

Model Number 4115A-01A	ROTARY TRANSFORMER TORQUE SENSOR			Revision E ECN #: 38181										
Performance	ENGLISH	SI		Optional Versions (Optional versions have identical specifications and accessories as listed for standard model except where noted below. More than one option maybe used.)										
Measurement Range (Full Scale Capacity)	50 in-lb	5.6 Nm	[1]	Notes [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] Mounting per AND10262 and AND20002. [6] See PCB Declaration of Conformance PS062 for details.										
Sensitivity (±15 %) (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	≤0.03 % FS	≤0.03 % FS	[3]											
Environmental				Supplied Accessories										
Overload Limit	150 in-lb	17 Nm		180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors ()										
Temperature Range (Operating)	-65 to 285 °F	-54 to 141 °C		8113-105A Relay activated precision shunt calibration module ()										
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	[3][4]											
Electrical														
Bridge Resistance	350 Ohm	350 Ohm	[1]											
Excitation Frequency	3.28 kHz	3.28 kHz												
Excitation Voltage	2 to 10 VAC rms	2 to 10 VAC rms	[2]											
Insulation Resistance	>5000 MOhm	>5000 MOhm												
Zero Balance	≤2 % FS	≤2 % FS	[3]											
Bridge Current (at 5 VAC)	50 mA	50 mA												
Physical														
Size (Shaft Length x Housing Length x Housing Height)	9.10 in x 8.25 in x 6.00 in	231.14 mm x 209.55 mm x 152.40 mm												
Weight	46 lb	20.9 Kg												
Mounting	Flange w/ Splined Shaft	Flange w/ Splined Shaft	[5]											
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	4.5 kin-lb/radian	0.5 kN-m/radian												
Rotating Inertia	0.0047 in-lb/sec2	0.0005 N-m/sec2												
Maximum Speed	15000 RPM	15000 RPM												
														
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.														
			<table border="1"> <tr> <td>Entered: DMW</td><td>Engineer: JSD</td><td>Sales: RR</td><td>Approved: JC</td><td>Spec Number:</td></tr> <tr> <td>Date: 01/10/2012</td><td>Date: 01/10/2012</td><td>Date: 01/10/2012</td><td>Date: 01/10/2012</td><td>19258</td></tr> </table>		Entered: DMW	Engineer: JSD	Sales: RR	Approved: JC	Spec Number:	Date: 01/10/2012	Date: 01/10/2012	Date: 01/10/2012	Date: 01/10/2012	19258
Entered: DMW	Engineer: JSD	Sales: RR	Approved: JC	Spec Number:										
Date: 01/10/2012	Date: 01/10/2012	Date: 01/10/2012	Date: 01/10/2012	19258										
			 Company: PCB Load & Torque, Inc. Address: 24350 Indoplex Circle Farmington Hills, MI 48335 UNITED STATES Phone: 866-684-7107 Fax: 716-684-0987 E-mail: ltinfo@pcbloadtorque.com Web site: http://www.pcbloadtorque.com											

Model Number 4115A-02A	ROTARY TRANSFORMER TORQUE SENSOR			Revision D ECN #: 38181										
Performance	ENGLISH	SI		Optional Versions (Optional versions have identical specifications and accessories as listed for standard model except where noted below. More than one option maybe used.)										
Measurement Range (Full Scale Capacity)	100 in-lb	11 Nm	[1]	Notes [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] Mounting per AND10262 and AND20002. [6] See PCB Declaration of Conformance PS062 for details.										
Sensitivity (±15 %) (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	≤0.03 % FS	≤0.03 % FS	[3]											
Environmental				Supplied Accessories										
Overload Limit	300 in-lb	34 Nm		180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors ()										
Temperature Range (Operating)	-65 to 285 °F	-54 to 141 °C		8113-105A Relay activated precision shunt calibration module ()										
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	[3][4]											
Electrical														
Bridge Resistance	350 Ohm	350 Ohm	[1]											
Excitation Frequency	3.28 kHz	3.28 kHz												
Excitation Voltage	2 to 10 VAC rms	2 to 10 VAC rms	[2]											
Insulation Resistance	>5000 MOhm	>5000 MOhm												
Zero Balance	≤2 % FS	≤2 % FS	[3]											
Bridge Current (at 5 VAC)	50 mA	50 mA												
Physical														
Size (Shaft Length x Housing Length x Housing Height)	9.10 in x 8.25 in x 6.00 in	231.14 mm x 209.55 mm x 152.40 mm												
Weight	46 lb	20.9 Kg												
Mounting	Flange w/ Splined Shaft	Flange w/ Splined Shaft	[5]											
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	13.5 kin-lb/radian	1500 N-m/radian												
Rotating Inertia	0.0048 in-lb/sec2	0.0005 N-m/sec2												
Maximum Speed	15000 RPM	15000 RPM												
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 Company: PCB Load & Torque, Inc. Address: 24350 Indoplex Circle Farmington Hills, MI 48335 UNITED STATES Phone: 866-684-7107 Fax: 716-684-0987 E-mail: ltinfo@pcbloadtorque.com Web site: http://www.pcbloadtorque.com														
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Entered: DMW	Engineer: JSD	Sales: RR	Approved: JC	Spec Number:										
Date: 01/12/2012	Date: 01/12/2012	Date: 01/12/2012	Date: 01/12/2012	19259										

Model Number 4115A-03A	ROTARY TRANSFORMER TORQUE SENSOR			Revision D ECN #: 38181
Performance	ENGLISH	SI		Optional Versions (Optional versions have identical specifications and accessories as listed for standard model except where noted below. More than one option maybe used.)
Measurement Range (Full Scale Capacity)	200 in-lb	23 Nm	[1]	Notes [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] Mounting per AND10262 and AND20002. [6] See PCB Declaration of Conformance PS062 for details.
Sensitivity (±15 %) (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	≤0.03 % FS	≤0.03 % FS	[3]	
Environmental				Supplied Accessories
Overload Limit	600 in-lb	68 Nm		180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors ()
Temperature Range (Operating)	-65 to 285 °F	-54 to 141 °C		8113-105A Relay activated precision shunt calibration module ()
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	[3][4]	
Electrical				
Bridge Resistance	350 Ohm	350 Ohm	[1]	
Excitation Frequency	3.28 kHz	3.28 kHz		
Excitation Voltage	2 to 10 VAC rms	2 to 10 VAC rms	[2]	
Insulation Resistance	>5000 MOhm	>5000 MOhm		
Zero Balance	≤2 % FS	≤2 % FS	[3]	
Bridge Current (at 5 VAC)	50 mA	50 mA		
Physical				
Size (Shaft Length x Housing Length x Housing Height)	9.10 in x 8.25 in x 6.00 in	231.14 mm x 209.55 mm x 152.40 mm		
Weight	46 lb	20.9 Kg		
Mounting	Flange w/ Splined Shaft	Flange w/ Splined Shaft	[5]	
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	3700 N-m/radian		
Rotating Inertia	0.0049 in-lb/sec2	0.0005 N-m/sec2		
Maximum Speed	15000 RPM	15000 RPM		
 [6]				
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				Company: PCB Load & Torque, Inc. Address: 24350 Indoplex Circle Farmington Hills, MI 48335 UNITED STATES Phone: 866-684-7107 Fax: 716-684-0987 E-mail: ltinfo@pcbloadtorque.com Web site: http://www.pcbloadtorque.com
Entered: DMW		Engineer: JSD	Sales: RR	Approved: JC
Date: 01/12/2012		Date: 01/12/2012	Date: 01/12/2012	Date: 01/12/2012
				Spec Number: 19260

Model Number 4115A-04A	ROTARY TRANSFORMER TORQUE SENSOR			Revision D ECN #: 38181										
Performance	ENGLISH	SI		Optional Versions (Optional versions have identical specifications and accessories as listed for standard model except where noted below. More than one option maybe used.)										
Measurement Range (Full Scale Capacity)	500 in-lb	55 Nm	[1]	Notes [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] Mounting per AND10262 and AND20002. [6] See PCB Declaration of Conformance PS062 for details.										
Sensitivity (±15 %) (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	≤0.03 % FS	≤0.03 % FS	[3]											
Environmental				Supplied Accessories										
Overload Limit	1500 in-lb	170 Nm		180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors ()										
Temperature Range (Operating)	-65 to 285 °F	-54 to 141 °C		8113-105A Relay activated precision shunt calibration module ()										
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	[3][4]											
Electrical														
Bridge Resistance	350 Ohm	350 Ohm	[1]											
Excitation Frequency	3.28 kHz	3.28 kHz												
Excitation Voltage	2 to 10 VAC rms	2 to 10 VAC rms	[2]											
Insulation Resistance	>5000 MOhm	>5000 MOhm												
Zero Balance	≤2 % FS	≤2 % FS	[3]											
Bridge Current (at 5 VAC)	50 mA	50 mA												
Physical														
Size (Shaft Length x Housing Length x Housing Height)	9.10 in x 8.25 in x 6.00 in	231.14 mm x 209.55 mm x 152.40 mm												
Weight	46 lb	20.9 Kg												
Mounting	Flange w/ Splined Shaft	Flange w/ Splined Shaft	[5]											
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	94 kin-lb/radian	10600 N-m/radian												
Rotating Inertia	0.005 in-lb/sec ²	0.0006 N-m/sec ²												
Maximum Speed	15000 RPM	15000 RPM												
														
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Entered: DMW	Engineer: JM	Sales: RR	Approved: JC	Spec Number:										
Date: 01/18/2012	Date: 01/18/2012	Date: 01/18/2012	Date: 01/18/2012	19261										
 Company: PCB Load & Torque, Inc. Address: 24350 Indoplex Circle Farmington Hills, MI 48335 UNITED STATES Phone: 866-684-7107 Fax: 716-684-0987 E-mail: ltinfo@pcbloadtorque.com Web site: http://www.pcbloadtorque.com														

Model Number 4115A-05A	ROTARY TRANSFORMER TORQUE SENSOR			Revision D ECN #: 38181
Performance	ENGLISH	SI		Optional Versions (Optional versions have identical specifications and accessories as listed for standard model except where noted below. More than one option maybe used.)
Measurement Range (Full Scale Capacity)	1000 in-lb	115 Nm	[1]	Notes [1] Nominal. [2] Recommended 10 VAC RMS. [3] FS - Full Scale. [4] Over compensated operating temperature range. [5] Mounting per AND10262 and AND20002. [6] See PCB Declaration of Conformance PS062 for details.
Sensitivity (±15 %) (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	≤0.03 % FS	≤0.03 % FS	[3]	
Environmental				Supplied Accessories
Overload Limit	1500 in-lb	170 Nm		180-019A 5-socket mating connector for Series 3100, 4100, 4200 torque sensors ()
Temperature Range (Operating)	-65 to 285 °F	-54 to 141 °C		8113-105A Relay activated precision shunt calibration module ()
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	[3][4]	
Electrical				
Bridge Resistance	350 Ohm	350 Ohm	[1]	
Excitation Frequency	3.28 kHz	3.28 kHz		
Excitation Voltage	2 to 10 VAC rms	2 to 10 VAC rms	[2]	
Insulation Resistance	>5000 MOhm	>5000 MOhm		
Zero Balance	≤2 % FS	≤2 % FS	[3]	
Bridge Current (at 5 VAC)	50 mA	50 mA		
Physical				
Size (Shaft Length x Housing Length x Housing Height)	9.10 in x 8.25 in x 6.00 in	231.14 mm x 209.55 mm x 152.40 mm		
Weight	46 lb	20.9 Kg		
Mounting	Flange w/ Splined Shaft	Flange w/ Splined Shaft	[5]	
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	94 in-lb/radian	10600 N-m/radian		
Rotating Inertia	0.005 in-lb/sec ²	0.0006 N-m/sec ²		
Maximum Speed	15000 RPM	15000 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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Entered: DMW		Engineer: JM	Sales: RR	Approved: JC
Date: 01/18/2012		Date: 01/18/2012	Date: 01/18/2012	Date: 01/18/2012
		Spec Number: 19262		