

AD7832 series torque meter specifications

Torque sensor		AD7832										Unit	Remark
Model		S200	S200D1	S500	S500D1	S1K	S1KD1	S2K	S2KD1	S5K	S5KD1		
Performance specifications	Rated capacity (RC)	200		500		1k		2k		5k		Nm	
	Full scale (FS)	200	200/40	500	500/100	1k	1k/200	2k	2k/400	5k	5k/1k	Nm	*1
	Total error range	0.03										%FS	*2
	Non-linearity	(0.02)										%RC	*3
	Hysteresis	(0.02)										%RC	*3
	Repeatability	0.01										%RC	*4
Temperature specifications	Resolution	0.02										%RC	*5
	Temperature effect at zero point	0.003										%RC/°C	
	Temperature effect on sensitivity	0.003										%Load/°C	
	Temperature range for compensation	-10~+60										°C	
	Temperature range for operation	-20~+80										°C	
Rotation specifications	Temperature range for preservation	-20~+85										°C	
	Maximum rpm	12000					10000					r/min	
	Continuous rpm	12000					10000					r/min	
Machine characteristics	Rotation variation at zero point	0.05										%RC	*6
	Moment of inertia	4.0×10 ⁻³		5.0×10 ⁻³		6.0×10 ⁻³		9.0×10 ⁻³		14.0×10 ⁻³		kg·m ²	
	Torsional stiffness	1.2×10 ³		1.1×10 ³		1.7×10 ³		2.2×10 ³		3.6×10 ³		kNm/rad	
	Torsional resonance frequency	7.9		7.9		8.3		7.8		8.0		kHz	
	Torsion angle	0.2×10 ⁻³		0.4×10 ⁻³		0.6×10 ⁻³		0.9×10 ⁻³		1.4×10 ⁻³		rad	*7
	Allowable overload	200						150				%RC	
	Maximum overload	500						300				%RC	
	Maximum thrust load	5		10		20		30		50		kN	
	Maximum radial load	5		10		20		30		50		kN	
	Maximum curve moment	0.2		0.5		1		2		5		kNm	
Weight of rotor	2.4		2.8		2.8		3.6		4.8		kg		
Sensor signal processor		AD7893-S										Unit	
Exterior	Exterior dimensions	97(W)×97(H)×208.2(D)										mm	
	Weight	1.2										kg	
	Power supply	Input: 90 - 240V 50-60Hz, output: DC12V3A. Supply from AC adaptor											
Electric specifications	Power consumption	20 (AC adaptor included)										W	
	Operation temperature range	10 - 40										°C	
Interface	Rotary pulse input	Line driver differential input (RS422/485 conformity) 3ch (A phase, B phase, Z phase)											
	CAN	Hi-speed CAN (differential signal I/F) CAN 2.0B 1ch											
	Analog output	Single end output 3ch (torque, revolution velocity and revolution angle)											
	Digital input	Current drive input by photocoupler insulation (sink type) 2ch (range switch, zero point adjustment)											
	Digital output	Open collector output by photocoupler insulation, 3ch (range switch, status and watchdog output)											
	Serial communication	RS485 1 port											

- *1 : Hi/Lo
- *2 : Measured with static torque testing including non-linearity and hysteresis.
- *3 : Reference number
- *4 : Measured with static torque testing.
- *5 : BW=100HZ
- *6 : Value after revolution zero calibration
- *7 : Torsion angle on rated torque value.

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Safety Warning! ● Please read the instruction manuals carefully before use.

AND ...Clearly a Better Value
A&D Company, Limited
3-23-14 Higashi Ikebukuro Toshima Ku, Tokyo 170-0013 JAPAN
Telephone:[81](3) 5391-6132 Fax:[81](3) 5391-6148
http://www.aand.jp

A&D Technology, Inc.
4622 Runway Blvd. Ann Arbor, MI 48108 U.S.A
Telephone:[1](734) 973-1111 Fax:[1](734) 973-1103
http://www.aandtech.com

A&D Europe GmbH
Im Leuschnerpark 4, D-64347 Griesheim,
GERMANY
Telephone:[49](6155) 605 250 Fax:[49](6155) 605 100

A&D Technology Trading (Shanghai) Co., Ltd.
21A, Majesty Building, No.138 Pudong Avenue,
Pudong New Area, Shanghai, 200120, CHINA
Telephone:[86](21) 3393-2340 Fax:[86](21) 3393-2347

A&D Europe GmbH UK Branch
Unit 24/26 Blacklands Way Abingdon Business Park,
Abingdon, Oxon OX14 1DY UNITED KINGDOM
Telephone:[361](8) 8301-8100 Fax:[61](8) 8352-7409

A&D Australasia Pty Ltd.
32 Dew Street, Thebarton, South Australia 5031 AUSTRALIA
Telephone:[61](8) 8301-8100 Fax:[61](8) 8352-7409
A&D KOREA Limited
Manhattan Bldg. 6F, 38-2 Yoido-dong, Youngdeungpo-gu, Seoul, KOREA
Telephone:[82](2) 780-4101 Fax:[82](2) 782-4280

● Appearances and/or specifications subject to improvement without notice.
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*AD7832-ADCC-01-BP2-133xx

High technology support

AD7832 series torque sensor

Rotation Torque Sensor (RTS)

Advantages

- Torque sensor featuring 1/3000 high resolution and robust construction
- Directly attachable to either the engine axle or CVJ
- Real torque measurement using component force measurement
- Double range with high accuracy (without degrading the total accuracy)

Capabilities

- Nominal torque : 200 Nm - 5 kNm
- Total accuracy : 0.03%
- Double range : Total accuracy of 1/3000 is guaranteed at 1/5 of full scale
- Maximum rpm : 12,000 rpm (200 Nm) - 10,000 rpm (5 kNm)



Energy Flow Model for the Torque Demand Concept



Measurable range with RTS



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