

FOR IMMEDIATE RELEASE

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Opto 22 releases new *groov* EPIC® I/O modules for large-scale power monitoring and signal integration

GRV-IVAPM-3 for three-phase AC power monitoring. GRV-MM1001-10 for universal I/O

Temecula, CA - December 9, 2021 – Today, industrial automation and IIoT manufacturer Opto 22 announced two new I/O modules for its *groov* EPIC edge programmable industrial controller: [GRV-IVAPM-3](#) for Category III three-phase AC power monitoring up to 600 VAC and [GRV-MM1001-10](#) for universal I/O sensing and control.

Cost-effective power monitoring and I/O signal integration are fundamental requirements for large-scale digital transformation. Opto 22's new module options allow engineers, developers, and digital transformation leads to collect power and energy data, machine performance, and asset status directly from field devices and equipment and transport it securely into backend systems.

GRV-IVAPM-3

With simple web-based configuration, the GRV-IVAPM-3 module captures Category III AC voltage, current, energy, and power measurements, facilitating preventative and predictive maintenance and energy optimization cost-saving initiatives.

The module can separately measure up to 3 different single-phase (two-wire with neutral) branch circuits from the same service or a single 3-phase wye (up to 400 VAC) or delta (up to 600 VAC) circuit. Engineers can use either 0.333 VAC, 1 VAC, or 5 A Category III current transformers (CTs) for current measurement and, if necessary, can use a different CT type on each circuit.

GRV-IVAPM-3 provides 18 real-time data points per phase—including voltage, current, true and reactive power, power factor, and frequency—and 10 additional data points providing totals across all three phases. Accumulated values are preserved in non-volatile memory every

30 seconds to survive power interruption, and signal accuracy can be tuned for each phase using the minimum voltage threshold ratio, minimum current threshold ratio, and power creep adjustment properties.

GRV-MM1001-10

Based on Opto 22's successful *groov* RIO edge I/O module, the new GRV-MM1001-10 module for *groov* EPIC gives engineers the flexibility to quickly connect almost any traditional I/O signal or circuit they find in the field without specifying precise sensing requirements in advance.

This software-configurable universal I/O module accepts over a dozen signal types— analog and discrete, inputs and outputs. It supports over 200,000 unique I/O configurations via eight multifunction, multi-signal I/O channels, including thermocouples (TCs), integrated circuit temperature devices (ICTDs), thermistors/resistors, voltage inputs/outputs, current inputs/outputs, millivolt inputs, discrete DC inputs, self-wetting discrete inputs, and discrete DC sinking outputs. It also includes two form C mechanical relays.

groov RIO modules can be used in combination with GRV-MM1001-10 modules on *groov* EPIC to provide both universal remote and local I/O capabilities, accelerating signal integration for large facilities and remote sites.

Both of Opto 22's new modules provide signal quality indicators and intelligent functions like scaling, averaging, and totalizing. Once acquired, data from both GRV-IVAPM-3 and GRV-MM1001-10 is immediately available for distribution to backend applications through the *groov* EPIC processor's embedded MQTT clients, Ignition Edge from Inductive Automation®, REST API, and traditional industrial communication protocols.

Availability

[GRV-IVAPM-3](#) (\$895) and [GRV-MM1001-10](#) (\$895) modules are available through Opto 22's global network of distributors and system integrators, and directly via +1-800-321-OPTO and www.opto22.com.

groov EPIC firmware 3.3.0 and PAC Project 10.4 or a *groov* EPIC SSH license are required for full support, with CODESYS support coming soon. Free technical support is provided for all Opto 22 products from pre-sales through the life of the system.

About *groov* EPIC

groov EPIC is an edge programmable industrial controller (EPIC). More than a PLC, PAC, or PC, it is a Linux-based processor in a compact industrial enclosure, with local and remote I/O and wide-ranging programming and communications options. In addition to real-time control, *groov* EPIC provides the connectivity many of today's projects require: it connects to field sensors and devices, legacy PLC systems, software applications, remote equipment, and cloud services for anything from weather conditions to big data analytics and predictive maintenance.

About Opto 22

Opto 22 designs and manufactures industrial control products and internet of things (IoT) platforms that bridge the gap between information technology (IT) and operations technology (OT). Based on a core design philosophy of leveraging open, standards-based technology, Opto 22 products are deployed worldwide in industrial automation, process control, building automation, industrial refrigeration, remote monitoring, and data acquisition applications. Designed and manufactured in the U.S.A., Opto 22 products have a worldwide reputation for ease-of-use, innovation, quality, and reliability. For over 40 years OEMs, machine builders, automation end-users, and information technology and operations personnel have and continue to trust Opto 22 to deliver high-quality products with superior reliability. The company was founded in 1974 and is privately held in Temecula, California, U.S.A. Opto 22 products are available through a global network of distributors and system integrators. For more information, contact Opto 22 headquarters at +1-951-695-3000 or visit www.opto22.com. Follow us on [Instagram](#), [Twitter](#), [Facebook](#), [LinkedIn](#), [YouTube](#).

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