

# $\mu$ Active Battery Equaliser

CENTRE TAP POWER EQUALISER WITH OPTIONAL REGULATED O/P



Active battery equalisation allows the “centre tap” on a battery bank to be utilised without damage to the battery bank and provide balancing of 24V battery pair when a 12V load is being powered.

Because the load is taken directly from the centre connection the peak power draw is limited only by the battery performance/ capacity allowing loads such as starter motors, winches, radio communications, air conditioning, radios and scientific equipment to be attached.

This powerful unit will allow rapid balancing at up to 40A allowing even the most powerful loads to be connected . (See over for more details).

The Antares  $\mu$ Active Equaliser will balance in both directions unlike some equalisation techniques which can only equalise in one direction, and generate waste heat in the other.

Optionally, the unit can provide an additional fixed voltage output (regardless of actual centre-tap voltage).

## Key features:

- Protects 24V battery sets from damage caused by centre tap 12V loads
- Programmable microprocessor
- Powerful & Compact
- 40A balancing
- Integral split charge
- Remote alternator detection
- Recovers fully discharged batteries
- High reliability & in-service proven
- High degree of system protection
- Rugged aesthetic enclosure
- Optional remote Temp/voltage compensation

## Applications

The equaliser is suitable for any application where the voltage required is different to the battery/alternator voltage. Even high peak loads can be handled as long as the average load is less than 40A. This is ideal and will save cost and weight if there is no other reason to fit a dedicated aux battery for the load.

Typical loads are starter motors, winches, refrigeration, engine management, radios, communications systems and heaters.

## How it works

For ease of understanding the following explanation refers to a 24V chassis with a 12V load. The battery bank usually consists of two monobloc 12V batteries in series. The battery connected to the chassis is referred to as the “lower” battery and the battery connected to 24V is referred to as the “upper” battery.

(See schematic overleaf.)

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# μActive Battery Equaliser

## CENTRE TAP POWER EQUALISER WITH OPTIONAL REGULATED O/P

### Without the equaliser:

The 12V load connected to the centre tap draws current depleting only the lower battery. The lower battery voltage will drop, while the upper battery will remain unchanged. This causes the pair to become unbalanced, which the alternator cannot resolve, so the result is both batteries are incorrectly charged, causing permanent damage and a very short service life.

### With the equaliser:

The active equaliser recognises that the voltage on the two batteries is attempting to be unequal and, provided that there is a charging voltage on the chassis system, will “pump” power into the battery that

needs it and will continue until the centre tap is exactly half the voltage of the 24V battery pair.

The maximum rating of the battery equaliser must be greater than the **average** consumption of the load, while the engine is running (or other charging source is available). If the charging source is removed too quickly the lower battery will still be able to reduce. The **peak** power that can be drawn from the battery is only limited by the type, characteristics and size of the lower battery and does not affect the equaliser.

If you require a constant voltage specify the “regulated output”.

## Installation

The solid integral flanges of the aluminium side extrusions are pre drilled for ease of mounting in any orientation.

## Safety protection

The system is protected against:

- overload
- overheating
- short circuit
- battery reversal/removal
- over voltage

Recovery is automatic.

## Rugged construction for long life

The unit is constructed from corrosion resistant aluminium with a structural steel top plate that is epoxy coated. Labels use longlife sub-surface polycarbonate graphics. The printed circuit boards are conformally coated to protect against high humidity and through-plated to protect against vibration damage.

## Auto on/off

The unit automatically detects if there is sufficient charging voltage on the chassis. When the charging voltage appears it will come out of sleep mode and equalise the tap (if necessary).

Whilst in sleep mode it conserves power, with no indicators the quiescent draw is less than 30mW. Remote on/off is an option.

## Options

The μActive range is modular, and any module can be combined with any other: please call one our applications engineers for details. As designers and manufacturers of this equipment we can create combinations not covered in this literature.

Model type	24 to 12 CENTRE TAP ACTIVE BATTERY EQUALISER	24 to 12 ACTIVE BATTERY EQUALISER WITH REGULATED DC OUT
Balancing Current	40A @ 12V nom	20A @12V nom
Regulated output	n/a	20A @12.6V fixed
FUNCTION		
Part Numbers	9662 121 121.0	9662 121 131.0
Auto On/Off thresholds	26.2V on / 25.2V off	
Input Voltage range	21.0 – 30.0V	
Equaliser Output	50% of input voltage	
Regulated output	n/a	12.6V ± 0.1V
Standard Features	On/Off control, input undervoltage and overvoltage shutdown, output overvoltage protection	
Weight & Dimensions	1.5kg, 275mm x 121 mm x 67(H)	
Operating temperature	-5 to 40°C, with derating above 40°C to 65°C, IP20 environmental protection	
Connections	1m flying leads - input, output, ground,	
Cooling	Temperature controlled fan	
Compliance	e-mark: e11*03 5860, CE marked	