FEND®

Physically Block Cyberattacks

ENERO solutions

Safely Moving Critical Data for Large-Scale Manufacturing Facilities

Manufacturers need to keep energy and maintenance costs under control. Equipment at their factories uses millions of dollars of energy and water each year, and when equipment performance starts to slip, costs can add up quickly.

Unexpected equipment failure due to lack of predictive maintenance can also lead to a production stoppage, resulting in significant lost revenue with each hour of downtime.

Manufacturers use analytics platforms and energy savings performance contracts to help their maintenance teams maintain operational performance. They use OPC and other data flows to stay on top of the critical equipment at each facility, prioritize tasks, and direct investment. However, internal OT security teams see tremendous cybersecurity risk in connecting the factory floor to the Internet. Deploying data diodes – also known as a one-way communication diodes – address both needs, helping all parties stay informed and secure.

Data diodes use optical isolation to send data in one direction only, physically protecting key assets. They provide system visibility while prohibiting malware, ransomware, and other attacks from breaching the network connection.

Fend has teamed with Enero Solutions (https://enerosolutions.com/) to bring OPC UA data feeds from legacy systems without needing to modify the original systems. The OPC Protocol Conversion with Fend Data Diodes uses a multistep, low latency approach to securely expose OPC data outside of the OT network without introducing potential attack vectors to bad actors.

How it works

An OPC Client on the protected side consumes OPC UA or DA subscriptions.

Data is serialized for TCP passthrough at the OT-side Edge Device, forwarded to the Fend Data Diode and passed on to a TCP Server on the enterprise side, deserialized with the IT-side Edge Device and extracted as viable OPC points (path, value, timestamp).

An OPC Client on the Enterprise (IT) Edge Device writes points on an OPC UA server which are accessed by the customer with a subscription.

CISA, NIST, and DoD Recommend Data Diodes

In March 2022, The Cybersecurity & Infrastructure Security Agency recommended the use of one-way communication diodes to enhance network segmentation and protect industrial control systems from cyberattack. Read more at https://www.cisa.gov/news-events/cybersecurity-advisories/aa22-083a.

In 2023, NIST and the DoD recommended data diodes as an option for securing OT infrastructure in the latest NIST SP 800-82r3 and UFC 4-010-06.

For More Information
info@fend.tech • 571-970-1382

www.fend.tech
4600 Fairfax Dr, Suite 410, Arlington, Virginia 22203