SMART ELECTRONIC CONTROL
MINIMISING PROGRAMME RISK

Meggitt's new smart electronic control capability minimises programme risk and significantly shortens product development time.

That's because our power supply, input and output (IO), filtering and processing modules are almost infinitely interchangeable and scaleable.

Sophisticated control algorithms ensure our baseline units address a spectrum of complexity, voltage, frequency and movement. This means we can prototype rapidly and mitigate the impact of engineering change on programme management associated with one-off customisation.

AEROSPACE
CAPABILITIES

- Wheels, brakes and brake control
- Thermal management and fluid control
- Ice protection
- **Smart electronic control**
- Fire protection and control
- Ignition
- Health monitoring
- Sensing and data acquisition
- Flight test
- Fluid gauging
- Air data measurement
- Flight displays
- Polymer solutions
- Fuel containment
- Countermeasure deployment
- Automatic ammunition-handling

MEGGITT
smart engineering for extreme environments

MULTI-VOLTAGE IO

Meggitt's scaleable, modular smart electronic control can accommodate alternating and direct current, *wild* frequencies and battery power. Our solution is compatible with any industry-standard interface.

APPLICATIONS

Meggitt's smart electronic control technology is a natural for the more electric aircraft but its applications are wider.

Its development has been informed by significant experience of what electronic and electro-mechanical components – fans, pumps, compressors and control valves – endure in civil and military aerospace and land-based combat. That's why low weight, low power consumption, high reliability and ruggedness come as standard in any solution we devise.

Integrating a bleed air sub-system for a business jet
Meggitt used its smart electronic control technology to deliver the entire pneumatic bleed air system for Embraer's Legacy 450/500 business jet. The controller is enabling the multiple regulating and shut-off valves that maintain anti-ice systems and temperature and pressure control in cargo bays, cabins and cockpits.

Smart space management for a military aircraft
Our lightweight, space-efficient thermal management system cools a fighter jet's critical electronic flight equipment before take-off, with minimal installation volume.

At the core of Meggitt's fully qualified in-service solution, lies our aerodynamically-efficient electronic controller, which is integrated into the fan housing used as the heat sink for the controller's heat-generating gate drives. So the motor could be as light and small as possible, our control architecture enables soft starts to be programmed, removing the impact of torque load on the motor shaft and bearings and high current demand on the motor windings that only heavier, rugged equipment could withstand.

Smart power management for an unmanned ground vehicle
Meggitt's smart electronic control technology and extreme environment component know-how has been demonstrated on a Lockheed Martin unmanned multi-function utility, logistics and equipment vehicle.

The challenge involved designing a high ratio traction hub gear box and fail-safe hydro-electric system with access to limited onboard power. We demonstrated how the control logic of our system can be adapted to deliver power management smart enough to make the most of available energy.

KEY FEATURES

I PROCESSOR

CONTROL
- multi-tasking
- real-time
- multiple I/O

MEMORY
- plug-and-play
- scaleable
  - RAM
  - FLASH
  - NVRAM
  - EEPROM

SURVIVABILITY
- military, aerospace and industrial temperature ranges
- never obsolete: pin-compatible with multiple replacement processors

II INPUT/OUTPUT

COMMUNICATION
- configurable for virtually all aerospace and defence protocols
  - ARINC
  - CAN
  - RS422
  - RS485
  - RS232

DRIVE
- signals configurable for multiple applications
  - pumps
  - motors
  - fans and compressors
  - valves
  - sensors

DIAGNOSTICS
- built-in test
- health monitoring
- data processing

III POWER

CONVERSION AND CONTROL
- AC
- DC
- wild frequencies
- battery
  - fans and compressors
  - pumps
  - traction systems

MEASUREMENT
- current, voltage
- temperature, position
- velocity measurement

SYSTEM PROTECTION
- short circuit
- over/under voltage
- human factors/personnel

IV FILTER

CONFIGURABLE
- controls noise for applications ranging from 5 to 600 volts

CONTACT

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SMART ELECTRONIC CONTROL
Just one of the Meggitt capabilities covered in Meggitt in a Minute, the group's new e-tour.

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