detailed group information may be displayed by pointing and selecting with the system mouse or by pressing $\langle F1 \rangle$ and entering the group number when prompted. This information is described on the following page.

At the top of the screen you will see the time remaining before the next group is scheduled to start as well as the number of groups currently in defrost cycle. The scanning unit number currently being controlled is also displayed in this area.

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Console View - Lab System
<pre>(1) Description: (-20F Ice Cream PH1) Group Tag: EV-2 (2) Defrost Cycle Code: 1 - Hot Gas Defrost SUCT ENG CLOSED (3) Unit Activate I/O Number: 0 (Not Present) (4) Analog Control Number: 96 (Penthouse 1 Product) Follow: 0 (5)Status During Offcycle: Fans: Active Suction: Closed (6) . VGroup Automation Status: Automatic Operation. (7) Temperature Setpoint: -20.00 Deadband: 2.00 (8) Humidity Setpoint: n/a Deadband: n/a (9) (Cooling) Run Time: 1061.42 Hrs. (10) Unit Service Vessel: LPR1 Gas Leak Sig: 0 Level: 25.0 (11) Fan Startup Delay: 0 Secs. No Shutdown On Gas Sense</pre>
Group Number: 2 No Frost Sensor Mode: Off Cycle 09:48:40
LSV: Closed SPSV2: Closed HGSV: Closed BSV: Closed
Fans: Running VFD: 100.0 %
<pre></pre>
<t>erminate Defrost. Temperature <h>istory</h></t>
<d>efrost Information <r>e-Heat <e>dit Current Display.</e></r></d>
<pre> C>ontrol Parameters In-Active </pre> CESC>ape To Menu.
n-line Using Network Adaptor.

Button Access Sequence: Main Menu, F1, F2, Valve Group

Detailed group information is displayed if selected from the valve group status screen. This screen contains all the setup and operational parameters for the selected valve group allowing operator override of all conditions.

- (1) **Description** contains the group or air unit process area, name, and group tag.
- (2) Cycle Code selects type of defrost cycle to execute on valve group as follows:
 - (1) = Hot gas defrost / suction energized closed.
 - (2) = Air defrost.
 - (3) = Hot gas defrost / suction energized open.
 - (4) = Electric defrost.

(3) - Unit Activate I/O Number designates which elementary input will allow the unit to operate in automatic temperature control, if active. If no value is present, this option is inactive.

(5) - **Status During Offcycle** sets fan condition codes to activate fans during non cooling modes (Active), turn fans off during noncooling modes (Not-Active), or cycle fans during offcycle mode.

Suction changes suction valve during off cycle to open or close (Operator Defined).

(6)- Vgroup Automation Status sets the current mode of the entire valve group. The selection displays a window allowing the selection of forced on (refrigerate all the time), forced off (pumpdown all the time), or automatic modes (control unit by temperature). In the forced on or automatic modes, defrost cycles are executed. While in the forced off mode, defrost cycles are skipped.

(7) - **Current Control Setpoint** contains the desired control temperature for the selected valve group. This entry may be changed to adjust the on and off staging of the valve group as displayed to the right of the entry. The setpoint may be changed up to 6 times in a given 24 hour period as described later.

(8) - **Control Dead Band** determines the on to off span from the current setpoint preventing short cycle activity on the air unit.

(9) - Cooling Run Time displays total time the valve group was in cooling mode, until operator reset.

(10) - Unit Service Vessel associates the selected valve group with the engine room vessel. This association allows for sub-system shutdown control and liquid circulation control based on valve group activity. If the manual valves are changed to connect the unit to another system vessel, this entry should be changed to reflect the new association. Additional information is contained in "Theory of Operations" section provided in this manual.

(11) - **Fan Startup Delay** allows the operator to delay air unit fans from starting when the valve group transitions from offcycle to cooling mode. The delay allows coils, which may have collected moisture, to refreeze before fans are started.

Other selections not requiring edit mode are **<F>orce** Defrost, which activates a defrost cycle manually still using defrost start times. **<C>ancel** Defrost, which terminates a defrost cycle. These entries are used to clean up coils which may have collected abnormal amounts of ice. **<P>revious** manually selects valve group previous to current selection and **<N>ext** selects valve group following current selection.

<**R**>eheat, if active, places the valve group in heating mode by placing the unit in hot gas reheat mode and turning on the fans for air circulation.

<D>efrost start time and **<C>ontrol** parameters are discussed on the following pages to allow viewing of windows required to enter changes to these areas.



Button Access Sequence: Main Menu, F1, F2, Air Unit #, Defrost Start

Upon selection of $\langle D \rangle$ efrost Information, the system will display a window with day selections. This will allow the system operator to select the desired schedule day. Additionally, there is a selection $\langle A \rangle$ ll Days = Sunday which allows the schedule to be entered in the Sunday entry and copied to all other days with a single key entry.

SCR-010 will display results of day selection.

<I>nhibit - This selection allows the operator to stop the scheduled and runtime defrost cycles for the selected unit. Note: The text under the inhibit button will display the current inhibit mode of operation.

< **R>un Time** - This allows the operator to set the runtime period before initiating a defrost cycle for each valve group. The operator must select a specified time period in minutes and store this value in RTI storage, "Run Time Interval". The remaining time is then displayed under the RTI value. BRTI "Blast Run Time Interval" is available to allow variable defrost intervals after a blast cell is started. Steps 1 through 3 hold the interval times between each defrost cycle. Upon defrost execution, the next cycle time is placed in the RTI storage area.

<M>ode lets the operator choose the type of defrost control to apply to the selected valve group, runtime modes, or fixed schedules.

Selection modes are:

Scheduled -	Defrost runs by user defined schedule only.
Schedule Skip -	Defrost is executed if the desired refrigeration run time is present and a user defined schedule time is present.
Runtime -	Defrost runs if the user set runtime has elapsed. (RTI) = Run Time Interval.
BRTI -	The unit runs up to 3 user defined defrost runtime intervals. After each interval the next runtime duration is stored in the RTI which may have a different value.
Signal -	Defrost is initiated upon a request input signal (ie. Frost sensor)

Stronsole View - Lah System
Refrigeration Valve Group Editor
 (1) Description: (-20F Ice Cream PH1) Group Tag: EV-3 (2) Defrost Cycle Code: 1 - Hot Gas Defrost SUCT ENG CLOSED (3) Unit Activate I/O Number: 0 (Not Present) (4) Analog Control Number: 96 (Penthouse 1 Product) Follow: 0 (5)Status During Offcycle: Fans: Not-Active Suction: Closed (6) VGroup Automation Status: Automatic Operation. (7) Temperature Setpoint: -20.00 Deadband: 2.00
(8) (10) (10) (11)Enter Defrost Starting Times. (Day 3 Tuesday)Time (0:05:00 <> Active 18:05:00 Active 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive 00:00:00 Inactive.0
BSV: Closed Fans: Stopped VFD: 100.0 %
<f>orceDefrost.<p>rev.<n>extGroup<t>erminateDefrost.Temperature<h>istory</h></t></n></p></f>
<d>efrostInformation<r>e-Heat<e>ditCurrent Display.<c>ontrolParametersIn-Active<esc>apeTo Menu.</esc></c></e></r></d>
Dn-line Using Network Adaptor.

Button Access Sequence: Main Menu, F1, F2, Defrost Start time

Upon day selection, the system will display the selected day schedule. The system allows up to 6 defrost times per day for each valve group. Each day of the week may consist of a different schedule.

The *<T>ime* button allows entry of the schedule activation time next to the current select pointer. The *<C>ondition* button toggles the condition code from Active to Inactive, allowing the schedule to remain constant and not defrosting at the requested time. The up and down keyboard arrow keys or the *<Enter>*key will move the select pointer to the desired slot.

Console View - Lab System
<pre>(1) Description: (-20F Ice Cream PH1) Group Tag: EV-3 (2) Defrost Cycle Code: 1 - Hot Gas Defrost SUCT ENG CLOSED (3) . Unit Activate I/O Number: 0 (Not Present) (4) Analog Control Number: 96 (Penthouse 1 Product) Follow: 0 (5)Status During Offcycle: Fans: Not-Active Suction: Closed (6) . VGroup Automation Status: Automatic Operation. (7) Temperature Setpoint: -20.00 Deadband: 2.00 (8) Humidity Setpoint: n/a Deadband: n/a (9) (Cooling) Run Time: 193.64 Hrs. (10) Unit Service Vessel: LPR1 Gas Leak Sig: 0 Level: 25.0 (11) Group Nu Group Nu Change (C>ycle Times. Change (G>ycle Times</pre>
Fans: Stopped VFD: 100.0 % CF>orce Defrost. CP>rev. CH>ext Group CT>erminate Defrost. Temperature CH>istory CD>efrost Information CD>efrost Current Display. CD>ontrol

Button Access Sequence: Main Menu, F1, F2, Control Parameters

The **<C>ontrol Parameters** selection will display a window requesting I/O or defrost cycle time selections. The following two pages show resulting information windows.

Console View - Lab System	LOGIC C Technologies Inc.
Refrigeration Valve Group Editor	
<pre>(1) Description: (-20F Ice Cream P (2) Defrost Cycle Code: 1 (3) . Unit Activate I/O Number: (4) Analog Control Number: (5)Status During Offcycle: Fan (6) . VGroup Automation Status: Au (7) Temperature Setpoint: - (8) Humidity Setpoint: n/ (9) (Cooling) Run Time: 1 (10) Unit Service Vessel: LP (11) Group Nu Change (U>alve I/O Change (C>ycle Tim Change (G>eneral S (ESC>ape)</pre> Valve I/O Type VD Control Valve I/O Type VD Control Unit Status Suct (Main) P1 Suct (Low Reg) Soft Gas Bleed Fans (PrimAUX) Fans (LowSped) Reheat Frost Sensor %HH Control	Signal Number 950 ANA: 206 0 266 0 267 0 268 0 0 0 0 0 269 0 270 0 271 0 271 0 277 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Fans: Stopped VFD: 100.0 %	
<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	<n>ext Group</n>
<t>erminate Defrost. Te</t>	emperature <h>istory</h>
<pre><d>efrost Information <r>e-Heat <e>dit</e></r></d></pre>	Current Display.
<pre><c>ontrol Parameters In-Active << color="block"><c>ontrol Parameters</c></c></pre>	To Menu.
On-line Using Network Adaptor.	

Button Access Sequence: Main Menu, F1, F2, Control Parameter, Change

Change <V>alve I/O displays a window allowing entry of I/O identification numbers associated with the selected valve group. This window allows operators to reassign hardware rack positions to the group or add additional equipment to the control algorithm. The first column contains the primary device numbers and the second column contains secondary control elements. The sequence of these devices are explained in the "Theory of Operations" section of this publication.

CAUTION: Before changing any of these I/O numbers, refer to your original I/O identification drawings to verify proper I/O number. Only qualified operators should modify any I/O numbers in this section. Entering the wrong I/O information could cause incorrect system operation.

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Refrigeration System Screens

Console View - Lab System	
Refrigeration Valve Group Editor	[−]
<pre>(1) Description: (-20F Ice Cream PH1) Gro (2) Defrost Cycle Code: 1 - Hot Gas Defrost (3) . Unit Activate I/O Number: 0 (Not Present (4) Analog Control Number: 96 (5)Status During Offcycle: Fans: (6) . VGroup Automation Status: Autom (7) Temperature Setpoint: -20. (8) Humidity Setpoint: n/a (9) (Cooling) Run Time: 193. (10) Unit Service Vessel: LPR1 (11) Change (V)alve I/O. Group Nu Change (C)ycle Times. Change (G)eneral Settings. (ESC)ape</pre>	up Tag: EV-3 SUCT ENG CLOSED V Sec. Length 1200 1200 1500 1500 120 120 120 120 120 120 120 1
Fans: Stopped VFD: 100.0 %	
<f>orceDefrost.<p>rev.<t>erminateDefrost.Tempe</t></p></f>	(N)ext Group rature (H)istory
<pre> CD>efrost Information</pre>	Current Display. To Menu.
Dn-line Using Network Adaptor.	

Button Access Sequence: Main Menu, F1, F2, Valve Group Number

Change **<C>ycle** Time allows operators to adjust defrost cycle duration times. All times are entered in seconds. This window format is determined by the group "Defrost Cycle Code" which changes the number of entries and the descriptions based on the type of defrost cycle.

Pump Down Delay Time deenergizes the liquid feed solenoid valve for the specified time, keeping fans and suction valves in cooling mode, allowing all remaining liquid in coil to evaporate before energizing the hot gas valve.

Hot Gas Cycle Time energizes the hot gas solenoid valve and/or hot gas main, if applicable, and deenergizes fans and suction valve for the specified time.

Coil Dry Delay Time holds pressure on the coil but deenergizes the hot gas coil.

Bleed Delay Time allows pressure in the evaporator to equalize to system suction pressure by opening the bleed valve. It also deenergizes the hot gas, fans, and main suction valve.

Fans Delay Time allows liquid to enter the coil for the specified time before energizing the evaporator fans.

🛃 Console View - Lab System	
Condensing System Status	$\Box \lor Technologies Inc.$
System Setpoint Head Pres. 1 145.00 Psig 142.49 Psig Water Low Temp Off: Not Active Ambient 60.4 Cond # Description WP-1 WP-2 Fan-1	Rise Rate -0.674 Psi/Min ∙Deg. 86.8 %RH Fan-2 Fan-3 Fan-4 W-Lv]
1 Condenser 1 Pump 1 Fan 1 2 Condenser 1 Pump 2 Fan 2 3 Condenser 1 Pump 3 Fan 3 4 Condenser 1 Pump 4 Fan 4 4 Condenser 1 Pump 4 Fan 4 6 Condenser 1 Pump 4 Fan 4 9 L03 9 L03 9 L04 9	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a
₹.	
<pre> CESC>ape To Menu. </pre> <pre> CS>equence </pre>	<c>hange Setpoints</c>

Button Access Sequence: Main Menu, F1, F3

(3) View Condensing Conditions, from the status menu, is used to display all system condensing components and the order in which they will sequence to maintain system discharge pressure.

The user selectable setpoint control window is displayed upon selecting **<C>hange** Setpoints via mouse or the keyboard. The sub menu allows the operator to change condensing system setpoints and change high pressure cutout setpoint.

The current discharge pressure is continually displayed along with the system setpoint. Head pressure control algorithms calculate and display pressure rise rate in pounds per minute. The rise rate determines system equipment response time.

NOTE: If the InterLOGIC system controls more than one condensing system, a system ID number button will be shown on the bottom of this screen. This button will display the condition of the selected system ID number.



Button Access Sequence: Main Menu, F1, F4

(4) View System Vessel Conditions displays the current conditions of each pressure vessel. The information on the base view consists of vessel ID, pressure rise rate, current vessel pressure, setpoint pressure, and percent full based upon column percentage. All float, feed valves, and transfer valves are displayed with real time condition on each vessel.

Vessel pump or pumper vessel status information is also displayed with the current condition of each removal system. Each vessel consists of P1 for pump 1 and P2 for pump 2 with a star to indicate the running mode, or T1 and T2 for pumper transfer drums.

System automatic pressure control is initiated by selecting the vessel with mouse or pressing $\langle F1 \rangle$ and entering the sub-system ID code when requested. This section is described on the following page.



Button Access Sequence: Main Menu, F1, F4, Select Vessel

Upon selecting the vessel as described on the preceding page, all setpoint and operational modes are displayed in window format. **<C>hange Setpoints** will step through all vessel setpoint values and execute system change after the last entry is entered. Lead pump selection is initiated by pressing key **<1>** for pump 1 or **<2>** for pump 2. The alternate pump becomes standby. **<H>igh Level Lock Reset** clears high level flag for the selected vessel. **<R>eset Comp. Staging** resequences compressors associated with the selected vessel. Compressor sequencing is explained in the "Theory of Operations" section.

<**H>igh Level Lock Reset:** If the current vessel is in high level state or had a high level condition, the high level lock is active. The system will not restart until the high level lock/condition is reset (by Operator).

<**R>eset Compressor Staging:** After a high level condition on any vessel, and the high level lock is reset, the reset compressor staging button must be reset if the operator chooses to have the InterLOGIC Control System start the compressor staging sequence automatically. **Note:** If the operator chooses not to reset the compressor staging at the time of high level reset, the compressors have to be manually started and the InterLOGIC System will not control the starting and stopping of any compressors that are linked to this specific vessel experiencing the high level.

The **Start/Stop Vessel** button allows the operator to start or stop the current condition the vessel is operating under. Starting the vessel puts the current vessel in automatic condition. Therefore, the current vessel setpoint controls all vessel activity. Stopping the vessel puts the current vessel in the inactive mode, stopping the vessel's pumps and liquid feed solenoid.

Change Setpoint: Allows the operator to change current control setpoints on the current vessel.

a) **High Level:** Displayed in % full of vessel liquid column level. A high level condition will shutdown/ force fail any compressors, ammonia pumps, and liquid feed solenoid valves that are linked to the vessel experiencing a high level condition and will display the vessel ID and condition on the alarm status screen as described on page **SCR-55**.

b) **Operating Level:** Displayed in % of vessel liquid column level. The operating level is the level the vessel tries to maintain under normal operating conditions.

c) **Low Level:** Displayed in % of vessel liquid column level. A low level condition will stop the ammonia pumps from operating and will display the vessel ID and condition on the alarm status screen. Note: This condition will automatically reset if the low level condition is reset or corrected.

d) **Transfer Level:** Displayed in % of vessel liquid column level. This setpoint is used when a liquid transfer system is installed in the refrigeration system. It should be set to allow the liquid transfer system to energize before a high level condition occurs.

e) **Suction Setpoint:** Displayed in PSIG and is the vessel's suction operating setpoint. It also reflects suction and capacity control of the compressors that are linked to the current vessel. This setpoint is transmitted to each compressor assigned to the vessel.

f) **Low Pump Pressure:** Displayed in PSIG. This setpoint is used to shut down the ammonia pumps if low pump discharge pressure occurs to prevent the pumps from cavitating. NOTE: Setpoint is a differential from actual vessel suction pressure.

g) **High VPCO:** High vessel pressure cutout is designed as a safety to shut down ammonia pumps vessel liquid feed preventing flooding conditions in the evaporators in case of compressor failure. This condition will also display a HVPCO on the vessel status screen. NOTE: This setpoint is a +offset pressure of the actual vessel suction pressure.

h) Lead Pump/Lead Transfer: <1>,<2> allows the operator to select or change the designated lead pump or transfer vessel.



When selecting a pressure vessel to change setpoints, various modes of the setpoint window will be displayed. The vessel setup database defines the type of vessel and each type will not require the same settings. The first example on **SCR-016** show the setpoint screen for a recirculator package with a variable level transmitter. The above screen is for a recirculator with float controls.



An accumulator vessel, as displayed above, may include transfer vessels to move the refrigerant liquid to a higher pressure vessel. This is accomplished using a trigger float or variable level indicator. The setpoint screen will ask for tank level trip points.

Console View - Lab System Current Purger Status			OGIC echnologies Inc.
Seq. Equipment Cycle List 1 0,ECl South Purge 2 0,ECl North Purge 3 0,ECl East Purge 4 0,ECl West Purge 5 0,Receiver Purge	Status Auto Auto Auto Auto Active Auto	Time Total 600 Secs. 600 Secs. 600 Secs. 600 Secs. 900 Secs.	Remaining 831.4
System Active			
CESC>ape To Menu.	<a>cti	vate <d>e</d>	activate

Button Access Sequence: Main Menu, F1, F5

(5) View System Purger Status is used to monitor the discharge pressure air purging system. The display includes the equipment purge sequence, purge status, total purge time, and time remaining for the active purge sequence point.

The *Activate* button will start the purge selection algorithm and the *Deactivate* button will terminate activity.

NOTE: To change the purger time sequence, refer to file maintenance menu on page **SCR-46** in this manual.

📑 Console	View - Lab System Valve Group De	efrost Log			LOGIC Technologies Inc.
Date	Start Time	End Time	Completion Status	Unit Description	VG#
$\begin{array}{c} 04 - 14\\ 04 - 14\\ 04 - 13\\ 04 - $	$\begin{array}{c} 10:00:28\\ 09:46:37\\ 09:32:47\\ 13:14:19\\ 13:00:28\\ 12:46:37\\ 12:32:47\\ 12:32:47\\ 12:18:56\\ 12:05:05\\ 11:51:14\\ 11:37:23\\ 11:23:33\\ 11:09:42\\ 10:55:51\\ 10:42:00\\ 10:28:10\\ 10:44:19\\ 10:00:28\\ 10:14:19\\ 10:00:28:10\\ 10:14:19\\ 10:00:28:10\\ 10:14:56\\ 09:05:05\\ 08:51:14\\ 08:37:23\\ \end{array}$	No End No End 09:32:47 No End No End 12:32:47 12:18:56 12:05:05 11:51:14 12:12:19 11:23:33 11:09:42 10:55:51 11:21:56 11:08:06 10:54:15 10:30:24 10:26:33 09:32:47 09:18:56 09:05:05 09:26:10 08:37:23	Active Active LRTI Skip ABTERM ABTERM ABTERM LRTI Skip LRTI Skip LRTI Skip LRTI Skip LRTI Skip LRTI Skip OK OK OK OK OK URTI Skip LRTI Skip LRTI Skip LRTI Skip	+34F Dairy/Deli PH6 +34F Dairy/Deli PH4 -10F Freezer PH3 +34F Dairy/Deli PH6 +34F Dairy/Deli PH5 +34F Dairy/Deli PH4 -10F Freezer PH3 -10F Freezer PH2 -20F Ice Cream PH1 +34F SE Dock +34F NE Dock +34F NE Dock +34F NE Dock +34F Dock 1st Level +34F Dry Produce PH8 +29F Variety PH7 +34F Dairy/Deli PH6 +34F Dairy/Deli PH4 -10F Freezer PH3 -10F Freezer PH3 -10F Freezer PH1 +34F SE Dock +34F SW Dock	20 16 12 21 17 13 9 5 1 52 48 44 44 40 36 32 28 24 28 24 20 16 12 8 4 4 51 47
Pres	S (ENTER)	For Nex	t Page Or	KESC> To Menu.	<i>ndividual</i>
On-line Using	Network Adaptor.				

Button Access Sequence: Main Menu, F1, F7

(7) View Defrost Log selection displays a listing of system valve group defrost history. The information displayed consists of date, defrost start time, defrost end time, completion status, and description. Completion status codes identify how the defrost terminated.

Completion Codes:

OK	- Indicates a total defrost cycle completion with no complications.
No Type	- Indicates the absence of an assigned defrost type code for the valve group.
Low Disch.	- Indicates discharge pressure fell below the minimum setpoint for the defrost system.
OFF Maint.	- Indicates the valve group was in forced off operation.
No Times	- Indicates no cycle times were assigned to the valve group.
Task ACT	- Indicates a defrost cycle was already active on the displayed valve group.
Alarm	- Indicates the system was in alarm mode when the defrost became active.
User Term.	- Indicates the system operator who terminated the defrost cycle.
Shutdown	- Indicates the system was shutdown when the defrost became active.
NH3 Sense	- Indicates the valve group NH3 sensor terminated the defrost cycle.
ABTERM	- Indicates an abnormal defrost termination due to system reset of false end of procedure.

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Sonsole '	View - Lab System alve Group De	frost Log			
Date	Start Time	End Time	Completion Status	Unit Description	VG#
$\begin{array}{c}\\ 04-14\\ 04-14\\ 04-14\\ 04-13\\ 04$	10:14:19 10:00:28 09:46:37 09:32:47 13:14:19 13:00:28 12:46:37 12:32:47 12:18:56 12:05:05 11:51:14 11:37:23 11:23:33 11:09:42 10:55:51 10:42:00 10:28:10 10:14:19 10:00:28 09:46:37 09:32:47 09:18:56 09:05:05 08:51:14	No End No End O9:32:47 No End No End 12:32:47 12:18:56 12:05:05 11:51:14 12:12:19 11:23:33 11:09:42 10:55:51 11:21:56 11:08:06 10:54:15 10:30:24 10:26:33 09:32:47 09:18:56 09:05:05 09:26:10	Active Active Active LRTI Skip ABTERM ABTERM LRTI Skip LRTI Skip LRTI Skip LRTI Skip LRTI Skip OK LRTI Skip OK OK OK OK OK OK OK OK OK OK OK OK OK	+29F Variety PH7 +34F Dairy/Deli PH6 +34F Dairy/Deli PH4 -10F Freezer PH3 +34F Dairy/Deli PH6 +34F Dairy/Deli PH6 +34F Dairy/Deli PH4 -10F Freezer PH3 -10F Freezer PH2 -20F Ice Cream PH1 +34F SE Dock +34F SE Dock +34F Dock 2nd Level +34F Dock 1st Level +34F Dock 1st Level +34F Dock 1st Level +34F Dory Produce PH8 +29F Variety PH7 +34F Dairy/Deli PH6 +34F Dairy/Deli PH6 +34F Dairy/Deli PH4 -10F Freezer PH3 -10F Freezer PH2 -20F Ice Cream PH1 +34F SE Dock	24 20 16 12 21 17 13 9 5 1 52 48 44 40 36 32 28 24 20 16 12 8 4 51
Pres	S <enter></enter>	For Nex	t Page Or	(ESC) To Menu.	<i>ndividual</i>
On-line Using	Network Adaptor.				

Button Access Sequence: Main Menu, F1, F7, <I>ndividual

The **<I>ndividual** button allows selection of one valve group to display. When selected entries from the group are displayed, a time span log of minutes between defrost is also viewed. This information is useful when designing and fine tuning a runtime defrost system.

Console View	- Lab Syste	em Demand Di	sn]au					□L(◇Ted		■□× IC ogies Inc.
AM Time	15 № :00	in. Int :15 :3	ervals 10 :45	Hour Kw Total	PM Time	15 м :00	in. I :15	nterv :30	/als :45	Hour Kw Total
00:00 01:00 02:00 03:00 04:00 05:00 07:00 07:00 08:00 09:00 10:00 11:00	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0$
Total	Daily	Usage	0.0	Kw To Time	≥ 10:15	Per	T iod T De	otal: otal: mand:		0.0 0.0 0.0
De line I king M-two	KesC>ape To Menu. KesC>ape To Menu.									

Button Access Sequence: Main Menu, F1, F8

(8) View Current System Power Demands selection is used to monitor hourly system power demand for the current 24 hours (requires power company XY pulse meter with end of period pulse). This feature may be used as a tool for organization, summarization, and statistical display to aid in the analysis of energy demands.

Snapshots of power demands are written to the database in 15 minute intervals. Highest hourly demand is displayed in **RED** to distinguish the entry from others.

The **<H>istory** button prompts the user for a requested day of year to display. The history is maintained for a one year period previous to current day of year.



Button Access Sequence: Main Menu, F3

Selection <3> on the main application programs menu displays a window to allow operator initiated shutdown operations. The <E>mergency button will shutdown all system activity and sound system alarms. The <N>ormal shutdown button will place all air units in an offcycle mode, pumpdown, and then stop the engine room. <C>ancel will close the window without executing any operation. If a shutdown operation is requested, the operator is asked to verify the request with a <Y>es or <N>o, button as shown on the next page.

The following windows are displayed after selecting system shutdown or restart.

The operator has to verify if they want the system to shutdown.

<*Y*>*es* to confirm shutdown

<*N*>*o* to cancel and return to the main menu

Caution - Emergency Stop System.					
<e>mergency</e>	<n>ormal</n>	<c>ancel</c>			
Verify -	<y>es</y>	<n>0</n>			

This screen will appear if the operator decides to restart the control system. This window is displayed only if selection $\langle 3 \rangle$ on the main screen displays "Restart System". Answering $\langle Y \rangle es$ will slowly restart the system. This will allow the engine room and air units to restage while not overloading electrical systems.


Button Access Sequence: Main Menu, F3

(4) Auxiliary System Menu selects user defined subsystems. The displayed screen allows connection to other control environments or other control screens not normally contained in standard software releases.

Each system selection provides a button and a description of the selection.

See Master File Maintenance for information on menu setup.

System Process Reports (F1) - Evaporator Control Report. (F2) - Evaporator Defrost Times Report. (F3) - Evaporator Temperature Schedule Report. (F4) - Evaporator Current Temperature Report. (F5) - System Defrost Activity Report. (F6) - System Analog (High/Low) Report. (F7) - System Analog History Report. (F8) - Current Analog Values Report. (F9) - User Defined Reports	Console View - Lab Systen	n	
⟨F1⟩ - Evaporator Control Report. ⟨ESC>ape ⟨F2⟩ - Evaporator Defrost Times Report. This Menu. ⟨F3⟩ - Evaporator Temperature Schedule Report. ⟨F4⟩ - Evaporator Current Temperature Report. ⟨F5⟩ - System Defrost Activity Report. ⟨F6⟩ - System Analog (High/Low) Report. ⟨F7⟩ - System Analog History Report. ⟨F8⟩ - Current Analog Values Report. ⟨F9⟩ - User Defined Reports	System Proces	s Reports	□ ∨ Technologies Inc.
 F2> - Evaporator Defrost Times Report. This Menu. F3> - Evaporator Temperature Schedule Report. F4> - Evaporator Current Temperature Report. F5> - System Defrost Activity Report. F6> - System Analog (High/Low) Report. F7> - System Analog History Report. F8> - Current Analog Values Report. F9> - User Defined Reports 	<f1></f1>	- Evaporator Control Report.	<esc>ape</esc>
 F3> - Evaporator Temperature Schedule Report. (F4) - Evaporator Current Temperature Report. (F5> - System Defrost Activity Report. (F6) - System Analog (High/Low) Report. (F7> - System Analog History Report. (F8> - Current Analog Values Report. (F9> - User Defined Reports 	<f2></f2>	- Evaporator Defrost Times Report.	This Menu.
 <pa> Evaporator Current Temperature Report.</pa> System Defrost Activity Report. System Analog (High/Low) Report. System Analog History Report. Current Analog Values Report. User Defined Reports 	<f3></f3>	- Evaporator Temperature Schedule Report	
 <f5> - System Defrost Activity Report. <f6> - System Analog (High/Low) Report. </f6></f5>	<f4></f4>	- Evaporator Current Temperature Report.	
<pre></pre>	<f5></f5>	- System Defrost Activity Report.	
<pre></pre>	<f6></f6>	- System Analog (High/Low) Report.	
<pre></pre>	<f7></f7>	- System Analog History Report.	
- User Defined Reports	<f8></f8>	- Current Analog Values Report.	
	<f9></f9>	- User Defined Reports	

Button Access Sequence: Main Menu, F4

(5) **Reports Menu** allows the operator to select 1 of 8 reports available as related to the control system. The following pages display sample listings of each selection. When selected from the main console, the report procedure is placed in a background run mode and is printed on the main system printer. Remote selection of report programs place the report procedure in standard execution mode and the report is transmitted to the requesting console. A report printing message is displayed during this transmission. When the complete report is received, the menu returns and the report is printed on the remote console printer.

NOTE: When report printing is in progress on a remote console, the operator will not be able to change or move around to other selection menu items until the print job is completed.

Refrigeration Control Systems Application Manual

1 - Evaporator Control Report.

📑 InterLO	GIC	dbc/	'05 9	Signal Serve	er - Ope	erations & Engineering Con	sole - L(DGIC Techn	ologies										-	. 8
Server Wi	ndow	Fil	e S	earch Edit	Applica	ations Reporting DataBase	Informa	ition												
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1			1.	EV-I	-201	ice tream PHI	96	-20.00	2.00	252	253	254	257	U	U	U	255	0	256	
			2	EV-2	-20F	Ice Cream PH1	96	-20.00	2.00	259	260	261	264	0	0	0	262	0	263	
			з :	EV-3	-20F	Ice Cream PH1	96	-20.00	2.00	0 266	0 267	0 268	271	0	0	0	0 269	0	0 270	
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			4	EV-4	-20F	Ice Cream PH1	96	-20.00	2.00	273	274 0	275 0	278	0	0	0	276	0	277	
\equiv			5	EV-5	-10F	Freezer PH2	103	-10.00	2.00	280	281	282	285	0	0	0	283	ō	284	
			6	WU-C	-108	Freeger DH2	103	-10.00	2 00	297	0 200	299	292	0	0	ő	0 290	0	0 291	
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			7 3	EV-7	-10F	Freezer PH2	103	-10.00	2.00	294	295	296	299	0	0	0	297	0	298	
			8 3	EV-8	-10F	Freezer PH2	103	-10.00	2.00	301	302	303	306	0	0	0	304	0	305	
QA										0	0	0					0	0	0	
			9 :	KV-9	-10F	Freezer PH3	110	-10.00	2.00	308	309	310 0	313	0	0	0	311	0	312	
		1	0	EV-10	-10F	Freezer PH3	110	-10.00	2.0 <u>5</u>	315	316	317	320	0	0	0	318	0	319	
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۲		1	6	EV-16	+34F	Dairy/Deli PH4	117	35.00	2.00	354	355	0	358	0	0	0	356	0	357	
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The **Evaporator Control** report prints the valve group ID number, descriptive name, current setpoint, deadband high and low from setpoint for off and on operation, liquid solenoid device number, suction pilot solenoid device numbers, hot gas solenoid device numbers, bleed solenoid device numbers, and fan starter device numbers. This report may be printed for device cross reference and trouble shooting information.

2 - Evaporator Defrost Times Report.

			<mark>e</mark> l Je izdie u									1
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LOGIC dbc/05 Signal Server - Operations & Engineering Console - LOGIC Technologies Window File Search Edit Applicators Reporting DataBase Information Image: 1 Processes Page: 1 Allowed State												
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	C dbc/OS Signal Server - Operations & Engineering Console - LOGIC Technologies we file Search Edit Appleadons Reporting DataBase Information ***********************************											
		, I	-208	Too Creem PH1	Sunday	00-05-00	06.05.00*	12-05-00*	19-05-00*	00.00.00	00.00.00	
		1 1	201	ICE OTEAM FILL	Monday	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
					Tuesdav	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
1					Wednesday	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
1					Thursday	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
					Friday	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
1					Saturday	00:05:00	06:05:00*	12:05:00*	18:05:00*	00:00:00	00:00:00	
			é	Course To Course to	D	001 /II-+ 0-	15001 /0	0 50	0) (D14-	1001 /8	D-1 1001	
		De 106	riost	cycles in Seconds ((Pump Down: 12	UU) (HOC Ga	45: 1500) (D	ry out: so	0) (Bleed:	180) (Fan	Delay: 120)	
		2	-20F	Ice Cream PH1	Sunday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
					Monday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
					Tuesday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
			Search Edit Applications Reporting DataBase Information Prior Control Prior Contro Prior Control Prior Control Prior Prior Prior Prior Prio									
					Thursday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
					Friday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
					Saturday	01:35:00*	07:35:00*	13:35:00	19:35:00*	00:00:00	00:00:00	
		De	frost	Cycles In Seconds ((Pump Down: 12	00) (Hot Ga	⊾s:_1500) (D	ry Out: 50	0) (Bleed:	180) (Fan	Delay: 120)	
		3	-20F	Ice Cream PH1	Sunday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
					Monday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
					Tuesday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
					Wednesday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
					Thursday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
					Friday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
1					Saturday	03:05:00	09:05:00*	15:05:00*	21:05:00*	00:00:00	00:00:00	
		De	frost	Cycles In Seconds ((Pump Down: 12	00) (Hot Ga	s: 1500) (D	ry Out: 50	0) (Bleed:	180) (Fan	Delay: 120)	
				-	-			-			-	
		4	-20F	Ice Cream PH1	Sunday	04:35:00*	10:35:00*	16:35:00	22:35:00*	00:00:00	00:00:00	
					Monday	04:35:00*	10:35:00*	16:35:00	22:35:00*	00:00:00	00:00:00	
					Tuecdev	04-35-00*	10.32.00*	16-35-00	22.32.00*	00.00.00	00.00.00	1
		0	n-line Us	ing Network Adaptor.							1	1

The **Evaporator Defrost Times** report prints each valve group with time slots for each day of the week. This report gives a quick global reference for all defrost times if executed from system scheduling.

3 - Evaporator Temperature Schedule Report.

JinterLO	GIC db	ic/ 05 5 File Se	ignal Server - Operations & Engine arch Edit Applications Reporting	eering Console DataBase Inf	e - LOGIC Tech	nologies					<u>-8×</u>
	_		No. 1.10 1.0								
		Repo	't Edit View - sys\$1002.rpt								
		Inter	LOGIC Evaporator Temperatur	e Schedule	Report. (et	/aptprt)		Date: 03-	26-2004, T:	ime: 14:16:03	
		Cool	LOGIC - Atlan	ita, GA						Page: 1	
				(*) Denote	s Active T	imes					
		Unit	Description	Day	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	
			007 T	a							
		1	-20F Ice Cream PHI	Sunday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
021111				Wandar	0.00	0.00	0.00	0.00	0.00	0.00	
				nonday	00.00.00	00.00.00	00.00.00	00.00.00	00.00.00	0.00.00	
				Tuesday	0.00	0.00	0.00	0.00	0.00	0.00	
				Tuesday	00.00.00	00.00.00	00.00.00	00.00.00	00.00.00	0.00.00	
s an				Wednesday	0.00	0.00	0.00	0.00	0.00	0.00	
				wednesday	0.00.00	0.00.00	0 00	0 00	0.00.00	0.00	
				Thursday	0.00	0.00	00.00.00	0.00	0.00	00.00.00	
					0.00	0.00	0.00	0.00	0.00	0.00	
				Friday	00.00	00.00.00	00.00.00	00.00.00	00.00.00	00.00.00	
					0.00	0.00	0.00	0.00	0.00	0.00	
				Saturdav	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
					0.00	0.00	0.00	0.00	0.00	0.00	
ORA I		2	-20F Ice Cream PH1	Sunday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
- Mar				-	0.00	0.00	0.00	0.00	0.00	0.00	
				Monday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
					0.00	0.00	0.00	0.0դ	0.00	0.00	
				Tuesday	00:00:00	00:00:00	00:00:00	00:00:0¢	00:00:00	00:00:00	
					0.00	0.00	0.00	0.00	0.00	0.00	
				Wednesday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
					0.00	0.00	0.00	0.00	0.00	0.00	
× 4				Thursday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
- X6					0.00	0.00	0.00	0.00	0.00	0.00	
				Friday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
					0.00	0.00	0.00	0.00	0.00	0.00	
				Saturday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
0					0.00	0.00	0.00	0.00	0.00	0.00	
w.		3	-20F Ice Cream PH1	Sunday	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	
					0.00	0.00	0.00	0.00	0.00	0.00	
		-		mondev		001100100					
			p-lipe Lisipa Network Adaptor								
		₽	mane osing Network Adaptor:							///	
03/26/2004	14:16	5:01	Control Base System	U	ser = root		File Size = 910	021 Bytes, 923	ines - Current	Pos. Char = 0, Line = 1	

This report is used to print out each air unit's scheduled temperature setpoint change times. The information printed on this screen has to be plotted by the operator who enters the scheduled temperature and time changes.

NOTE: To edit temperature and time changes, refer to page **SCR-49**, System Temperature Schedule.

4 - Evaporator Current Temperature Report.

📑 InterLO	GIC d	bc/05 9	Signal Server - Operations & Engine	ering Conso	le - LOGIC Te	chnologie s				
Server Wir	ndow	File S	earch Edit Applications Reporting	DataBase Ir	nformation					
	_		📕 e the sters							<u>a</u>
	l	n) Repo	rt Edit View - sys\$1003.rpt				and here and		0004 Mirror 14:10:01	
		Cool	lgeration valve Group Temper LOGIC - Atlan	ature kepo ita, GA	ort/uneckii	st. (evtmp	prpt) Da Pag	re: 1	2004, lime: 14:18:01	Ĩ
. 🔄 🔒					Current		High	Low		
		Num.	Valve Group Description	Tag =======	Value =======	Units =======	Reading =======	Reading	Remarks	
		1	-20F Ice Cream PH1	EV-1	-20.68	Deg. F	-18.22	-18.22		
		2	-20F Ice Cream PH1	EV-2	-20.68	Deg. F	-18.22	-18.22		
		з	-20F Ice Cream PH1	EV-3	-20.68	Deg. F	-18.22	-18.22		
		4	-20F Ice Cream PH1	EV-4	-20.68	Deg. F	-18.22	-18.22		
=		5	-10F Freezer PH2	EV-5	-10.77	Deg. F	-10.20	-10.20		_
		6	-10F Freezer PH2	EV-6	-10.77	Deg. F	-10.20	-10.20		_
		7	-10F Freezer PH2	EV-7	-10.77	Deg. F	-10.20	-10.20		_
04		8	-10F Freezer PH2	EV-8	-10.77	Deg. F	-10.20	-10.20		_
- Ka		9	-10F Freezer PH3	EV-9	لر 8.00-8-	Deg. F	-11.70	-11.70		_
		10	-10F Freezer PH3	EV-10	-8.00	Deg. F	-11.70	-11.70		_
		11	-10F Freezer PH3	EV-11	-8.00	Deg. F	-11.70	-11.70		_
		12	-10F Freezer PH3	EV-12	-8.00	Deg. F	-11.70	-11.70		_
*		13	+34F Dairy/Deli PH4	EV-13	34.98	Deg. F	32.98	32.98		_
		14	+34F Dairy/Deli PH4	EV-14	34.98	Deg. F	32.98	32.98		_
		15	+34F Dairy/Deli PH4	EV-15	34.98	Deg. F	32.98	32.98		_
		16	+34F Dairy/Deli PH4	EV-16	34.98	Deg. F	32.98	32.98		_
		17	434¥ Deir⊽/Deli DHS	80-17	34 19	Der R	36 08	36 08		
)e liee Heine Network Adaptor							
			nnine using Network Adaptor.							2
03/26/2004	14:1	17:11	Control Base System	ļ	Jser = root		File Size	= 7859 Bytes,	127 Lines - Current Pos. Char = 0, Line = 1	

Selecting option 4 will produce a report of all control groups with their associated control temperature.



Selecting report option 5 will ask the above questions before printing the report. If you wish to clear the defrost history without printing a report answer the 1st request with a "Y" for yes. You may also clear the file after the report is printed as stated in the 2nd input request.

5 - System Defrost Activity Report.

📑 InterLO	GIC dt	c/05 Signal	Server - Ope	erations & En	gineering Cons	ole - LOGIC Technologies			_ & ×
Server Wi	ndow	File Search	Edit Applica	itions Reporti	ing DataBase :	Information			
		- 2		10.1					
		Report Edit	t View - sys\$	1004.rpt					
		Defrost A	ctivity Re	port. (def	rrpt)	Date: 03-26-2004, T	ime: 14:19:52		
		Cool LOGI	с	- At	lanta, GA		Page: 1		
			<i>a.</i> .						
		Dates	Start	End	Completion	Init Decenintics			
					scacus				
ATTRI I									
1 all		03-14-20	13:42:00	13:42:00	OFF Maint.	-10F Freezer PH2			
		03-14-20	13:48:56	13:48:56	LRTI Skip	-10F Freezer PH3			
		03-14-20	15:05:05	15:05:05	LRTI Skip	-20F Ice Cream PH1			
		03-14-20	15:18:56	15:18:56	LRTI Skip	-10F Freezer PH3			
Éq.		03-14-20	16:42:00	16:42:00	LRTI Skip	-10F Freezer PH2			
		03-14-20	16:48:56	16:48:56	LRTI Skip	-10F Freezer PH3			
		03-14-20	18:05:05	19:06:21	OK	-20F ICe Cream PHI			
		03-14-20	18:12:00	19:20:12	OK	-low Freezer PH2			
		03-14-20	18:25:51	19:05:47	OK	+34F Dairy/Deli PH4			
		03-14-20	18:32:47	19:12:43	OK	+34F Dairy/Deli PH5			
		03-14-20	18:39:42	19:19:38	OK	+34F Dairy/Deli PH6 T			
		03-14-20	18:46:37	19:26:33	OK	+29F Variety PH7			
		03-14-20	18:53:33	19:25:29	OK	+34F Wet Produce PH9			
O'A		03-14-20	19:00:28	19:00:28	LRTI Skip	+34F Dock 1st Level			
		03-14-20	19:07:23	19:42:19	OK	+34F Dock 1st Level			
		03-14-20	19:14:19	19:14:19	LRTI Skip	+34F Dock Znd Level			
		03-14-20	19:21:14	19:56:10	UK LDTT Skin	+34F NE DOCK			
		03-14-20	19:35:05	19:35:05	LETI Skip	-20F Ice Cream PH1			
		03-14-20	19:42:00	19:42:00	OFF Maint.	-10F Freezer PH2			
		03-14-20	19:55:51	20:35:47	OK	+34F Dairy/Deli PH4			
		03-14-20	20:02:47	20:42:43	OK	+34F Dairy/Deli PH5			
- X Ó		03-14-20	20:09:42	20:49:38	OK	+34F Dairy/Deli PH6			
		03-14-20	20:16:37	20:56:33	0K	+29F Variety PH7			
		03-14-20	20:18:56	20:18:56	LRTI Skip	-10F Freezer PH3			
		03-14-20	20:23:33	21:03:29	OK	+34F Wet Produce PH9			
		03-14-20	20:30:28	21:05:24	OK	+34F Dock 1st Level			
		03-14-20	20.37.23	21.12.13	OK	+34F NE Dock			
		03-14-20	20:51:14	20:51:14	LRTI Skip	+34F SW Dock			
		03-14-20	20-58-10	20-58-10	LOTT Skin	+34R SR Dock			
		On-line	Using Network	Adaptor.				li li	
03/26/2004	14:1	9:40 Cont	rol Base Syste	m		User = root	File Size = 101041 Bytes, 1452 L	ines - Current Pos. Char = 0, Line = 1	

This selection of the report menu prints out a 24 hr. history on defrost activity. Information displayed in this section is as follows: Date, start time/stop time, status of defrost (OK=No problems were noted), and air unit description.

6 - System Analog (High/Low) Report.

JinterLO	GIC dl ndow	bo/ OS S File Se	ignal Server - Operations & Engine earch Edit Applications Reporting	ering Cons	ole - LOGIC T Information	echnologie	s		_ _ 7 ×
	_		Ne to ster				_		नन
		Repo	rt Edit Yiew - sys\$1005.rpt		-				ᄪᅴᅀᅴ
		Cool	em Analog High/Low Report. (LOGIC - Atlan	hilorpt) ta, GA	Da	te: 03-26	-2004, Tim P	me: 14:21:20 Page: 1	Ê
		Num.	Analog Description	High	Time	Low	Time	Units	
		1	Disch Press Set-Point	145.00	23:59:00	145.00	23:59:00	Psig	
		2	Discharge Pressure	141.26	23:59:00	141.26	23:59:00	Psig	
		3	Disch Press Rise Rate	4.72	23:59:00	4.72	23:59:00	Psi/Min	
		4	+20F MPR-1 Vari-Level	19.00	23:59:00	19.00	23:59:00	% Probe	
		5	+20F MPR-1 Suction	36.00	23:59:00	36.00	23:59:00	Psig	
		6	+20F MPR-1 Pump Diff	59.00	23:59:00	59.00	23:59:00	Psid	
		7	+20F Rise Rate	0.00	23:59:00	0.00	23:59:00	Psi/Min	
0.0		8	-25F LPR-1 Vari-Level	20.50	23:59:00	20.50	23:59:00	% Probe	
QA		9	-25F LPR-1 Suction	3.50	23:59:00	3.50	23:59:00	Psig	
		10	-25F LPR-1 Pump Diff	26.50	23:59:00	26.50	23:59:00	Psid	
		11	-25F Rise Rate	-6.00	23:59:00	-6.00	23:59:00	Psi/Min	
		12	-35F ACC-1 Vari-Level	20.00	23:59:00	20.00	23:59:00	% Probe	
*		13	-35F ACC-1 Suction	0.00	23:59:00	0.00	23:59:00	Psig	
		14	-35F ACC Rise Rate	0.00	23:59:00	0.00	23:59:00	Psi/Min	
		15	EC-TR-1 Vari-Level	5.00	23:59:00	5.00	23:59:00	<pre>% Probe</pre>	
•		16	Ambient Humidity	86.82	23:59:00	86.82	23:59:00	* PH	
		17	Rnerow Center MH3	0 00	23-59-00	0 00	23-59-00	DDM	
		o	n-line Using Network Adaptor.						
03/26/2004	14:2	0:43	Control Base System		User = root		File S	Size = 30948 Bytes, 713 Lines - Current Pos. Char = 0, Line = 1	

This report shows current trend history of all the analog points in your system. The information displayed in this section is as follows: Analog # and description, high (time) when the current analog reached its highest reading, low (time) when analog reached its lowest reading, and engineering units (PSIG, % full, lbs. Min., etc.). The information displayed is a history report and reflects information based on a past 24 hr. period.



When reporting from analog history databases the above screen will be displayed. This allow the operator to open history files which have been closed out or select the current log file. If *<A>rchived* is selected a menu of files will be displayed with the year and day of year as the filename. This is the date the file was archived. You may select any of the displayed dates. If *<C>urrent* is selected the active history data file is opened for search.

After the selection is made the following page is displayed with starting and ending date information for the requested file. Selection of any date/time within the displayed range is allowed.

Console View - Lab System	
InterLOGIC Analog History Reporting	Utility. Version. 1.5
Enter Number Of Signals To Print	t: <mark>5</mark> (Up To 8)
Enter Signal 1 Number: 20 Enter Signal 2 Number: 23	(Condenser Relief)
Enter Signal 3 Number: 21	
Enter Signal 4 Number: 20 Enter Signal 5 Number: 40	(Condenser Relief) (Penthouse 4 NH3)
Mon <u>.</u> Day. <u>Yea</u> r	Ho <u>ur</u> <u>Mi</u> n.
Starting - 4-12-2004 Ending - 04-14-2004	11:45 (Zero Month To Cancel.) 10:15
Minimum Penorting Interval In	Minutes: 60
Available Reporting Range IS:	
Starting 04-12-2004 / 11:45:00	Ending 04-14-2004 / 10:15:00

Button Access Sequence:

The **Analog History Report** is a user definable report which asks for up to 8 analog reference signals. After signal numbers are entered with starting date/time and ending date/time, a column format report is printed. The operator may also specify the reporting interval in minutes to shorten the report length.

The following page displays a sample printing of the analog history report. This report may be printed for cross reference and troubleshooting information.

7 - Analog History Report.

JinterLO O Server Win	GIC d	lbc/05 Signal Se File Search Ei	rver - Opera dit Applicatio	itions & Engineerin ns Reporting Data	g Console - LO Base Informat	GIC Technolo	gies				_8
		The Search E		no noporang baca							
		-		~ •							
	- 6	🖻 Report Edit Vi	iew - sys\$10	07.rpt							- D X
		InterLOGIC	Systems Ar	halog Signal His	story Report	. (ahistrp	t)		Date: 03-26-2004	4, Time: 14:32:15	
	Date Date 03-25-2004 Distance Part Edit View - sys\$1007.npt Date: 03-26-2004, Time: 14:32:15 Cool LOGIC - Atlanta, GA - Atlanta,										
				Condenser			Condenser	Penthouse			
		Date	Time	Relief			Relief	4 NH3			
				1241 (24)	56 3758	21227 / P201	31.57723				
1		03-23-2004	17:15:00	0.422	0.000	0.000	0.422	0.228			
		03-23-2004	18:30:00	0.422	0.000	0.000	0.422	0.228			
		03-23-2004	19:30:00	0.422	0.000	0.000	0.422	0.228			
		03-23-2004	20:30:00	U.422	0.000	0.000	0.422	0.228			
		03-23-2004	21:30:00	0.422	0.000	0.000	0.422	0.228			
Á.,		03-23-2004	22:30:00	0.422	0.000	0.000	0.422	0.228			
		03-23-2004	23:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	00:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	02:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	02.30.00	0.422	0.000	0.000	0.422	0.220			
		03-24-2004	04:20:00	0.422	0.000	0.000	0.422	0.228			
_		03-24-2004	05:30:00	0.422	0.000	0.000	0.422	0.220			
		03-24-2004	06:30:00	0.422	0.000	0.000	0.422	0.220			
		03-24-2004	07:30:00	0 422	0.000	0.000	0 422	0.228			
ORA		03-24-2004	08:30:00	0 422	0.000	0.000	T 0 422	0.228			
Mar		03-24-2004	09:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	10:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	11:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	12:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	13:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	14:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	15:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	16:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	17:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	18:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	19:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	20:30:00	0.422	0.000	0.000	0.422	0.228			
0		03-24-2004	21:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	22:30:00	0.422	0.000	0.000	0.422	0.228			
		03-24-2004	23:30:00	0.422	0.000	0.000	0.422	0.228			
		03-25-2004	00:30:00	0.422	0.000	0.000	0.422	0.228			
		03-25-2004	01-30-00	0 422	0 000	0 000	0 422	0 228			
		On-line Usi	ing Network Ad	laptor.						1.	
03/26/2004	14:3	31:38 Control	Base System		User = i	root	File	Size = 7017 Bytes	, 84 Lines - Current Pos. (Thar = 0, Line = 1	

This report displays all analog history data on specific time intervals (set by operator). The information displayed on this page is as follows: Date, time and current condition/reading of each selected analog point at that specific time.

8 - Current Analog Values Report.

📑 InterLO	GIC dt	ic/OS Si	ignal Server - Operations & Engine	ering Consol	e - LOGIC Te	chnologies			_ & ×
Server Win	ndow	File Se	earch Edit Applications Reporting	DataBase In	formation				
		_							
		Repor	t Edit View - sys\$1008.rpt						
	DGIC dbc/05 Signal Server - Operations & Engineering Console - 10GIC Technologies Window Fie Search Edit Applicators Reporting DataBase Information Report Edit Yeav - sys\$1000.pt Report Edit Yeav - sys\$1000.pt Contract Value Report/CheckList. (avalrpt) Date: 03-25-2004, Time: 14:33:43 Cool LOGIC - Atlanta, GA Page: 1 Actual Checked Value Initial Remarks Actual Checked Value Initial Remarks Actual Checked Value Initial Remarks Disch Press Resever 141.27 Psig Disch Press Rise Rate -0.01 Psi/Hin 4 +207 HPR-1 Vari-Level 19.60 + Probe 5 +207 HPR-1 Suction 36.00 Psig 6 +207 HPR-1 Pump Diff 59.00 Psid 7 +207 Rise Rate 0.00 Psi/Hin 8 -257 LDR-1 Vari-Level 20.15 + Probe 9 -257 LDR-1 Vari-Level 20.00 + Probe 13 -357 ACC-1 Vari-Level 20.00 + Probe 13 -357 ACC Rise Rate 0.00 Psi/Hin 15 & C-TR-1 Vari-Level 5.00 + Probe				 E				
		dbc/05 Signal Server - Operations & Engineering Console - LOGIC Technologies Wr Fie Search Edit Appkrations Reporting DataBase Information Prover Edit View - sys\$1000.ptt Systes Analog Current Value Report/CheckList. (avalrpt) Date: 03-26-2004, Time: 14:33:43 Cool LOGIC - Aclanta, GA Nue. Analog Description Value Units Value Technologies Actual Checked Disch Press Set-Point 1 Disch Press Set-Point 145.00 Prig 2 Discharge Pressure 141.27 Prig 3 Disch Press Rate -0.81 Pri/Hin 4 +207 HDP-1 Vari-Level 19.60 % Probe 5 +207 HDP-1 Vari-Level 19.60 Prid 7 +207 Rise Rate 0.00 Pri/Hin 8 -257 LDP-1 Vari-Level 20.00 % Probe 9 -257 LDP-1 Suction 3.50 Prid 11 -257 Pise Rate -6.00 Pri/Hin 12 -357 ACC-1 Vari-Level 20.00 % Probe 13 -357 ACC-1 Suction 0.00 Pri/Min 12 -357 ACC-1 Suction 0.00 Pri/Hin 13 -357 ACC-1 Suction 0.00 Pri/Min 14 -357 ACC Suction 0.00 Pri/Hin 15 SC-TR-1 Vari-Level 5.00 % Probe 13 -357 ACC Suction 0.0							
				Actual		Checked			
		Num.	Analog Description	Value =======	Units =======	Value ======	Initial =======	Remarks	
		1	Disch Press Set-Point	145.00	Psig				
<u>et</u>		2	Discharge Pressure	141.27	Psig				
		з	Disch Press Rise Rate	-0.81	Psi/Min				
		4	+20F MPR-1 Vari-Level	19.60	<pre>% Probe</pre>				
\equiv		5	+20F MPR-1 Suction	36.00	Psig				
		6	+20F MPR-1 Pump Diff	59.00	Psid				
		7	+20F Rise Rate	0.00	Psi/Min				
OKA		8	-25F LPR-1 Vari-Level	20.15	<pre>% Probe</pre>				
- Xer		9	-25F LPR-1 Suction	3.50	Psig				
		10	-25F LPR-1 Pump Diff	26.50	Psid		<u> </u>		
		11	-25F Rise Rate	-6.00	Psi/Min				
		12	-35F ACC-1 Vari-Level	20.00	% Probe				
×		13	-35F ACC-1 Suction	0.00	Psig				
		14	-35F ACC Rise Rate	0.00	Psi/Min				
		15	EC-TR-1 Vari-Level	5.00	<pre>% Probe</pre>				
		16	Ambient Humidity	86.82	* RH			2	
		17	Rnarow Cantar MH3	0 00	DDM				
			n-line Using Network Adaptor.			_			
03/26/2004	14:3	2:50	Control Base System	ļ	Jser = root		File Size	= 43119 Bytes, 771 Lines - Current Pos. Char = 0, Lir	ne = 1

This sample page can be utilized as a check list for all analog points and can be used for record keeping and calibration of all analog points. The information displayed on this page is as follows: Analog #, description, actual reading, engineering units (PSIG, % full, temperature, etc.), check value (calibration cross reference), and initials of the operator who verified current calibration.

9 - User Defined Reports.

📑 Console View - Lab Systen	n	
llcor Dofinod	Roport Soloctions	□∨Technologies Inc.
USEI DELTIEU	Nepul C Seleccions	
<f1></f1>	- Evap Temperatures	4 Items
<f2></f2>	- Spare	
<f3></f3>	- Spare	
<f4></f4>	- Spare	
<f5></f5>	- Spare	
<f6></f6>	- Spare	
<f7></f7>	- Spare	
<f8></f8>	- Spare	
<f9></f9>	- Report Editor.	<pre>KESC>ape This Menu.</pre>
On-line Using Network Adaptor.		

The Signal Server also allows operators to define reports to display hourly readings for a sensor point and the high, low and average reading for the day. As these report are defined, the heading will be displayed on each of the 1 to 8 selections.



When 9 is selected the report editor is activated. The above setup screen is displayed requesting selection of the report number, report name, number of analog points to print and each analog database number.

The setup may be save as edited or scrapped by the Save Setup reqest.



After a report is defined, selecting the report will ask for the day to print, as shown above. The range available is also shown on the bottom of the screen.

1 - Room Temperatures.

Đ	Report Edit View - sys\$1007.rpt													Ľ
	InterLOGIC User Defined Rep Room Temperatures	ort. - Anal	Refrigeration I og Information H	inc., Atlanta Report For 12	A GA 2- 2-2001	12-02-20	01							
		Hour												
	Description	00 01	02 03 04 05	06 07 08	09 10 11	12 13 1	4 15 1 =======	6 17 =====	18 1	.9 20	21	22	23	Uni
	Finished Prod Room Tem High = 37.62 at 02:30	36 35 Low =	36 37 36 35 34.98 at 10:15	36 36 36 Average =	36 35 0 35.91	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	Production Room Temp High = 44.06 at 03:30	38 39 Low =	38 38 39 40 36.88 at 10:15	40 39 39 Average =	40 38 0 39.55	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	Water Chiller Rm Temp High = 50.05 at 01:15	47 49 Low =	46 46 45 45 44.77 at 04:45	45 45 46 Average =	46 46 0 45.61	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	Raw Product Room Temp High = 36.85 at 10:15	35 36 Low =	36 37 35 35 34.64 at 06:45	35 37 35 Average =	35 35 0 35.57	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	Incoming Dock Temp High = 47.67 at 05:00	38 36 Low =	37 36 35 48 34.92 at 04:00	36 37 38 Average =	36 36 0 36.75	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	Dry Goods Storage Temp High = 51.36 at 00:45	50 50 Low =	50 50 51 50 49.17 at 09:15	51 51 50 Average =	51 51 0 50.61	0 0	0 0	0 0	0	0 0	0	0	0	Deg
	•													E

The layout of the user defined report will print the hourly reading as a whole value. This value is printed for each hour of the requested day. After the hourly reading are printed, the high, low and average will be printed for the day. These values are calculated with all data for the requested day. This may show a value lower or higher than the displayed hourly data. The hourly data is recorded on the hour only!

🚰 Console View - Lab System					LOG	
Compressor Information Di	isplays				✓ Technol	ogies Inc.
Suction Setpoints: (STD) Modes:	27.0 Level 01	27.0 Level 02	0.0 Level 03	0.0 SCAuto	-11.1 Level 01	0.0 Level 02 Unit 6
Suction (+PSIG)(-"hg) Discharge Pres. (PSIG) Oil Pressure. (PSIG) Oil Filter Diff. (PSIG) Suction Temp. (Deg. F) Oil Temp. (Deg. F) Discharge Temp. (Deg. F) Compressor Loading (%) Motor Current (% FLA) Motor Speed (% VFD)	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	30.7 145.0 136.0 33.0 130.0 130.0 175.0 100.0 76.0 n/a	31.5 32.0 32.0 77.0 81.0 89.0 100.0 0.0 n/a	31.2 144.0 138.0 1.0 36.0 129.0 167.0 36.0 45.0 n/a	0.7 32.0 59.0 -22.0 128.0 151.0 57.0 87.0 n/a	1.2 34.0 57.0 -21.0 123.0 141.0 100.0 106.0 n/a
Pressure System > Current Status >	HPR1 Comm Fail	HPR1 Comm Fail	HPR1 Comm Fail	HPR1 Comm Fail	LPR1 Comm Fail	LPR1 Comm Fail
Sel. <pre>Sel. <pre>Sel. <pre>CH>ext <pre>CP>age Unit (1) Selected. Page: 1 </pre></pre></pre></pre>	EC-C-1 <a>uto I	High Stag	ge Compre	essor (M	>ode Change	
Compressor,	<c>hange</c>	Setpo [.]	int KES	C>ape	Load 📕	<i>nfo</i>
On-line Using Network Adaptor.						li.

Button Access Sequence: Main Menu, F1, F4

The Compressor Control system was developed to support a wide variety of compressor packages such as Frick, Mycom, M&M, FES, and Vilter. To the operator, all compressors are transparent and appear the same at the display screen. Remote control and monitoring of each package is achieved through RS232/RS422/RS485 communications. Functional buttons at the bottom of the display allow the operator remote compressor control of all packages.

<n>ext</n>	- Select to highlight the next compressor
<p>age</p>	- Select to move to the next entire page if more than six compressors are controlled
<l>oad</l>	- Select to manually load the compressor.
<u>nload</u>	- Select to manually unload the compressor.
<a>uto Loading	- Places the compressor loading mode to automatic.
<m>ode Change</m>	- Changes the operating mode of the compressor.
<s>tart</s>	- Displays the run window.
<s>top</s>	- Displays the stop window.
<r>eset</r>	- Clears cutouts and anti recycle modes(R is a hidden key not displayed in menu).
<c>hange</c>	- Displays the change setpoint window.
<esc>ape</esc>	- Exits the compressor control system.

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compressor information visplays	0.0		
Suction Setpoints: 27.0 27.0 0.0 (STD) Modes: Level Suction (+PSIG)(-"hg) Discharge Pres. (PSIG) 0. 0il Pressure. (PSIG) 0. 0il Filter Diff. (PSIG) 0. 0il Filter Diff. (PSIG) 0. 0il Temp. (Deg. F) 0. Discharge Temp. (Deg. F) 0. Compressor Loading (%) 0. Motor Current (% FLA) 0. Motor Speed (% VFD) 8. Pressure System > HPR1 Current Status > Comm	o 4 .2 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	-11.1 Level 01 Unit 5 0.7 32.0 59.0 0.0 -22.0 128.0 151.0 57.0 87.0 n/a LPR1 Comm Eail	0.0 Level 02 Unit 6 1.2 34.0 57.0 0.0 -21.0 123.0 141.0 100.0 106.0 n/a LPR1 Comm Fail
 Sel. <h>ext</h> Sel. <h>ext</h> Selected. Page: 1 <l>oad</l> Compressor, Compressor, Compressor, 	(In KM	1) >ode Change Load	↓ <i>nfo</i>

Button Access Sequence: Main Menu, F1, F4, <C>hange

The **<C>hange** setpoint button will display a window which will allow the compressor suction setpoint to be changed from the normal vessel setpoint and take over control of the selected compressor until a reset/restage compressor sequence is initialized. This will also change the selected set point if the compressor mode is in **<A> utomatic** (controlled by the microprocessor on compressor) as described on page **SCR-48c**, engine room setup.

The compressor to be controlled must be highlighted using the *<***N***>***ext** or *<***P***>***age** buttons



Button Access Sequence: Main, F1, F4, <I>nfo

This screen displays the compressor to vessel staging information. It shows how many compressors are assigned to each vessel (levels) and how many of the compressors assigned are currently running. This screen is for performance information.

System Utility & Setup Screens

Section II of this manual describes the general signal database and system setup programs included with the installation. This section contains general setup and administrative functions and should be accessed by experienced operators and administrators.

📑 Console View - Lab Systen	n		
System Utilit	ies		0
<f1></f1>	- Modify System Mas	ster Information.	<esc>ape</esc>
<f2></f2>	- System User File	& Message Maintenan	ce. This Menu.
<f3></f3>	- User Message Syst	tem.	
<f4></f4>	- Process Master Fi	ile Editors.	
<f5></f5>	- File System Utili	ities.	
<f6></f6>	- Communications Cł	nannel Utilities.	
<f7></f7>	- Signal Database &	& Utilities.	
<f8></f8>	- Memory / IO Disp	lay Utility.	
<f9></f9>	- Set System Date ,	/ Time.	
Dn-line Using Network Adaptor.			

Button Access Sequence: Main Menu, F5

The (10) System Utilities menu breaks down the system utilities into nine selectable group items. Each group serves as a specific utility in this control program. In the following pages, each group item is described. To select a desired item, simply enter the group item # in the dialog box below and press Enter or click the left mouse button on the selected group item button.

CAUTION: This section of the program should only be used by experienced operators. Modifying any of the information in this section could cause the InterLOGIC Control System to operate improperly.

Console View - Lab	System Efinition. Version 3.0 No. ATL - Atlanta, GA Date: 04-14-2004
<f1></f1>	Installation Name : InterCOOL Inc. ATL City : Atlanta State : GA
<f2></f2>	Dual Monitor System (Y/N): N Status: Released System Console Start Task:
<f4></f4>	Change Background Task Assignments. Direct Printing Inactive Change Channel Task Assignments.
<f6></f6>	Edit System Master Variables. Activate System Analog Scan
<f72 <f8></f8></f72 	Alarm Call #:
<f9></f9>	Set Logging Interval = 15 Minutes.
KES	SC>ape
On-line Using Network Ad	laptor.

Button Access Sequence: Main Menu, F5, F1

(1) Modify System Master Information screen is broken down into nine sub items. Note: This information screen should only be modified by experienced operators. If not set up properly, the InterLOGIC Control System could operate improperly.

1) Installation Name: Your Facility City: Facility Location State: Facility Location

All information may be changed by selecting the number buttons on this menu.

2) Dual Monitor System: (Y/N) Status:

The normal operating mode is "N" for no.

3) System Console Start Task: This allows the server main screen to execute a program other than the main menu when restarted.

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4) **System Direct Reporting Status: NOTE:** This section is for system troubleshooting only and should not be used during regular operation. The normal operating mode is "Inactive".

5) **Change Channel Job Assignments**: This section displays the tasks that are assigned to system channels such as remote consoles, modems, compressor scan programs, or other intelligent control scan programs.

6) Edit System Master Variables: This section contains general setup information about the system.

7) **Deactivate System Analog Screen**: This section is used to deactivate the system's analog scanning system (pressure, temperature, 4-20mA signals) and is used for troubleshooting. If the operator selects to deactivate the analog scanning system, the button will change to reactivate the analog scanning system. Note: The InterLOGIC Control System will no longer function properly if the operator selects to deactivate the analog scanning system. The deactivate mode is used for diagnostics.

8) **Alarm Call Number**: This section can be used to notify an operator/administrator if the alarm condition on your system exists via a phone line. This option requires a remote console to be available to connect and display the alarm information.

9) Set Logging Interval: This allows the operator to set the logging interval time of all your system's analog points. This time frame needs to be set for the operators preference and is used for history keeping purposes. The normal setting is 15 minutes. With larger storage media, it is possible to archive at 5 minute periods.

Chnl Task Name Mode 4 - 6 8 - frkscan 9 - 7 3 - 7 0 - 7 0 - 7 0 - 7 0 - 7 5pool Hardware Port: 0 Modem Chnl: 4 UPS Chnl: 10 Remote Alarm Console Chnl: 0 Remote Alarm Display Chnl: 7 Do You Wish To Change System Channel Assignments (Y/N):	Econsole View - Lab System InterLOGIC System Definition. InterCOOL Inc. ATL - Atlanta,	GA Date: 04-14-2004
<pre>4 - 8 - frkscan 9 - 2 - 0 - 0 - Spool Hardware Port: 0 Modem Chnl: 4 UPS Chnl: 10 Remote Alarm Console Chnl: 0 Remote Alarm Display Chnl: 7 Do You Wish To Change System Channel Assignments (Y/N): ■</pre>	Chnl Task Nar	ne Mode
Spool Hardware Port: 0 Modem Chnl: 4 UPS Chnl: 10 Remote Alarm Console Chnl: 0 Remote Alarm Display Chnl: 7 Do You Wish To Change System Channel Assignments (Y/N): ■	4 - 6 - 8 - frkscan 9 - 3 - 2 - 0 - 0 - 0 - 0 - 0 - 0 -	
Remote Alarm Console Chnl: 0 Remote Alarm Display Chnl: 7 Do You Wish To Change System Channel Assignments (Y/N): 📕	Spool Hardware Port: (0 Modem Chnl: 4 UPS Chnl: 10
Do You Wish To Change System Channel Assignments (Y/N): 📕	Remote Alarm Console Chnl:	: O Remote Alarm Display Chnl: 7
	Do You Wish To Change Syst	tem Channel Assignments (Y/N): 📕

Change Channel Job Assignments displays the above screen. This information determines which terminal channels are started for remote access and procedures attached to these channels.

Other port information assigned such as printer harware port, modem channel, UPS channel, remote alarm console channel, and remote alarm display channel specifies where to attach external equipment to the server.



The master information data describes the basic setup for the refrigeration server.

Items covered on the 1st screen:

Minimum Discharge Pressure For Defrost: determines the lowest discharge pressure allowed when a defrost is initiated. If the pressure is below this value when started the defrost is skipped and a log entry is posted stating the reason.

For Reheat: is the minimum discharge pressure setpoint to allow a valve group to enter reheat mode.

If hot gas boost is selected the discharge boost pressure is entered. This setpoint is used to control the system head pressure during a defrost cycle on a valve group.

Seconds between air units starting is used to space starting times on valve groups. This keeps the air units from all starting at the same time.

The total compressor count defines how many compressors will be attached to the system. Maximum slide valve assigns the value at which the next stage compressor will be allowed to activate. This is available as a setpoint due to some compressor manufacturers controllers not displaying exactly 100% loading.

The number of discharge systems is entered and type code for control. There may be up to 3 discharge systems allocated on a single system. For each discharge system the base analog database ID is entered to point to 3 items used by the control procedures. These items include discharge setpoint, real discharge pressure and pressure rise rate.

Pumps off setpoint is entered next. This entry determines the ambient termperature at which condenser pumps will shutdown. They will restart 5 degrees above this setpoint.

Emergency stop inputs and mercoid input define points monitored for safety shutdown. If any input is assigned to the list the point is monitored for presence. If the point goes inactive the system is shutdown as an emergency and the reason is posted to the alarm log.

System safety shutdowns are defined as outputs which remain active as long as the refrigeration system is normally running. If the system is shutdown normally or E-stop activated all items on this list are deactivated until a system restart in issued.

The hot gas definition and pre-hot gas definition define points to turn on when a defrost cycle startes on a valve group. Upon cycle startup the pre-hot gas is activated. After a 15 second delay the main hot gas will be turned on. If defrost cycles overlap the main hot gas will remain active.



System heart beat output is an output that will pulse once at 5 second intervals.

The X, Y and end of period inputs define the inputs provided by a billing power meter. Each pulse from the X and Y inputs are totalized and multiplyed by the pulse multiplier. The information is then stored in the analog points assigned to projected demand storage (the total pulses over 3 mins. * mult. * 20), demand storage (the total pulses over 15 or 30 mins. * mult., and accumulated demand storage (the total pulses * mult. until reset).

If the loadshead request input is defined, the presense of signal on this input will perform a normal system shutdown operation on the plant. When the signal is removed the system will restart the refrigeration in a controlled start as if the operator perfromed the operation from the main menu. The Acknowledge output is activated if the system shutdown is performed. This allows the utility system to be notified the action actualy occured.

Background color and resolution mode sets the graphic display mode used by server graphic systems.

Definitions for ambient air, and panel air analog points are entered here also.

UPS voltage storage analog and data position are defined with an input to allow direct monitoring of the control voltage. If the UPS reads a voltage under 90 the system will shutdown refrigeration operations and restart when power returns to normal.

The last item on the screen selects split system shutdown. If this is answered yes only the compressors attached to the vessel in high level will be shutdown. This is a software only option. The server panel must be wired to allow this option to work.

<mark>Console View - Lab System</mark> InterLOGIC dbc/OS User Inform	nation Maintenance.	_ 🗆 ×
Enter User Number To Mod	Hify.	

Button Access Sequence: Main Menu, F5, F2

(2) System User File And Message Maintenance: Upon selection, the operator is asked for a user number to be entered. The user number may also be referenced from a list by entering a "?" in the input area.



After the "?" is entered the above screen is displayed. This show each user ID allowed access to the system. The operator may select an item by pointing to a user name and left clicking the mouse.



Button Access Sequence: Main, F5, F2, User Number

System User File And Message Maintenance: This section is designed to modify security entry into the InterLOGIC Control System, view and reset user logon time, and send specific messages to a specific operator.

A) **Record:** This section displays the logon time (for each individual user, specified in your system), User ID, User Password, and Group Code. Note: Each specific user can change their logon name and password. Only the administrator has access to each user's ID, password, and group code and has the ability to change each item.

B) **Message:** Allows the user to read or leave specific messages to other users on this system. This message is maintained until the respondant user deletes it.

C) Clear: Allows an administrator to reset a user's total logon time from the history information.

Console View - Lab System		
nterLOGIC dbc/OS User Information Mainte	enance.	
Last Logon Time: 00:00:00, Date:	0, Total Time:	0 Sec.
User 123 Selected.		
Current User ID: test		
Current User Password:	PIN:	
Group Codes: 1	1 1 1	
Current Start Job: <mark>winset</mark>	[script]	
Current Shadow Number:		

Button Access Sequence: Main, F5, F2, User#, <R>ecord

The above screen displays the layout of the user setup program. This screen allows a user to add, remove, or modify their access information. Only the administrators of the control system are allowed access to all user information. Each user may change their password and user name when desired.

Group codes are used to allow or restrict access to areas of the system. The 1st edit field contains the security level 0-100 in value. Positions 2-4 are special groups above 100 which allow user access to selected programs.

Group Codes: 0 = All access rights 1 to 30 = Technical access 31 to 60 = Supervisor access 61 to 80 = Operator access 81 to 100 = General user access

The start job assigns which system procedure will execute when the user logs onto the system. If a shadow number is assigned when the user logs onto the system, the system will disconnect and call the user back if the logon procedure is successful.

Console View	- Lab System						_ 🗆 ×
InterLOG	IC dbc/OS Thc. ATL	User M - Atl:	Message anta. (e Util [.] GA	ity,	Versi	on 1.0
	=======================================		=======================================	=======================================	=======================================	 	
YSTEM	8	1	1	1	1		
oot	ž	õ	ō	õ	ō		
inter Use	er ID :						
In the second							

Button Access Sequence: Main Menu, F5, F3

(3) User Message System: This section is used to leave an instant message to other operators that are currently logged on to the InterLOGIC Control System.

Enter the operator's user ID into the dialog box and hit the enter key. The ENTER message dialog box will appear. Enter the instant message you wish to send. When finished, hit the enter key. Your message has now been sent.

The message will be displayed on the selected user console at the bottom of the screen. If the windows remote console is connected, the message box is displayed.

📑 Console Yiew - L	ab System							_ 🗆 ×
InterLOGIC InterCOOL	dbc/OS Inc. ATL	User M - Atla	lessage nta, (e Utili GA	ty,		Version	1.0
SYSTEM SYSTEM root	1 8 2	1 1 0	1 1 0	1 1 0	1 1 0			
Enter User	ID : <mark>ro</mark>	ot						
Enter Mess	age : <mark>Th</mark>	is is a	. test	messag	je			
On-line Lisina Network	Adaptor.							

The above example shows how a message is displayed on the ECON Windows based console. If the user is logged on to the main console the message will display on the last line of the screen.

Console View - Lab System TSN Cond. Err. Start-Time/Date Pause ImageSz Chnl Name 012 Paus 0 14:52:57 03-26 2 6910 0 emulate 013 Paus 0 14:52:58 03-26 5 4740 0 emulate2 014 Paus 0 14:53:02 03-26 2 5067 0 nopower 018 Paus 0 14:53:05 03-26 7 11302 0 vesctrl 019 Paus 0 14:53:05 03-26 0 8337 0 condctrl 020 Run 0 14:53:05 03-26 0 0 4 021 Idle 0 14:53:05 03-26 0 0 4 022 Paus 0 14:53:05 03-26 0 0 4 022 Paus 0 14:53:05 03-26 0	Console View - Lab System TSN Cond. Err. Start-Time/Date Pause ImageSz Chnl Name 012 Paus 0 14:52:57 03-26 2 6910 0 emulate 013 Paus 0 14:52:57 03-26 2 5067 0 nopower 014 Paus 0 14:53:05 03-26 7 11302 0 vesctrl 019 Paus 0 14:53:05 03-26 11 9272 0 pumpctrl 020 Run 0 14:53:05 03-26 0 0 4 021 Idle 0 14:53:05 03-26 1 11780 0 tempctrl 021 Idle 0 14:53:05 03-26 1 11780 0 tempctrl 021 Idle 0 14:53:05 03-26 4 3434 0 transfer 030 Paus 0 14:53:05 03-26 2 4173 0 compvfd 032 <th></th> <th></th> <th></th>			
TSN Cond. Err. Start-Time/Date Pause ImageSz Chnl Name 012 Paus 0 14:52:57 03-26 2 6910 0 emulate 013 Paus 0 14:52:58 03-26 5 4740 0 emulate2 014 Paus 0 14:52:58 03-26 2 5067 0 nopower 014 Paus 0 14:53:02 03-26 7 11302 0 vesctrl 019 Paus 0 14:53:05 03-26 1 927 0 pumpctrl 020 Run 0 14:53:05 03-26 0 8337 0 condctrl 021 Idle 0 14:53:05 03-26 0 0 4 022 Paus 0 14:53:05 03-26 0 0 4 022 Paus 0 14:53:05 03-26 0 0 6	TSN Cond. Err. Start-Time/Date Pause ImageSz Chn] Name 012 Paus 0 14:52:57 03-26 2 6910 0 emulate 013 Paus 0 14:53:02 03-26 5 4740 0 emulate2 014 Paus 0 14:53:05 03-26 7 11302 0 vesctrl 019 Paus 0 14:53:05 03-26 11 9272 0 pumpetrl 020 Run 0 14:53:05 03-26 0 0 4 021 Idle 0 14:53:05 03-26 1 11780 0 tempetrl 027 Idle 0 14:53:05 03-26 4 6585 0 chiller 030 Paus 0 14:53:05 03-26 4 6585 0 chiller 032 Paus 0 14:53:05 03-26 4 6585 0 chiller 032 Paus 0 14:53:05 03-26 0 0 9 033 Paus 0 14:53:05 03-26 0 11807 8 frkscan 033 Paus 0 14:53:05 03-26 0 0 9 038 Idle 0 14:53:05 03-26 1 10252 1 menul 162 Stat 0 11:09:32 03-29 0 7205 2 chnlmenu Global Area Reserves - Data = 3726, Vars. = 2608 Enter CHNL To Start:	📑 Console ¥iew - Lab System		
029 Paus 0 14:53:05 03-26 4 3434 0 transfer 030 Paus 0 14:53:05 03-26 4 6585 0 chiller 032 Paus 0 14:53:05 03-26 6 4908 0 alrmpnl 033 Paus 0 14:53:05 03-26 2 4173 0 compvfd 035 Run 0 14:53:05 03-26 0 11807 8 frkscan 037 Idle 0 14:53:05 03-26 0 0 9 038 Idle 0 14:53:05 03-26 0 0 3 048 Paus 0 14:53:21 03-26 64 13088 0 compctrl	182 Paus 0 07:53:46 03-27 1 10252 1 menu1 162 Stat 0 11:09:32 03-29 0 7205 2 chnlmenu Global Area Reserves - Data = 3726, Vars. = 2608 Enter CHNL To Start:	TSN Cond. Err. 012 Paus 0 013 Paus 0 014 Paus 0 018 Paus 0 019 Paus 0 020 Run 0 021 Idle 0 022 Paus 0 021 Idle 0 022 Paus 0 027 Idle 0 029 Paus 0 030 Paus 0 033 Paus 0 033 Paus 0 035 Run 0 037 Idle 0 038 Idle 0 048 Paus 2	tart-Time/Date Pause ImageSz Chnl Name 4:52:57 03-26 2 6910 emulate 4:52:58 03-26 5 4740 emulate 4:53:02 03-26 2 5067 nopower 4:53:05 03-26 7 11302 vesctrl 4:53:05 03-26 11 9272 pumpctrl 4:53:05 03-26 0 0 4 4:53:05 03-26 0 0 4 4:53:05 03-26 0 0 6 4:53:05 03-26 0 0 6 4:53:05 03-26 0 0 6 4:53:05 03-26 4 3434 0 transfer 4:53:05 03-26 4 4908 alrmpnl 4:53:05 03-26 2 4173 0 compvfd 4:53:05 03-26 0 0 3 1 1 4:53:05 03-26 0 0 3 1 1 1	

Button Access Sequence: Main Menu, F5, F6, F7

(4) **Remove Task From System**: This section of the InterLOGIC Control System will remove any specific task that is currently running in the InterLOGIC Refrigeration Control Program.

CAUTION: This section of the program should only be used by experienced operators. Removing a specific task from the InterLOGIC Control System program could cause the system to operate improperly.

Only administrative level users are allowed kill privilege.
onsole View - Lab System	LOGIC Technologies Inc.
System Utilities	
<f1> - Edit File.</f1>	<esc>ape</esc>
<pre><f2> - Print File To System Printer.</f2></pre>	This Menu.
<pre><f3> - Copy File.</f3></pre>	
<pre> - Backup Job Specific Files.</pre>	
<pre> - Restore Job Specific Files.</pre>	
<pre><f6> - Create File List.</f6></pre>	

(5) File System Utilities: This section is used to change, print or copy specific files and could be used to copy history files to a floppy disk or tape back up system.

1) **Edit File:** By selecting the edit file button, the dialog box will appear on the bottom of the screen. Enter file name to edit. If the file is not available, the user is asked if they wish to create a new file.

2) Print File To System Printer: Allows the operator to send specific files to your local printer.

3) **Copy File:** Allows the operator to copy specific files to a specific location on your hard drive or floppy drive.

nsole View - Lab System	
Communications Channel Utilities	
- Connect To System Async Modem.	<esc>ape</esc>
(F2) - Change System Channel Baud Rate.	This Menu.
<pre><f3> - Set Modem Link To Remote Location.</f3></pre>	
- Remove Modem Link.	
<pre> - Reset System Channel.</pre>	
<pre><f6> - Remove Channel From System.</f6></pre>	
<pre> - Start System Channel.</pre>	
<pre><f8> - Calibrate Touch Screen System.</f8></pre>	
Line Maturel Adapter	

(6) Channel Utilities: This section of the InterLOGIC Control system is used to modify/remove specific channels in the InterLOGIC Control System program.

The selections also allow access to remote InterLOGIC Systems available to the operator.

CAUTION: This section should only be used by experienced operators. Removing/modifying system channels could cause the system to operate improperly.



(7) Signal Database And Utilities: This section is broken down into nine specific group items. Each specific group item is described on the following pages.

Analog #DescriptionCurrent Value1Disch Press Set-PointC145.00PsigE12Discharge Pressure135.24Psig3Disch Press Rise Rate4.76Psi/Min4+20F MPR-1 Vari-Level19.80% Probe5+20F MPR-1 Suction36.00Psig6+20F MPR-1 Pump Diff59.00Psid7+20F Rise Rate0.00Psi/Min8-25F LPR-1 Vari-Level19.50% Probe9-25F LPR-1 Suction3.50Psig10-25F LPR-1 Suction3.50Psig11-25F Rise Rate-6.00Psi/Min12-35F ACC-1 Vari-Level20.00% Probe13-35F ACC-1 Suction0.00Psig14-35F ACC-1 Suction0.00Psi/Min15EC-TR-1 Vari-Level5.00% Probe16Ambient Humidity86.82% RH17Energy Center NH30.00PPM18Condenser Relief0.00PPM19Energy Center Relief0.00PPM	: Yiew-Lab System Analog Signal Setup Utility			LOGIC
1 Disch Press Set-PointC 145.00 PsigE1 2 Discharge Pressure 135.24 Psig 3 Disch Press Rise Rate 4.76 Psi/Min 4 +20F MPR-1 Vari-Level 19.80 % Probe 5 +20F MPR-1 Suction 36.00 Psig 6 +20F MPR-1 Pump Diff 59.00 Psid 7 +20F Rise Rate 0.00 Psig 8 -25F LPR-1 Vari-Level 19.50 % Probe 9 -25F LPR-1 Vari-Level 19.50 % Probe 9 -25F LPR-1 Vari-Level 19.50 % Probe 11 -25F Rise Rate -6.00 Psid 12 -35F ACC-1 Vari-Level 20.00 % Probe 13 -35F ACC-1 Suction 0.00 Psig 14 -35F ACC-1 Suction 0.00 Psig 14 -35F ACC Rise Rate 0.00 % RH 15 EC-TR-1 Vari-Level 5.00 % RH 17 Energy Center NH3 0.00 PPM<	Analog # Descri	ption	Current Value	
20 Condenser Relief 0.42 PPM 21 0.00 0.00 22 0.00 0.00 23 0.00 0.00 24 0.00 0.00	1 Disch P 2 Dischar 3 Disch P 4 +20F MP 5 +20F MP 6 +20F MP 7 +20F Ri 8 -25F LP 9 -25F LP 10 -25F Ri 12 -35F AC 13 -35F AC 14 -35F AC 15 EC -TR-1 16 Ambient 17 Energy 18 Condens 19 Energy 20 Condens 21 22 23 24	ress Set-PointC ge Pressure ress Rise Rate R-1 Vari-Level R-1 Suction R-1 Pump Diff se Rate R-1 Vari-Level R-1 Suction R-1 Pump Diff se Rate C-1 Vari-Level C-1 Suction C Rise Rate Vari-Level Humidity Center NH3 er Relief Center Relief er Relief	$\begin{array}{c} 145.00\\ 135.24\\ 4.76\\ 19.80\\ 36.00\\ 59.00\\ 0.00\\ 19.50\\ 3.50\\ 26.50\\ -6.00\\ 20.00\\ $	PsigE1 Psig Psi/Min % Probe Psid Psid Psid Psi/Min % Probe Psi/Min % Probe Psi/Min % Probe Psi/Min % Probe Psi/Min % PPM PPM PPM PPM

(1) Analog Signal Definition Editor: This section defines all of the system's analog points by number. The operator can modify, change, add, and remove specific analog points. To add a new analog point to the system, press the enter key down to the last described analog number. Enter the analog number that has no description into the dialog box on the bottom of the screen. Press the enter key. Specifics on how to add data to a new analog number screen is described on page five in this manual.

NOTE: Only experienced operators should define/modify analog points. Entering the wrong information could cause the InterLOGIC Control System to operate improperly.

Section II



(2) Modify Current I/O Value: This section allows the operator or administrator to modify specific I/O points. When selecting this section, the security lock code window appears as shown in the example above. This requires the operator to enter a number in order to proceed. This code is used to lock out any other operator to change specific I/O points that the previous operator has modified from automatic to manual or automatic to force off. The operator can change the lock out I/O point only if the original numeric code is entered in the security lock code window. Once the I/O point is restored to automatic, any operator specified in the system user file section (as described on page SCR-29) can modify any I/O point that is in automatic position.

NOTE: Changing the condition of any I/O point described in the InterLOGIC Control System program from its automatic state will no longer be controlled by the InterLOGIC Control System program. This operation is for trouble diagnostics or lock out procedures only and should not be used for general control purposes. Only experienced operator should make such changes.

📑 Console Vi	Console View - Lab System								
I/O Mai	inter	nance	Utili	ty.				Mode	e: Decimal
Current	I/0	Defi	nitior	IS _					
Num F	tru –	POS	Zone	Wire	Туре	Mode	Value		Description
<u>l<-</u>	1	<u> </u>	Ŭ,	100	Input	Auto	1		ESTOP Button (Panel)
2	1	_1	<u> </u>	101	Input	Auto	1		Mercoid Cutout
3	1	- 64	0	103	Output	Auto	Q		Shunt Trip
4	1	- 2	Ŭ,	105	Input	Auto	1		ESTOP Switch (Remote 1)
5	1	3	<u> </u>	107	Input	Auto	1		ESTOP Switch (Remote 2)
6	1	_4	<u> </u>	109	Input	Auto	1		ESTOP Switch (Remote 3)
7	1	65	<u> </u>	110	Output	Auto	0		System Alarm Strobes
8	1	66	<u> </u>	111	Output	Auto	<u> </u>		System Alarm Horns
9	1	2	0	112	Input	Auto	0		Alarm Horn Silence Sw.
10	1_	67	0	113	Output	Auto	0		Ammonia Leak Alarm Relay
11	1	_6	<u> </u>	114	Input	Auto	<u> </u>		Firebox Flow Switch
12	1	68	<u> </u>	116	Output	Auto	0		Continous Fan Start
13	1	7	0	117	Input	Auto	0		EF-EC-5 Fan Aux
14	1	69	Q	118	Output	Auto	0		Panel Fan
15	1	70	0	120	Output	Auto	0		Scrubber Start
16	1	1	Q	. 90	Output	Auto	0		HLCO Override
17	1	72	Q	126	Output	Auto	1		King Hot Gas Sol
18	1	73	0	127	Output	Auto	1		King Liquid Sol
19	1	- 74	0	128	Output	Auto	0		LPR-1 EPDL Sol.
20	1	75	Q	129	Output	Auto	0		MPR-1 EPDL Sol.
21	1	76	0	130	Output	Auto	0		TR-1 EPDL Sol.
22	1	- 77 -	0	131	Output	Auto	0		#1 PDL from Evap
23	1	- 78	0	132	Output	Auto	0		Glycol Pump - Start
24	1	_8	0	133	Input	Auto	0		Glycol Pump - Aux
25	1	79	0	134	Output	Auto	0		Glycol Pump - Start
26	1_	9	0	135	Input	Auto	0		Glycol Pump - Aux
27	1	10	0	136	Input	Auto	0		Banana Glycol FS
28	1	80	0	138	Output	Auto	0		B-HE-1 LSV
<esc></esc>		<up:< th=""><th>></th><th><dn></dn></th><th><pgup></pgup></th><th></th><th><pgdn></pgdn></th><th></th><th><home> <c>hange</c></home></th></up:<>	>	<dn></dn>	<pgup></pgup>		<pgdn></pgdn>		<home> <c>hange</c></home>
On-line Using N	etwork J	Adaptor.							
arrando aparigita									/

Button Access Sequence: Main Menu, F5, F7, F2, Lock Code

After the operator enters a lock code number on the previous screen, a view displays all I/O points defined to your control system.

<*Up*> Moves the cursor up one number at a time.

<Dn> Moves the cursor down one number at a time.

<PgUp> Moves the cursor up one page at a time.

<*PgDn*> Moves the cursor down one page at a time.

Home> Moves the cursor back to the first I/O position.

<*Change*> Allows the operator to change a specific I/O point's state described on the next page. In order to change a specific I/O number, the operator must select which I/O number to change. Move the cursor to the desired number using the <*Up*>, <*Dn*>, <*PgUp*> or <*PgDn*> keys and select change button. The mouse may also be placed on the desired line and selected with a left mouse button press.



Button Access Sequence: Main Menu, F5, F7, F2, Lock Code, I/O

When selection of a desired I/O is processed, the above screen is displayed. This area allows the operator to change the condition of the selected I/O #. The current state of the selected I/O # is displayed at the top of this screen. The current condition shows if current I/O point is active or inactive. The value area is used to show the raw value of a signal coming back to the PC and is used on analog points and other devices controlled by the InterLOGIC Control System program.

Device #: Shows the number of the current I/O selected.

- **P:** Shows previous I/O point as defined.
- >: Current I/O point selected.
- N: Next I/O point as defined.

<U>: Ramp value up is used to change a value on an analog point or /modulating device.

<D>: Ramp value down is used to change a value on an analog point or modulating device.

< X >: Turn Device On: Turns the specific device (currently selected) on in manual and overrides the automatic control.

<O>: Turn Device Off: Shuts down the specific device (currently selected) in manual off position and overrides the automatic control.

 $<\!\!A$ >: Restore Device To Automatic: Restores the specific device (currently selected) back into automatic position so that the InterLOGIC Control System takes over its control function.

<P>: Select Previous: Selects the previous I/O device.

<N>: Select Next: Selects the next I/O device.

CAUTION: Any device left in the manual on or off position is not controlled by the InterLOGIC Control System program. A device has to be returned to automatic mode in order for the system to control its function.

1 Disch Press Set-PointC 145.00 PsigE1 2 Discharge Pressure 220.00 Psig 3 Disch Press Rise Rate 0.00 Psi/Min 4 +20F MPR-1 Vari-Level 19.95 % Probe 5 +20F MPR-1 Suction 36.00 Psig 6 +20F MPR-1 Pump Diff 59.00 Psid 7 +20F Rise Rate 0.00 Psi/Min 8 -25F LPR-1 Vari-Level 19.55 % Probe 9 -25F LPR-1 Suction 3.50 Psig 10 -25F Rise Rate -6.00 Psi/Min 11 -25F Rise Rate -6.00 Psi/Min 12 -35F ACC-1 Vari-Level 20.00 % Probe 13 -35F ACC-1 Suction 0.00 Psig 14 -35F ACC-1 Suction 0.00 Psig 15 EC-TR-1 Vari-Level 5.00 % Probe 16 Ambient Humidity 86.82 % RH 17 Energy Center NH3 0.00 PPM 18 Condenser Relief 0.00 PPM 18 Condenser Relief 0.00 PPM
CENTER> To Exit, CENTER> To Cont. List, or Select Item # 1 :

(3) View Analog History Trend: This section allows the operator to plot information to view a history graph. This is a vital tool for trend logging and troubleshooting.

Enter Number Of Signals To Plot: The operator can choose up to three individual analog points. After entering the number of analog points to plot, the "Enter Starting Year:" dialog box will appear. The date shown in the dialog box may be changed by pressing the backspace key and adding the date the operator wants to start from. Next, the month dialog box will appear. To change its number, follow the steps described in the previous change year description. The same procedure should be followed until the 12 hr., 24 hr. and new date buttons appear on the bottom of the screen. Select the plot duration by selecting either the 12 hr. or 24 hr. button.

Refrigeration Control Systems Application Manual

Analog #	Description	Current Value	
1	Disch Press Set-PointC	145.00	PsigE1
2	Discharge Pressure	220.00	Psig
3 4	DISCH Press Rise Rate	10.00	PS1/M1n V Rucha
5	+20F MPR-1 Vari-Level	36 00	Deid
é	+20F MPR-1 Pump Diff	59.00	Psid
7	+20F Rise Rate	0.00	Psi/Min
8	-25F LPR-1 Vari-Level	19.55	% Probe
-9	-25F LPR-1 Suction	_3.50	Psig
10	-25F LPR-1 Pump Dift	26.50	Psid Dei Avie
12	-ZDF KISE KALE -35E ACC-1 Vari-Level	20.00	% Probe
13	-35F ACC-1 Suction	20.00	Psia
Ĩ4	-35F ACC Rise Rate	0.00	Psi/Min
15	EC-TR-1 Vari-Level	_5.00	% Probe
16	Ambient Humidity	86.82	% RH
10	Energy Center NH3 Condenson Poliof	0.00	PPM
10	Condenser kerrer	0.00	PPM
(ENTER>	To Exit, (ENTER) To Cont.	List, or Select	Item # 1 :

This menu will be displayed after selecting the year, date, month, hour, minute, and duration. The operator must now select the analog ID's he wants to graph. To select an analog ID, type the value to be selected in the edit box on the bottom right of your screen and press the enter key. This procedure must be repeated if more than one analog ID is selected. The item number to the left of the edit box will show the current selected item number.

Section II



Access Sequence: Main Menu, F5, F7, F3

After the requested analog signals are selected, the history graph is displayed. This is an example of the analog history graph. To preview earlier plotting times or to move the graph to an earlier start time, the <-> key must be selected on the keyboard or screen button. The same procedure must be followed in order to move the graph forward by using the <+> selection. The Signal Description Box will display the high, low and average reading during the time selected to display. The Y units box displays the unit of measurement, temperatures, pressure, and the current position reading of the cursor in the graph display box.

Console View - Lab Systen		
System Histor	y Archive Maintenance	- reenhologies ne.
<f1></f1>	- Archive File To Floppy Disk.	<esc>ape</esc>
<f2></f2>	- Reset Current History File.	This Menu.
<f3></f3>	- Reset Current History (W/HD Backup).	
<f4></f4>	- Copy Range To User Specified File.	
<f5></f5>	- Create New History File From Specified	H File.
<f6></f6>	- View History Directory.	
<f7></f7>	- View Current History File Status.	
<f8></f8>	- Setup CSV Transfer Data.	
<f9></f9>		
n-line Using Network Adaptor.		

F5 Archive/Reset Analog History File: This section of the InterLOGIC Control System program is used for maintenance of history files. It allows the operator to copy, reset, and create history files specified in the InterLOGIC Control System. The following pages will describe each function of this section.

F1) **Archive File to Floppy Disk:** By selecting the number one button on this screen the back up media size screen appears. User must select the size of diskette to be used. Next, the size of the history file will be shown and the number of diskettes needed to copy the current history file will be displayed. If the operator wishes to cancel this procedure, he may at this time.

F2) **Reset Current History File:** Allows the operator to remove current data that is stored on the history file. CAUTION: By selecting the number two option in this segment, the operator will lose all history data and permanent information for trend logging. The operator is prompted to verify this operation with (Y/N).

F3) **Reset Current History:** (W/HD Backup) allows the operator to reset current history and relocates the information into a history directory on your hard drive. NOTE: Even though the history file will reset, no information will be lost. It is stored on the hard drive. Experienced operators can recall any information stored on the hard drive, if needed.

F4) **Copy Range To User Specified File:** Allows the operator to copy ranges of current history data to a floppy or new file created by the operator. NOTE: No history data will be lost since the operator only copies information and does not remove data from the history file.

F5) **Create New History file From Specified File:** Allows the operator to create a new history file from information copied from the original history file. All data in the current file is deleted.

F6) View History Directory: Allows the operator to view existing history files from archive.

F7) View Currect History File Status: Shows the operator how many records there are available and the amount of bytes used for them.

F8) **Setup CSV Transfer Data:** Allows operator to create a CSV (Excel) file that shows the high/low/average for the requested signals for the selected analog numbers.



(8) View Current History File Status: This segment displays information on the system history file, size, date/time of activation, and last date of history file stored.

ionsole ¥iew - Lab System		
System Genera	l Reports	Fechnologies Inc.
<f1></f1>	- Analog Setup Information Report.	<esc>ape</esc>
<f2></f2>	- Print Analog History Report. (db-formated)	This Menu.
<f3></f3>	- Analog Calibration Information Report.	
<f4></f4>	- System Alarms Activity Report.	
<f5></f5>	- I/O Device Reference Listing.	
<f6></f6>	- Analog History Transfer Report.	
<f7></f7>		
<f8></f8>	- Analog History Recovery Report (by record n	umbers).
<f9></f9>		
e Using Network Adaptor.		

(9) General Report Menu: This section of the general report menu allows the operator to print various reports common to all InterLOGIC systems.

<1>: Analog Setup Information Report: This report will print vital information of each analog point, I/O number, conversion formulas, and description.

<2>: Print Analog History Report (db Format): This option prints out the same type of information but in a database format that allows the operator to import information to spreadsheet formats for report purposes.

1 - Analog Setup Information Report.

	Re the the t		
	Report Edit View - sys\$1009.rpt		
	System Analog Definition Report. (anarpt) Date:	03-26-2004,	Time: 15:31:49
	Cool LOGIC - Atlanta, GA		Page: 1
	Alarm Alarm	Control	Control Control
	Setpoint Dead Band Alarm Procedur	e I/O Point	Setpoint Deadband Cont
	Num. Engineering Description High Low High Low High Low	High Low	High Low High Low High
	1 Direct Duran Cat Daint 0 0 0 0		
	$\frac{1}{1} \frac{1}{1} \frac{1}$	0 0	T/0 - 0 Disch Press Set-Point
	ingineting formale (.io(vio, dis), discolor		1,0 0 21500 11055 200 10100
	2 Discharge Pressure 0 0 0 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - (!io[%io]-819)*0.152625		I/O - 700 Discharge Pressure
	3 Diath Duard Dian Data 0 0 0 0		
	Bugineering Formule -	0 0	T/O - O Disch Press Dise Date
	ingineting formate		1,0 0 FISCH TESS MISE MADE
	4 +20F MPR-1 Vari-Level 0 0 0 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - (!io[%io]-819)*0.030525		I/O - 706 +20F MPR-1 Vari-Level
	$5 + 20F \text{ MFR}^{-1}$ Subclon $0 = 0 = 0 = 0$ Regimeering Formula - (!io[%io]-819)*0 06105-14 7	0 0	T/0 - 701 +20F MPB-1 Suction
			-/
	6 +20F MPR-1 Pump Diff 0 0 0 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - ((!io[%io]-819)*0.06105-14.7)-#analog(5)		I/0 - 702 +20F MPR-1 Pump Diff
	7 1207 Dice Dete	I.,	
	Rngineering Formula -	0 0	I/0 - 0 +20F Rise Rate
			-,
	8 -25F LPR-1 Vari-Level 75 0 10 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - (!io[%io]-819)*0.030525		I/O - 707 -25F LPR-1 Vari-Level
	9 -25F LPR-1 Suction 0 0 0 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - (!io[%io]-819)*0.06105-14.7	0	I/0 - 703 -25F LPR-1 Suction
	10 -25F LPR-1 Pump Diff 0 0 0 0	0 0	0.0 0.0 0.0 0.0
	Engineering Formula - ((!io[%io]-819)*0.06105-14.7)-#analog(9)		I/O - 704 -25F LPR-1 Pump Diff
	11 -25W Dise Date 0 0 0 0	0 0	0.0 0.0 0.0 0.0
_			

This report shows the current setup for each analog signal. Included in the report is description, alarm setpoints and deadbands, alarm procedure assignments, generic control points with setpoint and deadbands, engineering conversion formulas, and rack I/O positions.

Section II



2 - Print Analog History Report. (db-formatted)

Dat 03-	:e 	Time 			Panei lemp	mp		
03-								
	-26-2004	02:30:00	0.000	0.000	79.638	60.495		
03-	-26-2004	03:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	04:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	05:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	06:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	07:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	08:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	09:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	10:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	11:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	12:45:00	0.000	0.000	79.638	60.495		
03-	26-2004	13:45:00	0.000	0.000	79.638	60.495		
03-	-26-2004	14:45:00	0.000	0.000	79.638	60.495		

The db-formatted report is operated in the same maner as the analog history report shown on screen **SCR-26b**. This report differs in the column headers. Only one header is printed for the entire report allowing easy inporting into spread sheet applications.

3 - Analog Calibration Information Report.

🖻 Repo	🖬 Report Edit View - sys\$1014.rpt								
Syste Cool	em Analog Calibration Inform LOCIC - Atlan	lation Repo Ita, GA	rt. (acalr	pt) Date:	03-26-2004, Page:	Time: 1	15:38:51		
Num. ====	Analog Description	Actual Value	Units	Zero Offset	Slope ======				
1	Disch Press Set-Point	145.00	Psig	0.00	0.000				
2	Discharge Pressure	132.80	Psig	0.00	0.000				
3	Disch Press Rise Rate	-0.51	Psi/Min	0.00	0.000				
4	+20F MPR-1 Vari-Level	21.30	% Probe	0.00	0.000				
5	+20F MPR-1 Suction	36.00	Psig	0.00	0.000				
6	+20F MPR-1 Pump Diff	59.00	Psid	0.00	0.000				
7	+20F Rise Rate	0.00	Psi/Min	0.00	0.000				
8	-25F LPR-1 Vari-Level	19.60	<pre>% Probe</pre>	0.00	0.000				
و	-25F LPR-1 Suction	3.50	Psig	0.00 -	[0.000				
10	-25F LPR-1 Pump Diff	26.50	Psid	0.00	0.000				
11	-25F Rise Rate	-6.00	Psi/Min	0.00	0.000				
12	-35F ACC-1 Vari-Level	20.00	% Probe	0.00	0.000				
13	-35F ACC-1 Suction	0.00	Psig	0.00	0.000				
14	-35F ACC Rise Rate	0.00	Psi/Min	0.00	0.000				
15	EC-TR-1 Vari-Level	5.00	<pre>% Probe</pre>	0.00	0.000				



4 - System Alarms Activity Report.

D	Report Edit Vi	ew - sys\$101	16.rpt	
	System Aları	n Report.	(alrmrpt) Date: 03-26-2004, Time:	15:40:57
	Cool LOGIC		- Atlanta, GA	Page: 1
	Date	Time	Alarm Message	Ack. By
	811 - 786 - 9 ¹ 1900			
	03-26-2004	14:58:32	User (root) logged on via channel #02	
	03-26-2004	14:53:12	Alarm Panel Comm Loss	root
	03-26-2004	14:53:11	Switch To Pump 2 On -25F Recirculator	root
	03-26-2004	14:53:11	Pump Safety Fail 1 On -25F Recirculator	root
	03-26-2004	14:53:11	User (root) logged on via channel #01	root
	03-26-2004	14:53:04	System Restarted	root
	03-26-2004	13:50:22	Alarm Panel Comm Loss	root
	03-26-2004	12:18:48	Alarm Panel Comm Loss	root
	03-26-2004	11:54:47	User (root) logged on via channel #02	root
	03-26-2004	11:53:39	User (root) logged off via channel #02	root
	03-26-2004	11:41:29	User (root) logged on via channel #02	root
	03-26-2004	10:47:13	Alarm Panel Comm Loss	root
	03-26-2004	09:15:34	Alarm Panel Comm Loss	root
	03-26-2004	07:44:00	Alarm Panel Comm Loss	root
	03-26-2004	06:12:26	Alarm Panel Comm Loss	root
	03-26-2004	04:40:52	Alarm Panel Comm Loss	root
	03-26-2004	03:09:18	Alarm Panel Comm Loss	root
	03-26-2004	01:37:45	Alarm Panel Comm Loss	root
	03-26-2004	00:06:10	Alarm Panel Comm Loss	root



I

5 - I/O Device Reference Listing.

ħ	Report	t Edit Yiew -	sys\$1017.rpt				
	System	m I/O Cros	sref Report. (iorpt)	Date: 03-26-2004,	Time:	15:42:38)
	Cool 1	LOGIC	- Atlanta, GA			Page:	1
	I/0	Туре	Description				
	1 L	Input	ESTOP Button (Panel)		1		
	2	Input	Mercoid Cutout		1		
	3	Output	Shunt Trip		0		
	4	Input	ESTOP Switch (Remote 1		1		
	5	Input	ESTOP Switch (Remote 2		1		
	6	Input	ESTOP Switch (Remote 3		1		
	7	Output	System Alarm Strobes		0		
	8	Output	System Alarm Horns		0		
	9	Input	Alarm Horn Silence Sw.		0		
	10	Output	Ammonia Leak Alarm Rel		0		
	11	Input	Firebox Flow Switch		0		
	12	Output	Continous Fan Start		0		
	13	Input	EF-EC-5 Fan Aux		0		
	14	Output	Panel Fan		0		
	15	Output	Scrubber Start		0		
	16	Output	HLCO Override		0		
	17	Output	King Hot Gas Sol		1		
	18	Output	King Liquid Sol		1		
	19	Output	LPR-1 EPDL Sol.		0		
	20	Output	MPR-1 EPDL Sol.		0		
	21	Output	TR-1 EPDL Sol.		0		
	22	Output	#1 PDL from Evap		0		
	23	Output	Glycol Pump - Start		0		
	24	Input	Glycol Pump - Aux		0		
	25	Output	Glycol Pump - Start		0		
	26	Input	Glycol Pump - Aux		0		
	27	Input	Banana Glycol FS		0		
	28	Output	B-HE-1 LSV		0		
	29	Öutput	B-HE-1 SSV		0		
		0	Classed Design (******		· ·		

6 - Analog History Transfer Report.

🗄 Report Edit View - sys\$1008.rpt					
99999, TempLog, PRG, 14-NOV-01 .23:45, MAINT. ?. ?.	35.80,	50.92,	54.44.	35.54	
99999, TempLog, PRG, 15-NOV-01 ,00:30, MAINT, ?, ?,	35.80	49.17,	54.88	34.66	
99999, TempLog, PRG, 15-NOV-01 ,00:45, MAINT, ?, ?,	36.24,	49.61,	54.44,	35.10	
99999, TempLog, PRG, 15-NOV-01 ,01:00, MAINT, ?, ?,	36.68,	50.49,	54.44,	36.42	
99999, TempLog, PRG, 15-NOV-01 , 01:15, MAINT, ?, ?,	35.80,	50.49,	54.44,	35.10	
99999, TempLog, PRG, 15-NOV-01 , 01: 30, MAINT, ?, ?,	35.80,	50.92,	54.00,	34.22	
99999,TempLog,PRG,15-NOV-01 ,01:45,MAINT,?,?,	36.68,	50.49,	53.12,	34.22	
99999,TempLog,PRG,15-NOV-01 ,02:00,MAINT,?,?,	35.80,	50.92,	54.00,	34.66	
99999,TempLog,PRG,15-NOV-01 ,02:15,MAINT,?,?,	35.80,	50.49,	53.56,	34.22	
99999, TempLog, PRG, 15-NOV-01 ,02:30, MAINT, ?, ?,	37.12,	50.49,	53.56,	34.66	
99999,TempLog,PRG,15-NOV-01 ,02:45,MAINT,?,?,	35.80,	51.36,	53.12,	34.66	
99999, TempLog, PRG, 15-NOV-01 , 03:00, MAINT, ?, ?,	35.80,	50.92,	51.80,	34.22	
99999, TempLog, PRG, 15-NOV-01 , 03:15, MAINT, ?, ?,	35.80,	50.49,	51.80,	34.66	
99999, TempLog, PRG, 15-NOV-01 , 03: 30, MAINT, ?, ?,	36.24,	50.92,	51.80,	35.10	
99999,TempLog,PRG,15-NOV-01 ,03:45,MAINT,?,?,	35.80,	50.49,	51.80,	34.22	
99999,TempLog,PRG,15-NOV-01 ,04:00,MAINT,?,?,	36.24,	49.61,	51.80,	33.34	
99999,TempLog,PRG,15-NOV-01 ,04:15,MAINT,?,?,	36.24,	50.49,	51.80,	34.66	
99999,TempLog,PRG,15-NOV-01 ,04:30,MAINT,?,?,	34.92,	50.49,	50.49,	34.66	
99999,TempLog,PRG,15-NOV-01 ,04:45,MAINT,?,?,	43.27,	50.49,	50.49,	35.54	
99999,TempLog,PRG,15-NOV-01 ,05:00,MAINT,?,?,	46.35,	50.92,	50.49,	34.66	
99999,TempLog,PRG,15-NOV-01 ,05:15,MAINT,?,?,	37.12,	50.05,	50.49,	36.42	
99999,TempLog,PRG,15-NOV-01 ,05:30,MAINT,?,?,	35.80,	50.49,	50.05,	40.38	
99999,TempLog,PRG,15-NOV-01 ,05:45,MAINT,?,?,	36.24,	50.05,	50.05,	42.57	
99999,TempLog,PRG,15-NOV-01 ,06:00,MAINT,?,?,	35.80,	50.05,	50.05,	35.98	
99999,TempLog,PRG,15-NOV-01 ,06:15,MAINT,?,?,	35.80,	50.92,	50.05,	34.22	
99999,TempLog,PRG,15-NOV-01 ,06:30,MAINT,?,?,	36.68,	50.92,	48.29,	35.10	
99999,TempLog,PRG,15-NOV-01 ,06:45,MAINT,?,?,	35.80,	50.05,	48.73,	35.98	
99999,TempLog,PRG,15-NOV-01 ,07:00,MAINT,?,?,	36.24,	49.61,	47.85,	35.10	
99999,TempLog,PRG,15-NOV-01 ,07:15,MAINT,?,?,	37.12,	49.17,	47.85,	33.34	
99999,TempLog,PRG,15-NOV-01 ,07:30,MAINT,?,?,	37.12,	50.49,	47.85,	35.54	
99999,TempLog,PRG,15-NOV-01 ,07:45,MAINT,?,?,	36.24,	50.05,	48.29,	34.22	
99999,TempLog,PRG,15-NOV-01 ,08:00,MAINT,?,?,	36.68,	50.05,	47.85,	35.10	
99999,TempLog,PRG,15-NOV-01 ,08:15,MAINT,?,?,	35.80,	50.05,	47.85,	35.54	
99999, TempLog, PRG, 15-NOV-01 ,08:30, MAINT, ?, ?,	38.00,	50.05,	48.29,	34.22	
99999, TempLog, PRG, 15-NOV-01 ,08:45, MAINT, ?, ?,	36.68,	50.49,	48.29,	34.22	
99999, TempLog, PRG, 15-NOV-01 ,09:00, MAINT, ?, ?,	36.24,	50.49,	47.85,	35.54	
99999, TempLog, PRG, 15-NOV-01 , 09:15, MAINT, ?, ?,	35.80,	50.49,	48.29,	34.22	
99999, TempLog, PRG, 15-NOV-01 , 09:30, MAINT, ?, ?,	35.80,	50.49,	49.17,	33.34	
99999, TempLog, PRG, 15-NOV-01 , 09:45, MAINT, ?, ?,	35.80,	50.49,	50.05,	33.34	
99999, TempLog, PRG, 15-NOV-01 , 10:00, MAINT, ?, ?,	35.80,	51.36,	50.49,	35.54	
99999, TempLog, PRG, 15-NOV-01 , 10:15, MAINT, ?, ?,	36.24,	49.61,	50.05,	34.22	_
provide Treating BBC IF NON OI 10.00 WATHER 0.0	00 9F	FO OF	F1 06	04.00	

Console View - Lab System Interl OGTC Data Format Analog History R	enorting Utility Version 1 0
Interlogie bata ronnat Analog mistory k	cporting others. Version, 1.0
This Report Sends Data Only Report	In Column Format!
Enter Number Of Signals To Print: $f 1$	(Uр то 8)
Enter Signal 1 Number: 2	(Discharge Pressure)
Mon. Day. Year Ho	ur Min.
Starting - 🔤	(Zero Month To Cancel.)
Enaing	

8 - Analog History Recovery Report (by record numbers).

_									
G	Report Edit Vi	iew - sys\$102	0.rpt						
	InterLOGIC	Systems Ana	log Signal Hist	tory Repo	rt. (ahistrp	t)	Date:	03-26-2004	. Time: 15:54:26
	Cool LOGIC	- ,	- Atlanta.	GA					Page: 1
					Panel Temp	Ambient Te			
	Date	Time			•	шр			
	02-04-2004	20:45:00	0.000	0.000	79.638	60.495			
	02-04-2004	22:00:00	0.000	0.000	79.638	60.495			
	02-04-2004	23:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	00:15:00	0.000	0.000	79.638	60.495			
	02-05-2004	01:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	02:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	03:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	04:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	05:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	06:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	07:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	08:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	09:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	10:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	11:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	12:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	13:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	14:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	15:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	16:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	17:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	18:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	19:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	20:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	21:00:00	0.000	0.000	79.638	60.495			
	02-05-2004	22:00:00	0.000	0.000	79.638	60.495			~
	0Z-05-2004	Z3:00:00	0.000	0.000	79.638	60.495			Ţ
	02-06-2004	00:15:00	0.000	0.000	79.638	60.495			
	02-06-2004	01:00:00	0.000	0.000	79.638	60.495			
	102-06-2004	12.10.00	U. 00 0	U 000	29.638	60.495			



(8) Memory/I/O Display Utility:

NOTE: This section is used for the InterLOGIC Control System program for troubleshooting only and should not be accessed by operators during normal conditions.

Console View - Lab System	1			<u></u>	
InterLUGIC Memory Disp	ιαγ υτι Πι	ty. vei	rsion. I.V	ACCTT	
Address Hex Dullp	1 5 6 7	8 9 A R		0173456789ARCDEE	
0008 · 00000000 - DOE 700E0	D0E700E0	C3E200E0	D0F700F0	VI25450765ABCDEP	<v>ata</v>
0008:00000010-D0F700F0	54FF00F0	088000F0	D0F700F0	ΤΤ	ZOSwit
0008:00000020-A5FE00F0	87E900F0	6FEF00F0	6FEF00F0		(d) die
0008:0000030-6FEF00F0	6FEF00F0	57EF00F0	6FEF00F0	00W0	<a>ddress
0008:00000040-140000c0	4DF800F0	41F800F0	D49700F0	MA	
0008:00000050-39E700F0	59F800F0	2EE800F0	D2EF00F0	9Y	** Display
0008:0000060-A4E700F0	F2E600F0	6EFE00F0	53FF00F0		
0008:000000/0-53FF00F0	A4F000F0	C7EF00F0	716600C0	Sqt	<pgup></pgup>
0008:00000080-D0E/00F0	D0E700F0	D0E700F0	D0E700F0		
0008:00000090-D0E700F0	D0E700F0	D0E700F0	D0E700F0		<pgdn></pgdn>
0008:0000000000-D0E700F0					Zille Manu
0008:000000c0-D0F700F0	D0F700F0	D0F700F0	D0F700F0		Корукеу
0008:000000D0-D0E700F0	D0E700F0	D0E700F0	D0E700F0		(Dn)keu
0008:000000E0-D0E700F0	D0E700F0	D0E700F0	D0E700F0		(Diring)
0008:000000F0-D0E700F0	D0E700F0	D0E700F0	D0E700F0		<m>onitor</m>
0008:00000100-59EC00F0	D5EF00F0	65F000F0	717800c0	Yeqx	
0008:00000110-D0E700F0	D0E700F0	F5EF00F0	DOE700F0		
0008:00000120-D0E/00F0	DUE/00F0	DUE/00F0	DUE/00F0		
0008:00000130-D0E/00F0	D0E/00F0	D0E700F0	D0E/00F0		
0008:00000140-6FEF00F0	DUE/00F0	DUE/00F0	DUE/00F0	0	
0008:00000150-D0E700F0	DUE/UUEU	DUE/UUEU	DUE/UUEU		
0008:00000170 D0E/00F0	D0E700F0	D0E700F0	D0E700F0		
0008.00000170-00270040	000000000	000000000	000000000		
0008.00000190-00000000	000000000	000000000	000000000		
0008.000001A0-D0F700F0	D0F700F0	D0F700E0	D0F700F0		
0008:00000180-D0F700F0	140000c0	D0F700F0	D0F700F0		
00000000000000000000000000000000000000	2,0000000	202.0010	002,0010		
Enter Start Addres	ss To Disp	olay: <mark>8</mark>	1		
Enter Single Chara	acter Comr	mand.			
On-line Using Network Adaptor.					
	,			,	111

Selection 1 displays all memory that is used by the InterLOGIC Control System program.

NOTE: This section is used for troubleshooting purposes and should not be accessed by operators during normal conditions.



Selection 2 displays the memory addresses being used by the InterLOGIC Control System program.

NOTE: This section is used for troubleshooting only and should not be accessed during normal operating conditions.



This option allow the server date and time to be changed by the operator. When the date or time is changed, the systemschedule is terminated and resubmitted.

View - Lab Syster	n 	
rocess Disp]	ays	recimologies
<f1></f1>	- Evaporator Maintenance.	<esc>ape</esc>
<f2></f2>	- Engine Room Startup Information.	This Menu.
<f3></f3>	- System Temperature Schedules.	
<f4></f4>	- System Vessel (Sub-System) Information.	
<f5></f5>	- Condenser Control Information.	
<f6></f6>	- Purger Control Information.	
<f7></f7>	- Compressor Control Information.	
<f8></f8>	- Alarm Call Number Maintenance.	
<f9></f9>	- Auxiliary Systems Menu Maintenance.	

(11) System File Maintenance: The system file maintenance menu is broken down into nine utility groups and displays information of the system set up for each group. In the following pages each group item is described with a sample screen. To select a program group, enter the group number in the edit box and press the enter key or press the left mouse button on a desired group number.

Section II

Group # Description 120F Ice Cream PH1 220F Ice Cream PH1 320F Ice Cream PH1 420F Ice Cream PH1 510F Freezer PH2 610F Freezer PH2 710F Freezer PH3 1010F Freezer PH3 1010F Freezer PH3 1110F Freezer PH3 1210F Freezer PH3 13 + +34F Dairy/Deli PH4 14 - +34F Dairy/Deli PH4 15 - +34F Dairy/Deli PH4 16 - +34F Dairy/Deli PH4 17 - +34F Dairy/Deli PH5 18 - +34F Dairy/Deli PH6 20 - +34F Dairy/Deli PH6 21 - +34F Dairy/Deli PH6	Console View - La Refrige	ab System III III IIII LOGIC Pration Valve Group Editor
120F Ice Cream PH1 220F Ice Cream PH1 320F Ice Cream PH1 420F Ice Cream PH1 510F Freezer PH2 610F Freezer PH2 710F Freezer PH3 1010F Freezer PH3 1110F Freezer PH3 1210F Freezer PH3 13 - +34F Dairy/Deli PH4 15 - +34F Dairy/Deli PH4 16 - +34F Dairy/Deli PH4 17 - +34F Dairy/Deli PH4 18 - +34F Dairy/Deli PH5 19 - +34F Dairy/Deli PH6 20 - +34F Dairy/Deli PH6 21 - +34F Dairy/Deli PH6	Group #	Description
23 - +29F Variety PH7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	-20F ICe Cream PH1 -20F ICe Cream PH1 -20F ICe Cream PH1 -20F ICe Cream PH1 -10F Freezer PH2 -10F Freezer PH2 -10F Freezer PH3 -10F Freezer PH3 -10F Freezer PH3 -10F Freezer PH3 -10F Freezer PH3 +34F Dairy/Deli PH4 +34F Dairy/Deli PH4 +34F Dairy/Deli PH4 +34F Dairy/Deli PH6 +34F Dairy/Deli PH6
<pre>KESC>ape To Exit, KENTER> To Continue List, or Select Choice: Kenter</pre>	<esc>ape</esc>	To Exit, Center To Continue List, or Select Choice:

Button Access Sequence: Main Menu, F4, F1

(1) Evaporator Maintenance: This section of the system file maintenance displays a list of all valve groups and descriptions. To select a specific air unit, enter the group number in the dialog box or click left mouse button on the desired number the operator wishes to view. Detailed information on how to edit information that will be displayed while selecting a specific group is described on page SCR-5 in this manual.

NOTE: Only experienced operators should enter this section of the InterLOGIC Control System program. Any changes to a specific air unit/group could cause the InterLOGIC Control System program to operate improperly.

<D>efrost Time Setup: this section of the air units editor allows the operator to schedule defrost (via a program in the InterLOGIC Control System program) equally throughout a 24 hr. Period. It automatically sets defrost schedules from user entered information equally spacing times throughout a 24 hr. period.

NOTE: The operator still has the option to add/remove additional defrosts to specific air units. For more information on defrost scheduled times, refer to page **SCR-10**, Defrost Start Times.





Section II



Button Access Sequence: Main Menu, F5, F4, F2

(2) Engine Room Start Up Information: This section of the InterLOGIC Control System lets the operator customize the type of setup to be used to control the engine room, system discharge press., compressor staging, and purge point sequencing and timing. The Setup portion can be changed by selecting any of the items mentioned above. A Standard setup (STD) is part of the default setup of this program and is used in the original installation of your program. This Standard setup can be modified by the plant operator/administrator to fit the plants' operating conditions.

a) A Blank screen will appear when selecting this section, with one menu button <**?**> List Items. After selecting the item to be edited, a submenu will appear. This is described in detail on the following pages.

Note: Any changes to either of the following items in this section have to be activated before exiting this section. The operator can do this by selecting the #6 Button on the following submenu (Activate Current Selection at this Time).

CAUTION: Changing any information in the following selections could affect the operation of the InterLOGIC Control System and its efficiency.

Button Access Sequence: Main Menu, F5, F4, F2, Setup Code

Engine Room Setup Editor: This section will display a list of setups that can be selected by typing in the appropriate letters in the dialog box. After doing such, the next option menu will appear.

NOTE: *STD* is a standard setup and is used at the initial startup of your facility. Operators can add or remove other engine room setups. By adding a different engine room setup, the menu will display the new setup automatically in the above displayed list.
E Console View - Lab System InterLOGIC Refrigeration Engine Room Setup Editor.	
l Record(s) In File.	
Setup Code : STD	
Day Of Week To Activate : 0 - No Day Time Of Day To Activate : 00:00:00	
2 System Discharge Pressure: 145.00	
Change Compressor Staging Sequence.	
Activate Current Selection At This Time.	
Select Item: 📕 🔀 KEsc>ape For New Setup or -1 To Remove.	
On-line Using Network Adaptor.	1.

Button Access Sequence: Main Menu, F5, F4, F2, STD

In this section of the engine room editor, six specific items are displayed and can be modified by the operator.

<*l*>: **Day Of Week** to activate and time of day to activate: Allows the operator to set the day when he wishes this setup to actively control the engine room.

<2>: System Discharge Pressure: This set point controls the system discharge pressure and is also referred to on page SCR-14. If the setpoint is different from the current setpoint, the new value will become the new system discharge setpoint.

Items number three through six are described on the following pages.

Console View - Lab System			
InterLOGIC Refrigeration	Engine Room Setup Edito	r.	
InterLOGIC Refrigeration Comp. 01 System ID: HPR Comp. 02 System ID: HPR Comp. 03 System ID: HPR Comp. 04 System ID: HPR Comp. 05 System ID: LPR Comp. 06 System ID: LPR Comp. 07 System ID: ACC Comp. 08 System ID: ACC	Engine Room Setup Edito Mode: Level 01 Mode: Level 03 Mode: Auto Mode: Level 01 Mode: Level 01 Mode: Level 02 Mode: Level 01 Mode: Level 02	r. Suct. SPT: 10.0 Type Suct. SPT: 0.0 Type	FS FS FS FS FS FS FS FS
≺Esc>ape Select ⊄	Compressor:		

Button Access Sequence: Main Menu, F5, F4, F2, STD, 3

<3> Compressor Staging Sequence: This section displays the current setup and starting and stopping sequence of all system compressors. The following information is displayed on this screen: compressor ID #, cuction cet point, mode, system ID and type of compressor.

The Compressor ID # and type of compressor are only used for reference and not for control purposes. The suction set point is a reflection of the current suction set point of the compressor which is described in detail on page **SCR-27** in this manual.

Mode: This section describes the actual level or starting sequence of each individual machine as they are staged in respect to vessel ID #. The following is a brief example and Theory Of Operation of this section.

Example: Your engine room consists of two vessels.(V-1 is for low stage vessel and V-2 as high stage vessel) and the system has six compressors. Two compressors are boosters and four are high stage compressors. The following scenario could apply:

Comp 1 - Booster#1	Level#2	System ID: V-1
Comp 2 - Booster#2	Level#1	System ID: V-1
Comp 3 - High Stage Comp.#1	Level#3	System ID: V-2
Comp 4 - High Stage Comp.#2	Level#2	System ID: V-2
Comp 5 - High Stage Comp.#3	Level#4	System ID: V-2
Comp 6 - High Stage Comp.#4	Level#1	System ID: V-2

For the V-1 vessel, compressor 2 starts first with compressor 1 starting second. The number 2 compressor is the highest level on the V-1 vessel. For the high stage or V-2 vessel, compressor 6 is the first to start followed by compressor 4, then compressor 3 and finally compressor 5, etc..

The Stopping sequence is set to stop the last compressor that started and follow in respect to that sequence. In the level ID section, the operator can also define a selected compressor to be controlled by its own Micro Processor by entering the letter "A" in the level control section. Each System level ID must be in sequence in order to perform automatically. Also note that the compressor setup section has a high discharge pressure setpoint. This is to prevent any booster compressor from starting before the high stage suction pressure drops below it's setpoint. To change this setpoint, follow the instructions as described on page **SCR 51** to **SCR51b**. To add a compressor to the system (high stage or low stage), a vessel # and vessel ID in respect to the staging sequence has to be assigned to the new compressor . Example: To add a booster compressor , (which would become booster #3 in example above) simply add Booster #3 or Compressor #7 to Level#3 (which puts this machine as third in the starting sequence) and the Vessel ID : V-1 (Low stage).

Refrigeration Control Systems Application Manual

📑 Console View - La	ab System				
InterLOGIC	Refrigeration Ai	r Unit Setpoin	t Schedule E	Editor.	
Group #	Description	Tag			
1 -	-20F Ice Cream	PH1 EV-1			
2 -	-20F Ice Cream	PH1 EV-2			
3 -	-20F Ice Cream	PH1 EV-3			
4 -	-20F Ice Cream	PH1 EV-4			
2 -	-10F Freezer PH	12 EV-5			
<u>6</u> –	-10F Freezer PH	12 EV-6			
/ -	-10F Freezer PH	EV-/			
<u>8</u> –	-IUF Freezer PH	EV-8			
9 -	-IOF Freezer PH	13 EV-9			
10 -	-IUF Freezer PF	13 EV-10			
11 -	-IUF Freezer PF	EV-II			
12 -	-IVF Freezer PF	13 EV-12			
13 -	+34F Dairy/Deli	PH4 EV-13			
14 -	+34F Dairy/Deli	PH4 EV-14			
10 -	+34F Dairy/Deli	PH4 EV-10			
	+34F Dairy/Deli	PH4 EV-10			
10 -	+34F Dairy/Deli	PHD EV-17			
10 -	+34F Dairy/Deli	PHD EV-10			
13 -	+34F Dairy/Deli	PH0 EV-19			
20 -	+34F Dairy/Deli	PH0 EV-20			
21 -	- +34F Datry/Deli	PH0 EV-21			
22 -	- +34F Dairy/Deli	PHO EV-22			
20 -	- H29F Variety PF	17 EV-20 17 EV-20			
24 -	- +29F Variety PF	17 EV-24			
20 -	- +29F Variety PF	17 EV-20 17 EV-26			
20 -	- +29F Variety PF	1/ EV-20			
-27 -	+J4F Dry Produc	LE PHO EV-27			
(50)	To Evit		ntinue List	or select	Choice:
<e2c>abe</e2c>	10 EXIL,	CENTERS TO COL	Tennue Erst,	, or select	
On-line Using Network (Adaptor.				11

Button Access Sequence: Main Menu, F5, F4, F3

System Temp. Schedule : This section allows the operator to define different temperature setpoints at different times of the day for each valve group/air unit defined in your InterLOGIC Control System. After selecting this option from your submenu, the listing of all group#/air units appears. Select the group/air unit you wish to set the time schedule. Next, the air unit scheduler will appear. To change this, press the $\langle E \rangle$ dit key and insert the time and temperature you wish to set.

Console View - Lab System						
InterLOGIC Refrige	ration Air	Unit Seto	nint Schedu	le Editor		
Unit: 3 Descri	ption: -20	- Ice Crear	n PH1	- EV-3		
Day	Change 1	Change 2	Change 3	Change 4	Change 5	Change 6
Sunday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Time:	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Setpoint:	0.00	0.00	0.00	0.00	0.00	0.00
Monday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Time:	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Setpoint:	U.UU	U.UU	U.00	U.UU	U.UU	U.00
Tuesday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Setpoint:	00:00:00	00.00.00	00:00:00			
Wednesday Cond:	Tnactive	Tnactive	Tnactive	Tnactive	Tnactive	Inactive
Time:	00.00.00	00.00.00	00.00.00	00.00.00	00.00.00	00.00.00
Setpoint:	0.00	0.00	0.00	0.00	0.00	0.00
Thursday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Time:	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Setpoint:	0.00	0.00	0.00	0.00	0.00	0.00
Friday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Time:	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Setpoint:	0.00	0.00	0.00	0.00	0.00	0.00
Saturday Cond:	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
Inme:	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Setpoint:	0.00	0.00	0.00	0.00	0.00	0.00
Select Time Sl	ot With Ar	row Keys, ·	<e>dit Posi</e>	ition, or 🗸	<esc> For M</esc>	lenu.
On-line Using Network Adaptor.						li.

Button Access Sequence: Main Menu, F5, F4, F3, VG#

When the operator selects a valve group, the temperature schedule is displayed. This screen allows the operator to assign up to 6 temperature change times for each day of the week.

Console Yiew - Lab System	
Refrigeration (Sub-System) Definition File Editor.	
System File Quick Reference.	
ACC-135F Accumulator	
HPRI - $+20F$ Recirculator	
LPR125F Recirculator	
CEnters For Next Pade or CEssage To Select.	
On-line Using Network Adaptor.	1

Button Access Sequence: Main Menu, F5, F4, F4

This section of the setup program defines all the system vessel information, high-level, operating level, low-level, pump aux., and nput/output points. To view each vessel setup, the vessel code, as listed in the above shown example, must be entered into the edit box or click the left mouse button on the desired vessel code.

A description of the vessel setup is shown on the following page.

EConsole View - Lab System III X Refrigeration (Sub-System) Definition File Editor.
4 Vessels(s) Type = ** General Accumulator * System Id : ACC-1
<pre>KF1> Vessel Name : -35F Accumulator KT>ype</pre>
(F2) Transfer Valve I/O : 601 POffHL: No VGOffHL: No
CF3> Liquid Level Analog Number : 12 Variable Level
Vessel Analog #s - Vessel : 13 Cycles : 0 Rate : 14
(F5) Float I/O Numbers : Hi(53), Alr(0), Op2(0), Op1(0), Low(0)
CF6> Liquid Feed Valves: Op2(0), Op1(0)
<pre>Keen And And And And And And And And And An</pre>
<pre>KF8> Transfer Tank I/O Numbers</pre>
Tank 1 Tank 2 Ctl/Flt/Sec/Typ Ctl/Flt/Sec/Typ 0 0 0 AN 0 0 0 AN Ana ID: 0 Ana ID: 0
Tags:
Select Edit Item.
<pre><esc>ape</esc></pre> <pre></pre>
On-line Using Network Adaptor.

Button Access Sequence: Main Menu, F5, F4, F4, Select Vessel

The **Vessel Definition Editor** allows the operator to edit vessel information to the respective I/O numbers in the InterLOGIC Control System program.

NOTE: Only experienced operators should edit any information on this screen. Entering the wrong information could cause the InterLOGIC Control System to operate improperly and could cause damage to the system's equipment. Operators must refer to the I/O manual for device assignments.

Process Automation

Console View - Lab System
4 Vessels(s) Type = ** Recirculator ** System Id : LPR1
<pre> Vessel Name : -25F Recirculator</pre>
(F2) Transfer Valve I/O : 19 POffHL: No VGOffHL: No
(F3) Liquid Level Analog Number : 8 Variable Level
<pre>Vessel Analog #s - Vessel : 9 Pump : 10 Rate : 11</pre>
(F5) Float I/O Numbers : Hi(45), Alr(0), Op2(0), Op1(0), Low(0)
CF6> Liquid Feed Valves: Op2(0), Op1(46)
<pre> Number Of Pumps : 2 Lead : 1 Force I/O# : 0</pre>
Pump I/O Numbers Pump 1 Pump 2 Pump 3 Ctl//fv/Prs/Typ Ctl//fv/Prs/Typ Pump 3 Pump 4 Pump 3 Pump 3 Pump 3 Pump 3 Pump 4
47 48 0 AN 50 51 0 AN 0 0 0 AN Safety: 49 Safety: 52 Safety: 0 Tags: EC-PU-3 EC-PU-4
Select Edit Item. <pre></pre>
On-line Using Network Adaptor.



Console View - Lab System	
Retrigeration (Purging System) Definition File Editor.	
Enter Purger Device I/O Information In Sequence Order From Top To Bottom On List !	
Seq.Device I/OSecondsSystem Description1 644 600 0, ECI South Purge3 646 600 0, ECI North Purge4 647 600 0, ECI West Purge5 648 900 0, Receiver Purge600** Not Used **700** Not Used **800** Not Used **900** Not Used **1000** Not Used **1100** Not Used **1300** Not Used **1400** Not Used **1600** Not Used **	
On-line Liking Network Adaptor	

Sonsole View-Lab System Refrigeration (Compressor) Dev	Finition File Editor.
Refrigeration (Compressor) Der Current Compressors Defined 1 - EC-C-1 High Stage 2 - EC-C-2 High Stage 3 - EC-C-3 High Stage 4 - EC-C-4 High Stage 5 - EC-C-5 Low Stage 6 - EC-C-6 Low Stage 7 - EC-C-7 Low Stage 8 - EC-C-8 Swing 9 - N/A 10 - N/A 11 - N/A 12 - N/A 13 - N/A 15 - N/A 16 - N/A	finition File Editor. d For System: 17 - N/A 18 - N/A 19 - N/A 20 - N/A 21 - N/A 22 - N/A 23 - N/A 24 - N/A 25 - N/A 26 - N/A 27 - N/A 28 - N/A 29 - N/A 30 - N/A 31 - N/A 32 - N/A
Select Compressor To Edit	: <esc>ape To Menu.</esc>

Button Access Sequence: Main Menu, F5, F4, F7

Compressor Control Information Editor displays a list of all compressors assigned to the InterLOGIC Control System. To edit information on a specific compressor, enter the compressor number in the edit box or click the left mouse button on the compressors to be edited.

CAUTION: The information described on the next screen is vital safety and operational information. It defines all I/O points/safeties for each specific compressor. Editing this information should only be done by experienced operators. Entering the incorrect information could cause the InterLOGIC Control System to operate improperly and could cause damage to your equipment.

Refrigeration Control Systems Application Manual

Console View - Lab System	Definition File Editor
Unit ID Name	Load Control I/O Runtime 0.0 Hrs.
1 EC-C-1 High Stage Safetys HDT 0 HOT 0 LOP 0 LSP 0 HDP 0 Reset: 0	0 Start 0 AUX 0 0 Load 1 0 0 Load 2 0 0 Load 3 0 0 Load 4 0 0 Total Loading %
Graphic Name: frdb Compressor HP: 687 Motor FLA: 743.0 Safety C/O Output: 97 Analog Storage Base: 240 Manufacturer Code: FS Comp ID: 1 Status I/O: 0	VFD Ctrl: 748 VFD Monitor: 31 HiDischVal: 190 SysAnalog: 2 Discharge Pressure Disch. Start Inibit 95 Lbs. Minimum Loading % 5 Minimum Load Run Time: 120 Sec. Anti-Recycle Status Input: 0
<esc>ape <c></c></esc>	ange Information <r>eset Runtime</r>
On-line Using Network Adaptor.	

Button Access Sequence: Main Menu, F5, F4, F7, Select Compressor ID

The information on the screen shown above identifies all related I/O points to the appropriate control functions it displays, run time, basic compressor information, and vital safety I/O points. Every section described on this screen can be edited by pressing the <C> hange Information button. The operator can also reset compressor run time on the reset button.

CAUTION: Before changing any information in this segment, refer back to the original I/O layout manual provided by LOGIC Technologies, Inc.

NOTE: The high discharge value for booster compressors is described in example page **SCR-48c**.

This is used to inhibit the starting of the compressor until the desired discharge pressure is present. The analog signal may be assigned to a vessel pressure if the compressor is piped as a booster system. Minimum loading % is the percentage setpoint which starts the shutdown timer for the compressor. The time is entered as minimum load runtime in minutes.



Button Access Sequence: Main Menu, F5, F4, F8

Alarm Call Number Maintenance: This optional function is used if a voice card is installed in your InterLOGIC Control System. This allows the operator to record alarm messages in reference to actual alarms. The InterLOGIC Operating System will then dial a list of phone numbers, programmed by the operator, until the system program reaches a specific person. The person then may reset the existing alarm, entering a preprogrammed reset code. This is a special option of the InterLOGIC Operating System program and is desribed on the following pages.



Button Access Sequence: Main Menu, F5, F4, F8, <M>, <?>, Select Message#

This section of the voice alarm call setup defines the type of alarms. <1> contains the description that will be displayed on the system alarm screen, <2> the file the voice message is stored in, and <3> the list of persons that will be called if the alarm occurs. This section may be setup to contact up to 10 numbers for each type of alarm recorded. To setup a list of call numbers refer to the next page



Button Access Sequence: Main Menu, F5, F4, F8, <M>, <P>hone, <?>, Call

Number

This section allows the operator to define specific contacts for the voice alarm message system.

- <*l>* Telco Number: Defines the phone number for the individual to be contacted.
- <2> Call Identification: Describes the contact.
- *<3>* Acknowledge PIN: Is the code used to acknowledge alarm by individual contacted.

Note: PIN# is operator defined and should be unique for each call identification.

<4> System user name decribes the user code that will be displayed on the alarm screen upon acknowledgement of the alarm for informational purposes.



Button Access Sequence: Main Menu, F3

Auxiliary System Menu Maintenance: This area of the InterLOGIC Control System program is used to customize the auxiliary menu (button #4 on the Main Menu). This section allows the operator to customize special procedures to be accessed and used. The following page will give an example of installed auxiliary menus.

When selecting the auxiliary system menu maintenance option, a blank screen will appear. The operator can then enter the name of the auxiliary menu he wishes to edit. A list of auxiliary menu items can also be displayed by pressing <?> list items button or entering the question mark symbol in the dialog box.

Upon selecting a menu item, the menu edit screen appears.



Button Access Sequence: Main Menu, F3, Name Of Auxiliary Menu

The menu editor defines the auxiliary menu selected. The operator can edit, add, or remove any information on this screen.

CAUTION: Changing/editing any information in this section of the InterLOGIC Control System program should only be done by experienced operators. Changing/editing any information can result in the improper operation of the auxiliary menu option or the system.

Item 1 is the menu description to identify the selection on the menu. Item 2, the security level, blocks users with privilege levels lower than specified from using the selection. Item 3, system type, identifies if the entry runs a program or connects to a remote server via telephone or channel connections. Item 4 selects the startup procedure for entry. Items 5 & 6 specify connection channel and baud rate if not a program system type.





Button Access Sequence: F11 On Main Menu

(F11) Logoff/Change User: This menu option allows the operator to logoff the main screen or to change users. Each operator should logoff after completing their task in the InterLOGIC Operating System. This section of the InterLOGIC Operating System is part of the security option described in detail on page SCR29. After operators select the F11 button on the main menu, the security logon window will appear. Any registered operator can logon this window and reenter the operations described in this manual.

Console View - Lab Sy	stem	
Alarm Tran	saction History	
Date Time	Alarm Message	Ack. By
04-14 15:38: 04-14 14:06:	29 Alarm Panel Comm Loss 58 Alarm Panel Comm Loss	
04-14 12:35: 04-14 11:03:	24 Alarm Panel Comm Loss 51 Alarm Panel Comm Loss	4
04-14 09:39: 04-14 09:38: 04-14 09:32:	34 User (root) logged on 37 User (root) logged off 29 User (root) logged on	via channel #02 via channel #02
04-14 09:32: 04-14 09:32:	18 Alarm Panel Comm Loss 11 System Restarted	
04-13 13:04: 04-13 11:33: 04-13 10:01:	45 Alarm Panel Comm Loss 12 Alarm Panel Comm Loss 39 Alarm Panel Comm Loss	
04-13 08:30: 04-13 06:58:	05 Alarm Panel Comm Loss 32 Alarm Panel Comm Loss 32 Alarm Panel Comm Loss	
04-13 05:26: 04-13 03:55:	59 Alarm Panel Comm Loss 25 Alarm Panel Comm Loss	
04-13 02:23: 04-13 00:52: 04-17 23:20:	52 Alarm Panel Comm Loss 19 Alarm Panel Comm Loss 45 Alarm Panel Comm Loss	
04-12 21:49: 04-12 20:17:	12 Alarm Panel Comm Loss 39 Alarm Panel Comm Loss	
04-12 20:17: 04-12 20:17:	37 User (root) logged on 31 System Restarted	via channel #01
<du></du>	<pgup> <pgdn></pgdn></pgup>	<a>cknowledge <esc>ape</esc>
n-line Using Network Adapt	or.	

Button Access Sequence: F12 On Main Menu

(F12) View Alarm Status: This section displays all current and past system alarms. The information displayed on this screen is as follows: Date and time of alarm condition, type of alarm, and the operator that acknowledged the alarm.

Failure and non-failure causing alarms (Example: System force fail compressor, E-Stop System shutdown, High Discharge Pressure, etc.) are displayed in **RED** text.

All acknowledged alarms or failures are displayed in **GREEN** text.

All system messages are diplayed in **YELLOW** text. System messages are displayed when warnings or actions the system corrected occur.

Engineering Console

Section III describes the installation and usage of the WIN32 Engineering Console used to access the dbc/OS Signal Server from remote locations.

INSTALL



Section III

The dbc/OS Engineering Console is released on CD due to the large volume of program files installed. Setup of the software is accomplished by inserting the CD and selecting the INSTALL program located in the root directory. Upon execution of the program, the above dialog box will appear. Select the top button and when asked for install options, select custom to install all programs. If you are updating from an older version of this software, you should select the normal installation procedure.

Optional programs included are the Adobe Reader and RAR Archive Utility. Adobe Reader is used by the console program to view online documentation such as this manual or system drawing sets. RAR is used to maintain backups of program on the server in a managable size.

If you do not have available any high definition graphic files, the Project Setup Data will contain demo graphic files and libraries. If you have purchased the high definition graphics package, your current graphical views and libraries will be installed.