UTFⅡ-500Nm

FLANGE TYPE TORQUE METER

WATER&DUST PROOF RoHS2

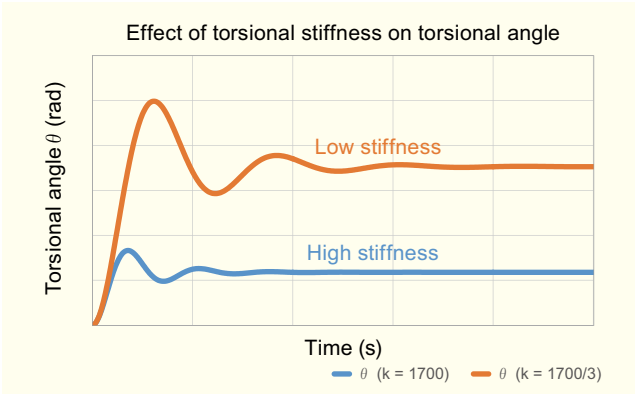
Supported dual-range now!

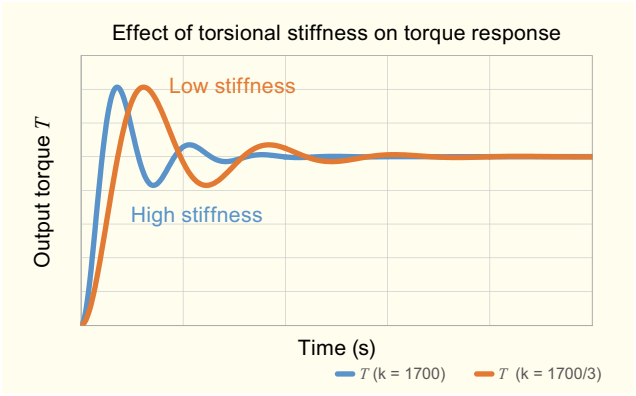
Detect high-frequency torque fluctuation accurately! Durability & noise immunity dramatically improved! A flange type torque meter achieving high stiffness & high safe overload

- 500% of high safe overload
- 1700 kN m/rad of high stiffness
- Accuracy of 0.03% FS
- Maximum speed of 25000 rpm
- Dynamic balance grade G2.5
- Supports usage in mist environments such as turbine oil etc.
- Cut-off frequency of 3 kHz with sampling rate of 20 kHz
- Standard installation of pulse output (90 to 1080 pulse/rotation, can be changed by setting)
- Regarding torque output, ±10 V analog output, frequency output, RS-485 output are equipped as standard
- Dual-range is equipped as standard (Switchable to ±100 N m range by external signal input)

High torsional stiffness (1700 kN m/rad)

By observing 2 different fluctuations, torsional angle is inversely proportional to torsional stiffness.
High stiffness allows small hunting in torque, thus able to measure torque accurately.





Due to high torsional stiffness, torque changes are measured with high responsiveness & accuracy.

High safe overload (500%)

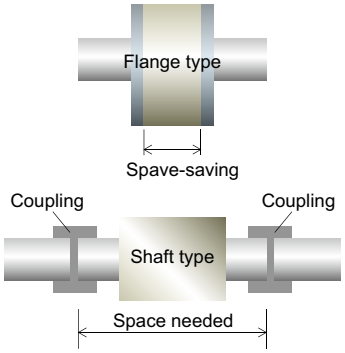
Lower the risk of malfunction due to unstable torque changes at start-up, braking and unexpected large torque.

Bearingless

Perfect for durability test as no parts will be effected by rotation and worn out.

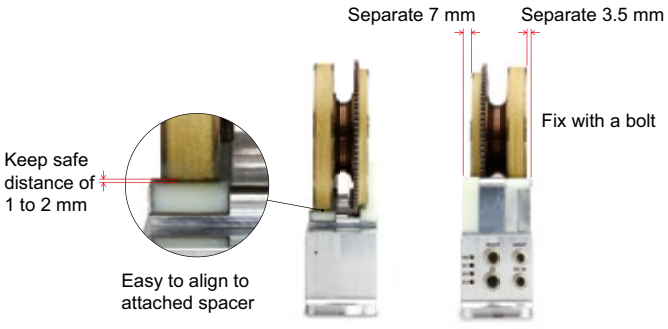
Space-saving

Easier connection and horizontal installation due to its short axis.



Easy installation

Helps to reduce installation time.



High accuracy & stability

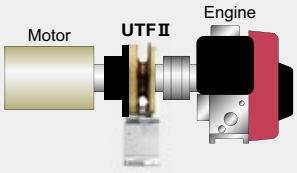
Able to return to zero point & remain stable. (Same as UTM series)
Even small torque can be detected with high accuracy.

Variable low pass filter

Optimal filter can be selected depending on applications.

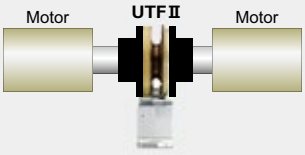
Sample application

Evaluation test for engine



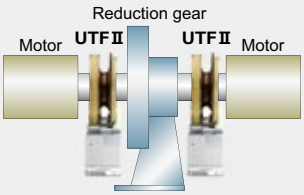
Cranking torque and friction torque measurement

Performance test of motor



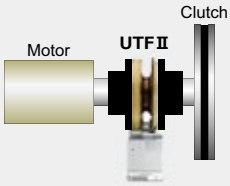
Cogging torque and torque ripple measurement

Efficiency measurement of reduction gear



Transmission torque fluctuation, transmission efficiency and friction torque measurement

Functional test of clutches and dampers



Starting torque and dynamic friction torque measurement

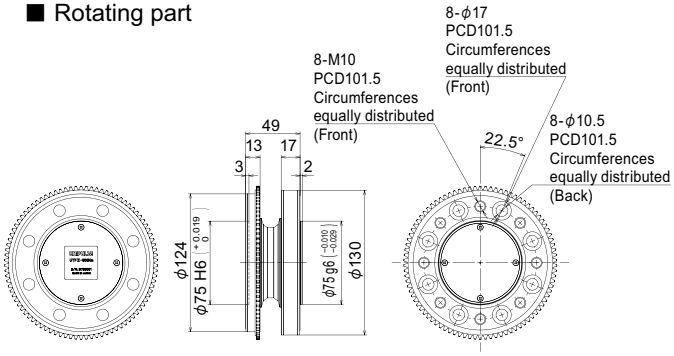
Specifications

Rotating part	Receiver		Strain gauge type
	Measurement range		±100 N m / ±500 N m
	Safe overload		2500% FS (2500 N m) / 500% FS (2500 N m)
	Cut-off frequency		3 kHz (Sampling rate 20 kHz)
	Digital low pass filter		1 Hz to 1 kHz (Changes by setting), PASS 3 kHz
	Non-linearity		0.03% FS typ. / 0.03% FS or less
	Hysteresis		0.03% FS typ. / 0.03% FS or less
	Repeatability		0.03% FS typ. / 0.03% FS or less
	Compensated temperature range		−10 to +50℃
	Temperature effect on zero		0.05% FS/℃ or below / 0.01% FS/℃ or below
	Temperature effect on span		0.05% FS/℃ or below / 0.01% FS/℃ or below
	Maximum rotation speed		25000 rpm
	Torsional spring constant		1700 kN m/rad
	Maximum torsional angle		2.93×10^{-4} rad (0.017°)
	Inertia moment		5.0×10^{-3} kg m^2
	Gear for detecting rpm		90 cogs/round
	Dimension		ϕ 138 × 51(D) mm
	Weight		Approx. 2.3 kg
Receiver	Analog output	CH1	±10 V torque output (Load resistance must be more than 5 kΩ)
		CH2	±10 V rotation speed output (Load resistance must be more than 5 kΩ)
	Frequency output		Torque output: 60 kHz±30 kHz
	Pulse output	Detection method	Magnetic detection
		Signal specification	90° phase differences AB phases pulses, Z phases pulses (RS-422A standard driver)
		Number of pulses	90 to 1080 pulses/rotation (AB phases) (Changes by setting) 1 pulse/rotation (Z phase)
	Digital I/O	Number of I/O	(3) INPUT for changing setting, (1) OUTPUT for error
		Input type	Volt-free contact, open collector or TTL level
		Output type	Open collector DC 30 V 50 mA
	Interface		RS-485 (115.2 kbps)
	Compensated temperature range		−10 to +50℃
	Power supply voltage		DC 24 V±15%
	Power consumption		17 W typ.
	Dimension		210(W) × 66.5(H) × 60(D) mm (Not including projections)
	Weight		Approx. 1.1 kg
Attachments	Power supply cable 5 m ·····1 Analog output cable 5 m·····1 Digital output cable 5 m·····1		I/O cable 5 m ·····1 Position confirmation attachment ·····2 Operation manual ·····1
Optional accessories	CATF2-PWR-5M: Power supply cable for UTF Ⅱ 5 m (Same as the attachment) CATF2-AOUT-5M: Analog output cable for UTF Ⅱ 5 m (Same as the attachment) CATF2-DOUT-5M: Digital output cable for UTF Ⅱ 5 m (Same as the attachment) CATF2-I/O-5M: I/O cable for UTF Ⅱ 5 m (Same as the attachment) CATF2-SET-5M: Cable sets (power, analog output, digital output, I/O) (Same as the attachment)		

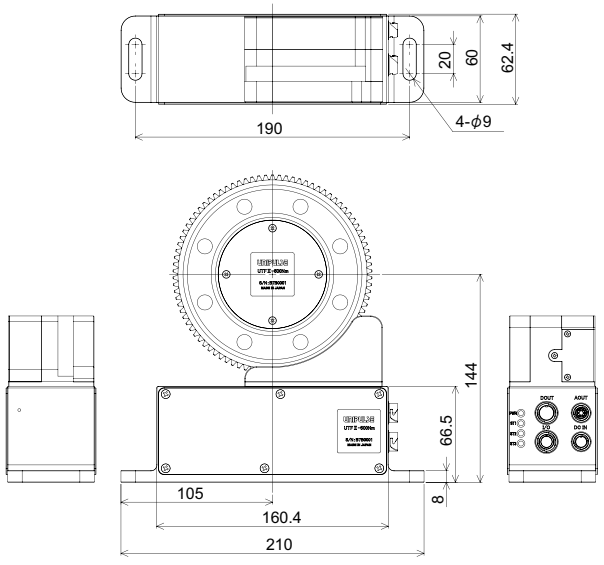
*Switchable to ±100 N m range by external signal input

External dimension

■ Rotating part



■ Receiver



Unit: mm