



Actuation
Energy storage
Motors
Position sensors
Power conversion
Power generation

Position sensors

Duplex RVDT Size 08



Safe and reliable position measurement for your application

MEGGITT angular position sensors are either designed as LRUs or may be fitted inside Servo-Controls actuators, for any kind of system, and DC brushless motors for commutation or vector control. They are ideal for aerospace and military applications requiring integrated redundant position sensing, thus allowing for a good weight to cost to reliability compromise.

The duplex RVDT provides two measurement channels which are fully electrically segregated with common mechanical interface. It provides differential electrical outputs giving an image of the sensed angle.

The RVDT operation is based on electromagnetism and variable reluctance technology, so that no brushes are needed. Thus, RVDT are simple and robust sensors, able to work in harsh environments.

Due to variable reluctance principle, angular operating range is limited, making RVDT particularly adapted to limited travel applications. A gearbox may be needed to fit some applications.

*RVDT = Rotary Variable Differential Transformer

Key features

- Brushless technology
- 2 channels, fully electrically segregated
- Adjusted to secondary load conditions
- Specific energizing conditions
- Customised shaft output
- Anti-backlash input gear
- Shielding braid on wire exit
- Diametric hole in shaft

Applications

- Cockpit controls
- Engine controls
- Flight controls
- Targeting systems

Contact

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Meggitt Sensing Systems

Our product competencies and services:
Avionics displays | Inertial sensors | Ignition systems |
Performance Sensing | **Power & Motion** | Sensing & Monitoring

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smart engineering for
extreme environments

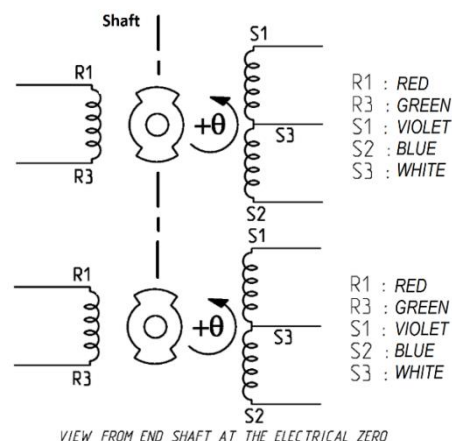
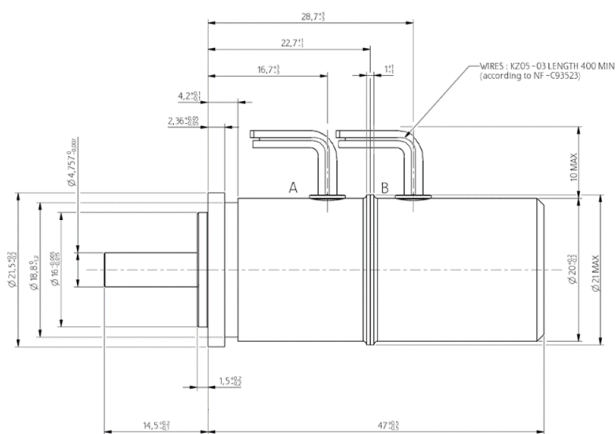


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Specifications

Electrical angular range	$\pm 35^\circ$
Energising conditions	
Voltage	7 V _{RMS}
Frequency	3000 Hz, sine wave
DC Offset	<50 mV
Input current	20 mA _{RMS} max
RVDT output, for each channel	
Sum voltage	4.7 V _{RMS}
Reference angle	42.6°
Gradient	47 mV/° on each single voltage
Accuracy	$\pm \{ 0.1 + 0.25 \theta / 35 \}^\circ$ at room temperature $\pm \{ 0.2 + 0.4 \theta / 35 \}^\circ$ within operating temperature range
Operating range	-40 °C to 85 °C
Storage range	-55 °C to 125 °C
Altitude	Up to 50,000 ft
Temperature variation	Up to 10 °C/min
Mechanical angular range	No limit
Weight	<100 g
Rotor inertia	2 x 10 ⁻⁷ kg.m ²
Friction torque	1 x 10 ⁻³ N.m
Axial play	0.040 mm max
Radial play	0.015 mm max
Note: Due to continuous process improvement, specifications are subject to change without notice	



Dimensions in mm

$$U_{S1S3} = U_{R1R3} \cdot K \cdot (\theta_{REF} + \theta)$$

$$U_{S2S3} = U_{R1R3} \cdot K \cdot (\theta_{REF} - \theta)$$

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