



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 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

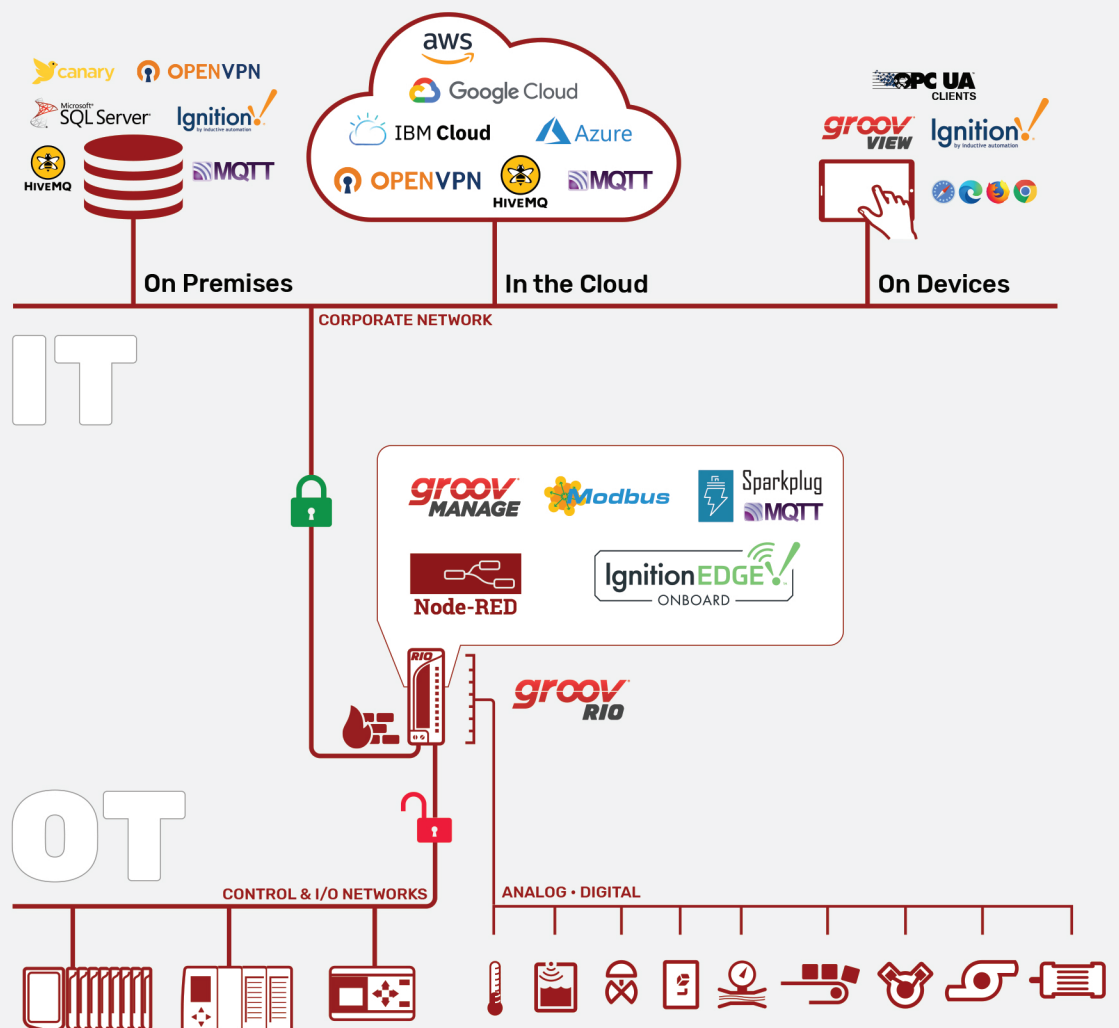
Learn more at info.opto22.com/introducingRIO

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
MQTT**

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.

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.

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.

**IgnitionEDGE[®]
ONBOARD**

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

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Channel	INPUT							OUTPUT				
	Discrete		Analog					Discrete	Analog	Mechanical Relay		
	Discrete	Switch Input, Powered	Voltage	Current	ICTD	Thermistor/Resistor	Thermocouple/Millivolt	DC Sinking	Current / Voltage	Form C-NO	Form C-NC	
	Features (ch 0-7): <ul style="list-style-type: none">On/Off State Features (ch 0 & 1): <ul style="list-style-type: none">On/Off LatchingOn/Off TotalizationFrequency MeasurementPeriod MeasurementPulse MeasurementCounting		Features: <ul style="list-style-type: none">ScalingOffset and GainMinimum/Maximum ValuesAverage Filter WeightProblem Indication					Features: <ul style="list-style-type: none">On/Off StateOn/Off TotalizationOutput Pulsing/TPOWatchdog Timeout Value	Features: <ul style="list-style-type: none">ScalingRampingClampingWatchdog Timeout ValueProblem Indication	Features: <ul style="list-style-type: none">On/Off StateWatchdog Timeout Value		
Ch 0												
Ch 1												
Ch 2												
Ch 3												
Ch 4												
Ch 5												
Ch 6												
Ch 7												
Ch 8											—NC	—COM
											—COM	—NO
Ch 9											—NC	—COM
											—COM	—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)



OPTO 22
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