

# R710

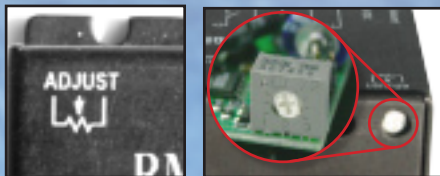
## MICROSTEPPING DRIVER

### MAIN FEATURES:

- Voltage: +24 to 80VDC
- Current: 0.3 to 7.0 Amps Peak, using a resistor for limiting current
- Hold current: 33% of default (100% can be set via jumpers internally)
- Step resolution: 10 Microstep
- Speed: (step frequency: 200 kHz)
- Inputs: step pulses, direction change, disable/enable driver

### DETAILED FEATURES:

- Step frequency: 0 to 200 kHz
- Step pulse time on falling edge (0): 0.5 microseconds minimum ( $0.5 \times 10^{-6}$ )
- Step pulse time on rising edge (1): 4.0 microseconds minimum ( $4.0 \times 10^{-6}$ )
- Direction setup: 1 msec minimum (20 microseconds min hold time after step edge)
- Operating temperature: 0° to 70° C
- Humidity range: 0 to 95% (non-condensing)
- Power dissipation: 1 to 12 Watts (1 to 7 Amps)
- Adjustable trimpot:



The potentiometer shown on the board can be rotated using a screwdriver. It's recommended to rotate the motor at 0.25 RPS. Then to adjust the potentiometer until there is the least amount of vibration and noise coming out of the motor. This will be the position that the driver will perform smoothly with a given motor and power supply voltage.

The adjustment will alter the current waveform coming out of the driver and into the motor coils.

### ACCESSORIES:

- No accessories are needed for this product.
- Other units needed to run this: Power Supply, Function Generator, Step Motor, Resistors

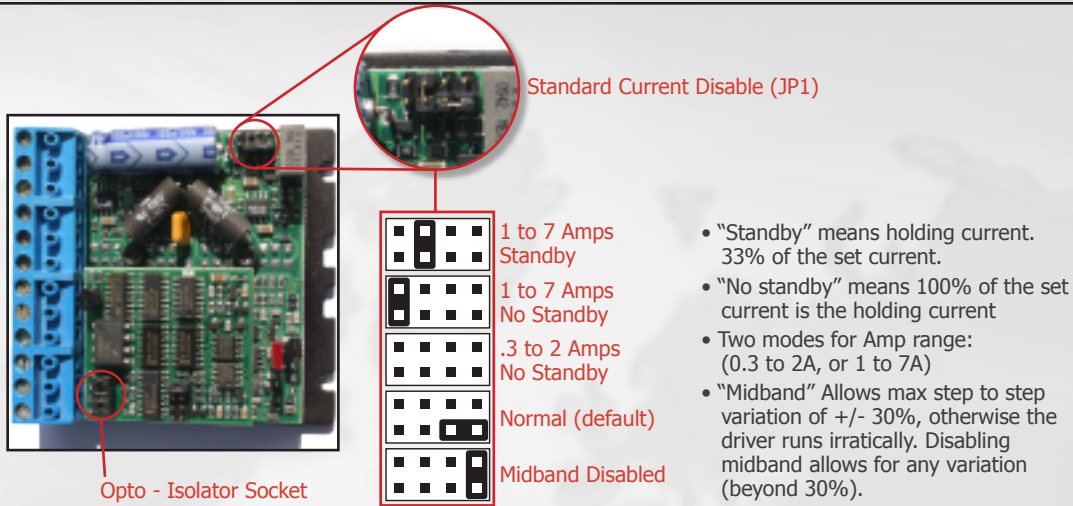


### CONNECTION SPECIFICATIONS:

Current (Amps)	Resistance (Ohms)
1	8.2K
2	18K
3	36K
4	62K
5	120K
6	270K
7	Open

Pin #	Color
1	Power Ground
2	+24 to 80VDC
3	A Phase
4	A Bar Phase
5	B Phase
6	B Bar Phase
7	Disable Input
8	Direction Input
9	Step Input
10	+5 VDC
11	Current Set
12	Current Set

## AUTO CURRENT REDUCTION:

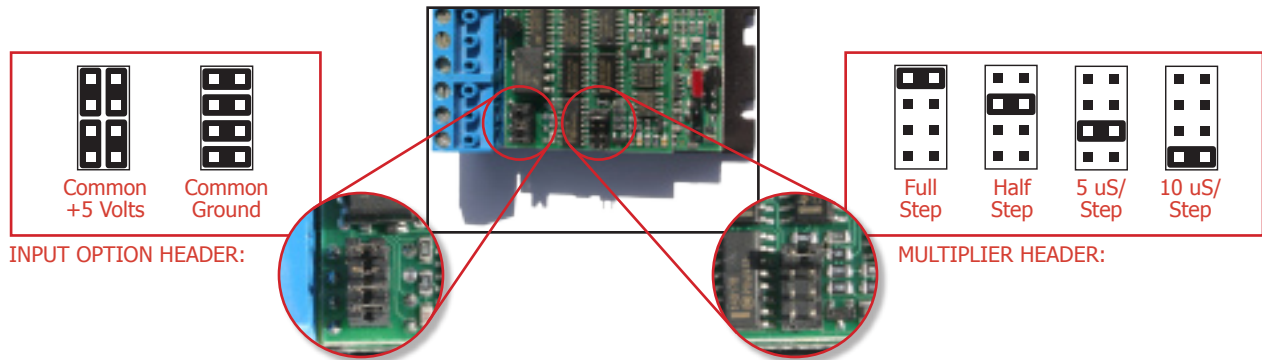


Standard Current Disable (JP1)

Opto - Isolator Socket

	1 to 7 Amps Standby
	1 to 7 Amps No Standby
	.3 to 2 Amps No Standby
	Normal (default)
	Midband Disabled

- "Standby" means holding current. 33% of the set current.
- "No standby" means 100% of the set current is the holding current
- Two modes for Amp range: (0.3 to 2A, or 1 to 7A)
- "Midband" Allows max step to step variation of +/- 30%, otherwise the driver runs irrationally. Disabling midband allows for any variation (beyond 30%).



INPUT OPTION HEADER:

Common +5 Volts	Common Ground

MULTIPLIER HEADER:

Full Step	Half Step	5 uS/ Step	10 uS/ Step

### INPUT OPTION HEADER:

- To power the Optically isolated inputs, you have the option to use a +5VDC common or a Ground common.
- Most PLC users will like to use the common ground option
- The R710 must be used with the +5VDC to supply the optos

### MULTIPLIER HEADER:

- The R710 always outputs 10x microstepping
- The step input will be multiplied by 1, 2, 5, or 10 times on-board to receive the same speed but at 10x microstepping
- Users do not need to change their original setup to get microstepping
- They only need to select the desired step multiplier of 1, 2, 5, or 10 to achieve the 10x microstepping output from the driver while maintaining the rotational speed that they had in their original setup
- This is most beneficial for customer who have a PLC and software that is already written for a full step, half step or 5x microstep system. And now, if they choose to change out the driver to use microstepping for better and smoother performance, they won't have to re-program their software to accommodate for the new microstepping. The R710 will do the changes for them.

### EXAMPLE:

At full stepping, 200 pps on a 1.8° stepper will equal 1 RPS  
(200 pulses per second / 360° per rev \* 1.8° per step).

But 200 pps on a 1.8° stepper at 10x microstepping is now equal to 0.1 RPS  
(200 pulses per second / 360° per rev \* 1.8° per step / 10 steps per 1.8°)

The R710 will multiply the 200 pps by 10 times in order to output 2000 pps at 10x microstep. Now, the speed is back to 1 RPS  
(2000 pulses per second / 360° per rev \* 1.8° per step / 10 steps per 1.8°)

