



groov RIO[®] I/O for the IIoT[™]

OPTO 22
Your Edge in Automation.[™]

groov 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 IIoT 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

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

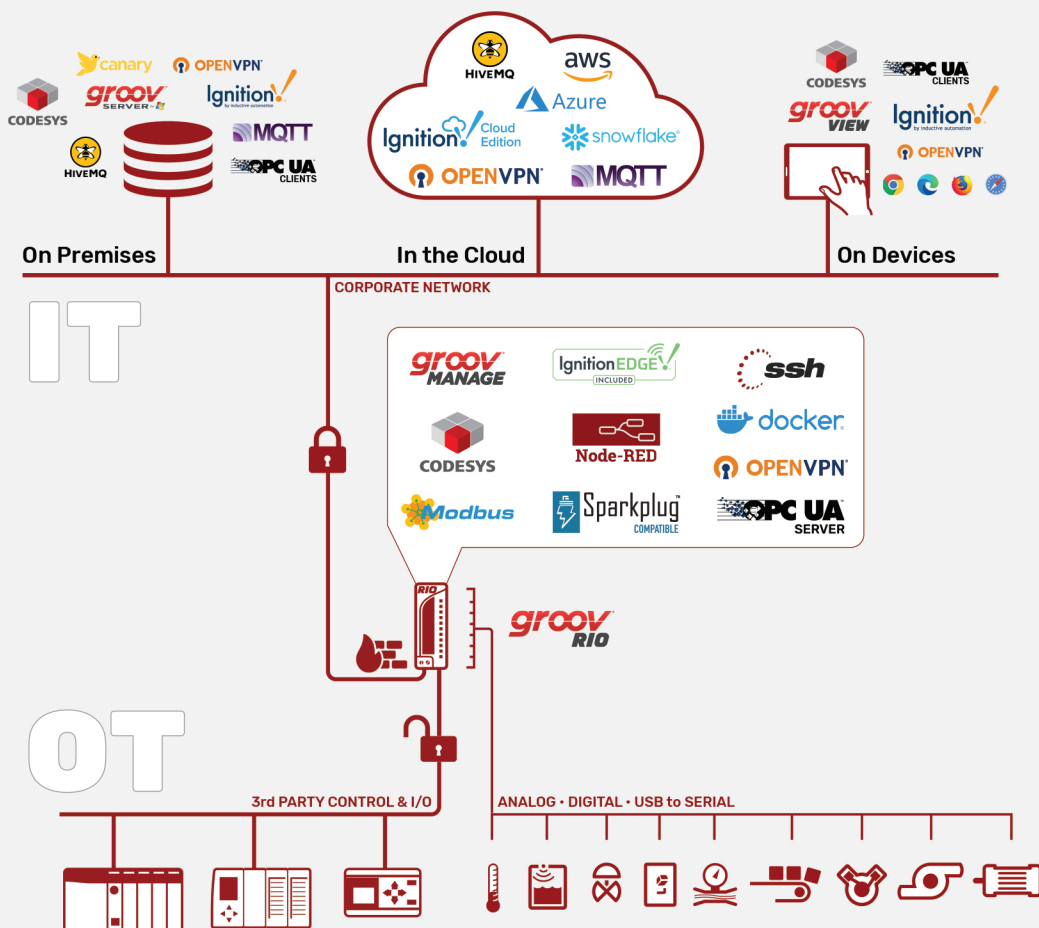
groov Manage—a web app that gives you command center-like access to your groov RIO—helps you configure, troubleshoot, and commission the unit and the attached I/O, like sensors, switches, transmitters, and more.

Sparkplug COMPATIBLE

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 state.

Node-RED

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.



IgnitionEDGE (INCLUDED)

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 available only on GRV-R7-MM2001-10

OPC UA SERVER

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.

Modbus

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.

CODESYS

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.



Channel	INPUT						OUTPUT				
	Discrete		Analog				Discrete		Mechanical Relay		
	Discrete	Switch Input, Powered	Voltage	Current	ICTD	Thermistor/Resistor	Thermocouple/Millivolt	DC Sinking	Current / Voltage	Form C-NO	Form C-NC
Ch 0											
Ch 1											
Ch 2											
Ch 3											
Ch 4											
Ch 5											
Ch 6											
Ch 7											
Ch 8										—NC	—COM
										—COM	—COM
										—NO	—NO
Ch 9										—NC	—COM
										—COM	—COM
										—NO	—NO

v14

Thousands of Unique Field I/O Combinations. Learn more at: info.opto22.com/thousands

— Thermocouple inputs and discrete sinking outputs cannot be mixed on channels 0-3.

groov RIO Modules

GRV-R7-MM1001-10 Remote I/O; 8 multi-signal, multifunction ch; 2 form C electromechanical relay output channels

GRV-R7-MM2001-10 Remote I/O; 8 multi-signal, multifunction ch; 2 form C electromechanical relay output channels, Ignition Edge

POWER SUPPLY
(10-32 V DC or 802.3af PoE)



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