

POWER MANAGEMENT UNIT

DESCRIPTION

The Power Management Unit is the central node in the power supply system of the OCEANOR oceanographic buoys. The main functions of the unit are:

- Control the charging and discharging of the batteries.
- Supervise the battery voltage and switch to back-up source or disconnect the load if necessary.
- Power ON/ OFF switch.
- Provide power for the various load requirements.
- Provide powersystem status information to the GENI data logger.

In addition, the unit provides auxiliary features like:

- Optional DC/DC conversion
- Externally controlled high-power drivers
- 5-LED status indicator panel



To provide fail-safe operation of the system, the Power Management Unit comprises two boards in a 2:1 redundancy configuration. One is configured as master (nominally active) and the other is configured as slave (nominally passive). An error situation detected in the master will raise a status flag, and the slave will automatically take over operation and inhibit the master.

SPECIFICATIONS

Absolute maximum ratings

Output current max.: (fused)	10A
Charge current ¹⁾ max.: (fused)	7.5A
Battery input voltage max.:	21V
Solar panel input voltage max.:	21V

Electrical characteristics

Supply current:	~4mA
Battery to load voltage differential:	< 0.5V
Battery guard cut-off voltage:	10.5V
Battery guard hysteresis	1.5V
Back-up to main battery pack switch delay	~15min
Charge voltage range	10.7 to 20V

Environment

Operating temperature:	-10 to +70 °C
Storage temperature:	-40 to +85 °C
Protection:	IP65

Mechanical

Dimensions (L x W x H):	235 x 190 x 155mm
Weight:	3000g

Miscellaneous

COM interface:	RS-232
Calibration:	None

¹⁾ Applies for solar panel input. Not applicable for charging with external charger (EXT input)