

PRODUCT BRIEF

1700W
GCU

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The VISIONAIRtronics 1700W Generator Control Unit manages the generation and storage of electrical energy to supply the needs of small to medium-sized UAVs.

The GCU is designed to complement the functionality provided by the 900W PDU (Power Distribution Unit). When installed together, these two units form a complete power supply solution including electrical power generation, battery management, power distribution and redundancy for critical sub-systems.

The GCU includes an optional engine starter which uses the same BLDC motor and wiring that is used for electrical power generation, saving weight and installation effort.



FEATURES

- Main power output provides up to 900W at 56V for powering vehicle electronics directly or via PDU.
- Two battery chargers, each capable of providing up to 400W of charging power for rapid in-flight recharging.
- Battery chargers user-configurable for both voltage and current, allowing a wide variety of battery chemistries and sizes to be accommodated.

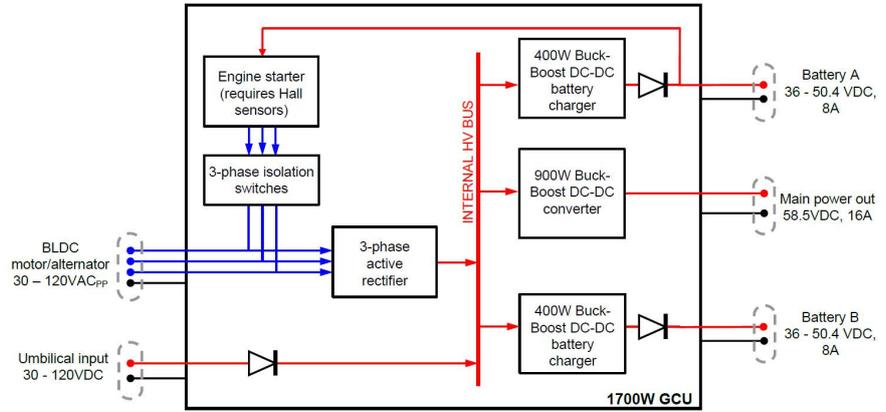
- Supported battery types include:
 - LiPo: 10 – 14S
 - LiS: 15 – 20S
 - LiFe: 10 – 14S
- Active rectification of 3-phase inputs achieves highest possible efficiency, minimising self-heating.
- Outputs powered by interleaved, spread-spectrum modulated DC-DC converters for best possible EMI/RFI performance.
- Umbilical input: 35 – 60 VDC.
- RS232 and CAN monitoring interfaces provide extensive reporting of voltages, currents and internal temperature.
- Available in either IP67 or slimline enclosure.
- Weight: standard 1450g
- Dimensions: 185x125x90mm

FEATURES



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

BLDC inputs	30 to 120 VACpp
Umbilical input	35 to 60 VDC
Battery charger outputs	36 to 50.4 VDC, 8 Amps continuous
Main power output	57.5 VDC, 16 Amps continuous
Low-power output	12 VDC, 1 Amp continuous

Miscellaneous

Environmental protection class	IP67 or IP50
Operating temperature range	-40°C to + 55°C
Altitude rating	10,000m
Cooling	Thermostatically controlled redundant fans
Enclosure	Lightweight custom-machined aluminium
Connectors	LEMO M-Series and ODU with ratchet coupling
Communications protocols	RS232 (57600 8N1), CAN (1Mb/S)

