REVOLV

SARA: a Solar Array Drive Assembly for small satellites

TECHNICAL SPECIFICATIONS	
Enables **autonomous Sun tracking** thanks to the embedded electronics and Sun sensors	
Equipped with **backup mechanism** restoring a default orientation of the panels in case of failure	
Can include **additional components** (solar panels and HDRM) upon request	
Compatibility	
Compatible with 1U to 16U cubesats	
Can be adjusted for microsatellites / ESPA-class platforms	
Sized to rotate up to one pair of triple deployable 6U solar panels (3 x 200x300mm)	
Physical characteristics	
Dimensions	0.23U (97x97x23 mm)
Mass	<350 g
Mechanical interface	8 x M3 bolts or mounted in the PC-104 stack
Mounting	top / bottom mounted (can be adjusted for other arrangements)
Electrical characteristics	
Power supply	5 V (2 redundant connectors)
Max. power drawn	<6 W (peak), <3 W (average)
OBC interface	2 x RS-485 and 1 x CAN (redundant communication)
Pointing characteristics	
Pointing accuracy	<1 deg
Sun-sensing accuracy	<5 deg
Rotation range	+/- 180°
Control modes	Autonomous Sun tracking, manual override (angle commanded from OBC), freeze (last angle maintained), idle (motor not powered, reference angle restored), off
Health monitoring	
Rotation monitoring	Continuous position feedback
Sensor data	Sun direction vector, raw sun sensor data, current on electrical components, status of panel deployment
Other	Commanded rotation angle, electrical power harnessed from the panels
Environmental characteristics	
Operating temperature range	-40 / +60 °C
Non-operating temperature range	-50 / +70 °C
Lifetime in LEO	5 years
Endured vibration environment compatible with launchers:	Falcon 9, Vega C, Electron, LauncherOne, Firefly Alpha