

## Model 6860 Moving Magnet Capacitive Position Detector Optical Scanner



Supports 5 mm and 10 mm apertures

### Galvanometer Specifications

All Position Detector specifications apply with Cambridge Technology servo driver after a 30 second warm-up. All angles are in mechanical degrees. Consult manual for complete operating instructions.

### Mechanical Specifications

Rated Angular Excursion:	40°
Rotor Inertia:	0.6 gm*cm <sup>2</sup> , ±10%
Torque Constant:	9.3X10 <sup>4</sup> dyne-cm/amp, ±10%
Maximum Coil Temperature:	110°C
Thermal Resistance (Coil to Case):	1.5°C/Watt, Max

### Electrical Specifications/Drive Mechanism

Coil Resistance:	1.5 Ohms, ±10%
Coil Inductance:	160uH, ±10%
Back EMF Voltage:	0.17mV/degree/sec, ±10%
RMS Current:	4.6 Amperes at Tcase of 50°C, Max
Peak Current:	25 Amperes, Max
Small Angle Step Response Time:	0.5ms, with balanced inertia matched load

### Position Detector

Linearity:	99.9%, Minimum, over 40 degrees
Scale Drift:	50PPM/°C, Maximum
Zero Drift:	15 microradians/°C, Maximum
Repeatability, Short Term:	8 microradians
Output Signal, Common Mode:	585 microamperes with AGC voltage of 10VDC, ±20%
Output Signal, Differential Mode:	14.5 µA/degree, at common mode current of 585µA, ±20%

## Model 6870 Moving Magnet Capacitive Position Detector Optical Scanner



Supports 12mm and 15mm beam apertures.

### Galvanometer Specifications

All Position Detector specifications apply with Cambridge Technology servo driver after a 30 second warm-up. All angles are in mechanical degree. Consult manual for complete operating instructions.

### Mechanical Specifications

Rated Angular Excursion:	40°
Rotor Inertia:	2.0 gm*cm <sup>2</sup> , ±10%
Torque Constant:	1.8X10 <sup>5</sup> dyne-cm/amp, ±10%
Maximum Coil Temperature:	110°C
Thermal Resistance (Coil to Case):	1.0°C/Watt, Max

### Electrical Specifications/Drive Mechanism

Coil Resistance:	1.4 Ohms, ±10%
Coil Inductance:	275uH, ±10%
Back EMF Voltage:	0.3mV/degree/sec, ±10%
RMS Current:	5.3 Amperes at Tcase of 50°C, Max
Peak Current:	25 Amperes, Max
Small Angle Step Response Time:	0.7ms, with balanced 2.0gm*cm <sup>2</sup> load

### Position Detector

Linearity:	99.9%, Minimum, over 40 degrees
Scale Drift:	50PPM/°C, Maximum
Zero Drift:	15 microradians/°C, Maximum
Repeatability, Short Term:	8 microradians
Output Signal, Common Mode:	585 microamperes with AGC voltage of 10VDC, ±20%
Output Signal, Differential Mode:	14.5 µA/degree, at common mode current of 585 µA, ±20%

## Model 6880 Moving Magnet Capacitive Position Detector Optical Scanner



Supports 20 mm and 30 mm beam apertures.

### Galvanometer Specifications

All Position Detector specifications apply with Cambridge Technology servo driver after a 30 second warm-up. All angles are in mechanical degrees. Consult manual for complete operating instructions.

### Mechanical Specifications

Rated Angular Excursion:	40°
Rotor Inertia:	6.4 gm*cm <sup>2</sup> , ±10%
Torque Constant:	2.54X10 <sup>5</sup> dyne-cm/amp, ±10%
Maximum Coil Temperature:	110°C
Thermal Resistance (Coil to Case):	0.75°C/Watt, Max

### Electrical Specifications/Drive Mechanism

Coil Resistance:	1.0 Ohms, ±10%
Coil Inductance:	280uH, ±10%
Back EMF Voltage:	0.44mV/degree/sec, ±10%
RMS Current:	7.5 Amperes at Tcase of 50°C, Max
Peak Current:	25 Amperes, Max
Small Angle Step Response Time:	0.9ms, with balanced inertia matched load

### Position Detector

Linearity:	99.9%, Minimum, over 40 degrees
Scale Drift:	50PPM/°C, Maximum
Zero Drift:	10 microradians/°C, Maximum
Repeatability, Short Term:	8 microradians
Output Signal, Common Mode:	970 microamperes with AGC voltage of 10VDC, ±20%
Output Signal, Differential Mode:	22 µA/degree, at common mode current 970 µA, ± 20%