

## Rendezvous- and Docking Sensor RVS

Jena-Optronik is the leading manufacturer of AOCS (Attitude and Orbit Control) Sensors. The **RVS** is the standard sensor chosen to guide three different spacecrafts to the ISS.



### Special Features

- Laser Range Finder combined with a galvanometric scanning system
- High accuracy range and position measurement from several km to docking
- Automatic target acquisition, identification and tracking
- 3D Imaging capability

### Space proven technology

Premiere in Space: The RVS enabled the fully automated flights of the first European Automated Transfer Vehicle ATV "Jules Verne" to the International Space Station in 2008, followed by the demonstration flight of the Japanese H-II Transfer Vehicle HTV in 2009.

These two pioneering missions were followed by further successful automated flight missions to the ISS.

From a distance of about 1500 meters, the RVS system is able to measure the distance and approach direction of the transfer vehicles with respect to the ISS: a mirror system is used to send short laser pulses towards the target.

The RVS prototype has already been qualified in orbit with two Space Shuttle Missions STS-84 and STS-86 docking to the MIR space station in 1997.

## RVS Rendezvous- and Docking Sensor Performance

Dimensions			
Optical Head	270 mm x 278 mm x 196 mm		
Electronic Box	315 mm x 224 mm x 176 mm		
Mass			
Optical Head	< 6100 g		
E-Box	< 7700 g		
Temperature Range			
Operational	-35 °C...+65 °C		
Non-operational	-55 °C...+70 °C		
Measurement Accuracy			
LOS noise	± 0.1° [3σ] [maximal]	Azimuth ± 0.01° [3σ] [typical]	Elevation ± 0.02° [3σ] [typical]
LOS bias	± 0.1°		
Range noise	± 0.1 m [3σ] [long range]	± 0.01 m [3σ] [short range]	
Range bias	± 0.5 m [long range]	± 0.01 m [short range]	
Power Consumption			
	< 35 W [nominal]		< 70 W [maximal]
Field of View			
	40° x 40°		

