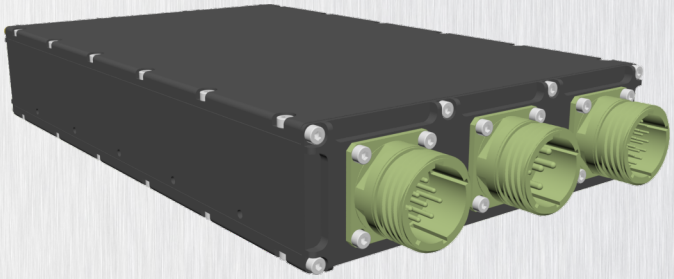
Electronic Circuit Breakers System

ECB-48



ARM FPGA RS 485 RS 232 ARINC 429 CAN USB

KEY BENEFITS

- ✓ Improves reliability through elimination of mechanical circuit breakers and relays
- ✓ Simplifies the overall wiring of the aircraft
- ✓ Gives full information on the currents consumed by the devices
- ✓ Reduces weight

Electronic circuit breakers system integrates entire electrical distribution system in one unit, making it easily managed through the EICAS display or other MFD displays. It gives the total protection for all the electrical circuits, starting from overload and short circuit to detection of open circuit and control of individual devices like trimming flaps and systems, lights and others without the use of relays.

The system is easily configured to match the needs of specific aircraft. For each channels the current limits, temperature curves and other parameters are set up individually, giving the precise control on every electrical device.

Having all the circuit breakers and relays centralized in one compact place removes the wire madness behind the panels, simplifies the schematics, lowers weight and most importantly improves reliability.

The system supports all standard control interfaces as ARINC-429, RS-232, RS-485 and CAN bus. For initial setup and configuration the USB interface can be used together with easy to use software. The control of power channels can also be implemented with discrete inputs, that can be connected to mechanical switches on the panels, end-switches on the devices, etc.

The system is fully integrated with EICAS and AAM products from AV-Tech L.L.C., making it possible to implement a glass-cocpit concept in any aircraft and also to provide complex logic between sensor data acquired by AAM and pilots interaction on EICAS.

Size: 270 mm x 170 mm x 50 mm

Weight: 2 kg

Channels:
6x 25 A DC
8x 15 A DC
26x 5 A DC
Channels can be paralleled to increase current capability

Interfaces:
RS-232
RS-485
ARINC-429 input
ARINC-429 output
CAN bus
USB

Power: 8-36 VDC, 320 A total distributed current

Environmental:
Pressure range:
-1,400 ft. to 30,000 ft.
Operating temperature range:
-40°C to +80°C

Certification:
Designed to be compliant to DO-160, DO-178C, DO-254 standards for installation in experimental aircrafts. This product holds no TSO certification.

AVIATION TECHNOLOGIES

ELECTRONICS DESIGN AND MANUFACTURE

OVERHAULING

SERVICING

REBUILDING

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Air Condition Control Unit

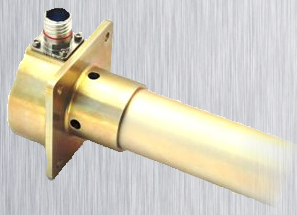
For any modern aircraft it is necessary to provide comfortable flight for passengers, especially during long range flights. In helicopters, the cabin is usually non pressurized and altitudes are low thus making use of traditional air condition scheme impossible.
To solve the problem of efficient air conditioning the new state of the art system of air conditioning using compressor/condenser technology was developed.
The whole system is controlled by electronic module, incorporating solid state control of air conditioning motor, blowers, temperatures, pressures and user interaction.

ARM

RS 485 **RS 232**

ARINC 429

Capacitive and Magnetic Fuel Sensors



Capacitive fuel probe mounts in the fuel tank for measuring fuel quantity. It is a very reliable and accurate system that has no moving parts. As the fuel level decreases in the tank, the probe capacitance changes, this capacitance change is sensed by a signal conditioning unit.
The sensor provides a continuous 0-5V analogue and frequency outputs and is compatible with most liquid types including fuels, oils and aggressive alcohol-based fuels. Separate "FUEL LOW" output gives signal if the level is below critical point. This signal is formed independently from capacitive measurement by using NTC/RTD sensors combination.
All of the sensor's processing electronics are located within the sensor head thus no additional remotely-mounted electronics are required. With a robust anodized aluminum body construction, the sensor is well suited to harsh environment applications and has a wide operating temperature range from -40°C to +125°C.

RS 485

ARINC 429

Torque sensor

The torque sensor had been modified to a modern design using solid state polarized laser technology to measure the angular displacement of a torsion bar. The measured time parameters are processed by DSP to calculate the torque. The sensor is installed in the standard place in helicopter. The case was reverse engineered to provide the exactly same alignment and pickup of an torsion bar shutters.
The sensor can be calibrated for a range of torque measurements and can be adapted to any existing torsion bar. The adoption of new torque sensor raises the reliability and response time of an indicator, thus providing higher safety and alerting for pilot.

RS 485

ARINC 429

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