

Model Number 4103-02A		ROTARY TRANSFORMER TORQUE SENSOR				Revision: D ECN #: 36496											
Performance		ENGLISH	SI		OPTIONAL VERSIONS												
Measurement Range(Full Scale Capacity)		200 in-lb	22.6 N-m	[1]	Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.												
Sensitivity(± 15 %)(output at rated capacity)		2.0 mV/V	2.0 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					NOTES: [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] See Outline Drawing 28602 for Complete Dimensions. [6] See PCB Declaration of Conformance PS062 for details.												
Overload Limit		600 in-lb	66 N-m														
Temperature Range(Operating)		-65 to 170 °F	-54 to 77 °C														
Temperature Range(Compensated)		+70 to +170 °F	+21 to 77 °C														
Temperature Effect on Output(Maximum)		± 0.002 %Reading/°F	± 0.0036 %Reading/°C	[4]													
Temperature Effect on Zero Balance(Maximum)		± 0.002 %FS/°F	± 0.0036 %FS/°C	[4][3]													
Electrical																	
Excitation Frequency		3.28 kHz	3.28 kHz														
Bridge Resistance		350 ohm	350 ohm	[1]													
Excitation Voltage		2 to 10 VAC rms	2 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		.75 in Dia. Keyed Shaft	19.1 mm Dia. Keyed Shaft		SUPPLIED ACCESSORIES: Model 180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors Model 8113-105A Relay activated precision shunt calibration module												
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		33 kin-lb/radian	3.7 kN-m/radian		<table><tr><td>Entered: DMW</td><td>Engineer: PE</td><td>Sales: RR</td><td>Approved: JC</td><td>Spec Number:</td></tr><tr><td>Date: 12/14/2011</td><td>Date: 12/14/2011</td><td>Date: 12/14/2011</td><td>Date: 12/14/2011</td><td>20384</td></tr></table>			Entered: DMW	Engineer: PE	Sales: RR	Approved: JC	Spec Number:	Date: 12/14/2011	Date: 12/14/2011	Date: 12/14/2011	Date: 12/14/2011	20384
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Rotating Inertia		0.0026 in-lb/sec2	0.0003 N-m/sec2														
Maximum Speed		15,000 RPM	15,000 RPM														
																	
[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. ICP® is a registered trademark of PCB Group, Inc.																	
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