

PRODUCT BRIEF

1800W Power Distribution Unit

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The VISIONAIRtronics 1800W Power Distribution Unit converts unregulated battery voltage down to a set of regulated outputs suitable for distribution within medium to large-sized UAVs.

Six main outputs are provided, each of which may be user-configured for voltage. The two avionics and two servo power supplies are fully duplicated internally to maximise system reliability through redundancy. The 1800W PDU has dual battery inputs with automatic lossless switchover between the two. An umbilical input ensures that batteries are not depleted during pre-flight checks prior to take-off.



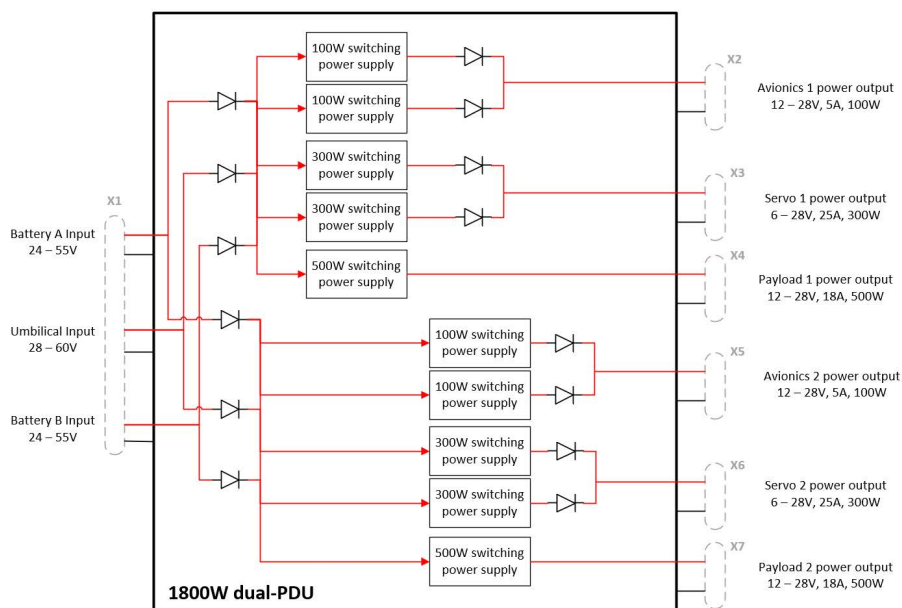
FEATURES

- Eight independent power supply systems:
 - 2x Avionics: 12 – 28V
 - 2x Servo: 6 – 28V
 - 2x Payload: 12 – 28V
 - 2x Low-power: 5V
- Avionics, Servo and Payload outputs are user-configurable for voltage.
- Avionics, Servo and low-power outputs have 100% redundancy (i.e. the outputs are the result of combining two identical and independent power supplies, each of which is capable of supplying 100% of rated load).
- Two battery inputs. Battery voltage may range from 24 to 60 VDC. Supported battery types include:
 - LiPo: 10 – 14S
 - LiS: 15 – 20S
 - LiFe: 10 – 14S
- Umbilical input: 28 – 60 VDC.
- RS232 and CAN monitoring interfaces provide extensive reporting of voltages, currents and internal temperature.
- Available in an IP66 enclosure.
- Enclosures can be customized to suit type/size/number of connectors
- Weight: ~ 2700g
- Dimensions: ~ 235x260x55mm



BLOCK DIAGRAM

This is a greatly simplified diagram showing only the main power pathways. Diodes shown are symbolic; diode functionality is implemented using FETs configured as “ideal diodes”.



Internal Architecture

SPECIFICATIONS IN BRIEF

Electrical

Battery inputs	24 to 55 VDC
Umbilical input	28 to 60 VDC
Avionics output 2x	12 to 28 VDC, 2x 5 Amps continuous, 2x 100 Watts max.
Servo output 2x	6 to 28 VDC, 2x 25 Amps continuous, 2x 300 Watts max.
Payload output 2x	12 to 28 VDC, 2x 18 Amps continuous, 2x 500 Watts max.

Miscellaneous

Environmental protection class	IP67
Operating temperature range	-40°C to + 55°C
Altitude rating	10,000m
Cooling	Thermostatically controlled redundant fan outputs
Enclosure	Lightweight custom-machined aluminium
Connectors	Souriau 8D series (D38999) and LEMO
Communications protocols	RS232 (57600 8N1), CAN (1Mb/s)

