



Modular Microgrid Power Solutions

Why AKA is your best partner.



AKA's modular power solutions integrate medium and low voltage electrical, control, and safety components, as well as auxiliary systems.

Containerized solutions are designed to ensure the safety of critical and valuable industrial processes and electrical equipment across different land based and marine applications.



AKA's Modular Solutions Can Include

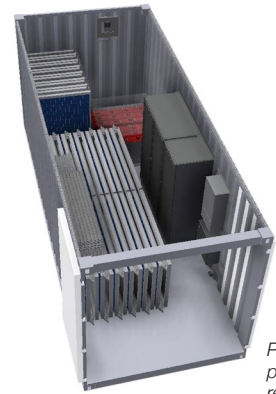
- Metal insulated or uninsulated ISO standard dry shipping containers modified for a particular environment or custom E-House
- Low or medium voltage switchgear
- Low or medium voltage transformers
- Low voltage motor control centers
- Low voltage power conversion equipment
- Energy storage systems and related support

infrastructure

- Cables, cable trays, and accessories
- Raised floor
- Mechanical, electrical, and control systems for the container, including lighting, heating, ventilation, air conditioning, fire protection, alarm system, CCTV system, access control systems, SCADA, etc.

AKA offers exceptional resources to fabricate containerized solutions within our 100,000 square foot manufacturing facility. The test bay enables full testing of the solution resulting in no surprises and a rapid and efficient startup. AKA pre-manufactures solutions within ISO containers to ensure easy delivery and handling at the destination. The modules are assembled in a controlled environment manufacturing facility. Each containerized solution is customized to suit a

TYPICAL CONTAINER SPEC	STANDARD
Wall Insulation Value	R-13
Wall External Sheet	14 gauge
Wall Internal Sheet	24 gauge
Floor Insulation Value	R24
Floor Internal Sheet	6 mm
Floor External Sheet	28 mm thick with 19 ply treated plywood
Roof Insulation Value	R-13
Roof External Sheet	14 gauge
Roof Internal Sheet	24 gauge
Ventilation	Mechanical
DOORS	
Double steel service door with lock	Standard 14 gauge
Single pedestrian doors with lock	Available
LIGHTING	
Internal Lighting Type	Fluorescent or LED
Internal Lighting Flux	Minimum 500 lux
Exit Lights	Equal To Door Quantity



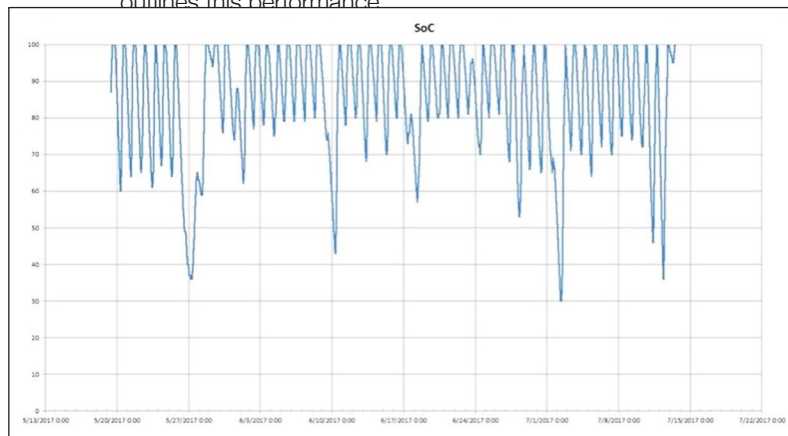
*Power skid
packed and
ready for
deployment*

Canada Forces Base

The system was designed with reduced process complexity to provide additional functionality, enabling a reduction in overall tankage. Each step was re-evaluated which achieved more removal/treatment per tank, resulting in a streamlined single-pass wastewater treatment design. Complexity (i.e. moving parts) was removed where possible to keep operator maintenance and energy costs to a minimum.

Since installation, the back-up conventional power system has supported the operations of the mobile waste water treatment system successfully with **100% required power being generated from the photovoltaic array with backup power supplying stand-by functionality only.**

The state of charge mapping shown in the figure below outlines this performance



The Project

Client

Island Water Technologies

Location

Gagetown, New Brunswick, Canada

Product

Waste Water Treatment Plant Microgrid

Completion Date

2016

Energy Storage Technology

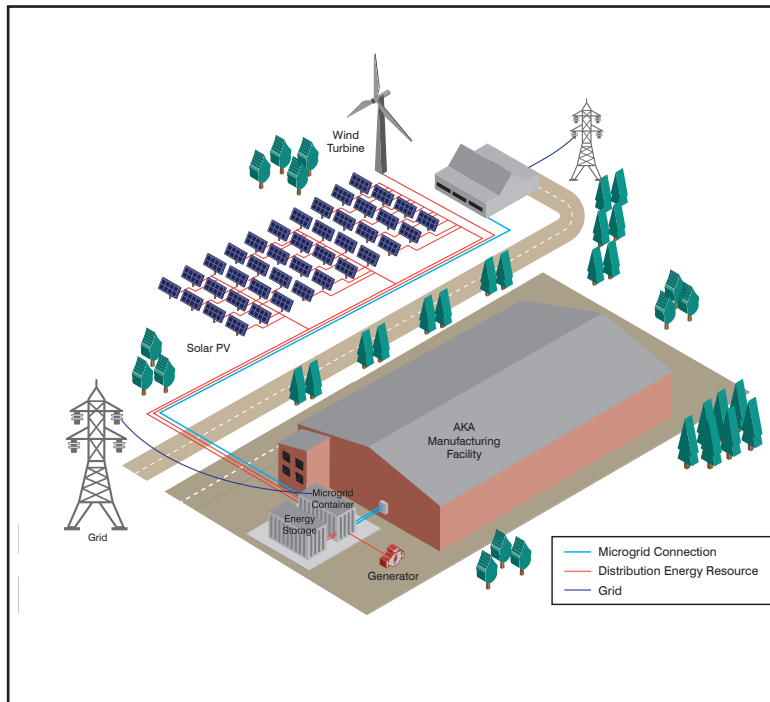
Lead Acid

Capacity: 8.8 kW

Energy: 55 kWh

Benefits

- Self Powered
- BRS
- Ease of Transplant & Installation
- Dashboard for Remote Visualization of performance



AKA Microgrid

AKA's Pooles Corner Microgrid is designed with a focus on power system reliability, power distribution management, and energy storage to support the campus including two facilities; manufacturing and AKA's START CENTRE: engineering building. It incorporates a diesel generator, renewable energy, and energy storage.

The Project

Client

AKA

Location

Pooles Corner, PE, Canada

Product

Commercial/Industrial Microgrid

Completion Date

2018

Energy Storage Technology

Ultra-Capacitors and Lithium Ion

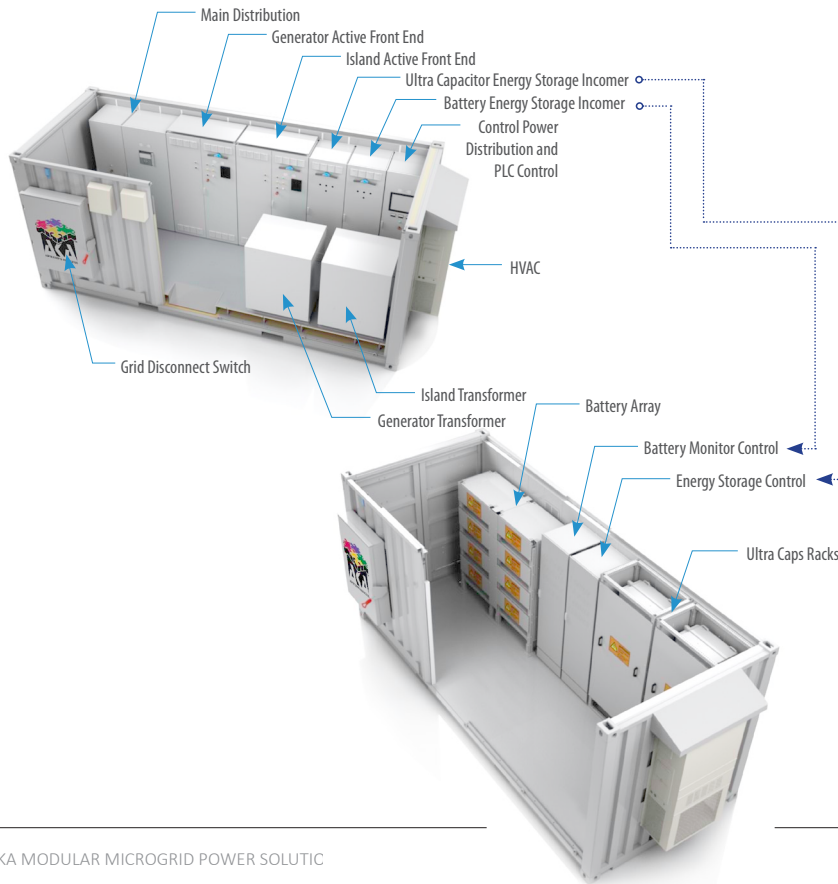
Capacity: 200 kW

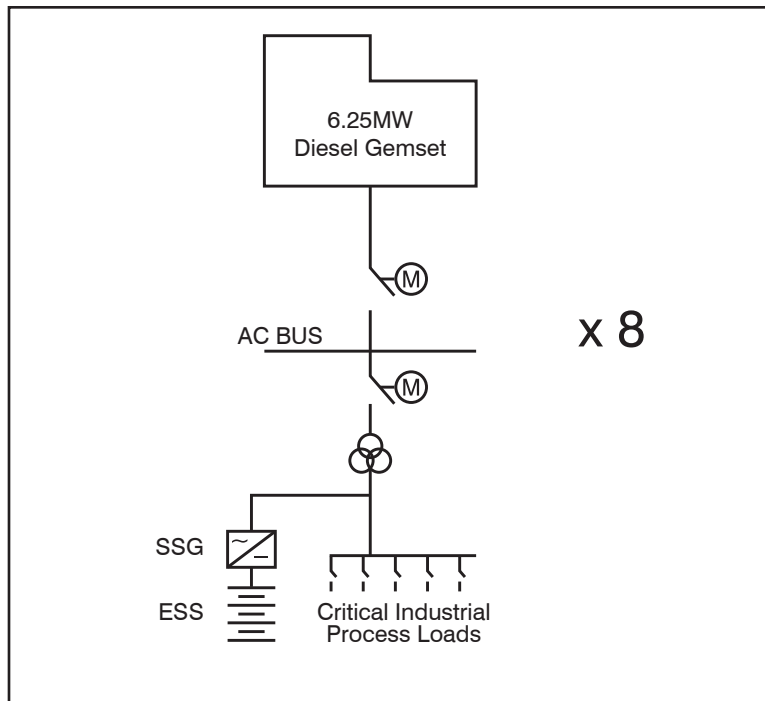
Energy: - 78 kWh Lithium Ion Battery

- 5.25 MJ Ultra-Capacitors

Benefits

- Seamless integration of renewables
- Anti-Islanding
- Peak Shaving/demand metering reduction
- Generator Availability
- Utility KVAR Compensation
- Synchronization - Bumpless connection/Disconnection
- Bumpless Grid Fault Ride Through
- Data Capture and Analytics
- Predictive Data Driven Optimization





Industrial Microgrid

Construction has already commenced retrofitting A 50MW diesel power plant station to enable AKA's micro-grid technology. This system comprises of 16 solid-state generating units each containing 125 kWh's of energy, and a capacity for 500 kW. This Micro-grid will provide a vast amount of redundancy and reliability for the client and allow them to operate reduced rotating reserve, in an extremely harsh environment.

The Project

Product

Industrial Micro-Grid System

Completion Date

2018

Energy Storage Technology

Lithium-Ion Batteries

Capacity: 8 MW

Energy: 2,000 kWh

Benefits

- Reduced rotating reserve requirements
- Peak Shaving
- Synchronization
- Fault Ride-Through / Power Bridging
- Data recording and analytics for plant optimization, reduced maintenance

Aspin Kemp & Associates (AKA)

AKA is a leader in power and propulsion technology.

AKA offers a full spectrum of integrated products and services including; systems integration, new product development, engineering, manufacturing, testing, installation, commissioning, life cycle support, field services, integrated documentation and training.

Our solutions incorporate several patented and innovative technologies including Advanced Generator Protection (AGP), the XeroPoint Hybrid Power and Propulsion System and Hybrid Drill Floor for ultra-deepwater drillships.

AKA systems are developed with the backbone of our Integrated Documentation System (IDS™). This methodology is a foundation for information transfer to our clients. Once a project is complete, our clients receive best in class documentation and asset management records.

Our manufacturing facility in Prince Edward Island includes a state-of-the-art mechanical fabrication shop, an electrical assembly area and a medium voltage test bay.

AKA's global clients and partners include MAN Diesel & Turbo, Transocean, GE Energy, Siemens Oil & Gas, Foss Maritime, Kotug International, Bhagwan Marine and more.



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