

## Priority Adjustable Split Charging System



SmartBank Control Processor

**Allows charging of up to 3 separate battery banks from multiple charge sources**

**Prioritises charge to the starter battery and prevents it being flattened by auxiliary loads**

**Dash mounted switch allows batteries to be paralleled for emergency starting from auxiliary batteries**

Many specialist vehicles now have multiple battery banks on-board, each powering designated electrical loads.

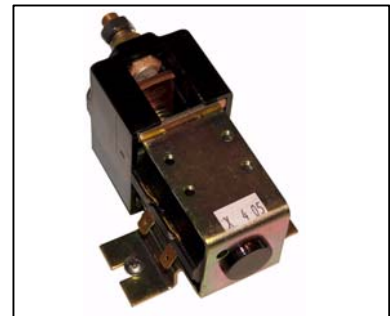
SmartBank allows you to charge all of them from the vehicle alternator and from additional charging sources such as mains powered battery chargers.

SmartBank works by connecting either two or three banks of batteries when charge current is available and disconnecting them when they are being discharged. While discharging, the battery banks are isolated from each other so the engine start battery cannot be flattened by loads wired to the auxiliaries.

Importantly, SmartBank is also "priority adjustable", meaning that the installer can decide exactly how they want to share the available charging current between the batteries. This is critical as although SmartBank will always make sure that the vehicle starter battery is charged first when the alternator is running, the priority given to the starter battery may have to be reduced sometimes to ensure that the auxiliary batteries receive a fair amount of charge.

SmartBank has various other features including an adjustable "hold connected" timer. This is there to help defeat relay cycling which can occur if the auxiliary batteries are very depleted and the charge source is not large enough. In this scenario, it is possible that other battery combining split charge devices will continually connect and then disconnect the batteries.

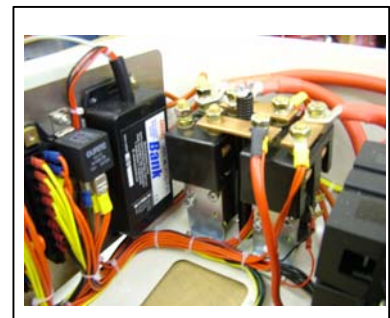
SmartBank also offers the facility to mount an "emergency parallel" switch on the vehicle dash. In the event of a starter battery failure, this switch can be held down to parallel in the auxiliaries to assist with engine cranking.



SmartBank Charging Relay



Dash Mount Emergency Parallel Switch



SmartBank Installed

## Efficiency

SmartBank split charging introduces no significant voltage loss into the system. Voltage loss is commonly associated with other forms of split charging such as blocking diodes or isolators. These losses confuse the vehicle alternator into charging much less efficiently and necessitate the fitting of aftermarket alternator charge controllers. These are not required with SmartBank, reducing the cost of the installation dramatically.

SmartBank also develops very little heat. Other forms of split charging such as electronic, split charging battery chargers generate a lot of heat. This is clearly visible by the presence of heat sinks and cooling fans in the product enclosures. Heat is simply lost energy which results in lower charging currents.

The SmartBank control processor never uses more than 0.0001A in standby mode or 0.0008A maximum in any other mode. This equates to an incredible 7Ah a year!

## Connect, Disconnect & Hold Settings

There are three adjustment potentiometers in the SmartBank which are marked "Connect", "Diss" and "Hold". "Connect" and "Diss" directly correspond to the nominal voltages at which the SmartBank CPU will connect and disconnect the batteries. On top of simply using voltages however, the SmartBank also uses dynamic control circuitry to delay connection and disconnection until it has established that the voltage change is as a result of a confirmed charge or discharge source. This prevents nuisance relay operation.

Connect can be adjusted from 13.0 - 13.6V DC (26.0 - 27.4V DC, 24V system)

Disconnect can be adjusted from 12.4 - 13.0V DC (24.8 - 26.0V DC, 24V system)

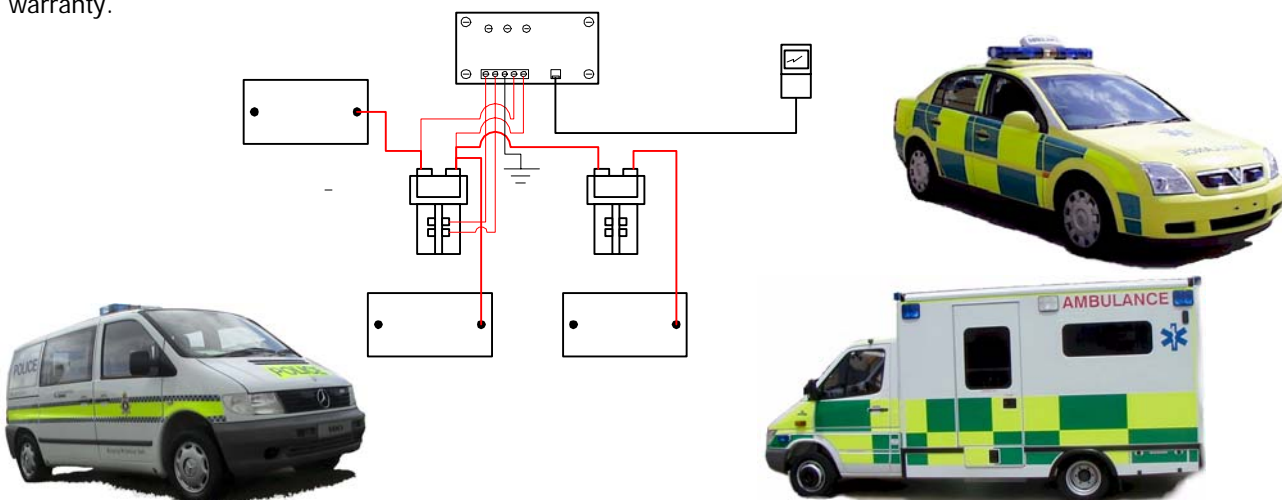
The Hold feature introduces a time period following connection when SmartBank will simply not allow the batteries to disconnect. This is generally needed where there is excessive load on one of the auxiliary battery banks and the primary charge source is undersized. In most applications, it is not required however it can be an advantage when the optimum charge source cannot be fitted.

Hold can be adjusted from 0 -2 mins

## Ease Of Installation

SmartBank's CPU is wired to the control relays by simply connecting five wires. The dash mount switch is operated by a loom which is supplied that plugs into an RJ11 socket on the SmartBank CPU. The CPU can be mounted any distance from the relays if limited space is available close to the batteries.

No alterations are required to the existing vehicle wiring system so SmartBank will not compromise your warranty.



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