



CONTROL

ADVANCED ELECTRONIC CONTROL TECHNOLOGIES

PUMP / MOTOR CONTROLLER
HYDRAULIC PUMP



 **MAROTTA®**

We're in Control



DC Brushless Motor Controller

Marotta's MCONTROL Hydraulic Pump Controller is used in each of the three variants of the F-35 Lightning II.

The MCONTROL Hydraulic Pump Controller provides hydraulic power on the ground to actuate weapons bay and landing gear doors, landing gear, brakes and steering during maintenance mode. It also operates in emergency mode, providing backup hydraulics in the event of an engine failure.

The MCONTROL Hydraulic Pump Controller uses motor speed and current feedback to precisely control pump speed under varying load and power conditions, monitors temperature and system health, and has the ability to shut down the motor in the event of out of performance envelope conditions.

The compact, lightweight motor is a 270 VDC, 6.3kw brushless motor that uses Hall sensors to provide motor rotational feedback to the controller.



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Key Features

- DC Brushless (DCBL) motor control provides fixed speed operation
- Constant speed Hall effect motor drive operation to provide motor rotational feedback to the controller
- DSP servo control improves reliability and reduces cost due to reduced component count and elimination of precision analog passive components
- Proven, two-loop state-of-the-art all digital velocity servo control for improved operational stability under all environmental operating conditions
- PID algorithms tailored for optimum control
- Vehicle control interface with discrete data signaling
- Built-in-test (BIT) diagnostics
- Pulse Width Modulated PWM motor driver for optimum power conversion efficiency
- State-of-the-art motor drive circuits using Isolated Gate Bipolar Transistors (IGBTs)
- Input power - 270 VDC
- Motor output power - up to 6.3 kw
- Discrete direction control input
- Discrete Fault signal output
- 16 Channel, 12 bit ADC
- MISRA C Software, Qualified, Safety Critical
- Weight - 6.7 lbs
- Size: 6" x 2.5" x 9"



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**WHEN IT COMES TO
ELECTRONIC CONTROL SYSTEMS
WE'RE IN CONTROL**