APPLIED MEASUREMENTS LTD.
Transducer Specialists...

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https://appmeas.co.uk

Flange type Static/Reaction Torque Transducer | DTD-F

Accurate and Easily Adaptable, Direct Torque Measurement

- **Lead Time:** 10 weeks

AT A GLANCE

- Capacities: 0-10Nm to 0-50kNm
- mV/V Strain Gauge Bridge Output
- Environmental Protection: IP65
- Accuracy: <±0.25%/Rated Capacity
- Custom Capacities to 200kNm+

- **Ideal for Bolting Between Machinery to Measure Direct Torque**
- **IP65 Protected From Low Pressure Water Jets**
- **Offshore and Marine Submersible Versions Available**
- **Fast and Simple Installation with its Integrated Connector**
- **Customised Shaft and Configuration Options to Suit Your Exact Application**

DESCRIPTION

The DTD-F series of static / reaction torque transducers have end flanges for bolting between machinery where a **direct drive** is required. Applications including the testing of automotive drives, aircraft actuator and industrial robots.

The DTD-F flange static torque transducer is constructed from **Stainless Steel on capacities up to 10kNm** while capacities from **20kNm upwards are constructed from Alloy Steel**.

Installation and setup is made fast and simpler with its **integral, robust connector**.

The design of the DTD-F lends itself readily to customisation, allowing us to offer custom flange sizes and fixing configurations, as well as versions with sealing to IP68 for applications where operating conditions are particularly harsh or involve total submersion.

If you need a torque transducer without a flange end, please see our range of alternative static torque transducers (https://appmeas.co.uk/products/torque-sensors/static-reaction/).

TECHNICAL SPECIFICATIONS

Rated Capacity (RC)	Nm	0-10, 0-20, 0-50, 0-100, 0-200, 0-300, 0-500, 0-1000, 0-2k, 0-3k, 0-5k, 0-10k, 0-20k, 0-30k, 0-50k

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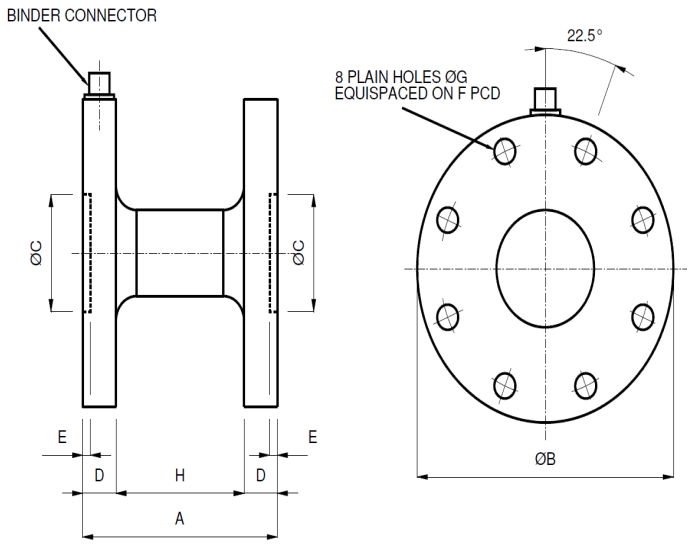
Operating Modes		Clockwise (CW)/Counter-Clockwise (CCW) / Clockwise (CW) & Counter-Clockwise (CCW)
Sensitivity (RO)	mV/V	10Nm = 0.6 / 20Nm = 0.7 / 50Nm = 1.0 / 100Nm to 50kNm = 1.5typ.
Zero Balance/Offset	±%/Rated Output	<1
Output Symmetry (CW vs. CCW)	±%/Rated Output	<0.25 typical
Non-Linearity	±%/Rated Output (BFSL)	<0.1 (<0.05 typical)
Hysteresis	±%/Full Scale Output	<0.1 (<0.05 typical)
Repeatability	±%/Full Scale Output	<0.02
Temperature Effect on Zero	±Full Scale Output/℃	<0.010
Temperature Effect on Output	±/Reading/℃	<0.010
Bridge Resistance	Ohms	700 nominal
Insulation Resistance	Megaohms	>5000 @ 50Vdc
Excitation Voltage	Volts AC or DC	10 recommended (2-15 acceptable)
Operating Temperature Range	℃	0 to +80
Compensated Temperature Range	℃	+20 to +60
Storage Temperature Range	℃	0 to +80
Safe Overload	% of Rated Capacity	150
Ultimate Overload	% of Rated Capacity	300
IP Rating (Environmental Protection)		IP65
Weight		See dimensions table
Fatigue Rating		20 million fully reversed cycles
Cable Length (as standard)	metres	3
Cable Type		10Nm to 10kNm: M8 Binder connector with mating 3 metre cable assembly 20kNm to 50kNm: M12 Binder connector with mating 3 metre cable assembly
Construction		17-4PH stainless steel + 303 stainless steel
Resolution		1 part in 250,000 (with appropriate instrumentation)

Product Dimensions



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Capacity (Nm)	A	ØB	ØC	D	E	ØF	G	Weight kg (approximate)
0-10, 0-20, 0-50, 0-100	76	100	38.1	13	2	82.5	8.2	1.4
0-200, 0-500	76	100	38.1	13	3	82.5	8.2	1.4
0-1000, 0-2000	90	125	50.1	19	6	108	10.2	3.1
0-3000	120	150	50.1	35	6	108	16.3	8.7
0-5000	120	202	80.1	38	8	165	16.3	16.9
0-10k	190	202	80.1	38	8	165	16.3	17.2
0-20k, 0-30k, 0-50k	180	278	110.1	50	4	235	24.5	56

All dimensions are in mm.

Wiring Details

Wire	Designation
Red	+ve excitation
Blue	-ve excitation
Green	+ve signal (clockwise)
Yellow	-ve signal
Screen	To ground - not connected to sensor body

ORDERING CODES & OPTIONS

Core Product	Capacity (inc Engineering Units)	Cable Length (m)	Specials Code	Result
DTD-F	10Nm	003	000	DTD-F-10Nm-003-000
DTD-F	20Nm	003	000	DTD-F-20Nm-003-000
DTD-F	50Nm	003	000	DTD-F-50Nm-003-000
DTD-F	100Nm	003	000	DTD-F-100Nm-003-000
DTD-F	200Nm	003	000	DTD-F-200Nm-003-000
DTD-F	300Nm	003	000	DTD-F-300Nm-003-000
DTD-F	500Nm	003	000	DTD-F-500Nm-003-000
DTD-F	1000Nm	003	000	DTD-F-1000Nm-003-000
DTD-F	2000Nm	003	000	DTD-F-2000Nm-003-000
DTD-F	5000Nm	003	000	DTD-F-5000Nm-003-000
DTD-F	10,000Nm	003	000	DTD-F-10kNm-003-000
DTD-F	20,000Nm	003	000	DTD-F-20kNm-003-000
DTD-F	30,000Nm	003	000	DTD-F-30kNm-003-000
DTD-F	50,000Nm	003	000	DTD-F-50kNm-003-000

Array

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