

# TAKE OFF WITH PRECISE SENSING

Enhance drone performance with advanced sensor technology



As commercial drones take on increasingly complex tasks, the reliability of core components becomes paramount. Failure is not an option when it comes to spreading fertilizer or delivering packages. That's why robust performance and reliability is key to ensuring safe and efficient operation in even the most challenging environments.

The motors on the drone enable it to achieve its key functions, allowing for unhindered movement with six degrees of freedom. Therefore, they require general sensor feedback from closed-loop control systems, along with protection against shorts and overcurrent near the motors. Magnetic current sensors offer a contactless method for monitoring motor load in a compact package, while also providing isolation from the circuit in the event of failure.

Another valuable feature of the drone is its camera, which supports both manual and autonomous flight by delivering real-time visual feedback to the operator or automated system. The gimbal motors that stabilize the camera necessitate precise position sensing to ensure a clear and accurate view. Magnetic position sensors can be used to measure the angle of the gimbal motor for better stabilization. Additionally, the joysticks and buttons on the remote controller can utilize linear magnetic sensors to provide a robust design that is resistant to mechanical wear and tear.

## What you can achieve with Allegro solutions

- **Reliability:** Magnetic sensors provide contactless solutions to minimize mechanical wear and tear for accurate measurements over time and temperature.
- **Efficiency:** Ensure your drones stay in the air longer with components that have reduced power consumption.
- **Solution Size Reduction:** Space-saving designs allow for lighter, more agile drones or the integration of additional features.

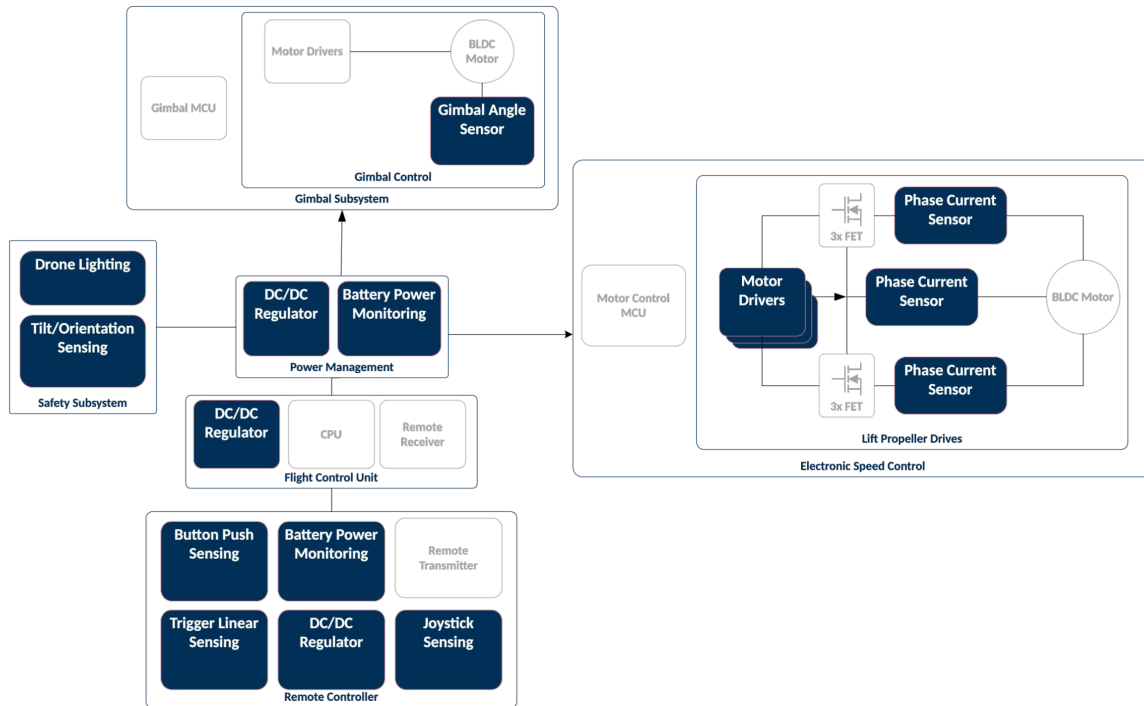


**Start upgrading your drone with Allegro's diverse line of sensors to ensure it has the hardware needed to effectively carry out its tasks.**

Design robust systems that enable your drone to stay airborne longer, with safe operation supported by advanced sensing technologies.

# Market-Leading Portfolios that Sense, Regulate and Drive

## Block Diagram



## Key Products and Solutions

Subsystem	Component	Allegro Parts	Key Differentiator
Battery Power Monitoring	Power Monitoring IC	ACS37800	Accurate and safe battery charge monitoring to optimize battery life
DC/DC Regulator	Buck Converter	A8586	Low quiescent current and extensive circuit protection for longer battery life
Drone Lighting	LED Driver	A6211	3 amp dimmable buck led driver, for high power LED applications
Propellor Motor Current Sensing	Current Sensor	ACS71240	Small 3mm x 3mm package saves space on board, and operates with low ohmic losses for efficient battery life
Propellor Motor Driver	3-phase Gate Driver	A4919	3-phase BLDC gate driver with optimized gate drive and LDO in 5 mm x 5 mm package to reduce system solution size
Gimbal Angle Sensor	1D, 2D, or 3D Position Sensor	CT8150	Consumes current in the nano to microamps range reducing power loss, available in small form-factor and low profile package
		CT310	High accuracy for precise angle measurement to provide better camera stabilization
		A31301	User-selectable magnetic axes for on-axis or off-axis angle sensing
Button & Trigger Sensing	1D Position Sensor	A1391, A1392, A1393, A1395	User selectable sleep mode and quick wakeup allows for optimizing battery life while maintaining accurate sensing
Joystick Sensing	1D or 3D Position Sensor	A1391, A1392, A1393, A1395	User selectable sleep mode and quick wakeup allows for optimizing battery life while maintaining accurate sensing
		A31301	Configurable power, sensitivity, and temperature compensation for optimized battery life and design flexibility



To learn more about the Allegro family of products and to explore available design resources, visit [allegromicro.com](http://allegromicro.com)

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