copenhagen atomics

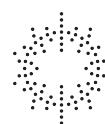# Data Diode V1.1

Two USB–C connectors, registers as ethernet.
Data diode, UDP/IP communication, 100 MBps

Photo showing version 1.1

Introduction

Usage

The Data Diode is a simple device that uses opto couplers to only allow communication in one direction. The Data Diode has two USB-C connectors in each end of the box, which registers as an 100 Mbps ethernet port in your operating system.

You can only send packages in one direction over this ethernet link and you can only use UDP/IP packages. Thus your software for sending and receiving must support this low level protocol. For one way http requests, you can use a [forwarding gateway](#) to get the requests across the diode.

You cannot use normal SSL or TLS, but you can communicate in a secure channel if private/public keys has been shared between sender and receiver ahead of time.

Data communication

Each end of the diode will be registered as a network device when attached to the PC. No special driver is required.

The network connection associated with the device must be configured with a static IP address, typically within the same range as the destination IP address.

The destination MAC address must be added to the local ARP cache.

At this point, UDP packets with the destination IP address should be carried across the diode successfully.

Note: Other communication protocols can be used. These will also send data across the diode, but no response will be received
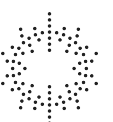
Introduction

Integration with TurboCtrl

By protecting your TurboCtrl based system with a data diode, you can ensure the outgoing connection of the system can not be used to reach your system from outside. To do this, change the uploader to data diode mode, connect the data diode to it and on the outer side connect it to a device running the UdpToHttpGateway.

TurboCtrl.ai supports many sensor and actuator types:
Temperatures, pressure, humidity, oxygen and other gasses, gas and liquid flow sensors, DC ports, AC ports, VFDs, current, voltage, oven controllers, light controllers, motors, audio, video, scales, position, liquid level, density, viscosity, integration with Festo and other pneumatics systems. And much more
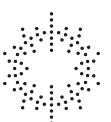
Buy connectors

The board comes with a USB-C to USB-C cable included and standard DIN rail mounting.

i For more information, please contact sales@copenhagenatomics.com

Specs

Parameter	Condition	Value	Unit(s)
A–side MAC Address[1]		CA:12:A5:5A:73:61	
B/K–side MAC Address[1]		CA:12:5A:A5:73:62	
Network Transfer Speed	max.	100	Mbps
USB			
USB Connector		Type–C	
USB Communications Standard		2.0	
USB Voltage	typ.	5	V
USB Current	max.	500	mA
USB Speed	max.	480	Mbps

1. Not registered with a regulatory authority
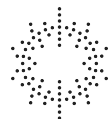
Product photos
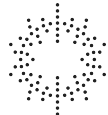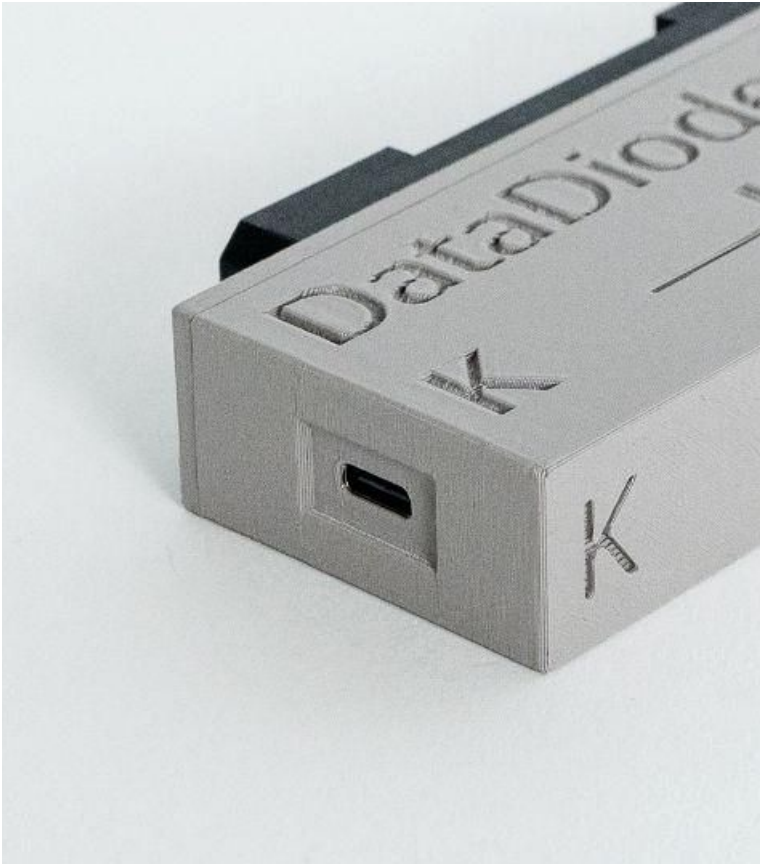
Contact
Copenhagen Atomics

copenhagen
atomics

sales@copenhagenatomics.com
copenhagenatomics.com

Copenhagen Atomics A/S
Oliefabriksvej 77
2770 Kastrup
Denmark

Copenhagen Atomics reserves the right to change or update information and values of this datasheet at any time without prior notice. Please inquire for the current version.