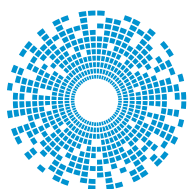


# Wireless Charging Transmission Coils

*Single & Multiple Windings*

**At-a-Glance**



**signal**  
TRANSFORMER

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## Overview

Signal's Wireless Charging Coil (WCC) Series are wireless charging transmission coils, available in single, double and multiple windings configurations. The WCC Series allows power to be transmitted wirelessly through inductive coupling to charge an array of products.

The WCC Series transmitter coils utilize inductive coupling to transfer signals, data and power from one source to another. Of its many applications, the most common include phones, tablets, gaming controllers, wearable devices, toothbrushes, robotic cleaners, drones and many smart car charging applications.

The advantages of the WCC's use of inductive coupling eliminates conductive connections and traditional wiring, seamlessly transferring data and power while avoiding the mechanical abrasion, corrosion and wearing-out of conductive contacts. The fixed-in position inductive coils are non-moving, resistant to vibration and corrosion, and are designed for reliability and longevity.

## Inductive Coupling

### What is it?

Inductive Coupling is a wireless power that utilizes magnetic fields. When the electrical current moves throughout the wire, it generates a circular magnetic field. When winding 2 wires into coils and putting them close together on a common axis, the magnetic field on one winding will induce a current onto the other winding. It produces an effect on another product by transferring signals from one part to another. Since Inductive Coupling does not use direct contact, it is a non contact transmission. Inductive Coupling is utilized to transfer signals, data and power from one source to another.

### Why should you use it?

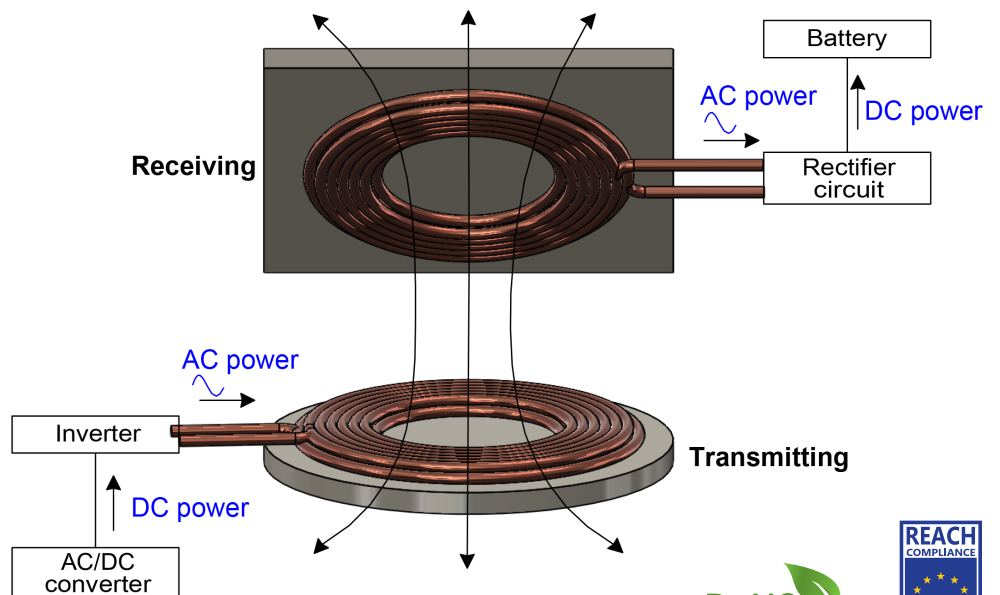
Inductive Coupling eliminates conductive connections and traditional wiring, seamlessly transferring data and power while avoiding the mechanical abrasion, corrosion and wearing out of conductive contacts. Fixed-in position, inductive coils are non-moving, resistant to vibration and corrosion and are designed for reliability and longevity. Of its many applications are base chargers for cell phones, tablets, toothbrushes, remotes and similar devices.

## Features

1. Pin cooling technology and tight pin tolerance control within +/-1.0 mm after the Tin Immersion process
2. Two core shapes, square/rectangular (Q) or circular (C)
3. Size and shape characteristics are customizable
4. Qi standard compliance
5. Low profile & high mechanical intensity
6. Inductance tolerance is  $\pm 5\%$  for (J),  $\pm 10\%$  for (K), with inductance of 6R3 for 6.3uH
7. Performance had been confirmed based on WPC equipment
8. Operating temp:  
-20°C to 85°C (general apps);  
-40°C to 125°C (automotive)
9. Compliance with all environmental requirements, including RoHS, REACH, Prop 65 & Conflict Minerals



**Model Shown:**  
WTSC-10R0K-A3,  
Top View



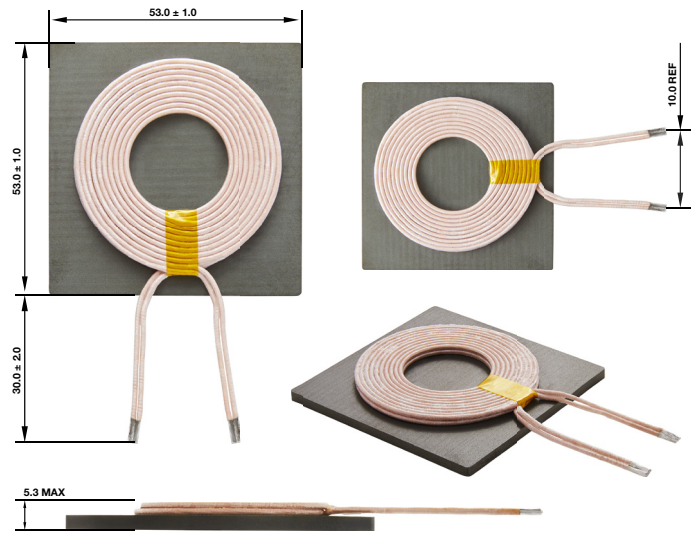
## Product Identification

W T S C - 6R3 K - A11

(1) (2) (3) (4) - (5) (6) - (7)

- (1) Wireless Charging Coil Assembly
- (2) Location: **T**: Transmitter, **R**: Receive
- (3) Number of Windings: **S**: Single, **M**: Multiple
- (4) Single Winding Core Shape:
  - Q**: Square/rectangle, **C**: Circular
- (5) Inductance: 6R3 for 6.3uH
- (6) Inductance Tolerance: **J**:  $\pm 5\%$ , **K**:  $\pm 10\%$
- (7) Qi Standard Code or other

## Single Coil Winding Example



P/N: WTSQ-6R3K-A11	
Structure size (mm)	53.0 X 53.0 X 5.3
L (uH)	6.3 $\pm$ 10%
Test Frequency	@100kHz, 1.0V
DCR (mΩ)	25 MAX
I rms (A)	9.0
I sat (A)	10.0

## Applications



Smart Car Applications



Consumer Products



Controllers



Wearable Devices

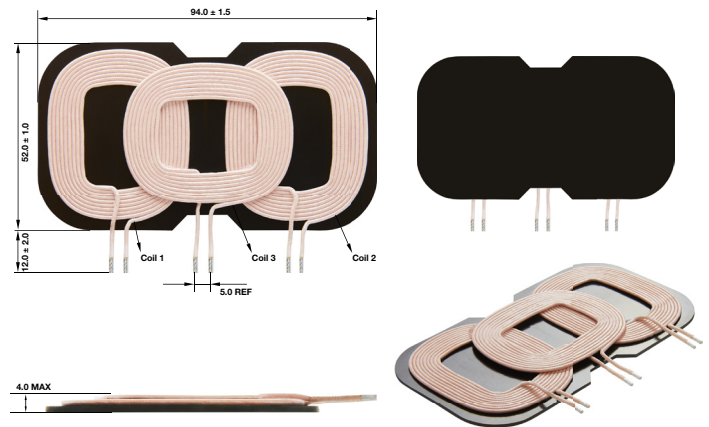


Robotic Cleaners



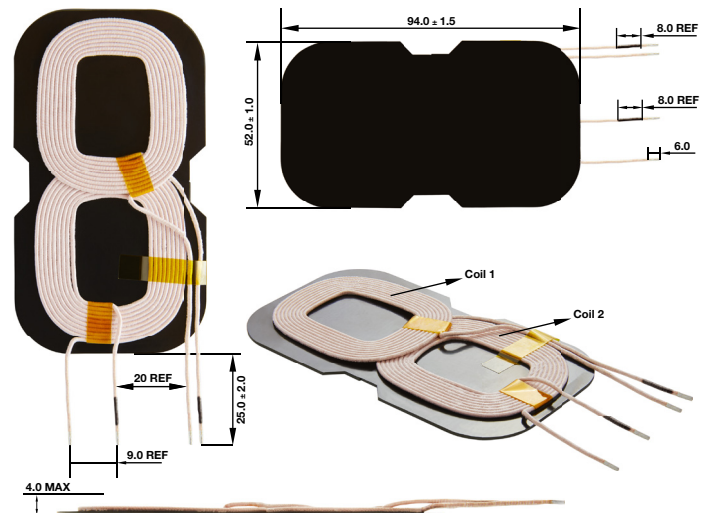
Drones

## Multiple Coil Winding Examples



P/N: WTM-7R0K-A28	
Structure size (mm)	94 X 52 X 4.0
L1,2 (uH)	7.0 $\pm$ 10%
L3 (uH)	6.5 $\pm$ 10%
Test Frequency	@100kHz 1.0V
DCR1,2 (mΩ)	45 MAX
DCR3 (mΩ)	45 MAX
I rms (A)	7.0
I sat (A)	12.0

Product thickness size does not contain release paper.



P/N: WTM-7R1K-A28	
Structure size (mm)	94.0 X 52.0 X 4.0
L1,2 (uH)	7.1 $\pm$ 10%
Test Frequency	@100kHz, 1.0V
DCR1 (mΩ)	45 MAX
DCR2 (mΩ)	45 MAX
I rms (A)	7.0
I sat (A)	10.0

Product thickness size does not contain release paper.



## About Signal Transformer

**Signal Transformer**, a Bel group, has designed and manufactured standard and custom power transformers and magnetics since our founding in 1959 in Brooklyn, NY. Utilizing our global manufacturing, engineering, and logistics capabilities and the resources of our parent company, Bel Fuse Inc. (NASDAQ: BELFA & BELFB), Signal Transformer is positioned to support your needs wherever you are located. At Signal Transformer, we are committed to providing the highest grade magnetics for customers who demand total reliability, on-time delivery and competitive pricing. Year after year, engineers and buyers consistently choose Signal Transformer as their preferred source for magnetics. Since 1959, we've led the magnetics industry with innovation, creativity and reliability.

Bel is headquartered in Jersey City, New Jersey. Founded in 1949, Bel designs, manufactures and markets products that power, protect and connect electronic circuits.



**For more information,  
please contact us:**

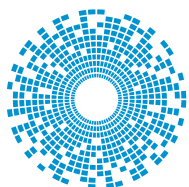
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