

	Form Number: 160.81-M1 (LS04)	407
	Supersedes: None	
LITERATURE SUPPLEMENT	File with: 160.81-M1 (307), 160.81-O1 (106)	
Subject: YR Chiller Software Enhancements Effective May 2007		

GENERAL

Beginning May 2007, enhanced software will be supplied in all new YR chillers. It is compatible to chillers equipped with microboard 031-02430-000 only. The enhancements are listed below.

The version and part number for 031-02430-000 microboard is:

- NEMA 1-4 and CE chillers C.OPT.05.08.303 (031-02489-001)

New Adjustable Motor Overload Setpoint

In previous software versions, the motor current overload function (105% of Chiller Full Load Amps) was performed solely by the motor controller device (CM-2 board, Solid State Starter). This version provides an adjustable software overload function, in addition to that provided by the motor controller devices.

New setpoint 105% MOTOR CURRENT TIME (located on the SETPOINTS Screen) allows the software overload timer to be adjusted over the range of 12 (default) to 40 seconds (in 1 second increments). It should not be set to a value other than the default value unless advised by the YORK factory. Operator (or higher) access level is required.

In operation, when the motor current has exceeded 105% of Chiller FLA for the programmed time period, a safety shutdown is performed and “105% Motor Current Overload” is displayed on the System Details Line of the Display. The chiller can be restarted after the Compressor switch is placed in the Stop-reset (O) position.

New Current limit Response

To prevent motor current swings resulting from overshoot and undershoot of the current limit setpoint, proportional slide valve loading/unloading is applied within a band around the Current Limit Setpoint (Local or Remote).

The proportional load limiting band will begin at 93% of motor current limit setpoint and end at 100% of the motor current limit setpoint. While in this band, the load pulses will be proportionally decreased as the motor current increases from 93% to 100% of the motor current limit setpoint, and proportionally increased as the motor current decreases from 100% to 93% of the motor current limit setpoint.

At 100% of the motor current limit setpoint, no loading or unloading occurs.

The proportional unloading band begins above 100% of the motor current limit setpoint and ends at 104% of motor current limit setpoint. While in this band, the unload pulses will proportionally decreased as the motor current decreases from 104% to 100% of the current limit setpoint and proportionally increased as the motor current increases from 100% to 104% of the current limit setpoint.

Above 104% of the motor current limit setpoint, the load output is continuously energized.

Incorrect “Remote Temperature Setpoint Range” Setpoint Defaulting

In previous software versions, this setpoint reverts to the default value (10.0 °F) during power failures. In this version, the setpoint remains at its programmed value during power failures.

New Oil Level Sensor

New production chillers are equipped with an Oil Level Sensor in the Oil Separator. When the oil level decreases to an insufficient level, it signals the microboard and a safety shutdown is performed. This software version supports this new feature.

The sensor is connected to the microboard as follows:

<u>Sensor</u>	<u>Microboard</u>	<u>Function</u>
1	J14-2	+5vdc to sensor
2	J14-3	Gnd
3	J14-1	Sensor signal out

The sensor operates on a +5vdc power source. The sensor output is a solid state component equivalent of a relay contact closure that is connected between microboard J14-1 and J14-3. This effectively provides either a closed or open circuit between these points. With sufficient oil level, the sensor provides a closed circuit, dropping the voltage between these points to less than +1Vdc. With insufficient level, the sensor provides an open circuit, raising the voltage between these points to greater than +4Vdc.

The Low Separator Oil Level LED on the Oil Separator Screen indicates the oil level status. With sufficient level, it is extinguished. With insufficient level, it is illuminated. An LED with the same operation is also added to the Digital I/O Diagnostic Screen labeled as “J14-1”.

After the chiller has been running for at least 3 minutes, if the level sensor opens for 30 continuous seconds, a safety shutdown is performed and “Oil Separator – Low Level” is displayed. The chiller can be restarted after the Compressor Switch is placed in the Stop-reset position and sufficient oil has been added to allow the Level Sensor to see sufficient level and provide a closed circuit to the microboard.

IMPORTANT! To allow this software version to operate in chillers equipped with the Oil Level Sensor and be backward compatible to chillers not equipped with the sensor, microboard Program Jumper JP9 must be positioned appropriately as follows:

1. If the chiller has an oil level sensor installed and wired to microboard J14, then JP9 jumper shunt must be on pins 1 & 2.



If the jumper is not in this position, the oil level safety function will not be detected.

2. If the chiller does not have an oil level sensor wired to microboard J14, then JP9 must be on pins 2 & 3.



If the jumper is not in this position, the oil level safety message will be displayed and the chiller will not run.

