

PRODUCT BRIEF

1000W Power Distribution Unit



The 1000W Power Distribution Unit converts unregulated battery voltage down to a set of regulated outputs suitable for distribution within small to medium-sized UAVs.

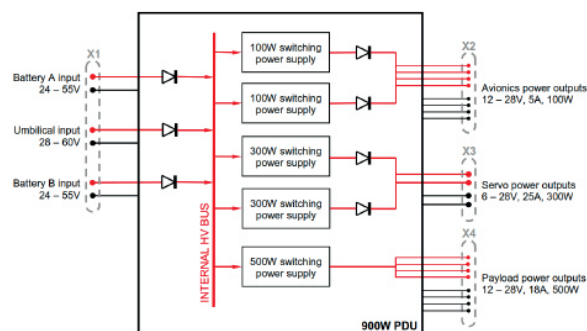
Three main outputs are provided, each of which may be user-configured for voltage. The avionics and servo power supplies are fully duplicated internally to maximise system reliability through redundancy. The 1000W PDU has dual battery inputs with automatic lossless switchover between the two. An umbilical input ensures that batteries are not depleted during pre-flight checks prior to take-off.

FEATURES

- Four independent power supply systems:
 - Output 1: 12 – 28V
 - Output 2: 6 – 28V
 - Output 3: 12 – 28V
 - 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
- IP67
- Weight: 1600g
- Dimensions: example 235x195x54,5mm

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, recommended 34VDC+ |
| Umbilical input | 28 to 60 VDC |
| Output 1 | 12 to 28 VDC, 5.5 Amps continuous, 150 Watts max., redundant |
| Output 2 | 6 to 28 VDC, 25 Amps continuous, 500 Watts max., redundant |
| Output 3 | 12 to 28 VDC, 25 Amps continuous, 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, convection |
| Enclosure | Lightweight custom-machined aluminium |
| Connectors | MIL-DTL-38999 |
| Communications protocols | RS232 (57600 8N1), CAN (1Mb/S, user selectable) |

