

Sample Dancer Arm Application

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This is the simplest form of a dancer arm application. The analog feedback device attached to the dancer arm is fed directly into the command position summation point, which is also known as the Primary Set Point (PSP.) It is fed into the PSP through use of Electronic Gearing (GEAR) feature of the ACR controller. The GEAR is updated every servo/trajectory update at the firmware level of the controller so the user's program does not have to actively monitor or support the dancer arm. There is no need to tune the axis with respect to the dancer arm input, although the GEAR RATIO and ADC GAIN could be used to adjust the amount of arm deflection vs. the amount of correction.

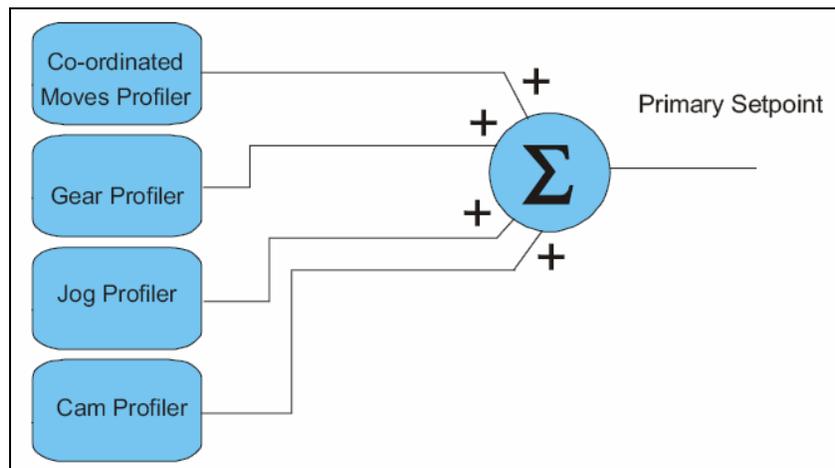


Figure 1 : Primary Set Point Summation

The dancer arm correction is input as a “position correction” command which has an immediate affect on the axis velocity. The ADC GAIN or the GEAR RATIO can be used to invert the polarity of the command signal to allow the dancer arm input to either add or subtract from the axis' commanded position. Since this is a position correction, this would not be useful to correct for product stretch since it has a finite range.

See sample code on next page.

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Sample program:

```
PROGRAM

REM Setup ADC0 so +10V to -10V range is -4096 to +4096 counts
ADC ON
ADC MAX 1
ADC 0 SCALE 10
ADC 0 GAIN 4096
ADC 0 POS 0

REM setup our axis
RES X
PPU X4000

REM This program will gear X axis to ENC2 with a ratio of 5:1

REM Set the electronic gearing source for X to use ADC0
GEAR SRC X P6408

REM Scale the master for electronic gearing
GEAR PPU X4096

REM Set gearing ratio at 1:1 for X (X axis will move 1 times ADC0 move)
GEAR RATIO X1

REM Turn on electronic gearing
GEAR RES X
GEAR SRC X RES
GEAR ON X

REM The axis is now continuously moved in the positive direction while the
dancer arm
REM ... continuously corrects position by injecting Gear offset into the
commanded
REM ... position of the axis.
JOG VEL X10
JOG ACC X10
JOG DEC X10
JOG FWD X

ENDP
```