

Model 1104 to 1107

Standard Rotating Shaft Torque Sensor



DESCRIPTION

A line of rotary slip ring torque sensors primarily designed for a multitude of general test and measurement applications, such as motor testing. Can be used to monitor start up, running, and stall torque levels. Capacity range from 100 in-lb to 100000 in-lb for shaft mounting configurations.

FEATURES

- 100 in-lb to 100000 in-lb capacity range
- 0.1 % non-linearity and hysteresis
- Manual brush lifter (standard)
- Speed sensor and/or foot mount options
- Lower cost for general “in-line” applications
- Can be used with almost all existing dc and ac signal conditioning instrumentation

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PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Torque range	100 lb-in to 3000K lb-in
Non-linearity	±0.1 % of rated output
Hysteresis	±0.1 % of rated output
Repeatability	±0.05 % of rated output
Output @ rated capacity	±2 mV/V (nominal)

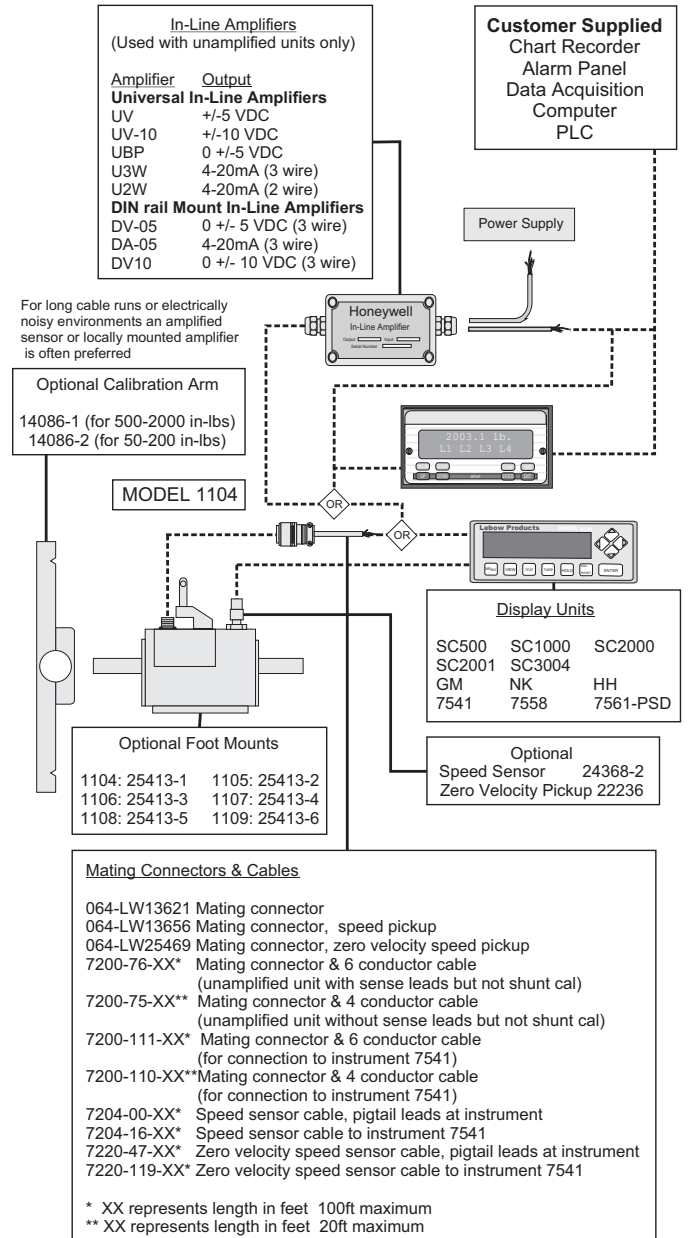
ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-29 °C to 93 °C [-20 °F to 200 °F]
Temperature, compensated	21 °C to 77 °C [70 °F to 170 °F]
Temperature effect, zero	±0.002 % of rated output/°F
Temperature effect, output	±0.002 % of reading/°F

ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Excitation (maximum)	20 Vdc or Vac RMS
Insulation resistance	> 5000 mOhm @ 50 Vdc
Bridge resistance	350 ohm (nominal)
Number of bridges	1
Zero balance	±1.0 % of rated output
Electrical termination	MS-3102E-14S-5P

TYPICAL SYSTEM DIAGRAM



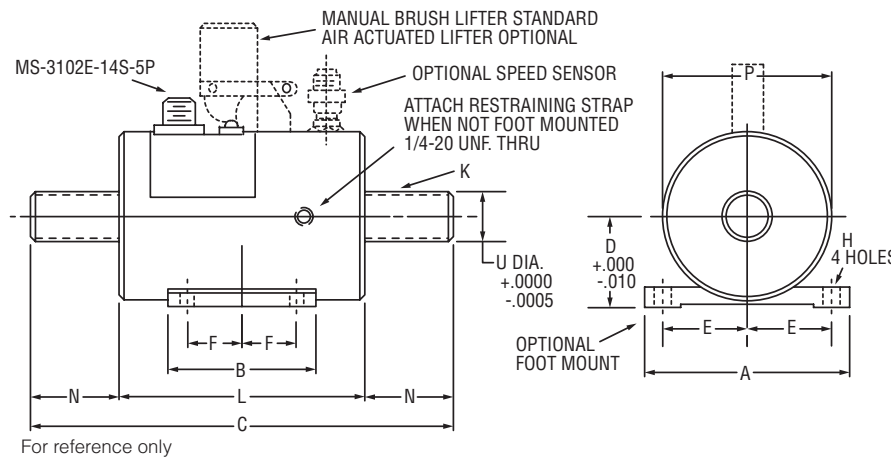
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MECHANICAL SPECIFICATIONS

Model	lb-in	N-m	Max speed RPM	Overload capacity (% of nominal capacity)	Torsional stiffness lb-in/rad	Rotating inertia lb-in/sec ²	Weight (lb)
1104	100	10	9000	150	6430	3.93×10^{-3}	11
1104	200	20	9000	150	17000	3.96×10^{-3}	11
1104	500	55	9000	150	45200	4.11×10^{-3}	11
1104	1000	115	9000	150	103000	4.11×10^{-3}	11
1104	2000	225	9000	150	182500	4.14×10^{-3}	11
1105	5000	565	8500	150	475000	9.29×10^{-3}	28
1105	10000	1130	8500	150	750000	1.06×10^{-2}	28
1106	20000	2250	4500	150	2610000	3.93×10^{-2}	42
1107	50000	5650	4000	150	7220000	0.14	74
1107	100000	11300	4000	150	12450000	0.15	74

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]
1104 (100 lb to 200 lb)	25,40 [10]	14,76 [5.81]	5,32 [2.09]	10,16 [4]	1,91 [0.75]	0,46 sq. [0.18 sq.]	12,07 [4.75]	8,89 [3.50]	5,40 [2.13]	5,08 [2.0]	3,49 [1.38]	0,71 [0.28]
1104 (> 200 lb)	25,40 [10]	14,76 [5.81]	5,32 [2.09]	10,16 [4]	2,54 [1.0]	0,64 sq. [0.25 sq.]	12,07 [4.75]	8,89 [3.50]	5,40 [2.13]	5,08 [2.0]	3,49 [1.38]	0,71 [0.28]
1105	32,39 [12.75]	18,42 [7.25]	6,99 [2.75]	11,99 [4.72]	3,81 [1.50]	0,95 sq. [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]
1106	37,15 [14.63]	17,46 [6.88]	9,84 [3.88]	13,47 [5.50]	5,72 [2.25]	1,27 sq. [0.50 sq.]	18,42 [7.25]	13,34 [5.25]	7,62 [3]	7,62 [3]	5,08 [2]	1,35 [0.53]
1107	48,26 [19]	19,05 [7.5]	14,61 [5.75]	16,51 [6.50]	7,62 [3.0]	1,91 sq. [0.75 sq.]	21,59 [8.50]	13,97 [5.50]	8,89 [3.50]	8,89 [3.50]	5,08 [2]	1,35 [0.53]



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⚠ WARNING
MISUSE OF DOCUMENTATION

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