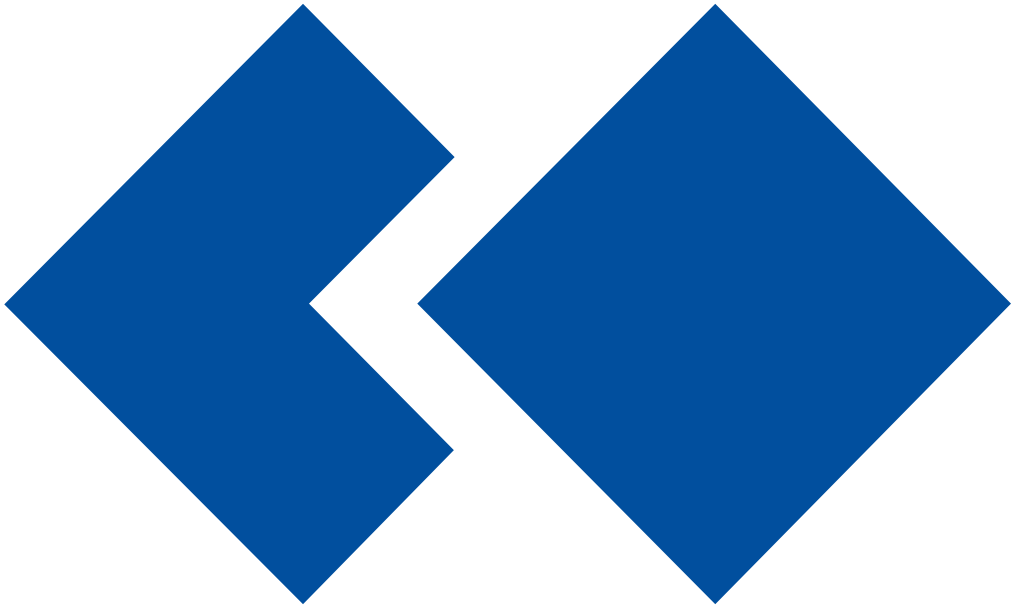


Products & Solutions

Easy Data

From the substation to the enterprise to the grid edge

NovaTech Automation delivers seamless data integration between electric utility substations, enterprise SCADA, and grid edge devices. Our Made-in-the-USA RTU data gateways, power meters, network switches and satellite clocks are engineered for precision, reliability, and ease-of-use. Our solutions leverage open tools and standards to maximize your investments in automation. We offer design, build, and deployment of packaged solutions from cabinets to panels to custom and pole top enclosures. We help you modernize and operate your grid at peak efficiency.

10-year No Hassle Warranty

Made in the USA

Net Zero Committed

98.7%

Of our clients would recommend us to a colleague

Orion
Substation Automation
Yeah. It'll do that.
pg. 6

Hermes
Gigabit Ethernet Switches
Futureproof your network.
pg. 16

Kronos
Satellite Clocks
On time. All the time.
pg. 18

Bitronics
Power Measurement
Easy to use, hard to beat.
pg. 20

Argus
Fleet Management
Powering reliability, fleetwide.
pg. 22

Voltage Optimization
Distribution Grid Monitoring.
pg. 23

Packaged Solutions
Design, build, install and retrofit.
pg. 24

SCADA Systems
Design and deploy with no annual fees.
pg. 26

W3TS
Test Switches
Infinitely configurable.
pg. 27

Contacts & Support
pg. 28

Legacy & Vision
pg. 30

Solutions overview

Substation Automation
The Orion family supports all substation automation applications—RTU, HMI, Math & Logic, Tile Annunciation, SOE Recording, FLISR, and more—in a rugged platform that can be redundant.

Virtual Digital Substation
NovaTech is a proud member of the vPAC Alliance. Our OrionVX integrates all of our Orion processes—Math & Logic, Alarming, HMI, protocols, etc.— to run in a virtual machine on a standard industrial server or embedded within partner products.

Pole top, Vault, and Unit Substation Automation
Smaller Orions can provide remote control and monitoring of the switches and other apparatus in unit and vault substations.

SCADA Systems
NovaTech SCADA systems offer a range of cost-effective solutions from simple reporting and notification HMIs, to more complex functions like ADMS, FLISR and DERMS, all with no annual fee. OrionVX can also be used as a front end processor for more complex SCADA systems.

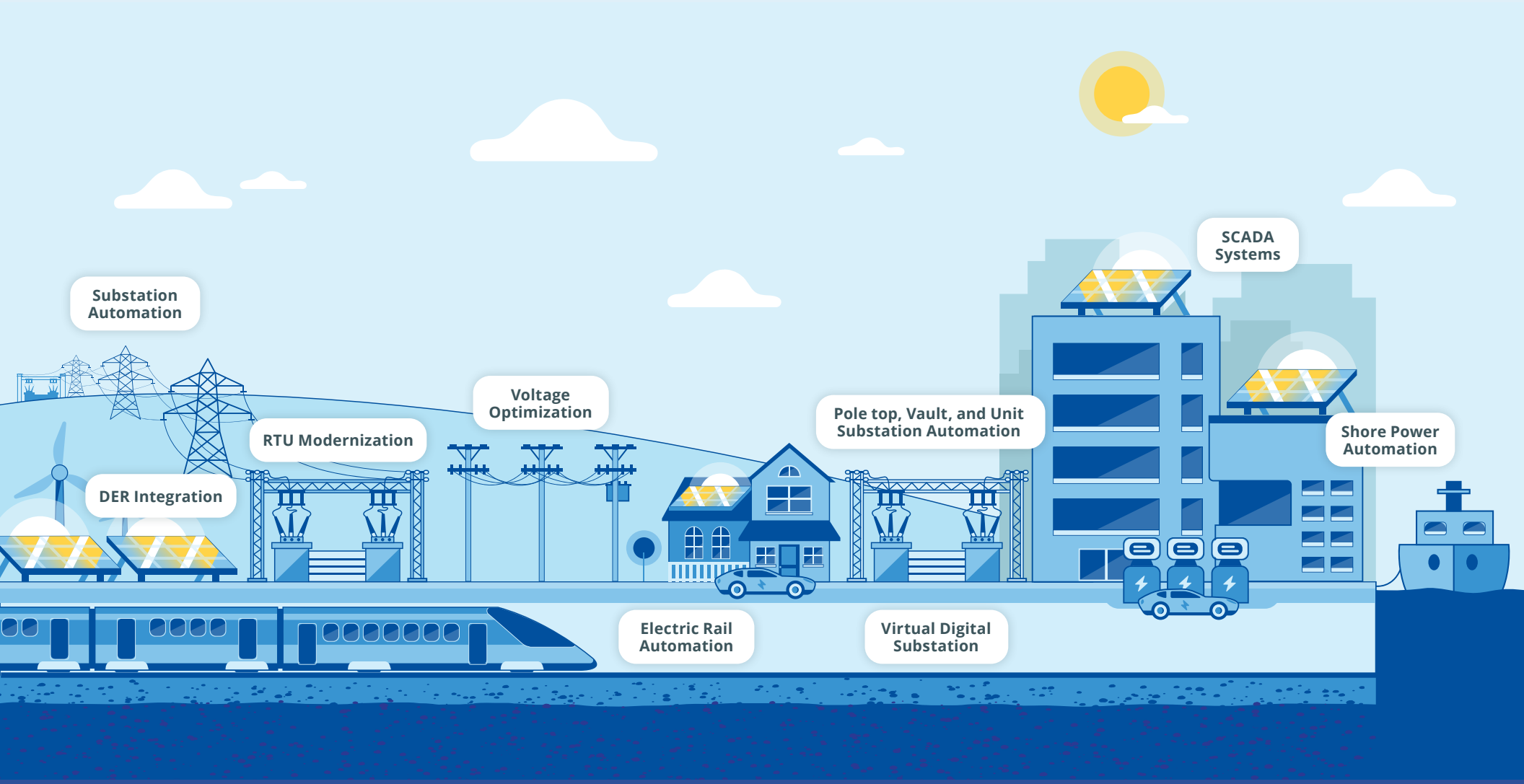
RTU Modernization
NovaTech provides retrofit solutions for most common legacy substation RTUs, including D20/200, Telegyr, Telvent, SNW, and ACS. We also provide solutions to replace legacy Modicon® and Allen Bradley® PLCs.

Shore Power Automation
NovaTech has partnered with Watts Marine to provide a clean dockside electric power solution—an alternative to dirty onboard diesel-generated electric power for ships in harbor.

DER Integration
NovaTech products serve as data gateways for many US wind power substations, act as inverter controllers and cyber secure protocol converters for grid scale solar fields, and are installed in numerous hydropower facilities worldwide. We also provide generation synchronization transducers for generators and fast frequency measurements for grid scale battery ancillary services enablement.

Voltage Optimization
Growth in Distributed Energy Resources (DERs) is driving a need for fast and precise voltage, frequency, and fault data along a feeder. The NovaTech Distribution Grid Monitor is a configurable and easy to install packaged solution for use in Volt-VAR Optimization, Conservation Voltage Reduction, and FLISR schemes.

Electric Rail Automation
Orion is applied in snow melting, track energization, and RTU applications, notably when modernizing legacy electric rail substations.


Substation Automation
DER Integration
RTU Modernization
Voltage Optimization
Electric Rail Automation
Pole top, Vault, and Unit Substation Automation
Virtual Digital Substation
SCADA Systems
Shore Power Automation

OrionOS

The easiest way to automate the power grid

OrionOS provides common software, firmware, and configuration tools for all Orion products, and for all grid automation applications, reducing learning curves, speeding up implementation, and simplifying security and compliance issues.

All Orions share the same security and software tools:

NERC CIP Cybersecure

All Orions share the same security features. These include Linux OS, support for Integrity Measurement Architecture (IMA), a stateful firewall, secure protocols (HTTPS, SSH, SFTP), strong passwords and password rules, RADIUS and LDAP authentication, tiered access user groups, and syslog.

Extensive Protocol Library

50+ protocols, including IEC 61850, DNP3, SEL®, IEC 60870-5-101/103/104, Modbus, and legacy protocols. SEL Protocol enables engineering access, IRIG-B support, and automatic retrieval of SEL Event Reports. SNMP Manager monitors switches, routers, servers, and other network equipment.

Tile Alarm Annunciator

A pre-engineered alarm tile webpage is available for replacing hard-wired annunciators. This annunciator provides full software configurability for rows, columns, and tile names.

SEL Relay Integration

Data and records in SEL relays can be accessed by Orion and delivered to relay engineers and to SCADA. Engineers can also pass through Orion to access SEL relays using ACSELERATOR® and Blueframe®.

Redundancy

Orions can be configured as a hot-standby redundant pair to support applications as a SCADA RTU, Alarm Annunciator, substation HMI, SOE Recorder, and substation controller. Both Orions run identical NCD configurations, logic and webpage configurations, and configurations are auto-replicated between the two.

Math & Logic

A calculator is available enabling users to easily create equations using common Excel-style operators and notation including * / ( ) + - ^ SQRT() ABS() and ROUND(). IEC 61131-3 and Lua are also available.

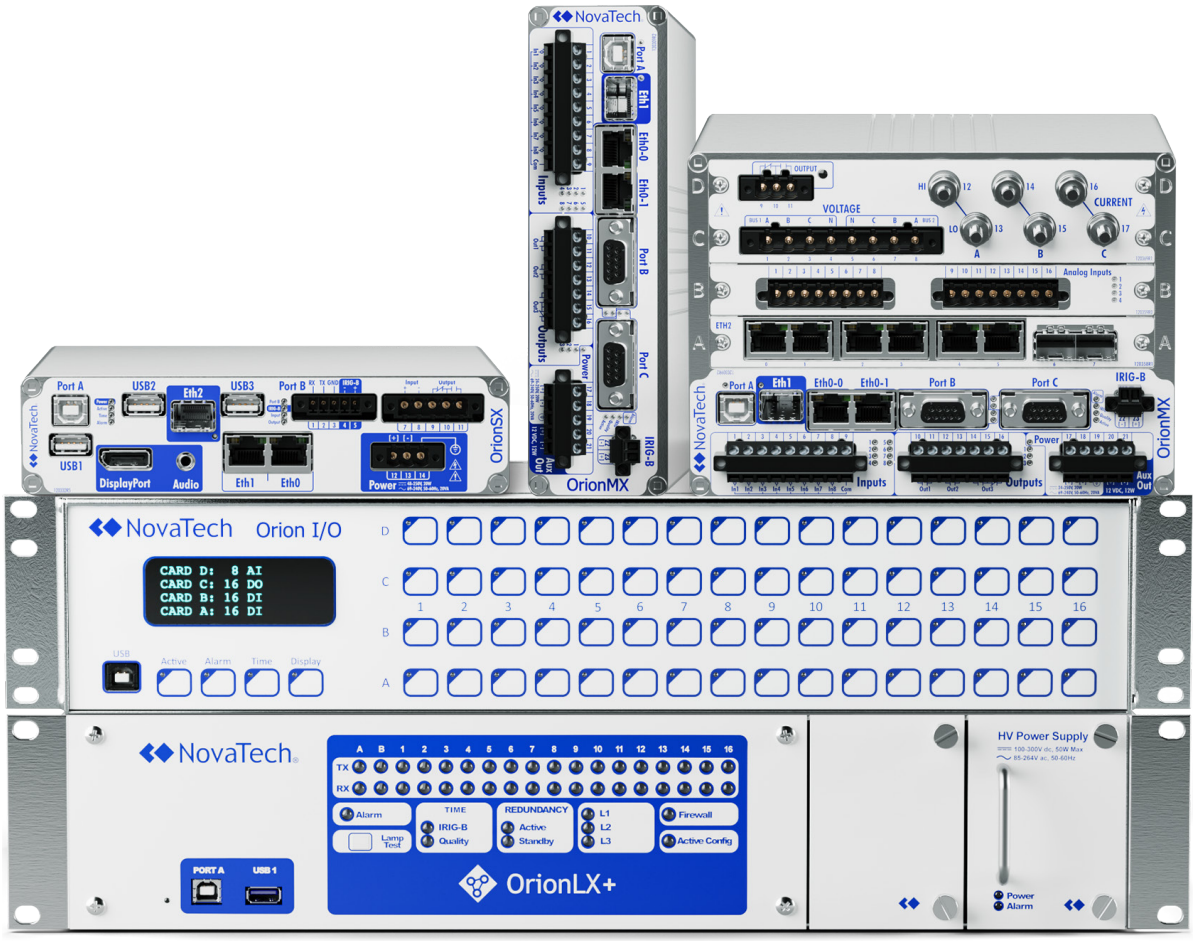
Orion Automation Platforms

Yeah. It'll do that.

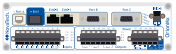
Orion Automation Platforms combine unparalleled flexibility and ease-of-use in a variety of form factors and hardware options.

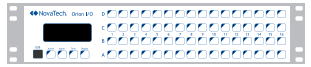
These units really outperform competitor RTUs on every level.

- Systems Engineer, Midwest US IOU



Made in the USA





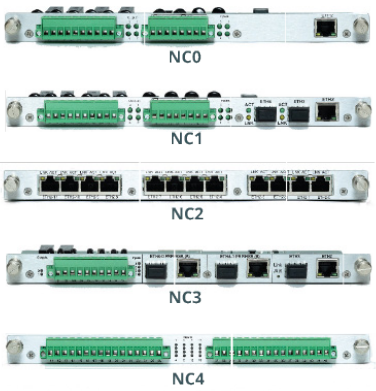
	OrionLX+	OrionMX	OrionSX	OrionVX	Orion I/O
Use Case	**Large scale applications in new / retrofit substations**	**Pole tops, vaults, and small substations**	**Data collection, protocol conversion, and HMI server**	**Front End Processor and virtual substation RTU**	**Hardwired I/O**
Mounting	19" rack	Surface, panel, 19" rack, or DIN rail	Surface, panel, 19" rack, or DIN rail	As per server	19" rack or surface
Dimensions	19"W x 3.5"H x 13.5"D (2 RU)	7"W x 2"H x 6"D	7"W x 1.75"H x 6"D	"	19"W x 3.5"H x 7"D (2 RU)
Power Supply	Redundant hot swappable 125-250V dc/120-240V ac or 24-48V dc	Single 24-250V dc/69-240V ac or 12-24V dc	Single 48-250V dc/120-240V ac	"	Single 48-250V dc/120-240V ac or 12-24V dc
Direct Video	1 DisplayPort	None	1 DisplayPort	None	None
Ethernet Ports	2 RJ45 & *Optional NovaCards: NC0: 1 RJ45 NC1: 1 RJ45 and 2 SFP NC2: 12-port RJ45 switch NC3: 1 pair of HSR/PRP ports, 1 RJ45 port, 1 SFP slot*	2 RJ45, 1 SFP	2 RJ45, 1 SFP	As per server	1 RJ45,1 SFP slot or *1 RJ45 and a 3-port RJ45 switch or 1 SFP slot, 2 RJ45 HSR/PRP ports*
Serial Ports	Up to 17 RS232/485, ST Fiber, V-pin Fiber, or bit synchronous	Up to 18 RS232/485, ST Fiber	1 RS232	None	1 RS232/485
SCADA Points	40,000 *60,000 or 80,000 optional*	600 *10,000 optional*	40,000 *60,000 or 80,000 optional*	80,000	600
Device Connections	256 *512 optional*	128	256	512	64
I/O	Up to 20DI , 4DO + Alarm	Up to 40DI, 19DO, 32AI, CT, PT	1 DI, 1 DO	None	Up to 64DI, 64DO, 32AI, 32AO
Orion Redundancy Support	Yes	Yes	Yes	N/A (hypervisor)	No

Options are italicized

OrionLX+

For larger substations and the most complex applications

The most powerful member of the Orion family, the OrionLX+ takes on all automation applications in T&D substations. Modular serial cards and network options enable the OrionLX+ hardware to leverage existing equipment and minimize upgrade effort.



Optional NovaCards

NC0: One 10/100/1000Mbps Ethernet port and 4 DI / 4 DO

NC1: One 10/100/1000Mbps RJ45, 2 SFP ports and 4 DI / 4DO

NC2: Twelve 10/100/1000Mbps Ethernet ports

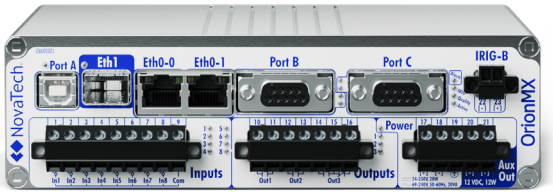
NC3: Pair of HSR/PRP ports as RJ45 and SFP, 1 RJ45 Ethernet Port, 1 SFP Slot, 4 DI / 2 DO

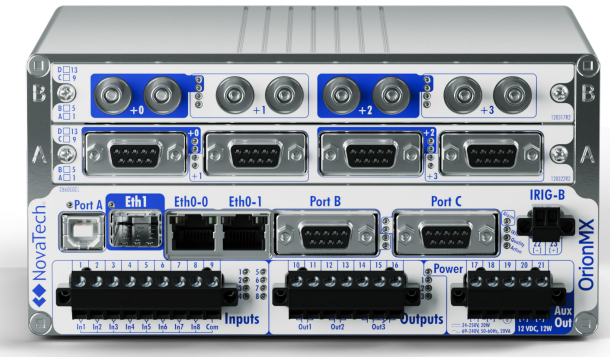
NC4: 16 Digital Inputs

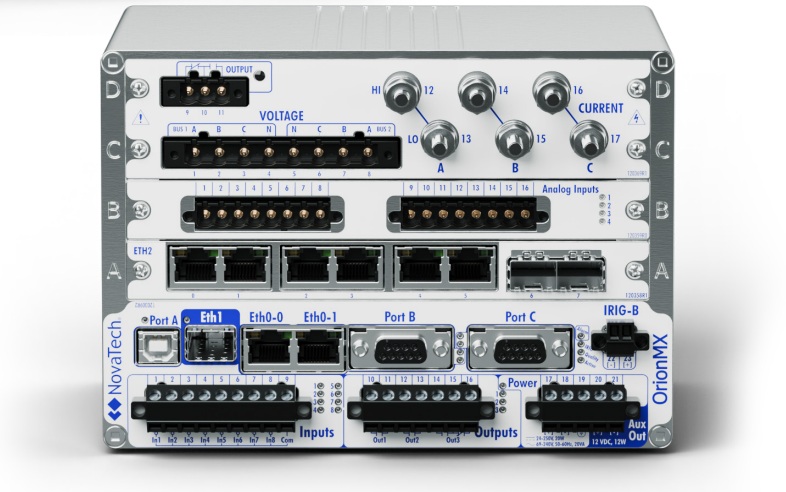
OrionMX

Optimized for smaller spaces

Available in three case sizes, the OrionMX can be configured with a variety of expansion cards for automation and metering applications in smaller distribution and unit substations, on pole tops, and in vaults.







OrionMX Expansion Cards

F1: 4 Serial fiber ports

S1: 4 RS232/485 serial ports

D1: 8 Digital inputs & 4 digital outputs

M1: Meter card with 5 or split core CT & PT inputs

M2: Meter card with 20 Amp CT & PT inputs

C1: Line 2 meter card (paired with M1)

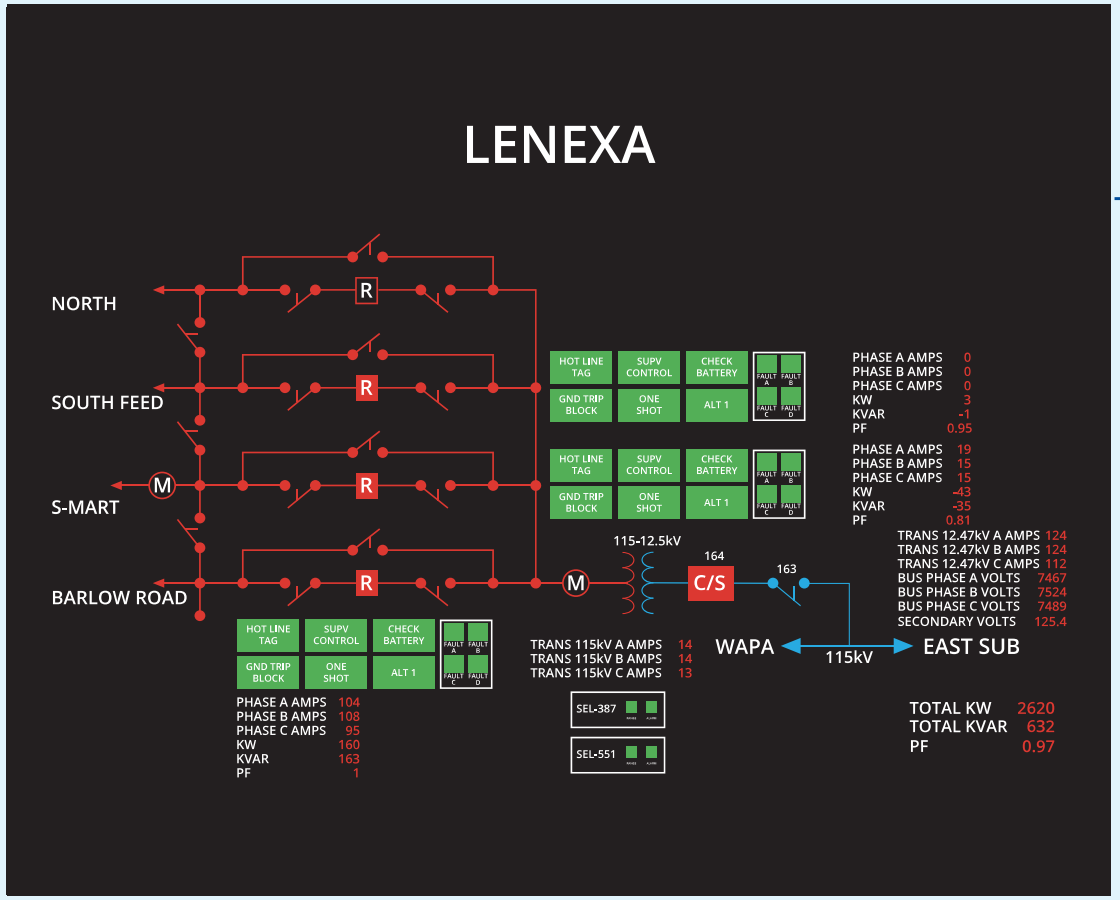
E1: 8 Ethernet ports

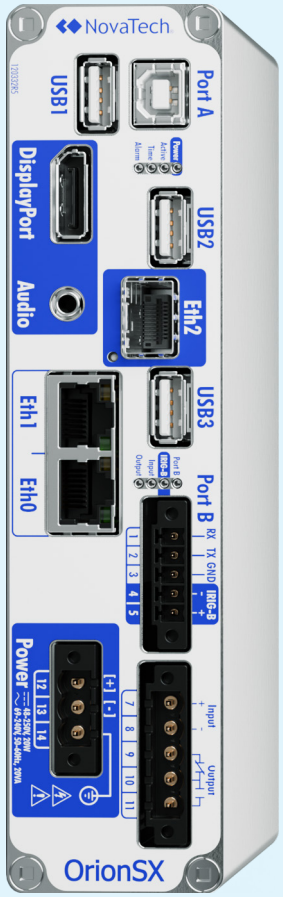
A1: 4 Analog input

OrionSX

Data and HMI server

Compact and powerful, the OrionSX is optimized for data aggregation, protocol conversion and HMI applications for digital substations.





OrionVX

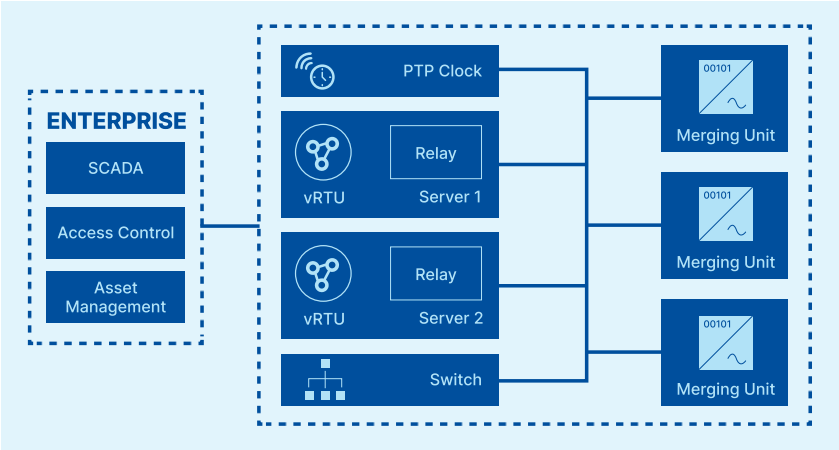
Virtual RTU and SCADA front end

OrionVX is virtualized OrionOS software that runs on standard servers or embedded instances to enable next generation enterprise SCADA and virtual digital substation applications.

Member

vPAC alliance

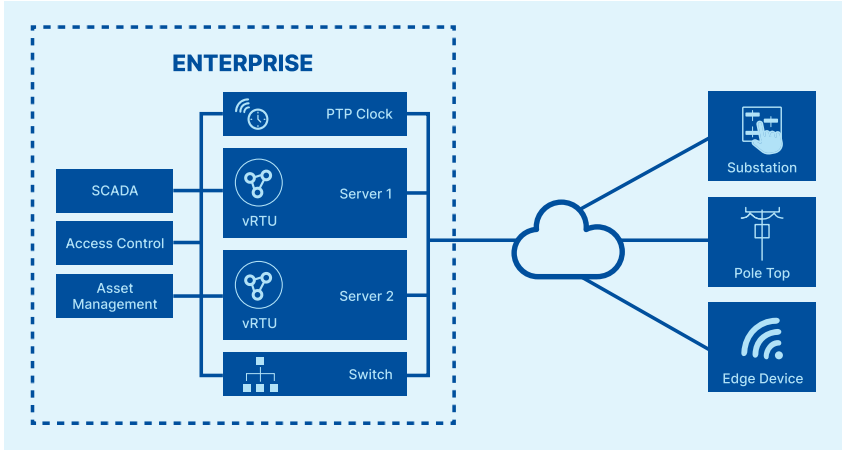
OrionVX in a Digital Substation



Virtual substation RTU

Running on a server in a substation alongside a virtualized protection relay, OrionVX is an ideal solution for the virtualized protection and control concept with simplified management and a reduced number of hardware appliances.

OrionVX as a Front End Processor



Enterprise front end processor

At the enterprise level, OrionVX can act as a front end processor for the collection and normalization of data from substations, pole tops, vaults, and IOT devices to SCADA, DERMS, ADMS and asset management systems.

Orion I/O

Easy to see and retrofit

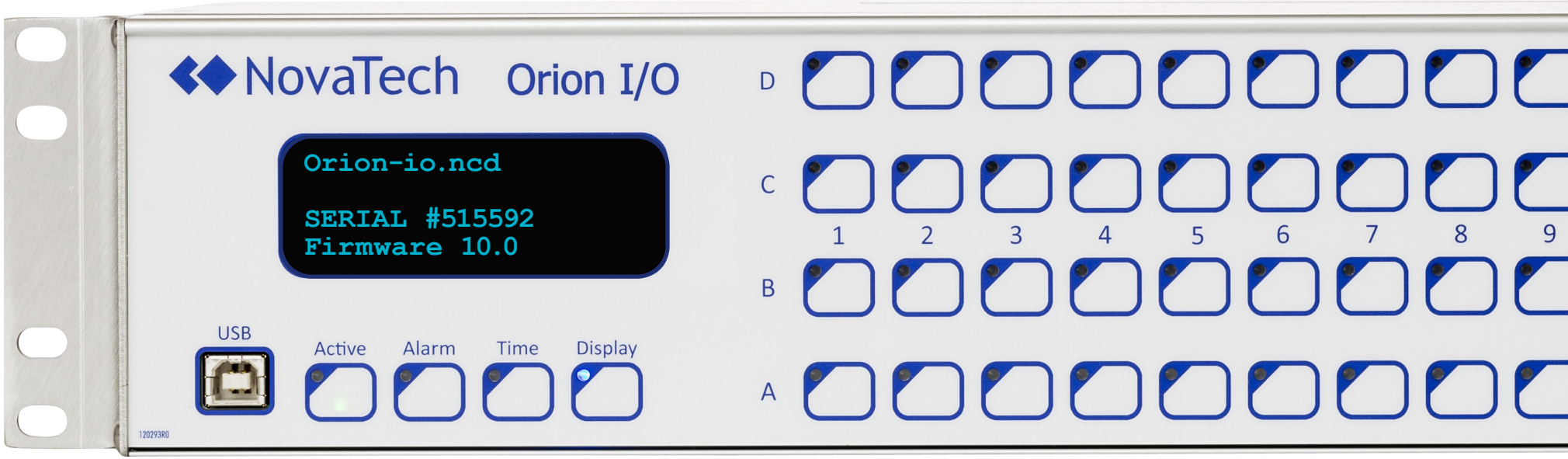
Orion I/O provides the most comprehensive solution for substation automation, featuring high density, I/O card flexibility, and unique local display for point names and status.

Other examples of the Orion I/O 4-line x 20-character display:

```
CARD D: 8 AI
CARD C: 16 DO
CARD B: 16 DI wetted
CARD A: 16 DI Wetted
```

```
Trans Top Oil Temp

175 degrees F
.642mA
```

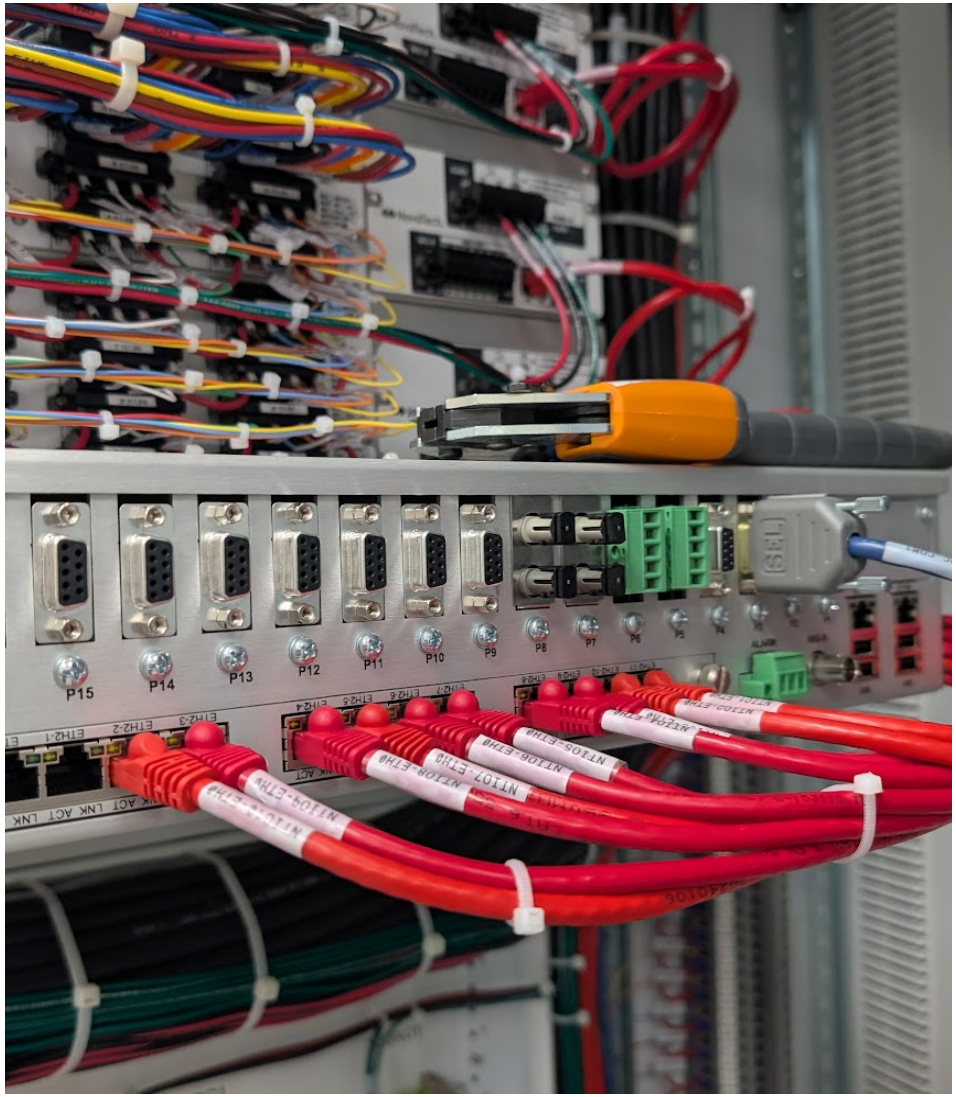
```
CB #23 Bakersfield

17.59.08.960
Breaker Open
```



I/O Card Options

- 16 Digital Input Card
- 16 Digital Input Wetted
- 16 Digital Output Card (NO or NC)
- 16 Digital Output High Power Card
- 8 Digital Input / 8 Digital Output High Power Combination Card
- 8 Analog Input Card
- 8 Analog Input Flex Card with HV Input
- 8 Analog Output Card

Retrofit Solutions



We offer standard and custom retrofit solutions for most of the common legacy RTUs: D20/D200, Telvent, Landis & Gyr, ACS, and Systems Northwest. Many of our retrofit solutions do not require lifting of field wiring.

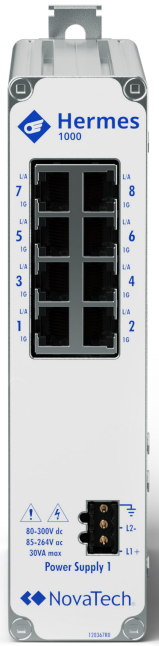
Hermes Gigabit Ethernet Switches

Futureproof your substation networks

Hermes 1000

Unmanaged Gigabit Ethernet Switch

Engineered for reliable operation in harsh substation environments.



Gigabit Ethernet

- 24 Gigabit (10/100/1000Mbps) RJ45 ports - rack mount
- 8 Gigabit (10/100/1000Mbps) RJ45 ports - DIN rail mount

Plug-and-Play Operation

- No configuration required, enabling effortless deployment and maintenance

Rugged Design

- Wide operating temperature range (-40°C to 70°C)
- Compact, fanless aluminum enclosure

Hermes 2000

IEC 61850-3 Compliant Layer 2 Gigabit Ethernet Switch

Hermes 2000 delivers high performance networking for protection and control applications, and offers advanced features including VLAN, PTP transparent clock function, IGMP snooping, QoS, and -40°C to +70°C operating range.

Redundant Networking

- PRP transparency with RSTP or FRNT protocols ensure rapid network recovery
- PTP transparent clock function maintains network time

Secure

- IEEE 802.1x and VLAN support for securing network access and traffic
- HTTPS and SSHv2 for secure configuration

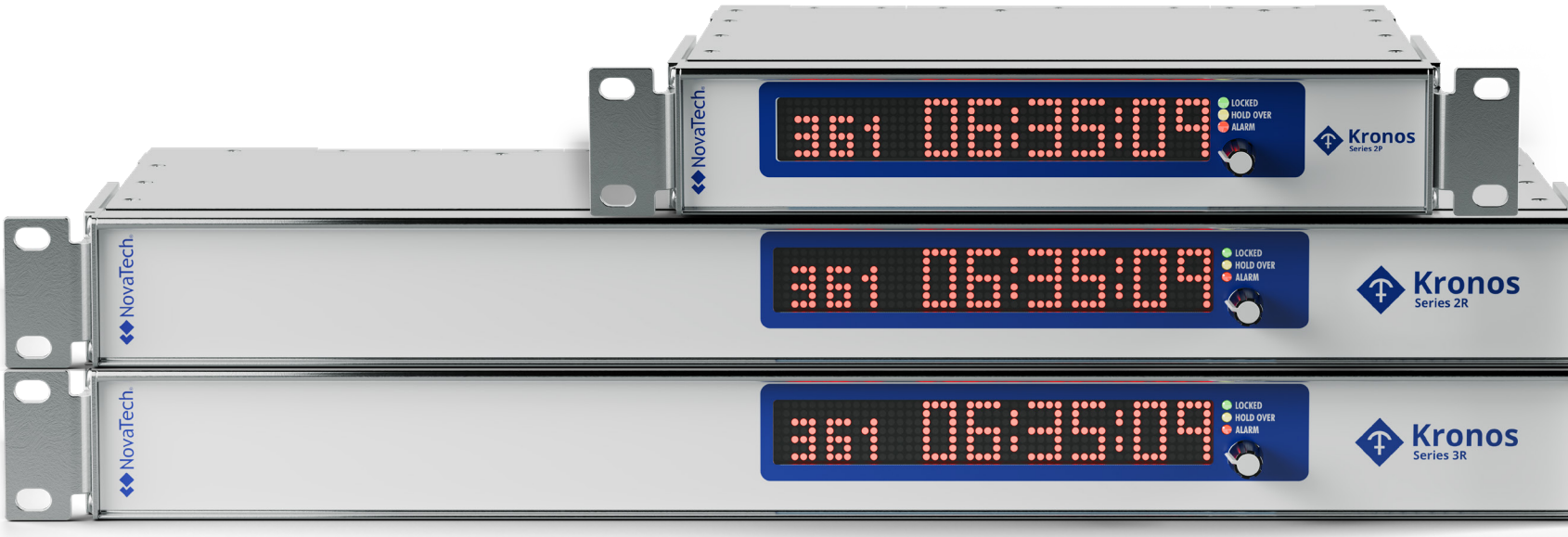
Easy Configuration

- CLI for local configuration
- WebUI for remote configuration
- SD card for fast configuration cloning

Kronos Satellite Clocks

Better time in less time

Kronos Satellite Clocks offer solutions for both traditional and network-based time distribution, providing high accuracy, long holdover, and versatile configuration options. With multi-constellation support for GPS, BeiDou, GLONASS, and Galileo, Kronos clocks ensure rapid signal acquisition and industry-leading accuracy as low as 20ns.



Made in the USA

	Series 2P	Series 2R	Series 3R
Mounting	Panel	19" rack	19" rack
Front Panel Height	1RU	1RU	1RU
Accuracy	60ns	60ns	20ns
Oscillator	TCXO	TCXO	TCXO or OCXO
Ethernet Ports	1 copper port	1 or 2 copper ports	4 SFP slots, 1 copper port
HSR/PRP	No	No	Yes
NTP/SNTP	Yes	Yes	Yes
PTP (IEEE 1588v2)	No	No	Yes
IRIG-B Outputs	Up to 4	Up to 12	Up to 12
Redundant Power Supply	No	Optional	Optional
Antenna Cable-Delay Compensation	Yes	Yes	Yes
Out-of-bound Alarm	Yes	Yes	Yes
Open/Short Antenna Alarm	Yes	Yes	Yes
Web-based Configuration	Yes	Yes	Yes
SNMP	Yes	Yes	Yes

Bitronics Power Measurement

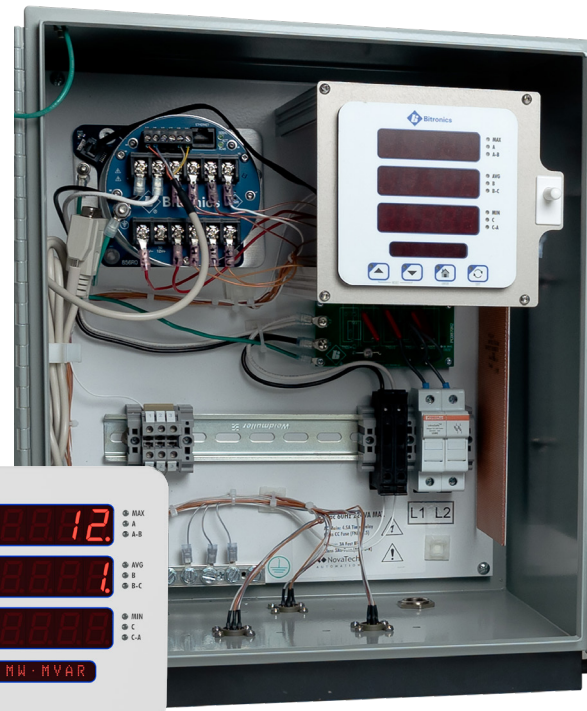
Easy to use, hard to beat

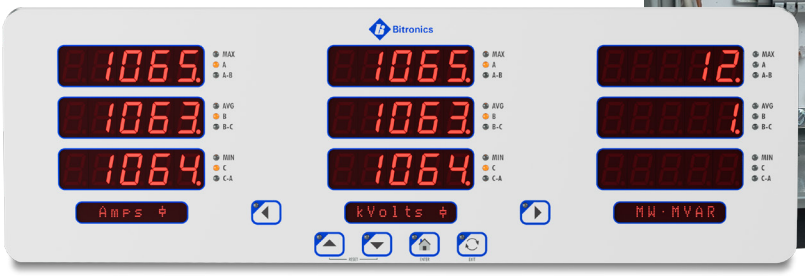
Bitronics was the first to digitize power metering in 1982, and today our meters, digital transducers, distributed recorders, and Distribution Grid/Line Voltage Monitors are used worldwide.

Bitronics panel meters measure and displays Amps with Demand, Voltage with Min/Max, and a wide range of three-phase measurements. SCADA transducers offer the same features without the display. With redundancy support through DLR, our synchronizing transducers are used in sync-check and auto sync applications.

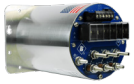
What we like about Bitronics Meters is their consistency and accuracy.

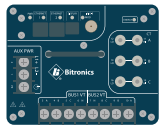
- Engineer, Western US Testing Lab





Made in the USA



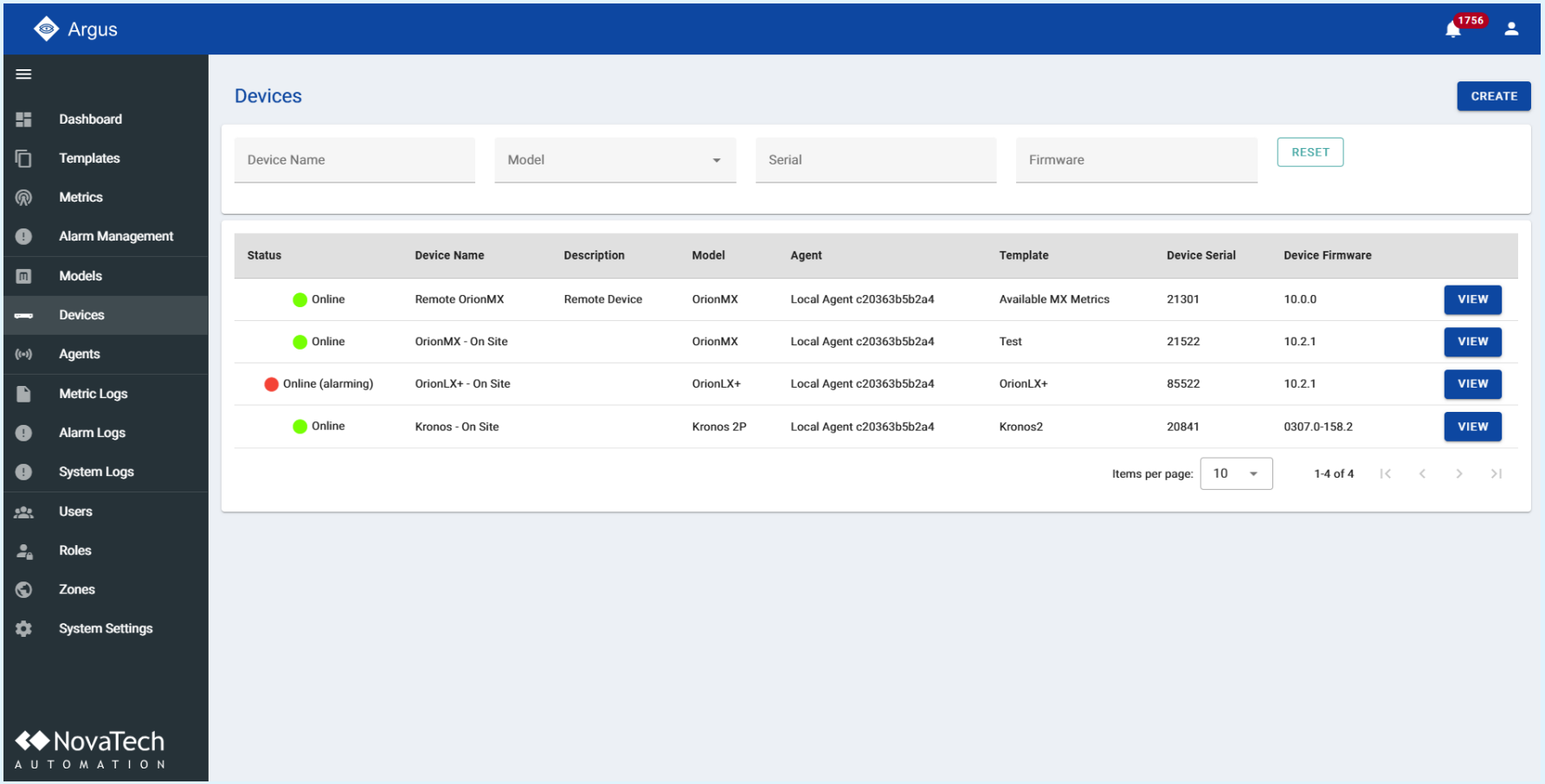


	Panel Meters	SCADA Transducers	M350	Synchronizing Transducer
Full Set of 3-phase Power Measurement	Yes	Yes	Amp/Demand (A3); Volt/Min/Max (V3)	Yes
0.2% Revenue Accuracy	Yes	Yes	N/A	Yes
.001Hz Accuracy	Yes	Yes	N/A	Yes
Current Input Range	1A, 5A, 20A	1A, 5A	1A, 5A (M350A3)	1A, 5A
Split Core CT Option	1A, 5A	1A, 5A		
Voltage Input Range	120V ac	120V ac	120V ac (M350V3)	600V ac
DNP3/Modbus Serial and TCP (Server)	Yes	Yes	Yes	Yes
No of 3-Line, 5-Digit Displays	1, 0, or 3	1, 0, or 3	1	1-Detached
IEC 61850 or EtherNet/IP	Yes	No	No	Yes
Data Trending	Yes	No	No	Yes
Definite Time Overcurrent Relay Element	Yes, M661P3 for DGM	No	No	No
Update Rate	1ms	100ms	100ms	1ms
Fast Frequency Response with Low Pass Filter	Yes (M664 / M665)	No	No	Yes (MTWDN8C)

Argus Fleet Management

Powering reliability

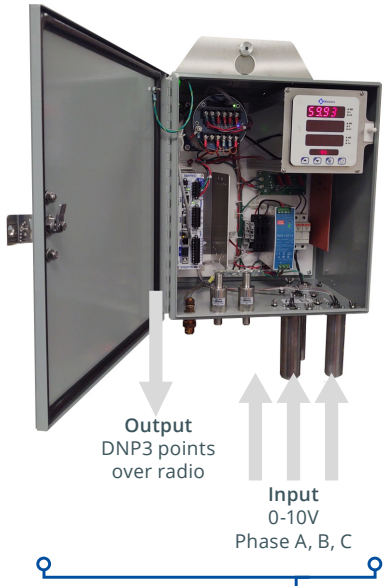
Argus is a convenient, enterprise-level solution designed to monitor the performance and health of NovaTech Orion, Kronos and Hermes devices. Argus provides real-time insights tailored to your OT devices and enabling seamless and improved visibility of your energy infrastructure. Whether tracking devices at a single site or across the entire fleet, Argus simplifies operations and reduces downtime with comprehensive monitoring, diagnostic insights and user-centric design.

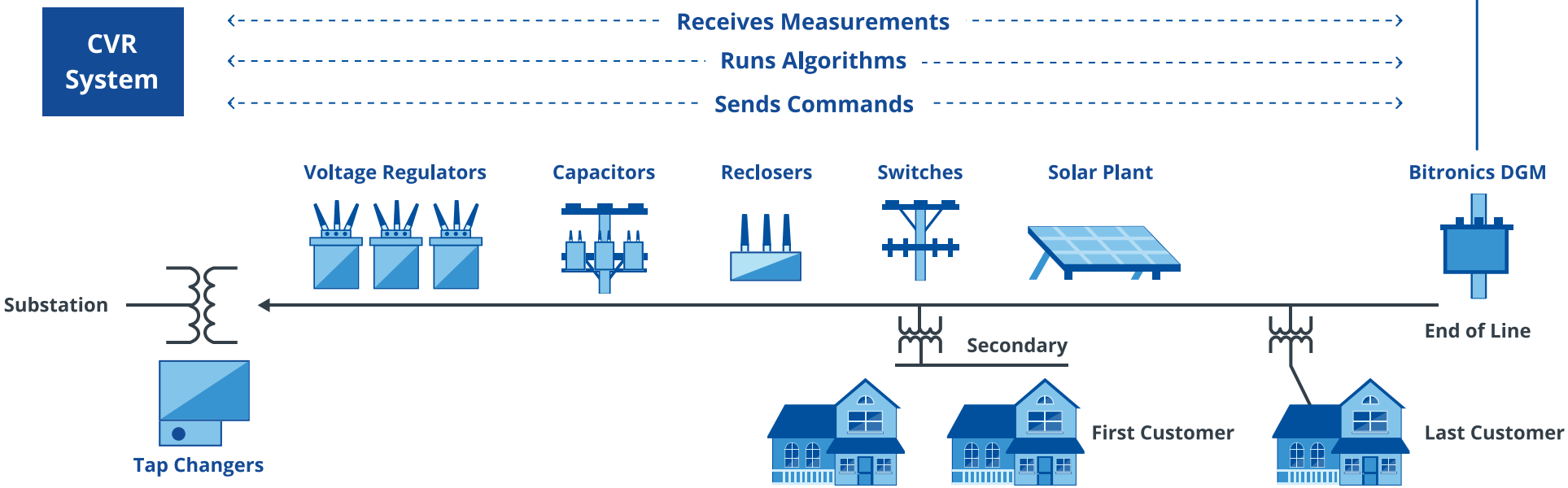


Distribution Grid Monitoring

Voltage Optimization

The NovaTech Digital Grid Monitor (DGM) is a configurable solution designed for pole top installation, ideal for providing distribution line data, including accurate voltages, loads, reactive power, and fault data. The DGM gives more granularity to ADMS, FLISR and VVC/VVO and CVR schemes.





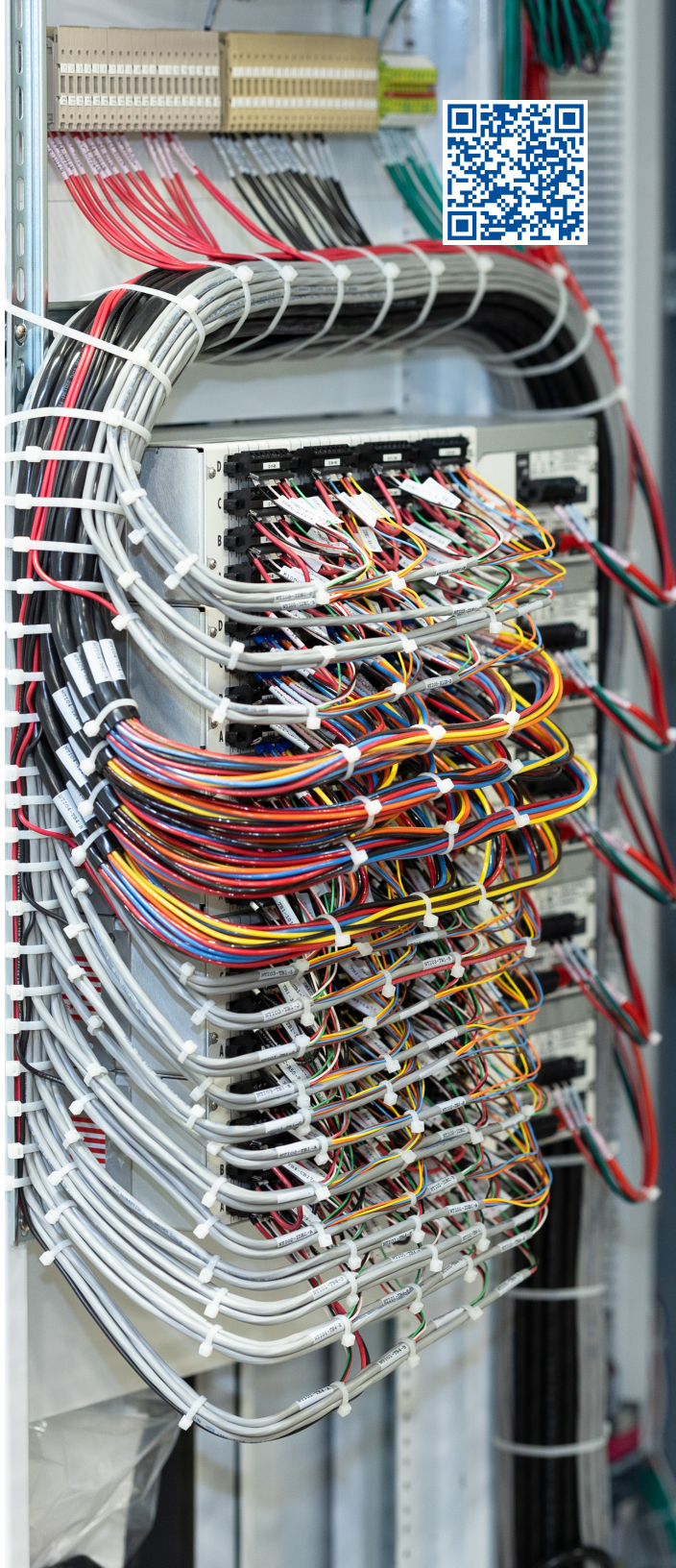
Packaged Solutions

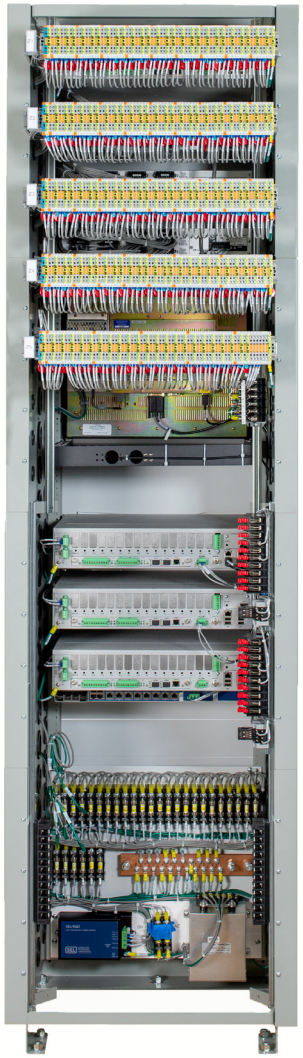
Design, build, install and retrofit

For more than 30 years, NovaTech has been designing, building, and commissioning custom panels for some of the largest utilities in the world. Our Systems and Services staff includes project engineers, panel assemblers, software engineers, quality engineers and training instructors.

Our 37,000 square foot facility in Lenexa, Kansas features a professionally designed climate-controlled manufacturing area, state-of-the-art testing laboratories, and fully equipped engineering areas.

Made in the USA



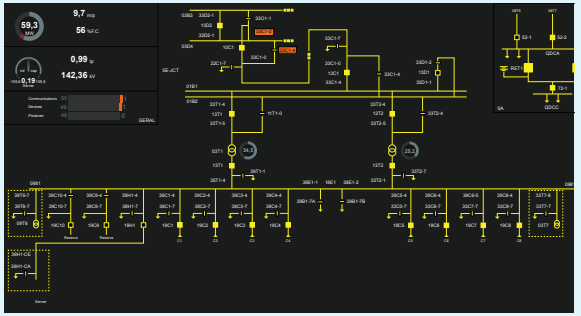


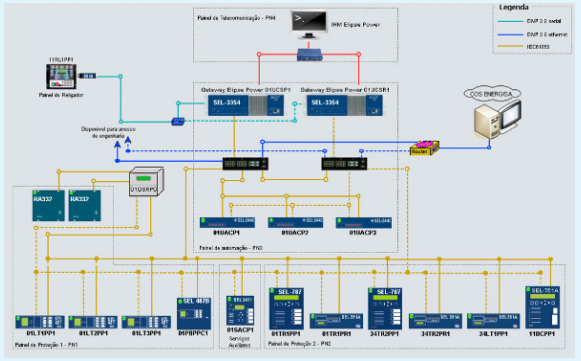
NovaTech

SCADA Systems

Design and deploy with no annual fee

We provide scalable SCADA solutions tailored for electric utilities, ranging from intuitive web-based interfaces to comprehensive Energy Management Systems (EMS) and Advanced Distribution Management Systems (ADMS). Our offerings enhance operational efficiency across generation, transmission, and distribution networks.





W3TS Modular Test Switches

Reliable & configurable

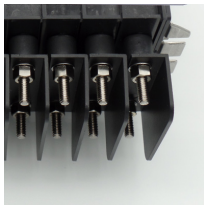
Made in the USA

W3TS test switches feature integrated barriers, high quality materials, and our patented safety knob - perfect for modern substations across the grid. Choose from 15 switch elements and a variety of handle colors to create a custom configuration using our web-based design tool. The modular design allows W3TS to be used where only a few points may be needed.

Mounting and Installation Options

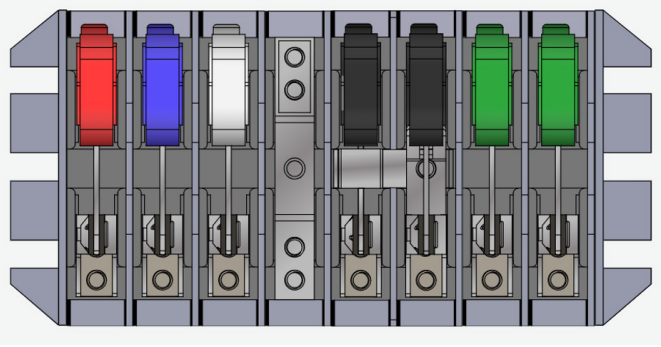
Surface Mount

DIN Rail



Back Connected

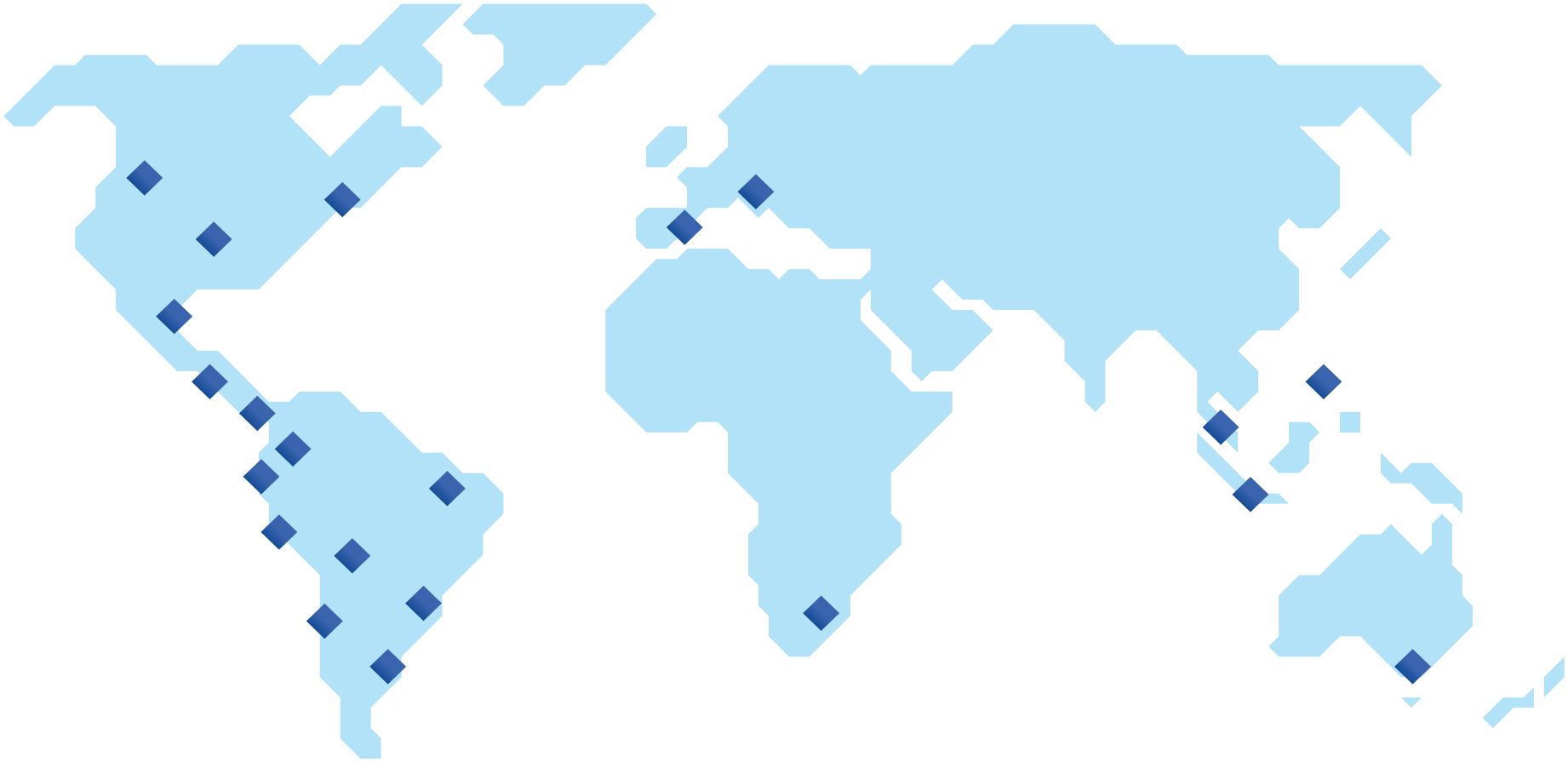
Custom Configuration Designer



Web-based design tool allows you to create unique configurations not available from other manufacturers. Experiment with layouts, generate a part number, and submit a quote request all in one easy-to-use interface.

Connect with NovaTech Automation

Offices & authorized partners



Contact us today at 844-NOVATECH | sales@novatechautomation.com

Bethlehem, PA
261 Brodhead Road, Bethlehem, PA 18017

Lenexa, KS
13555 West 107th Street, Lenexa, KS 66215

Lima, Peru
Calle Alcanfores 142 - 606, Miraflores 15074

International Distributors

Contacts & Support

Book 30 minutes with an engineer
Our engineers are available to help. Book a 30 minute session with one of them to talk through your projects in detail.

POWER HOUR

Power Hour webinars
Our monthly webinars include training on our products and a variety of grid automation topics like logic protocols, SCADA, Networking, etc.

World-class support
Knowledgeable technical support personnel and comprehensive online resources help us deliver 98.7% CSAT.

Training
Orion automation basic training in our Lenexa, Kansas facility or customizable curriculum to upskill your staff at your facility.

Committed to our customers and the future

NovaTech Automation is a US-based, family-owned business.

As current and future stewards of the most complex machine ever built, we have both the opportunity and obligation to accelerate the decarbonization of the power grid. We have therefore committed to achieve Net Zero carbon/GHG operations by 2050.

Conrad Oakey, CEO
Volker Oakey, Chairman

NovaTech
AUTOMATION

Electrify and automate everything

NovaTech

AUTOMATION

NovaTech Automation is net zero committed. Printed on recycled paper. ♻

Copyright © 2025 NovaTech, LLC. All rights reserved. All brand and product names mentioned in this document are trademarks of their respective owners. Bitronics is a registered trademark of Bitronics, LLC. NovaTech is a registered trademark of NovaTech, LLC. The information in this literature is subject to change without notice and is not to be construed as a warranty. NovaTech Overview_20250627