

Comparison of 400% Overload NexGen Ultra Precision Torque Sensors with Earlier Shaft Models

		MCRT®49800V Series	MCRT®49000V Series	MCRT®29000T Series	MCRT®49700V Series
Specifications	Torque Ratings (lbf-in)	50 to 190,000 ●	25 to 250,000 ●	25 to 250,000 ●	25 to 250,000 ●
	Overload (% of Range)	400 ●	400 ●	400 ●	400 ●
	Maximum Speed Rating (rpm) - Code N	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●
	Maximum Speed Rating (rpm) - Code H	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●	15,000 to 3,600 ●
	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% ●	≤±0.1% ●
	Combined Error (% of Rating) - Code C*	≤±0.02% ●	≤±0.05% ●	≤±0.07% ●	≤±0.05% ●
	Nonrepeatability (% of Rating) - Code N	≤±0.02 ●	≤±0.05 ●	≤±0.03 ●	≤±0.05 ●
	Nonrepeatability (% of Rating) - Code C*	≤±0.01 ●	≤±0.03 ●	≤±0.02 ●	≤±0.03 ●
	Accuracy Class (% of Rating) - Code N	0.04 ●	0.1 ●	0.1 ●	0.1 ●
	Accuracy Class (% of Rating) - Code C*	0.036 ●	0.05 ●	0.07 ●	0.05 ●
	Zero Drift (% of Rating /deg. F) - Code N	≤±0.001 ●	≤±0.002 ●	≤±0.002 ●	≤±0.002 ●
	Zero Drift (% of Rating /deg. F) - Code C*	≤±0.0006 ●	≤±0.001 ●	≤±0.001 ●	≤±0.001 ●
	Span Drift (% of Reading/ÆF) - Code N	≤±0.002 ●	≤±0.002 ●	≤±0.002 ●	≤±0.003 ●
	Span Drift (% of Reading/ÆF) - Code C*	≤±0.002 ●	≤±0.001 ●	≤±0.001 ●	≤±0.0015 ●
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	50
	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*	+10 or +5
	Power* Analog Out (Volt)	±10 or ±5	Not Available	Not Available	±10 or ±5
	Torque, Speed*, Power* Digital Out	RS232, RS422, RS485	Not Available	Not Available	RS 232
	Overrange (% of Range)	150	Not Specified	Not Specified	150
	Max/Min Capture Time (µS)	128	Not Available	Not Available	2,000
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	33
	Classify User Settable Limits	Yes	Not Available	Not Available	Not Available
	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	8.5 to 23
	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	Yes
	Shaft Stiffness (lbf-in/rad)	13,000 to 31,500,000	5,590 to 36,000,000	5,590 to 36,000,000	5,590 to 36,000,000
	Rotating Inertia (ozf-in s ²)	0.0148 to 12.96	0.035 to 11.7	0.035 to 11.7	0.035 to 11.7
	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	Plated Alloy Steel
	Weight (lb)	12.5 to 172.2	11 to 150	9 to 150	11 to 150
	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 7400L	Bulletin 709E	Bulletin 7408A	

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.

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