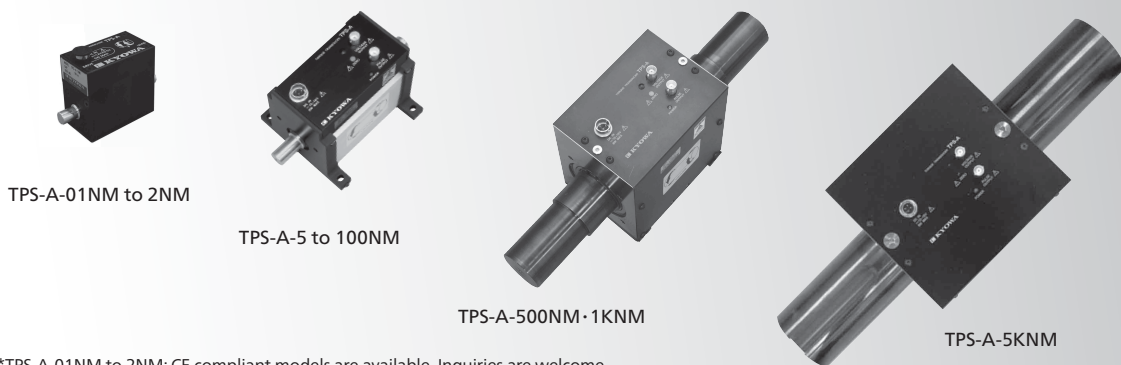


## Built-in Amplifier Torque Transducer



\*TPS-A-01NM to 2NM: CE compliant models are available. Inquiries are welcome.

## Noncontact measurement design to shaft ensures easy maintenance.

- Easy maintenance.
- Built-in amplifier with  $\pm 5$  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 $\Omega$ * or more) *01NM to 2NM: 2k $\Omega$
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 $\pm 0.1\%$ RO (01NM to 2NM)

## 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 $\pm 0.5$ 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.

Optional Accessories See tables at the right.

Models	Rated Capacity	Safe Overloads	Cutoff Frequencies of AMP	Max. Speed	Safe Bending Moments *1	Safe Loads at the Shaft End *2	Moments of Inertia (kg·m <sup>2</sup> )	Weight (Approx.)
●TPS-A-01NM	$\pm 0.1$ N·m	200%	1.5 kHz (-3 $\pm$ 1 dB)	15000 rpm	1.0 N·m	300 N	$1.5 \times 10^{-6}$	150 g
●TPS-A-05NM	$\pm 0.5$ N·m				1.2 N·m			
●TPS-A-1NM	$\pm 1$ N·m				1.5 N·m		$2.5 \times 10^{-4}$	
●TPS-A-2NM	$\pm 2$ N·m	150%	200 Hz (-3 $\pm$ 2 dB)	5000 rpm	3 N·m	600 N	$2.6 \times 10^{-4}$	1.8 kg
●TPS-A-5NM	$\pm 5$ N·m				15 N·m		$2.7 \times 10^{-4}$	
TPS-A-10NM	$\pm 10$ N·m							
TPS-A-50NM	$\pm 50$ N·m	120%	500 Hz (-3 $\pm$ 2 dB)	4000 rpm	150 N·m	800 N	$2.3 \times 10^{-3}$	9 kg
●TPS-A-100NM	$\pm 100$ N·m						$2.6 \times 10^{-3}$	
●TPS-A-500NM	$\pm 500$ N·m						$1.8 \times 10^{-2}$	
●TPS-A-1KNM	$\pm 1$ kN·m	150%	550 Hz (-3 $\pm$ 1 dB)	3000 rpm	500 N·m	1 kN		10 kg
●TPS-A-5KNM	$\pm 5$ kN·m							

●For delivery date, please contact us.

\*1 Sensor only \*2 When no rotation



Torque Transducers

## Optional Accessory Tables

Table of Couplings

Models	Couplings	Key Groove
TPS-A-01NM TPS-A-05NM TPS-A-1NM TPS-A-2NM	SFC-025SA2-T011-K-8B-ΔB	—
TPS-A-5NM	SFC-040SA2-K-16B-ΔB	
TPS-A-10NM	SFC-060SA2-K-16B-ΔB	
TPS-A-50NM		
TPS-A-100NM	SFF-080SS-K-19B-ΔBδ-100N	
TPS-A-500NM	SFF-140SS-K-45K-ΔKδ-800N	
TPS-A-1KNM	SFH-190S-T010-K-45K-ΔKδ	
TPS-A-5KNM	SFH-260S-T004-K-75H-Λδ	
		Yes (Key: Option)

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)

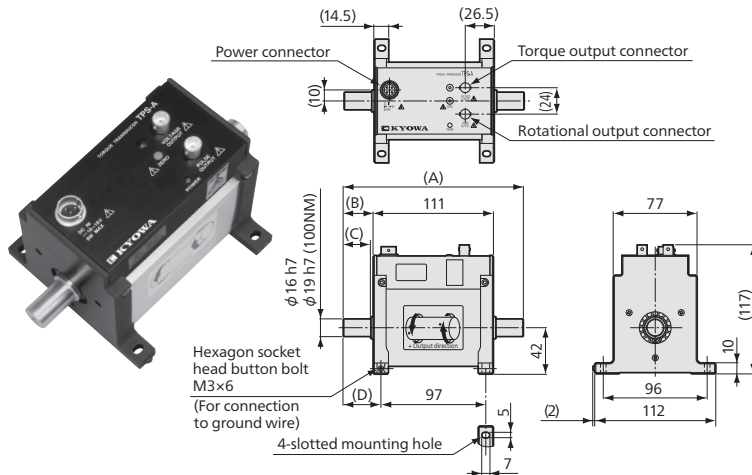
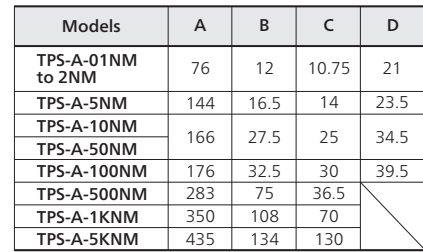
\*As for 5KNM, None: Old JIS; H: New JIS; N: New regulated motors

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 P-76 (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 TE57-A-24V (2 m, bared at the tip) (For converting the power supply 14 to 30 VDC into 12 VDC.)
TPS-A-5NM to 5KNM	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 BNC plug to 2 alligator clips cable (For details, contact us.)
			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 BNC plug to 2 alligator clips cable (For details, contact us.)
			Output cable U-59 (1.5 m, BNC to BNC)



Torque  
Transducers

[illegible]

Two keyless torque wrenches are shown. The one in the foreground is labeled 'TPS-A-5KNM' and features a black digital display screen with '5.00' and '5.00' visible. The one in the background is labeled '(Keyless)' and has a green display screen showing '0.00'.

Technical drawing of the RM12BRD-4PH (71) connector, showing front and side views with dimensions and labels.

**Front View (Top):**

- Power connector:** (RM connector RM12BRD-4PH (71))
- Torque output connector:** (BNC connector BNC-223-R)
- Rotational output connector:** (BNC connector BNC-223-R)
- Dimensions:** (43), (55), (10), (24)
- Labels:** TORQUE & ROTATIONAL OUTPUT

**Side View (Bottom):**

- Dimensions:** (A), 100,  $\phi 75 \text{ h7}$ , (C), (B), (168), 92,  $\phi 20 \text{ N9}$
- Label:** Key groove

