IFMA-1 Frequency to Analog Converter (D/A) Programming

PROBLEM: Replacing frequency to analog converter or recalibrating following speed of conveyors, received by encoder.

1. Determine the Frequency for the D/A converter by examining the installation of the sensor used to measure Press Speed. Consult with Engineering if necessary. If undetermined, set the D/A converter range to 1700 Hz using the example in step 4. 1700 Hz is based on a standard installation of a shaft encoder (600 pulses per revolution), with a 3.5" diameter pulley driven by a 2.6" diameter pulley on a shaft that moves the press connection belts 1 foot per revolution. Based on these dimensions, at a 3" lap the shaft encoder installation is designed to produce 90 pulses per paper. An additional 25% frequency adjustment is made so that the Auto Pot may adjust the Lap above or below 3". If the Press Speed Sensor produces other than 90 pulses per paper the 1700 Hz should be proportionately adjusted.

2. Frequency to Analog (D/A) Converter (a.k.a. IMFA-1) Programming Procedure. For details see specification bulletin. Set Operating Mode to 2 (0-10 v dc) and Input Range to 1700 Hz (all others to factory default).

   A. Operating Mode:

   - Moving DIP switch # 4 to up (on) enters the program mode for OPERATING MODE. The Green Input Led blinks (1/2 sec on 1/2 sec off) 1 to 9 times to indicate the operating mode followed by a 2 sec pause. The operating Mode initially is set to 4(factory setting). Blink, Blink, Blink, Blink, 2 sec pause.

   - Set the OPERATING MODE. Turn the Rotary switch to 2. Move Dip switch #4 to up (the green LED blinks the present mode). Press the push-button once (green LED blinks rapidly indicating access). Press the push-button again (new operating mode of 2 is indicated by: blink, blink and a 2 sec pause). Return DIP switch #4 to the down position.

   B. Input Range: Set the Input Range to 1700 Hz using the following:

   - Set DIP switch 4 & 6 to the up (on) position and read the present range.

     Θ blink (1/2 sec on 1/2 sec off) indicates a number
     Θ total number of blinks (1 to 9) = a digit
     Θ flash (0.04 sec on & 1 sec off) = a zero
     Θ 2 sec pause = end of a digit
     Θ 4 sec pause = end of a 6 digit value

     The first 5 digits of the value indicate the frequency in Hz. The 6th digit of the value is the number of decimals places from the right. The default setting is 10,000 Hz represented by the value 100000. The LED will indicate: 4 sec pause + blink + 2 sec pause + flash + flash + flash + flash + flash + 4 sec pause (then repeat the readout).

   - Set the new frequency range. This can be set as:
     170001 which means: 1700.0 Hz
     or
     017000 which means: 01700 Hz
     ⇑ The last number is the number of decimal places
     ⇑⇑⇑⇑⇑ The first 5 numbers are the frequency value

- The new frequency of 01700 Hz is set as follows:

  Set DIP switch 4 & 6 to up
  Turn the rotary switch to 0.
  Press push-button once (access for first number, green LED blinks rapidly)
  Press push-button once (enters first number = 0)
  Turn the rotary switch to 1
  Press push-button once (enters 2nd number = 1)
  Turn the rotary switch to 7
  Press push-button once (enters 3rd number = 7)
  Set the rotary switch to 0
  Press push-button once (enters 4th number = 0)
  Press push-button once (enters 5th number = 0)
  Press push-button once (enters 6th number = 0) (number of decimal places)

  If the numbers have been entered correctly the LED blinks the new frequency: Flash + Blink + Pause 2 sec + Blink + Blink + Blink + Blink + Blink + Blink + Blink + pause 2 sec + Flash + Flash + Flash + Pause 4 sec, Repeats the new Value.

  Note: If you have difficulty reading the frequency, re-read the definitions of Blink, Flash, 2 sec pause & 4 sec pause.

  Set DIP switch 4 & 6 to down (exits program mode)

  - Test the new trip frequency: At the next press run set the Auto Pot to mid-scale and observe the LAP as the newspapers transfer from the press connection to the first conveyor. The LAP should not change. Increasing the Auto Pot should increase the Lap and decreasing the Auto Pot should decrease the LAP (± 25% range). Adjust the 1700 Hz up or down proportionately and re-program the D/A converter with the new frequency range. Note: Increasing the frequency decreases the conveyor speed.

3. Set DIP Switches: #1 = Off, #2 = On, #3 = On.