



Torque Feedback Device

Cost Effective High Quality Tactile Interface



Description

The new Torque Feedback Device (TFD) provides a variable torque output, in proportion to a DC input, for steering and other by-wire applications. This innovative design offers a cost effective, high quality user interface by applying state-of-the-art friction materials and a patent pending electromagnetic actuation system.

Incorporated into the TFD are two redundant sensors for fail-safe shaft feedback. Several standard product configurations are offered with torques ranging from 2.5 to 20Nm, and the TFD's modular design makes it easily adaptable to specific application requirements.

Features

- Integrated design combines both tactile and position/velocity feedback with a steering wheel interface in one mechanical package.
- Compact design offers high torque densities and energy efficient operation.
- Continuously variable torque output for high quality operator interface or "feel".
- Redundant sensors for safety and field serviceability.

- Modular design allows the product to be easily scaled to specific application requirements.
- Repeatable operation over a wide range of operating conditions and product life.
- Assembly and all components meet EU Directive 2002/95/EC (RoHS).
- Designed for use in EN1175 and IEC61508 compliant systems.

Typical Steer-By-Wire Applications

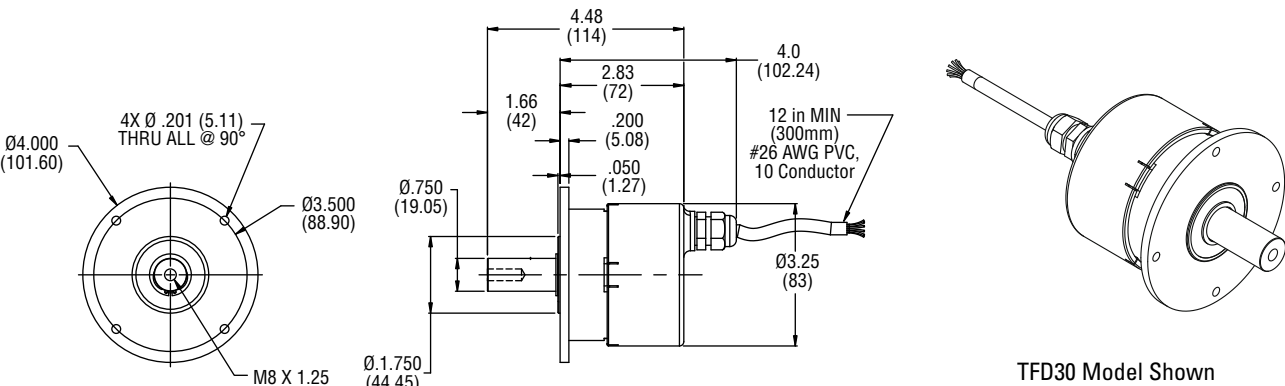
- Electric vehicles including:
 - Lift trucks
 - Golf carts
 - Pallet trucks
 - Floor sweepers
 - Cleaning equipment
- Turf & garden equipment (professional lawnmowers)
- Industrial & recreational marine/boats
- Military/aerospace
- Construction equipment

For Immediate assistance
 E-mail: geoff.rondeau@thomsonlinear.com
 Tel. North America: +1 716 531-7110
www.thomsonlinear.com

DELTRAN

TFD-30

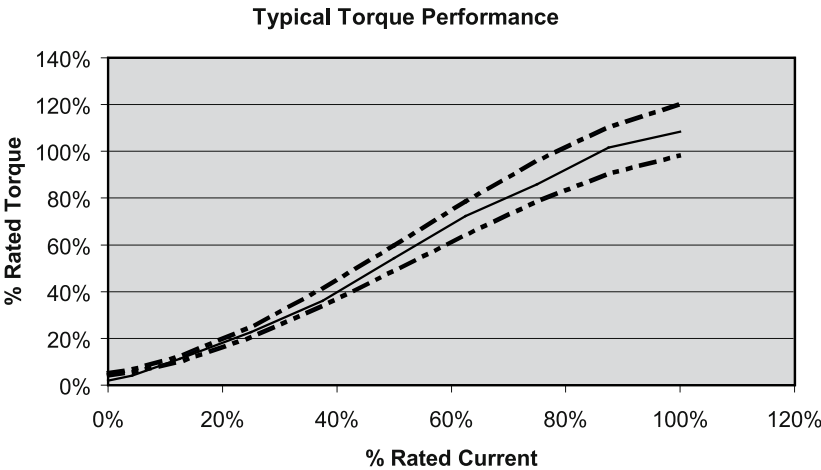
Dimensions & Specifications



Dimensions (mm)

PERFORMANCE							
Model	Static Torque lb-in (Nm)	Coil Voltage* VDC	Resistance Ohms @ 20°C nom	Power Watts max	Speed* RPM	Rotor Inertia lb-in-sec ²	Weight lb (kg)
TFD-30 025	22 (2.5)	12	3.6	40	300/120	35 X 10 ⁻³	3.5 (1.59)
		24	12.5	46	300/120	35 X 10 ⁻³	3.5 (1.59)
		36	32.6	40	300/120	35 X 10 ⁻³	3.5 (1.59)
		48	55.0	42	300/120	35 X 10 ⁻³	3.5 (1.59)
TFD-30 050	44 (5.0)	12	3.6	40	300/120	62 X 10 ⁻³	3.5 (1.59)
		24	12.5	46	300/120	62 X 10 ⁻³	3.5 (1.59)
		36	32.6	40	300/120	62 X 10 ⁻³	3.5 (1.59)
		48	55.0	42	300/120	62 X 10 ⁻³	3.5 (1.59)

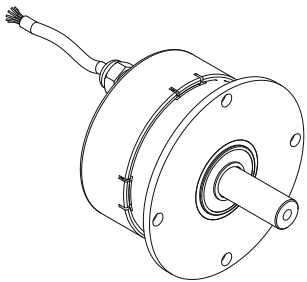
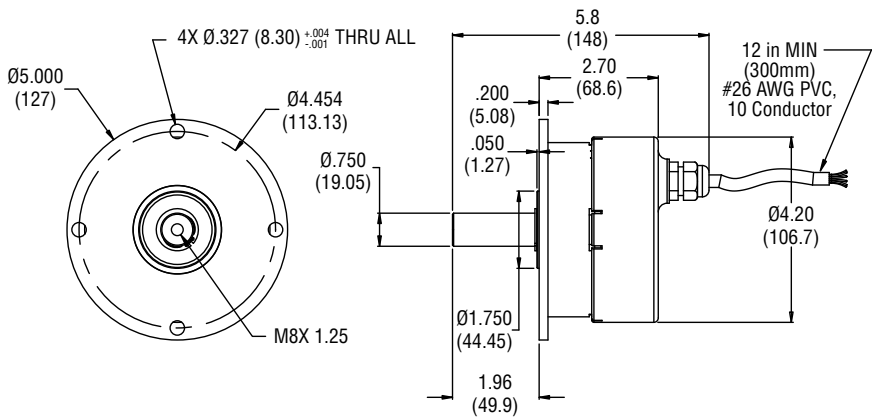
(-) denotes metric equivalents. Specifications subject to change without notice.
*Intermittent/Continuous



% Rated Torque	% Rated Current
2%	0%
25%	28%
50%	47%
75%	65%
100%	88%

TFD-40

Dimensions & Specifications

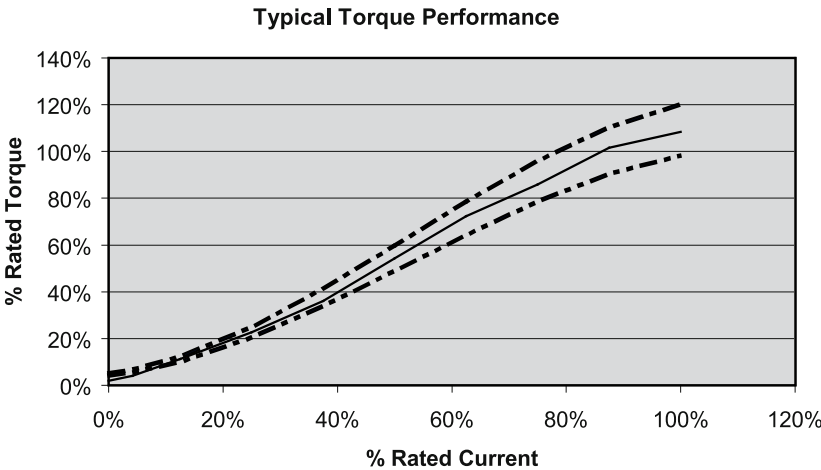


TFD40 Model Shown

Dimensions (mm)

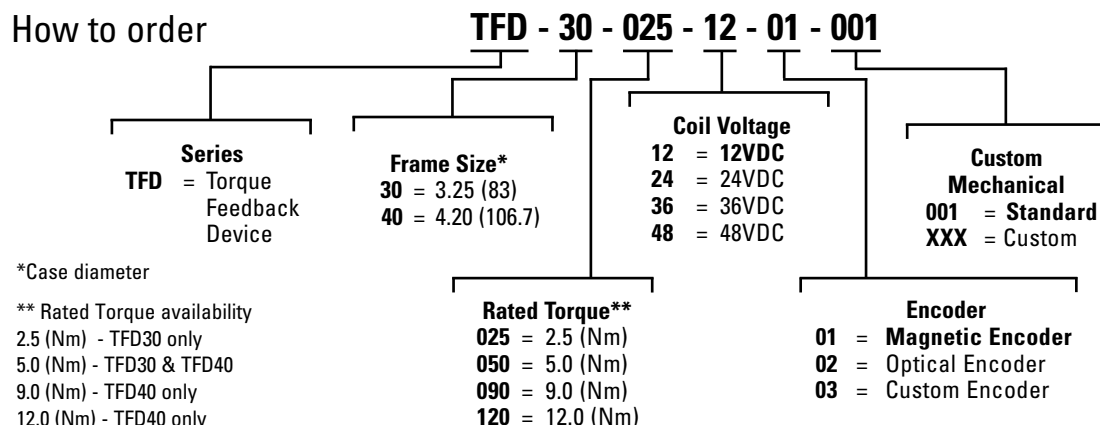
PERFORMANCE							
Model	Static Torque lb-in (Nm)	Coil Voltage* VDC	Resistance Ohms @ 20°C nom	Power Watts max	Speed* RPM	Rotor Inertia lb-in-sec ²	Weight lb (kg)
TFD-40 050	44 (5.0)	12	3.5	42	300/120	76 X 10 ⁻³	6.2 (2.8)
		24	11.0	51	300/120	76 X 10 ⁻³	6.2 (2.8)
		36	22.7	57	300/120	76 X 10 ⁻³	6.2 (2.8)
		48	35.5	65	300/120	76 X 10 ⁻³	6.2 (2.8)
TFD-40 090	80 (9.0)	12	3.5	42	300/120	10 X 10 ⁻²	6.2 (2.8)
		24	11.0	51	300/120	10 X 10 ⁻²	6.2 (2.8)
		36	22.7	57	300/120	10 X 10 ⁻²	6.2 (2.8)
		48	35.5	65	300/120	10 X 10 ⁻²	6.2 (2.8)
TFD-40 120	106 (12.0)	12	3.5	42	300/120	13 X 10 ⁻²	6.2 (2.8)
		24	11.0	51	300/120	13 X 10 ⁻²	6.2 (2.8)
		36	22.7	57	300/120	13 X 10 ⁻²	6.2 (2.8)
		48	35.5	65	300/120	13 X 10 ⁻²	6.2 (2.8)

(-) denotes metric equivalents. Specifications subject to change without notice.
*Intermittent/Continuous



% Rated Torque	% Rated Current
2%	0%
25%	28%
50%	47%
75%	65%
100%	88%

How to order



For immediate assistance

Thomson
45 Hazelwood Drive, Amherst, NY 14228 USA
Phone: 1-716-531-7110 Fax: 1-716-91-9196
E-mail: geoff.rondeau@thomsonlinear.com

USA, Canada and Mexico

Thomson Customer Service
203A West Rock Road, Radford, VA 24141 USA
Phone: 1-540-633-3549 Fax: 1-540-633-0294
E-mail: thomson@thomsonlinear.com
Literature: literature.thomsonlinear.com

France

Thomson
C.P 80018, 12, Rue Antoine Becquerel – Z.I. Sud
72026 Le Mans Cedex 2, France
Phone: +33 (0) 243 50 03 30 Fax: +33 (0) 243 50 03 39
E-mail: sales.france@thomsonlinear.com

Germany

Thomson
Nuertinger Strasse 70, 72649 Wolfschlugen, Germany
Phone: +49 (0) 7022 504 0 Fax: +49 (0) 7022 504 405
E-Mail: sales.wolfschlugen@thomsonlinear.com

Italy

Thomson
Largo Brughetti, 20030 Bovisio Masciago, Italy
Phone: +39 0362 594260 Fax: +39 0362 594263
E-mail: info@danahermotion.it

Spain

Thomson
Rbla Badal, 29-31 7th, 1st, 08014 Barcelona, Spain
Phone: +34 (0) 9329 80278 Fax: +34 (0) 9329 80278
E-mail: josep.estaran@thomsonlinear.com

Sweden

Thomson
Box 9053, 291 09 Kristianstad, Sweden
Phone: +46 (0) 44-24 67 00 Fax: +46 (0) 44-24 40 85
E-mail: sales.scandinavia@thomsonlinear.com

United Kingdom

Thomson
Chartmoor Road, Chartwell Business Park
Leighton Buzzard, Bedfordshire, LU7 4WG; United Kingdom
Phone: +44 (0)1525 243 243 Fax: +44 (0)1525 243 244
E-mail: sales.uk@thomsonlinear.com

Asia Pacific

Thomson
Unit A, 16 Floor, 169 Electric Road, Manulife Tower,
North Point, Hong Kong
Phone: +852 2503 6581 Fax: +852 2571 8585
E-mail: victor.lim@danahermotion.com

China

Thomson
Rm 2206, Scitech Tower, 22 Jianguomen Wai Street
Beijing, China, 100004
Phone: +86 10 65120195 Fax: +86 10 65150506
E-mail: tm.sales@danaher.com

India

Thomson
Unit No. 2, SDF 1 SeepzAnderi, Mumbai 400 096, India
Phone: +91 22 28294058 Fax: +91 22 28394036
E-mail: girish.mahajani@danahermotion.com

Japan

Thomson
2F, Tokyu Reit Hatchobori Bldg,
2-7-1 Hatchobori Chuo-ku, Tokyo 104-0032 Japan
Phone: +81-3-6222-1051 Fax: +81-3-6222-1055
E-mail: info@danahermotion.co.jp

200809-01 XXX Printer #M GH 10/3/2008
Specifications are subject to change without notice. It is the responsibility of the product user to determine the suitability of this product for a specific application. All trademarks property of their respective owners.
© Thomson Industries, Inc. 2010