

DATUM ELECTRONICS

TORQUE AND SHAFT POWER MEASUREMENT SPECIALISTS

PRODUCT CATALOGUE 2017





Datum Electronics is an International Manufacturer and Supplier of Torque and Shaft Power Measurement Equipment. Headquartered on the Isle of Wight, UK, we have a long established presence in the UK, USA, Asia, Europe and beyond.

www.datum-electronics.co.uk

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INLINE TORQUE SENSORS

M425 ROTARY TORQUE SENSOR



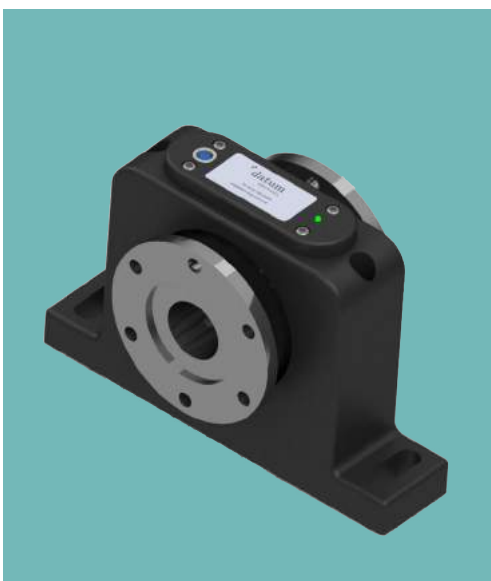
FEATURES

Keyway Torque Transducer
 Static and Rotary Torque Measurements
 Accuracy: +/- 0.1%
 Sample Rates: 1 to 4,000 (selectable)

Model Size	Rated Load, Nm	Rated Load, Lbf-ft	Rotational Speed, RPM	Operating Range, °C	Operating Range, °F
Size 1-A	0 - 10	0 - 7.5	0 - 10,000	-10 to +70	+14 to +158
Size 1-B	0 - 20	0 - 15	0 - 10,000	-10 to +70	+14 to +158
Size 1-C	0 - 50	0 - 40	0 - 10,000	-10 to +70	+14 to +158
Size 1-D	0 - 100	0 - 75	0 - 10,000	-10 to +70	+14 to +158
Size 2-A	0 - 250	0 - 185	0 - 8,000	-10 to +70	+14 to +158
Size 2-B	0 - 500	0 - 370	0 - 8,000	-10 to +70	+14 to +158
Size 3-A	0 - 1,000	0 - 740	0 - 6,000	-10 to +70	+14 to +158
Size 3-B	0 - 2,000	0 - 1,475	0 - 6,000	-10 to +70	+14 to +158
Size 4-A	0 - 5,000	0 - 3,700	0 - 5,000	-10 to +70	+14 to +158
Size 4-B	0 - 10,000	0 - 7,375	0 - 5,000	-10 to +70	+14 to +158
Size 5-A	0 - 15,000	0 - 11,100	0 - 2,000	-10 to +70	+14 to +158
Size 5-B	0 - 20,000	0 - 14,750	0 - 2,000	-10 to +70	+14 to +158
Size 5-C	0 - 25,000	0 - 18,450	0 - 2,000	-10 to +70	+14 to +158
Size 5-D	0 - 30,000	0 - 22,125	0 - 2,000	-10 to +70	+14 to +158

*Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc

FF425 FLANGE TORQUE SENSOR



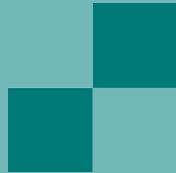
FEATURES

Flange to Flange Torque Transducer
 Rotary Torque Measurements
 Accuracy: +/- 0.1%
 Sample Rates: 1 to 4,000 (selectable)

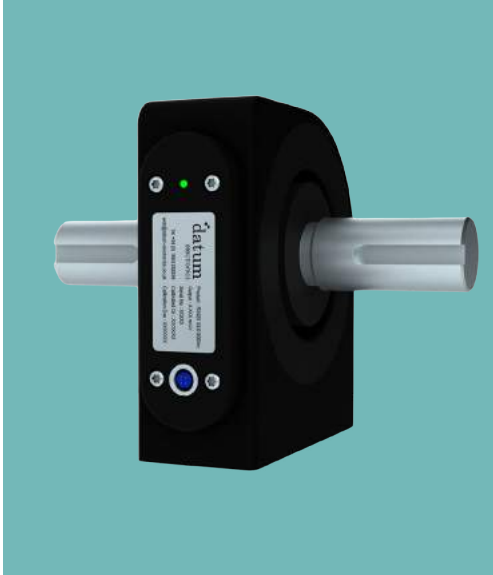
Model Size	Rated Load, Nm	Rated Load, Lbf-ft	Rotational Speed, RPM	Operating Range, °C	Operating Range, °F
Size 1	0 - 100	0 - 75	0 - 10,000	-10 to +70	+14 to +158
Size 2-A	0 - 250	0 - 185	0 - 10,000	-10 to +70	+14 to +158
Size 2-B	0 - 500	0 - 370	0 - 10,000	-10 to +70	+14 to +158
Size 3-A	0 - 1,000	0 - 740	0 - 10,000	-10 to +70	+14 to +158
Size 3-B	0 - 2,000	0 - 1,475	0 - 10,000	-10 to +70	+14 to +158
Size 4-A	0 - 5,000	0 - 3,700	0 - 8,000	-10 to +70	+14 to +158
Size 4-B	0 - 10,000	0 - 7,375	0 - 8,000	-10 to +70	+14 to +158
Size 5-A	0 - 15,000	0 - 11,100	0 - 6,000	-10 to +70	+14 to +158
Size 5-B	0 - 20,000	0 - 14,750	0 - 6,000	-10 to +70	+14 to +158
Size 5-C	0 - 25,000	0 - 18,450	0 - 6,000	-10 to +70	+14 to +158
Size 5-D	0 - 30,000	0 - 22,125	0 - 6,000	-10 to +70	+14 to +158

*Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc

INLINE TORQUE SENSORS



RS425 HIGH-SPEED TORQUE SENSOR



FEATURES

Spline or Keyway Torque Transducer
 Rotary Torque Measurements
 Accuracy: +/- 0.1%
 Sample Rates: 1 to 4,000 (selectable)

Model Size	Rated Load, Nm	Rated Load, Lbf-ft	Rotational Speed, RPM	Operating Range, °C	Operating Range, °F
Size 1-A	0 - 10	0 - 7.5	0 - 10,000	-10 to +70	+14 to +158
Size 1-B	0 - 20	0 - 15	0 - 10,000	-10 to +70	+14 to +158
Size 1-C	0 - 50	0 - 40	0 - 10,000	-10 to +70	+14 to +158
Size 1-D	0 - 100	0 - 75	0 - 10,000	-10 to +70	+14 to +158
Size 2-A	0 - 250	0 - 185	0 - 10,000	-10 to +70	+14 to +158
Size 2-B	0 - 500	0 - 370	0 - 10,000	-10 to +70	+14 to +158
Size 3-A	0 - 1,000	0 - 740	0 - 6,000	-10 to +70	+14 to +158
Size 3-B	0 - 2,000	0 - 1,475	0 - 6,000	-10 to +70	+14 to +158
Size 4-A	0 - 5,000	0 - 3,700	0 - 5,000	-10 to +70	+14 to +158
Size 4-B	0 - 10,000	0 - 7,375	0 - 5,000	-10 to +70	+14 to +158
Size 5-A	0 - 15,000	0 - 11,100	0 - 2,000	-10 to +70	+14 to +158
Size 5-B	0 - 20,000	0 - 14,750	0 - 2,000	-10 to +70	+14 to +158
Size 5-C	0 - 25,000	0 - 18,450	0 - 2,000	-10 to +70	+14 to +158
Size 5-D	0 - 30,000	0 - 22,125	0 - 2,000	-10 to +70	+14 to +158

*Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/- 10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc

FF410 STATIC TORQUE SENSOR



FEATURES

DIN Size Flange Torque Transducer
 Static Torque Measurements
 Accuracy: +/- 0.1%
 Sample Rates: 1 to 4,000 (selectable)

Model Size	Rated Load, Nm	Rated Load, Lbf-ft	No. of Holes	Operating Range, °C	Operating Range, °F
Size 1	0 - 250	0 - 185	6	0 to +70	+32 to +158
Size 2	0 - 500	0 - 370	6	0 to +70	+32 to +158
Size 3	0 - 700	0 - 515	6	0 to +70	+32 to +158
Size 4	0 - 1,000	0 - 740	8	0 to +70	+32 to +158
Size 5	0 - 1,600	0 - 1,180	8	0 to +70	+32 to +158
Size 6	0 - 1,900	0 - 1,400	8	0 to +70	+32 to +158
Size 7	0 - 2,900	0 - 2,140	8	0 to +70	+32 to +158
Size 8	0 - 4,400	0 - 3,245	8	0 to +70	+32 to +158
Size 9	0 - 5,100	0 - 3,760	8	0 to +70	+32 to +158
Size 10	0 - 7,300	0 - 5,385	10	0 to +70	+32 to +158
Size 11	0 - 13,000	0 - 9,590	8	0 to +70	+32 to +158

*Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/- 10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc

SHAFT POWER MEASUREMENT SOLUTIONS

COMPACT SHAFT POWER MEASUREMENT KIT



FEATURES

- Shaft Sizes: 30 - 500 mm (1.1811 " - 19.685 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 hours
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA): +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*

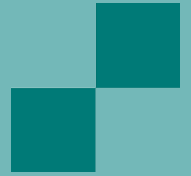
STANDARD SHAFT POWER MEASUREMENT KIT



FEATURES

- Shaft Sizes: 90 - 1,100 mm (3.5433 " - 43.3071 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 days
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA): +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*



SHIP TORSION METER SYSTEM

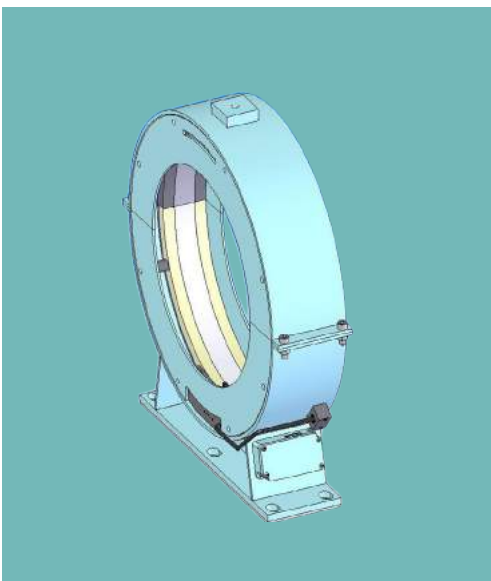


FEATURES

- Shaft Sizes: 30 - 500 mm (1.1811 " - 19.685 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 hours
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*

NAVAL TORSION METER SYSTEM



FEATURES

- Shaft Sizes: 90 - 1,100 mm (3.5433 " - 43.3071 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 days
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA); +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*

SHAFT POWER MEASUREMENT SOLUTIONS

WIND TURBINE TORSION METER SYSTEM

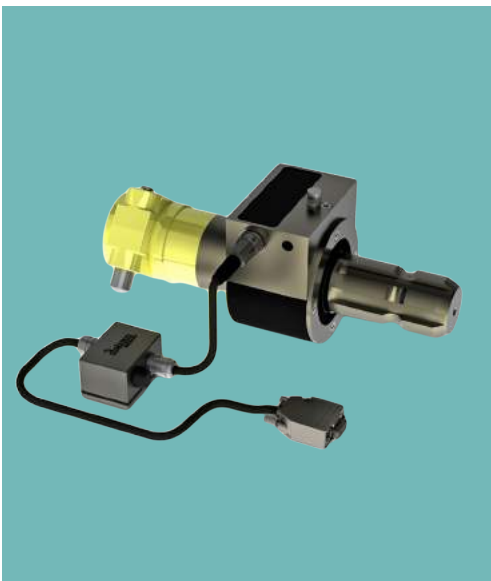


FEATURES

- Shaft Sizes: 30 - 500 mm (1.1811 " - 19.685 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 hours
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA): +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*

PTO POWER MONITORING SYSTEM

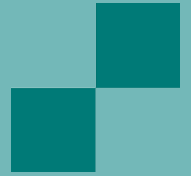


FEATURES

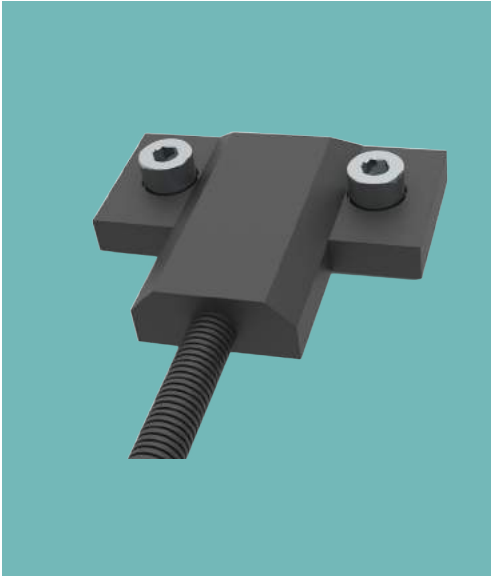
- Shaft Sizes: 90 - 1,100 mm (3.5433 " - 43.3071 ")
- Accuracy: +/- 0.1%
- Battery Life: 30 days
- Operating Temperature: 0 to + 70 °C (+32 to + 158 °F)
- Data Sampling Rate: 10 sps as standard
- Cable Length: 4m as standard
- Data Output: RS485 & USB for Torque and Speed
- Single or Dual Channel
- PC Software

**Signal output options can include Ethernet, MODBUS, USB, RS485/232 and 4 analogue channels configured 4-20mA (4-12-20mA): +/-10Vdc, +/- 5Vdc, 0-10Vdc or 0-5Vdc*

STRAIN GAUGE BOLT-ON SENSORS



2-HOLE BOLT-ON SENSOR



FEATURES

- Rated Strain Range: 10 - 1,100 micro-strain
- Rated Output: 1.5mV/V for 1,000 micro-strain
- Bridge Resistance: 350 ohm (nominal)
- Linearity & Repeatability: 0.1% of rated output (FSD)
- Temperature Effect on Output: 0.005 of applied load
- Operating Temperature: -20 to + 80 °C (-4 to + 176 °F)
- Environmental Protection: IP68
- Resistant to **chemicals** including: dust, wate, salt stray, urine, paint, dilute acid; **fuels**: diesel, gasoline, bio diesel oils including lubricating, hydraulic; **coolants**: ethylene glycol, coolant conditioner, freon

3-HOLE BOLT-ON SENSORS

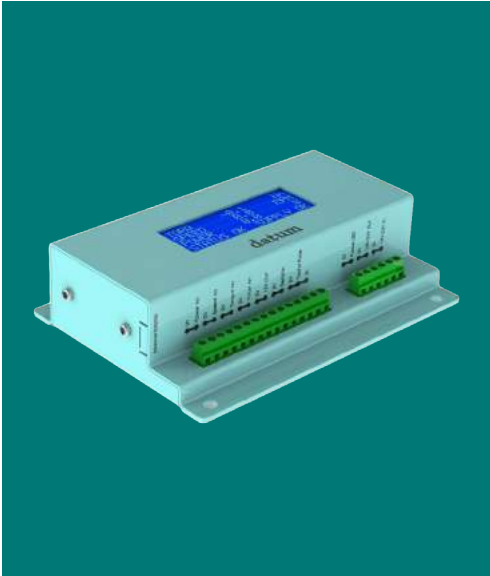


FEATURES

- Designed to eliminate any differential temperature between the sensor and the structure.
- Rated Strain Range: 10 - 1,100 micro-strain
- Rated Output: 1.5mV/V for 1,000 micro-strain
- Bridge Resistance: 350 ohm (nominal)
- Linearity & Repeatability: 0.1% of rated output (FSD)
- Temperature Effect on Output: 0.005 of applied load
- Operating Temperature: -20 to + 80 °C (-4 to + 176 °F)
- Environmental Protection: IP68
- Resistant to **chemicals** including: dust, wate, salt stray, urine, paint, dilute acid; **fuels**: diesel, gasoline, bio diesel oils including lubricating, hydraulic; **coolants**: ethylene glycol, coolant conditioner, freon

UNIVERSAL INTERFACE

SENSOR UNIVERSAL INTERFACE



FEATURES

Supports all Datum Inline and Shaft Power Measurement Solutions

Displays: Torque, Speed RPM, Power and Status

Analogue Outputs: 4-20mA, +/-10Vdc, +/-5Vdc, 0-10Vdc or 0-5Vdc

Digital Outputs: RS485, RS232, Ethernet, MODBUS UDP, USB Type Mini B, USB Type A

Also accepts an input from an external shaft speed tachometer

Power Supply: 15-24Vdc

Operating Range: -10 to +70 °C (+14 to +158 °F)

Environment Protection: IP54

CUSTOM (OEM) SOLUTIONS

CUSTOM ENGINEERED SOLUTIONS

In many cases it is better to use an existing shaft or test rig and convert this to be the torque sensor. This process reduces the cost of fitting a conventional torque transducer and it improves the measurements taken by maintaining the dynamics of the driveline.

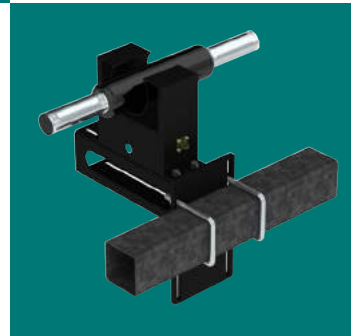
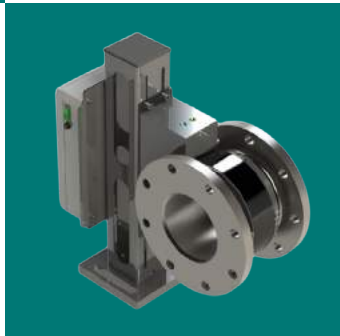
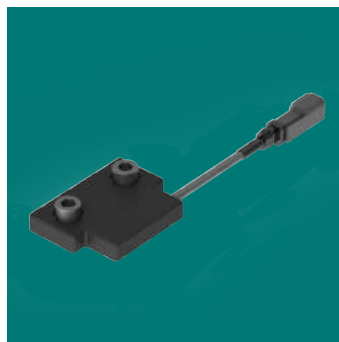
Datum Electronics are able to provide both modular and custom designed torque and rotary strain measurement solutions. The solutions range from an installation on a specific shaft or coupling on a test rig to the full design of an integral system for a drive system. Such engineered solutions can be complete as one off, as well as fully integrated OEM solutions.

With over 30 years of experience, Datum Electronics have complete over 1,000 such designs and will probably have something close to what you need in our drawings library. If you would like to discuss an application where you think a custom design would be of benefit please call our technical sales team or email in a drawing or sketch of the shaft and its location.

HOW DATUM ELECTRONICS CAN HELP:

Custom engineering solutions have a lot of meanings and Datum Electronics have been successfully providing flexible solutions to meet emerging markets and customers needs:

- Modifying or customising our standard products to fit into a customer's requirements
- Developing a new product from existing components and parts
- Adapting a standard product to integrate into existing machinery or application
- Designing and manufacturing a one-off design



DATUM ELECTRONICS

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