Model Number	ROTARY TRANSFORMER TORQUE SENSOR	Revision: D
4104-01A		ECN #: 36946

Performance	**ENGLISH**	**SI**	
Measurement Range(Full Scale Capacity)	500 in-lb	56.5 N-m	[1]
Sensitivity(output at rated capacity)	2.5 mV/V	2.5 mV/V	[1][3]
Non-Linearity	≤ 0.05 % FS	≤ 0.05 % FS	[3]
Hysteresis	≤ 0.05 % FS	≤ 0.05 % FS	[3]
Non-Repeatability	≤ 0.02 % FS	≤ 0.02 % FS	[3]
Environmental			
Overload Limit	1500 in-lb	170 N-m	
Temperature Range(Operating)	-65 to 170 ℉	-54 to 77 ℃	
Temperature Range(Compensated)	+70 to +170 ℉	+21 to 77 ℃	
Temperature Effect on Output(Maximum)	± 0.001 %FS/℉	± 0.0018 %Reading/℃	[4]
Temperature Effect on Zero Balance(Maximum)	± 0.001 %FS/℉	± 0.0018 %FS/℃	[4][3]
Electrical			
Excitation Frequency	3.28 kHz	3.28 kHz	
Bridge Resistance	350 ohm	350 ohm	[1]
Excitation Voltage(Recommended)	5 to 10 VAC rms	5 to 10 VAC rms	[2]
Bridge Current(at 5 VAC)	50 mA	50 mA	
Insulation Resistance	>5000 Mohm	>5000 Mohm	
Zero Balance	≤ 2 % FS	≤ 2 % FS	[3]
Physical			
Size (Shaft Length x Housing Length x Housing Diameter)	10.00 in x 6.00 in x 4.00 in	254.0 mm x 152.4 mm x 101.6 mm	[5]
Weight	18 lb	8.2 kg	
Mounting	1.00 in Dia. Keyed Shaft	25.4 mm Dia. Keyed Shaft	
Sensing Element	Strain Gage	Strain Gage	
Housing Material	Black Oxided Steel	Black Oxided Steel	
Shaft Material	Steel	Steel	
Electrical Connector	MS3102A-14S-5P	MS3102A-14S-5P	
Torsional Stiffness	85 kin-lb/radian	9.6 kN-m/radian	
Rotating Inertia	0.0026 in-lb-sec^2	0.0003 N-m-sec^2	
Maximum Speed	15,000 RPM	15,000 RPM	

CE [6]

All specifications are at room temperature unless otherwise specified.
In the interest of constant product improvement, we reserve the right to change specifications without notice.

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OPTIONAL VERSIONS

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

NOTES:

[1] Nominal.
[2] Recommended 10 VAC RMS.
[3] FS - Full Scale.
[4] Over compensated operating temperature range.
[5] See Outline Drawing 28581 for Complete Dimensions
[6] See PCB Declaration of Conformance PS062 for details.

SUPPLIED ACCESSORIES:

Model 180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors (1)
Model 8113-105A Relay activated precision shunt calibration module (1)

Entered: DMW	Engineer: PE	Sales: RR	Approved: JC	Spec Number:
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