



Title: 3200MP MOTOR CURRENT ZERO CALIBRATION

Number: C8815

Date: 11/11/88

Supersedes:

Date:

Models Affected: ALL SINGLE- AND DUAL-COMPRESSOR  
MACHINES WITH 3200MP CONTROL

**Purpose:** To provide a procedure for checking and, if necessary, adjusting the motor current zero for the processor board and the analog expansion board.

**Background:** Service Bulletin C8717 contains a procedure for calibrating the motor current zero that has been very helpful in resolving motor current calibration problems and dual-compressor surge/stall problems. However, the procedure requires breaking the seal on the calibration pot to discover that, in many cases, the calibration was correct. The new procedure does not require breaking this seal unnecessarily.

**Procedure:**

Caution: The control power must be on to check and adjust calibration. To avoid damaging the board, turn the power off until all connections are completed, then turn the power on to check and, if necessary, adjust the calibration.

"Minigrabber" test clips or equivalent should be used to make meter connections to the board. These are the small clips with the spring loaded hook on the end. These can be found at almost any electronics store, and they are recommended for checking other board test points as well.

After the motor current zero has been calibrated, check the motor current calibration.

MAIL KEYS: 2.45, 2.40B, 2.53, 5.14A, 5.14B, 2.33B, 2.33D

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**Code 77 Display:**

The 100 Series ESP II software will always monitor motor current to determine the compressor's on/off status. If a motor current value of 10% or more is detected when the compressor should not be on, the 3200MP will: (1) start the oil pump, chilled water and condenser water pumps, (2) try to turn the compressor off, and (3) display code 77. If a stray voltage is induced on "23" and "24" or if the motor current zero is adjusted too high or momentarily exceeds this value during calibration, the control will enter this protect mode. This protection is provided in addition to the traditional monitoring of the 1CR and run contacts for this purpose.

**Processor Board:**

1. Turn power off and locate chip U19 on the processor board. It is a flat device with 8 legs mounted below the motor current calibration pot and to the left of TP3.
2. Connect the positive test clip of the meter to the leg on the lower right side (closest to TP11).
3. Jumper the motor current input connections "23A" and "24A" and connect the negative test clip of the meter to this jumper.
4. Set meter to 2 VDC scale and turn power on. Reading should be 0.000 to 0.005 VDC. To adjust, break seal on zero pot R70 and turn screw CW to increase and CCW to decrease voltage reading.

**Analog Expansion Board:**

1. Turn power off and locate chip U4 on the A/X board. It is a flat device with 8 legs (identical to U19 on the PCB) mounted below and to the left of the motor current calibration pot and above the zero pot R22.
2. Connect the positive test clip of the meter to the lower left leg (same as on U19, except U4 is rotated CW 90°).
3. Jumper the motor current input connections "23B" and "24B" and connect the negative test clip of the meter to this jumper.
4. Set meter to 2 VDC scale and turn; power on. Reading should be 0.000 to 0.002 VDC. To adjust, break seal on zero pot R22 and turn screw CW to increase and CCW to decrease voltage reading.