



**groov RIO®**

**af** arrowfinch  
IOT Simplified

**OPTO 22**  
Your Edge in Automation.™





# groov<sup>®</sup> RIO

Intelligent, multi-signal, multifunction, PoE-powered, remote Ethernet I/O for IIoT and Automation Applications

- Configure up to 8 channels of multi-signal, multifunction I/O (temperature, current, voltage, or discrete), plus 2 mechanical relays
- Power the unit and connected I/O with 802.3af PoE Class 0 switches or 10-32 V DC power
- Integrate I/O data directly with databases, HMIs, SCADA, cloud services, and IoT platforms with embedded Node-RED connectivity suite
- Connect to existing control systems or building automation systems with Modbus TCP, OptoMMP, or REST APIs
- Publish process data directly into publish-subscribe architectures with MQTT transmitting Sparkplug or string payloads
- Log data to internal power fail-safe memory or attached USB mass storage device
- Protect with built-in security features, including configurable firewalls, encryption, user accounts, and VPN client
- Install anywhere with wide -20 °C to + 70 °C rating, UL Hazardous Locations approved; ATEX compliant

Learn more at [info.opto22.com/introducingRIO](http://info.opto22.com/introducingRIO)

10-32 V DC power

USB host port

Two, switched  
Gigabit Ethernet ports,  
one with 802.3af PoE

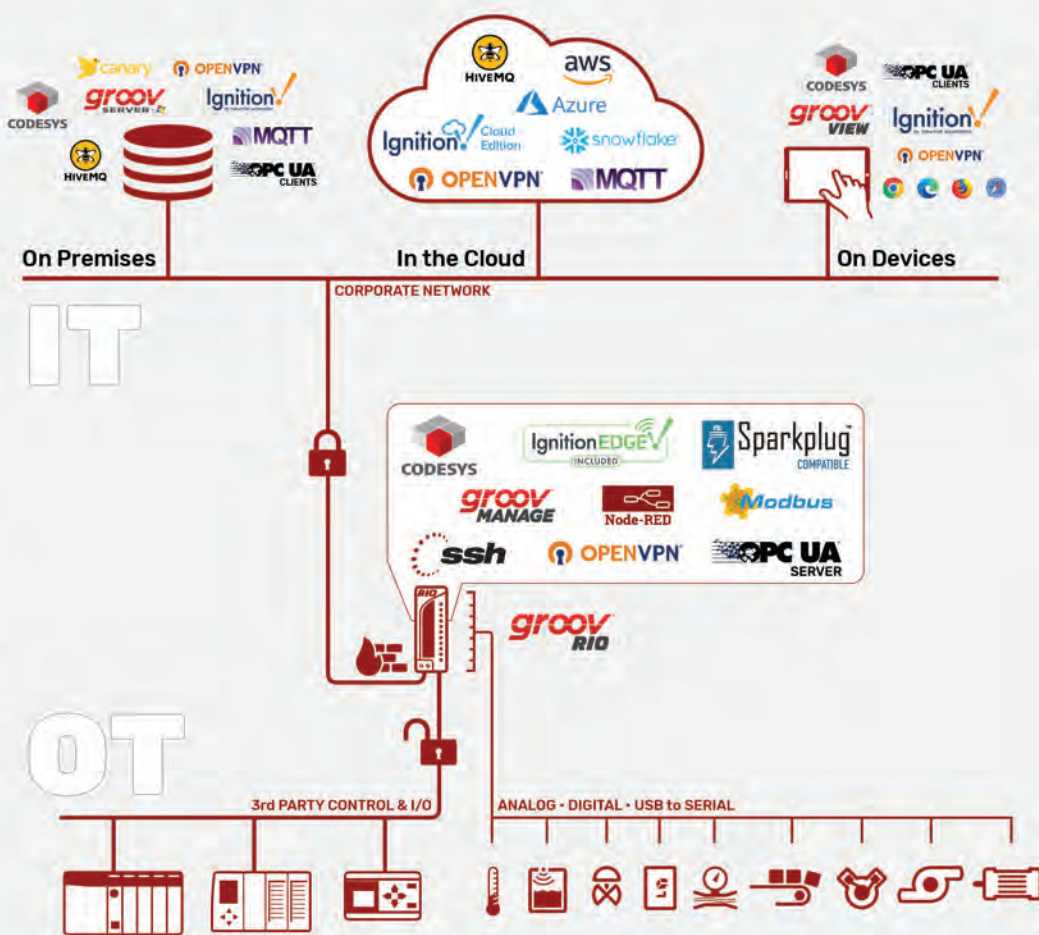
- **USB host port** can increase the capabilities of your RIO; connect a USB storage device or supported WiFi adapter.
- **26-pin** removable terminal connector with single hold-down screw and spring-clamp signal wire retention.
- **LED indicators** show power, device, Ethernet and I/O status.



**groov Manage**—a web app that gives you command center-like access to your **groov RIO**—helps you configure, troubleshoot, and commission the unit and the attached I/O, like sensors, switches, transmitters, and more.



Improve communications efficiency with MQTT, a secure, lightweight transport protocol with a publish/subscribe architecture that decouples devices from applications. The Sparkplug payload definition for industrial applications also manages field device states.



Ignition Edge connects to Allen-Bradley®, Siemens®, and Modbus®/TCP devices via OPC UA and offers efficient IIoT communications using MQTT with Sparkplug B payload.

\* Ignition Edge is only available on GRV-R7-MM2001-10



With the OPC UA server on board, **groov RIO** offers a familiar, platform-independent way to exchange data among devices and software within your OT network. Smoothly integrate your I/O tags into SCADA and HMI software using OPC UA—no special drivers required.



Build simple data flows to wire together databases, cloud applications, and APIs using Node-RED. This open-source, IIoT development tool gives you a large library of +600 prebuilt nodes, so you can leverage existing software code and use directly in your applications.



**groov RIO** is a Modbus TCP slave out-of-the-box. Use your favorite Modbus TCP master device or software to poll RIO's I/O channels. A Modbus TCP calculator is built into RIO's **groov Manage** application, helping you quickly find the Modbus Unit ID and register for I/O registers.



Use **groov RIO** as a PLC. The on-board CODESYS runtime engine fully supports IEC-61131-3 control programs written in the programming language of your choice: structured text, ladder logic diagram, functional block diagram, and continuous or sequential function chart.