



## Satellite Platform

Transforming Power Into Success



With the SPICA-virtus Multi-functional Propulsion Power Unit family we pursue the goal of achieving our customers' competitiveness without compromise. The SPICA-virtus PPU is designed in a way that simply by configuration either a HEMPT EV0, a BUSEK BHT350 or a BUSEK BHT600 HET thruster can be operated. GaN components guarantee the highest possible efficiency and a very favorable form factor. Control capability of the Flow Control Unit (FCU) is a standard function of the SPICA-virtus PPU.

### Flexible

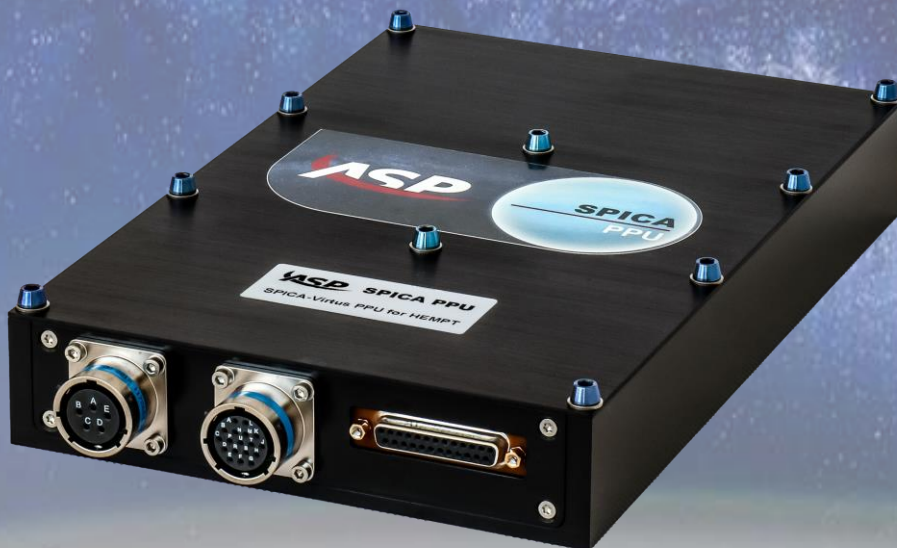
- the SPICA PPU can either serve HET or HEMPT
- PPU operation configurable via digital control (no change on H/W)

### Scalable

- Hybrid or Dual operation from one SPICA PPU (HET & HEMPT)
- Optional Built-in switch matrix: driving up to 6 thrusters from one SPICA PPU

### Ready for high quantities

- mainly SMT technology used leading to optimized manufacturing effort (design to production)
- full automated testing leading to short testing time (design to test)



Fly a SPICA





# SPICA PPU

The multifunctional, multi-thruster SPICA Propulsion Power Unit is optimized for constellation programs and related requirements.

## Technical Data

Input	Bus Voltage
Full Performance	62V...72V
Reduced Performance	56V...62V

HEMPT EVO	min. voltage	max. voltage	min. load	max. load	max. power
Anode Supply / High Voltage Supply; switchable	320V DC	760V DC	0A	1.2A	750W
	120V DC	380V DC	0A	2.4A	
Neutralizer Heater Supply	4V AC (60kHz)	14V AC (60kHz)	1A rms	3.5A rms	45W
Neutralizer Keeper Supply	10V	40V	0.5A	2.5A	80W
2 valve driver blocks: 3 Valves, On/Off Type. Pull in / hold cycle Switching Frequency nom. 3Hz	12V	30V	0.1A	2A	-

HET	min. voltage	max. voltage	min. load	max. load	max. power
Anode Supply / High Voltage Supply; switchable	320V DC	600V DC	0A	1.2A	900W
	120V DC	380V DC	0A	2.4A	
Neutralizer Heater Supply	2V DC	8V DC	2A	7A	45W
Neutralizer Ignitor	-	300V pulse	68nF via 10kOhm		
Neutralizer Keeper Supply	10V	40V	0.5A	2.5A	80W
Magnet Solenoid Supply	5V	16V	2A	5A	70W
2 valve driver blocks: 3 Valves, On/Off Type. Pull in / hold cycle Switching Frequency nom. 3Hz	12V	30V	0.1A	2A	-

Interfaces	
Power Bus	D-Sub power DA3W3 Male
Anode	MIL-DTL-38999 Series III, Class F // D38999/20FD5SN
Neutralizer	MIL-DTL-38999 Series III, Class F // D38999/20FD18SN
FCU	D-Sub 15 Female
TMTC (CAN-bus)	D-Sub 15 Female

Environmental Loads	
Radiation	TID 30kRAD / SEE 37MeV/mg*cm2 at EEE component level TID 50kRAD / SEE 37MeV/mg*cm2 at EEE component level with additional shielding
Operating Temperature	-40°C ... +55°C

Physical Properties	
Dimensions	372 x 182 x 50 mm3
Mass	4,2kg (30krad Version) / 6,3 kg (50krad Version)