

# RSI 01 Momentum and Reaction Wheels 0.1 Nms with integrated Wheel Drive Electronics



TELDIX® Space Wheels deliver industry leading capability and reliability for spacecraft attitude control.

They are available with an angular momentum storage capacity spanning a range between 0.04 Nms and 68 Nms. The wheels accommodate the requirements of attitude control systems for spacecraft weighing between 30 kg and 7,000 kg.

With more than 30 years experience in Space Wheel technology, our Teldix Space Wheels have accumulated more than 2900 years of in-orbit operational time - far exceeding competing products.

## KEY BENEFITS

- ▶ Modular design
  - Fast adaptation to customer requirements
  - Space qualified subsystems (Housing, Motor, Bearing unit, Electronics)
- ▶ Hermetically sealed
- ▶ Volume/mass optimized
- ▶ Broad spectrum of different wheel types

## KEY FEATURES

- ▶ For satellites weighing 30 – 100 kg
- ▶ High reliability through heritage
- ▶ Usable as momentum or reaction wheel
- ▶ More than 5 years lifetime
- ▶ Digital RS 485 interface

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Main technical data	RSI 01-5/15	RSI 01-5/28i
Angular momentum at nominal speed	0.04 Nms	0.12 Nms
Operational speed range	± 1,500 rpm	± 2,800 rpm
Speed limiter (EMF)	< 1,700 rpm	< 3,000 rpm
Reaction torque at nominal speed	5 mNm	5 mNm
Dimensions		
Diameter	95 mm	95 mm
Height	102 mm	102 mm
Mass	< 0.6 kg	< 0.7 kg
Power consumption		
Steady state at nominal speed	< 2 W	< 2 W
Maximum torque at nominal speed	< 4 W	< 4 W
Power interface		
Supply voltage	14 ± 3; 5 ± 0.25 V	20 – 0.5; 5 ± 0.25 V
Input current	(14 V line) < 0.20 A (5 V line) < 0.12 A	(20 V line) < 0.20 A (5 V line) < 0.12 A
Signal interface		
Protocol	RS 485 - full duplex (9600, n, 8, 1)	RS 485 - full duplex (9600, n, 8, 1)
Connector	15-pin high density (GFSC type)	15-pin high density (GFSC type)
Telemetry data	Speed, torque, motor current, inner temperature	speed, torque, motor current, inner temperature
Operational modes:	Standby, speed-loop, torque-loop	Standby, speed-loop, torque-loop
Environmental conditions		
Operating temperature	-20 to +60 °C	-20 to +60 °C
Survival/non-operating temperature	-35 to +70 °C	-35 to +70 °C
Lifetime:	> 5 years (in-orbit) > 2 years (storage)	> 5 years (in-orbit) > 2 years (storage)

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Rockwell Collins delivers smart communication and aviation electronics solutions to customers worldwide. Backed by a global network of service and support, we stand committed to putting technology and practical innovation to work for you whenever and wherever you need us. In this way, working together, we build trust. Every day.

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