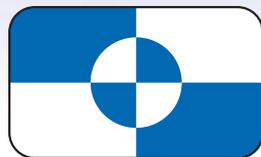


POWER DISTRIBUTION &
CONTROL UNITS



POWER
DISTRIBUTION
and CONTROL
UNITS for
AIRCRAFT
PLATFORMS



Savronik



SYSTEM DESCRIPTION

Power Distribution and Control Units designed to remotely control the electrical power needs of various subsystems on aerial platforms in a controlled and protected manner are microprocessor/FPGA controlled units in the "Smart" class. In addition, there are Power Distribution Units designs that are provided with only logic gates provided with electromechanical structures.

Voltage, current, frequency, etc. of platform power supplies at PDCUs power input, power quality states and on-off states of switching/protection elements of each output are monitored instantly. Internal and external communication is provided by communication protocols, RS422, CAN Bus, Ethernet, I2C, ARINC429, MILS-STD-1553 etc.

PDCUs can be specially designed by Savronik in different sizes and in accordance with different mounting interfaces in order to provide power distribution within the scope of the needs of different aircraft (fixed wing, rotary wing, UAV, etc).

As a subcontractor mainly for defense industry foundations owned by the Turkish Armed Forces and as a main contractor, Savronik has designed, developed and produced PDCUs for domestic and foreign markets. The PDCUs by Savronik are used actively to meet controlled and protected power needs on various platforms across Turkey and in many countries.

TECHNICAL FEATURES

Compliance with DO-254 (Hardware) and DO-175 (Software) design certification processes

DAL-A level design capability with high reliability

MIL-STD-704E(Aircraft Electrical Power Characteristics) compliant designs

Use of FPGA(Field-Programmable Gate Array) instead of microprocessor in some platform projects with high reliability and redundant system solutions

Mechanical interface connections suitable for aircraft

Voltage, current, frequency measurements for AC power

Voltage, current measurements for DC power

AC and DC Power Switching can be done via Electromechanical Switching Elements (Relay/Contactor/Circuit Breakers)

Alternatively, AC and DC Power Mains can be made with Solid-State Power Controller (SSPC) Boards designed by SAVRONIK

Temperature/Humidity sensor (Built-In-Test-BIT) infrastructure on each card in order to perform in-unit temperature control

Energizing the outputs according to the state of the power supplies by defining different working scenarios

Fault, warning and error conditions can be recorded in the memory on the unit with date-time information and then these records can be read and interpreted.

In case of warning, the units are protected by cutting the power of the relevant outputs to be assigned in the scenario

In case of changing power needs, the current cut-off limits of the SSPC outputs can be changed remotely without changing the board

Updating parametric values (High-Low Voltage, Over/Short Circuit/Trip Current, High Temperature etc.) with Savronik design Maintenance Update Software via RS422 and/or Ethernet

GENERAL FEATURES

| | |
|--|---|
| Operating Voltage (DC) | : 18–33 V |
| Operating Voltage (AC) | : 90-130 V |
| Operating Frequency | : 400 Hz |
| Operating Temperature | : -40°C / +70°C |
| Storage Temperature | : -55°C / +85°C |
| Operating Altitude | : 0–45000 feet (according to usage area) |
| Protection Class | : IP 54 / IP 65 / IP 67 (according to usage area) |
| Electromagnetic Compatibility Tests | : MIL-STD-461E / DO-160; RE102, CE102, CS101, CS114, CS115, CS116, RS103 MIL-STD-704E Aircraft Electrical Power Characteristics |
| Environmental Conditions Tests | : MIL-STD-810G / DO-160; High Temperature(Operating-Storage), Low Temperature(Operating-Storage), Humidity, Low Pressure(High Altitude), Shock, Vibration, Sealing etc. |

OUR POWER SWITCHING CAPABILITIES

The power switching techniques used in our designs since the first production in the Power Distribution and Control Units (GDKB) Product Family;

Traditional Switching Methods

Relay,
Contactor,
Circuit Breaker/Fuse

Solid-State Switching Methods

Solid-State Power Controller(SSPC) - Innovative Electronic Card Designs

PDCUs produced with power switching techniques play an important role in meeting electrical power needs on;

Land Platforms (Shelter, Wheeled Tire, Tracked Vehicle etc.),

Naval Platforms (Underwater and surface vehicles, etc.),

Airborne Platforms (UAV, Fixed Wing, Rotary Wing etc.).

Due to the high level of reliability of GDKB Systems developed specifically for aircraft, the design processes are carried out in accordance with:

DO-254, Design Assurance Guidance for Airborne Electronic Hardware,

DO-178C, Software Considerations in Airborne Systems and Equipment Certification.

About Savronik

Savronik, founded in 1986, has been operating for over a quarter of a century in the Turkish Defence Industry, and is one of the few major players in an industry dominated by quasi-governmental organizations. Starting from early 2000s, we have been employing our defence industry experience also in Intelligent Road Systems, Railway Systems and Integrated Logistics Support.

Savronik produces award winning, high quality products, both unit and integrated solutions, compliant with standards such as ISO 9001:2015, AS9100 rev.D in the fields of electronics, electro-mechanics and software. Our true differentiator however, is our field capabilities which allow Savronik be wherever and whenever our customer needs us. In this respect Savronik is not only a technology company but also a services and maintenance competence center providing full life cycle maintenance and operating services to its customer in the civil and military sector.