RCB+

Warranty 3 years

8.9/10 Repairability index

Presentation

With the increasing use of Lithium batteries (LiFePo4) for on-board electrical systems, compatibility between different battery types has become a major issue. Indeed, the cohabitation between starter batteries, often lead-acid, and lithium batteries for service requires specific management of energy flows, particularly during alternator operation.
RCB+ smart coupleur relay responds to this challenge by providing an efficient and secure connection between these two types of battery.
The device is capable of managing the current coming from the alternator, either 12 or 24VDC, up to 200A, by limiting it to the service battery, while protecting starter battery charge.

Part number	RCB-ADJ-120A	RCB-50PL	RCB-80PL
Maximum current to the house battery	Adjustable (50 to 120A)	50A	80A
Input			
Input voltage tolerance	From 8VDC to 32VDC		
Voltages	12VDC or 24VDC		
Protection current decoupling	200A +/-10%		
Output			
Both size Input & Output	2 x M8		
Ground isolation	>500VDC		
Maximum voltage drop	0.2VDC		
Environment			
Cooling	Natural (Fanless)		
Operating temperature	From -25°C to +65°C (-13°F to 149°F)		
Consumption	1.2mA@12V / 0.9mA@24V		
Casing			
Length, height, depth	159 x 100 x 36 mm (6,25 x 3,93 x 1,41 in)		
Weight	0,45kg (1 lb)		
Standards			
	RoHS Compliant / IEC60335-1 / ISO8846/SAE J1171 (Ignition protected)		

How RCB+ works :

One of the RCB+'s key features is its ability to limit the current flowing between the alternator and the service battery. Thanks to a setting wheel for the adjustable version, the user can adjust the current between 50 and 120A, guaranteeing flexibility according to the on-board system's needs.
It is recommended to retain around 30% of the alternator's capacity for the starter battery; for example, for a 110Ah alternator, the limit could be set at 70A for service bank. This fine-tuned management preserves the alternator from overload while optimizing the battery charge.

Compact and lightweight this unique compact relay is designed to be used in harsh environment. Its innovating technology based on low frequency switching mode offers stabilized output charge current and protection against reverse voltage to avoid damages on the alternator.
On the RCB-ADJ-120A model the black selector wheel of the encoder can be removed for safety or maintenance reason.In some cases RCB+ can replace a DC-DC charger.

Coupling and decoupling principle

12 VDC	Input		Output
Coupling	> 13V for more than 90s	&	>10,5V
	or		
	>13.6V for more than 30s	&	>10,5V
Decoupling	> 16V		
	or		
	< 12.4V for more than 10s		
	or		
	< 12.7V for more than 30s		

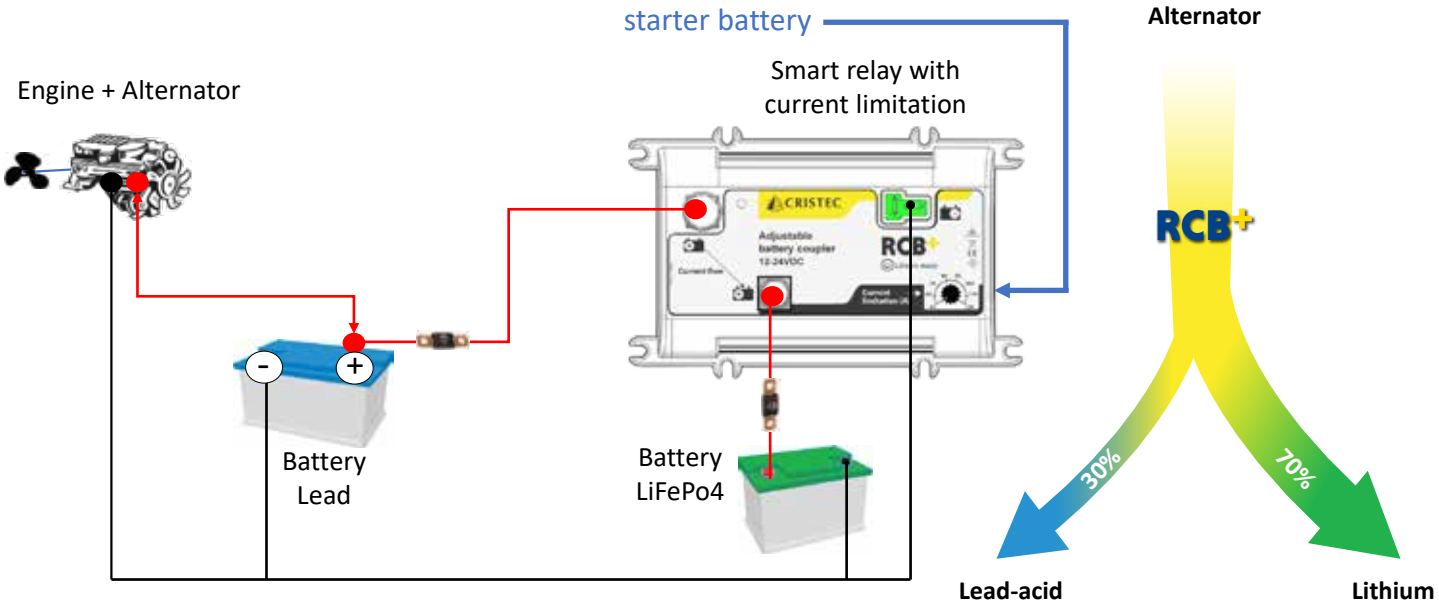
24 VDC	Input		Output
Coupling	> 26.0V for more than 90s	&	>21V
	or		
	>27.2V for more than 30s	&	>21V
Decoupling	> 32V		
	or		
	< 24.8V for more than 10s		
	or		
	< 15.4V for more than 30s		

SMART BATTERY COUPLER RELAYS RCB+

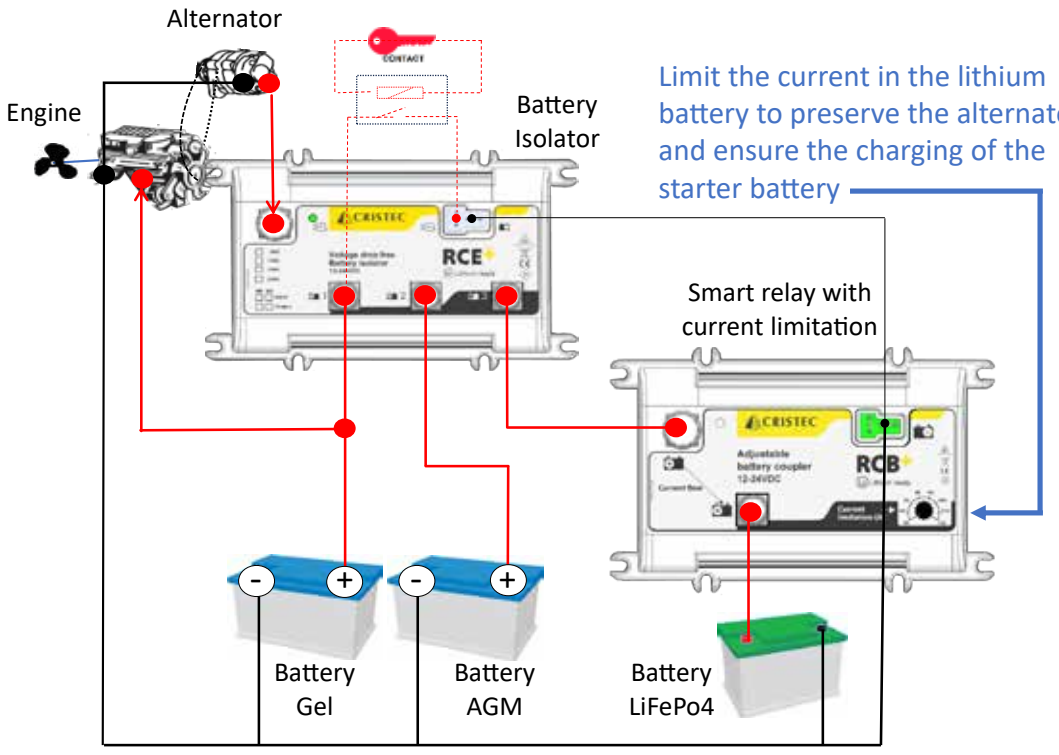
12V
24V

Typical installation

Limit the current in the lithium battery to preserve the alternator and ensure the charging of the starter battery



Typical installation with various types of batteries



RCB+ smart relay limits current to the lithium battery from the RCE+ battery isolator.