

# Case Study - WEB Aruba (Water En Energiebedrijf)

**KRAFT  
POWERCON**

**KraftPowercons UMD secures operation of fuel pumps for a GE Frame 5 Gas turbine**



## Customer

Aruba is a constituent country of the Kingdom of the Netherlands physically located in the central-southern part of the Caribbean Sea.

To help maintain the power grid stable and efficient, various solutions are installed in Aruba's electricity grid system – flywheels with energy storage capacity and Intelligent Generation Management System (IGMS). To further increase power capacity and to override peak loads, a GE gas turbine is part of the power system.



## Challenge

In order to increase operational reliability and the availability of the gas turbine, it was modernized in 2021-2022. A review was made of the fuel pump system where the old DC motor was identified as technically deficient and requiring maintenance.

The DC motor has served as a backup for the gas turbine's critical fuel pump system. The customer's requirement was to eliminate the DC motor and get backup for the primary fuel pumps.



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### Solution

KraftPowercons Uninterruptible Motor Drive (UMD) was installed to secure the operation of the two primary AC motors in the fuel pump system. In the event of a power outage, the transition from mains supply to battery supply is automatic and seamless.

In order to quickly start the gas turbine to support the electricity grid in the event of a power outage, the black start function of the fuel pumps was a requirement for the new backup solution. To be able to get full pump power at start-up, a high starting current was required, which the UMD supplies directly from the frequency converter.

An equivalent UPS would require significant oversizing to handle the same load. The customer chose UMD because of its high availability and cost-effectiveness compared to a regular UPS.

**In-line Integrated VFD's allow precise motor control**

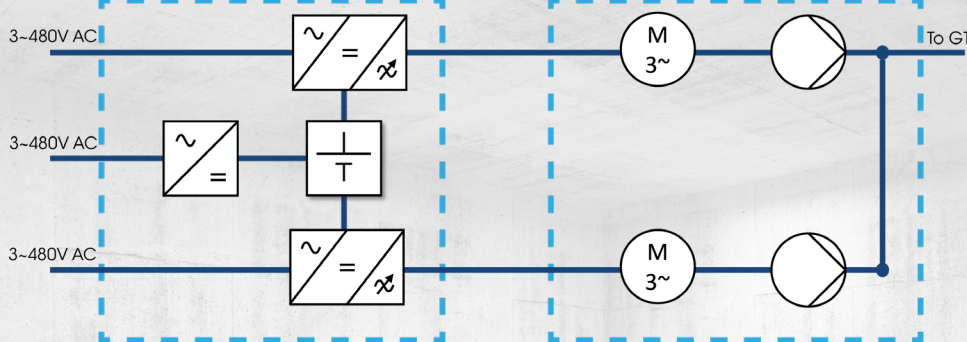
**UMD™ adds black start capabilities**

**Complete factory tested UMD™ system**



**KraftPowercons solution UMD**

**Main fuel pumps for the gas turbine**



**Previous fuel pump system**

