YORK®
ES Service Information

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SI0186
New 308

Equipment Affected: YK Centrifugal Chillers

YK Centrifugal Chillers - Software Enhancements (Ver 18)

General

Beginning March 2008, 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 versions and Program Card part number is:

- NEMA 1-4 and CE chillers: C.OPT.01.18.307 (031-02474-001)

Liquid Cooled Solid State Starter – Motor Communications Protocol Setpoint

This software supports both YORK and MODBUS protocol versions of the serial communications between the Microboard and the Solid State Starter Logic/Trigger Board. Although this software version supports both protocols, the Logic/Trigger Board will not be converted to MODBUS capability until later in mid 2008.

In new production chillers prior to mid 2008, microboard COM 5 port (J15) communicates with the LCSSS Logic/Trigger Board (031-02001 or 031-02505) (TB2) using YORK protocol. In new production chillers beginning mid 2008, the microboard RS-485 COM 2 port (J13) will communicate with the Logic/Trigger Board (031-02505) (J14) using MODBUS protocol.

The protocol and motor drive type selection is made on the SETUP Screen, using SERVICE access level. When "SSS-Mod B" is selected as the MOTOR DRIVE TYPE setpoint, the MOTOR COMMUNICATIONS PROTOCOL setpoint is used to select either YORK or MODBUS protocol, as appropriate. The appropriate selection depends on the actual hardware/interface that is present as per above. As a guide, the starter Logic/Trigger Board is not scheduled to be converted to MODBUS capability in new production chillers until mid 2008. A Service Information Letter will be issued at that time defining the hardware/interface/setup requirements for MODBUS protocol.

Oil Pressure Safety – R22 Applications

When the refrigerant selection (microboard SW1-1) is set to "R22" and the Oil Pump Package (Setup Screen) is set to "Variable Speed", the "Oil-Variable Speed Pump-Setpoint Not Achieved" safety shutdown is not performed.

Medium Voltage VSD

11KV, 12.47KV and 13.8KV applications are supported.

"Oil-Low Temperature Differential" Cycling Shutdown

When the chiller has been shutdown for ≤ 30 minutes, a restart should be allowed when the oil temperature minus the condenser saturation temperature is ≥ 30ºF. In previous software version, this threshold was erroneously set to 40ºF.

“Leaving Chilled Liquid-Low Temperature” Shutdown Offset

The Low Temperature shutdown threshold is programmed as an offset below the LEAVING CHILLED LIQUID TEMPERATURE setpoint using the SHUTDOWN setpoint. In previous software versions, this value was displayed as the OFFSET on the upper right area of the Evaporator Screen. However, it did not always accurately reflect the actual offset being used by the software.

In this version, OFFSET will be replaced with EFFECTIVE OFFSET and will automatically change to reflect the actual offset being used. Usually, the Offset used is the same as the value programmed for the SHUTDOWN setpoint. However, the Offset being used will automatically change, based on the values programmed for the LEAVING CHILLED LIQUID TEMPERATURE setpoint and the SHUTDOWN setpoint, to prevent the leaving chilled liquid temperature from going below the minimum allowed value: 36ºF (water), 34ºF (water with smart freeze enabled) or 6ºF (brine). For example, if it is set to 45ºF (water) and the SHUTDOWN setpoint is set to 4ºF, the Effective Offset is displayed as 4ºF. If the leaving setpoint is lowered to 38ºF, the Effective Offset will change to 2ºF. If the leaving chilled setpoint is raised back to 45ºF, the Effective Offset will revert back to the SHUTDOWN setpoint.

Analog Remote Setpoints Filtering

This software version provides filtering on the Analog Leaving Chilled Liquid Temperature Setpoint and the Current Limit Setpoint inputs. This stabilizes these remote setpoint values under noisy conditions and when the inputs are unstable.

Remote Reset Temperature Range Setpoint

In previous software versions, this setpoint could be set to 10ºF or 20ºF. In this version it can be set to 10ºF, 20ºF, 30ºF, or 40ºF.