WIBOTIC™

AERIAL DRONES

Programmable Wireless Charging and Uptime Optimization for Aerial Drones

Autonomous Power Management

Maximize Drone Operations
Base stations can be placed throughout any work site allowing fleets of drones to land and charge quickly for maximum drone uptime.

Enhance Durability
Wireless charging systems can be fully embedded into drone garages or hangars and are impervious to dirty/wet/corrosive environments.

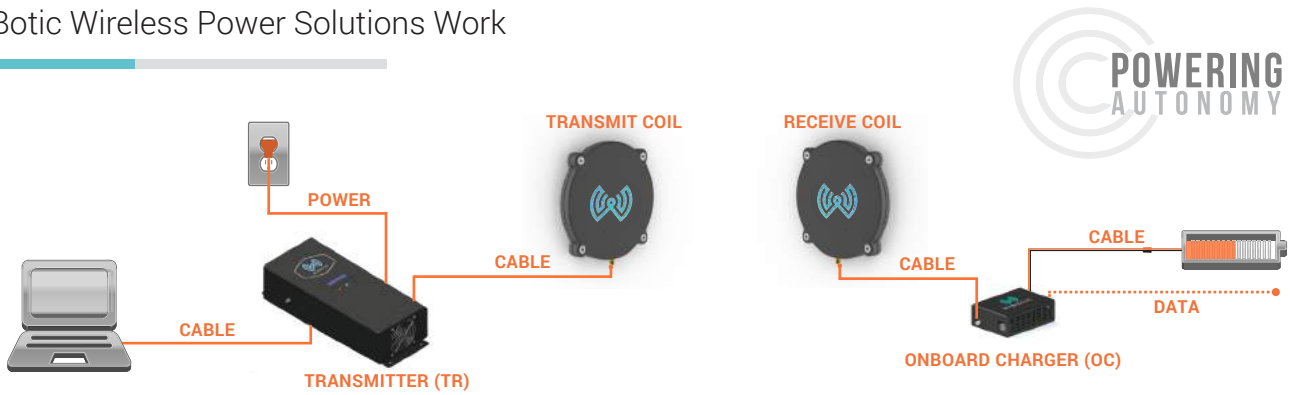
Monitor and Control Remotely
WiBotic's technology enables fleet-wide power management, eliminating the need for constant human monitoring and management of battery charging.

Our Solutions

Autonomous aerial drone applications are changing the way modern industries collect and process information. The adoption of drones for industrial and commercial applications has exploded in recent years - but their full potential simply isn't realized if they must be manually retrieved for battery exchange or charging after every mission. While semi-autonomous, physical-contact chargers and mechanical battery-swap technologies eliminate some of the operator burden, those devices can suffer from dirty, corroded, or worn out contacts with limited operational lifetimes.

WiBotic's wireless charging and software-enabled uptime optimization solutions solve these problems for OEMs, Service Providers, and Operators – allowing true autonomy for applications where drone "readiness-to-fly" is critical. Wireless charging systems can be integrated into existing drone garages or hangars to provide weather-proof power for permanently deployed drones. When located strategically throughout a work site, wireless transmitters also allow fleets of drones to charge whenever and wherever they're stationed – constantly topping off batteries. WiBotic systems also offer flexibility in landing position, so drones don't need to make a perfect landing every time to reliably charge.

How WiBotic Wireless Power Solutions Work



Available Components For Your Specific Application Needs

WiBotic offers a range of wireless charging components to accommodate nearly any drone system. Designed for "many-to-many" operation, it allows multiple transmitters to autonomously recharge multiple drones. Drone battery voltage and charge rate is configurable in software, so drones with different battery chemistries and voltages can share the same set of transmitters.

WiBotic's API allows drone scheduling systems to optimize charge rate (amps) for every charge cycle. The result is not only maximum uptime for entire drone fleets, but superior management of battery health and longevity for reduced operating costs and preventative maintenance.

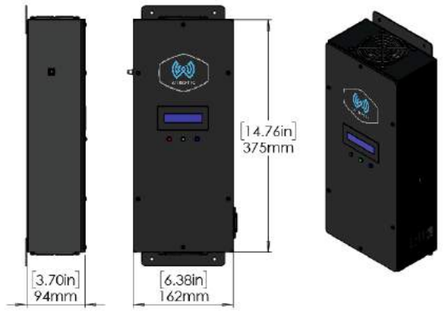
TRANSMITTER UNITS

WiBotic transmitters (TRs) convert AC power to a high frequency wireless power signal for transmission to the robot fleet. (DC powered models also available).

TRANSMITTER UNIT (in enclosure)	TR-100	TR-300
Input Voltage (AC)	90-264v	90-264v
Input Receptacle (AC)	IEC320-C14	IEC320-C14
Input Frequency	43-63 Hz	43-63 Hz
Enclosure Type	ABS Plastic/Metal	ABS Plastic/Metal
Data Port	Ethernet	Ethernet

*DC powered configurations available

TR-100



TR-300

ONBOARD CHARGERS

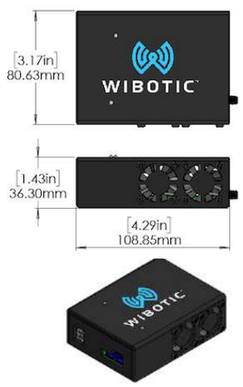
Onboard Chargers (OC's) are receiver circuit boards that convert incoming wireless power to a usable DC voltage. They're also smart battery chargers, with the ability to safely charge a wide range of battery types at adjustable charge rates.

ONBOARD CHARGERS	OC-100	OC-200	OC-250	OC-300
Battery Compatibility	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH
Battery Voltage Range	11.2-58.4v DC	11.2-58.4v DC	11.2-58.4v DC	11.2-58.4v DC
Max Charging Current	5A*	10A*	10A*	30A*
Max Charging Power	90w*	125w*	250w*	>300w*
Weight (PCB & Fan)	46g	82g	100g	220g
Total Weight (w/enclosure)	74g	154g	200g	413g
Operating Temperature	-20 to 40C	-20 to 40C	-20 to 40C	-20 to 40C
Transmitter/Receiver Communication	2.4 GHz Wireless	2.4 GHz Wireless	2.4 GHz Wireless	2.4 GHz Wireless
Aux Wired Charging Input Voltage	12-48v DC	12-48v DC	12-48v DC	12-48v DC

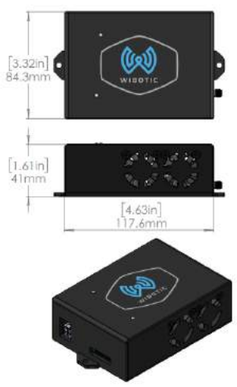
*Must be paired with properly sized transmitter to achieve max value

OC-100

OC-200



OC-250

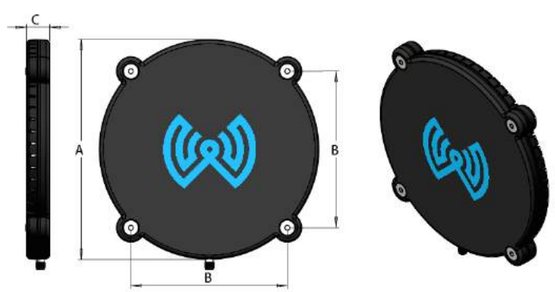


OC-300

TRANSMITTER AND RECEIVER COILS

Transmitter (Tx) and receiver (Rx) coils are specialized antennas that transmit and receive wireless power at specific frequencies. The standard WiBotic coil set is shown, but custom coil configurations, offered through our Integration Services, are also available.

TRANSMITTER/RECEIVER COILS (in enclosure)	RX-100	TX-200
Total Width (A)	104.5	205.5
Mounting Hole Distance - Max (B)	85	145
Thickness (C)	7.6 [0.30]	15.5 [0.61]
Enclosed Coil Diameter	100	200
Total Weight (w/enclosure)	35g	180g



OPTIONAL COMPONENTS

WiBotic's standard configurations can be mixed and matched to build the system that best suits your needs. However, if you're interested in ready-to-deploy simplicity, our optional embodiments may be of interest.

THE WIBOTIC POWERPAD: The WiBotic PowerPad is a fully integrated industrial-ready landing pad containing a transmitter circuit board with internal power supply*, a transmitting antenna* and a visible indicator light. The PowerPad can be used as-is for indoor or outdoor applications, and as a standalone landing pad or placed within a drone garage or hangar for maximum environmental protection.

*Items sold separately

BATTERY INTELLIGENCE MODULE: Many drones use new "smart batteries" with onboard balancing and BMS systems. Unless you're a master programmer, though, you probably haven't taken advantage of their advanced features. And there are still many drones that use traditional batteries without battery intelligence on their own. WiBotic's BIM solves these problems. Providing Cell Balancing, Monitoring and Protection, the BIM provides complete battery management and a host of reporting capabilities to help minimize long term battery costs.

Industries We Serve

Construction

Inspection

Agriculture

Defense/Security

Logistics/Delivery

Mining

How To Get Started

WiBotic wireless charging and software enabled uptime optimization solutions are extremely flexible across a wide range of applications and power levels. However, every robot application is unique. To ensure the best possible experience with WiBotic hardware and software, we provide an upfront evaluation and integration service that is customized to meet your needs. Depending upon the design of your robot, the service may include:

- Analysis and testing of component positioning
- Final performance verification testing
- Installation support of a standard set of components
- Customization of component sizes and shapes

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