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SERVICE BULLETIN	Supersedes: Nothing	394	Form 160.47-M2 (SB-10)
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**SUBJECT: SCREW CHILLER (125-675TR)
MICROCOMPUTER CONTROL CENTER -
VERSION S.01F.11 & S.01T.11 EPROM**

On/about March, 1994 the subject Screw Chillers will be shipped with EPROM Version S.01F.11 (Part Number 031-01102-002). New Version S.01T.11 (Part Number 031-01102-003) will be used in new Guardian Service/Remote Chiller Communications Installations. The new versions contain the following enhancements:

"LOW SEPARATOR OIL LEVEL" SAFETY SHUTDOWNS

Previous EPROM versions responded to a momentary opening of the Separator Oil Level Switch to initiate a safety shutdown. Under certain operating load conditions, this caused nuisance "LOW SEPARATOR OIL LEVEL" safety shutdowns. In this new version of EPROM, the Oil Level Switch must be open for 30 continuous seconds before a safety shutdown is initiated.

PROGRAMMABLE MINIMUM ALLOWABLE %FLA

Previous EPROM versions incorporated a "MINIMUM ALLOWABLE SLIDE VALVE POSITION" feature that inhibits the chiller from unloading to less than 5% slide valve position to prevent "LOW SEPARATOR OIL LEVEL" safety shutdowns at low loads. This feature was enabled by removing Micro Board Program Jumper JP4. The non-adjustable 5% threshold has proven to be inadequate for all chiller sizes and operating conditions. Therefore, this feature is eliminated and replaced by the programmable low load limit below.

This new feature allows the Field Service Technician to program a minimum allowable motor current value expressed as %FLA. It is programmable from 15% to 70% FLA; the default value is 15%. During operation, following a 3 minute bypass at start, if the motor current is less than the programmed minimum allowable value, "**SYSTEM RUN-MINIMUM LOAD CONTROL**" is displayed and the slide valve load solenoid is pulsed on for 1 second every 3 seconds until the motor current is greater than or equal to the minimum setpoint plus 2%. If the programmed minimum allowable %FLA threshold is greater than either the programmed "PULLDOWN DEMAND LIMIT" or "CURRENT LIMIT" values, the minimum allowable %FLA threshold shall have priority. However, manual slide valve control in **SERVICE MODE** overrides the "MINIMUM ALLOWABLE %FLA" operation. It is not necessary to remove Micro Board Program Jumper JP4 to enable this new feature.

The 15% FLA Default Value will provide proper operation in most chillers. However, on those chillers where the Upper Oil Return Eductor will not keep up with the suction connection oil dropout at low load, this value will have to be increased to a value where this no longer occurs. The operating point at which this occurs can be found by manually controlling the Slide Valve to load and unload the chiller while the chiller is running.

To enter the desired "**MINIMUM ALLOWABLE %FLA**" proceed as follows:

1) Enter **PROGRAM MODE** using **ACCESS CODE** 1 3 8 0.
2) Press **UNLOAD** Key. "MINIMUM CURRENT LOAD LIMIT = xx%" is displayed.
3) Using **ENTRY** keys, enter the desired value (15% to 70% in 1% increments). Pressing the **CANCEL** key displays the default Value 15%.
4) Press **ENTER** Key.
5. Press **PROGRAM** key to exit Program Mode.

SUCTION TROUGH EDUCTOR SOLENOID

In previous EPROM Versions, whenever the compressor was operating and the Slide Valve Position was less than or equal to 17%, the Suction Through Eductor Solenoid was energized (OPENED).

In this new EPROM Version, to eliminate dependence on the Slide Valve Potentiometer Position, the SUCTION TROUGH EDUCTOR SOLENOID is energized (OPENED) whenever the compressor is operating; If is de-energized (CLOSED) whenever the compressor is shutdown. On all new production units, the Suction Through Eductor Solenoid is no longer used.

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