

Model 2110-2116 Flanged Reaction Torque Sensor



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

Safety considerations: It would be unsafe to operate Honeywell torque sensors and load cells beyond static overload or ultimate extraneous load limits as defined in the glossary of terms or, when applicable, higher than maximum speed. When in doubt, consult factory. Honeywell is not responsible for any property damage or personal injury which may result because of the misapplication of the transducer.

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:

2112-100K

Order code and range (lb-in)

Order codes

2110	Model 2110 flanged reaction torque sensor, 2000 lb-in to 5000 lb-in
2111	Model 2111 flanged reaction torque sensor, 10000 lb-in to 30000 lb-in
2112	Model 2112 flanged reaction torque sensor, 50000 lb-in to 100000 lb-in
2113	Model 2113 flanged reaction torque sensor, 200000 lb-in
2114	Model 2114 flanged reaction torque sensor, 300000 lb-in to 500000 lb-in
2115	Model 2115 flanged reaction torque sensor, 600000 lb-in to 750000 lb-in
2116	Model 2116 flanged reaction torque sensor, 1200000 lb-in to 2400000 lb-in

Specifications

Performance

Torque range	2000 lb-in to 2400000 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

Temperature, operating	-54 °C to 93 °C [-65 °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

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

Mechanical

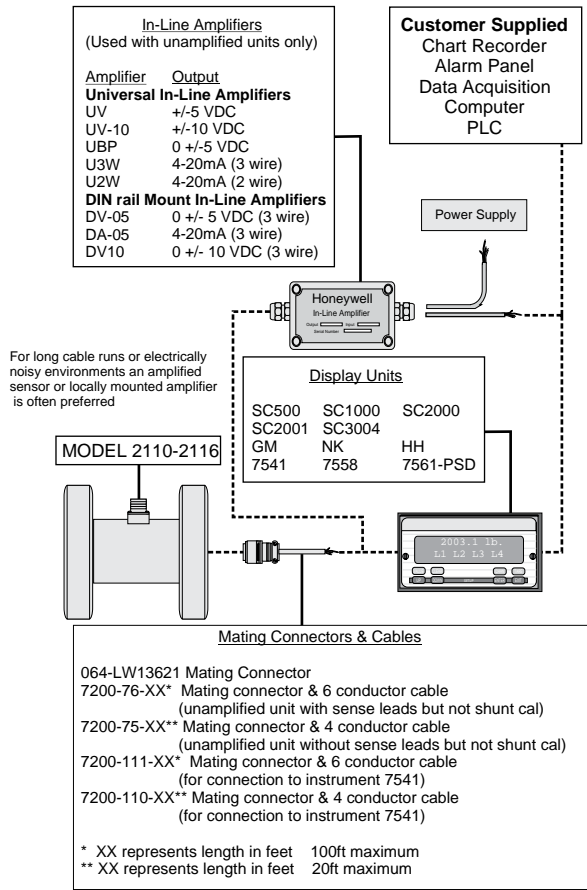
Model	Capacity Nm [lb-in]	Overload Nm [lb-in]	Torsional stiffness Nm/rad [lb-in/rad]	Max. overhung moment WxS Nm [lb-in]	Max. shear W N [lb]	Max. thrust P N [lb]
2110-2K	225 [2000]	340 [3000]	43384 [384000]	113 [1000]	6675 [1500]	8895 [2000]
2110-5K	565 [5000]	845 [7500]	103941 [920000]	226 [2000]	8896 [2000]	13344 [3000]
2111-10K	1130 [10000]	1690 [15000]	302784 [2680000]	565 [5000]	17800 [4000]	26688 [6000]
2111-20K	2250 [20000]	3380 [30000]	649630 [5750000]	1130 [10000]	28900 [6500]	44480 [10000]
2111-30K	3390 [30000]	5085 [45000]	1129790 [10000000]	1695 [15000]	3863 [8500]	57824 [13000]
2112-50K	5650 [50000]	8475 [75000]	903833 [8000000]	2704 [24000]	53375 [12000]	80064 [18000]
2112-100K	11300 [100000]	16950 [150000]	2259584 [20000000]	5650 [50000]	89000 [20000]	133440 [30000]
2113-200K	226000 [2000000]	33900 [3000000]	3773505 [33400000]	10170 [90000]	133440 [30000]	177920 [40000]
2114-300K	339000 [3000000]	50850 [4500000]	6778752 [60000000]	16950 [150000]	186800 [42000]	266880 [60000]
2114-500K*	56500 [500000]	84750 [750000]	12879628 [114000000]	22600 [200000]	244640 [55000]	355840 [80000]
2115-600K*	67796 [600000]	101695 [900000]	18079096 [160000000]	22600 [200000]	422560 [95000]	400320 [90000]
2115-750K*	84745 [750000]	127119 [1125000]	23728814 [210000000]	28250 [250000]	489280 [110000]	467040 [105000]
2116-1200K*	135593 [1200000]	203375 [1800000]	20338983 [180000000]	39550 [350000]	622720 [140000]	578240 [130000]
2116-2400K*	271186 [24000000]	406800 [3600000]	48587570 [430000000]	79096 [700000]	1000800 [225000]	934080 [210000]

* Calibration performed to 300000 lb-in. Consult factory for higher calibrations.

Specifications subject to change.

Questions? Contact us at either 1-800-848-6564, +1 614-850-5000, or our Web site for customized options: (<http://sensing.honeywell.com/TMSensor-help>).

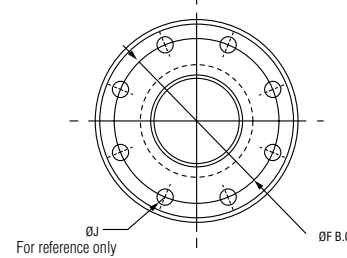
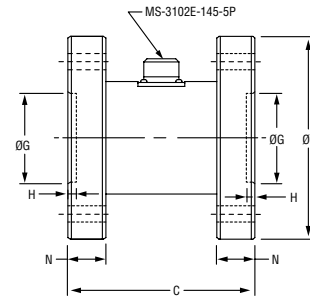
Typical system diagram



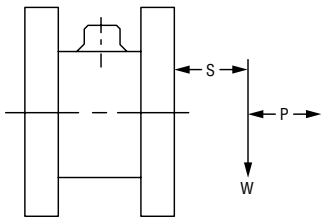
Mounting dimensions and characteristics

Model	C cm [in]	D cm [in]	F cm [in]	G* cm [in]	H cm [in]	N cm [in]	J** cm [in]
2110-2K, -5K	7,62 [3]	10,16 [4]	8,26 [3.25]	3,81 [1.50]	0,32 [0.13]	1,27 [0.50]	0,83 [0.33]
2111-10K, -20K	8,89 [3.50]	12,70 [5]	10,80 [4.25]	5,08 [2.00]	0,64 [0.25]	1,91 [0.75]	0,99 [0.39]
2112-50K, -100K	18,73 [7.38]	20,32 [8]	16,51 [6.50]	8,89 [3.50]	0,79 [0.31]	3,81 [1.50]	1,63 [0.65]
2113-200K	21,59 [8.50]	24,77 [9.75]	20,32 [8]	10,16 [4]	0,79 [0.31]	3,81 [1.50]	1,94 [0.77]
2114-300K, -500K****	26,67 [10.50]	35,63 [14]	27,94 [11]	15,24 [6]	0,79 [0.31]	5,08 [2]	2,59 [1.02]
2115-600K, -750K****	26,67 [10.50]	38,10 [15]	30,48 [12]	15,24 [6]	0,79 [0.31]	5,08 [2]	3,85 [1.52]
2116-1200K, -2400K****	40,64 [16]	50,80 [20]	40,64 [16]	20,32 [8]	1,27 [0.50]	5,08 [2]	3,86 [1.52]***

* Tolerance on shaft diameter +0.002 - 0.00
 ** Eight equally spaced holes are located within 0.005 in of true position
 *** 16 equally spaced holes
 **** Calibration performed to 300000 lb-in max.



Load carrying capacity



W - weight
W x S - overhung moment
S - distance to W
 Do not exceed moment (**W x S**) or shear (**W**), whichever value is attained first
P = thrust