OIM102-Two Inch FSM

FEATURES:

- Flexure suspension allows stiction free motion of the mirror with an infinite fatigue lifetime
- Built in optical sensor allows the user to monitor both axes of mirror motion
- Moving magnet design allows coils to be heat sunk to the mirror base structure
- New coil design eliminates coil overheating problems, no need to monitor coil temperature
- Removable optical table mounting foot allows easy mounting to standard optical tables
- Mirror coating to customer requirements
- Wave-front quality 1/4th wave rms
    - Substrate 1/4th wave p-v
- Useable aperture 1.8”

Model OIM102 features a 2” glass mirror substrate. Standard coating protected aluminum. Contact Optics In Motion for custom mirror coatings.

A built in high precision optical sensor monitors mirror angle. The compact optical head is attached to a servo controller using a supplied 6 foot cable. The user inputs analog mirror command to the controller to steer the mirror.

Optics In Motion LLC, 4223 Rutgers Ave, Long Beach, CA 90808
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Mirror Specifications

Specification	Typical	Units
Dynamic Performance		
Mirror Angular Range (mechanical)	+/- 1.5	degrees
Angular resolution	<2	urads
3dB Bandwidth (small angle 10mV)	> 750	Hz
Linearity	1%	% Full Scale
Step Response (1 mrad step)	<5	ms
Mirror Substrate		
Material	Pyrex or fused silica	
Mirror substrate size	2”	
Coating	Protected Aluminum	
Reflectivity	>85% from 400 – 700nm	
Wavefront quality	λ/4 @ 633nm	waves rms
Clear Aperture	1.8	inches
Electrical		
Peak power	30	Watts
Coil thermal protection set point	80	degrees C
Mechanical		
Mirror head size	2.3 X 2.3 X 2.2	inches
Controller size	2.0 X 4.0 X 6.1	inches

Pricing

Complete mirror system (mirror head, controller, cables, and power supply) Includes: Fast Steering Mirror Head Protected aluminum mirror substrate* Analog Servo Controller 6 foot cable FSM to Controller Table top power supply	OIM102	$4100

***** Contact Optics In Motion to obtain a price for other mirror coatings.

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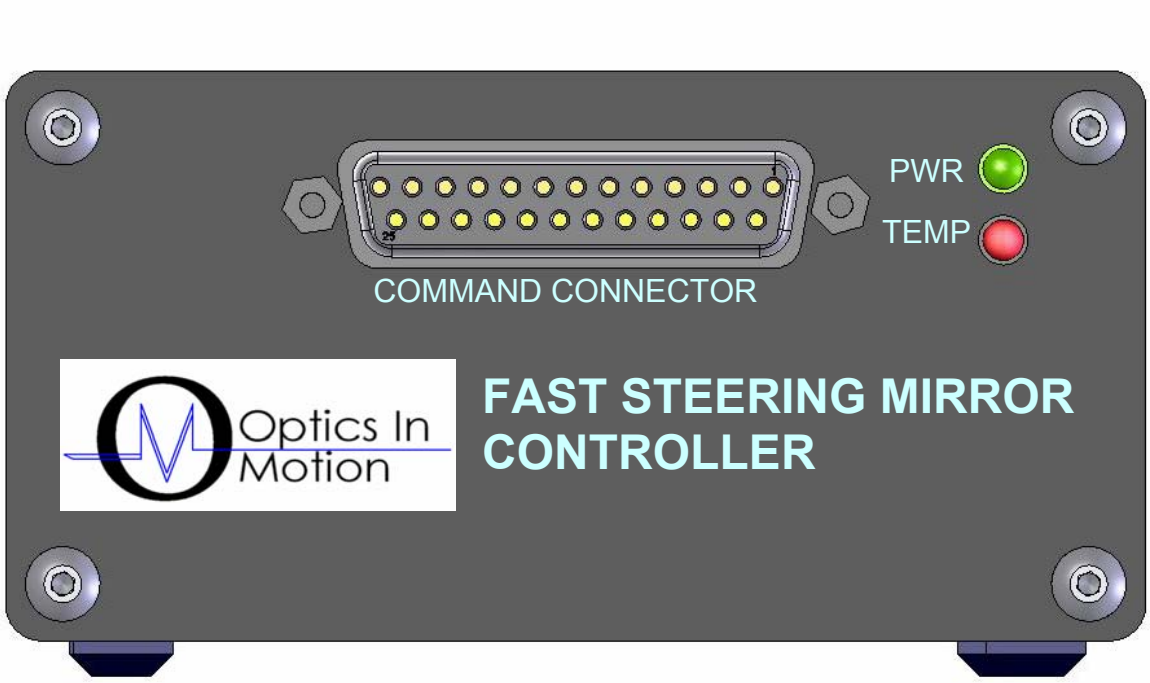

Figure 1: Controller Front View

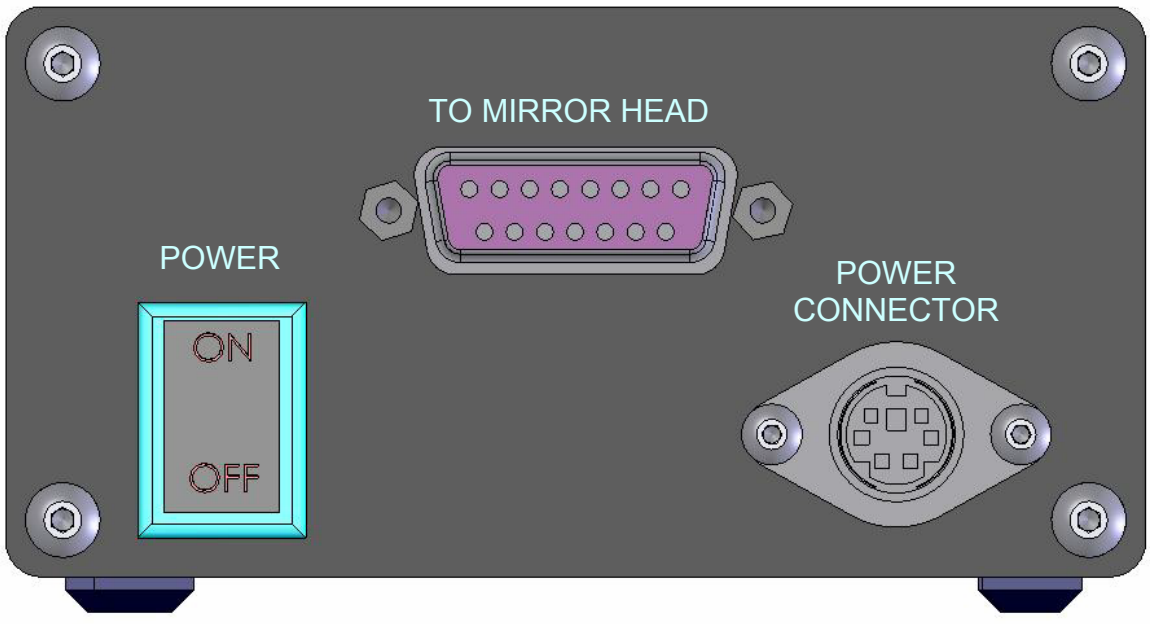

Figure 2: Controller Rear View

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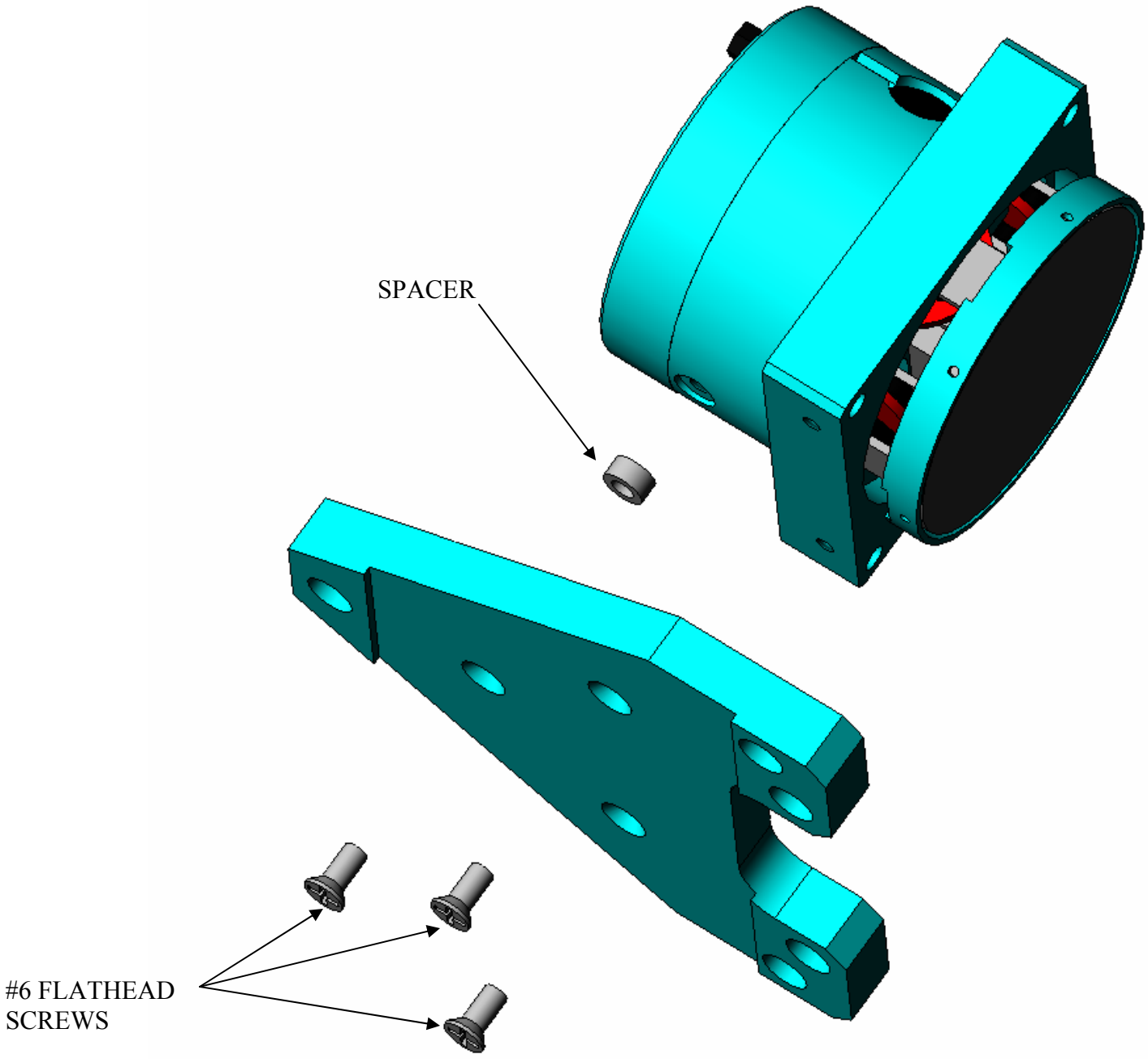

OIM100 SERIES MIRROR, FOOT
INSTALLATION/REMOVAL

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Command Connector Wiring Table

25-Socket Sub-miniature D Connector

Pin Number	Signal Name	I/O Type	Description
1	Y ERROR	Output	Y summing junction error voltage output, difference between commanded and actual position. (referenced to ground)
2	INT/EXT SWITCH	Input	Normally low TTL input. High level switches the position feedback input from local to external. (used with input pins 10,11 and 17, 5)
3	Y- COMMAND	Input	Y mirror position command. Low side of differential command input. Range +/-10 Volts.
4	Y+ COMMAND	Input	Y mirror position command. High side of differential command input. Range +/-10 Volts.
5	Y- EXTERNAL	Input	Y external mirror position. Low side of differential position input (from external quad or similar position sensor)
6	GND	Output	Ground Reference
7	-15 VOLTS	Output	-15 VDC for external loads of less than 100ma.
8	N/C		
9	N/C		
10	X+ EXTERNAL	Input	X external mirror position. High side of differential position input (from external quad or similar position sensor)
11	X- EXTTERNAL	Input	X external mirror position. Low side of differential position input (from external quad or similar position sensor)
12	X- COMMAND	Input	X mirror position command. Low side of differential command input. Range +/-10 Volts.
13	X+ COMMAND	Input	X mirror position command. High side of differential command input. Range +/-10 Volts.
14	Y POSITION	Output	Y mirror angular position readout from local position sensor. (referenced to ground)
15	+5 VOLTS	Output	5 VDC for external loads of less than 100ma.
16	N/C		
17	Y+ EXTERNAL	Input	Y external mirror position Low side of differential position input (from external quad or similar position sensor)
18	N/C		
19	+15 VOLTS	Output	+15 VDC for external loads of less than 100ma.
20	N/C		
21	N/C		
22	N/C		
23	X POSITION	Output	X mirror angular position readout from local position sensor. (referenced to ground)
24	X ERROR	Output	Y summing junction error voltage output, difference between commanded and actual position. (referenced to ground)
25	OVER TEMP	Output	Normally low TTL output, High output represents a thermal over temperature of the mirror coils. Controller shuts down mirror operation until coils return to operating temperature range.