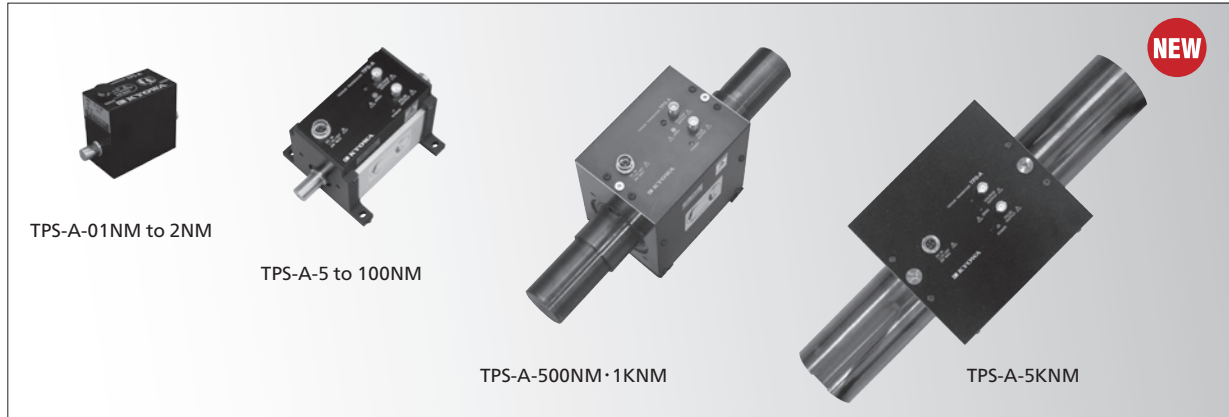


Built-in Amplifier Torque Transducer



Noncontact measurement design to shaft ensures easy maintenance.

- Easy maintenance.
- Built-in amplifier with ± 5 V output.
- Rotation speed output: 4 pulses per rotation
- Applicable to a friction-joint coupling (Excluding 5KNM)

Specifications

Performance

Rated Capacity	See table below.
Rated Output	5 V $\pm 4\%$ (Load resistance 5 k Ω * or more) *01NM to 2NM: 2k Ω
Nonlinearity	Within $\pm 0.1\%$ RO (01NM to 2NM) Within $\pm 0.3\%$ RO (5NM to 5KNM)
Hysteresis	Within $\pm 0.1\%$ RO (01NM to 2NM) Within $\pm 0.3\%$ RO (5NM to 5KNM)

Environmental Characteristics

Safe Temperature	-10 to 70°C (Non-condensing)
Compensated Temperature	-10 to 60°C (Non-condensing)
Temperature Effect on Zero	Within $\pm 0.03\%$ RO/°C
Temperature Effect on Output	Within $\pm 0.1\%$ /°C (01NM to 5NM) Within $\pm 0.05\%$ /°C (10NM to 5KNM)

Electrical Characteristics

Cutoff Frequencies of AMP	See table below.
SN Ratio	45 dB or more (When no rotation) (01NM to 2NM: 50 dB or more)
Power Supply	12 ± 0.5 VDC (01NM to 2NM) 10 to 16 VDC (5NM to 5KNM)
Current Consumption	0.4 A or less (TPS-A-01NM to 2NM, 5KNM) 0.5 A or less (TPS-A-5NM to 1KNM) When power supply is 12 VDC.

Mechanical Properties

Safe Overloads	See table below.
Max. Speed	See table below.
Rotational Output	4 pulses/rotation (Open collector output, detecting the rotational direction is not available)
Degree of Protection	IP40 (IEC 60529)
Safe Bending Moment	See table below.
Safe Load at Shaft End	See table below.
Moments of Inertia	See table below.
Weight	See table below.
Compliance	Directive 2014/30/EU (EMC) (TPS-A-01NM to 2NM only) Directive 2011/65/EU (RoHS) (TPS-A-01NM to 2NM only)

Optional Accessories See tables at the right.

Models	Rated Capacity	CE	Safe Overloads	Cutoff Frequencies of AMP	Max. Speed	Safe Bending Moments *1	Safe Loads at the Shaft End *2	Moments of Inertia (kg·m ²)	Weight (Approx.)
TPS-A-01NM	± 0.1 N·m	Yes	200%	1.5 kHz (-3 ± 1 dB)	15000 rpm	1.0 N·m	300 N	1.5×10^{-6}	150 g
TPS-A-05NM	± 0.5 N·m					1.2 N·m			
TPS-A-1NM	± 1 N·m					1.5 N·m			
TPS-A-2NM	± 2 N·m					3 N·m			
TPS-A-5NM	± 5 N·m	150%	150%	200 Hz (-3 ± 2 dB)	5000 rpm	1.5 N·m	600 N	2.5×10^{-4}	1.8 kg
TPS-A-10NM	± 10 N·m					3 N·m			
TPS-A-50NM	± 50 N·m					15 N·m			
TPS-A-100NM	± 100 N·m					15 N·m			
TPS-A-500NM	± 500 N·m	150%	150%	500 Hz (-3 ± 2 dB)	4000 rpm	150 N·m	800 N	2.3×10^{-3}	9 kg
TPS-A-1KNM	± 1 kN·m					2.6 $\times 10^{-3}$			
TPS-A-5KNM	± 5 kN·m					500 N·m		1 kN	

*1 Sensor only *2 When no rotation



Optional Accessory Tables

Table of Couplings

Models	Couplings	Models	Couplings
TPS-A-01NM to 2NM	SFC-025SA2-T011-K-8B-ΔB	TPS-A-500NM	SFF-140SS-K-45K-ΔKδ -800N
TPS-A-5NM	SFC-040SA2-K-16B-ΔB		
TPS-A-10NM to 50 NM	SFC-060SA2-K-16B-ΔB	TPS-A-1KNM	SFH-190S-T010-K-45K-ΔKδ
TPS-A-100NM	SFF-080SS-K-19B-ΔBδ-100N	TPS-A-5KNM	SFH-260S-T004-4-K-75H-Δδ

Note: Δ is the other part of hole's diameter, δ is the tolerance on the shaft. (Blank: h7, K: k6, M: m6, J: j6, S: 35+0.010 to 0)
 δ: As for 5KNM, H: New JIS; N: New regulated motors; None: Old JIS

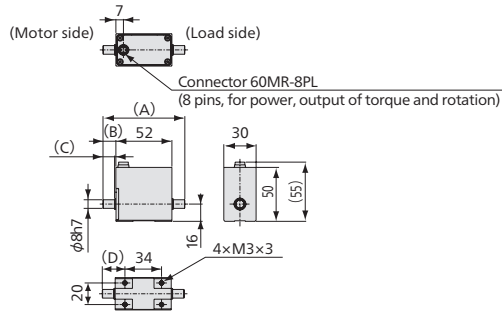
Table of Output Cables and Power Supply Cables

Models	Power Supply	Cables, etc.	
TPS-A-01NM to 2NM	AC	AC adapter SA-10A-EDS (For U.S.A.: UNI318-1215-EDS)	Connection cable TE-58R (2 m, terminated with a connector plug)
	12 VDC	To DC power directly (12 V recommended)	Connection cable TE-57R (2 m, bared at the tip)
		DC power cable (12 V recommended)	Connection cable TE-58R (2 m, terminated with a connector plug)
	24 VDC	To DC power directly (24 V recommended)	Connection cable TE-57-A-24V (2 m, bared at the tip) (For converting the power supply 14 to 30 VDC into 12 VDC.)
TPS-A-5NM to 5 KNM	AC	AC adapter SA-10A-EDS (For U.S.A.: UNI318-1215-EDS)	Output cable U-15 (1.5 m, P-12-7 to BNC)
			Output cable U-58 (1.5 m, BNC to 2 alligator clips)
			Output cable U-59 (1.5 m, BNC to BNC)
	12 VDC	DC power cable P-76 (12 V recommended)	Output cable U-15 (1.5 m, P-12-7 to BNC)
			Output cable U-58 (1.5 m, BNC to 2 alligator clips)
			Output cable U-59 (1.5 m, BNC to BNC)



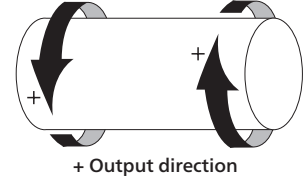
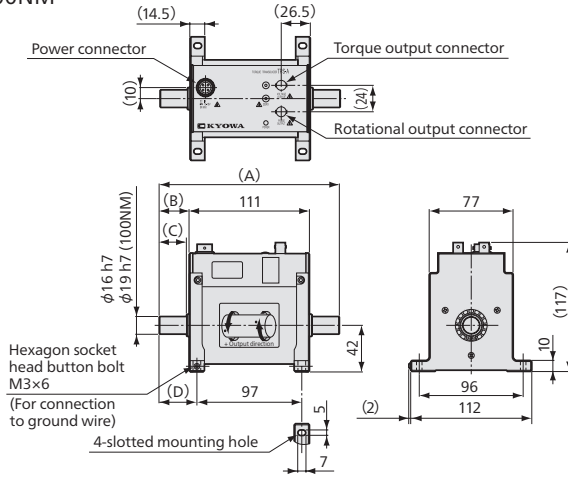
■ Dimensions

TPS-A-01NM to 2NM

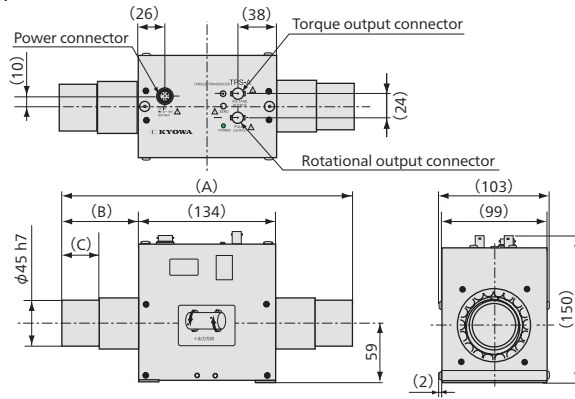


Models	A	B	C	D
TPS-A-01NM to 2NM	76	12	10.75	21
TPS-A-5NM	144	16.5	14	23.5
TPS-A-10NM	166	27.5	25	34.5
TPS-A-50NM	176	32.5	30	39.5
TPS-A-500NM	283	75	36.5	
TPS-A-1KNM	350	108	70	
TPS-A-5KNM	435	134	130	

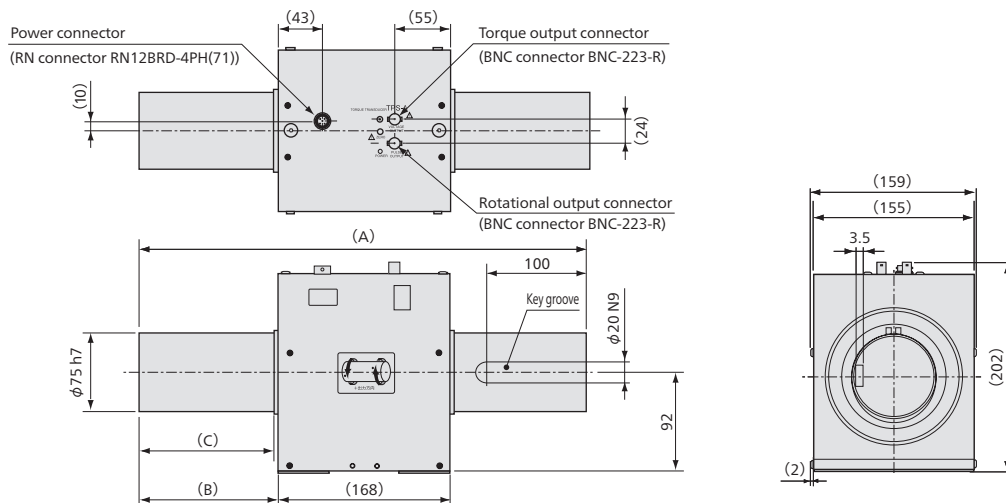
TPS-A-5NM to 100NM



TPS-A-500NM, 1KNM



TPS-A-5KNM



● Dynamic measurement

