

**FEATURES**

- ❖ Powered by 10.5 to 15V DC power range
- ❖ Adjustable thresholds for cut-in and cut-out points between 1 to 200V DC
- ❖ 12 Amp @ 28VDC SPDT relay contact
- ❖ Automatic reversible action with the cut-in, cut-out adjustments
- ❖ Adjustable 0 to 255 sec. time delay on cut-in
- ❖ Compact size eliminates mounting problems

**APPLICATIONS**

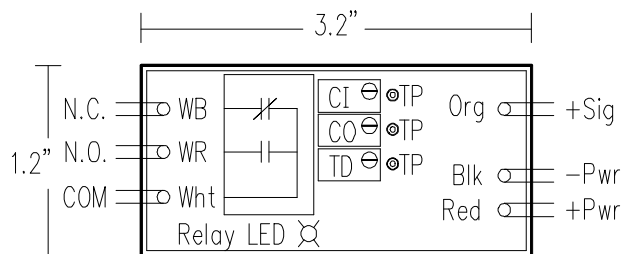
- ❖ High voltage DC power switching
- ❖ High voltage DC load diversion
- ❖ Hydro-electric Power shunt
- ❖ Battery charge controller for EV cars

**DESCRIPTION**

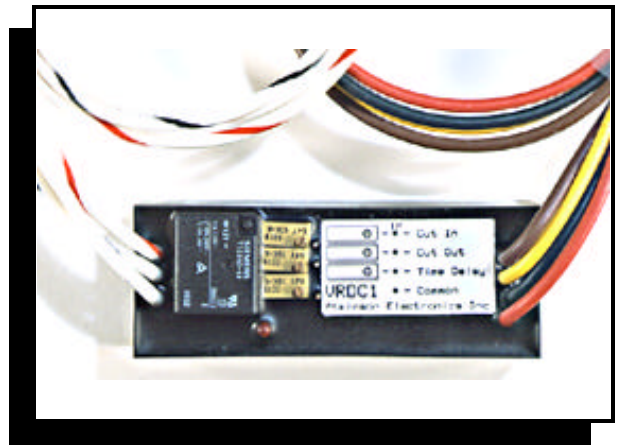
The VRDC-200V is an Adjustable Voltage Relay for DC applications. The VRDC-200V can be used in applications where a varying DC voltage is used to switch an adjustable relay such as in generator control, low battery voltage load disconnect or high battery voltage load diversion. The "cut-in" voltage, "cut-out" voltage, and the time delay value are adjusted on multi-turn potentiometers by measuring the respective test points and adjusting the potentiometers per the set-up instructions and chart on the back side of this page.

**OPERATION**

The VRDC-200V uses a half-wave rectifier filter circuit which allows the VRDC-200V to operate from either a 10.5 to 15V DC power source. The VRDC-200V's input is internally scaled so that a 0 to 200V DC signal equals 0 to 5V DC as shown on the chart on the back side of this page. An LED lights when the relay is pulled in.

**PHYSICAL CONFIGURATION**

The test points shown are for field calibration of the "cut-in", "cut-out", and time delay potentiometers.

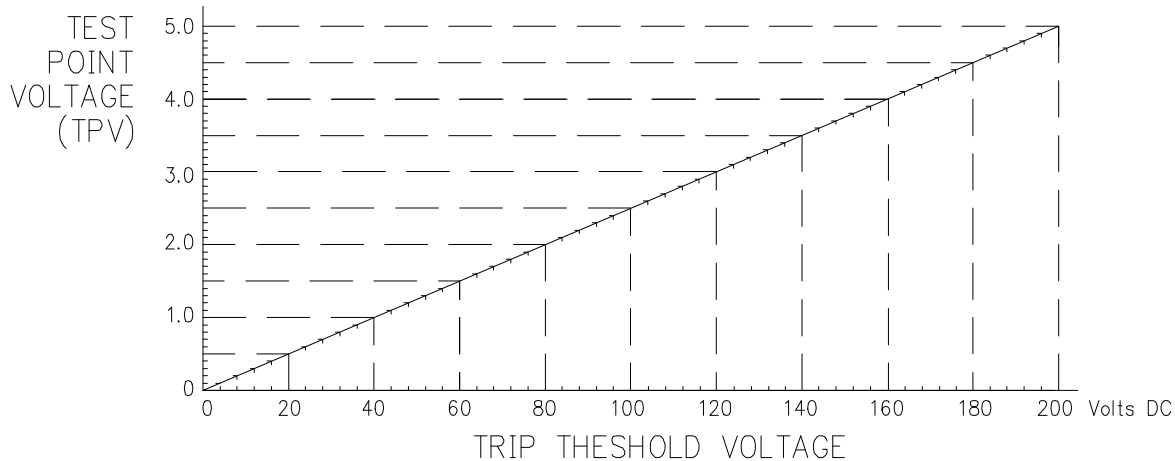
**SPECIFICATIONS**

SIZE:	3.2"L x 1.2"W x 0.75"H inches
ENCLOSURE:	Epoxy potted in PVC plastic
MOUNTING:	Double stick tape or snap track
POWER:	10.5 to 14.5V DC
LOAD CAPACITY:	<b>12 Amps @ 28V DC, SPDT</b> <b>12 Amps @ 120V AC, SPDT</b> HASCO KLT1C12DC12
INPUT SIGNALS:	0 to 200V DC
THRESHOLD:	Cut-in @ 1 - 200V DC Cut-out @ 1 - 200V DC 2.0V DC min. differential
TIME DELAY:	0 - 255 seconds delay on energize
ACTION:	Direct - Energizes on increase Reverse - Energizes on decrease
SIGNAL FILTERING:	>2Hz
CURRENT DRAW:	Continuous - less than 1mA Relay energized - 30mA
INDICATION:	LED indicates Relay is energized
TEMPERATURE:	-20 to 50°C
RELAY LIFE:	100 million mechanical operations

**ORDERING INFORMATION**

**VRDC-200V** - Adjustable DC Voltage Relay with 0 to 255 second time delay

note: 200 Amp contactor not supplied with VRDC-200V

**ADJUSTMENT CHART**

$$TPV = V_{in} / 200 \times 5,$$

$$TDV = \text{Time Delay (sec)} \times 0.01961$$

TPV	-	Test Point Adjustment voltage at cut-in & cut-out test points
$V_{in}$	-	Input voltage signal
TDV	-	Test Point Delay voltage

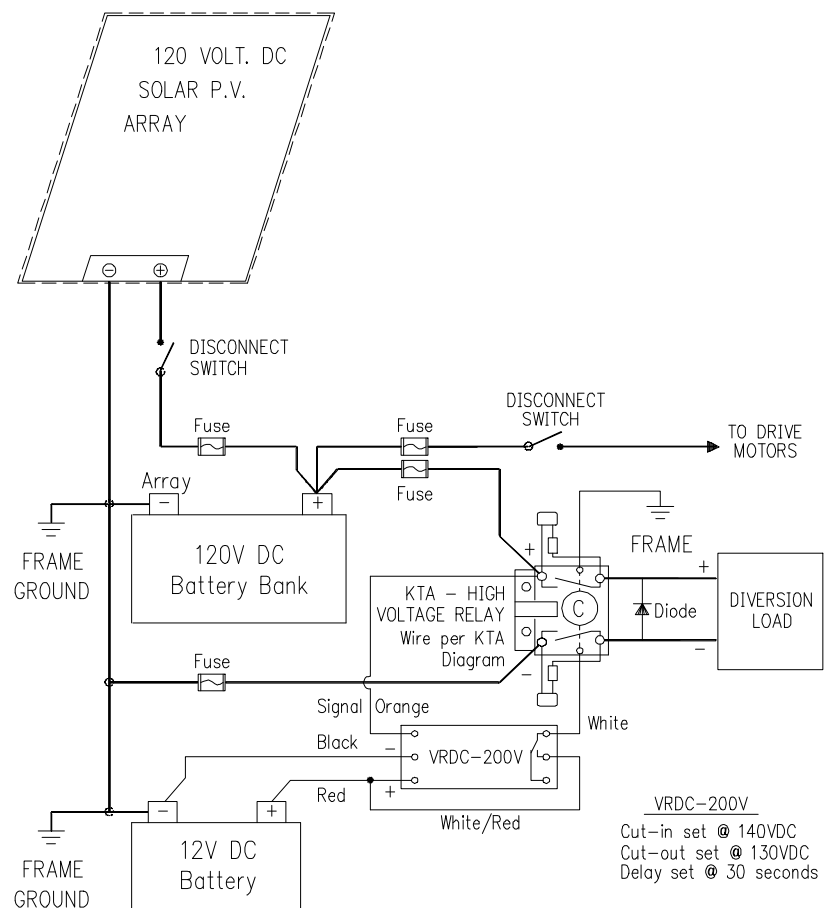
**ADJUSTMENT PROCEDURES****HIGH VOLTAGE P.V. APPLICATION**

1. The "cut-in", "cut-out" and "time-delay" pot adjustments are measured on the respective test points by a DC voltmeter. The cut-in/out 0-5V DC represents 0- 200V DC, input signal. The time delay 0- 5V DC represents 0 to 255 seconds delay on energize.

2. If the "cut-in" pot is greater than the "cut-out" pot then the relay energizes when the signal voltage is greater than the "cut-in" point and de-energizes when the signal voltage drops below the "cut-out" point. If the "cut-in" point is less than the "cut-out" point then the relay energizes when the signal voltage drops below the "cut-in" point and de-energizes when the signal voltage rises above the "cut-out" point. If the signal voltage differential between the "cut-in" and "cut-out" adjustments is not at least 1.0V DC in the 0 to 200V range then the relay will not operate.

3. The time delay pot's 0 to 5V DC represents 0 to 255 seconds of time delay for the relay to energize on "cut-in" for either reverse or direct mode. The input signal must exceed the "cut-in" point for the time delay value or the timing action will start over. The "cut-out" action is instantaneous.

4. After adjusting the VRDC-200V module, interrupt power (this re-sets the circuitry) to insure that the module operates properly.



The VRDC-200V senses the Battery voltage and when it reaches 140V it energizes the diversion relay passing the excess charge to the diversion load. When voltage falls below 130V DC it de-energizes the relay. The KTA 200 amp contactor supplied by user.

**DO NOT APPLY** charge currents to VRDC's relay, It will burn it up !