Tethered Power System for Unmanned Aerial Vehicles

33.6V

1.3kW

100m

Alarm

Overview

Tethered Power System (hereinafter System) is intended to supply unlimited power from a ground power source to an unmanned aerial vehicle (UAV). The System provides continuous operation of the UAV in the flight mode for an unlimited time at a distance of up to 100 meters.

The System consists of a ground station, cable reel with an ultralight optoelectronic composite cable with Kevlar reinforcement and a converter mounted on board of the UAV. The ground station converts AC voltage into a high DC voltage in order to reduce current consumption value transmitted through the cable. High voltage is transmitted via a composite cable to the onboard unit, which converts and provides the required low voltage DC power for the UAV. The System can switch the power source of the UAV from the tethered System to a backup battery in case of termination of power from a ground power source.

The System provides high-speed data exchange between ground station and UAV through optical wires of the composite cable with a high level of noise immunity.

The built-in monitoring module performs continuous diagnostic monitoring of the System and its operating parameters, such as current, voltage, temperature and the battery cells voltage. In case of error detection the diagnostic system generates an alarm and the corresponding message is displayed on the front panel LCD display of the ground station. In the normal operation mode of the System the operating parameters of the ground station are displayed on the LCD screen, such as input and output voltages, input and output currents and the temperature.

The tethered power system along with UAVs can be used in wide range of areas, such as mobile repeater stations, mobile high altitude video surveillance system for a long time, in tight areas, military purposes, public safety, telecommunications, traffic monitoring and etc.

Specialized software supplied with the System allows the user to flexibly configure the System settings according to their requirements. The software has a simple and intuitive interface.

System Features

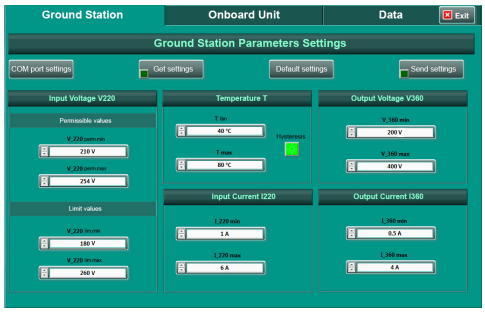
- High output power
- Control of the UAV current consumption and voltage
- Diagnostic control of system operation
- Light and audio alarm
- Overload protection
- Overheating protection
- Ultralight solid optoelectronic composite cable to provide power to the UAV
- Powering of the UAV from the backup battery in case of termination of the power from the ground station
- Easy installation, use and transportation

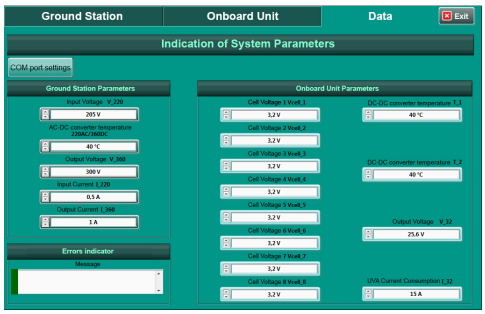
Technical Specifications

Input Voltage	230VAC ± 10%
Frequency	50Hz
Output Voltage	33.6VDC ± 5%
Output Current	40 A
Output Power	1300 W
Ground Station Weight	12,5 kg
Ground Station Size	555mm x 428mm x 211mm
Onboard Unit Weight	2 kg
Onboard Unit Size	160mm x 165mm x 55mm
Cable Weight (100 meters)	1,5 kg
Cable Length	100 m
Data Transfer	at least 100Mb/s

Operation Conditions

Environment Temperature	from -30 °C to +50 °C
Relative Humidity at 25 °C	no more than 95%





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