
Reaction Torque Sensors - General Purpose

Models 2110 to 2114**Description**

Flanged reaction torque sensors

Features

- High torsional stiffness
- Higher resistance to bending moments
- Minimal friction error
- Low end sensitivity due to absence of moving parts

Application Examples

These general purpose reaction torque sensors have been used in a broad range of component and product test applications. Components such as drive shafts can be tested during manufacturing to verify their capability to withstand minimum torque levels with no damage. They have also been used as calibration standards that can be taken to fixed installations and installed to calibrate the installation without removal of the torque monitoring device permanently installed.

Specifications

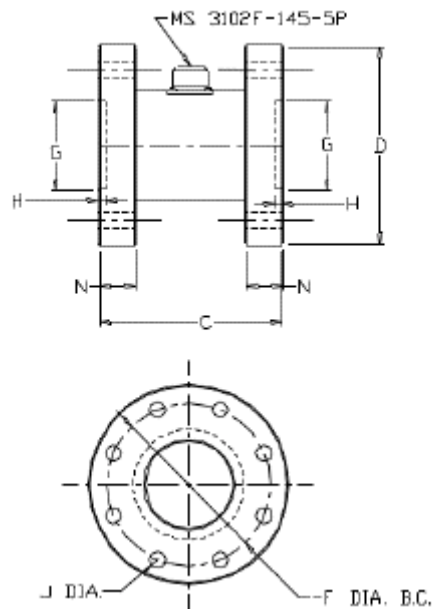
	STANDARD	HIGH OUTPUT OPTION
Output at rated capacity: millivolts per volt, nominal	2	5
Nonlinearity: of rated output	±0.1%	±0.15%
Hysteresis: of rated output	±0.1%	±0.15%
Repeatability: of rated output	±0.05%	±0.07%
Zero balance: of rated output	±1.0%	±1.0%
Bridge resistance: ohms nominal	350	350
Temperature range, compensated: °F	+70 to +170	+70 to +170
Temperature range, compensated: °C	+21 to +77	+21 to +77
Temperature range, useable: °F	-65 to +200	-65 to +200
Temperature range, useable: °C	-54 to +93	-18 to +93
Temperature effect on output: of reading per °F	±0.002%	±0.003%
Temperature effect on output: of reading		

1728 Mapletown Drive
Troy, Michigan 48064-4600
United States of America

Telephone 1 248 637 9406
Facsimile 1 248 643 0259
Web www.lebowproducts.com
Email info@lebow.com

per °C		
Temperature effect on zero: of rated output per °F	±0.002%	±0.003%
Temperature effect on zero: of rated output per °C	±0.0054%	±0.0054%
Excitation voltage, maximum: volts DC or AC rms	20	20
Insulation resistance, bridge/case: megohms at 50 VDC	>5000	>5000
Number of bridges	1	1

Design Drawings



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Design Information

LOAD CARRYING CAPACITY

W = weight of test device

W x S = overhung moment

S = distance to center of gravity of test unit

Do not exceed moment (W x S) or shear (W), whichever value is attained first.

P = thrust.

Model		C	D	F	G*	H	N	J†
2110-2K	In.	3	4	3 1/4	1.500	0.125	1/2	21/64
	cm	7.62	10.16	8.26	3.81	0.32	1.27	0.83
	In.	3	4	3 1/4	1.500	0.125	1/2	21/64
	cm	7.62	10.16	8.26	3.81	0.32	1.27	0.83
	In.	3 1/2	5	4 1/4	2.000	0.25	3/4	25/64
	cm	8.89	12.7	10.8	5.08	0.64	1.91	0.99
	In.	3 1/2	5	4 1/4	2.000	0.25	3/4 Sq	25/64
	cm	8.89	12.7	10.80	5.08	0.64	1.91	0.99
	In.	7 3/8	8	6 1/2	3.500	0.31	1 1/2	41/64
	cm	18.73	20.32	16.51	8.89	0.79	3.81	1.63
	In.	7 3/8	8	6 1/2	3.500	0.31	1 1/2	41/64
	cm	18.73	20.32	16.51	8.89	0.79	3.81	1.63
	In.	8 1/2	9 3/4	8	4	0.31	1 1/2	49/64
	cm	21.59	24.77	20.32	10.16	0.79	3.81	1.94
	In.	10 1/2	14	11	6	0.31	2	1 1/64
	cm	26.67	35.56	27.94	15.24	0.79	5.08	2.59
	In.	10 1/2	14	11	6	0.31	2	1 1/64
	cm	26.67	35.56	27.94	15.24	0.79	5.08	2.59

*Diameter tolerance +.002 — .000.

	Capacity	Overload	Torsional	Max.	Max. Shear	Max. Thrust
	Lbs. In.	Lbs. In.	Stiffness Lbs.	Moment WxS Lbs. In.	W Lbs.	P Lbs.
	N • m	N • m	N • m/Rad.	N • m	N	N
	2,000	3,000	384,000	1,000	1,500	2,000
	225	340	43,384	113	682	8,895
	5,000	7,500	920,000	2,000	2,000	3,000
	565	845	103,941	226	909	13,344
	10,000	15,000	2,680,000	5,000	4,000	6,000
1728 Maplelawn Drive Troy, Michigan 48061-3000 United States of America	10,130	1,690	302,784	565	1,818	26,688

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Facsimile 1 248 643 0259

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Email info@lebow.com

2111-10K	10,000	15,000	2,680,000	5,000	4,000	6,000
2111-10K	20,000	30,000	5,370,000	10,000	8,000	12,000
2111-20K	2,250	3,380	649,630	1,130	2,954	44,480
2112-50K	50,000	75,000	8,000,000	24,000	12,000	18,000
	5,650	8,475	903,833	2,704	5,454	80,064
2112-100K	100,000	150,000	20,000,000	50,000	20,000	30,000
	11,300	16,950	2,259,584	5,650	9,091	133,440
2113-200K	200,000	300,000	33,400,000	90,000	30,000	40,000
	22,600	33,900	3,773,505	10,170	13,636	177,920
2114-300K	300,000	450,000	60,000,000	150,000	42,000	60,000
	33,900	50,850	6,778,752	16,950	19,091	266,880
	500,000	750,000	114,000,000	200,000	55,000	80,000
	56,500	84,750	12,879,628	22,600	25,000	355,840
*Calibration performed to 300,000 lbs. in. maximum.						

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