Doc No.:   TN20-82
Version: 1.0
Date: 9th Dec 2005
Subject: Individual Axis Enabling

Application Note

Applications:

Controllers with larger numbers of axes may require axes to be enabled and disabled individually or in groups.

Controllers:

The current implementation of individual axis enabling is usable with SERCOS or MECHATROLINK axes ONLY. System software version 1.6460 or higher is required.

KEYWORDS:

-   AXIS_ENABLE – This new axis parameter can be set ON or OFF for each axis individually. The default value is ON to maintain compatibility with earlier versions. The axis x will be enabled if AXIS_ENABLE AXIS(x) is ON AND WDOG=ON.

-   DISABLE_GROUP(axis x, axis y,…..) – This new function can be used to group any list of axes together for error disabling. If a group of axes is made, when an error occurs on one they will all have their AXIS_ENABLE set OFF and SERVO set OFF. Multiple groups can be made, although an axis cannot belong to 2 groups. All groupings can be cleared using DISABLE_GROUP(-1).

-   MOTION_ERROR – A small change has been made to this parameter. It now returns the bit pattern of axes with a motion error.

-   WDOG – Both WDOG and AXIS_ENABLE must be ON for the axis to be enabled. If an axis has not been included in a DISABLE_GROUP and an error occurs on that axis, WDOG will be set OFF.

Example:

A system of 8 axes requires that axes 4..7 keep running if axes 0..3 have an error and vice-versa. The axes would be grouped using DISABLE_GROUP:

```
DISABLE_GROUP(-1)
DISABLE_GROUP(0,1,2,3)
DISABLE_GROUP(4,5,6,7)

WDOG=ON
STOP

enable_b:

FOR ax=4 TO 7
   AXIS_ENABLE AXIS(ax)=ON
NEXT ax

return
```