

GROUPPOSITIONCURRENTGET COMMAND ON HXP-ELEC & HXP-ELEC-D

The purpose of this technote is to highlight the difference between the ways `GroupPositionCurrentGet` command is handled on HXP-ELEC-D (newer hardware) vs. HXP-ELEC (older hardware), as well as recommend a solution for a single code to work with either hardware.

Summary of Differences:

HXP-ELEC (HXP-Q firmware):

- `GroupPositionCurrentGet(Group, ...)` returns 6 coordinates (X,Y,Z,U,V,W) of Tool axes in Work
- `GroupPositionCurrentGet(Group.1, ...)` returns the position of strut/actuator #1
- `GroupPositionCurrentGet(Group.X, ...)` returns X coordinate of Tool axis in Work
- `HexapodPositionCurrent Get(Group, ...)` not supported

HXP-ELEC-D (XPS-Unified firmware):

- `GroupPositionCurrentGet(Group, ...)` returns individual struts/actuator positions for all 6 struts/actuators
- `GroupPositionCurrentGet(Group.1, ...)` returns the position of strut/actuator #1
- `GroupPositionCurrentGet(Group.X, ...)` returns X coordinate of Tool axis in Work
- `HexapodPositionCurrent Get(Group, ...)` returns 6 coordinates (X,Y,Z,U,V,W) of Tool axes in Work

Recommended Solutions:

Two possible options to ensure the same software code works on both HXP-ELEC and HXP-ELEC-D controllers are shown below.

Option 1:

Use an API to find out the configuration (HXP ELEC or HXP-ELEC-D), and based on the answer, have the SW select the proper API to query, i.e. `GroupPositionCurrentGet` or `HexapodPositionCurrentGet`.

For example: If `FirmwareVersionGet` returns “XPS-D Standard...”, it means the hardware is HXP-ELEC-D, so `HexapodPositionCurrentGet` should be selected.

Option 2:

Use `GroupPositionCurrentGet(Hexapod.X)`, `GroupPositionCurrentGet(Hexapod.Y)`, etc. in the code for both HXP-ELEC and HXP-ELEC-D. This will allow getting axis coordinates using the same command, but needs to be sent for each axis individually/one axis at a time.

Appendix: Detailed command descriptions

GroupPositionCurrentGet [HXP-ELEC-D] Gets the current position for all or individual positioners of the selected group.

GroupName:

When queried for the Group, this function returns the CurrentPosition for all positioners of the selected group. The current position is defined as:

CurrentPosition = SetpointPosition – FollowingError

PositionerName:

When queried for the positioner, this function returns the CurrentPosition for one positioner if PositionerName is:

- Hexapod.1
- Hexapod.2
- Hexapod.3
- Hexapod.4
- Hexapod.5
- Hexapod.6

Or

The X, Y, Z, U, V or W coordinate of the Hexapod platform, if *PositionerName* is:

- Hexapod.X
- Hexapod.Y
- Hexapod.Z
- Hexapod.U
- Hexapod.V
- Hexapod.W

HexapodPositionCurrentGet [HXP-ELEC-D]

This function returns the current X, Y, Z, U, V, W coordinates (all or individual) of the Hexapod platform

Groupname:

When queried for the Group, this function returns X,Y,Z,U,V and W coordinates of Tool axes in Work system

PositionerName:

When queried for the positioner, this function returns X,Y,Z,U,V, or W coordinate of Tool axis in Work system, if *PositionerName* is

- Hexapod.X
- Hexapod.Y
- Hexapod.Z
- Hexapod.U
- Hexapod.V
- Hexapod.W

GroupPositionCurentGet [HXP-ELEC]

When queried for a group, returns current position of the Tool coordinate system in the Work coordinate system with X, Y, Z, U, V, W values. Otherwise, can return the current position for one positioners or coordinate of the selected group.