

Model 1804-1807

Enhanced Accuracy Rotary Torque Sensor



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

DESCRIPTION

A line of enhanced accuracy rotary transformer torque sensors often ideal for test installations running long-term durability testing. Non-contact nature of the signal transfer virtually eliminates the need for maintenance. High overload protection with high signal output helps prevent potential damage to the sensor. Carrier frequency excitation provides increased signal/noise im-

munity. Extended speed range allows shaft rotation up to 27000 RPM. Capacity range from 100 in-lb to 100000 in-lb for shaft mounting configurations.

FEATURES

- 100 in-lb to 100000 in-lb capacities
- 0.05 % non-linearity and hysteresis
- Enhanced accuracy
- High overload protection with high signal output (sensitivity)
- Extended speed range, up to 27000 RPM
- Minimal maintenance due to “bearings only” contact
- Carrier frequency excitation provides increased signal/noise immunity

Model 1804-1807

PERFORMANCE SPECIFICATIONS

Characteristic	Measure
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)

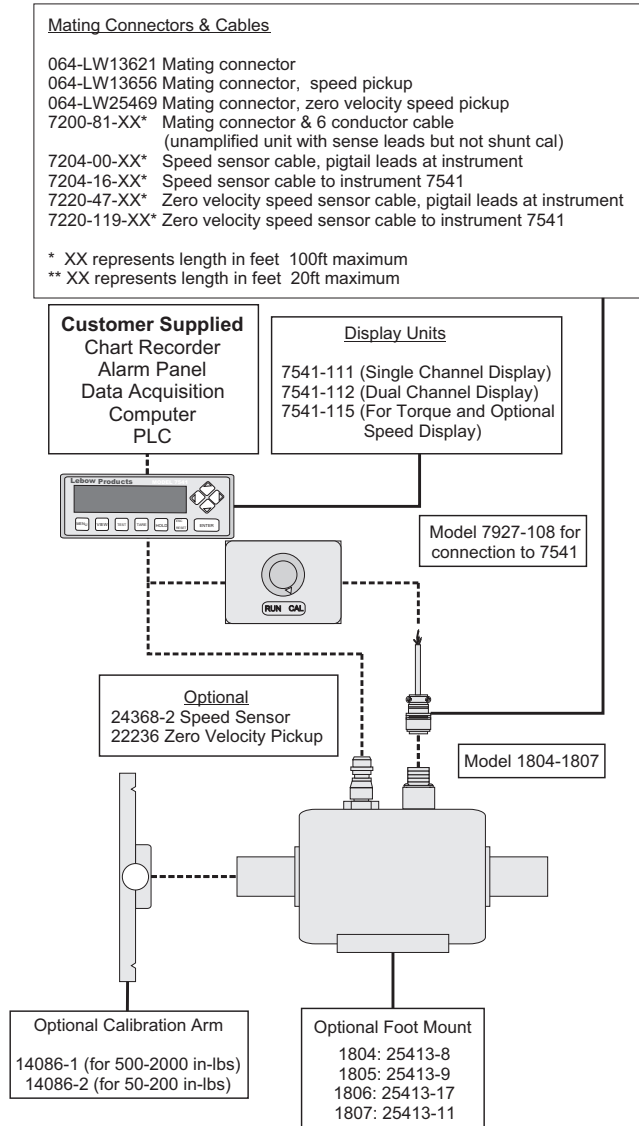
ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
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 SPECIFICATIONS

Characteristic	Measure
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

TYPICAL SYSTEM DIAGRAM



Enhanced Accuracy Rotary Torque Sensor

MECHANICAL SPECIFICATIONS

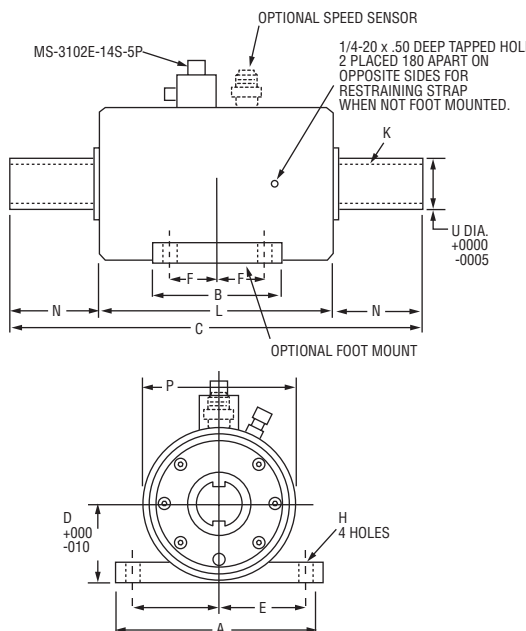
Model	Capacity lb-in	Capacity N-m	Max speed RPM*	Protected for overloads to Nm [lb-in]	Torsional stiffness lb-in/rad	Rotating inertia lb-in sec ²	Weight kg [lb]
1804-100	100	10	27000	30 [300]	13500	2.59 x 10 ⁻³	8,20 [18]
1804-200	200	20	27000	60 [600]	33000	2.59 x 10 ⁻³	8,20 [18]
1804-500	500	55	27000	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

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



For reference only

Model 1804-1807

Enhanced Accuracy Rotary Torque Sensor

Warranty. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

WARNING

PERSONAL INJURY

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office. To learn more about Honeywell's test and measurement products, call **+1-614-850-5000**, visit **<http://measurementsensors.honeywell.com>**, or e-mail inquiries to **info.tm@honeywell.com**

Sensing and Control
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422 USA
honeywell.com

Honeywell

008780-2-EN IL50 GLO
July 2014
Copyright © 2014 Honeywell International Inc. All rights reserved.