

Torque Transducer

Noncontact Design with Built-in Amplifier



TPS-A

- ◆ Noncontact transmission design requires far less maintenance work than slip ring type and enables long-term measurement of a high-speed rotation system.
- ◆ Built-in amplifier enables simplified system configuration with no external strain amplifier, voltage output of ± 5 V and improved noise resistance.
- ◆ Keyless design requires no keyway fabrication for connection to any friction-joint coupling and makes it free from measurement error due to backlash of key.
- ◆ Rotation speed output of 4 pulses per rotation enables measurement or monitoring with an external tachometer.
- ◆ Compact, lightweight (compared with KYOWA forerunners) and easy to install in a limited space.

Specifications

Performance

Rated Capacity:

TPS-A-10NM: ± 10 N·m

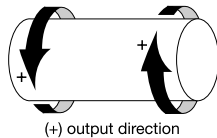
TPS-A-50NM: ± 50 N·m

Nonlinearity: Within $\pm 0.3\%$ RO

Hysteresis: Within $\pm 0.3\%$ RO

Rated Output: $\pm 5 \pm 0.2$ V (load resistance 5 k Ω or more)

Rotation Speed Output: 4 pulses per rotation (open collector output. Speed only is measured and rotation direction cannot be detected.)



Environmental Capability

Safe Temperature Range: -10° to 70°C (noncondensing)

Compensated Temperature Range: -10° to 60°C (noncondensing)

Temperature Effect on Zero Balance: Within $\pm 0.03\%$ RO/ $^{\circ}\text{C}$

Temperature Effect on Output: Within $\pm 0.05\%$ / $^{\circ}\text{C}$

Electrical Characteristics

Frequency Response Range (Amplifier):

DC to 200 Hz $-(3 \pm 2)$ dB

SN Ratio: 45 dB or more

Power Supply: 10 to 16 VDC, 8 W max. (with approx. 0.5 A, 12 VDC)

Current Consumption: Approx. 0.5 A (with 12 VDC supplied)

Mechanical Properties

Safe Overload Rating:

TPS-A-10NM: 150%

TPS-A-50NM: 120%

Maximum Rotation Speed: 5000 rpm

Safe Bending Moment: 30% the rated capacity (transducer only)

Safe Load at Shaft End: 300 N

Moment of Inertia: 2.6×10^{-4} kg·m²

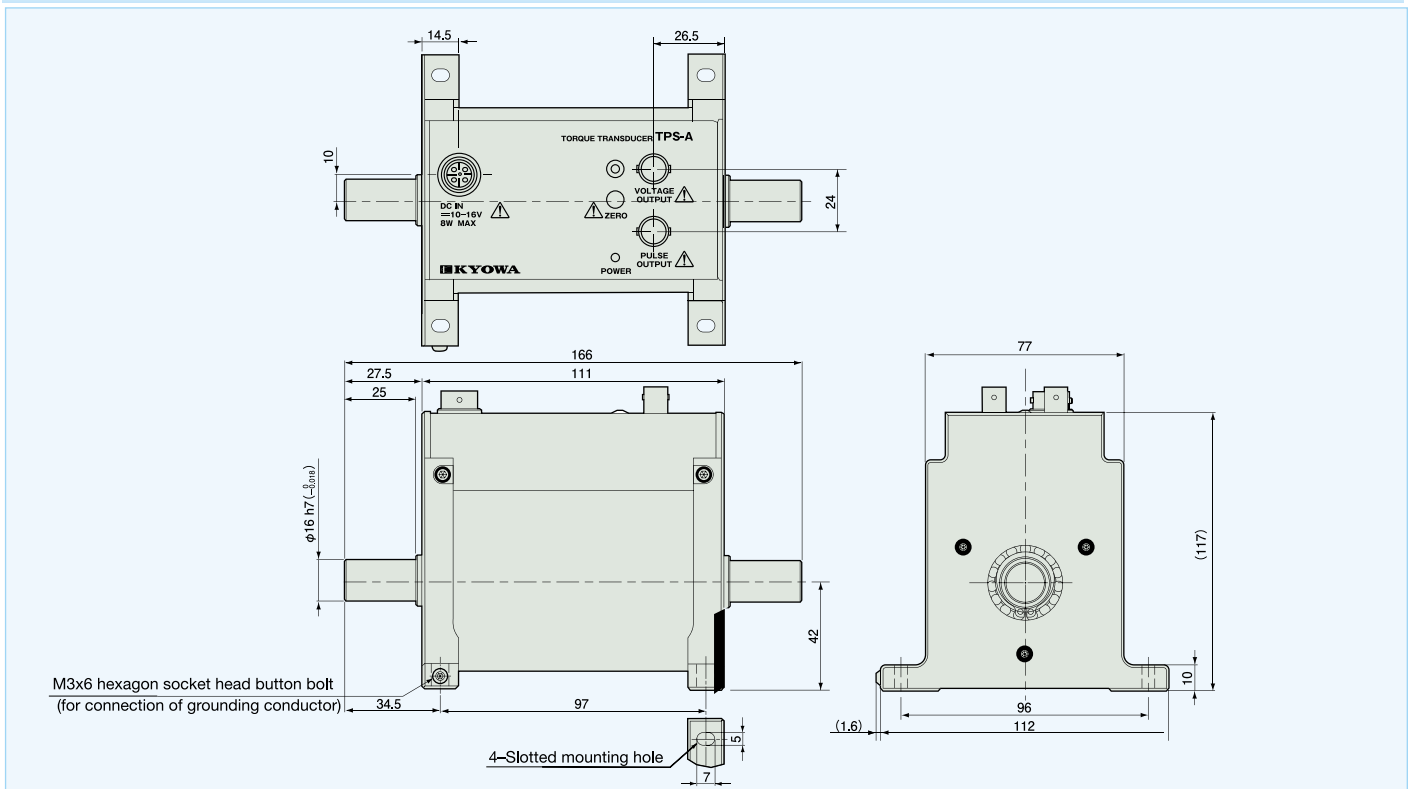
Protection Rating: IP 40

Weight: Approx. 1.8 kg

Options

- AC adapter (SA-10A-EDS)
- DC power cable (P-57)
- BNC cables (U-58, U-59)

Dimensions



JQA-0821
JQA-EM4824

Specifications are subject to change without notice for improvement.



Safety precautions

Be sure to observe the safety precautions given in the instruction manual, in order to ensure correct and safe operation.

Reliability through integration



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