



ANALOG MOTOR CONTROL DATA SHEET

Description:

The Analog Motor Control operates the motor in an open loop voltage mode. The control performs 2-quadrant commutation when an analog input signal is used. The control is compatible with 20 to 36Vdc power supplies. Open loop speed control is accomplished by the user supplying a 0-5Vdc analog input or a speed potentiometer. For cost sensitive applications requiring minimal speed feedback a tachometer output can be accessed.

Environment:

The NT Dynamo uses a TENV (totally enclosed non-ventilated) non-gasket construction. Installation and operating conditions should not exceed the recommended values for humidity and temperature. Contact the Hurst engineering department regarding any special installation issues you may have regarding vapors, oils or dust.

Storage Temp.: 32-158°F (0-70°C) Humidity: 90% Max. Non-condensing Operating Temp.: 32-104°F (0-40°C)

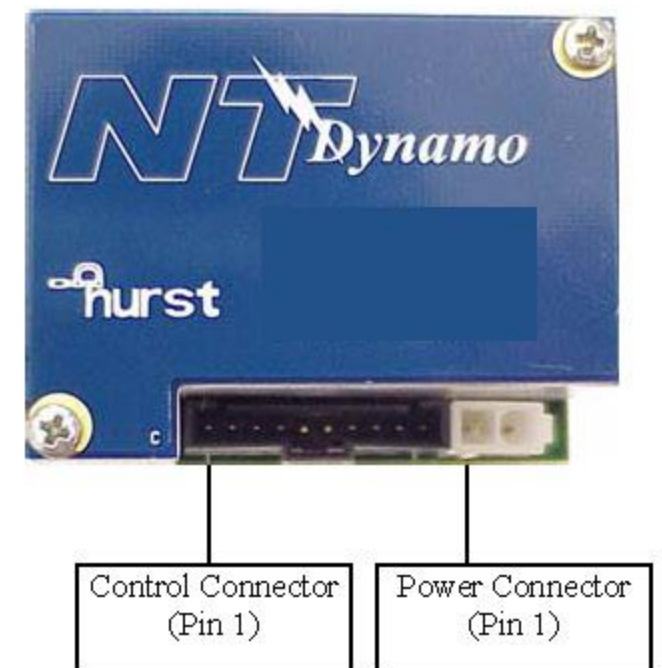
Power:

DC power must be connected to the 2-pin connector on control board. Observe the correct polarity when making this connection. Filter capacitors are supplied internal to the NT Dynamo for increased reliability under typical power conditions. Excessive amounts of voltage ripple can cause shortened product life. Control circuit commons are common to the negative terminal of the power connector. Use isolated input signals as required to avoid ground loop issues.

Minimum DC Voltage: 20Vdc

Maximum DC Voltage: 36Vdc

Connector	Pin #	Function	Mating Connector	Mating Terminal	Recommended Wire Size	Cable Length
Power	1	V_s	Molex 39-01-2020	Molex 39-00-0039	22 AWG	30 ft. Max ¹
	2	$V_{s(RTN)}$				
Control	1	Tach Signal	Molex 50-57-9410	Molex 16-02-0103	22 AWG	30 ft. Max ¹
	2	0-5V Input				
	3	N/A				
	4	N/A				
	5	N/A				
	6	N/A				
	7	Fwd/Rev				
	8	Run/Stop				
	9	$+5V_{(RTN)}$				
	10	+5V Output				



Notes

- 1) Longer cable runs may require a larger wire size to maintain the correct input voltage level and a signal amplifier / conditioner to avoid erroneous signal values. For cable runs longer than 3 ft, shielded wire is recommended.

Inputs:

Run/Stop

The Run/Stop pin is used to enable the drive. A low level signal on the Run/Stop pin causes the drive to start. A high level signal on the Run/Stop pin causes the drive to stop controlling the motor, thus allowing the motor to coast to a stop. This line has an internal 1.5K Ω pull up to 5Vdc. The minimum high level is +3.0Vdc. The maximum low level is +2.0Vdc. The 1.5K Ω pull up requires the pin to be driven by a circuit capable of sinking at least 3.5mA.

Fwd/Rev

The Fwd/Rev input is used to determine the direction of shaft rotation (Fwd meaning clockwise motor shaft rotation when viewing the motor from the lead end). A high level signal commands the forward direction. This line has an internal 1.5K Ω pull up. The minimum high level is +3.0Vdc. The maximum low level is +2.0Vdc. The 1.5K Ω pull up requires the pin to be driven by a circuit capable of sinking at least 3.5mA.

0-5V Input

Speed setpoint can be accomplished by connecting a 10K Ω potentiometer per figure 1, or by applying a 0-5Vdc control signal to the Pin 2.

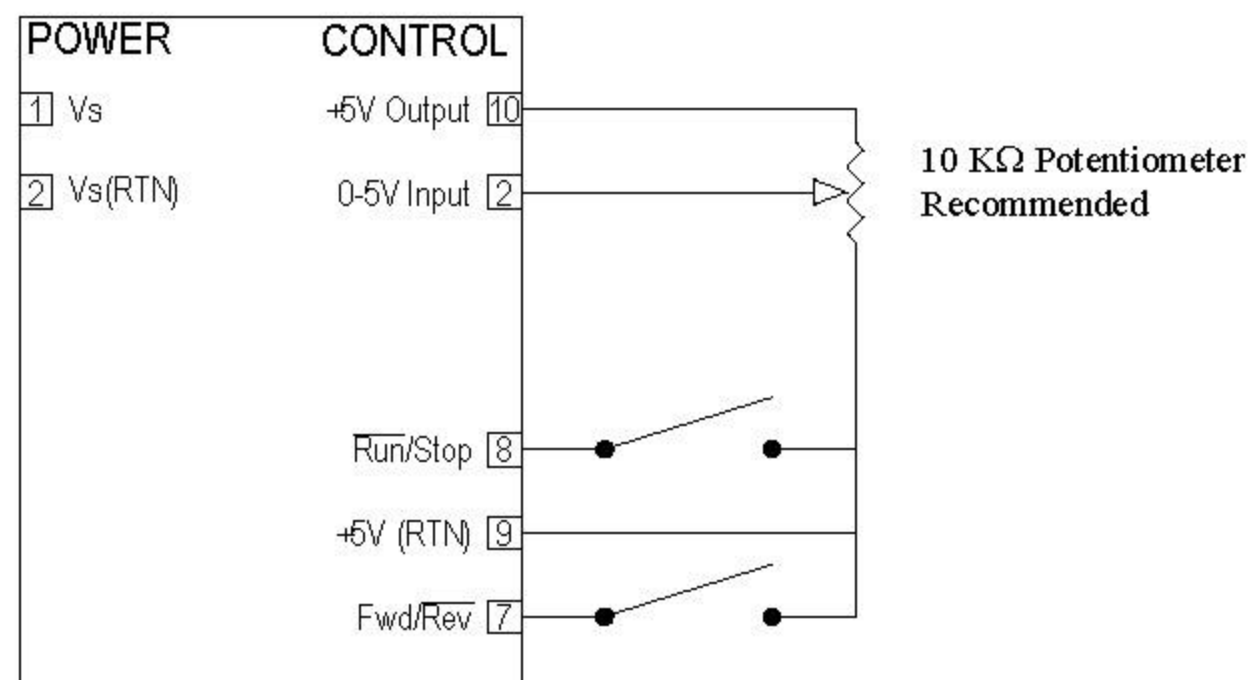


Figure 1 (Typical Connections)

Outputs:

Tachometer signal

Tachometer signal output is supplied by an open collector output with a 1K Ω resistor in series. On the standard 10 pole motor, the output is 30 pulses per revolution. Output for 8 pole motors (special order) is 24 pulses per revolution. The signal pulses low for 300ns minimum, 600ns typical.

Max. Voltage: 14Vdc

Max. Current 1.5mA

**For More Information Visit The Website www.hurst-motors.com or
Contact Hurst Engineering at 812-385-2564**