datum electronics

425 SERIES

RS425 Contactless Torque Transducer

PRODUCT OVERVIEW

Made in the UK

PRECISION. DATA. INNOVATION.

425 SERIES

Integrated with datum connect

RS425 Contactless Torque Transducer

The Datum Electronics RS425 Series contactless rotary torque transducers have been designed to fit easily in line with any drivetrain or test bed with its standard keyway shaft. The RS425 is a true contactless torque transducer, the rotor runs inside the stator with 2 mm to 5 mm gap. This ensures no longterm wear of bearings or frictional loads on the rotating drive shaft.

The DC Torque Transducers are Wi-Fi enabled to communicate with the Datum Connect app (available on Android, iOS and Windows) and have been designed to fit with most applications and solutions requiring rotary torque measurement.

We are able to modify the shaft configuration of the transducer to best suit your requirements, and can even design bespoke ends to fit including splines and smooth shafts for example. This type of transducer has many advantages over other torque systems including: zero bearing friction, high speed and high torque applications.

Features and Benefits

Lightweight Torque transducer with completely separate rotor and stator set
No mechanical friction, long-term operation reduced maintenance
Keyway shaft for easy fitting to test rigs and drive systems
Bespoke shafts are also available as an alternative to a keyway shaft
No bearings – ideal for high speed applications - speak to Sales for higher speeds.
Standard RS425 torque transducer range available from 0 to 30,000 N·m
Standard IP Rating 54 - can be upgraded to IP67
Compatable with industry standard couplings supplied with DIN rail mountable Datum Connect Interface (DCI)

System Advantages

Accurate On Shaft Torque Measurement
Modular System Assembly
Contactless Transmission
Proven Technology
Low Maintenance
Linear Calibration
Rotary and Static Torque Measurement
Calibrated analogue data for torque speed and power
Custom configurations available

Environment

Thermal Stability of Gain per 10°C	0.02%
Thermal Stability of Zero per 10°C	0.02%
Normal Specification Range	10°C to 60°C
Operating Range	-10°C to +70°C
Storage Range	-35°C to +75°C
Environmental Protection	IP54
Electromagnetic Compatibility	EN61326-1:2006 (IEC61000-4), IEC60945)

The RS425 Torque Sensor Range

The RS425 torque transducer utilises a strain gauged shaft for accurate and reliable torque measurement and a set of rotating on shaft conditioning electronics, the digital signals are transmitted to the non-rotating part of the system or stator providing a reliable and highly accurate torque measurement solution. The rotor is continuously powered enabling static torque measurement to be made. Not only does the RS425 Series offer great technical advantages but the range of torque sensors are competitively priced.

The RS425 series torque transducer is not limited by bearings; therefore, it can be used at higher speeds, and places no bearings loads on to the shaft. The stator needs to be mounted in relation to the shaft within an operating envelope of +/- 3 mm to 5 mm. The standard range can measure torque ranges from 0 to 30,000 N·m, the same modular elements have been applied to bespoke torque transducers for use down as low as 3 N·m and up to 500 kN·m and above.

Using our new generation of electronics as found in our industry standard M425 Torque transducer, the RS425 Connect Torque Transducers are Wi-Fi enabled to communicate with the Datum Connect app (available on both Android and iOS and Windows).

The high-tech non-contact communication system provides data directly proportional to torque, offering a comprehensive range of available digital and analogue outputs.

With its frictionless system the RS425 can achieve higher speeds than listed as standard. With speeds of up to 30,000 rpm being possible, please discuss with Datum Sales about your application.

The Competitive Edge

The Series RS425 transmits calibrated digital data as this is a cleaner and more defined method of transmitting data. The on-shaft signal from the strain gauge is converted to a digital signal and amplified on shaft. With Datum Connect Electronics this allows your smart phone/device to act as both display and data logger and with our Datum Connect Interface (DCI).

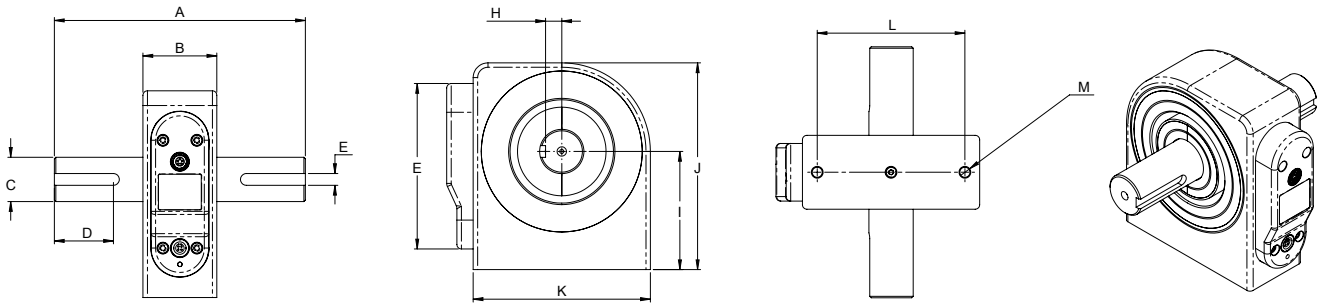
Performance Characteristics

RS425 model	Rated load (N·m)	Rated load (lbf·ft)	Standard (rpm) range	Stator mass (kg)	Rotor mass (kg)
S1-3Nm	3	2.2	1-10,000	1.057	0.401
S1-10Nm	10	7.4	1-10,000	1.057	0.401
S1-20Nm	20	14.8	1-10,000	1.057	0.421
S1-50Nm	50	36.9	1-10,000	1.057	0.462
S1-100Nm	100	73.8	1-10,000	1.057	0.560
S2-250Nm	250	184.4	1-10,000	1.057	1.201
S2-500Nm	500	368.8	1-10,000	1.057	1.276
S3-1kNm	1,000	737.6	1-6,000	1.057	1.668
S3-2kNm	2,000	1,475.1	1-6,000	1.057	2.149
S4-5kNm	5,000	3,687.8	1-5,000	1.152	6.112
S4-10kNm	10,000	7,375.6	1-5,000	1.152	12.162
S5-15kNm	15,000	11,063.4	1-2,000	2.138	20.499
S5-20kNm	20,000	14,751.2	1-2,000	2.138	22.318
S5-25kNm	25,000	18,439.1	1-2,000	2.138	34.608
S5-30kNm	30,000	22,126.9	1-2,000	2.138	40.969

Tech Specifications

RS425 model	Shaft length face to face (mm)	Body width (mm)	Shaft Ø	Keyway length	Keyway width	Output module length (mm)	Output module height (mm)	Keyway depth off axial centre	Base to shaft axial centre (mm)	Overall Height (mm)	Base Length (mm)	Base fixing holes. Centre to centre (mm)	Fixing holes (DIN 933)
	A	B	C	D	E	F	G	H	I	J	K	L	M
S1-10Nm	150	50	15	22.5	5	112	8.5	4.3	80	140	120	100	M8
S1-20Nm	150	50	15	22.5	5	112	8.5	4.3	80	140	120	100	M8
S1-50Nm	150	50	15	22.5	5	112	8.5	4.3	80	140	120	100	M8
S1-100Nm	150	50	15	22.5	5	112	8.5	4.3	80	140	120	100	M8
S2-250Nm	170	50	30	44	8	112	8.5	11	80	140	120	100	M8
S2-500Nm	170	50	30	44	8	112	8.5	11	80	140	120	100	M8
S3-1kNm	240	50	50	78.5	12	112	8.5	20	80	140	120	100	M8
S3-2kNm	240	50	50	78.5	12	112	8.5	20	80	140	120	100	M8
S4-5kNm	240	50	75	78.5	20	112	8.5	30	80	140	120	100	M8
S4-10kNm	240	50	75	78.5	20	112	8.5	30	80	140	120	100	M8
S5-15kNm	292	60	110	116	32	112	8.5	44	120	220	200	180	M10
S5-20kNm	292	60	110	116	32	112	8.5	44	120	220	200	180	M10
S5-25kNm	292	60	110	116	32	112	8.5	44	120	220	200	180	M10
S5-30kNm	292	60	110	116	32	112	8.5	44	120	220	200	180	M10

Alphabet key for RS425



3D models and STEP files are available from Datum Electronics to assist project planning.
Please contact Datum Electronics for more information.

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Contact Us

Rev. C

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