VAISALA

WindCube Autonomous Power Supply

The ProCube is an accessory for WindCube v2.1 designed to supply the lidar with power when grid access is not possible.

Features

- One-stop-shop power solution with Vaisala, as a single point of contact
- Stable and non-grid connected Power Supply to avoid additional costs, operations discontinuity and sources of delay
- Weatherproof fuel cell switching on only when battery voltage drops too low
- 1-year warranty included with no preventive maintenance required during this period
- Installation of ProCube and WindCube can be conducted with the purchase of the “Quick Start” (L1 training)

WindCube ProCube

ProCube solution has been developed and is manufactured by SFC Energy AG. It is supplied directly by Vaisala as a distributed item.

Description

The ProCube generates power from a set of two solar panels and a direct methanol fuel cell (EFOY Pro 2400 Duo Basic). The fuel cell is installed in an Aluminum casing (EFOY ProCube 2060A) equipped with a solar charge controller and two batteries to ensure continuity and stability of power supply to the Lidar. Two fuel cartridges (M28) are also placed in the casing to feed the fuel cell.

Flexible deployment and operation

The ProCube solution has been designed to optimally respond to the challenges associated with deployment in remote places. With its two different power supplies, the ProCube is totally independent from weather and any grid related issues. It can be installed quickly and easily in only a couple of hours. It is a discreet option thanks to its small footprint and its low noise level.

Remote monitoring

The ProCube’s performance status can be monitored via WindCube Insights - Fleet software. Available on the same webpage as the powered WindCube, the following information is provided:

- Battery voltage
- Output current from the fuel cell
- Operating time
- Operating state
- Operating mode
- Cumulative output energy
- Error code of the fuel cell
- Cartridge consumption

Safety

Fuel cartridges are perfectly sealed to avoid any danger. In addition, an antistatic mat and a safety face shield are provided with the ProCube package for a safe installation.

Importation and Transport

Fuel cartridges and batteries can be considered as Dangerous Goods by some countries. It is the responsibility of the user to verify local importation procedures and restrictions.

Depending on selected transport mode, additional expenses can be generated by the delivery of the solution. It is advised to validate logistics aspects before placing the order.

Consumption estimation tool

By using the GPS coordinates of the planned installation, it is possible to estimate the yearly solar irradiance level of the site and deduce the solar panel generation capacity and the fuel consumption. The tool can be used to assess the required number of onsite interventions to replenish the cartridges.

The values generated by the energy calculator are estimates under ideal conditions and should not be taken as formal quotes. The real energy yield from solar panel can be affected by additional factors such as inclination, alignment and fouling of solar panels as well as shading due to buildings, trees...

Technical data

ProCube 2060A specifications - Mechanical specifications

Property	Description/Value
DIMENSIONS (L × W × H)	
Case	937 x 787 x 480 mm
WEIGHT	
Case	7.5 kg
Fuel cell	9.3 kg
Batteries	38 kg each
Fuel cartridge (M28)	23.4 kg each
MATERIAL	
Case Material	Aluminum-housing with handles
Temperature range	-20 °C to +50 °C / -4 °F to 122 °F
IP-code	IP 33
Nominal voltage	24 V DC (1)
Noise level (1m / 7m)	42 dB(A) / 25 dB(A)

1) *Battery nominal voltage. The DC-DC converter supplied alongside the power supply ensures an output voltage of 24.5-27 VDC to the WindCube*

Solar Installation specifications

SOLAR PANEL	
Quantity per system	2 panels installed in parallel
Nominal Power	215W-24V Mono each
Dimensions (l x w x h)	1580 x 808 x 35 mm each
Weight	15 kg each
SOLAR MOUNTING	
Material	Non-corrosive material, e.g. Aluminum EN AW-5754
Weight	10 kg

Packing list

Fuel Cell	Electrical equipment	Solar power equipment
Fuel Cell EFOY Pro 2400 Duo Basic	EFOY ProCube 2060A aluminum case customized for WindCube	Solar panel 215W-24V Mono (x2)
M28 Fuel cartridge (x2)	Morningstar SS-MPPT-15L incl. temperature sensor	Solar extension cable SET MC4, 10 m
	Battery Lead Gel 12 V 130 Ah (x2)	Solar mounting structure for two solar panels
	Souriau UTS6JC124SSCR (Power Out)	
	MC4 (x2) (Solar In & Out)	
	BULGIN PX0833 (RJ45) (Data In & Out)	
	DC/DC-Converter	
	M28 Adapter (x2)	
	Shockwave indicator 75g	
	AntiStatic Mat	
	Face shield	

Shipping Case dimensions

Transport Scenario	Packages	Weight	Dimensions
Europe and land transport	Pallet 1: ProCube	38 kg	120 x 80 x 73 cm
	Pallet 2: Solar Panels, Batteries, Fuel cell and cartridges	160 kg	120 x 80 x 220 cm
Cargo Plane	Pallet 1: ProCube	38 kg	120 x 80 x 73 cm
	Pallet 2: Solar Panels, Structure, Batteries, Fuel cell and cartridges	150 kg	120 x 80 x 220 cm
	Pallet 3: Solar panel structure	35 kg	220 x 30 x 38 cm

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