ENGINEERING PUBLICATION
MOTION CONTROL DIVISION

PRODUCT: NS300/NS500   **SUBJECT: TROUBLESHOOTING**
CATEGORY: TROUBLESHOOTING
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SUMMARY

The NS300 and NS500 have the same parameter set, same physical I/O, and same fieldbus message format. Therefore, troubleshooting is usually the same for both products.

This troubleshooting document will discuss common problems and solutions in order of most frequent to least frequent.

Problem 1) The drive won't enable.

Fieldbus communication has been established, the SVON bit has been turned on at the network master, and the servo does not enable.

Solution 1)

Check the status of the EMSTOP wiring and PN81B. The EMSTOP input is physically on the CN4 connector. This input is default to Normally Closed (PN81B bit 2). Both the EMSTOP input AND the ESTP bit in the command message need to be set in order for the drive to be out of disabled condition. The EMSTOP input and the ESTP bit will have no effect if PN81B is set to xxx0, which may be useful in unloaded bench-top testing.

EMSTOP INPUT	ESTP bit	ESTP_R	SERVO STATUS
ACTIVE	0	1	DISABLED
ACTIVE	1	1	DISABLED
NOT-ACTIVE	0	1	DISABLED
NOT-ACTIVE	1	0	NORMAL

Solution 2)

Check that the SVON bit has been toggled from 0 to 1. The SVON bit is edge sensitive.

Solution 3)

Check that there are no alarms (ALRM bit), power is on (PWRON bit), and the NS module is ready to communicate (READY bit).

Solution 4)

The SVON bit should be turned on after the ESTP_R = 0. The SVON bit and the ESTP bit cannot be set simultaneously.

Problem 2) The drive is enabled but the motor won't move.

The SVON_R is 1 in the response message.

Solution 1)

POT or NOT are never displayed on the LED readout of the SGDH amplifier when used with the NS modules.

Check the status of the POT and NOT input and Pn819. The inputs are physically on the CN1 connector. They are set to Normally Closed as default. The status of the POT and NOT input can be read in the response message byte 3, bit 6 and 7. The POT and NOT will have no effect if Pn819 is set to xxx0, which may be useful in unloaded bench-top testing.

Solution 2)

Any bit starting motion must be toggled from 0 to 1. C_START, FEED, STEP, PTBL, STN, HOME BITS ARE EDGE sensitive.

Solution 3)

Make sure the commanded position is different from the actual position. If the INC bit is set to 0, target position is commanded in absolute terms. In this case, If the motor is at position 5000 and a Simple Positioning of 5000 is commanded, the motor should not move.

Problem 3) Changes made to parameters are not taking effect.

Solution 1)

After making changes perform "System Reset". In NS300 and NS500 terms, a system reset saves all parameters to non-volatile memory. Unless a system reset is performed, all parameters will revert back to previous settings after a power down. A system reset can be performed over the fieldbus message using the SET/READ command message or by using the NSxxx software.

Solution 2)

If the speed does change, make sure the correct speed parameter is edited. There are separate speed parameters for jogging, positioning, and homing.

Solution 3)

Make sure max feed speed, Pn843, is set greater than all other speed settings.

Solution 4)

The acceleration type must be selected for jogging and positioning. Pn826 and Pn836 are default set to 0, No ACCEL/DECEL. If these parameters are left at 0, the accel and decel times (Pn822, Pn823, Pn832, Pn833) will have no effect on the motion.

Solution 5)

If parameters are set by NSxxx when the NS module is offline, make sure the upper controller or network manager software is not changing parameters when the NS module first comes online. Some network manager software programs will automatically send parameters from the EDS sheet when a product first comes online.