HOW TO GET THE BEST FROM REED RELAYS

If used correctly a reed relay is a superbly reliable device. The switch contacts are hermetically sealed and do not suffer from oxidization in the same way as an open electro-mechanical relay. If you follow the tips below, it will help you to achieve a reliable design with a long life.

Life Expectancy

In typical applications, for example, switching 10 volts at 10 mA, the life of dry reed relays will be in excess of 100 million operations. We can help you to choose the best relay for your application. Calculate how many operations you require from the relay. If it is operated once a second, 24 hours a day, it is worth noting that there are about 31.5 million seconds in a year.

The most common reliability problems are caused by abusive loads. - Read On!

Capacitive Loads

When capacitive loads are switched, there is a danger that the initial surge current will exceed the rating of the switch, thereby shortening the life of the relay. To prevent this, a surge limiting device, the most simple being a resistor, should be used. Long cable runs should also be considered, they can sometimes have a surprisingly high capacitance.

Inductive Loads

Arcing can occur when a reed switch is used to break a current to an inductive load. The back EMF can cause contact damage and should be eliminated by the use of an RC snubber, varistor or in the case of a DC load, a diode. Contact our technical department for further details.

Lamp Loads

A tungsten filament lamp may have an inrush of up to 10 times its steady state current. Surge current should be limited to the rating of the relay with a resistor. This will also increase the life of the lamp.

Coil Data

The standard 'must operate' and 'must release' voltages of Pickering relays at 20 degrees Centigrade are 75 percent and 10 percent of the nominal coil voltage, that is 3.75 volts and 0.5 volts for a 5 volt relay. The copper coil wire has a positive temperature coefficient of approximately 0.4 percent per degree Centigrade. If the temperature increases by 50 degrees Centigrade, the voltage required to operate the relay will increase by around 20 percent. The operate voltage is also effected by the extraneous magnetic fields from adjacent relays. Most Pickering relays feature an internal mu-metal magnetic screen to eliminate this problem.

Operate Times

The typical operate time of a dry reed relay is between 250 microseconds and 1 millisecond, depending on switch type. The Form A (energize to make) types in the small Single-in-Line relays are the fastest, typically 250 microseconds. The release time is typically one half of the operate time. For more specific information, please contact our technical department.

Tel: 01255-428141
(international) +44 1255-428141

Fax: 01255-475058
(international) +44 1255-475058

Web: www.pickering.co.uk
Email: sales@pickering.co.uk

Cert.No. FM29036
BS EN ISO 9002