

# Quantum™ HD Release Notes

OS Version 10.17

Released 7-14-2014

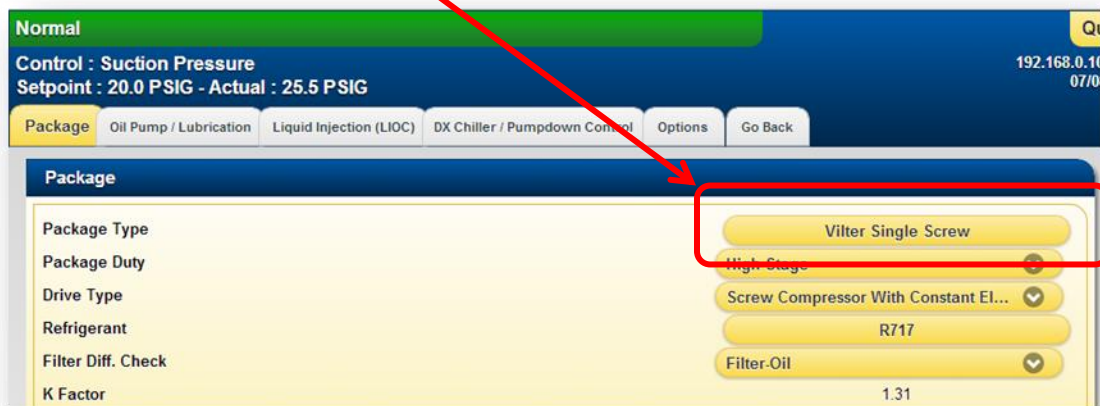
## ⚠ IMPORTANT

- To upgrade to OS version 10.17 directly the current OS version must be 10.13 through 10.16. To check the current OS version on the Quantum HD controller select *Menu > About*. The current OS version is listed as the 2<sup>nd</sup> line item “*Software Version.*”
- If the current version is 10.12 or earlier you must first upgrade to OS version 10.13 before upgrading to OS version 10.17. The upgrade files as well as upgrade instructions for both OS versions 10.13 and 10.17 are available at...  
[http://www.johnsoncontrols.com/content/us/en/products/building\\_efficiency/products-and-systems/industrial\\_refrigeration/frick\\_equipment/refrigeration\\_equipment/refrigeration\\_controls/quantum-hd-controls.html](http://www.johnsoncontrols.com/content/us/en/products/building_efficiency/products-and-systems/industrial_refrigeration/frick_equipment/refrigeration_equipment/refrigeration_controls/quantum-hd-controls.html)

OS Version 10.17 contains the following along with miscellaneous/minor bug fixes

### *Enhancements*

- Implemented control logic for the Vilter Single Screw (VSS) and added to the list of available package types for retrofit.



- Added control logic for the Mycom (Yosaku) PWM (pulse width modulated) valve used for Liquid Injection Oil Cooling on Mycom screw packages.
- Made the “Contacts” file tab on the Home page available in a read only format without logging in.

Cont'd

### **Changes**

- Changed the remote access logic to only allow a Running compressor to be stopped remotely only once the remote user has logged on to that controller. Once logged on to a running compressor the “Stop” button is activated and the compressor can be stopped remotely. That and any other action will then be tracked by the “User Action Tracking” feature.

### **Corrections**

- When a user enters a decimal point as part of a setpoint that is to be a whole number (integer, minutes, hours, etc.), a warning message to that effect will be issued.

## **OS Version 10.16**

**Released 6-27-2014**

### **⚠ IMPORTANT**

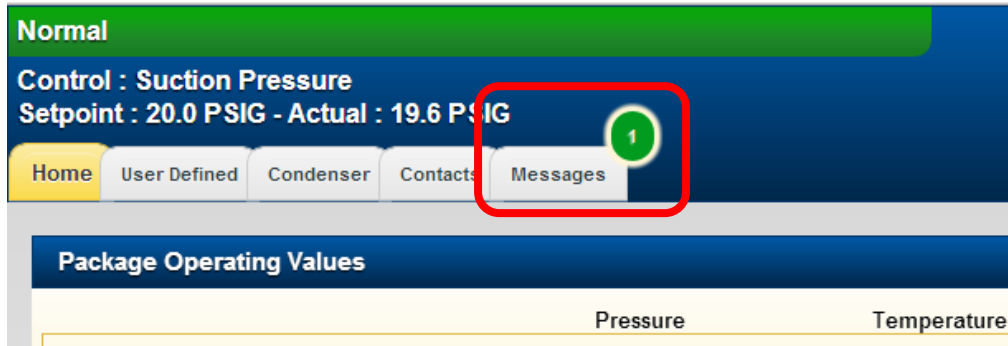
- To upgrade to OS version 10.16 directly the current OS version must be 10.13 through 10.15. To check the current OS version on the Quantum HD controller select *Menu > About*. The current OS version is listed as the 2<sup>nd</sup> line item “*Software Version.*”
- If the current version is 10.12 or earlier you must first upgrade to OS version 10.13 before upgrading to OS version 10.16. The upgrade files as well as upgrade instructions for both OS versions 10.13 and 10.16 are available at...  
[http://www.johnsoncontrols.com/content/us/en/products/building\\_efficiency/products-and-systems/industrial\\_refrigeration/frick\\_equipment/refrigeration\\_equipment/refrigeration\\_controls/quantum-hd-controls.html](http://www.johnsoncontrols.com/content/us/en/products/building_efficiency/products-and-systems/industrial_refrigeration/frick_equipment/refrigeration_equipment/refrigeration_controls/quantum-hd-controls.html)

OS Version 10.16 contains the following along with miscellaneous/minor bug fixes

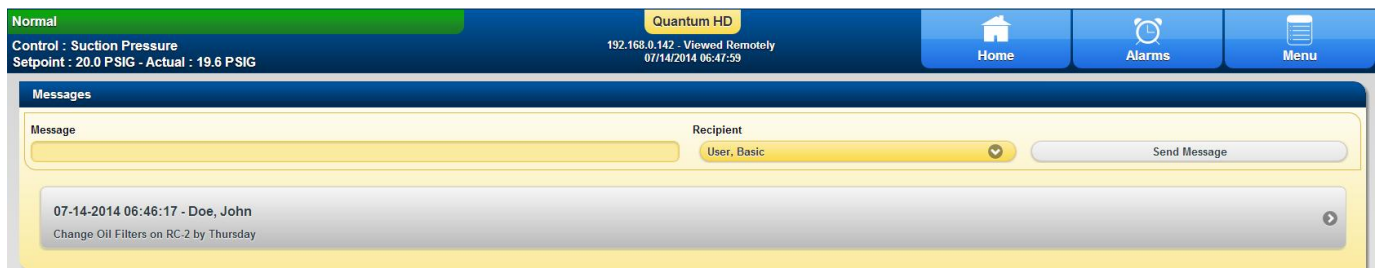
### **Enhancements**

- Includes the Maintenance Log in a System Data Download save file.

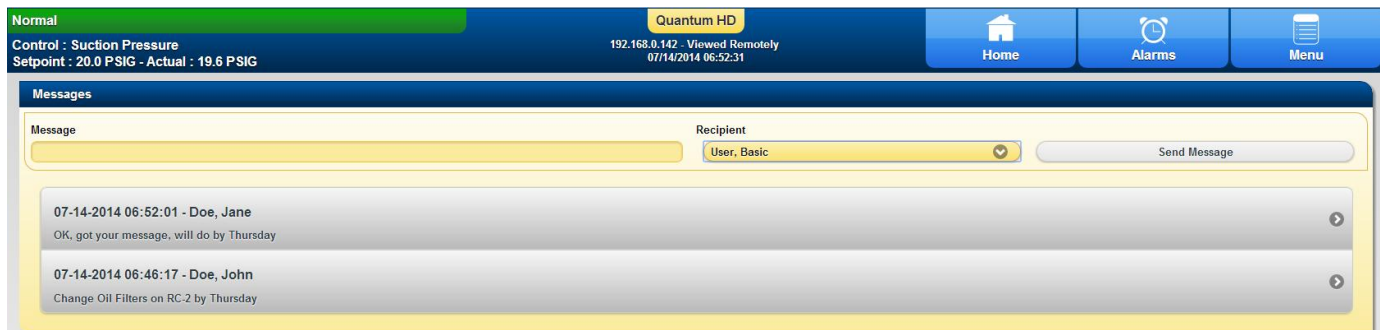
- A Message Board/Log was added and can be accessed by a file tab along the top of the Home Screen when logged into the Quantum HD. This message board/log can be used for one operator to send a message to another operator or to communicate items from one shift to another. If a message/s has been left for you from another operator a number representing the number of messages that you have will be seen next to the messages tab as shown below. Touch the Messages tab to access your messages.



On the message board the time dated message along with the senders name is displayed. This page can be used to reply to the original sender as well.

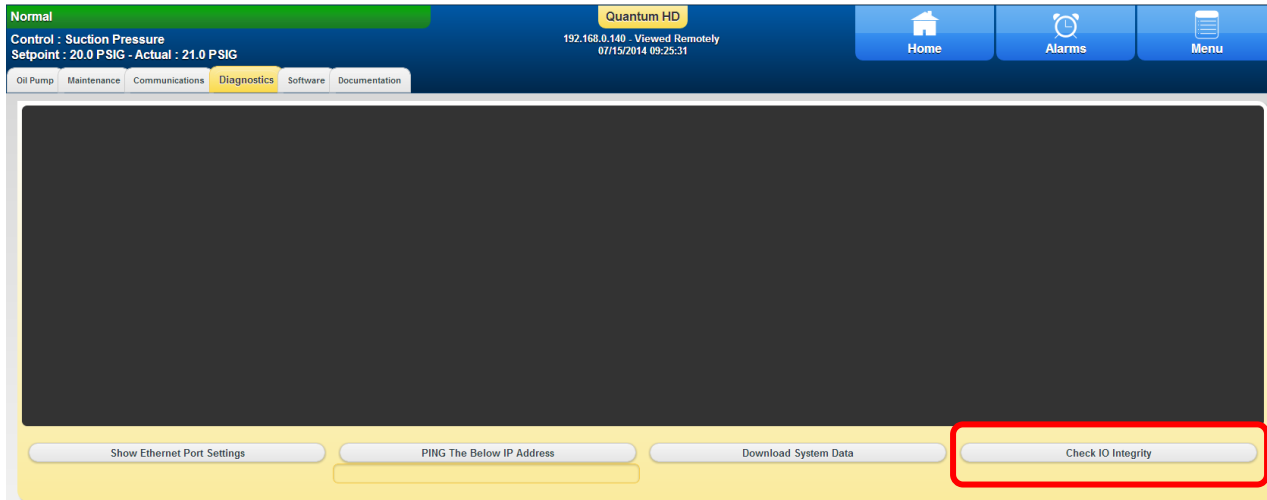


Replies are also logged on this page. The most recent outgoing or incoming message is listed at the top of the message board/log.

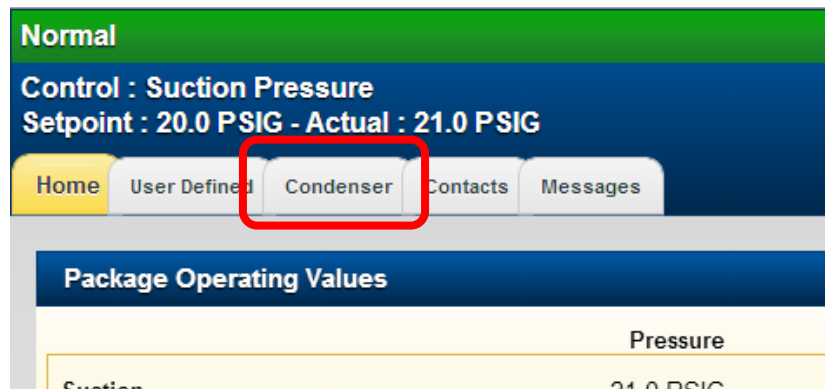


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- Added a Check I/O Integrity button to the Diagnostics page in Service to specify any I/O conflicts where a board and channel may have been configured for two or more purposes.



- When the Condenser control option is enabled, a Condenser tab is displayed on the Home page for quick access to the Condenser operating status.



### Changes

- Hide the Liquid Injection Oil Cooling, EZ Cool Valve Position if input channel is disabled.
- If Pump Type is set to Full Time, provide an Enable/Disable option for the Oil Level Shutdown. Default for this option is Disabled. If the Pump Type is not Full Time then the Oil Level Shutdown is always active.

Cont'd

- In the Restore Setpoints function, expand the “Restore Calibration Data (Yes / No)” question to the question below:

Cont'd

Restore Calibration Data (for the following...)

- Calibration Offset Data
- Digital I/O Configuration
- Analog I/O configuration

### **Corrections**

- Fixed issue to only allow capacity control modes that are enabled to be selected in the Mode Schedule (setback).
- Added sensor fault warning for Economizer Port pressure.
- When the Volume Slide section of the Calibration screen is hidden, also hide the Capacity Slide Travel setpoint. This would include the RXF, RXB, and all Other Manufacturer package types.

## **OS Version 10.15**

**Released 12-9-2013**

### **⚠ IMPORTANT**

- **You can only upgrade to OS version 10.15 directly if the current OS version is 10.13 through 10.14. To check the current OS version on the Quantum HD controller select *Menu > About*. The current OS version is listed as the 2<sup>nd</sup> line item “*Software Version.*”**
- **If the current version is 10.12 or earlier you must first upgrade to OS version 10.13 before upgrading to OS version 10.15. The upgrade files as well as upgrade instructions for both OS versions 10.13 and 10.15 are available at...**  
[http://www.johnsoncontrols.com/content/us/en/products/building\\_efficiency/products-and-systems/industrial\\_refrigeration/frick\\_equipment/refrigeration\\_equipment/refrigeration\\_controls/quantum-hd-controls.html](http://www.johnsoncontrols.com/content/us/en/products/building_efficiency/products-and-systems/industrial_refrigeration/frick_equipment/refrigeration_equipment/refrigeration_controls/quantum-hd-controls.html)

### **Enhancements**

- ***Menu > Service > Maintenance***  
***Added a feature where as a completed maintenance item or any other service related note can be entered into a Maintenance log. The entry is tagged by the name of the operator/technician as that name is setup in Security configuration. To access the***

**Maintenance log, touch Menu > Service and then touch Log on the left side of the page. Used must be logged in at the Service level to access the log.**

### **Changes**

- **Menu > Configuration > Communications > Map File**

**The File Selector buttons in the lower right corner of the Map File page were removed when accessing this page locally. These are only useful when accessing remotely.**

- **Menu > Configuration > Communications > Map File**

**Changed the descriptions for the File Selector buttons in the lower right corner when viewed remotely to...**

- **Upload Mapfile To Quantum HD**
- **Download Mapfile From Quantum HD**

### **Corrections**

- **Fixed an issue where the compressor speed was not being controlled correctly when the active capacity control mode was modes 2, 3 or 4 and the Remote Control Setpoint feature was enabled.**
- **Made improvements to the compressor sequencing operation**
- **Fixed an issue where as all setpoints files saved to a USB device would not be displayed when restoring setpoints, if there were more than 20 files saved locally to the operating flashcard**

## **OS Version 10.14**

**Released 8-21-2013**

### **⚠ IMPORTANT**

- **You can only upgrade to version 10.14 from version 10.13. To check the current software version select *Menu > About*. The current version is listed as the 2<sup>nd</sup> line item “*Software Version.*”**
- **The upgrade from ver. 10.13 to 10.14 may take several minutes**
- **If the current version is anything earlier than 10.13 the upgrade to 10.13 must be done first. The upgrade files as well as upgrade instructions for both versions 10.13 and 10.14 are available at [http://www.johnsoncontrols.com/content/us/en/products/building\\_efficiency/products-and-systems/industrial\\_refrigeration/frick\\_equipment/refrigeration\\_equipment/refrigeration\\_controls/quantum-hd-controls.html](http://www.johnsoncontrols.com/content/us/en/products/building_efficiency/products-and-systems/industrial_refrigeration/frick_equipment/refrigeration_equipment/refrigeration_controls/quantum-hd-controls.html)**

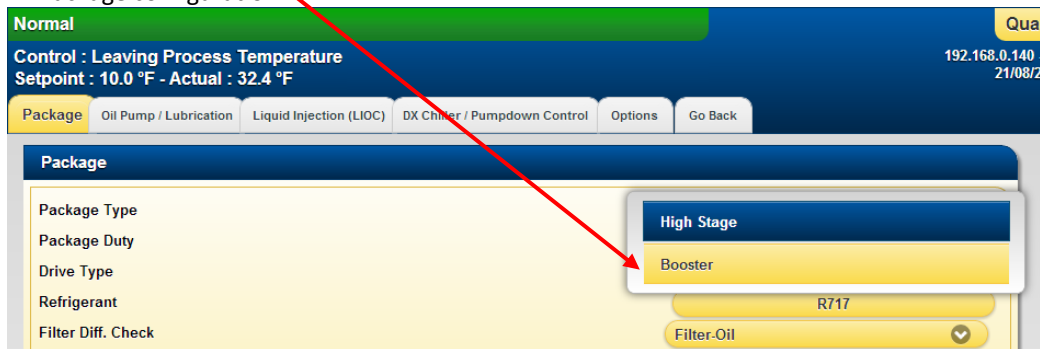
### **Enhancements**

- **Setpoint Management - Added the ability to save setpoints of a Quantum LX onto a USB thumb drive and restore them to a Quantum HD controller.**
- **When Compressor Mode is Auto and there is a 0 minute Start Delay, add a 5 second delay before the compressor starts; if there is a 0 minute Stop Delay, add a 5 second delay before the compressor stops.**
- **Allow the Compressor Sequencing control to use all 4 modes of capacity control instead of just modes 3 and 4.**

- Turn off the Oil Heater/s in the event of a Separator Temperature sensor fault.
- If there is an active shutdown, do not allow the oil pump to run in manual mode until the shutdown has been cleared.
- Default Setpoints (Manually) - Added logic to default setpoints at power up if jumper is installed on pins 5 & 6 of J1 on the communications interface board.
- Vyper Comms – Added command to flush the serial input and output hardware buffers on the Vyper before a command is sent to the Vyper.
- Vyper Diagnostics - Maintain files that log the communication packets sent to and received from the Vyper. These are downloaded with a System Data Download from the Quantum HD.
- Configuration -> Communications -> Mapfile -- If the user is accessing the panel remotely, allow them to download or upload the communications mapfile directly from their PC.

## Changes

- As part of going keyless, the "Alarm Silence" button has been moved from the keypad the Alarms page. It is just left of the "Clear All" button on the blue header bar.
- Ensure EZ Cool output will never be overridden (set to 0 %) due to low differential between discharge and suction pressure when the machine is configured as a Booster for Package Duty in Package configuration.



- If the Motor Amps sensor signal is CT and the compressor is not running, do not allow the Motor Amps input to be calibrated.
- When the Low Oil Pressure Maximum setpoint is changed, change the maximum value for the Low Oil Pressure Safety setpoints to the same value. Also changes the value of the Low Oil Pressure Safety setpoints to the same value if the present value is greater than the new maximum Oil Pressure setpoint.
- AB DF1 and Ethernet/IP protocols - When a command to write a register is received, only write it if the register's value is changing .
- Ethernet/IP protocol - Keep a count of good packets received, bad packets received, and responses sent.
- Balance Piston - Added an adjustable Balance Piston Pressure setpoint to the Balance Piston 2 Shutdown logic.
- Vyper Comms - Changed the timeout period to receive a response from the Vyper from .25 sec to .5 sec.
- Configuration > Package > Oil Pump / Lubrication – added a selection for Dual Pump Sequence if Dual Pump Control is enabled
- Calibrate Touch Screen – The “Calibrate Touch Screen” message and timer no longer appears when a re-boot is part of performing software maintenance, changing an IP address etc...This message now only appears when re-booting after the panel has been powered down.

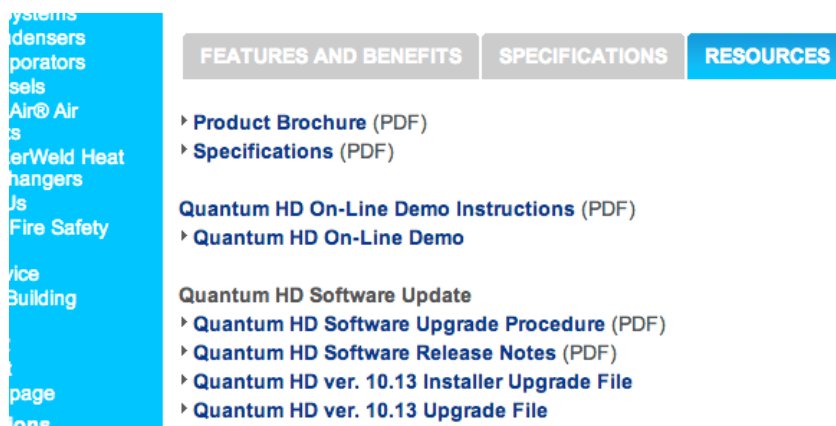
## Corrections

- If the pump is “ON” during starting and it is determined that the pump will be on when the compressor goes to running, do not turn the pump off during the transition from starting to running.
- When running with Dual Pump Mode enabled, monitor the Low Demand Pump Pressure safeties in the same way the Low Oil Pressure safeties are monitored to trigger a transition to the backup pump.
- Configuration > Package > Oil Pump / Lubrication – added a selection for Dual Pump Sequence if Dual Pump Control is enabled
- Fixed a issue with the Condenser Control wet bulb calculation when R22 is the selected refrigerant.
- Fixed an issue with Condenser Control logic where an output module was not coming on when it should.
- Modbus Protocols - Reset the server if runaway condition is detected in the server loop and the server stops responding to the client.
- Implemented new strategy for restoring setpoints. If the range, selection values, etc... for a setpoint changes, the setpoint value is not reset to the default.
- Calibration -> Pressure - Placed an “Out of Range” value in the offset field. If an offset is entered that exceeds the maximum offset value an “out of Range” message appears instantly.
- Reworked the Security setup whereas it was possible to change the Service level user to Basic or Operator, essentially deleting the service user. This can no longer be done.
- Web Server Port – when the web server port was changed to anything but 80, local panel navigation became impossible (remote navigation was still possible); this has been corrected.

## OS Version 10.13 Released 2-25-2013

### IMPORTANT

The upgrade to version 10.13 is a two step process. There are two files that need to be saved to the USB thumb drive, as shown below. Save both of these to the USB thumb drive. The upgrade process is the same but is repeated to do both the installer upgrade and the Software upgrade.



The screenshot shows a website interface. On the left is a blue sidebar with a list of menu items: systems, condensers, evaporators, seals, Air@ Air, s, erWeld Heat, hangers, Js, Fire Safety, vice, Building, page, ons. The main content area has three tabs: FEATURES AND BENEFITS, SPECIFICATIONS, and RESOURCES (which is highlighted in blue). Under the RESOURCES tab, there is a list of links: Product Brochure (PDF), Specifications (PDF), Quantum HD On-Line Demo Instructions (PDF), Quantum HD On-Line Demo, Quantum HD Software Update, Quantum HD Software Upgrade Procedure (PDF), Quantum HD Software Release Notes (PDF), Quantum HD ver. 10.13 Installer Upgrade File, and Quantum HD ver. 10.13 Upgrade File.



### **Enhancements**

- Added the User Action Tracking feature. This feature tracks the changes made by operators by their PIN number. To view this activity select Menu then User Actions.
- Added e-mail notification for shutdowns, warning and events. This can be structured so that only the users that need to get these notifications do. These notifications to various users are categorized by the users PIN number.

## **OS Version 10.12 Released 9-13-2012**

### **Corrections**

- Fixed the issue regarding response to the capacity command for VFD speed, when the Capacity Mode is Remote Comms or Remote I/O mode.

## **OS Version 10.11 Released 8-30-2012**

### **Changes**

- The Maximum Discharge Pressure High End has been defaulted to 380 PSIG

### **Corrections**

- Corrected the issue where when upgrading to ver 10.10 from an earlier OS version, the **Events** icon in the Menu appears altered

## **Version 10.10 Released 8-8-2012**

### **Enhancements**

- Added Capacity Unload Assist feature to control for RXF compressor types
- Added a "Force Unload for Capacity Unload Assist" message to the Home page
- Added Package Duty selection to the Configuration -> Package page. Select High Stage or Booster duty
- Added Demand Pump Logic selections to the Configuration -> Package -> Oil Pump/Lubrication page. Select between Oil Pressure Above Discharge or Oil Pressure Below Discharge. Default is (Oil Pressure Above Discharge).

### **Changes**

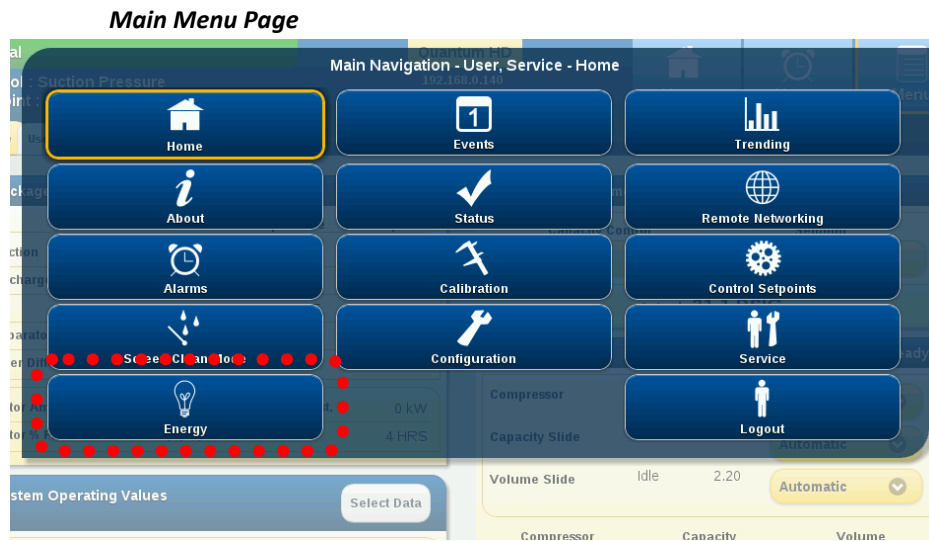
- In the EZ Cool Liquid Injection Oil Cooling (LIOC) control, the differential pressure override control to close the liquid feed solenoid is not active if the compressor duty is selected as Booster

- If the Low Vyper Coolant Temperature “Adjusted Shutdown Timer) is zero (0), set the Adjusted Shutdown value for the Low Vyper Coolant safety, equal to the Regular Shutdown value
- Added an Enabled/Disabled selection for the Low, Demand Pump Pressure safeties. It is defaulted as Enabled
- Changed logic to accept 30” Hg for a setpoint when 30” Hg is the minimum for the range.
- Initialize the Recycle Delay timer on power up only if the stored value of the Recycle Delay timer is non-zero
- Defaulted the Vyper Cooling Control Output to Analog Board 2, Output Channel 1
- Updated the conditional logic for the Capacity Slide Unload Assist on the Configuration -> Compressor page. If the compressor type is RXF, remove the “Rate of Decrease” setpoint.

## Version 10.03 Released 6-08-2012

### Enhancements

- Added “**Energy**” as a main menu selection item. The Energy section contains a Load Profile page. Additional “Energy” features/pages are in development and will be added.



- The **Load Profile Page** profiles the part load operation of the compressor. This profile provides real time data used to determine the return on investment for retrofitting a compressor with a variable speed drive. The Load Profile page (below) provides the capacity slide’s position by percentage, over time. Additional information provided by the Load Profile Page... number of profile days, total profile run hours, number of starts and the average operating suction and discharge pressure.

## Load Profile Page



- Added an **"Auto Login"** algorithm that logs an operator into a Quantum HD controller at the same level that they are logged into their central control system, when remotely accessing the Quantum HD from the central control system. This functionality also works when Remote Networking to a Quantum HD controller from another Quantum HD controller.
- Added an RDB Compressor Package Section to the Compressor Configuration page along with conditional logic for loading and unloading a step capacity rotary screw compressor.

### Changes

- Changed logic to automatically set the I/O board and channel when PHD vibration and temperature monitoring features are enabled.
- Re-arranged items on the Service > Communications page making the text on the buttons fully viewable.
- Changed the Economizer Pressure Setpoint to be displayed only when the pressure input is set to *"Fixed Pressure Setpoint"*.
- Changed logic to display a *"Calculated Minimum Drive Output"* value only when an acceptable combination of compressor package, oil and refrigerant is configured.
- Changed logic to display Low Suction Pressure Safeties only when the control input is set to something other than suction pressure.
- Changed logic to display the On and Off setpoints for *"DX Circuit control"* only when the DX Circuit control is set to *"DX Circuit on by Capacity Position"*.
- Changed logic to display the Recycle Delay Timer on the home page only when the Recycle Delay timer is enabled.
- Changed logic to not display Motor values on the home page when the drive type is set to Engine or Turbine.
- Changed logic to display Motor Kilowatts Est. as actual Motor Kilowatts when the drive type is selected as Vyper (RAM) or the corresponding I/O board and channel are set for Kilowatt Monitoring.

### ***Corrections***

- Corrected the Motor Kilowatts Est. reading on the home page. It was not displaying the correct value.
- Corrected the “*Remote Control Setpoint*” value for Capacity Control Mode 1. It was not being displayed correctly.
- Improved the decimal resolution for timers such as “*Recycle Delay*” that are used throughout the system.
- Corrected the issue where a “*browser search box*” would pop up if the manual load button is pressed when not on the home page.
- Corrected issue where the Compressor Model and Size were not being displayed correctly after being changed.
- Corrected what was shown on the Home page and the Calibration page with regard to capacity and volume based on the compressor package selection.
- Corrected High and Low “*Vyper Coolant Temperature*” Shutdowns to act as shutdowns instead of warnings.
- Control Process - write load profile data to the flash card every 4 minutes instead of every 4 seconds.
- Corrected the process of writing a negative data value to the Quantum HD controller, when using Allen Bradley, Ethernet IP protocol.

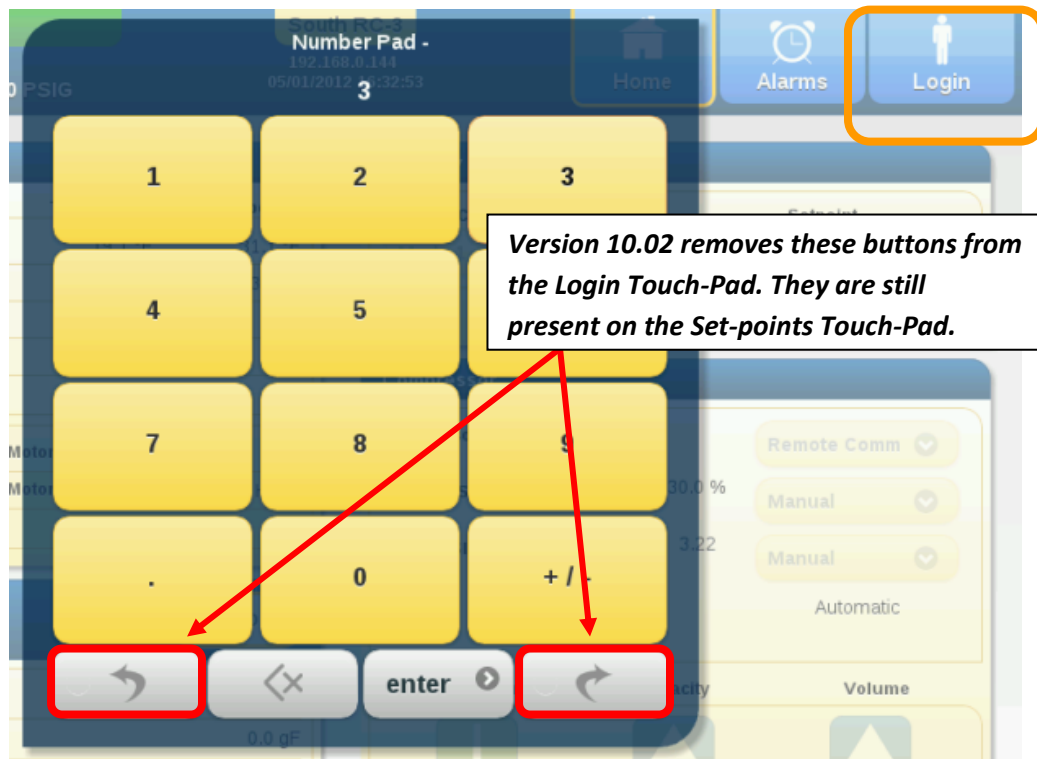
## **OS Version 10.02 Released 5-2-2012**

### ***Fixes***

1. Fixed issue where the touch screen navigation would lock up during the Login process if either the Forward or Back button is touched. These buttons are not needed for the Login function and have been removed.

See next page

## Login Touch-Pad



2. Fixed issue where the keypad could become non-functional after going through the factory test.

## OS Version 10.01 4-18-2012

### Enhancements

1. Sequencing - The Master compressor is now identified on the Sequencing Overview page.
2. Added the Software Release Date to the "About" page.
3. Added ***"With an Isopropyl Alcohol Based Glass Cleaner"*** to the wash me screen.

### Changes

1. Calibration - Changed the Sub-Navigation tab from "Motor Drive" to "Motor / Drive".
2. Made the colors of the Sub-Navigation Tabs and Side-Navigation Buttons consistent.
3. Changed the title of the Calibration > Outputs page from "analog\_output\_calibration" to "Analog Output Calibration"
4. Set the common default setpoints for all Proportional Integral Control the same.
5. Removed the option "None" from both the Real Time and Historical Trending selection lists.

## Fixes

1. Fixed functionality issues with the Remote Network page. Issues with manually adding panels, removing panels and automatically finding panels were corrected.
2. Fixed issue with the "Power Down Time" that occurred during the Daylight Saving Time transition.
3. Fixed issue that occurred when the capacity control channel text was too long. This would create a second line of text causing the home page to have a scroll bar.
4. Fixed the issue with the DBS Starter Info page loading.
5. Fixed the logic to not show the oil pump control box on the **Calibration > Capacity / Volume** page and the Home page when "No Pump" or "Shaft" is selected.
6. Improved the appearance of the I/O and Interface board listing on the About page and the **Status > IO Comms** page.
7. Repaired logic to show the User Defined name for an Auxiliary Analog channel in all places where it is displayed.
8. Fixed logic to display Vyper Coolant Temperature in the User Defined list of analog values.
9. Fixed issue whereas when the Sensor Type on the Configuration > Analog Auxiliaries page was selected as temperature and any setpoint was set as 0 (zero), the value would be displayed as a negative value.
10. Wrote logic to have the PI Control page automatically refresh when a Control input is changed
11. Wrote logic to have the Digital Aux. Outputs page automatically refresh when the analog input is changed. This allows the units to be updated when changing inputs.
12. Fixed dates on the Alarms and Events pages to reflect the correct date formatting.
13. Corrected places where DX Circuit Outputs were being labeled with a Dx instead of DX.
14. Fixed issue where the Capacity Control Channel was not being updated in the top of left of the screen when the Capacity Control Mode is changed.
15. Remote Networking - Added error handling logic to prevent getting stuck on a "404 Error" if the panel you are trying to view is not available. An error message will now appear if there is a problem.
16. Fixed the issue of the Output Percentage for Selected Output not showing a value when changing from and un-used channel to a used channel.
17. Fixed verbiage for **Leaving Process Temperature** and **Entering Process Temperature** when referring to these channels throughout all screens.
18. Set the common default setpoints for all Proportional Integral Control the same.
19. Calibration > Outputs - Fixed the issue of the Output Percentage for Selected Output not showing a value when changing from a non-configured channel to a configured channel.