



SERIES PC9000

ROTARY TORQUE TRANSDUCERS

- Measure torque and the degrees of rotation (angle)
- Torque only models available for impact tools
- Industrial-rated for power tool and fastener testing applications including pulse tools
- Onboard Auto-ID technology simplifies sensor setup and calibration when used with RS Technologies digital instruments
- Industry-standard transducers compatible with all RS Technologies fastener, joint analysis, and tool certification equipment, and most conventional strain gage readout instrumentation
- 2 mV/V output with matched shunt calibration

TYPICAL APPLICATIONS

- Power Tool Calibration & Performance Verification
- Threaded Fastener Testing
- Bolted Joint Troubleshooting



KNOW YOUR TORQUE-ANGLE

PCB's RS Technologies Series PC9000 Rotary Torque Transducers are widely used in the fastener assembly market to verify the performance of hand and power torque tools. The durable, strain gage-based transducers are fitted on the output drive of the hand or power tool and measure the torque applied by the tool to the fastener on an actual assembly. This measurement provides important information about tool shut off and can assist in establishing specifications for proper assembly.

Rotary torque transducers are also a key component of a threaded fastener torque tension testing machine. They are used to measure torque applied to a threaded fastener to help determine the torque-tension performance characteristics of the tested fastener. The data is also used in the calculation of friction coefficients in the underhead and threaded sections of the fastener. With the integrated angle encoder, a rotary torque-angle transducer can also measure the angle of fastener rotation, which is an important indication of joint integrity. Torque-angle transducers can provide the data to draw torque vs. time or torque vs. angle plots that can help analyze problematic joints and determine appropriate tightening strategies. Torque Only models are available for impact tool testing.

Rotary torque transducers are available in capacities ranging from 32 ozf-in to 18,000 lbf-ft (0.23 to 24,000 Nm), and fit most popular drive sizes.

SPECIFICATIONS	
Performance	
Torque	
Output at Rated Capacity	2 mV/V \leq 0.25% FS
Shunt Calibration	Matched 2mV/V \leq 0.25% with 43.575 kOhm Precision Resistor
Interchangeability	Matched for mV/V and Shunt Calibration \leq 0.30% FS
Non-Linearity	\leq 0.25% FS
Hysteresis	\leq 0.25% FS
Excitation Voltage	Calibrated at 10 VDC, usable 5 to 20 VDC or VAC RMS
Bridge Resistance	350 Ohm
Compensated Temperature Range	+70 to +150 °F (+21 to +66 °C)
Operating Temperature Range	0 to +200 °F (-18 to +93 °C)
Connector	Auto-ID = PT02H-12-10P Non-Auto-ID = PT02H-8-4P
Angle	
Magnetic Encoder	¼", ⅜" and ½" Drive – 368 Poles, ¾" Drive – 544 Poles, 1" and 1-½" Drive* – 720 Poles, 2-½" Drives – 900 Poles
Output	A-B Track 90 Degrees Phase Difference Flat Over Operating Speed Range
Counts Per Resolution (CPR), Resolution w/Quadrature	¼", ⅜", ½" Drive – 1472, ¼ Degree, ¾" Drive – 2176, ⅓ Degree, 1" and 1-½" Drive – 2880, ⅓ Degree, 2-½" Drive 3600, ⅓ Degree
Output Voltage	High 5.0 V, Low 0.5 V
Power Required	5 VDC @ 120 mA Maximum
Maximum Speed	
¼-inch Drive	5000
⅜-inch Drive	2500
½-inch Drive	2500
¾-inch Drive	2000
1-inch Drive	1000
1 ½-inch Drive	750
2 ½-inch Drive	500
Supplied Accessories	
Shunt Calibration Resistor, A2LA Accredited Calibration Certificate	

ROTARY TORQUE TRANSDUCERS				
Torque-Angle w/ Auto-ID	Torque Only w/ Auto-ID	Torque Only	Drive Size	Capacity
039230-50002/B	039030-50002	039030-54002	1/4 inch Hex Drive	32 ozf-in (0.23 Nm)
039230-50021/B	039030-50021	039030-54021	1/4 inch Hex Drive	20 lbf-in (2.3 Nm)
039230-50101/B	039030-50101	039030-54101	1/4 inch Hex Drive	100 lbf-in (11.3 Nm)
039230-51015/B	039030-51015	039030-54015	1/4 inch Hex Drive	132 lbf-in (15 Nm)
039225-50051/B	039025-50051	039025-54051	1/4 inch Square Drive	50 lbf-in (5.6 Nm)
039225-50101/B	039025-50101	039025-54101	1/4 inch Square Drive	100 lbf-in (11.3 Nm)
039225-51015/B	039025-51015	039025-54015	1/4 inch Square Drive	132 lbf-in (15 Nm)
039237-50022/B	039037-50022	039037-54022	3/8 inch Square Drive	200 lbf-in (22.6 Nm)
039237-50051/B	039037-50051	039037-54051	3/8 inch Square Drive	50 lbf-in (68 Nm)
039250-50101/B	039050-50101	039050-54101	1/2 inch Square Drive	100 lbf-ft (136 Nm)
039250-51201/B	039050-51201	039050-54201	1/2 inch Square Drive	148 lbf-ft (200 Nm)
039275-50301/B	039075-50301	039075-54301	3/4 inch Square Drive	300 lbf-ft (406 Nm)
039275-51501/B	039075-51501	039075-54501	3/4 inch Square Drive	369 lbf-ft (500 Nm)
039275-53601/B*	039075-53601	---	3/4 inch Square Drive	600 lbf-ft (814 Nm)
039201-53102/B	039001-53102	039001-54102	1 inch Square Drive	1000 lbf-ft (1356 Nm)
039201-01302/B	039001-01302	039001-54302	1 inch Square Drive	2213 lbf-ft (3,000 Nm)
039201-53302/B	039001-53033	---	1 inch Square Drive	3000 lbf-ft (4068 Nm)
039301-01103/B	039001-01103	---	1-1/2 inch Square Drive	7376 lbf-ft (10,000 Nm)
039625-00183	---	---	2-1/2 inch Square Drive	18,000 lbf-ft (24,000 Nm)

Recommended Accessories		
080922-01000	Model 922 Portable Digital Meter	
080962-01000	Model 962 Portable Transient Data Recorder	
097000-34445 097000-00016	Cable Assembly, Auto-ID, DB-15P to PT06A-12-10S	2-ft coiled 16-ft straight
099404-30563	Cable Assembly, Non-Auto-ID, DB-15P to PT06A-12-10S	10-ft straight
097000-34149 099404-34011 099404-30610	Cable Assembly, Non-Auto-ID, DB-15P to PT06A-8-4S	2-ft coiled 3-ft straight 10-ft straight
090900-31163	Cable Assembly, PT06A-12-10 to Pigtail Leads	20-ft straight
090970-31583	Cable Assembly, PT06A-8-4S to Pigtail Leads	6-ft straight
097000-0015P	DB-15P Connector w/ Strain Relief & Thumbscrews	
4242R-000630	PT06A-12-10S(470) Connector	
4242R-000600	PT06A-8-4S(470) Connector	

DIMENSIONS (IN.)										
	¼ inch Hex	¼ inch Square	⅜ inch	½ inch	¾ inch	¾ inch	1 inch	1 inch	1-½ inch	2-½ inch
					(300 & 369 lbf-ft)	(600 lbf-ft)	(2213 lbf-ft)	(3000 lbf-ft)		
Overall Length	4.25	3.23	3.23	3.23	4.12	3.60	4.00	4.60	5.50	9.48
Housing Length	2.30	2.30	2.30	2.30	2.68	2.00	2.00	2.62	2.63	4.63
Housing Height	2.07	2.07	2.07	2.07	2.87	3.63	3.63	4.62	4.88	7.25
Housing Width	1.50	1.50	1.50	1.50	2.50	3.25	3.25	3.88	4.25	6.50
Male Drive Length	0.99	0.29	0.42	0.56	0.84	0.84	1.06	1.12	1.59	2.25