

# Comparison of 200% Overload NexGen Ultra Precision Torque Sensors with Earlier Shaft Models

		MCRT®48800V Series	MCRT®48000V Series	MCRT®28000T Series	MCRT®48200V Series
Specifications	Torque Ratings (lbf-in)	25 to 375,000 ●	25 to 375,000 ●	25 to 375,000 ●	25 to 10,000 ●
	Overload (% of Range)	200 ●	200 ●	200 ●	200 ●
	Maximum Speed Rating (rpm) - Code N	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 6,000 ●
	Maximum Speed Rating (rpm) - Code H*	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 8,500 ●
	Balance Grade per ISO 1940/1	Not Specified	Not Specified	Not Specified	Not Specified
	Combined Error (% of Rating) - Code N	≤±0.04% ●	≤±0.1% ●	≤±0.1% ●	≤±0.2% ●
	Combined Error (% of Rating) - Code C*	≤±0.02% ●	≤±0.05% ●	≤±0.07% ●	≤±0.15% ●
	Nonrepeatability (% of Rating) - Code N	≤±0.02 ●	≤±0.05 ●	≤±0.03 ●	≤±0.05 ●
	Nonrepeatability (% of Rating) - Code C*	≤±0.01 ●	≤±0.03 ●	≤±0.02 ●	≤±0.05 ●
	Accuracy Class (% of Rating) - Code N	0.04 ●	0.1 ●	0.1 ●	0.2 ●
	Accuracy Class (% of Rating) - Code C*	0.036 ●	0.03 ●	0.05 ●	0.15 ●
	Zero Drift (% of Rating /°F) - Code N	≤±0.001 ●	≤±0.002 ●	≤±0.002 ●	≤±0.004 ●
	Zero Drift (% of Rating /°F) - Code C*	≤±0.0006 ●	≤±0.001 ●	≤±0.001 ●	≤±0.0017 ●
	Span Drift (% of Reading /°F) - Code N	≤±0.002 ●	≤±0.002 ●	≤±0.002 ●	≤±0.004 ●
	Span Drift (% of Reading /°F) - Code C*	≤±0.002 ●	≤±0.001 ●	≤±0.001 ●	≤±0.0017 ●
	48 Hour Drift (% of Rating) - Code N	≤±0.03 ●	Not Specified	Not Specified	Not Specified
48 Hour Drift (% of Rating) - Code C*	≤±0.02 ●	Not Specified	Not Specified	Not Specified	
Outputs	Power Calculation* Rate (Calculations/Second)	7,800	Not Available	Not Available	Not Available
	Torque Analog Out (Volt)	±10 or ±5	±5	±1.5mV/V Torque Only	±10 or ±5
	Torque Frequency Output (kHz)	Not Available	Not Available	Not Available	Not Available
	Speed* Analog Out (Volt)	+10 or +5	Pulse Train Only*	Pulse Train Only*	Pulse Train Only*
	Power* Analog Out (Volt)	±10 or ±5	Not Available	Not Available	Not Available
	Torque, Speed*, Power* Digital Out	RS232, RS422, RS485	Not Available	Not Available	RS 232 (Torque Only)
	Overrange (% of Range)	150	Not Specified	Not Specified	Not Specified
	Max/Min Capture Time (µS)	128	Not Available	Not Available	2000
Signal Filters	13: 0.1 to 1000 Hz	2: 1 & 500 Hz	Not Available	11: 0.1 to 200 Hz	
Features	Shunt Calibration of Active Torque Bridge	Yes	No	No	No
	Bipolar Calibration Circuitry	Yes	No	Yes	Yes
	Selectable Units/Measure Without Recalibration	33	Not Available	Not Available	10
	Classify User Settable Limits	Yes	Not Available	Not Available	Yes
	Tare Function	Yes	Not Available	Not Available	Yes
	Remote Zero Function	Yes	No	No	No
Mechanical Characteristics	Mechanical Style	Shaft	Shaft	Shaft	Shaft
	Length Overall (inch)	8.5 to 23	8.5 to 23	8.5 to 23	7.5 to 9.625
	Through Bore (inch)	Not Available	Not Available	Not Available	Not Available
	Axial Misalignment Rotor to Stator (inch)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Radial Misalignment Rotor to Stator (inch)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	Foot Mount Option - Code F*	Yes	Yes	Yes	Integral
	Shaft Stiffness (lbf-in/rad)	2,320 to 31,500,000	2,150 to 38,000,000	2,150 to 38,000,000	1,800 to 684,000
	Rotating Inertia (ozf-in s²)	0.0147 to 12.96	0.034 to 11.7	0.034 to 11.7	0.031 to 0.100
	Allowable Bending (lbf-in)	Not Specified	Not Specified	Not Specified	Not Specified
	Allowable Thrust (lbf)	Note 1	Note 1	Note 1	Note 1
	Sensor Material	Plated Alloy Steel	Plated Alloy Steel	Plated Alloy Steel	17-4PH Stainless
	Weight (lb)	12.5 to 172.2	6 to 150	6 to 150	10 to 12
	Provision for Customers' Accelerometer	No	No	No	No
Provision for Customers' Thermocouple	No	No	No	No	
Provision to Drain Customer's Oil	No	No	No	No	
Specification Sheet	Bulletin 7409P	Bulletin 7401K	Bulletin 761P	Bulletin 7410G	

Notes:  
 \* Denotes an Optional Feature  
 1. The thrust capacity of a bearing supported sensor is dependent on its installation. If it is installed as a floating shaft its thrust capacity in lbs. is one half its torque rating in lbf-in. When it is foot mounted, its allowable thrust is determined by bearing loads; refer to the applicable instruction manual for more information.  
 2. Specifications for all models Code J including Combined Error, Nonrepeatability, Accuracy Class, Zero Drift, Span Drift, and 48 Hour Drift are not available.

## S. Himmelstein and Company

Designing and Making the World's Best Torque Instruments since 1960

2490 Pembroke Avenue, Hoffman Estates, IL 60169 USA • Tel: 847-843-3300 • Fax: 847-843-8488 • www.himmelstein.com