

TB-5000

Hydrogen Fuel Cell Power System

PRODUCT OVERVIEW

TROPICAL S.A. presents its all new TB-5000 Hydrogen Fuel Cell Power System, producing 5000W nominal electric power using the Proton Exchange Membrane (PEM) technology. The membrane on the fuel cell stack is converting hydrogen into electric power and the only "pollutant" is clean water. This power generator produces high quality electric power 110V or 230V AC & 12V, 24V or 48 DC (other voltages on request). It is designed to be used as an Uninterruptable Power System (UPS), back-up power system, as a stand alone power generator providing electricity to our homes, in grid back up, as solar hybrid, in telecommunication towers or military applications or remote applications. Its main advantages are: quite in operation, small in size & light weight, produces zero-emissions, minimal maintenance, reliable, stable & quick start operation.

TECHNICAL SPECIFICATIONS

FUEL CELL SYSTEM CODE: TB-5000
 TYPE: PEM (Proton Exchange Membrane)
 POWER OUTPUT: 5000W (max 5.6kW)
 AC OUTPUT: 110 or 230 V/AC
 DC OUTPUT: 12V/24V/48V/DC
 BATTERY CHARGER: 110 or 230V/AC
 HYDROGEN PURITY: 99.99%
 OXIDANT: AMBIENT AIR
 COOLING SYSTEM: WATER
 ETHERNET PORT (LAN): ETHERNET PORT (LAN) ACCESS FOR CALIBRATION
 WEIGHT: 55 Kg
 DIMENSIONS (mm): L:500 x W:550 x H:600

FUEL CELL STACK BY BALLARD



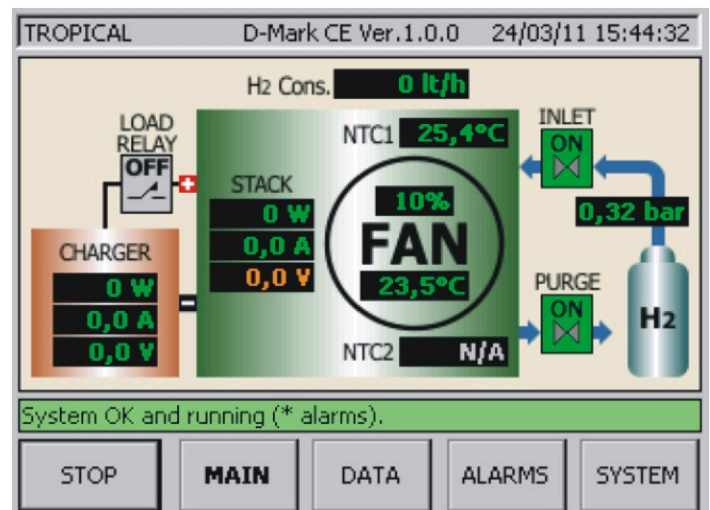
Ballard Power Systems
 FCGen 1300
 H₂ Fuel Cell Stack

BALLARD®

Tropical's Water Cooled TB Series Fuel Cell Systems are powered by FCGen 1300 Fuel Cell Stack. That stack provided from Ballard Power Systems is new, modern, it provides high fuel efficiency, reliability, runtime and flexible fuelling using reformat hydrogen (from NG, LPG, Methanol).



TOUCH SCREEN & MEASUREMENTS



The TB-5000 hydrogen fuel cell power system is being controlled by an intelligent controller which is operated by a 16-colored touch screen monitor. The management of the system is easily done through the touch screen monitor and although the system is fully automated, the user has the option to change which ever parameter likes followed by a 4-digit password. Moreover, data acquisition of the parameters can be saved on an excel file (SD memory card) and can be changed.

MEASUREMENTS

- ▶ STACK POWER (Watt)
- ▶ STACK VOLTAGE (Volt)
- ▶ STACK CURRENT (Ampere)
- ▶ BATTERY VOLTAGE (Volts)
- ▶ HYDROGEN LEAK SENSOR
- ▶ HYDROGEN INLET ON/OFF VALVE
- ▶ HYDROGEN PURGE ON/OFF VALVE
- ▶ AIR STACK TEMPERATURE (C°)
- ▶ COMPRESSED AIR FLOW (%)
- ▶ SET BUTTON (Settings Screen)
- ▶ DATA BUTTON (Parameters Screen)
- ▶ SYSTEM TOTAL OPERATING TIME
- ▶ TIME - DATE / MONTH / YEAR
- ▶ OVERLOAD SETTING (Watt)
- ▶ SD MEMORY CARD (Data Acquisition)

OPTIONAL

- ▶ HYDROGEN PRESSURE (Bar)
- ▶ HYDROGEN CONSUMPTION (lt/hr)
- ▶ HYDROGEN TANK CAPACITY
- ▶ SYSTEM SERVICE TIME
- ▶ STACK LIFETIME
- ▶ AIR HUMIDITY



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MAIN APPLICATIONS



Telecommunication
Surveillance & Sensing



Homes &
Remote Areas



Mobile Traffic Signals
& Remote Signalling



Motor Yachts
& Boats



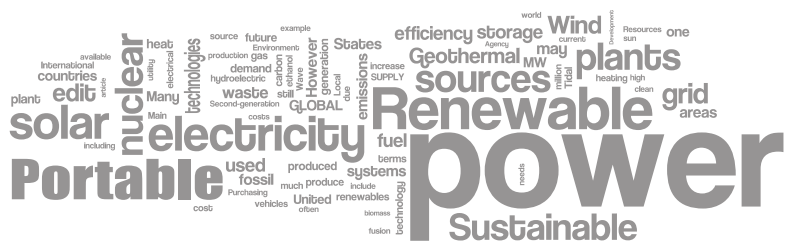
Small Businesses
& Industry



Army Applications

ABOUT TROPICAL S.A.

Tropical S.A. is a developer of distributed power generation products and solutions. The company designs, manufactures and sells a broad range of Hydrogen & Fuel Cell Technology solutions for residential, commercial and institutional, fixed or portable applications. In addition to Fuel Cell Power Systems, its product portfolio also includes Electric & Fuel Cell Vehicles and Commercial Vehicle A/C & Refrigeration Systems. A long time leader of the A/C & Refrigeration systems market with its innovative Inverter Technology, over the past decade Tropical made significant investments in the development of fuel cell technologies. For more information about the company and products, you may visit www.tropical.gr



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