

### Basic functionality test, with final analog and 3-wire setup

We'll use a one-horsepower WEG CFW300 drive to control a motor from a single-phase 120 volt supply.

These are the parameters we're going to set, and the values we're going to use in this demo:

P204=5	Factory Reset to 60hz
P401=3.2A	Motor Rated Current
P402=1725	Motor Rated Speed
P403=60 Hz	Motor Rated Freq
P100=2.0	Acceleration
P101=2.0	Deceleration
P133=4 Hz	Drive Min Speed
P134=30 Hz	Drive Max Speed
P002 (Read)	Drive Frequency
P003 (Read)	Motor Current
P207=18	Bar Graph = AI 1 input value
P223=1	Direction 0=FWD, 1=REV

Let's quickly walk through setting these just so you can get a feel for the flow of entering parameters now before doing anything.

**Let's reset the drive to factory defaults, so everyone is starting at the same place:**

**1)** Press the "P" button to get to the parameters, and scroll with UP arrow, to Parameter 204 (Reset Defaults). Hit "P" again, so we can change the parameter to a "5", by using the UP arrow, which resets the drive parameters to factory default for 60 Hertz, and press "P" to accept that.

**2)** Use the UP arrow to scroll to Parameter 401, which is the Motor Rated Current.

Our motor is 3.2 amps, so we enter that with the arrows, and press "P" to accept it. Enter YOUR value from your motor nameplate.

**3)** Use UP arrow to scroll to Parameter 402, this is the Motor Rated Speed, we'll modify that to 1725 RPM ( use UP or DOWN arrow buttons to reach your motor RPM) and hit "P" to accept that. Enter YOUR value from your motor nameplate.

**4)** Use UP arrow to scroll to Parameter 403, this is the Motor Max Frequency, 60 Hertz is what we want

and it's set there already, so hit "P" to accept that.

**5)** Use the DOWN arrow to scroll to the Acceleration parameter, which is P100. Hit "P" to change it, I'll change it to 5.0 seconds and hit "P" to accept that value.

**6)** Scroll UP to the next parameter on our list, P101, hit "P" and change the deceleration to 5.0 seconds and hit "P" to accept that.

**7)** Scroll UP to the min speed parameter, P133, let's make that 0.0 Hertz, hit "P" to accept that.

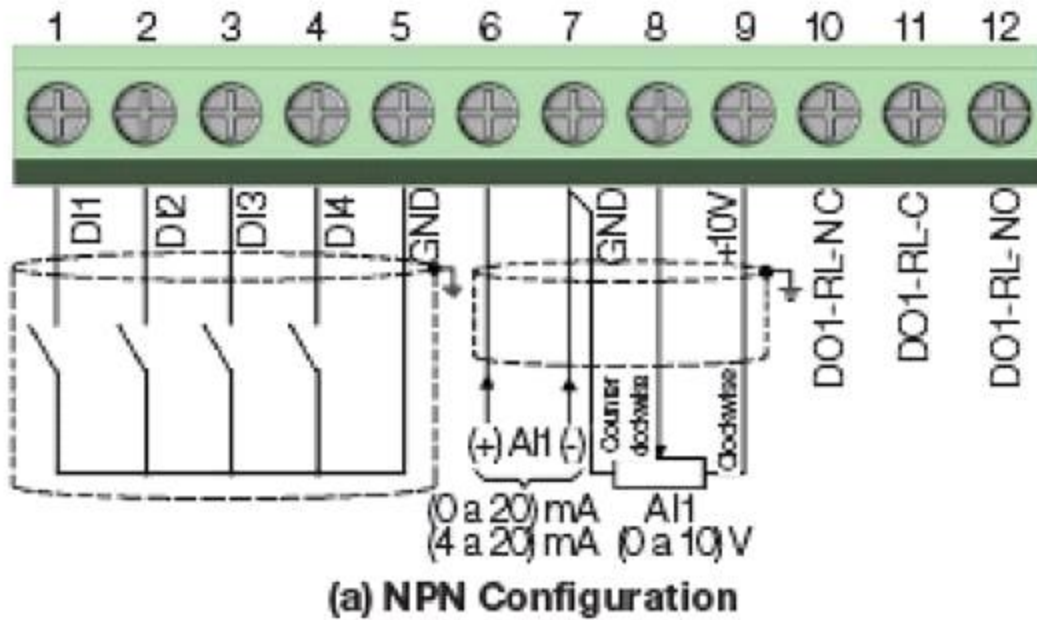
**8)** Scroll UP to the max speed parameter, P134, hit "P", let's change our max speed to 60.0 Hertz. Hit "P" to accept that.

**9)** Scroll DOWN to Parameter 2 which shows us the Drive Output Frequency, and press the Run/Stop key to start the motor. Since the drive speed is 0hz, the drive output does nothing. Use the UP arrow and increase the value, and the motor will start speeding up. Once you have verified this, press the Run/Stop key again to stop the motor.

**Now, to setup the analog control:** We are going to make the assumption that control is going to be completely external ( potentiometer or analog voltage/milliamp signal for the speed source, and, Run/Stop, Direction thru the Digital Inputs ). Parameter P220 determines the source of commands for Local and Remote situations.

**10)** Scroll UP to the P220 parameter, which is "Loc/Rem Source Selection". Hit "P" to change it, I'll change it to 1 for "Always Remote", and hit "P" to accept that value.

**11)** Scroll UP to the P222 parameter, which is "REM Reference Selection". Hit "P" to change it, change it to 1 for "AI1" (Analog Input 1), and hit "P" to accept that value.



**For a potentiometer**, the outside wires go to terminals 7 and 9, and the center wire, the wiper, goes to terminal 8.

**For a 0-10 volt signal**, + voltage goes to terminal 8 and - voltage goes to terminal 7.

**For 0-20 or 4-20 ma**, the + goes to terminal 6 and the - goes to terminal 7.

**12)** Use the UP arrow to scroll to P231, "AI1 Signal Function", hit "P" and verify the value is at the default of 0, for "Speed Reference".

**13)** Use the UP arrow to Scroll to P233 "AI1 Signal Function" , hit "P" and change the value to match your signal from Step 11:

Enter 0 for Potentiometer or 0-10v signal, or 0-20 ma.

Enter 1 for 4-20 ma.

Hit "P" to accept that.

**14)** To verify the AI 1 signal, press the "P" button, then use UP arrow to scroll to Parameter 207, "Bar Graph Parameter", change the value to "18", which refers to P018, which is the AI 1 value. This way, we can verify the signal on the bar graph on the display. Now verify your signal shows correctly on the bar graph at the very bottom of the drive display. If your pot signal works in reverse, then swap the wires on terminals 7 and 9.

### **To setup the 3-wire and Direction control:**

In this setup, DI1 will be "Start", and DI2 will be "Stop", and DI3 will be "Direction".

DI 1 will be a normally open pushbutton for "Start", and DI 2 will need to be a normally closed pushbutton for "Stop". DI3 would need to be a 2-position maintained selector switch to choose FWD or REV.

These are the main parameters for the 3-wire control:

P271 = 0	Function of the digital inputs. In this case it is set for NPN
P220 = 1	Always remote
P226 = 4	REM FWD/REV Selection. A value of 4 selects a DI as our FWD/REV control
P227 = 1	Selection of Remote Run/Stop. A value of 1 selects a DI
P263 = 6	Function for DI1 is Start
P264 = 7	Function for DI2 is Stop
P265 = 8	Function for DI 3 is Direction

**15)** Press the "P" button, then use UP arrow to scroll to Parameter 271, "DI Function", and check that the value is "0". If not, change it to "0", and hit "P" to accept that.

**16)** Use the DOWN arrow to scroll to Parameter 220, "LOC/REM Selection Source", and set to "1" for "Remote" then hit "P" to accept that.

**17)** Use the UP arrow to scroll to Parameter 226, "REM FWD/REV Selection" and set to "4", for "DIx" (meaning one of the Digital Inputs), then hit "P" to accept that.

**18)** Use the UP arrow to scroll to Parameter 227, "REM Run/Stop Selection" and set to "1", for "DIx" (meaning one of the Digital Inputs), then hit "P" to accept that.

**19)** Use the UP arrow to scroll to Parameter 263, "DI 1 Input Function" and set to "6", for "Start", then hit "P" to accept that.

**20)** Use the UP arrow to scroll to Parameter 264 "DI 2 Input Function", and set to "7", for "Stop", then hit "P" to accept that.

**21)** Use the UP arrow to scroll to Parameter 265 "DI 3 Input Function", and set to "8", for "Direction", then hit "P" to accept that.