

Gantner
instruments

intelligence
for energy.



Quality Made in Germany

Monitoring, Control, Analytics & Cybersecurity
Solutions for Power Plants

Gantner Instruments Environment Solutions GmbH

Gantner | Zwoenitz | Headquarters

intelligence for energy.

WE CONTROL
WHAT POWERS
THE WORLD.



Gantner.Qreader

POWER PLANT CONTROLLER, DATA LOGGER & EMS.

The Gantner.Qreader is Gantner's certified power plant controller (PPC), intelligent data logger and energy management system – engineered for utility-scale PV power plants and hybrid applications. Combining reliable data acquisition with advanced grid control functions, the Gantner.Qreader is the operational backbone of every Gantner installation.

POWER PLANT CONTROLLER (PPC) AND DATA LOGGER

Supports multiple industry-standard communication protocols via extensions, including IEC 60870, DNP3 and Modbus, as well as proprietary protocols from solar inverter, PQM and sensor manufacturers.

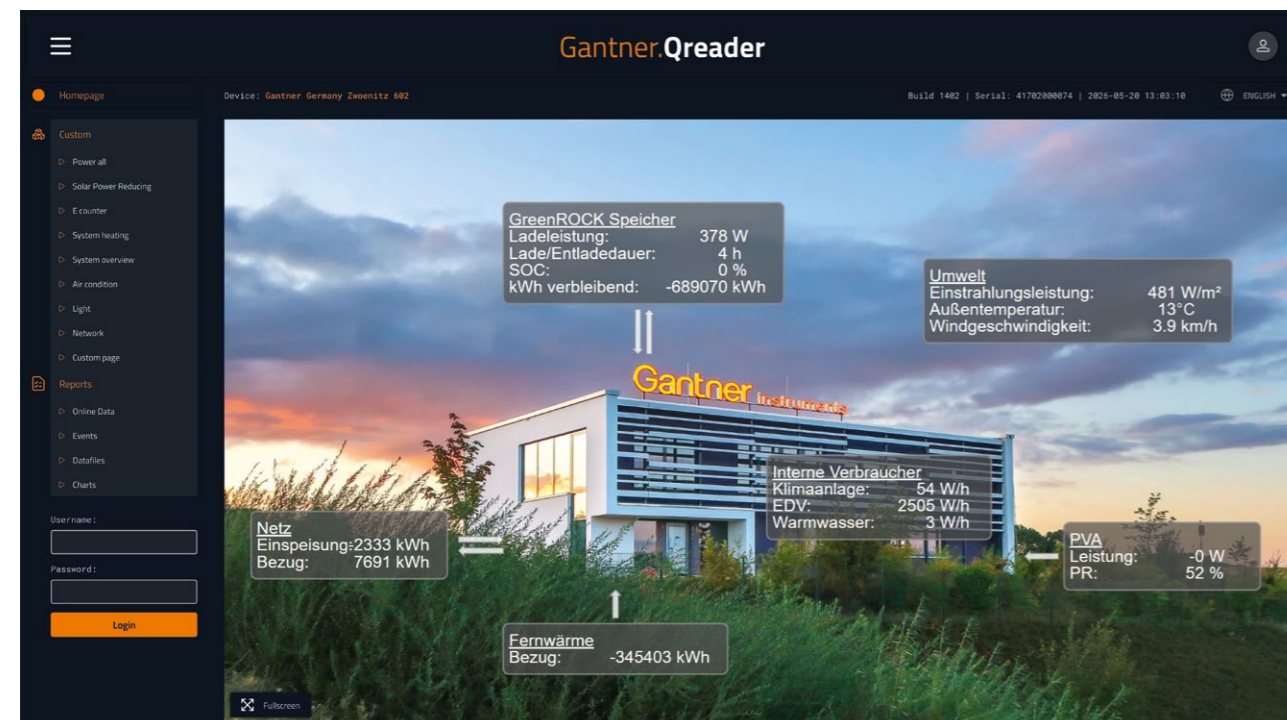
FEATURES OF THE PPC

- Absolute production constraint
- Power gradient constraint
- Voltage control
- Reactive power control
- Power factor control
- Frequency control
- aFFR & FCR
- Zero Feed-In
- Battery control (BESS)

The data acquisition can be performed with a resolution of up to 10 Hz. This is often required by utilities during grid impact tests. Signal conditioning, data storage and transfer, compression and multi-path communication are the strengths of this flexible data solution. The data transmission is possible via cable (Ethernet / LAN) or wireless with an external router (5G, WiFi). The Gantner.Qreader meets the latest industrial security requirements.

DATA LOGGER FEATURES

- String level data (current, voltage)
- Inverter data
- Meteorological data from weather stations
- Grid measurements
- Other state variables (switchgear, transformer status)



Mastermind of Gantner intelligence



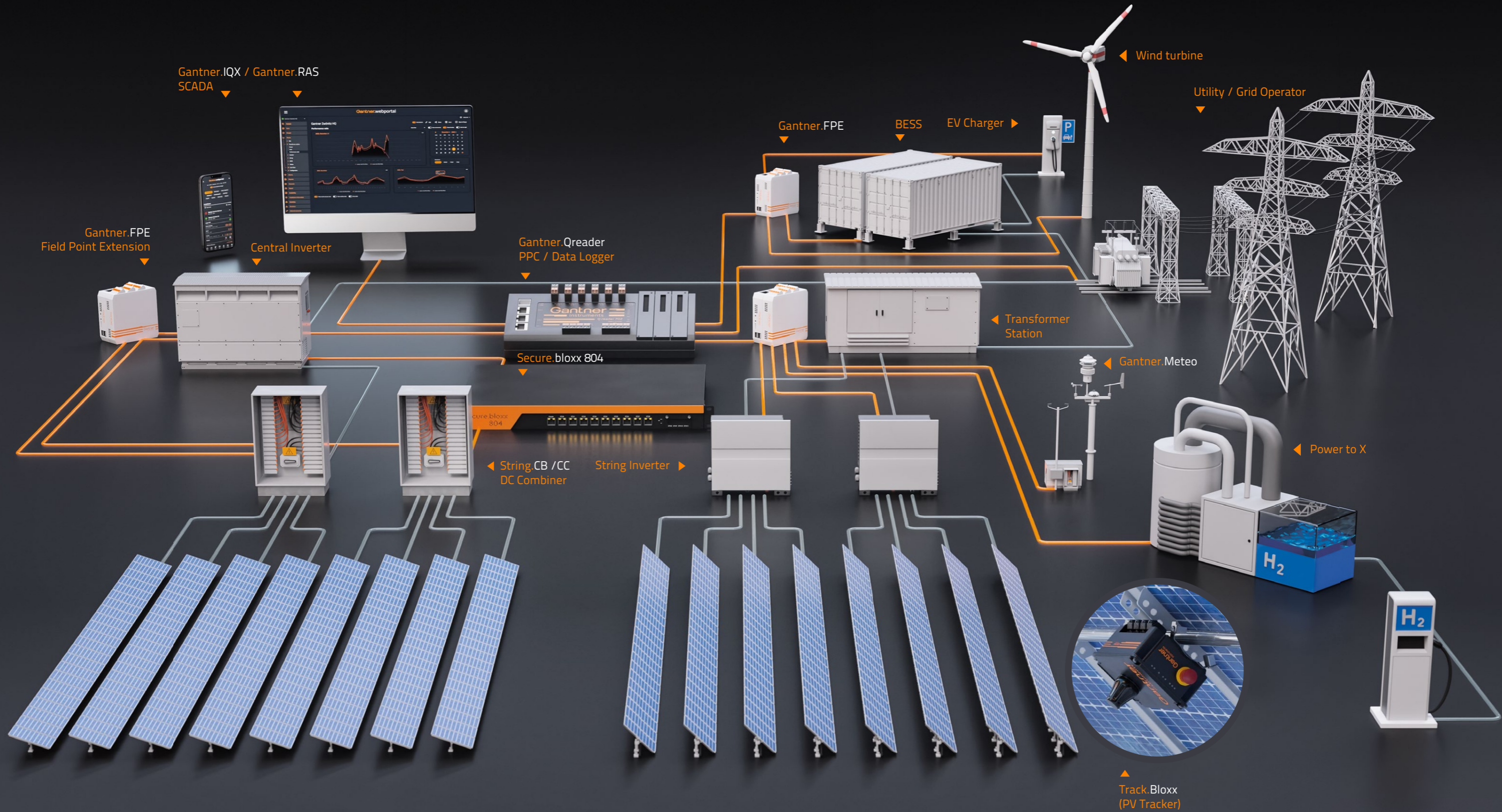
KEY TECHNICAL FEATURES

- Certified PPC: VDE-AR-N 4110, 4120, 4130 (medium to extra high voltage), NTS, CEI 0-16 and other international certifications
- PSS/E, PSCAD and PowerFactory simulation models
- Supports multiple grid connection points up to maximum mains voltage
- Hybrid controller function
- CT/VT direct connection and measurement
- Power Oscillation Damping (POD) – range 0.1–2.5 Hz
- Supports FTP/sFTP server and client, API, MQTT, Modbus-RTU, Modbus TCP, plus a wide range of inverter and sensor protocols
- Time synchronization function (NTP)
- RS485 fieldbus interfaces – up to 115.2kbps galvanically isolated
- Configurable monitoring with advanced arithmetic functions
- Direct integration with Gantner.IQX

Gantner.World

SOLAR, BESS, WIND, HYBRID, GENSETS, POWER TO X, PV TRACKER.

Synergy of Gantner intelligence



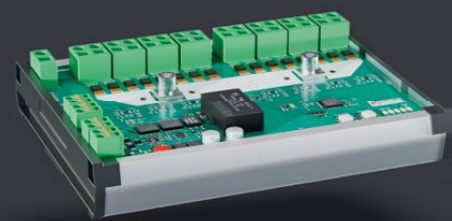
A POWERFUL PRODUCT FAMILY DESIGNED FOR SEAMLESS INTEROPERABILITY, HIGH INTEGRABILITY AND RELIABLE CONTROL AND MONITORING.

Robust Hardware for demanding applications in all climates. Whether data logging, power plant controllers, DC combiner boxes or string monitoring solutions: our hardware is developed individually to meet the highest requirements.

Hardware

Gantner.Qreader

Certified PPC controller & data logger, flexibly expandable, modular design, Modbus compatibility with third-party devices, easy retrofitting, future-proof and interoperable.



String.Bloxx

High-Precision Measurement, Comprehensive String Monitoring, Flexible System Integration, Reliable Fault Detection.



Track.Bloxx

Intelligent tracking control to unlock the full potential of your PV system. Maximize yield, ensure stability and stay in full control – in every condition, at any scale.



Secure.Bloxx 804

The Secure.Bloxx 804 is a high-performance security appliance built to protect critical energy systems with enterprise-grade cybersecurity. Combining firewall, VPN, routing and advanced threat detection in a single platform, it ensures secure communication, stable network operation and full compliance with modern standards such as NIS2.



Gantner.CTC

Centralized control for maximum tracking performance. The CTC coordinates and optimizes up to hundreds of trackers with precision, using advanced backtracking algorithms and real-time data. It ensures stable operation, higher energy yield and seamless integration into your plant control system.



String.CB

Efficient string combining with integrated monitoring and protection. Designed for reliable operation, precise data acquisition and optimized system performance.



Gantner.Meteo

High-precision meteorological data for optimized plant performance. Seamlessly integrated into your control system for real-time insights and reliable operation.



Gantner.WTC

Decentralized communication for flexible tracker networks. While the CTC controls, the WTC connects – enabling wireless communication, data acquisition and seamless integration of trackers and sensors across the plant.

Software

Gantner.IQX

Central web portal for real-time monitoring, control and data acquisition across all energy system components, full transparency, at a glance.

Gantner.RAS

Secure remote access to your energy systems. Stay in control – anytime, from anywhere.

Gantner.IQX

IQ-DRIVEN ASSET PERFORMANCE PLATFORM.

Powering the Future of Solar & BESS Analytics Gantner.IQX is a vendor-independent SaaS platform for real-time monitoring, analytics and reporting of utility-scale PV power plants and battery energy storage systems. Designed to maximize financial performance and operational transparency across your entire portfolio.

KEY FEATURES

Bankable & Vendor-Independent

Seamlessly monitor any hardware from any manufacturer, anywhere in the world.

Integrated Asset Management

Keep track of performance, contracts and compliance in one unified platform.

Digital Twin Gantner.MPM

Our mechanistic power model precisely identifies the gap between actual and theoretical production – so you know exactly where yield is lost.

Advanced BESS Analytics

Monitor State of Health (SOH) and battery degradation in real time to extend lifetime and protect your investment.

Smart Alarms

Move beyond simple notifications. Issues are automatically prioritized by their financial impact, so your team always focuses on what matters most.

Nowcasting & Forecasting

High-accuracy data models predict energy production in real time and ahead of time.

Traffic Light Status

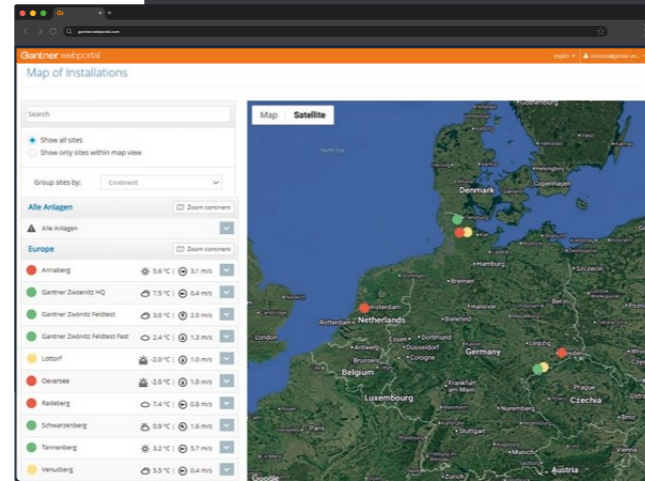
Get an instant portfolio overview with intuitive status indicators.

Automated Reporting

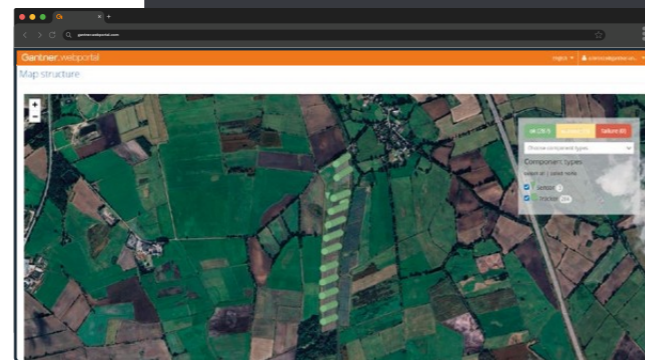
Generate professional, investor-ready reports in seconds, no manual efforts required.

Full API Access

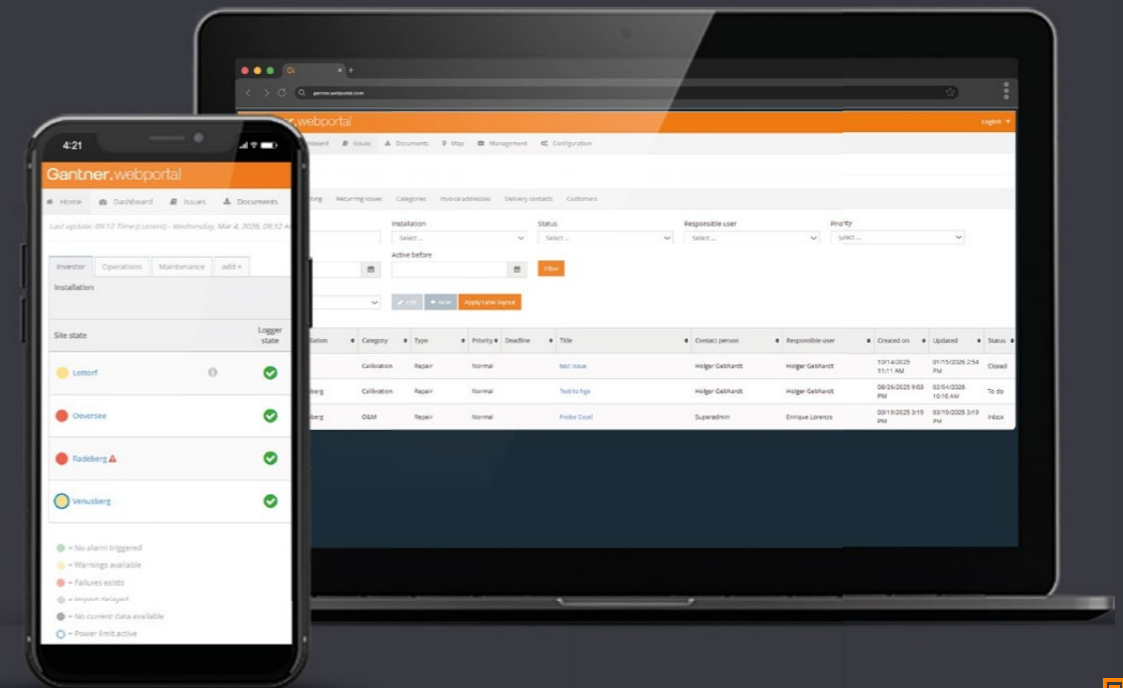
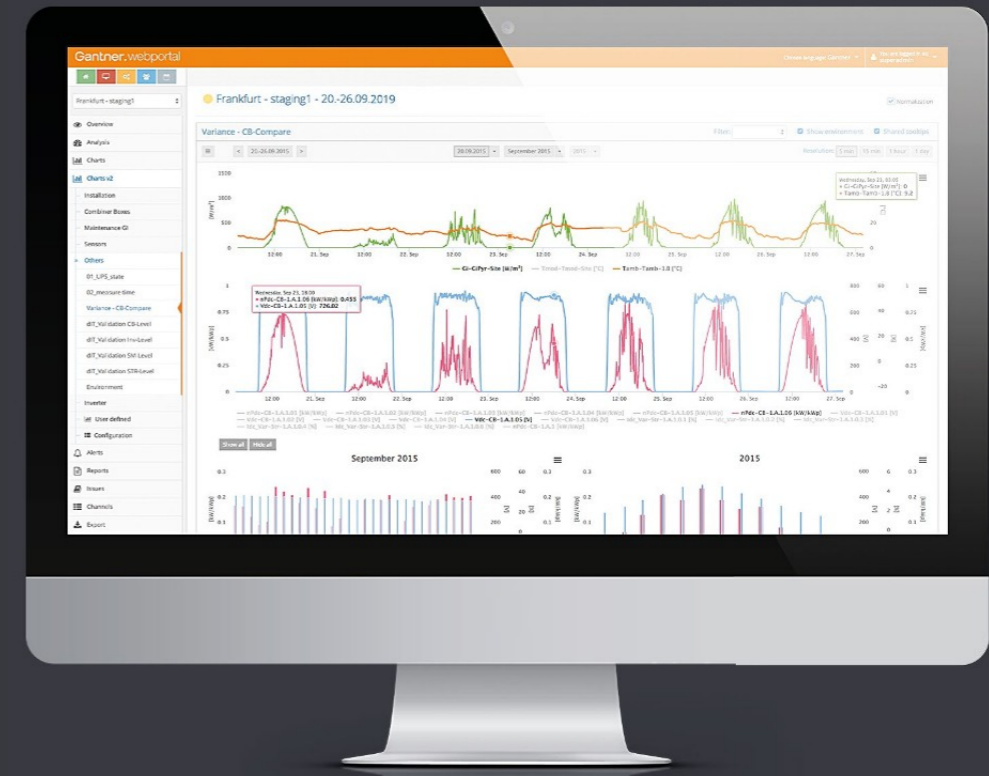
Integrate Gantner.IQX seamlessly with any third-party solution.



Component	AC Current Phase1 [A]	AC Current Phase1 Difference [A]	AC Current Phase1 Rel. deviation [N]	Range [N]	AC Current Phase1 Status [I]
Inverter A.1	58.145	-4.535	-9.95	low	OK
Inverter A.2	64.576	-1.104	-1.68	OK	OK
Inverter B.1	71.176	5.486	8.37	high	OK
Inverter B.2	69.361	3.691	5.60	OK	OK
Inverter C.1	60.196	-5.484	-9.35	OK	OK
Inverter C.2	69.638	3.940	6.01	OK	OK

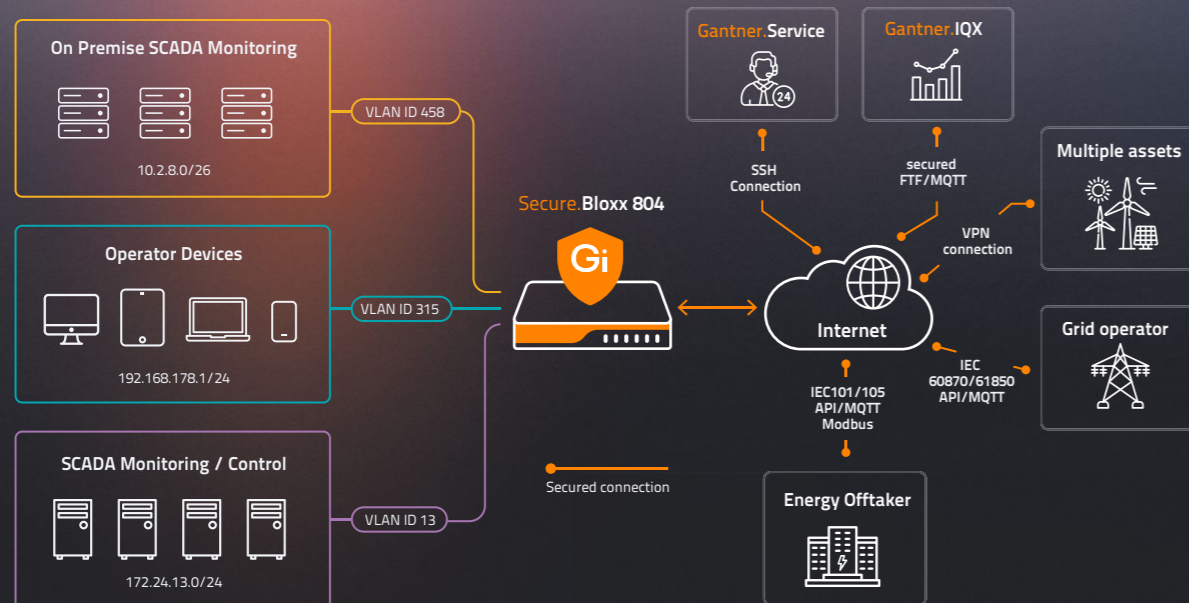
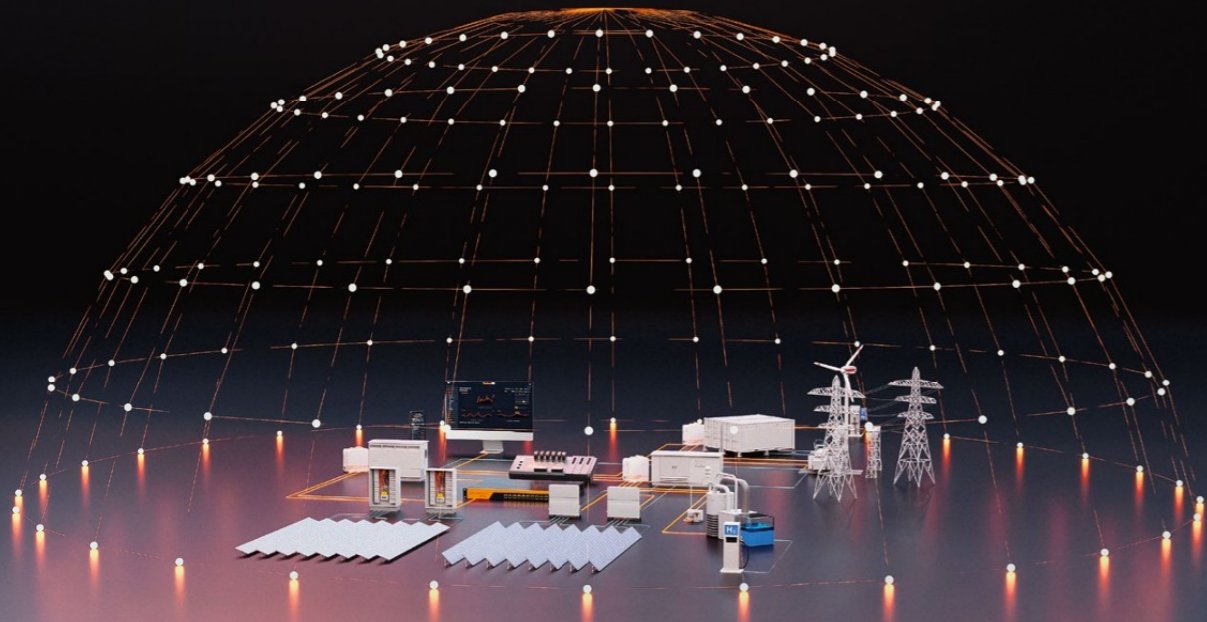


Alert	Category	Site Name	Alert Time	Alert Status	Alert Message
Inverter A.1	Warning	Ansbach	2023-09-20 10:00:00	Resolved	Inverter A.1 AC Current Phase1 Difference [A] is out of range.
Inverter B.1	Warning	Ansbach	2023-09-20 10:00:00	Resolved	Inverter B.1 AC Current Phase1 Difference [A] is out of range.
Inverter C.1	Warning	Ansbach	2023-09-20 10:00:00	Resolved	Inverter C.1 AC Current Phase1 Difference [A] is out of range.



Gantner.Cybersecurity

PROTECTING YOUR RENEWABLE ENERGY INFRASTRUCTURE.



Resilience of intelligent energy systems

Managed Security Services

Our Security Operations Center provides continuous protection – 24 hours a day, 365 days a year. From threat detection to incident response, identity management to compliance reporting, Gantner's managed security services cover the full spectrum of modern cybersecurity requirements.

KEY FEATURES

- 24/7/365 Security Operations Center (SOC)
- Managed Detection & Response (MDR) for IT & OT
- Continuous Threat Monitoring & Incident Response
- Vulnerability Management & Security Hardening

- Identity & Privileged Access Security (IAM/PAM)
- Third-Party Access Governance & Secure Remote Access
- Compliance Support – KRITIS, NIS2, IEC 62443
- Transparent Reporting & Service Revision

Secure.Bloxx 804

The Secure.Bloxx 804 is Gantner's dedicated hardware security appliance – a professional firewall and routing platform engineered for the demanding environments of utility-scale PV power plants. It integrates seamlessly into the Gantner ecosystem while delivering enterprise grade protection.

MAIN FEATURES

- Full network monitoring & analysis
- Anomaly detection using AI & machine learning
- Intrusion Prevention (IPS) & Intrusion Detection (IDS)
- Peer-to-peer encryption between Gantner.Qreader devices

- Traffic segmentation & centralized update management
- Event logging and audit trail
- High availability with redundant components
- Flexible deployment: SaaS or On-Premises



Gantner.TrackIQ

IQ-DRIVEN PV TRACKER CONTROL.

Gantner.TrackIQ is the next generation of intelligent PV tracker control – combining advanced algorithms, AI-driven optimization and German engineering excellence. The result: maximum energy yield, uncompromising security and complete data sovereignty.

WHY GANTNER.TRACKIQ

More energy from every ray of sunlight

Adaptive Terrain Tracking, Backtracking and Diffuse Light Optimization ensure peak performance, even in complex landscapes and under challenging weather conditions.

Flexibility without limits

Whether utility-scale, Agri-PV, or special projects: the open “Bring your own Algorithm” architecture adapts seamlessly to individual requirements.

Security you can trust

ISO 27001-certified cybersecurity, encrypted communication and 100 % data ownership guarantee that your data stays exactly where it belongs – with you.

Engineered for resilience

Built-in protection against snow, hail, wind and flooding ensures uninterrupted operation, even under extreme conditions.

Fast commissioning, smart operation

From intuitive mobile app setup to continuous performance monitoring, proactive alerts and an integrated service ticket system: Gantner.TrackIQ keeps your assets under control at all times.

Made in Germany

100 % developed and manufactured in Germany. One partner. One system. One global solution.

Gantner.TrackIQ Product Family

Gantner.TrackIQ is a fully integrated system – from field-level hardware to cloud-based intelligence. Every component is designed to work seamlessly together, giving you complete control over your tracker infrastructure.

Track.Bloxx – Tracker Control Unit (TCU)

The field intelligence of the system. Track.Bloxx receives all control commands from the CTC – including location-based tracking, wind protection positions, snow-removal and cleaning modes – and moves the PV array into the required position with precision. It continuously returns operational and status data to the wireless tracker control system for real-time monitoring.

Track.Bloxx

KEY TECHNICAL FEATURES

- Supports 24 VDC motors up to 500 W
- Powered by 1500 VDC string, AC or self-powered (pony panel)
- Battery option for operation from -20 °C to +60 °C
- Software-defined functionality (SDF) via secure cloud connection
- Customized tracking algorithms – “bring your own tracking algorithm”
- Firmware updates (OTA) fully compliant with NIS2 and CRA requirements
- Worldwide communication options: 2.4 GHz wireless mesh or industrial RS485
- 100 % customizable hardware and software

Maximum efficiency for intelligent energy systems

Gantner
instruments
Track.Bloxx



Gantner.CTC – Central Tracker Control System

The brain of the installation. The CTC provides full data access, acquisition and remote control with browser-based configuration and Modbus sensor integration. Software-defined features include wind-safe, snow-removal and cleaning modes. Optional extensions include a complete enclosure with power supply, UPS, networking, WAN and meteo sensors.

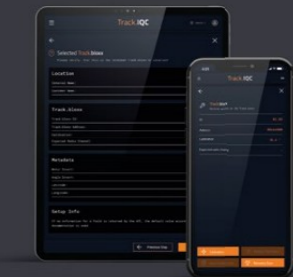
Gantner.WTC – Wireless Tracker Control System

Together with the RFID module, the WTC creates a robust 2.4 GHz wireless mesh that distributes all CTC commands to every Track.Bloxx unit, while simultaneously collecting all operational data and returning it to the CTC for monitoring and analysis.



Gantner.IQX – IQ-Driven Asset Performance

A cloud-based intelligence platform built to maximize asset performance and drive operational excellence across your entire tracker portfolio.



Track.IQC – IQ-Driven Commissioning App

Revolutionizing commissioning, operation and maintenance with an intuitive mobile-first workflow.

Gantner.BESS

BATTERY ENERGY STORAGE SYSTEMS INTELLIGENT MONITORING & CONTROL FOR HYBRID POWER PLANTS.

As solar generation grows, so does the need for flexibility. Battery Energy Storage Systems transform utility-scale PV plants into hybrid power plants – enabling operators to store excess energy, stabilize grid output and unlock new revenue streams. The real differentiator, however, is not the battery itself. It is how intelligently it is monitored, controlled and integrated. Gantner combines certified power plant control with advanced BESS management into one scalable, vendor-independent system – engineered and manufactured in Germany.

Reliable control for energy storage systems.



Monitor BESS
Warranty And
Guarantee



Seamlessly
Share Key
Insights With
Stakeholders



Optimizing BESS
Performance



WHAT BESS ENABLES

Peak Shaving & Output Smoothing

Absorb short-term production peaks and deliver stable power output to the grid.

Energy Shifting

Store midday solar surplus and release it during high-demand, high-price evening hours.

Ancillary Services

Participate in frequency regulation (FCR, aFFR), intraday trading and energy arbitrage.

Curtailment Reduction

Store excess generation instead of limiting output when grid capacity is constrained.

Self-Consumption Optimization

Maximize the use of locally generated energy across the entire plant.

KEY BENEFITS

Maximized Energy Yield

Optimize PV production, storage usage and self-consumption in real time.

Grid Compliance Ensured

Certified PPC meets all grid code requirements with precision control.

Full System Flexibility

Compatible with all major inverters and BESS, supports multi-OEM environments.

Optimized Battery Usage

Peak shaving, energy shifting and frequency services in one integrated system.

Scalable Architecture

From single plants to complex hybrid systems with multiple grid connections.

Future-Ready Operations

Supports virtual power plants and evolving energy market requirements.

GANTNER.QREADER PPC & INTEGRATED BESS CONTROLLER

The Gantner.Qreader Power Plant Controller serves as the central intelligence of every hybrid plant – coordinating PV generation, battery storage, grid requirements and market signals in real time. By integrating weather and price forecasts, the system anticipates future conditions and adjusts plant operation accordingly.

- Certified PPC VDE-AR-N 4110, 4120, 4130 for medium voltage to extra high-voltage, NTS, CEI 0-16 and other international certifications
- Integrated battery energy storage control
- Compatible with all major inverters and BESS manufacturers via open interfaces
- Supports multi-OEM systems within one plant
- Designed for utility-scale plants up to the highest voltage
- Supports grid simulation models: PSS/E, PSCAD, PowerFactory
- Proven in projects exceeding 10 GW worldwide

CORE CONTROL FUNCTIONS

- Peak shaving and energy shifting
- Ramp rate and power dispatch management
- Frequency and voltage control
- Power factor and reactive power control
- Self-consumption optimization
- Black start capability
- Spinning reserve and ancillary services (FCR, aFFR)

Why Gantner Instruments

FIVE REASONS OUR CUSTOMERS CHOOSE US – AND STAY WITH US.

PROVEN GLOBALLY

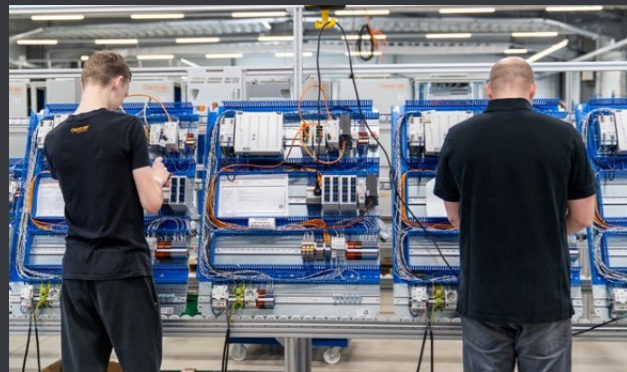
PROJECTS DELIVERED IN 54 COUNTRIES

From large-scale energy infrastructure to industrial monitoring applications, we have successfully delivered projects in 54 countries across Europe, Africa, Asia, the Americas and the Middle East. Our solutions perform under the most demanding conditions – from arctic climates to desert environments.

MADE IN GERMANY

ENGINEERING YOU CAN TRUST

We design, engineer and manufacture in Germany. From hardware components to software platforms, our products are built to the standards that have defined German engineering for generations: precision, durability and uncompromising quality.



A STABLE, INDEPENDENT COMPANY

BUILT FOR THE LONG RUN

Gantner Instruments is family-owned and headquartered in Germany. Our shareholders are established industrial groups from the DACH region with combined revenues in the multi-billion euro range. That means no quarterly pressure from investors, no risk of foreign acquisition, no sudden strategy pivots. Just a partner you can plan with – for decades.

CERTIFIED SECURITY

AUDITED, NOT ADVERTISED

We are certified to ISO 9001:2015 (Quality Management) and ISO 27001:2022 (Information Security Management) – both issued by TÜV AUSTRIA, one of Europe's leading certification bodies. This isn't marketing language. It means our processes, controls and security measures are independently audited every year.

DATA SOVEREIGNTY

YOUR DATA STAYS IN EUROPE

All customer data is hosted exclusively on Hetzner infrastructure across two redundant EU locations – never on US-controlled hyperscaler clouds. This guarantees full GDPR compliance, protection from extraterritorial laws like the US Cloud Act, business continuity through geographic redundancy and data sovereignty under European jurisdiction.



A COMPANY THAT GROWS WITH DEMAND

