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SSR-HDVR-12P-TTLC

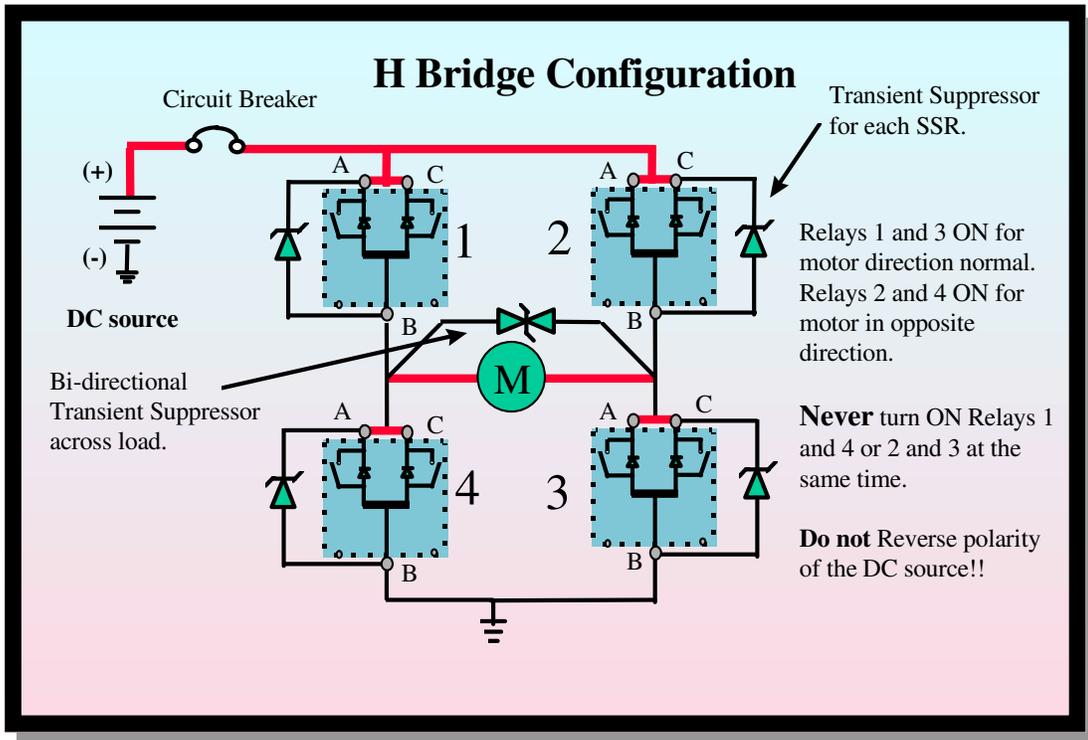


The SSR-HDVR-12P-TTLC provides for 2 control logic inputs. One for polarity logic, and one for SSR output ON or OFF. The control module requires 8 to 16 Volts for power. The outputs drive two SSR logic controls on the negative control input side. The output consists of open collector transistors which sink the SSR control input current. Internally, the control module contains circuits to prevent both outputs from being on at the same time.

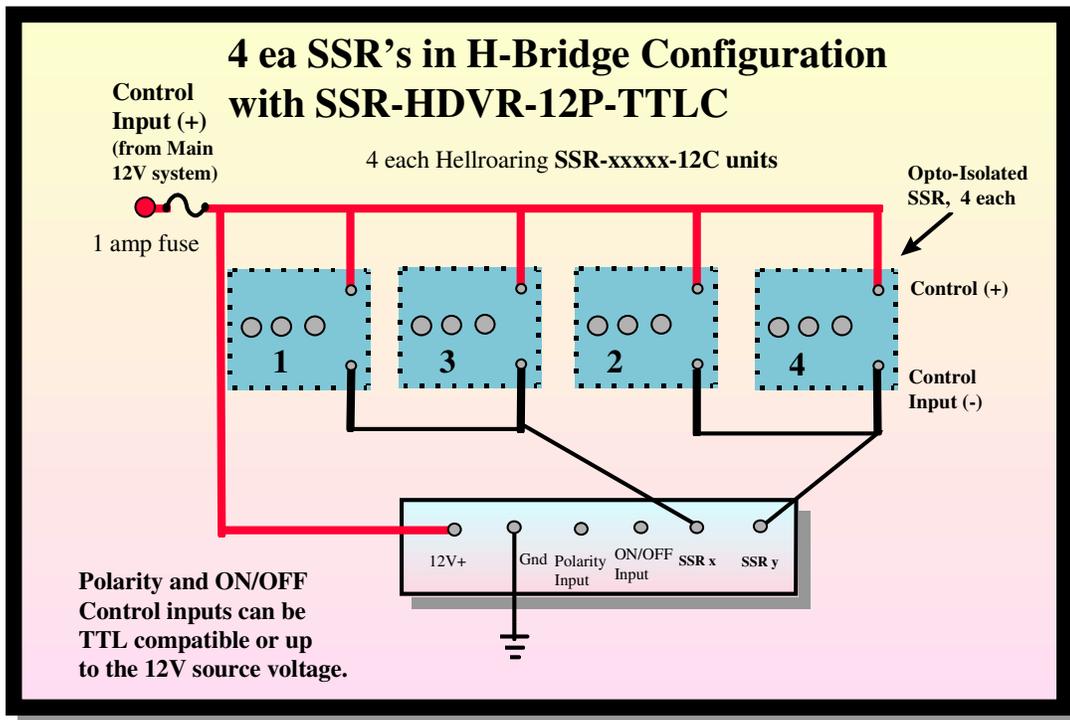
The input logic can be driven from TTL outputs or with logic voltages up to the power source voltage. The ON/OFF input controls the SSR output on or off condition. A logic high (+) on this terminal results in the SSR being turned ON. A logic low (ground) turns the SSR outputs off. A logic change on the polarity terminal will change the SSR output polarity.

Should you have a specific application or question not covered here, feel free to send an e-mail technical support request. Include as much detail as practical regarding your application. Send to: sales04@hellroaring.com. Or check our website for the current e-mail address.

Hellroaring SSR-HDVR-12P-TTLC Instructions

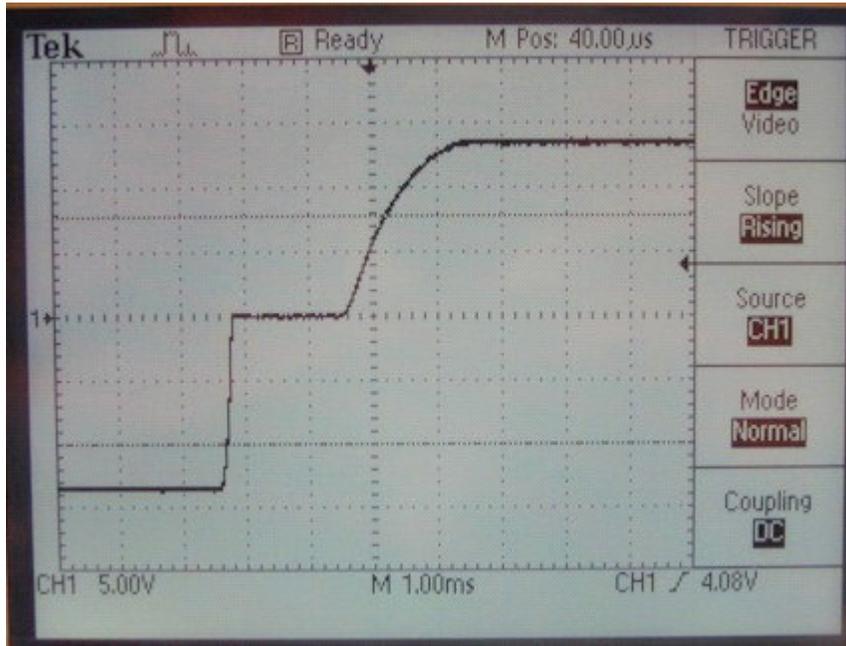


Basic diagram for the H-Bridge configuration using four Opto-Isolated SSR units. Use a Bi-directional transient suppressor across the H-Bridge output or across the load.



Note: Specifications are subject to change without notice.

Hellroaring SSR-HDVR-12P-TTLC Instructions



Typical H-Bridge polarity switching delay.

This picture illustrates a polarity reversal from a negative output to a positive output.

Polarity	On/Off	SSRx	SSRy
H	H	Off	ON
L	H	ON	Off
H	L	Off	Off
L	L	Off	Off

Transient Suppression heat dissipation will depend upon the inductive component of the load and the repetition rate of the switching operation. On initial system designs, pay attention to the heat build up in transient suppressors. If they become hot, you may need to decrease the switching repetition rate, or increase the transient suppression wattage capability.

Note: Avoid switching into highly capacitive loads without incorporating a peak current limiting method such as some series resistance in the load. A capacitor will present a temporary short circuit when the SSR's switch ON. Sufficient wire or other series resistance will help limit the peak switching currents.

Hellroaring SSR-HDVR-12P-TTLC Instructions

Standard Terms and Conditions of Sale

The sale of Hellroaring Technologies, inc. products shall be governed by the laws of the state of Montana. All sales shall transfer title within the state of Montana via common carrier. Hellroaring Technologies, inc. will not collect sales taxes for any other state. Should the unlikely event, a cause of action arises, buyer agrees that such action shall be held and governed in the state of Montana. The buyer recognizes that there exists inherent risks associated with batteries and installation & operation of battery devices. It is understood that any technical information published by Hellroaring Technologies, inc. including any installation instructions is of a general nature only and it is the user's responsibility to determine the proper application, installation, and operation of products. The buyer assumes all risk and agrees to indemnify Hellroaring Technologies, inc. against any and all causes for injury or damage to third parties that arises from use of such product.

Return Policy

Should any single unit product sold by Hellroaring Technologies, inc. not meet or exceed your expectations, you may, within 30 days of our shipment to you, return such product for a full refund (credit on credit card orders) less a 15% restock charge, provided that:

- a) You obtain an RMA number and provide your shipping address by calling customer service at 406 883-3801 or send an RMA request via e-mail (include the model #, serial number, and your phone number), and
- b) The product, including all accessories, is returned in original and re-saleable condition, and
- c) Units are Shipped (prepaid and insured for damage in transit) in the original or equivalent packaging, and
- d) (optional) You include a simple note as to the reason for dissatisfaction. (This can help us improve our products)

For quantity orders, sales are final and our standard limited warranty applies.

Limited Warranty

This Limited Warranty is extended to the original purchaser. Hellroaring Technologies, inc. warrants that our SSR products will be free from defects in materials and workmanship upon delivery. All claims for defects must be made within 30 days of delivery. The sole and exclusive remedy for failure of the product shall be for us, at our option, to repair or replace the product, to whatever extent we deem necessary to restore the product to proper operating condition. We may make replacements with new or functionally equivalent products of equal value. Should Hellroaring Technologies, inc. be unable to repair or replace the product within a reasonable time, we reserve the right, at our option, to issue a refund or credit of the purchase price in lieu of repair or replacement. We reserve the right to assess a \$15 fee for units returned and proven not to be defective. To obtain warranty service you must:

- 1) Call Customer Service at 406-883-3801 for a Return Material Authorization (RMA) number and shipping address. Or send an RMA request via e-mail (include the model #, serial number, and your phone number and your return shipping address)
- 2) Return the product in the original or equivalent packaging (Shipping prepaid and insured for damage in transit), together with the RMA number AND a description of the problem. Include your return shipping address and your phone number.

Do not attempt to disassemble, or otherwise tamper with any of the 4 nuts on the bottom of each unit. Doing so will void this limited warranty. For quantity orders, extended warranty for switching applications may be available on an application specific basis at slight extra cost.

Exclusions

This Limited Warranty is made expressly in lieu of and to the exclusion of any and all warranties, express or implied, oral or written, including, without limitation, any and all implied warranties of merchantability or fitness for a particular purpose, and all such other warranties are expressly disclaimed. This Limited Warranty shall not be applicable to failures of the product that result from accident, abuse, misapplication or alteration, improper installation or maintenance, unauthorized repair attempts, operation or attempts to operate it beyond its mechanical, chemical, thermal, or electrical capacity intentionally or otherwise, and we assume no liability as a consequence of such events under the terms of this warranty. Hellroaring Technologies, inc. shall not be liable for any special, indirect, incidental, consequential, exemplary, or punitive damages for claims in any claim, action, suit or proceeding arising out of the purchase, use or performance of the product, and whether or not it has been advised of the possibility of such damages. The foregoing allocation of risk is reflected in the price of the product. Nor shall there be any liability thereunder for claims of labor, loss, profit, goodwill, repairs or other expenses incidental to the repair or replacement of such product.

Hellroaring Technologies, inc.