

Model 1804-1807 Enhanced Accuracy Rotary Torque Sensor



- Enhanced accuracy
- High overload protection with high signal output (sensitivity)
- Extended speed range
- Minimal maintenance due to “bearings only” contact
- Carrier frequency excitation provides increased signal/noise immunity
- 100 lb-in to 100000 lb-in capacities

Model 7927 shunt cal reference box included with each purchase of 1800 Series.

How to order: (Quick-ship range/option combinations available. See Web site.)

Combine the order code and the desired torque range lb-in. For example:

1805 500

Order code Range (lb-in)

Order codes

- 1804 Model 1804 enhanced accuracy rotary torque sensor, 100 lb-in to 2000 lb-in
 1805 Model 1805 enhanced accuracy rotary torque sensor, 2000 lb-in to 10000 lb-in
 1806 Model 1806 enhanced accuracy rotary torque sensor, 20000 lb-in
 1807 Model 1807 enhanced accuracy rotary torque sensor, 50000 lb-in to 100000 lb-in

Specifications

Performance

Torque range 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K lb-in
 Non-linearity ±0.05 % of rated output
 Hysteresis ±0.05 % of rated output
 Repeatability ±0.02 % of rated output
 Output @ rated capacity 2 mV/V (nominal)

Environmental

Temperature, operating -30 °C to 77 °C [-20 °F to 170 °F]
 Temperature, compensated 21 °C to 77 °C [70 °F to 170 °F]
 Temperature effect, zero ±0.001 %/of rated output °F
 Temperature effect, output ±0.001 %/of reading °F

Electrical

Excitation 3.28 kHz optimum @ 10 Vac RMS
 Insulation resistance > 5000 mOhm @ 50 Vdc
 Number of bridges 1
 Zero balance ±1.0 % of rated output

Mechanical

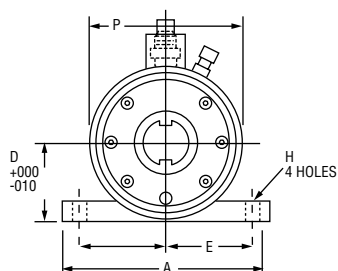
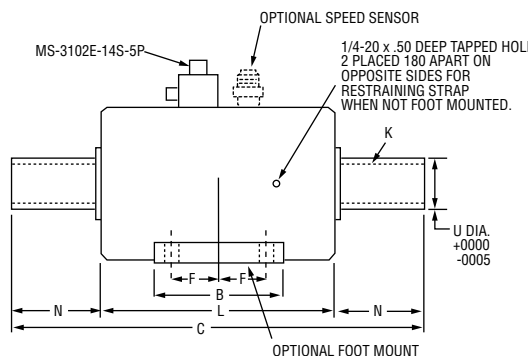
Model	Capacity lb-in	Capacity N-m	Max speed RPM*	Protected for overloads to Nm [lb-in]	Torsional stiffness lb-in/rad.	Rotating inertia lb-in/sec ²	Weight kg [lb]
1804-100	100	10	27000	30 [300]	13500	2.59 x 10 ⁻³	8.20 [18]
1804-200	200	20	27000	60 [600]	33000	2.59 x 10 ⁻³	8.20 [18]
1804-500	500	55	27000	165 [1500]	85000	2.59 x 10 ⁻³	8.20 [18]
1804-1K	1000	115	27000	340 [3000]	150000	2.59 x 10 ⁻³	8.20 [18]
1804-2K	2000	225	27000	340 [3000]	225000	2.59 x 10 ⁻³	8.20 [18]
1805-2K	2000	225	22000	675 [6000]	700000	8.41 x 10 ⁻³	13.20 [29]
1805-5K	5000	565	22000	1695 [15000]	950000	8.41 x 10 ⁻³	13.20 [29]
1805-10K	10000	1130	22000	2260 [20000]	1000000	8.41 x 10 ⁻³	13.20 [29]
1806-20K	20000	2250	12000	3390 [30000]	3.27 x 10 ⁶	3.84 x 10 ⁻²	[55.90]
1807-50K	50000	5650	10000	16950 [150000]	11.71 x 10 ⁶	0.14	[85.20]
1807-100K	100000	11300	10000	16950 [150000]	18.86 x 10 ⁶	0.15	[85.20]

Consult factor for higher speed ratings when used with air/oil mist bearings.

Mounting dimensions and characteristics

Model	C cm [in]	L cm [in]	N cm [in]	P cm [in]	U cm [in]	K cm [in]	A cm [in]	B cm [in]	D cm [in]	E cm [in]	F cm [in]	H cm [in]
1804	25,40 [10]	14,76 [6]	5,32 [2]	10,16 [4]	2,54 [1.00]*	0,64 [0.25 sq]*	12,07 [4.75]	8,89 [3.50]	5,40 [2.13]	5,08 [2]	3,49 [1.38]	0,71 [0.28]
1805	32,39 [12.75]	18,42 [7.25]	6,99 [2.75]	11,99 [4.75]	3,81 [1.50]	0,95 [0.38 sq.]	16,51 [6.25]	10,16 [4]	6,35 [2.50]	6,67 [2.63]	3,81 [1.50]	1,03 [0.41]
1806	40,01 [15.75]	20,96 [8.25]	9,53 [3.75]	13,97 [5.50]	5,72 [2.25]	1,27 [0.50 sq.]	18,42 [7]	13,34 [5.25]	7,62 [3]	7,62 [3]	5,08 [2]	1,35 [0.53]
1807	48,26 [19]	22,23 [8.75]	13,02 [5.125]	16,51 [6.50]	7,62 [3.00]	1,91 [0.75 sq.]	24,59 [8.50]	13,97 [5.50]	8,89 [3.50]	8,89 [3.50]	5,08 [2]	1,35 [0.53]

* 100, 200 lb-in units: K=3/16 in sq., U=3/4 in



Typical system diagram

Mating Connectors & Cables

- 064-LW13621 Mating connector
- 064-LW13656 Mating connector, speed pickup
- 064-LW25469 Mating connector, zero velocity speed pickup
- 7200-81-XX* Mating connector & 6 conductor cable (unamplified unit with sense leads but not shunt cal)
- 7204-00-XX* Speed sensor cable, pigtail leads at instrument
- 7204-16-XX* Speed sensor cable to instrument 7541
- 7220-47-XX* Zero velocity speed sensor cable, pigtail leads at instrument
- 7220-119-XX* Zero velocity speed sensor cable to instrument 7541

* XX represents length in feet 100ft maximum
 ** XX represents length in feet 20ft maximum

