55 SCIENCE PARKWAY, ROCHESTER, N.Y. 14620

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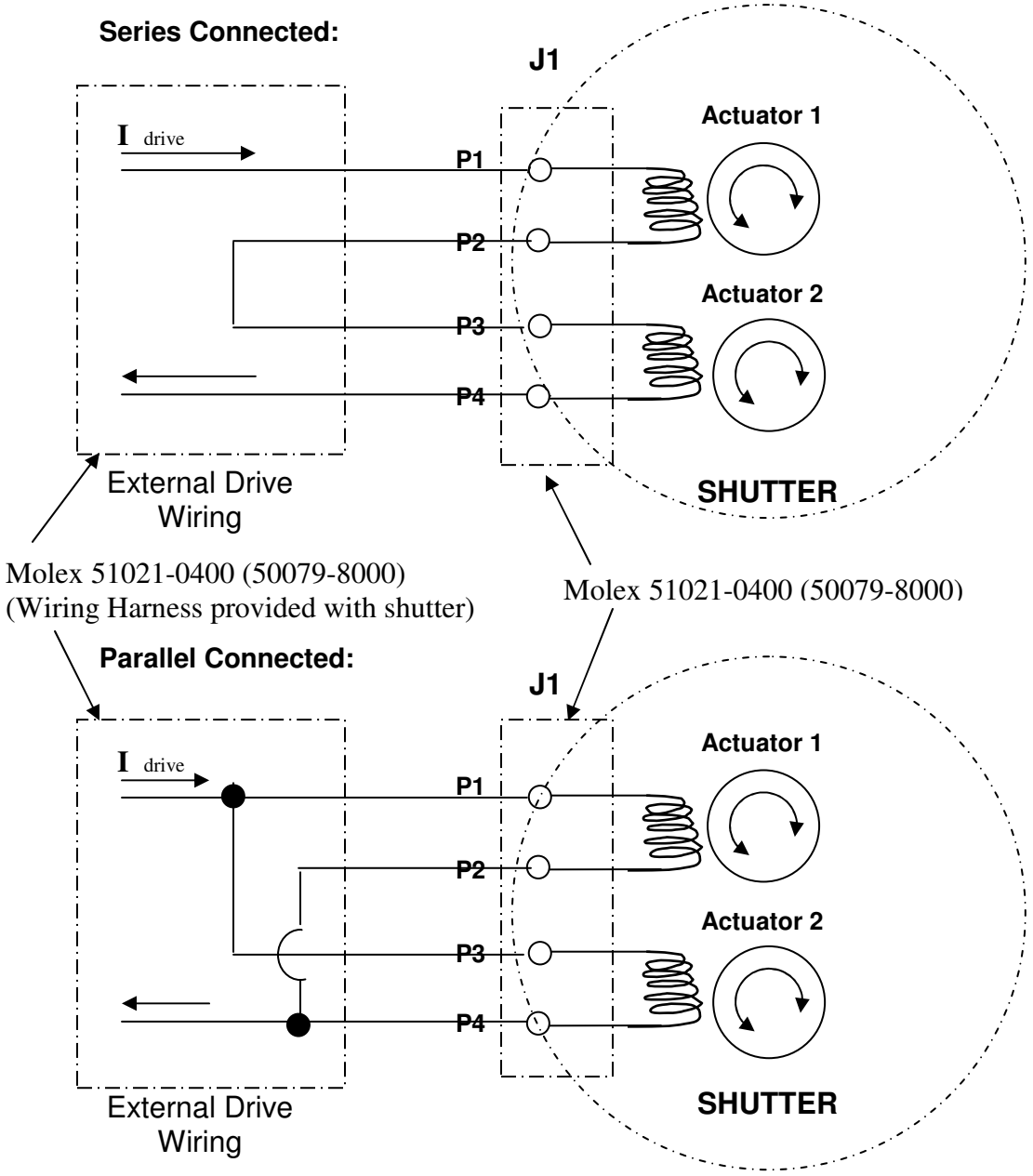
04RDS002 Shutter Drive Requirements-9 Volt
04RDS032 Shutter Drive Requirements-3 Volt

Wiring Diagram

The four-pin connector allows actuator coils to be connected in series or in parallel, for different voltage/current applications.



	9 Volt Actuator	3 Volt Actuators	
Actuator Coil Resistance (each actuator)	39.5 ohms +/- 10%	9.0 ohms +/- 10%	At 20 deg. C (R varies approx .394 % per deg. C)
Total Coil Resistance: Series Wired Parallel Wired	79 ohms 19.75 ohms	18 ohms 4.5 ohms	Tolerances and thermal variation, same as above
Drive Current @20°C (each actuator)	225 mA (-0 / +20%)	333 mA (-0 / +20%)	(+) polarity to open shutter (-) polarity to close shutter A current controlled driver is highly recommended for most consistent operation over variations in coil resistance and wide temp range
Total Drive Current @ 20°C: Series Wired Parallel Wired	225 mA 450 mA	333 mA 666 mA	
Drive Pulse Duration	30 mS min	30 mS min	60mS recommended for optimum bounce settling
Blade Transition Time, total	80 mS typical	80 mS typical	Incl. 50 mS bounce settling time
Max drive duty cycle (% time powered at rated current)	25%	25%	At 20 deg C ambient temp. (must be derated at higher ambient temperatures)
Max drive time at rated current	10 Sec	10 Sec	

Application Notes:

For a series-wired shutter, operating at up to 70 deg C:

The total max coil resistance will be:

79 ohms x 110% X (1+ .00394 x (70 – 20)) = 79 x 1.1 x 1.197 = 104 ohms

and required max drive voltage will be:

$V_{max\ drive}$ = I x R = .225 X 104 = 23.4 V

(Note that controller supply voltage must be slightly higher to allow for switching losses.)

For a parallel-wired shutter, operating at up to 70 deg C:

The total max coil resistance will be:

19.75 ohms x 110% X (1+ .00394 x (70 – 20))
= 19.75 x 1.1 x 1.197 = 26.0 ohms

and required max drive voltage will be:

$V_{max\ drive}$ = I x R = .45 X 26 = 11.7 V

(Note that controller supply voltage must be slightly higher to allow for switching losses.)
Melles Griot can recommend basic H-bridge block diagram drive circuit on request.