

# Current Limiting Voltage Sensitive Relays

## from 70 - 280A 12V/24V

The range of **Current Limiting Voltage Sensitive Relays (CVSRs)** offer bullet proof versatility. Not only do they act as bidirectional 0.0V drop charging relay but they also offer the ability to react in a controlled way to excessive loads that would normal destroy conventional relays. Under high loads, such as: Large Inverters / AC units / Bow Thrusters. The load drawn down the DC cabling would exceed the cable and relay rating and cause the arc to weld shut or would simply cause the relay to shatter. However, the CVSRs have PTC fuses which allow this high load to abate before opening the relay, thus protecting your relay/system.

### Built in current limiting:

Courtesy of the PTC fuses (red components jutting out of the unit), if overloaded, the product will simply shut off safely so as to protect the relay and the installation. Once the high load demand has been removed the relay is safe to re-engage.

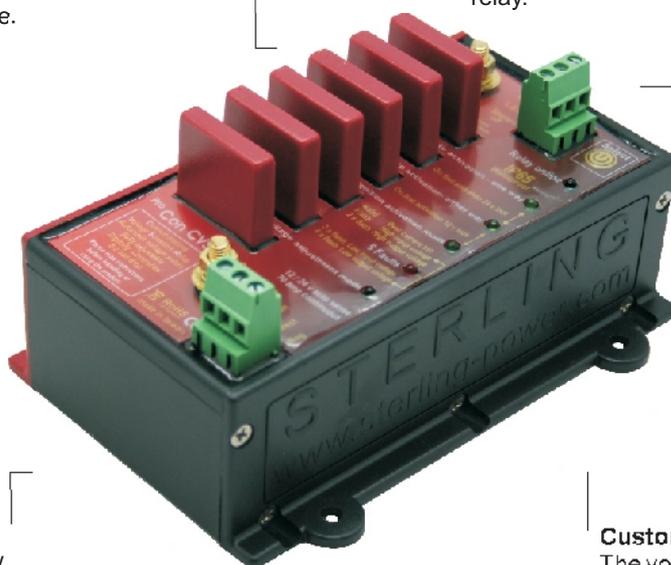
**Available in:** 70A, 140A, 210A & 280A. 12/24V auto select.

### 0.0V drop charging relay:

0.01V drop is the voltage drop across the relay. This is a negligible drop allowing for the best charge possible across the relay.

**Uni and Bidirectional charging relay:**

**IP66 waterproof (built to)**



6 LED information display. With remote LED option. With 5 built in alarms

**Start up time delays:** A 30 second start up time delay prevents the relay coming on while the engine is being started, protecting the relay circuit and preventing fuses blowing and damage to the relay.

Extremely low quiescent current, approx 1 mA.

**Manual Override:** The unit, by default, is voltage sensitive. It requires 13.3V to close circuit and 13.0V to open circuit. A manual override allows the user to dictate when the relay activates. Typical override would be an ignition feed.

### Customizable on and off voltages:

The voltage at which the relay closes and opens are default at 13.3V (on) and 13.0V (off) - twice for 24V. However, these thresholds can be adjusted.

Current Limiting Voltage Sensitive Relays (adjustable)				
DC (V)	Rated (A)	Size L x W x D mm	Weight Kg	Code
12 & 24 auto	70	140 x120 x 40	0.1	CVSR70
12 & 24 auto	140	140 x180 x 40	0.2	CVSR140
12 & 24 auto	210	140 x210 x 40	0.25	CVSR210
12 & 24 auto	280	140 x240 x 40	0.25	CVSR280

## IMPORTANT Safety Features

(shared by CVSRs / VSRs and Ignition Fed Relays).

- High overload surge rating.
- Back EMF spark arrester.
- Emergency auxiliary forced activation.
- High battery voltage trip protection.
- Suppression diodes across relay to prolong life.
- SAEJ1171 ignition protected.
- 5 alarm functions and safety trips.
- Protects primary battery from discharge.
- Anti Relay contact arching protection.
- Reverse polarity protected.

# Voltage Sensitive and Ignition Fed Relays

## Voltage Sensitive Relays Pro Con VSR range (80A-240A) (refer to CVSR page for safety features)

**0.0V drop and low quiescent current.** The voltage drop is 0.01V allowing for negligible power loss across the relay. The quiescent current is 1mA.

**6 LED information display**

**Automatic voltage activation.** True to word the relays are sensitive to voltage. On voltage is 13.3V. Off is 13.0V (x2 for 24V). **This can be manually changed.**

**Ignition/signal override** is possible to allow for manual override.



**High quality brass connections.**

**Uni and Bidirectional charging relay:** Multiple relays can be used to link / isolate as many battery banks as suitable.

**Built to IP66 waterproof**

**Available in:** 80A, 160A, 240A  
12/24V auto select.

**Start up time delays:** A 30 second start up time delay prevents the relay coming on while the engine is being started, protecting the relay circuit and preventing fuses blowing and damage to the relay.

Voltage Sensitive Relays (adjustable)					
DC (V)	Rated (A)	Size L x W x D mm	Weight Kg	Code	
12 & 24 auto	80	140 x 180 x 40	0.1	VSR80	
12 & 24 auto	160	140 x 190 x 40	0.2	VSR160	
12 & 24 auto	240	140 x 200 x 40	0.25	VSR240	

## Additional VSRs



**Magnetic Digital VSR:** The Digital VSR shares the **same features as the above VSR80-240 range.** It has fewer LEDs but is totally waterproof and ingress proof. This relay requires the use of the magnet to change the relays settings. The largest current rating is 160A.

Voltage Sensitive Relays (adjustable)				
DC (V)	Rated (A)	Weight Kg	Code	
12 & 24 auto	80	0.1	VSRB80	
12 & 24 auto	160	0.1	VSRB160	



**Analogue VSR:** The Analogue VSR is the most affordable VSR that Sterling does. It has no adjustable features. The user can not adjust the voltage thresholds and there is no switching delay. The unit is also not 12V / 24V auto select. They are simply 12V or 24V models. The unit has a fixed on voltage of 13.3V and the fixed off voltage of 13.0V. Ignition override is also possible.

Voltage Sensitive Relays (adjustable)				
DC (V)	Rated (A)	Weight Kg	Code	
12	80	0.1	VSRA8012	
12	160	0.1	VSRA16012	
24	80	0.1	VSRA8024	
24	160	0.1	VSRA16024	

## Ignition Fed Relays (refer to CVSR page for safety features)

**Available in:**  
12V 80A, 160A & 240A  
24V 50A 100A & 150A

**Requires Ignition / D+ / Signal feed to operate:** This range of low cost signal activated relays are the simplest in the range. It offers the ability to link together as many battery banks as you wish and therefore charge different battery banks on a boat / vehicle when the engine is running.



**IP66 waterproof  
(built to)**

**Starter battery interlock:** This unit has the ability to interlock with up to 2 engines starter motors to ensure the relay is inactive when starter motors are engaged, thus protecting the relay and avoiding fuses blowing.

Ignition / Signal fed Relays					
DC (V)	Rated (A)	Size L x W x D mm	Weight Kg	Code	
12	80	140 x 60 x 40	0.025	IFR1280	
12	160	140 x 70 x 40	0.030	IFR12160	
12	240	140 x 80 x 40	0.030	IFR12240	
24	50	140 x 60 x 40	0.025	IFR2450	
24	100	140 x 70 x 40	0.030	IFR24100	
24	150	140 x 80 x 40	0.030	IFR24150	