



# Electronic Design & Research Inc.

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## What you know and what we'll hopefully learn after reading your response.

Since we greatly expended a line of our products, a volume of inquiries has substantially increased. Large varieties of offered products made providing technical support even more challenging. A below questionnaire designed to simplify our communication and better inform you as a potential customer in our product and capabilities. Please answer, as many questions as you can that will increase the efficiency of our communication and bring our product to you faster.

*Please answer any questions if you know the requirements and if it's important to you. Do not respond if it is not important or insert a question mark "?" if you would like to have more information.*

We'd greatly appreciate it if you'll let us know how you located us \_\_\_\_\_

A relay/switch defined by three parameters, one is describing the output voltage/current and terminal configurations and second is describing the input control signal and if an external power voltage is required, third is packaging. About packaging, our modules are manufactured in several standard packages, for a PC Board soldering such as a SIP or a DIP and a panel mounting with screw-type terminals. If none of our standard packages meet your requirements, we'll gladly make a package to fit your application for a nominal fee.

Please mark what type of output terminal would you need and how many. If not on the list than please describe what are you looking for.

- SPST-NO      A Form 1                      \_\_\_\_\_
- SPST-NC      B Form 1                      \_\_\_\_\_
- SPDT    \_\_\_\_\_
- DPST    \_\_\_\_\_
- 3PST    \_\_\_\_\_
- 4PST    \_\_\_\_\_
- SPDT/DPST                                      \_\_\_\_\_
- SPDT/DPST with disable                      \_\_\_\_\_
- ½ Bridge Driver                                      \_\_\_\_\_
- H-bridge Driver                                      \_\_\_\_\_
- Socket/Driver                                      \_\_\_\_\_

**Here are a few questions about the output.**

Please offer us a realistic (actual) data:

What is average (rms) current? \_\_\_\_\_(A)

What is a peak current? \_\_\_\_\_(A)

About an output voltage:

What is a maximum voltage will be applied? \_\_\_\_\_(V)

We select and use an output power semiconductor based on the best possible outcomes considering a device’s efficiency, its cost, controllability, application and longevity. If for whatever reasons you preferred a certain output power device such as \_\_\_\_\_IGBT, \_\_\_\_\_MOSFET, \_\_\_\_\_TRIAC, or \_\_\_\_\_, please let us know.

We make relay/switches that can be use in a DC, AC/DC and AC only application. Please let us know what type of voltage (AC or DC) would you need to control? Traditionally, a relay to control an AC power (50/60Hz) uses a TRIAC/SCR on its output. Such device is a least expensive but in some applications, it can’t be used. When required to control a low AC voltage a relay with MOSFET is a solution. In addition, when the efficiency is a major concern than a TRIAC is becoming a second choice as well. A TRIAC-output relay will generate about 30W heat when a MOSFET-output relay, in a similar application, produces less than 1W of heat.

Is it a VAC (power line) \_\_\_\_\_?

It is a VDC and a VAC (power line) \_\_\_\_\_?

Is it a VAC (audio frequency, DC-20Khz) \_\_\_\_\_?

Is it a VAC (DC-100 KHz) \_\_\_\_\_?

Is it a VAC (DC-10 MHz) \_\_\_\_\_?

Is it a VAC (from \_\_\_\_\_, to \_\_\_\_\_) \_\_\_\_\_?

Is it a VDC? \_\_\_\_\_?

Is it a video switch? \_\_\_\_\_?

Is it an analog switch? \_\_\_\_\_?

We manufacture large varieties of relays/switches. Some of them capable to perform a turn on/off task in a millisecond time frame and others can do it as fast as in a few nanoseconds. There are no electronic or functional restrictions in using our fastest devices, such as F-series switches for controlling a power at any slow speed, even turning it on/off once a week. Restrain is different and it is obvious. An average cost of a F-series relay/switch is ten times higher than a L-series relay. The task and this questioner intended for is selecting of relay or switch that is the best technologically capable device but not a Cadillac for your specific application.

What range of frequency or how often a relay/switch will be turn on/off? \_\_\_\_\_(Hz), \_\_\_\_\_ (KHz), \_\_\_\_\_ (10<sup>2</sup> of KHz), \_\_\_\_\_ (MHz), or \_\_\_\_\_anything else.

Do you have any special requirements for a rising/falling time? Please be specific

\_\_\_\_\_.

Do you have any specific requirements for a turn-on delay, a time between a rising slope of the control signal and the output?

\_\_\_\_\_

Do you have any specific requirements for a turn-off delay, a time between a falling slope of the control signal and the output?

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How many relays/switching would you need (in 12 months)? \_\_\_\_\_ ea.  
When would you need a production quantity? \_\_\_\_\_ (Weeks)  
Would you need a few switches for testing \_\_\_\_\_ yes \_\_\_\_\_no \_\_\_\_\_when (week?) \_\_\_\_\_ ea.

**Here are a few questions about the input control and your preferences.**

Most of solid-state devices easily designed with almost any kind of input specifications and so are our solid-state relays, switches and modules. All relays/switches manufactured by EDR Inc. can be divided into two types. It is direct-driving relays, which has only two input terminals (please see p/n EDR82549 and EDR82620). They are very much-resembled electromechanical relays that built with four terminals, two input terminals (like terminals for a coil) and two output terminals. Modules that are designed to control a large power and high-speed switching using an external power for controlling powerful output semiconductors (please see p/n EDR82711).

Beside all industrial standard inputs such as 3.3V, 5V, 12V, 15V, 24V, 48V, 3-32V we made by a customer request 9V and 16V inputs and whatever you would wish.

Please let us know what type of relay would you need \_\_\_\_\_ (direct), \_\_\_\_\_ (any).

Please let us know how are you planning to drive a relay, \_\_\_\_\_ (voltage).

Please let us know how much power supply can you provide, \_\_\_\_\_ (voltage).

A solid-state relay/switch will work trouble-free for many yeas to come. It is a very reliable device comparing with any electromechanical devices if you provide the proper protection against transient surges. We hope the above questions will incline you to think in that direction. You should see the EDR's engineering brain is inviolable asset for providing the best technically possible advice to you. We know as long as you're happy with our product you'll come back for more and that is our ultimate goal.

In some cases we ask for more detail about your particular application and understand if you would refuse to familiarize us with it. Please understand that we are in the business to make modules for your end-equipment. Your success is our livelihood as well. If you do well you will buy our product, and as the result we'll prosper along with you.

We're ready to take the extra step to insure that our device will work in your application. We would not mind to sign a non-disclosure agreement if that would be only a way to insure better understanding on how (and where) our modules will be used.

Please fax, email or just mail your answers to the above address.

Do not hesitate to use additional pages if you want to share your concern and wishful thinking.



Good Luck and Sincerely,  
Vladimir A. Shvartsman, Ph.D.  
President