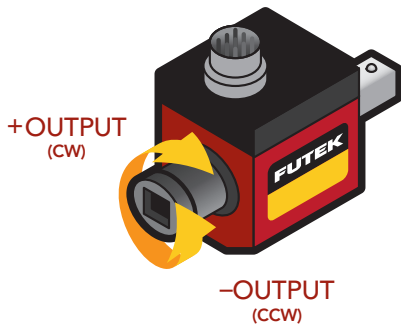


FUTEK's TRD305 Square Drive Rotary Torque Sensor with Encoder



NOTABLE FEATURES

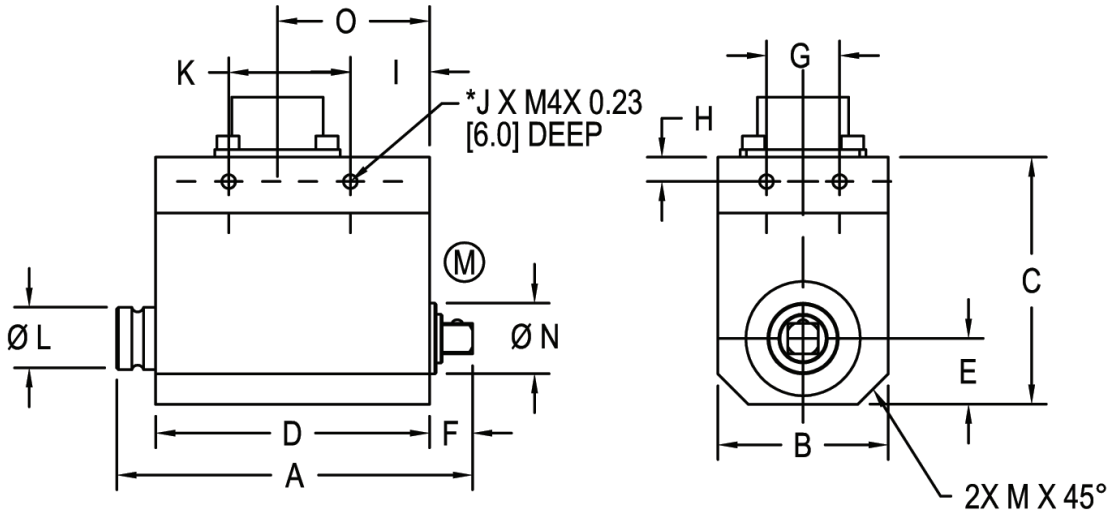
- 6 Nm to 1,000 Nm
- Square Drive with Encoder
- 3,000 RPM Max
- Slip ring type

ROTARY TORQUE SERIES

FUTEK's Square Drive Rotary Torque Sensors offer a unique solution for torque applications. With a broad capacity range—6 N-m to 1000 N-m—and the utilization of strain gauge technology, FUTEK's TRD series is the answer to any inline rotary application; ensuring the highest accuracy and measurement consistency. Measurements can be made in both clockwise and counterclockwise directions and with the compatibility to the USB Solutions, Digital Displays, Universal Amplifiers, and SENSIT Software, it allows for an easy build of a complete system.



DIMENSIONS inches [mm]

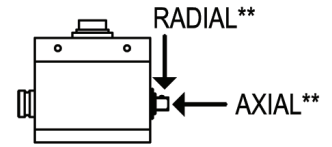


(M) = Measuring Side

Torque Sensor with Square Drive per DIN 3121 E, F, G & H

* Anti-rotation holes, not to be used to support load

** Maximum load allowed, not for measurement.

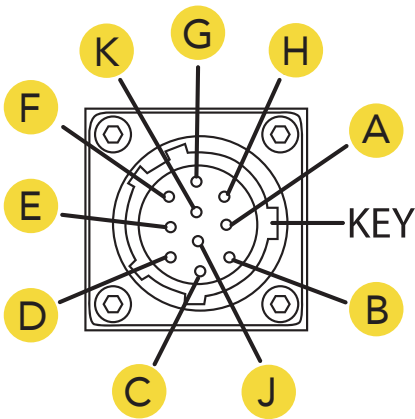


AVAILABLE MODELS inches [mm]

ITEM #	A	B	C	D	E	F	G	H	I	J	K	ØL	M	ØN	O
FSH01984	2.95 [75]	1.1 [28]	2.04 [52]	2.28 [58]	0.55 [14]	0.33 [8.5]	0.32 [8]	0.19 [5]	0.43 [11]	6	-	0.51 [13]	0.32 [8]	0.39 [10]	1.46 [37]
FSH01973	2.95 [75]	1.1 [28]	2.04 [52]	2.28 [58]	0.55 [14]	0.33 [8.5]	0.32 [8]	0.19 [5]	0.43 [11]	6	-	0.51 [13]	0.32 [8]	0.39 [10]	1.46 [37]
FSH01974	3.98 [101]	1.49 [38]	2.28 [58]	2.32 [59]	0.75 [19]	0.85 [21.5]	0.55 [14]	0.19 [5]	0.47 [12]	8	1.38 [35]	0.98 [25]	0.40 [10]	0.67 [17]	1.50 [38]
FSH01975	3.98 [101]	1.49 [38]	2.28 [58]	2.32 [59]	0.75 [19]	0.85 [21.5]	0.55 [14]	0.19 [5]	0.47 [12]	8	1.38 [35]	0.98 [25]	0.40 [10]	0.67 [17]	1.50 [38]
FSH01976	4.17 [106]	1.49 [38]	2.28 [58]	2.32 [59]	0.75 [19]	1.02 [26]	0.55 [14]	0.19 [5]	0.47 [12]	8	1.38 [35]	0.98 [25]	0.40 [10]	0.67 [17]	1.50 [38]
FSH01977	5.31 [135]	2.28 [58]	2.99 [76]	2.52 [64]	1.14 [29]	1.58 [40]	1.18 [30]	0.19 [5]	0.55 [14]	8	1.42 [36]	1.57 [40]	0.40 [10]	1.18 [30]	1.57 [40]
FSH01978	6.97 [177]	2.87 [73]	3.54 [90]	2.87 [73]	1.44 [36.5]	2.26 [57.5]	1.77 [45]	0.19 [5]	0.55 [14]	8	1.77 [45]	1.97 [50]	0.71 [18]	1.57 [40]	1.73 [44]

AVAILABLE MODELS

ITEM #	CAPACITY in-lb / N-m	DRIVE	**MAX. AXIAL FORCE lb [N]	**MAX. RADIAL FORCE lb [N]	WEIGHT lb [kg]
FSH01984	53 / 6	1/4"	34 [150]	7 [30]	0.7 [0.30]
FSH01973	106 / 12	1/4"	34 [150]	7 [30]	0.7 [0.30]
FSH01974	265 / 30	3/8"	124 [550]	13.5 [60]	0.8 [0.36]
FSH01975	558 / 63	3/8"	225 [1000]	13.5 [60]	0.8 [0.36]
FSH01976	1416 / 160	1/2"	405 [1800]	22.5 [100]	1.1 [0.52]
FSH01977	4425 / 500	3/4"	900 [4000]	34 [150]	3.2 [1.46]
FSH01978	8851 / 1000	1"	1350 [6000]	56 [250]	6.0 [2.70]



- Connector: 10 Pin Bendix PT02A-12-10P (Mating connector PT06A-12-10S-SR is not included)

CALIBRATION

- Calibration (STD): Certificate of Conformance
- Calibration (Available): 5pt CW and CCW
- Shunt Calibration: With sensor fully connected jump Pins B & K to generate 2 mV/V nom output

CONNECTOR CODE (CABLE PACKAGE WIRING CODE)

TORQUE CONNECTIONS

+Excitation	-Excitation	+Signal	-Signal
PIN 'A' (RED)	PIN 'B' (BLACK)	PIN 'C' (GREEN)	PIN 'D' (WHITE)

ANGLE CONNECTIONS

Power	Ground	Signal (Angle 1)	Signal (Angle 2)
PIN 'F' (ORANGE)	PIN 'E' (YELLOW)	PIN 'G' (BLUE)	PIN 'H' (BROWN)

SHUNT CAL CONNECTIONS

Power	Ground
PIN 'K' (PURPLE)	PIN 'B' (BLACK)

SHIELD CONNECTIONS

Shield (Floating)
PIN 'M'

PERFORMANCE			
PARAMETER	MIN	MAX	UNIT
Rated Output		2	mV/V nom.
Safe Overload		150	% of R.O.
Zero Balance	-1	1	% of R.O.
Excitation	5	11	(VDC OR VAC)
Calibration Test Excitation		10	VDC
Bridge Resistance		350	Ω nom.
Nonlinearity	-0.2	0.2	% of R.O.
Hysteresis	-0.1	0.1	% of R.O.
Nonrepeatability	-0.2	0.2	% of R.O.
Temp. Shift Zero	-0.01	0.01	% of R.O. / °F
	-0.02	0.02	% of R.O. / °C
Temp. Shift Span	-0.01	0.01	% of Load / °F
	-0.02	0.02	% of Load / °C
Operating Temp.	14	194	°F
	-10	90	°C
Compensated Temp	41	122	°F
	5	50	°C
Rotational Speed		3000	RPM
Shunt Cal Value (Internal)		43K	ohm

ENCODER DETAILS			
PARAMETER	MIN	MAX	UNIT
Pulses / REV		2 x 360	
Excitation	4.5	5.5	VDC

ENCODER SPECIFICATIONS

- Output Impulse (TTL)
- Angle 1- Leading Pulse
- Angle 2- Trailing Pulse (90°)

RELATED INSTRUMENTS AND ACCESSORIES

The following instruments are readily available with our TRD305 SQ Drive Rotary Torque Sensor. Please visit www.futek.com for full details on these items.



IHH500 PRO
Item Number: FSH03571

Intelligent Digital Handheld Display, mV/V, VDC, Current Measurement, Analog Output, Alarm Relays, TEDS and USB Output, Only Power Supply Adapter is Included With Pro Display



IPM650
Item Number: FSH03633

Intelligent Panel Meter, mV/V, VDC, Current Measurement, Analog Output, Alarm Relays, TEDS and USB Output



IHH500 ELITE
Item Number: FSH03460

Intelligent Digital Handheld Display, mV/V, VDC, Current and Encoder Measurement, Analog Output, Alarm Relays, TEDS and USB Output - Accessory Kit (FSH03583) With All Mating Connectors and SENSIT Software Included



USB410
ITEM NUMBER: FSH03637

External USB Output. Up to 18 Bit resolution. Able to measure torque, speed and angle in one channel. No external power supply needed. Works alongside SENSIT, LabVIEW, or DLL derived software.



ZCC980
Item Number: FSH02232

50 ft Long, 10 Pin Bendix PT06A-12-10S-SR to Cable Assembly, Material - Polyurethane, 30 Awg 10 Conductors, Braided Shielded

TECHNICAL SUPPORT

To access the TRD305 manual and gain setting instructions, visit our support page for detailed instructions:
<http://www.futek.com/rotarytorquesensors/support.aspx>

Drawing Number: F11032-E

FUTEK reserves the right to modify its design and specifications without notice. Please visit <http://www.futek.com/salesterms> for complete terms and conditions.

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13485:2012



9001:2008



17025:2005



U.S. Manufacturer