

SPC - Servo Position Controller Configuration for Fault Conditions

Issue

This issue only applies to SPC's configured with the Position Demand Source configured to use redundant demand inputs. This applies with Analog Primary, CANopen Primary or DeviceNet Primary selections for this setting. In these configurations, if the "Position Demand Fault Response" is configured for ALARM, it is possible for the output to "fail to a fixed demand" under a specific failure mode.

This issue does not apply to SPCs configured for a single input (CANopen Only, DeviceNet Only or Analog only).

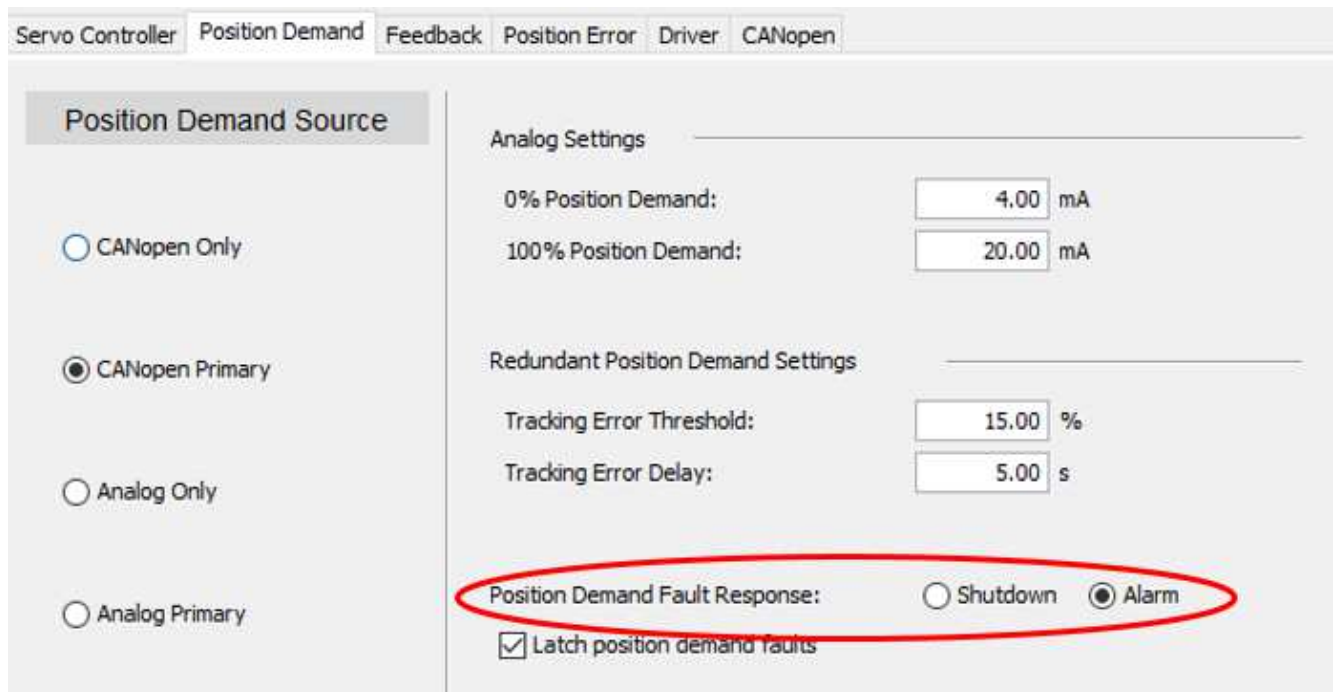
Description

The issue is related to a specific configuration in which the SPC is configured with the Position Demand Source as one of the following:

- CANopen Primary
- DeviceNet Primary
- Analog Primary

And the "Position Demand Fault Response" is configured to "ALARM."

If both inputs fail in a specific sequence (either simultaneously or backup first) the SPC outputs the last valid demand, and as a consequence the actuator position that is controlled by the SPC may remain fixed in place.



The screenshot shows the 'Position Demand Source' configuration window. On the left, four radio buttons are listed: 'CANopen Only', 'CANopen Primary' (selected), 'Analog Only', and 'Analog Primary'. On the right, under 'Analog Settings', there are two input fields: '0% Position Demand:' set to 4.00 mA and '100% Position Demand:' set to 20.00 mA. Below that, under 'Redundant Position Demand Settings', there are two input fields: 'Tracking Error Threshold:' set to 15.00 % and 'Tracking Error Delay:' set to 5.00 s. At the bottom, the 'Position Demand Fault Response:' is set to 'Alarm' (selected over 'Shutdown'), and the 'Latch position demand faults' checkbox is checked. A red oval highlights the 'Position Demand Fault Response' section.

Example of SPC configuration screen that indicates the unit is affected with the reported issue. CANopen shown as Primary; Analog Primary or DeviceNet Primary similar.

Affected Units

All SPC units are affected if configured as stated above and if a “fail fixed” response is not correct for the system.

Affected P/N's list:

8200-220, 8200-221, 8200-222, 8200-223, 8200-224, 8200-225, 8200-226, 8200-227.

Corrective Action

Field Correction:

For affected units (those configured to use Analog, CANopen or DeviceNet as Primary and with Position Demand Fault Response configured as ALARM):

- For most systems, the correct response to losing both inputs would be to move the valve or actuator to the shutdown position.
- If the desired response in a dual-failure scenario is to move the valve to the shutdown position, the Position Demand Fault Response should be updated by setting this value to “SHUTDOWN” instead of “ALARM.”

Permanent Corrective Actions:

The SPC firmware has been updated so that the Position Demand Fault Response setting of ALARM will result in the SPC outputting the 0% demand current when both position inputs are lost. This change will be made to all new production units. The field correction noted above resolves the issue, however Woodward has released a Service Pack for customers wishing to update the firmware in existing units. Please see Application Note 51628 for instructions

Customer Action

If the configuration needs to be updated as described above, please use the SPC Service Tool (downloadable from Woodward's web site or contact your authorized representative).

If you desire to install the revised firmware, please download Application Note 51628 for instructions. You can also contact your Woodward supplier or Woodward representative if you need further assistance.

If you wish to return the SPC to Woodward for the firmware update, this will be performed at no charge during the warranty period. Please contact your Woodward supplier or your Woodward representative to discuss this option.



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