



Product Family: Drive and PLC products

Number: AN-GS-010

Subject: Feedback controls for winders and web handlers.

Date Issued: 8/04/2003

Revision: Original

Application Description

A user wants to get an idea of how to get a feedback signal from one motor controlled from a VFD to another VFD. This is a classic master/follower arrangement. The intention for this application is to be a take-up roll for scrap paper. However, the applications are endless.



Process:

There are numerous ways of getting feedback from the master to the slave. The following items are just some of the ways available. It's up to the user to determine the best course of action concerning; technical ability of installation, design resources, potential retrofit of current equipment, adding new equipment, and budget constraints.

1. Use an ultra-sonic sensor that produces an analog output from the idler roll. (The idler roll allows for a loop to form preventing stretch or pull, critical in some applications, not so critical in others.
 - a. <http://www.honeywell.com/>
 - b. <http://www.baumerelectric.com/>
 - c. Web search for "ultrasonic analog sensors"

2. Use a basic lever arm to a potentiometer or load cell to produce an analog signal.
 - a. <http://www.blh.com/>
 - b. <http://www.hbm.com/>
 - c. <http://www.sensortronics.com/>
 - d. Web search for "potentiometers, or load cells"



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3. Use a loop scanner to produce an analog signal.
 - a. <http://www.delta-usa.com/>
 - b. [http://www.steellinks.com/pages/Sensors Gages and Measuring Devices/Position/](http://www.steellinks.com/pages/Sensors_Gages_and_Measuring_Devices/Position/)

4. Use an encoder and a frequency to analog converter to produce the analog signal.
 - a. <http://www.api-usa.com/>
 - b. <http://www.acromag.com/>
 - c. <http://www.actionio.com/>
 - d. <http://www.redlion-controls.com/>

5. Use an encoder to a HSC input on the DL05, DL06, D2-CTRINT, or H2-CTRIO card and convert to analog via analog output card.
 - a. Search for the following parts numbers at www.automationdirect.com:
 - i. DL05
 - ii. DL06
 - iii. H0-CTRIO
 - iv. D2-CTRINT
 - v. H2-CTRIO
 - vi. T1H-CTRIO
 - vii. H4-CTRIO

6. If the master drive has a viable analog metering signal, it can be used to produce a speed reference to the slave in some instances. The GS2 series has this capability.
 - a. Search for GS2 series VFD at www.automationdirect.com.

7. Use a drive combo of master and slave with the electronic gearing function. The SJ300 has this capability when using the SJ-FB feedback board.
 - a. <http://support.automationdirect.com/docs/egear.pdf>
 - b. Search for SJ-FB at www.automationdirect.com.

8. A high/low sensor is placed on the idler roll for an on/off control of speed reference.
 - a. Search for the following parts at Automationdirect.com
 - i. Inductive proximities sensors
 - ii. Capacitive proximity sensors
 - iii. Photo-electric sensors
 - iv. Electro-mechanical relays
 - v. Timers

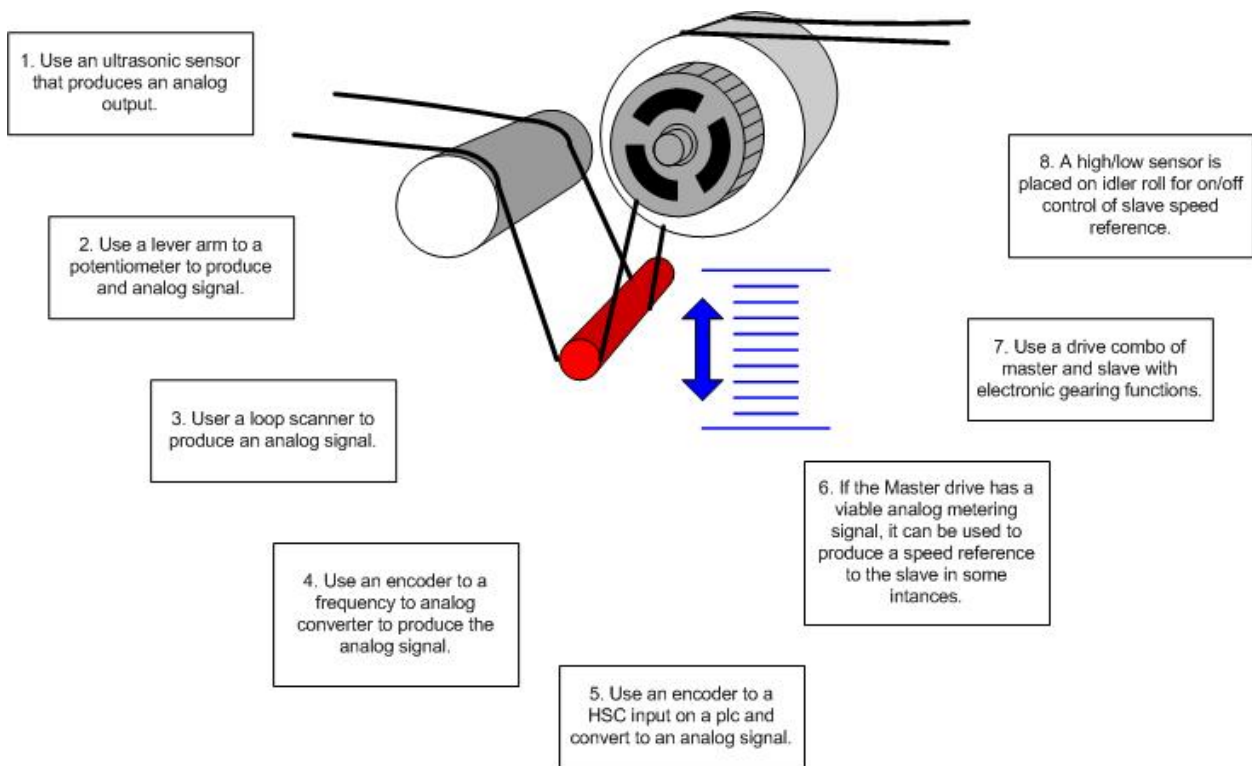


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Any of these analog signals can be routed through a plc to control trim or add an extra layer of control for more precise control. These can be as simple to complex based on the needs of the user and corresponding application.

Basic Diagram:



Technical

Assistance: If you have questions regarding this Application Note, please contact us at 770-844-4200 for further assistance.