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Технические характеристики на аккумуляторные системы и батареи на базе VES16 для космических аппаратов

4S1P VES16 battery

Saft's standard design for space applications

Battery specifically designed for Low Earth Orbit applications

The battery is based on VES16 space cells designed for LEO applications. This battery is sized for low power needs, such as microsats and nanosats, and can be used as a building block and assembled in serial and parallel for higher energy requirements.

Benefits

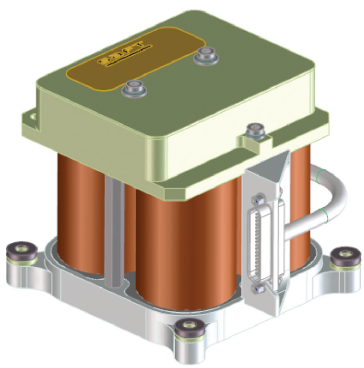
- Use of flight proven VES16 cells providing long life in LEO application up to 12 years
- Compact adaptable configuration
- Low cost design
- Reliability and safety

Equipment

- Circuit breaker at cell level
- Heater
- Thermal sensor
- MDMA 37P connector for power and telemetry
- Aluminium plate

Key features

- High mission use energy density
- Stainless steel casing
- Hermetically sealed
- Maintenance free
- No memory effet
- Manufactured in EU
- Certification ECSS



Electrical caracteristics	
Nameplate capacity	4.5 Ah
Battery voltage range	13.2 - 16.4 volts
Nominal energy	64 Wh
Physical characteristics	
Length	90,5 mm
Width	84,1 mm
Height	77 mm
Weight	0,70 kg
Operating conditions	
Recommanded cycling temparatures	[10°C ; 30°C]
Maximum charge current	C/2 at 20°C
Maximum continuous discharge current	Continuous C Pulse 2C
Life duration and cycle life	More than 5 years >25 000 cycles
Charging method	Constant current / current voltage
Charging voltage recommanded end of charge voltage for mission	16.1 volts
Storage & transportation temperatures	Recommanded -20°C to +10°C Allowable -20°C to +40°C

small GEO applications

Systems specifically designed for LEO and small GEO applications

The battery is based on VES16 space cells designed for LEO and small GEO applications between 30W to 12KW depending battery configuration. The batteries and cells ensure long life and high DOD. More than 80 spacecrafts are in orbit with VES16 batteries

Benefits

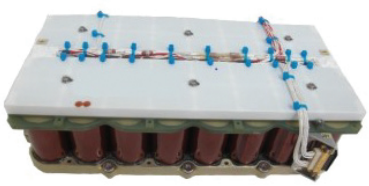
- Use of flight proven VES16 cells providing long life in LEO and GEO applications up to 18 years
- SP architecture (strings in parallel)
- Compact and scalable configuration in s and p
- Reliability and safety

Key features

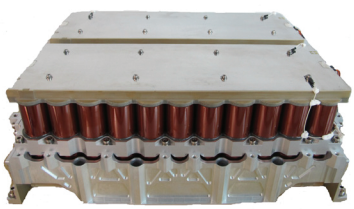
- Circuit breaker and venting at cell level
- Heaters
- Thermal sensors
- Connector for power and telemetry
- Aluminum plate
- Individual cell balancing system (SBS)
- High DoD (80% in GEO, 30% in LEO)

Pulse capabilities

- High mission use energy density
- Cell stainless steel casing
- Hermetically sealed
- Manufactured in EU
- Certification ECSS standards



VES16 8s4p battery



VES16 11s16p battery

VES16 cell

Cell electrical caracteristics	
Nameplate capacity	4.5 Ah
Energy	16 Wh
Cell physical characteristics	
Diameter	33 mm
Height	60 mm
Weight	0,155 kg

LEO configuration	8s4p
Reference energy	512 Wh
Battery voltage range	25 - 32.8 volts
Nameplate capacity	18 Ah

Mechanical characteristics	8s4p
Length	308 mm
Width	180 mm
Height	90 mm
Weight	5,80kg

GEO configuration	11s16p
Reference energy	11,264 Wh
Battery voltage range	9.7 - 45.1 volts
Nameplate capacity	288 Ah

Mechanical characteristics	11s16p
Length	440 mm
Width	397 mm
Height	170 mm
Weight	28,8 kg

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