

## data sheet twin engine three battery bank split charge system

**12 volt** .... P2431      part number .... 12431-400

**24 volt** .... P2441      part number .... 12441-400

### contactor current rating

continuous ..... 200 amp @ 40 mV / contact / 100 A  
 engine start ..... 400 amp intermittent  
 surge ..... 800 amp

### operation

..... bi-directional split charge, standard  
 connect voltage ..... 13.8V / 27.6V  
 drop-out voltage ..... 13.0V / 26.0V  
 adjustment ..... relay engagement and drop out  
 protection ..... waterproof to IP66

### display

type ..... 10 dot bar-graph x 4  
 engine ..... battery voltage 2  
 service ..... battery voltage and net amps, charge & discharge  
 ammeter shunt ..... 1 integral hall effect shunt  
 emergency link start ... includes button to engage link start timed period.

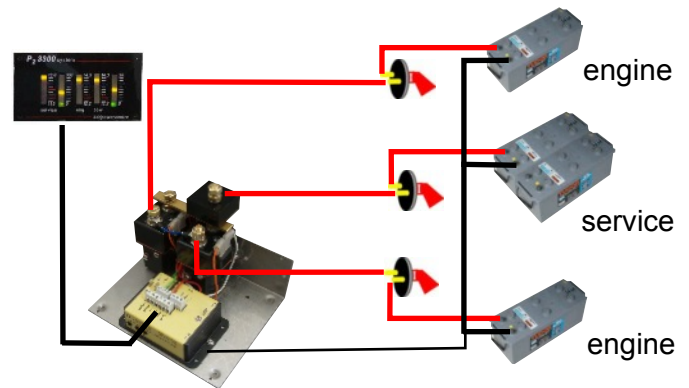
### system protection

..... 4 internal PTC fuses, auto re-set

### size / weight

contactor .. ..... 175 x 150 x 135 mm / 1.5 Kgs

display ..... 100 x 60 x 50 mm / 80 gms



### standard pre-fitted options

contact drop-out with engine starter motor operation .... to protect solar panel and secondary charge systems from high current.  
 emergency link start ..... allows engine to be started from service battery bank, timed engagement, remote switch on display.

### split charge contactor

The system employs heavy duty contactors, these carry far higher loads than typical VSR relays, making them ideal for emergency engine starting. They also feature a high fault current rupture rating ( 300 amp to UL508 ), allowing the disconnection of high current loads at low voltage. The contacts are sealed to IP66, making them suitable for operation in a marine environment, protecting contacts from corrosion and avoiding flash from open contactor units.

**emergency link start** engages the contacts allowing the engine to be started from the service bank, if the engine battery has a low capacity.

### operating voltage

Units are supplied normally set to standard voltages, we are happy to set modules to customer requirements, or they can be adjusted on site. Alternate can be supplied 12 or 24 volt operation to order, for other values please contact technical section.

### operation

The system allows both engines to charge separate engine start batteries, when a set voltage is reached the contactors are closed and the service battery charged by both alternators, contactors drop out at a set low voltage. If the boat is fitted with an inverter it can be monitored for operation, dropping out the contactors to prevent damage to the charging system due to high load being drawn from the engine battery due to low service battery. If one alternator fails, the remaining one will charge all battery banks via charge contactors

### options to order

contact rating ..... 100 and 350 amp  
 coil rating ..... 12 volt DC to 48 volt DC  
 fresh water gauge ..... display can be supplied to read fresh water tank level on ammeter bar-graph, includes sensor.  
 remote current sensor .. sensor protects the charge system from high loads i.e. inverter use with low battery level.  
 display options ..... digital readout in addition to the standard bar-graph, amps & volts selectable plus engine volts.

**bar-graph**

The display allows real time charge monitoring of both volts and amps for all batteries, plus it provides a battery level guide to both battery banks. By employing LED bar-graphs all voltages and amperages can be viewed with out the need for selector switch, or waiting for a display to scroll through. Critical battery voltage levels have red LED's to give visual warning, even when not close to display. The ammeter bar-graphs have a bi-colour LED's that shows polarity of current, green for charge, red for discharge, again providing instant warning if a problem

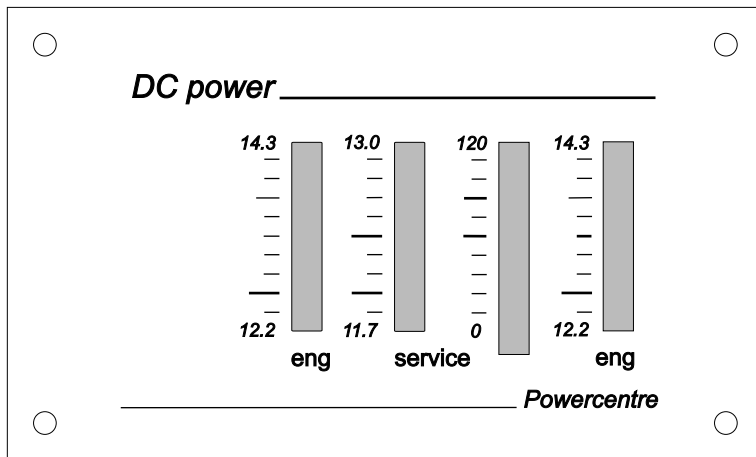
When charging batteries, the optimum recharge level for a system is when the voltage is at maximum and the current is low, easy to see as the bar-graphs are next to each other. At this point the batteries will not be taking any more significant charge, so motoring for longer is now only consuming fuel and money.

High voltage alarm, drives a audio alarm to indicate high charge voltage level, normally set at 15 volt, other values can be supplied factory set.

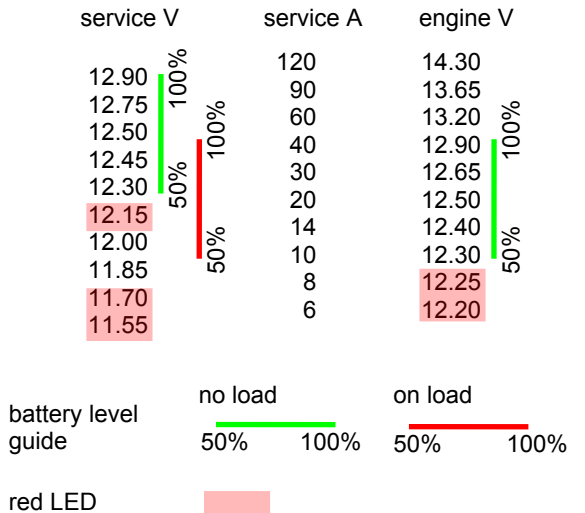
The display can be supplied to display the fresh water tank level on the ammeter bar-graph, it only requires the sensor head to be fitted to water tank. The system has the provision to set gauge reading to match the fresh water tank level.

The display only requires connecting a 6 way data cable matching colour to colour, no shunts or cable modifications required.

**standard display unit full size 100 mm x 60 mm x 50 mm deep**



**display read-out**



**display options**

The bar-graph can be supplied to order with alternate display values to suit a particular charging system, see **display options** allowing the display to be matched to the intended use,

**logarithmic scale** provides a extended scale in the low half, allowing low current monitoring of the completion of charge, or current drain during use. While the initial high charge current can be monitored on the upper high section.

**linear scale**, is used for monitoring charge current, or high discharge loads, the meter scale is uniform over the full meter range.

For non standard options please contact technical section.

**Digital / bar-graph display full size 175 mm 60 mm x 50 deep**

**alternate display scaling**

log scale		linear scale	
60	240	100	200
45	175	90	180
30	125	80	160
20	80	70	140
15	60	60	120
10	40	50	100
7	28	40	80
5	20	30	60
4	16	20	40
3	12	10	20

