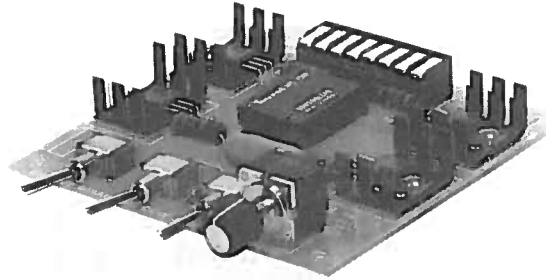


# HURST ELECTRONIC STEPPING MOTOR CONTROLS

## EPC-016 GENERAL PURPOSE CONTROL AND DRIVER



### GENERAL DESCRIPTION

The Hurst EPC-016 stepping motor control board is a general purpose control and driver for 4-phase stepping motors rated at 2 amps per phase. It combines the versatility of the Hurst 220001 custom hybrid circuit with power drive transistors and on-board switches for manual control. All components are mounted on a 4" x 4" PC board. The EPC-016, a 4-phase stepping motor with an operating voltage in the range of 6 to 24 volts, and a single DC power supply form a complete manually operated system. No additional components are required.

The hybrid contains a pulse source for continuous step and single step modes. The pulse frequency or width is determined by an on-board potentiometer. The hybrid also contains logic for bidirectional stepping and for turning off motor phases between moves. All of these functions are controlled by on-board toggle switches.

### APPLICATION INFORMATION

#### MOTOR CONNECTIONS

The 4 motor phases are connected to terminals 1 through 4 on the terminal strip. The phase commons (striped leads) are connected to terminals 5 and 6. Terminals 1 through 4 are labeled on the board according to the color code used on Hurst stepping motors. For other motors see the switching sequence diagram in figure 1.

#### POWER SUPPLY CONNECTIONS

The DC supply is connected to terminals 7 and 8. Terminal 8 is the positive voltage and terminal 7 is the circuit common. Power supply requirements for the EPC-016 are 6 to 24 VDC filtered, 50 ma maximum.

#### CW/CCW

The 2 position switch labeled CW and CCW controls the direction of rotation of the motor.

#### ENABLE/DISABLE

This switch allows the motor phases to be deenergized between moves without disconnecting the supply voltage. In the ENABLE position two motor phases are always energized. The hybrid determines the sequence in which they are energized. In the DISABLE position all phases are deenergized regardless of the sequencing signals from the hybrid.

#### RUN/JOG

This is a three position switch. In the center position the motor remains in a holding mode with two phases energized if enabled. In the RUN position the motor steps continuously in the direction specified by the CW/CCW switch at a rate determined by the speed adjust potentiometer setting. The JOG position is a momentary contact switch which generates one motor step each time it is pressed.

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## SPEED

The speed adjust potentiometer allows adjustment of the stepping rate over a range of approximately 5 to 400 pulses per second. However, the maximum rate at which a motor will run depends on motor and load characteristics.

**SWITCHING SEQUENCE**

	$\phi 4$ WHITE	$\phi 3$ BLACK	$\phi 2$ BLUE	$\phi 1$ RED	
CW ROTATION ↓	1	0	1	0	↑ CCW ROTATION
	1	0	0	1	
	0	1	0	1	
	0	1	1	0	

1 = ON, 0 = OFF

FIGURE 1

