UTF-500Nm

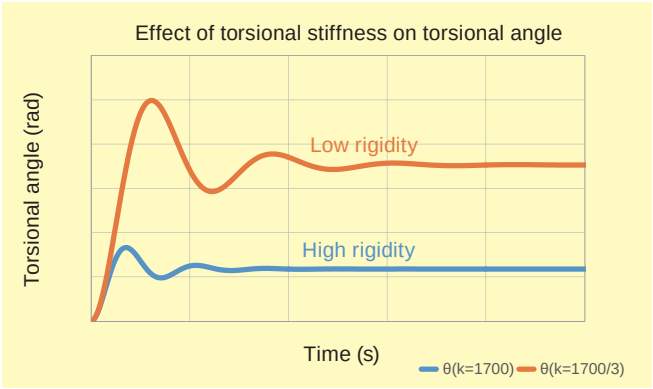
FLANGE TYPE TORQUE METER

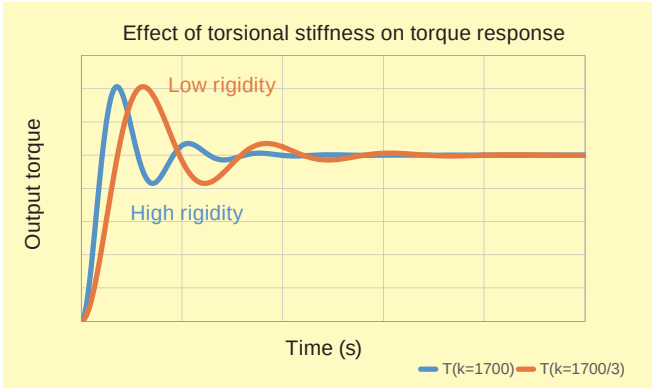
Detect high-frequency torque fluctuation accurately!
Flange type torque meter with
high torsional stiffness and high safe overload

- 500Nm full scale
- Accuracy of 0.03% FS
- Maximum speed of 20,000 rpm
- Dynamic balance grade G2.5
- Cut-off frequency of 3kHz with sampling rate at 20kHz
- Standard installation of pulse output (90 pulse/revolution)(1080 pulses/rotation as option)
- Unique signal transmission strong against grease and stain
- ±10V torque output without external amplifier

High torsional stiffness (1700kNm/rad)

By observing 2 different torque fluctuations, torsional angle is inversely proportional to torsional rigidity.
High rigidity 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%)

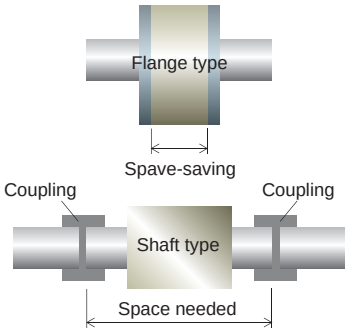
Lower the risk of malfunction due to unstable torque changes at start-up, braking and unexpected large torque.

Bearingless

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

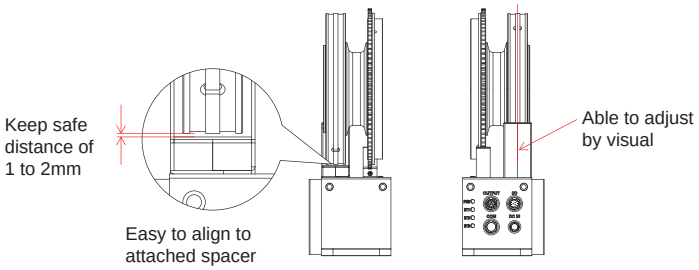
Space-saving

Easier connection and horizontal installation due to its short axis.



Easy installation

Helps to reduce installation time.



High accuracy & stability

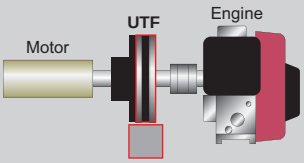
Able to return to zero point & remain stable. (Same as UTM series)
Even small torque can be detected with high accuracy.

Variable low pass filter

Optimal filter can be selected depending on applications.

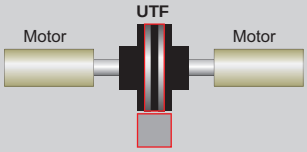
Sample application

Evaluation test for engine



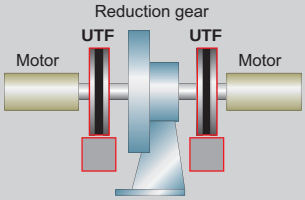
Cranking torque and friction torque measurement

Performance test of motor



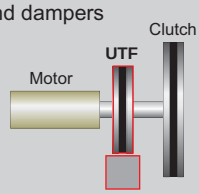
Cogging torque and torque ripple measurement

Efficiency measurement of reduction gear

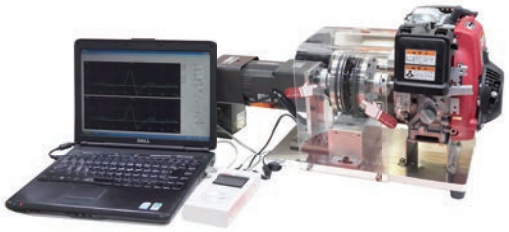


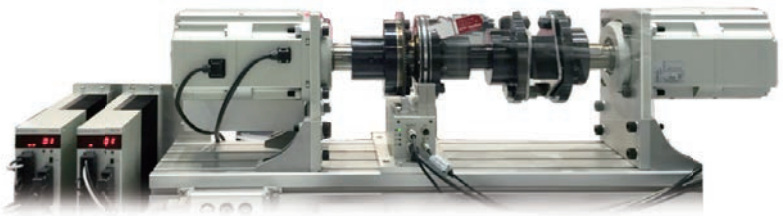
Transmission torque fluctuation, transmission efficiency & friction torque measurement

Functional test of clutches and dampers



Starting torque, dynamic friction torque measurement





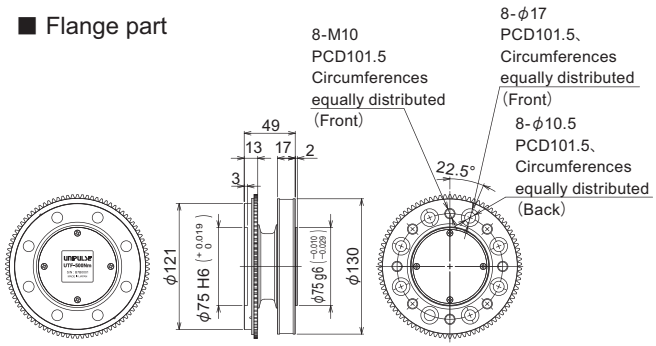
Specifications

Flange part	Receiver		Strain gauge type
	Measurement range		±500Nm
	Safe overload		500%FS(2500Nm)
	Cut-off frequency		3kHz (Sampling rate 20kHz)
	Digital low pass filter		1Hz to 1kHz(Changes by setting)、PASS 3kHz
	Non-linearity		0.03%FS
	Hysteresis		0.03%FS
	Repeatability		0.03%FS
	Compensated temperature range		−10 to +50℃
	Temperature effect on zero		0.01%FS/℃
	Temperature effect on span		0.01%FS/℃
	Max. rotation speed		20000rpm
	Torsional spring constant		1700kNm ／ rad
	Maximum torsional angle		2.93×10^{-4} rad(0.017°)
	Inertia moment		5.0×10^{-3} kgm^2
	Gear for detecting rpm		90 cogs/round
	Dimensions		φ138×51(D)mm
	Weight		Approx.2.3kg
Receiver	Analog output	CH1	±10V torque output (Load resistance must be more than 5kΩ)
		CH2	±10V rotation output (Load resistance must be more than 5kΩ)
	Pulse output	Detection method	Magnetic detection
		Signal specification	90°phase differences AB phases pulses (RS-422A standard driver)
		Number of pulses	90 pulses/rotation (Standard) 1080 pulses/rotation (Option)
	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 DC30V 50mA
	Interface		RS-485(115.2kbps)
	Compensated temperature range		−10 to +50℃
	Power supply voltage		DC24V ±15%
	Power consumption		17W typ.
	Dimensions		210(W)×67.5(H)×60(D)mm(Projections excluded)
	Weight		Approx.1.1kg
Option	Frequency output (Model: UTF-500Nm(FM))		Torque output: 60kHz±30kHz
	Number of pulses (Model: UTF-500Nm(IP))		1080 pulses/rotation

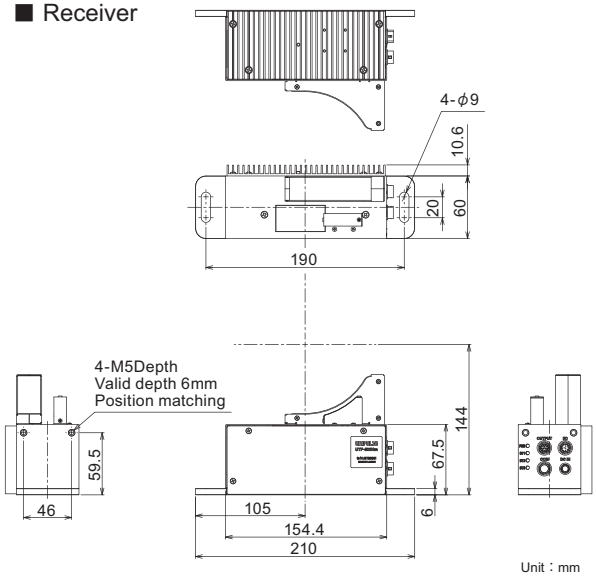
Attachment	Power supply cable····· 1 Analog output cable····· 1 Communication cable··· 1	I/O cable····· 1 Position confirmation attachment····· 1 Operation manual····· 1
Optional accessories	CATF-PWR-5M CATF-OUT-5M CATF-COM-5M CATF-I/O-5M CATF-SET-5M	Power supply cable for UTF 5m Analog output cable for UTF 5m Communication cable for UTF 5m I/O cable for UTF 5m Cable sets (power, analog output, communication, I/O)

External dimension

■ Flange part



■ Receiver



Unit：mm