



Flaps Motor Control Module (FMCM) DAL A FPGA-Based Motor Control Unit



- 2 kW brushless DC motor controller
- DAL A certifiable development
- DO-160 G qualified for non-pressurized environment



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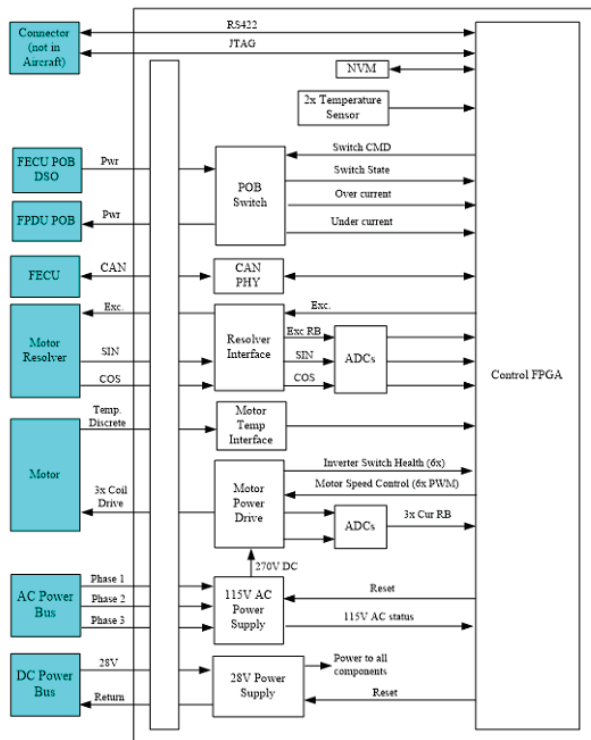
System Functions

The FMCM is a motor controller for the electrical FLAPS actuation of a medium-sized turboprop Part-25 aircraft. It provides the following functions:

- The FMCM controls the speed and direction of one 3 phase motor based on the speed command received via CAN and the actual motor speed received from a resolver attached to the motor.
- The FMCM controls the motor POB according to the command received via a CAN bus via a discrete signal.
- The FMCM sends actual motor speed, status, and BIT detected failures on CAN bus.

Top Level Architecture

All functions of the FMCM are implemented in an FPGA.



Enclosure & Environmental Qualification

The FMCM is built into a robust sealed aluminum enclosure. Environmental qualification is performed according to DO-160 for non-pressurized environment.

Technical Data

Interfaces

- 1x Resolver
- 1 x Temperature Sensor
- 1x Discrete Inputs
- 1x Discrete Outputs
- 1x ARINC 825/CAN 2.0B
- Power Off Brake
- Motor power drive interface

Power Input and Consumption

- Input power: 28 VDC, 115 VAC
- Power consumption:
 - 28 VDC: ~3 Watts
 - 115 VAC: max 2 kW

Weight & Physical Dimensions

- 4.68 kg
- 263 mm x 203 mm x 90 mm

External Connectors

5 x MIL-DTL-38999:

- AC Power Input
- Motor Power Out
- DC Power and Control
- Motor Sensors
- Test Connector

Availability

- 57.110 FH