WIBOTIC™

MOBILE ROBOTS

Programmable Wireless Charging and Uptime Optimization for Mobile Robots

Autonomous Power Management

Maximize Robot Uptime
Due to their low profile, charging stations can be placed throughout the facility to provide "opportunity charging" for maximum robot uptime.

Enhance Durability
Wireless charging systems can be fully embedded in walls or floors, and are impervious to dirty/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.

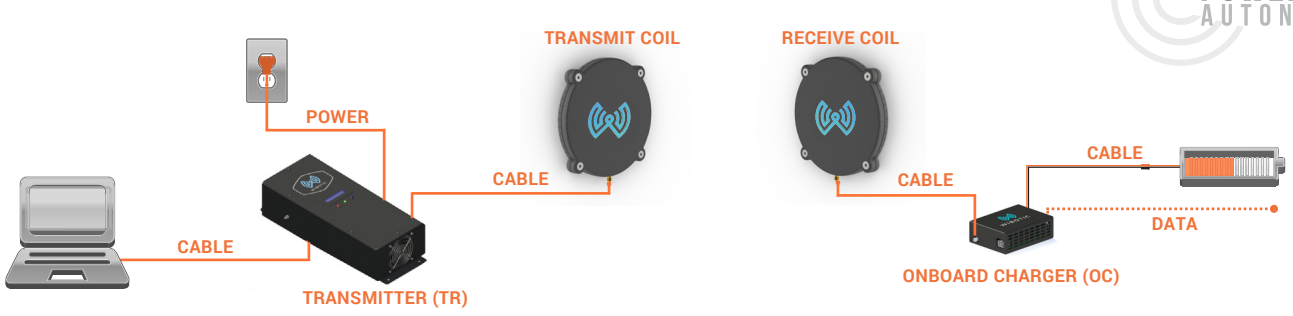
Our Solutions

Mobile robot applications have exploded in recent years, but their full potential simply isn't realized if humans must constantly monitor and manage battery charging functions. While semi-autonomous, physical-contact chargers eliminate some of the operator burden, those devices can suffer from dirty, corroded, or worn out contacts. Further, contact-based charging stations and docked robots take up floor space – especially when dozens or hundreds of robots are required.

WiBotic's wireless charging and software-enabled uptime optimization solutions solve these problems for OEMs, Service Providers, and Operators of mobile robots. Wireless charging systems can be unobtrusively embedded in walls or floors and are impervious to dirty/corrosive environments. When located strategically throughout a facility, wireless transmitters also allow charging whenever and wherever robots naturally pause – constantly topping off batteries, allowing fewer robots to do more work. WiBotic offers the most flexible wireless charging solutions on the market, so robots don't need perfect alignment to reliably charge.

How WiBotic Wireless Power Solutions Work

POWERING AUTONOMY



Available Components For Your Specific Application Needs

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

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

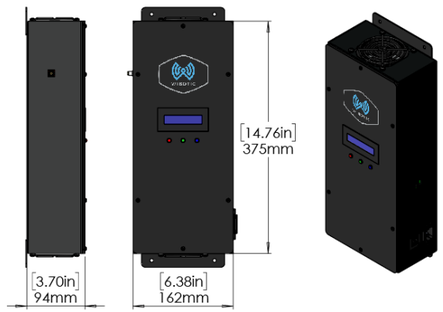
TRANSMITTER UNITS

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

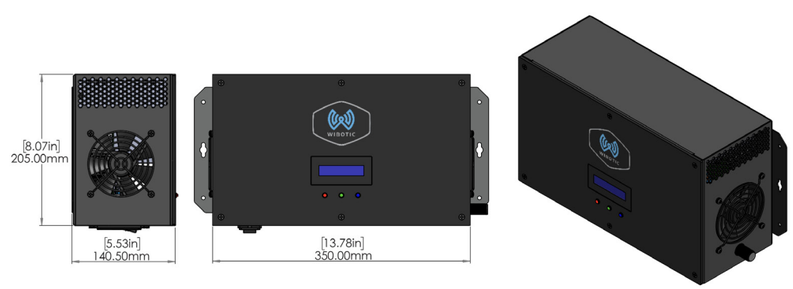
TRANSMITTER UNIT (in enclosure)	TR-110	TR-300
Input Voltage (AC*)	90-264v	90-264v
Input Receptacle	IEC320-C14	IEC320-C14
Input Frequency	50-60 Hz	50-60 Hz
Enclosure Type	ABS Plastic/Metal	ABS Plastic/Metal
Data Port	Ethernet (RJ45)	Ethernet (RJ45)

*DC powered configurations available

TR-110



TR-300



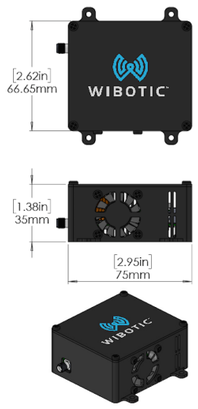
ONBOARD CHARGERS

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.

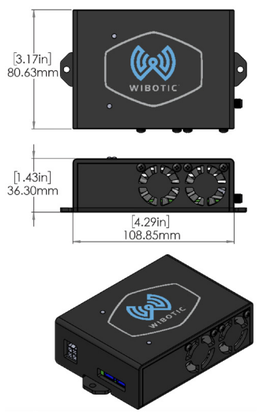
ONBOARD CHARGERS	OC-110	OC-210	OC-250	OC-300
Battery Compatibility	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH	LiPO, LiIon, SLA LiFePO4,NMH
Battery Voltage Range	7.92-30.1v DC	12.03-36v DC	12.03-36v DC	0-58.4v DC
Max Charging Current	5A*	10A*	10A*	30A*
Max Charging Power	90w*	125w*	250w*	>300w*
Weight (PCB & Fan)	46g	82g	100g	220g
Total Weight (w/enclosure)	74g	154g	200g	413g
Operating Temperature	-20 to 45C	-20 to 45C	-20 to 45C	-20 to 45C
Transmitter/Receiver Communication	UAVCAN API over CAN-bus	UAVCAN API over CAN-bus	UAVCAN API over CAN-bus	UAVCAN API over CAN-bus
Aux Wired Charging Input Voltage	18-50v DC	18-50v DC	18-50v DC	18-50v DC

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

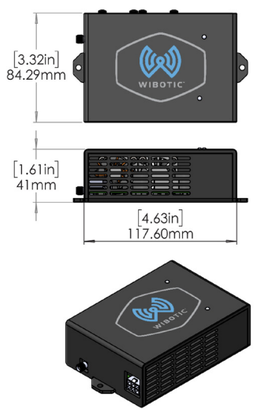
OC-110



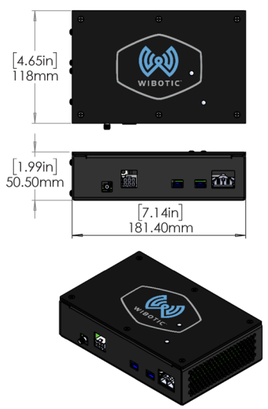
OC-210



OC-250



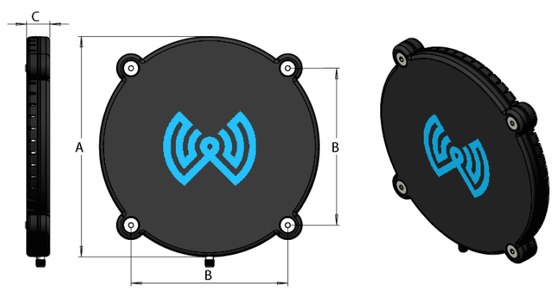
OC-300



TRANSMITTER AND RECEIVER COILS

Transmitter (Tc) and receiver (Rc) 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 Professional Services, are also available.

TRANSMITTER/RECEIVER COILS (in enclosure)	TC-200	RC-100
Total Width (A)	[8.1in] 205.5mm	[4.1in] 104.5mm
Mounting Hole Distance - Max (B)	[5.7in] 145mm	[3.3in] 85mm
Thickness (C)	[0.6in] 15.5mm	[0.3in] 7.6mm
Enclosed Coil Diameter	[7.9in] 200mm	[3.9in] 100mm
Total Weight (w/enclosure)	180g	35g



OPTIONAL COMPONENTS

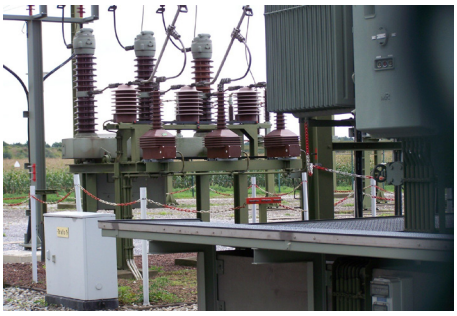
WiBotic's standard configurations can be mixed and matched to build the system that best suits your needs. However, if you're interested in ready-to-deploy simplicity, our optional embodiments may be of interest.

WIBOTIC EDGE: The WiBotic Edge is a complete wall-mountable station containing an internal power supply, TR circuit board, and transmitting antenna. Mounted directly to a wall, or in a wall cut-out for flush mounting, the Edge requires no floor space. In fact, the Edge can be mounted under packing/shipping tables or on aisle end-caps to provide Opportunity Charging any time a robot pauses during its regular routine.

** Customized wall-mount designs can also be available*

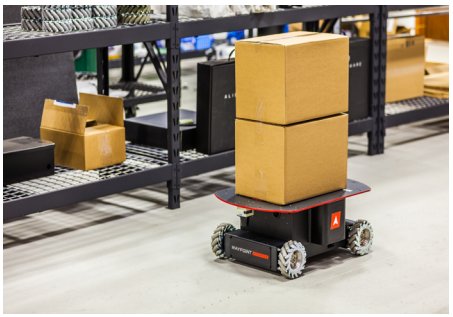
Industries We Serve

Data Centers



Energy/Utility

Industrial Automation



Logistics/Delivery

Defense

Remote Surveillance

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. We offer standard off-the-shelf systems for quick installation and evaluation, but also recognize that many robot applications are specific and unique. For these applications, we provide Professional Services toward a customized solution 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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