



## Document Reference (AN060021VS1)

### Composite Reference “Sleep” mode

#### Required Equipment:

VS1SP Series  
VS1GV Series  
VS1SD Series

#### Introduction:

The VS1 Series controls offer the “Sleep Mode” as a standard feature. The “Sleep Mode” feature (Parameters 1416 and 1417) allows the VS1 controls to monitor the speed reference Command Source and if set to **sleep mode** the drive will decelerate to a stop (go to sleep) when the speed reference Command Source drops below the set sleep band value. Here is an application with the Command Source parameter set up for Composite Reference and “sleep” activated not by Command Source but by the value of a variable composite speed reference analog signal.

#### Procedure:

1. Set Operating Mode parameter 1401 to PLC
2. Set PLC CONFIG # parameters for digital inputs as required for enable, forward run, reverse run, etc. actions. This is explained in drives Installation & Operation Manual Section PLC Mode Description.
3. Set Command Source for required Composite Reference value, parameters 3501 through 3508. This is explained in drive Installation & Operation Manual Section PLC Mode Description.

#### Setting Analog Input Sleep Mode:

As an example to set this “composite reference sleep”, let us assume we have a 4-20mA Analog Input 2 monitoring the user process, and this analog input is used as part of composite speed reference and process requires that drive will decelerate to stop when 4-20mA range value drops below 12mA.

1. Setting the drive to monitor Analog Input 2:

Set parameter 3431 COMPARE A to value 40, where 40 is the Monitor Parameter #40, which measures value of Analog Input 2 connected to input terminal J1-4 and J1-5.

Set parameter 3432 COMPARE A CONSTANT to value 50, where 50 is 12mA expressed in percent of 4-20mA range.

2. Setting the drive to disable when the above Compare Condition is true, when analog input drops below 12mA:

Set parameter 3410 PLC CONFIG as compare condition then action to stop. Please note, that we have chosen PLC CONFIG 10 but any PLC CONFIG can be used as long as it is not in conflict with any other PLC CONFIG logic statement.

Parameter value is 076.004.050.020 or as displayed on the keypad 76. 4. 50. 20

The above setting or value represents the following logic statement:

If Compare A condition is false (76) or (4) digital enable input is low (50) then do Action to disable the drive (Action, 20).