YORK
BY JOHNSON CONTROLS

Service Information

File In/With:	SI0283 New 414
Equipment Affected:	YK with OptiView Control Panel
V.26 YK OptiView Chiller Control Panel	

GENERAL

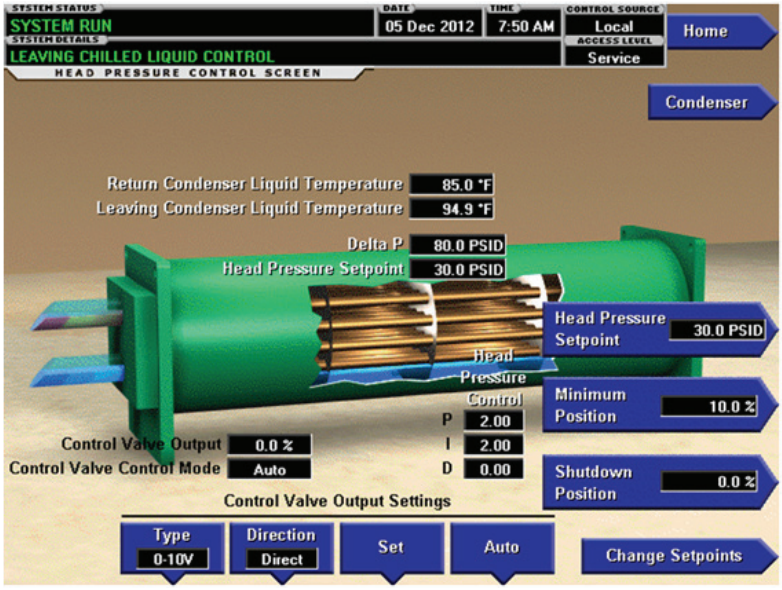
Beginning in April 2014, enhanced software will be supplied in new production YK chillers and replacement microboard kit 331-02430-601. This software is backward compatible to all previous YK chillers equipped with microboard 031-02430-000 or 031-02430-001. The enhancements are listed below.

The Panel Software version and program card part number is: C.OPT.01.26.308 (P/N 031-02474-001)

The EPROM BIOS Software Version: C.OPT.00.04 (P/N 031-02429-002)

Head Pressure Control Output

Two setpoint buttons have been added to the Head Pressure/Heat Recovery screen, “Minimum Position” and “Shutdown Position”. Access to this screen is available at Service level and above. User changes to these setpoints are recorded in the setpoints Report and the History Log.



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Work on this equipment should only be done by properly trained personnel who are qualified to work on this type of equipment. Failure to comply with this requirement could expose the worker, the equipment and the building and its inhabitants to the risk of injury or property damage.

The instructions on this service bulletin are written assuming the individual who will perform this work is a fully trained HVAC & R journeyman or equivalent, certified in refrigerant handling and recovery techniques, and knowledgeable with regard to electrical lock out/tag out procedures. The individual performing this work should be aware of and comply with all Johnson Controls, national, state and local safety and environmental regulations while carrying out this work. Before attempting to work on any equipment, the individual should be thoroughly familiar with the equipment by reading and understanding the associated service literature applicable to the equipment. If you do not have this literature, you may obtain it by contacting a Johnson Controls Service Office.

Should there be any question concerning any aspect of the tasks outlined in this bulletin, please consult a Johnson Controls Service Office prior to attempting the work. Please be aware that this information may be time sensitive and that Johnson Controls reserves the right to revise this information at any time. Be certain you are working with the latest information.

Product Technical Support

The Minimum Position is active when the condenser pump run contacts are closed which happens at chiller start at the end of pre-lube. The minimum will act as a maximum to the PID control if the Direction setpoint is set to Reverse. The Shutdown Position is active when the condenser run contacts are open which in the LCSSS is after coastdown and the SCR heatsink temperatures are below 105°F. All other starter types open the condenser pump run contacts at the start of coastdown.

Both settings have a minimum limit of 0% and a maximum limit of 100% with an initial default position of 0%.

	MINIMUM	MAXIMUM	DEFAULT
P	0	5	2
I	0	5	2
D	0	5	0

The PID reaction can be tuned using the Change Setpoints button and then selecting the P, I or the D parameter.

Increasing the P value or Decreasing the I value will speed up the rate of change of the valve signal.

MVVSD Power Fault Recovery / Catch A Spinning Load CASL

Power Fault Recovery is an option that is available on MVVSD drives. When the input power supply drops below 85% of nominal voltage overall, the MVVSD will deactivate the output to the compressor motor. The drive can maintain adequate bus voltage charge level for a power fault of up to 10 seconds long. During that 10 second period, the OptiView control panel will hold the condenser level control, PRV, VGD, and Hot Gas at the current commanded positions. If the input power is restored within 10 seconds, the condenser level control, PRV, VGD, and Hot Gas will be returned to automatic control. The VSD speed command will be set to the same or slightly less than the VSD speed command prior to the input power loss. After 10 seconds of input power loss, the MVVSD drive will generate an Input Power Supply fault.

If the input power is restored within 30 seconds, an enhanced quick start is initiated. In enhanced quick start, the condenser level control, PRV, VGD, and Hot Gas will be returned to automatic control and coastdown will be shortened and the chiller transitioned to run while the compressor is potentially rotating.

A Power Fault Recovery screen has been added that is accessible from the MVVSD screen and provides Power Fault Recovery Control indication and configuration.

The following settings are displayed on the Power Fault Recovery Screen:

PROGRAM SETTING	SCREEN	MODE	LOW LIMIT	HIGH LIMIT	DEFAULT
VSD Low Frequency Fault Time	Power Fault Recovery - Button 8	*	60 sec	120 sec	60 sec
CASL VSD Speed Percentage	Power Fault Recovery - Button 9	*	80%	100%	93%

* Visible in view mode, but only editable in Admin access level and above.

These setpoints have also been added to the Setpoints report and the History log in the MVVSD section.

The VSD Low Frequency Fault Time will adjust the amount of time that the VSD speed can be below the minimum speed. When Power Fault Recovery Control is not enabled, this setting will have no affect and the Low Frequency Fault will be the standard time of 25 seconds.

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Other Changes

1. Head Pressure control can now operate when a Heat Pump is in the cooling mode.
2. Bootup of the panel after power restoration on chillers with Quick Start, but no UPS:
   a. If coastdown is not complete, quick start proceeds as normal with a quick restart occurring within 30 seconds of the end of coastdown.
   b. If coastdown is complete, and the Time Since Coastdown completed is < 2 minutes quick restart is initiated. If the Time Since Coastdown is > 2 minutes, a Quick Normal Start (prelube and quick loading) is initiated.

   A quick restart without prelube is initiated for 30 seconds. To do a quick restart within this 30 second time period, the following must be true:

   - Oil Pressure > 25 PSID
   - VSD has completed precharge (Trigger SCR Output is enabled)
   - Chiller start signal is present (local or remote)
   - No faults/inhibits present
   - Chilled liquid flow is present

   For both of the above situations (a or b) if all of the above conditions are not met within 30 seconds, Quick Start will revert to a Quick Normal Start.

   If the Panel Switch is placed into the STOP/RESET position, Quick Start operation shall be cancelled and the next start will be a Quick Normal Start.
3. On the Sales Order Screen, the field descriptor has been changed for Tubes to Tubes Code.
4. The LCSSS communications has been changed for Modbus ASCII to Modbus RTU.

5. On heat pump-equipped YK chillers with a LCSSS, the condenser loop liquid is typically too hot to cool the SSS. In these applications the SSS is piped to the evaporator loop instead of the condenser loop. Therefore, instead of running the condenser liquid pump to cool the SSS, the evaporator liquid pump will be activated.

   The Evaporator Liquid Pump is turned on if any of the three phase heatsink temperatures is above 105 °F within 45 minutes of the last chiller stop. This provides quicker cooling of the heat sinks between chiller starts. Once the heatsink temperatures are all below 105 °F, the Evaporator Liquid Pump will not be turned on again until the next chiller start cycle.

6. The default value for Standby Lube has been changed from Disable to Enabled.
7. The setpoint changes logged into the security log when in Metric mode were not correct. This has been fixed.
8. Data Logging Enabled was not saved to BRAM and reverted to Disabled after a power failure. This has been changed to save the Data Logging setpoint during a power failure.
9. The Cursor Keys action has been changed to repeat every 150mS as long as the key is held in. This will make navigating Raptyr waveforms easier.
10. The COM2 port on the OptiView Control Panel used for Vyper has been changed to display No Parity.
11. The Unit Operating Code number 14 = “Unit Starting – MVVSD Startup – Drive Not Ready” has been added.
12. The Unit Safety Fault Code number 113 = “MVVSD – Excessive Shutdowns” has been added.
13. The surge map selection box could not navigate to the bottom row or rightmost column of the Surge Map. This has been fixed in this release.
14. The bug has been fixed that prevented the proper display of the Input Power when an IEEE 519 filter was present with a Vyper drive.
15. Corrected a bug that prevented proper operation of the Hot Gas while in Heating Mode of a Heat Pump.
16. Corrected operation of Smart Freeze when Data Display Mode is in Metric Mode.
17. Corrected bug to now log values in Metric when Data Display Mode is set to Metric.
18. Corrected bug that transmitted a 0 for the ACC surge Frequency Data Logging entry.
19. Corrected bug that displayed a Baseplate Temperature header regardless if the IEEE 519 filter is a Mod D or a Vyper drive.
20. Corrected bug that capped the Input and Output voltages for a MVVSD to 4500V when display was set to Metric.