



groov RIO[®] I/O for the IIoT[™]

OPTO 22
The Edge of 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



10-32 V DC power

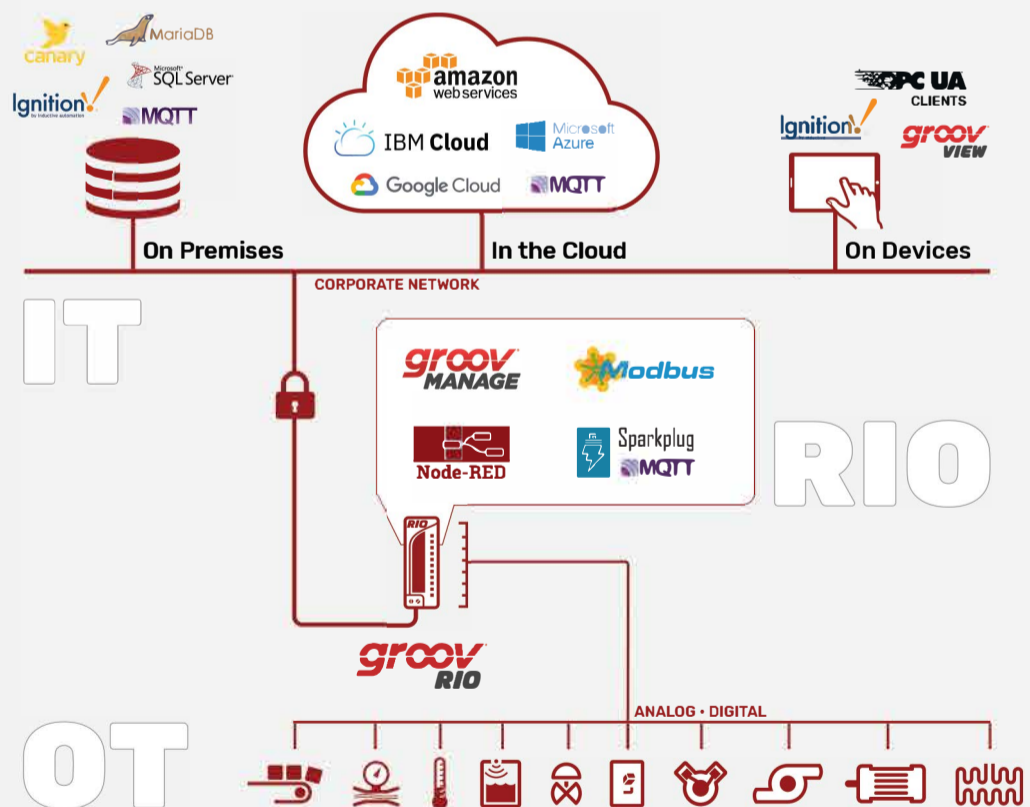
USB host port

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[®] RIO Software Architecture



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 and reduce reliance on IT networking resources 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 for easier implementation.



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



Channel	INPUT							OUTPUT																				
	Discrete		Voltage	Current	Analog		Thermocouple/ Millivolt	Discrete		Analog		Mechanical Relay																
	Discrete	Switch Input, Powered			ICTD	Thermistor		DC Sinking	Current / Voltage	Form C-NO	Form C-NC																	
	Features (ch 0-7): • On/Off State Features (ch 0 & 1): • On/Off Latching • On/Off Totalization • Frequency Measurement • Period Measurement • Pulse Measurement • Counting							Features: • Scaling • Offset and Gain • Minimum/Maximum Values • Average Filter Weight • Problem Indication							Features: • On/Off State • On/Off Totalization • Output Pulsing/TPO • Watchdog Timeout Value Features: • Scaling • Ramping • Clamping • Watchdog Timeout Value • Problem Indication							Features: • On/Off State • Watchdog 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.

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

11-10-2020

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

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