

What's a Rugged Data Diode?

You may have learned what a Data Diode does for protection and connection of your digital assets. But what about the protection when the connection of your digital assets runs through very harsh environments where temperature drops and humidity reaches levels above the ordinary? That's the case when the Rugged Data Diode comes into play. Let's have a look at it!

Data Diode basics

We start with some basics. A Data Diode guarantees a safe **one way** data transfer by only allowing data to travel in one direction. In concept the same type of action an electronic diode conducts current. Hence the use of the word diode.

The Data Diode separates your **secured side** where your systems (servers) may be and the **not so secure side** where your users (clients) may be.

The Data Diode performs this separation by isolating the secure side from the not so secure side galvanic, which means there are no electronic connections between the two sides. No copper cables, no steel cables, no iron cables. The Data Diode uses **fiber optics** to enable flow of data from the secure side to the not so secure side, but not the other way around.

”The Data Diode separates your secured side from your not secured side”

The harsh environment

Standard Data Diodes mostly lives in cabinets in data-centres where the environment is friendly to electronic and digital equipment. But there are environments around the world not that friendly.

Think of positions in an aircraft operating at high altitude where temperature drops heavily. And imagine a mine far below the surface where humidity is high and vibrations could shake things apart. Feel the the salt fog on a vessel crossing the oceans and consider what such a fog could do to the equipment. And think of the dust you may have come across in computer chassis and explore the consequences of such dust in a power station in the desert. In all those places not so friendly to electronic and digital equipment the digitization grows and with digitization comes the demand for security provided by a Data Diode.

”Feel the salt fog on a vessel crossing the oceans and consider what such a fog would do to the equipment”

You clearly see there are places demanding capabilities from components not available in their standard version. Standard components must be rugged.

So, there is a need for the **Rugged Data Diode**.

The Rugged Data Diode

The Rugged Data Diode shall withstand several not normal operating conditions.

The Rugged Data Diode shall operate at low air pressure as for example in air transportation. It shall withstand both extremely high temperature and low temperature. High humidity, rain and salt fog shall not interfere. Vibrations and shocking shall not break the diode.

The Rugged Data Diode is water protected and dust protected. In order to not be influenced by electromagnetism it is EMC (Electro Magnetic Compatibility) protected. And to not let the Rugged Data Diode be interfered by electromagnetism it is also EMI (Electro Magnetic Interference) protected.

”The Rugged Data Diode complies to several military- and industrial standards”

The Rugged Data Diode complies to several military- and industrial standards covering equipment's design for conditions it will experience throughout its service life.

Summing up

Now you know more about the basic concept of the Data Diode and the circumstance of life for the Rugged Data Diode. As we launched our first Data Diode in 2006 we've seen an increasing demand for cyber security. First was the Defense industry followed by the Energy industry and now we see the Financial industry, Medical industry, well almost all industries paying interest in the concept of Data Diodes. And as the digitizing grows everywhere and especially in harsh environments the demand for **rugged** components increases.

In short – we will see more **Rugged Data Diodes!**

So, to learn more about our Rugged Data Diode products, please visit

<https://www.fibersystem.com/> or give us a call as we are happy to listen to your requests and tell you more about the concept of Rugged Data Diode.

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