DOOSAN GRIDTECH® SOLUTIONS

Intelligent Controller (DG-IC®)

Energy Storage Management System for
Independent Power Producers | Project Developers | Utilities

Extensible artificial intelligence energy management for battery energy storage and hybrid power systems. Fully flexible, precision programming delivers safe, reliable control, and optimization with rapid response to changing conditions in real-time.

FLEXIBLE, CUSTOMIZED CONTROLS FOR YOUR PEACE OF MIND

Responds Quickly

Prioritized operating modes with sub-second response to variations in real or reactive power, voltage, and frequency mean a quick response to your most pressing needs.

Adapts Readily

Configurable parameters, constraints, and settings and a commitment to open standards-based communications ensure the systems can meet your specifications in AC and DC coupled applications.

Delivers Safely & Reliably

Built-in features - maintenance mode, three-tier alarm system, failsafe shutdown – ensures personnel, the grid, and the system are safe.

- Over thirty operating modes (prioritized by system owners) – targeting both real and reactive power use cases.
- Customized device configuration provides extensive monitoring capabilities of system components (e.g., PCS and battery banks), local power meters, relays, switches, etc.
- Seamless schedule setting reduces the need for operators to set operating modes constantly.
- Multiple means of control (local/remote/automatic) with configurable privileges ensuring the right level of access for every stakeholder — hosted on-premise or in the cloud or through both as a hybrid solution.
- Communication between internal components using Modbus and external communication using DNP3 compliant with open standards specifications – MESA and SunSpec.
- Warranty tracking with history and charting of battery performance compared to the manufacturer's warranty limits. State of charge constraint engine maintains a constant dischargeable capacity and energy over system life, ensuring contract compliance.
- Touchscreen, human-machine interface for improved ease of use and effectiveness of field operations.
- Configurable alarms for all system components.
- An imbedded performance analysis module that allows system operators to create custom key performance indicators, benchmarks, and visualizations.

OPTIMIZING VALUE ACROSS THE POWER AND ENERGY APPLICATION SPECTRUM
## *NEW SYSTEMS AND RETROFITS*

	APPLICATION	USE CASES	DG-IC OPERATING MODES
POWER ↑	Voltage Regulation	• Renewable Power Integration • Remote community support	• Voltage Smoothing • Dynamic Volt/VAr • Dynamic Volt/Watt
	Frequency Regulation	• Ancillary services • Contingency reserves	• Automatic Generation Control (AGC) • Frequency/Watt • Spinning Reserves
	Islanding	• Outage Management • Non-wires Alternatives	• SOC Management
	Solar + Storage	• Power Firming • Energy Shifting	• Generation Following • ESS Real Power
	Peak Management	• Demand Charge Management • Peak Shaving	• Demand Charge Management • Real Power Response
ENERGY ↓	Energy Arbitrage	• Energy Market Participation	• ESS Real Power

INTUITIVE, SIMPLE, COHERENT INTERFACES
SEAMLESS ADOPTION & ERROR PREVENTION
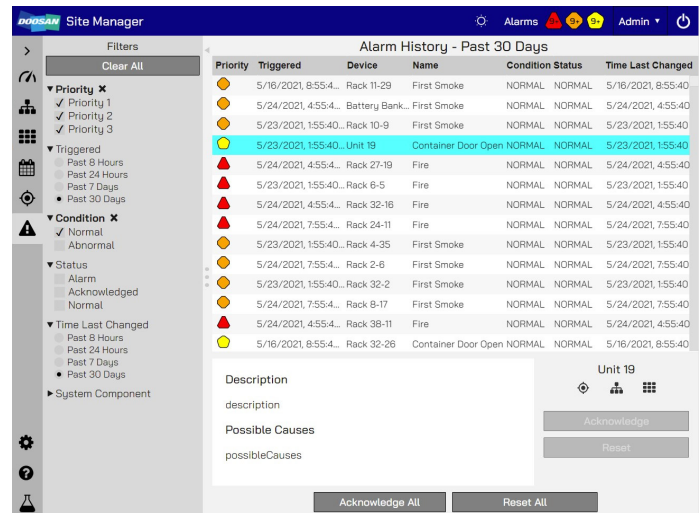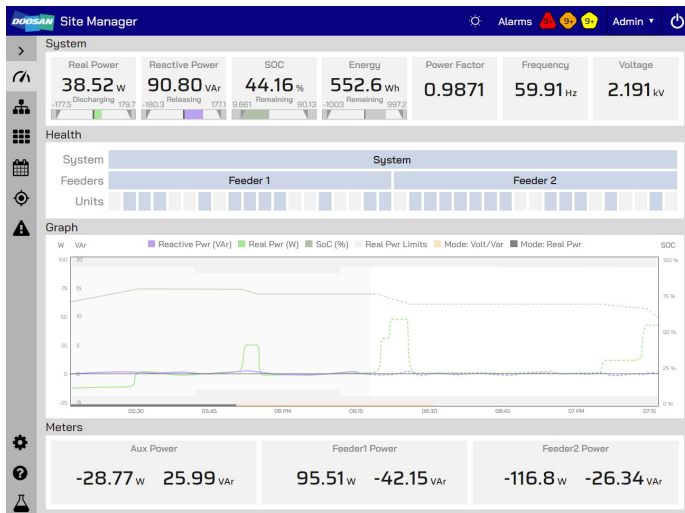
At Doosan GridTech®, we believe that enduring economic growth and environmental healing start with a resilient, low-carbon power grid. We are a multi-disciplined team of power system engineers, software developers, and turnkey energy storage specialists. We help utility-scale power producers evaluate, procure, integrate, control, and optimize energy storage, solar power, and other renewable power resources. Our battery storage experts in Seattle, Melbourne, and Seoul have designed and built over 35 installations in the Americas and Asian-Pacific regions – representing over 700 MWh of capacity.