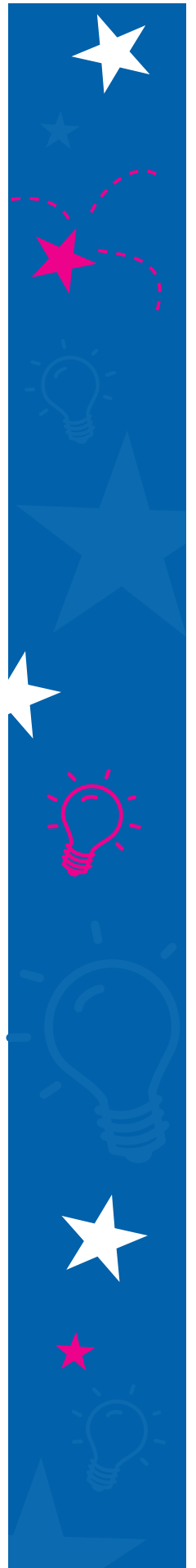




Custom Designs and Products

Electronic
Designs for
the Electrical
Controls
Industry



A Custom Control...

A Custom Control is a control that has been designed especially for the equipment that your company manufactures. It has combinations of inputs, outputs, and functions that are unique to you and your company.

R-K Electronics has been designing and manufacturing custom controls for a wide variety of industries over the last 30 years. Most of the custom control designs that we create incorporate unique combinations of features that would be difficult to do with standard, off the shelf components.

With R-K's custom designs, you can incorporate extra features and benefits in your new control that will allow you to have a marketing edge over your competition. The custom control will also differentiate your equipment from the competition's when your sales personnel are out in the field. Upgrading your product is almost always necessary to keep you viable in the market.

R-K can give your new control a high tech look (if you want), incorporate your existing control techniques, and include your unique marketing and performance features. Our solutions will help you satisfy your customers with virtually

no hassle on your end. Let R-K's creative engineering staff develop a custom control for you!

Marketing Edge

Customers...

Typical companies that R-K provides Custom Design and Product Services to are OEMs that manufacture equipment and/or machinery. Examples of our customers' products are:

- Presses
- Hot Stamp Equip.
- Water Treatment
- Pump Controls
- Grinders
- Beverage Dispensing
- Printing Equipment
- Compressors
- HVAC
- Machine Tools
- Mixing Equipment

This equipment uses combinations of some or all of the following components to control the operation:

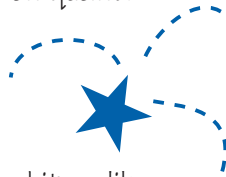
- Relays
- Digital Counters
- Hour Meters
- Switches
- Clocks
- Voltage relays
- Temperature Controllers
- Timers
- PLCs
- Buttons
- Pilot Lights
- Current Sensing
- Power Supplies



How Can I Estimate the Cost?

First, take a look at your panel. The more components that you are able to incorporate in the new design, the more affordable the control will be relative to your actual material cost. Some custom designs come in below the material cost and some above. It depends on quantities, values of your control components, and added features.

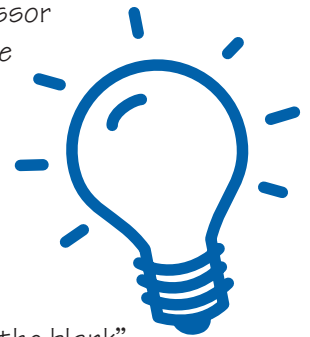
Once you put in a higher priced item like a PLC (\$250), a temperature control (\$200), or another similar item; additional high priced items may only add a portion of their value to the R-K custom cost. That's where some significant cost savings are generated.



Quantities and Costs...

Quantities for custom controls usually range between 100 and 500 controls per year, but R-K has gone as high as 15,000+ controls per year. Control costs range between \$100 and \$500. Some have been as low as \$25 and some have been over \$800.

Other costs to take into consideration are: engineering time to develop the control, supplier charges, PC boards, membranes, and artwork, etc. The costs will all vary depending on the type of design that will be required. Non-processor designs versus processor designs also can make a significant cost difference.



Can We Do This?

Now try John's "fill in the blank" pricing located on the back page. The worksheet provides simple guidelines to make a quick estimate of the value of your custom control. Things to think about:

- How many relays do you have?
- How many timers do you have?
- How many fuses do you have?
- How many terminal points do you have?
- How many other controls do you have and what is their cost?



Do You Fit?

If you fit R-K's Custom Design profile, you probably fit the following criteria as well:

- a. You build equipment or a series of similar machines (100 or more per year) that use separate control components (relays, timers, counters and various other controllers).
- b. Your focus is primarily on the mechanical portions of the machinery.
- c. Your electrical staff is already overwhelmed with keeping up with customer requests.
- d. You would like to or need to upgrade your controls.

What you don't need is any more hassle! You need an R-K custom control. Let R-K's engineering staff make your job a lot easier!

The Test!

A rule of thumb for a Custom Design is:

- 1.a. The value of the controls you buy will be over \$15,000 per year. (If the control is worth \$100, then you should be purchasing over 150 a year. If it is worth \$50, then you should be purchasing over 300 a year.)

—or—

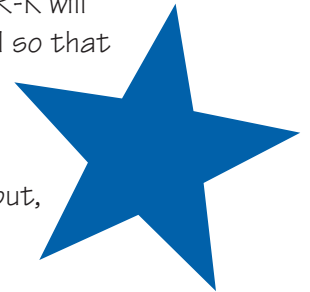
- b. Your current control's components have a total annualized value exceeding \$15,000.
2. You will be using 100 or more of the controls per year,

Things to Think About

I/O

If you are using a PLC, sometimes you are restricted to digital I/O. If you have an analog input or a temperature sensor input, you may have to either add a separate control to accommodate that input or buy a PLC with a lot more capability to get the special I/O option. R-K will combine I/O into the control so that you do not have to pay for unused features.

Think about it—a digital input, next to a plug-in relay output, next to a transistor input or output, next to a small contactor, next to a prox input, next to an encoder signal, next to a thermocouple input, next to a solid state output, next to anything—the possibilities are endless!



Processor or Discrete Components?

Not all designs need to be processor based, but if a processor based control is necessary, R-K's engineers will also develop the custom software. R-K will recommend the design level that best fits the operations and features required.

Buttons & Lights

Do you have any pushbuttons or pilot lights that are necessary to operate the control? Have you ever thought about a membrane control panel? cv

If you want R-K to provide you with the operator interface (membrane panel) as part of the control, that is also a possibility. Membrane overlays can have logos, lots of color, embossed tactile membrane switches, lights (LEDs), and alphanumeric displays, just to name a few options.

Custom Design Cost Estimate

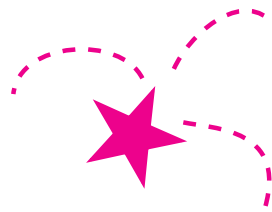
WORKSHEET

Component	Cost Estimate	Quantity	Total Cost
Relays (with socket)	\$10	x _____	= \$ _____
Timers (with socket)	\$30	x _____	= \$ _____
Push Buttons	\$15	x _____	= \$ _____
Pilot Lights	\$10	x _____	= \$ _____
Fuses	\$5	x _____	= \$ _____
Terminal Points	\$2	x _____	= \$ _____
PLC (or similar control)	\$250	x _____	= \$ _____
Temperature Control	\$150	x _____	= \$ _____
Digital Counter	\$150	x _____	= \$ _____
Other Items*	\$ _____	x _____	= \$ _____
Subtotal			\$ _____
Multiplier for Forgotten Things		x 1.2	
Custom Design Cost Estimate			\$ _____

* **Other Items** could include a power supply, pressure transducers, additional displays, special connectors, enclosure, labels, liquid level control, phase relay, current relay, etc. You might want to list these items separately and include that list with your request for a quotation so we will know what else you want included.

Let's Get Started!

Send us a schematic of your control. A word description of how the various components on the machine operate together is also useful. What about the type of inputs you will be using? What are the volts and amps on the outputs? We will also need to know what information your customer will need to have access to so they can set the temperature, view the count, adjust a time, select an option, etc.



So what are you waiting for? Let R-K do one of the things that we do best—designing custom controls! Give our creative engineering staff the opportunity to quote your company's project. In return, R-K will give **you** the opportunity to have an edge over the competition with a control that suits all of your unique custom needs. Call your local rep agency or R-K Electronics direct today!!



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