groov RIO® I/O for the IIoT™

OPTO 22
The Edge of Automation.™

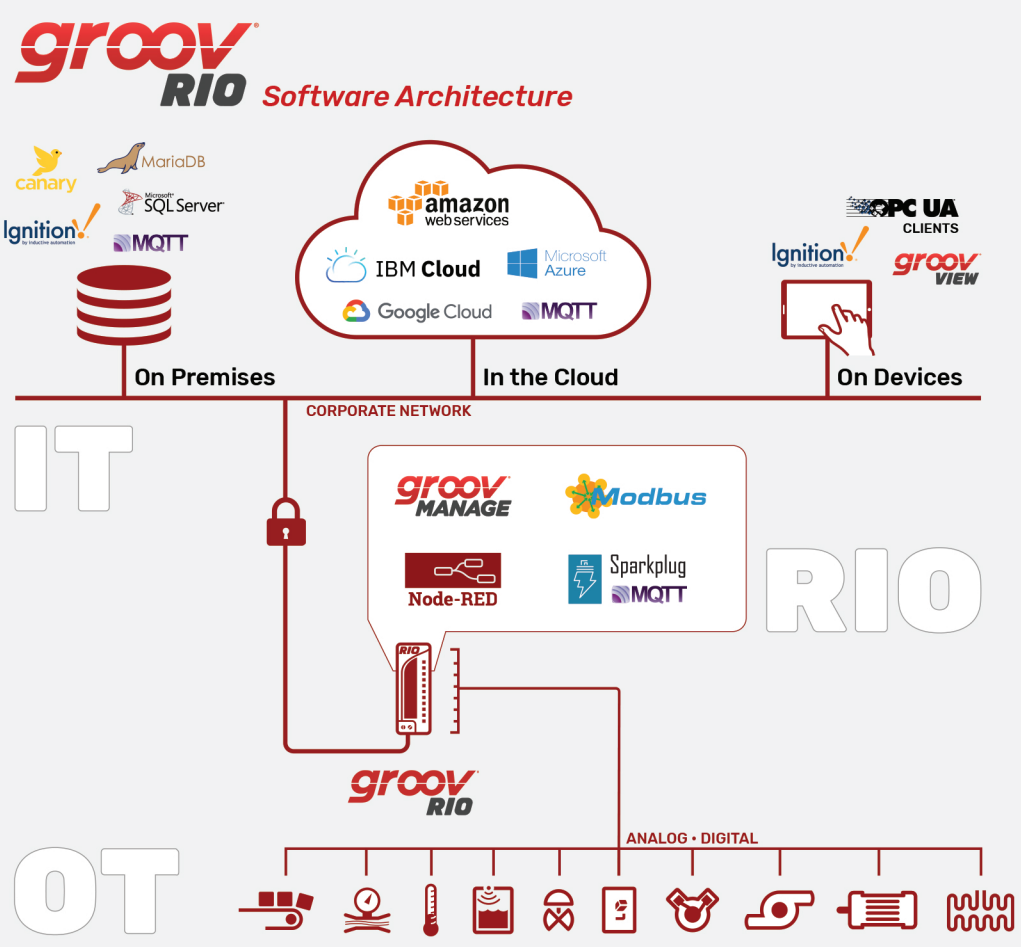
groov RIO

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

Learn more at **info.opto22.com/introducingRIO**

- ***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 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.

Node-RED

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.

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 a memory map area.

groov RIO

Multi-signal, Multifunction Wiring

Configurable for analog or discrete, input or output

MADE IN THE USA

INPUT

Discrete

Discrete

Features (ch 0–7):
- On/Off State

Features (ch 0 & 1):
- On/Off Latching
- On/Off Totalization
- Frequency Measurement
- Period Measurement
- Pulse Measurement
- Counting

Switch Input, Powered

Analog

Voltage

Current

ICTD

Thermistor

Thermocouple/ Millivolt

Features:
- Scaling
- Offset and Gain
- Minimum/Maximum Values
- Average Filter Weight
- Problem Indication

OUTPUT

Discrete

DC Sinking

Features:
- On/Off State
- On/Off Totalization
- Output Pulsing/TPO
- Watchdog Timeout Value

Analog

Current / Voltage

Features:
- Scaling
- Ramping
- Clamping
- Watchdog Timeout Value
- Problem Indication

Mechanical Relay

Form C-NO

Form C-NC

Features:
- On/Off State
- Watchdog Timeout Value

Channel	Discrete	Switch Input, Powered	Voltage	Current	ICTD	Thermistor	Thermocouple/ Millivolt	DC Sinking	Current / Voltage	Form C-NO	Form C-NC
Ch 0					BLK ICTD WHT						
Ch 1					BLK ICTD WHT						
Ch 2					BLK ICTD WHT						
Ch 3					BLK ICTD WHT						
Ch4					BLK ICTD WHT						
Ch 5					BLK ICTD WHT						
Ch 6					BLK ICTD WHT						
Ch 7					BLK ICTD WHT						
Ch 8										NC, COM	COM, NO
Ch 9										NC, COM	COM, NO

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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.

11-10-2020

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

OPTO 22
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