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Error Codes

PROGRAMMING ERROR CODES (NON-FATAL)

Error code messages have been incorporated into the keyboard controller to enable the user to better understand the nature of errors as they occur during programming. If an error occurs during operation or programming, the display will flash on and off while displaying an error code number and a four “character” reminder. **A flashing error display may be cleared by pressing the CLEAR key.**

“E0 EErr” EEPROM PROGRAMMING ERROR

Indicates that an error has occurred while trying to program the EEPROM memory. Press the CLEAR key once to clear the error.

Possible cause: Program enable input on back of PLuS was switched off while EEPROM programming was in process.

NOTE:

Channel outputs will reflect program changes immediately as they are entered, whether or not the EEPROM was able to be programmed. Channel outputs are updated out of RAM; this area of channel setpoint storage is immediately updated when program changes are made. The EEPROM memory is much slower (it is programmed during a separate interrupt routine), and large changes may require several seconds to complete.

Solution: Make sure that the program enable input on back of PLuS is turned ON and reprogram setpoint. It may take up to 3 seconds to complete EEPROM programming after changes are made. If the program enable input is turned off during this time, an “E0” error will result. If this error occurs while programming the current active program, the output patterns will reflect the new setpoints immediately because outputs are updated from RAM storage and are unaffected by the ability or inability to program the EEPROM.

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“E1 OLAP” PULSE OVERLAP

An attempt was made to 1) wipe out a pulse using the INCREMENT or DECREMENT key, 2) merge two pulses using the INCREMENT or DECREMENT keys, 3) form a new pulse that would have enclosed other pulses, 4) form a new pulse that would have extended another pulse, or 5) change an “ON” or “OFF” setpoint in such a way that the resulting pulse would have enclosed (or merged with) other pulses. Press the CLEAR key once to clear the error, and again to clear an illegal value if one was entered.

“E2 -run” NOT ALLOWED WHILE RUNNING

An attempt was made to alter a setpoint or offset value using numeric entry while in motion. While the encoder is turning, channel setpoints, offset value, and indicated encoder shaft position may only be changed incrementally using the INCREMENT and DECREMENT keys. Press the CLEAR key once to clear the error.

“E3 ordr” KEYSTROKE OUT OF ORDER

A key was pressed out of sequence. This would occur, for example, if you started to enter a channel but didn't conclude numeric entry by pressing the ENTER key. Pressing the VIEW keys would result in an “E3” error because a channel really hasn't been entered. This error generally means that a previous operation has not been completed, or that pressing that key didn't make sense (example: pressing VIEW INCREASING while programming a low rpm setpoint). Press the CLEAR key once to clear the error.

“E4 -Pro” PROGRAMMING NOT ENABLED

An attempt was made to alter a setpoint (or any value stored in EEPROM memory) when the Program Enable Input on the back of the PLuS was NOT On. It is necessary that the program enable input be ON in order for the EEPROM to be programmed. Press the CLEAR key once to clear the error.

“E5 8888” NUMBER OUT OF RANGE

A number was entered that exceeded limits. For example, trying to program channel 17 in a sixteen channel PLuS will result in “E5”. Press the CLEAR key twice and enter a new value.

“E6 -379” ILLEGAL SETPOINT VALUE

A setpoint value that ended in three (3), seven (7), or nine (9 - other than 89, 179, 269, 359) was entered. Although one revolution of the shaft is represented as a position between 0 and 359, when 256 actual positions are converted to read out in

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degrees (360), certain numbers must be skipped. The numbers that are skipped have a least significant digit of three, seven, and nine, except those around the quadrants (89, 179, 269, 359). Press the CLEAR key twice and enter a new value.

NOTE:

The converting of encoder values between 0 and 255 into displayed values between 0 and 359 will result in the display “skipping” numbers when the INC and DEC keys are pressed (Example: the display would change from 30 to 28 when the DEC key was pressed only once because 29 is not a “legal” value).

When moving pulses in “Pulse Mode”, the duration of certain pulses may appear to change for this same reason. Remember, however, that ALL pulses consist of an integral number of “256ths of a circle” and that the true duration of a pulse will remain constant regardless of what “degree” values are used to represent its on/off setpoints.

As an example, assume you have a pulse that is ON at 76 and OFF at 88. The difference between the ON and OFF setpoints is 12. If the OFF setpoint is moved to 90 in pulse mode, the ON setpoint will move to 80, giving a difference between setpoints of 10. The actual duration of the pulse (in “256ths of a circle”) will remain constant.

“SYSTEM ERROR CODES (FATAL)”

NOTE:

In the event of a major system fault, the PLS will display a three digit code in the setpoint window and HALT OPERATION. It will be necessary to remove AC power to the unit in order to restore service. Unless the controller has suffered permanent physical damage, a power-down/power-up sequence will restore the unit to service.

In any case, these fault conditions are a sign that something is **SERIOUSLY** wrong: either a system component has failed, or too much electrical noise is present. If your unit exhibits any of these fault conditions, contact the factory for assistance at (800) 228-5487.

“FE0” MEMORY FAULT

Indicates that the PLS has detected a fault in its random access memory. It is not possible to function without this memory. The unit has probably suffered some damage to its hardware, and should be returned for repair.

“FE1” PROGRAM COUNTER FAULT

Indicates that the Program Counter in the CPU has become corrupted, and that reliable operation is no longer possible until the system has been completely reset.

This error may either be caused by hardware failure or by electrical noise.

“FE2” WATCHDOG TIMER FAULT

Indicates that the watchdog timer has timed out. The operating system of the PLS controller must activate an internal signal at regular intervals; failure to do so means that the program is no longer operating correctly, and that the unit must be shut down.

This error may either be caused by hardware failure or by electrical noise.

“FE3” OVERSPEED FAULT

This error occurs if the encoder exceeds the maximum RPM rating of the PLS controller (2000 RPM).