

# INSTALLATION INFORMATION FOR ORIGINAL EQUIPMENT MANUFACTURERS

Model Number: TC



## IMPORTANT – PURPOSE OF DOCUMENT

THIS DOCUMENT IS FOR USE ONLY BY ORIGINAL EQUIPMENT MANUFACTURERS (OEMs) WHO PURCHASE THE REFERENCED HELIOS™ COMPONENTS FROM LEGGETT & PLATT®, INCORPORATED OR ITS AFFILIATES (L&P). NEITHER THIS DOCUMENT NOR THE INFORMATION IN THIS DOCUMENT IS INTENDED FOR DISTRIBUTION TO, OR USE BY, END USERS OF OEM PRODUCTS WHICH INCORPORATE HELIOS™ COMPONENTS (END USERS). BY PURCHASING HELIOS™ COMPONENTS FROM L&P, EACH OEM ASSUMES, AND SHALL HAVE SOLE AND FULL RESPONSIBILITY FOR, PROVIDING APPROPRIATE INSTRUCTIONS FOR USE OF SUCH OEM PRODUCTS.

L&P ASSUMES THAT ALL OEMs WHO PURCHASE FROM L&P AND WHO USE THIS DOCUMENT HAVE EXPERTISE IN THE USE OF ELECTRICAL DEVICES AND COMPONENTS, INCLUDING THE EXPERTISE NECESSARY TO (i) DETERMINE WHETHER OR NOT HELIOS™ COMPONENTS ARE SUITABLE FOR USE WITH THE OEM'S PRODUCT, AND (ii) PROPERLY AND SAFELY CONFIGURE AND INSTALL HELIOS™ COMPONENTS. ACCORDINGLY, THIS DOCUMENT IS INTENDED ONLY AS A HELPFUL SUPPLEMENT FOR USE BY THE OEM AND NOT AS A SUBSTITUTE FOR THE OEM'S EXPERTISE OR THE OEM'S RESPONSIBILITY FOR PROPER AND SAFE DESIGN OF ITS PRODUCT AND INSTALLATION AND USE OF HELIOS™ COMPONENTS. IF ANY OEM USING THIS DOCUMENT LACKS SUCH EXPERTISE OR DOES NOT AGREE TO THE FOREGOING LIMITED PURPOSE STATED FOR THIS DOCUMENT, SUCH OEM SHOULD IMMEDIATELY NOTIFY L&P IN WRITING TO THAT EFFECT AND SHOULD NOT USE THIS DOCUMENT.

PRICES AND OTHER TERMS AND CONDITIONS FOR SALE OF HELIOS™ COMPONENTS TO ANY OEM ARE GOVERNED BY SEPARATE DOCUMENTS ISSUED OR MADE AVAILABLE TO THE OEM BY L&P, INCLUDING THE INVOICE ISSUED BY L&P AND THE STANDARD TERMS AND CONDITIONS OF SALE LOCATED AT <http://www.Leggett.com/po-terms-conditions.htm>.

## SAFETY INFORMATION

L&P EXPECTS THAT THE OEM WILL INCLUDE APPROPRIATE SAFETY WARNINGS AND INFORMATION FOR END USERS OF ALL OEM PRODUCTS WHICH INCORPORATE HELIOS<sup>™</sup> COMPONENTS. SUCH WARNINGS AND INFORMATION MUST INCLUDE THOSE SET FORTH BELOW AND OTHER WARNINGS AND INFORMATION AS THE OEM DETERMINES NECESSARY AND APPROPRIATE.

### **DANGER**

#### **To reduce the risk of electrical shock:**

- Always disconnect the wireless power transmitter from its power supply before removing
- Do not reach for a wireless power transmitter that has fallen into water, if applicable – disconnect it from its power supply immediately
- Do not disassemble or modify any part of this wireless power transmitter
- Do not leave any metal objects, especially electrical coils close to the wireless power transmitter

### **WARNING**

#### **To reduce the risk of burns, fire, electrical shock, or injury to persons:**

- This wireless power transmitter is designed to provide wireless power to a device or battery of that device that is Qi-certified, and is for in-vehicle use only. Use this wireless power transmitter only for its intended application. Do not install or use this product elsewhere
- Keep cord away from heated surfaces and liquids, either for OEM, or for aftermarket installation
- Proper fuse shall be considered in the power supply. Supply voltage shall match what the transmitter is designed for.
- Do not install this wireless power transmitter in any electrically conductive surface. Keep any metal away from this transmitter
- This wireless power transmitter should not be used by children or people with disabilities that may hinder their ability to understand all product information and use the wireless power transmitter safely. Close supervision is necessary when children or people with disabilities can get in touch with to this wireless power transmitter.
- Do not place metal object(s) between the mobile phone and wireless power transmitter. Metal object(s) such as coins, rings or keys will become HOT. If metal object(s) become lodged between the mobile phone and wireless charging pad, carefully remove the mobile phone and allow the metal object(s) to cool before removing. Failure to wait until the object(s) cool could result in personal injury, including burns
- Never operate this wireless power transmitter if it has a damaged housing, cord, or if wet
- Do not operate when aerosol products are being used or oxygen is being administered

#### **FCC RF Exposure Warning to OEM installers:**

- The Helios<sup>™</sup> wireless power transmitter **must** be installed in such a way as to provide **at least 2 cm** of separation between the transmitter coils and the human body; otherwise the transmitter may exceed the FCC RF Exposure limits.
- Leggett & Platt recommends installing the Helios<sup>™</sup> wireless power transmitter with **10 cm** of separation between the transmitter coils and the human body to ensure compliance.

#### **To reduce the interference with the other electrical device in the vehicle:**

- Do not install this wireless power transmitter close to any other antennas used in vehicle. Keep it away from them as much as possible
- Do not leave your wireless entry & start fob close to the wireless power transmitter, the feature may not work properly while a mobile phone is being charged.
- If two or more units of wireless power transmitter need to be installed in the same vehicle, a minimum gap of 50 mm shall be considered between them to avoid their mutual interference

## **IMPORTANT SAFETY INSTRUCTIONS**

- 1. SAVE THESE INSTRUCTIONS** – This manual contains important safety and operating instructions for wireless power transmitter Model: TC
- 2.** Before using the wireless power transmitter, read all instructions carefully
- 3. CAUTION** – To reduce risk of injury, charge device equipped with Qi-certified wireless power receiver only. Other types of wireless power receiver may cause personal injury and damage.

## **FCC & INDUSTRY CANADA COMPLIANCE**

The OEM shall inform end users of the following to the extent applicable:

This wireless power transmitter complies with **Part 15, subpart C** of the FCC Rules and with Industry Canada license-exempt RSS Standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

“Le présent appareil est conforme aux CNR d’Industrie Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes: (1) l’appareil ne doit pas produire de brouillage, et (2) l’utilisateur de l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.”

Changes or modifications not expressly approved by Leggett & Platt, Incorporated could void the user’s authority to operate the wireless power transmitter.

“Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.”

“Conformément à la réglementation d’Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d’un type et d’un gain maximal (ou inférieur) approuvé pour l’émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l’intention des autres utilisateurs, il faut choisir le type d’antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l’intensité nécessaire à l’établissement d’une communication satisfaisante.”

## **EUROPEAN DECLARATION OF CONFORMITY**

We, Leggett & Platt, One Leggett Rd. Carthage, MO 64836, USA, declare under our sole responsibility that the wireless power transmitter Model TC, to which this declaration relates, is in conformity with the following standard(s) or other normative document(s)

**EN 300 330-2V1.6.1**

**EN 301 489-3 V1.6.1**

**EN 301 489-1V1.9.1**

Following the provisions of Electromagnetic Compatibility, and R&TTE directive(s). The Technical Construction File is maintained at:

360 Silvercreek Industrial Drive  
R.R.#1 Tecumseh, Lakeshore  
Ontario, Canada  
N8N 4Y3

## SAFETY CONSIDERATIONS for OEM INSTALLERS

Safety is dependent on the proper installation and servicing of this wireless power transmitter. It is important to read and follow all instructions before installing this product. To properly install a Helios™ wireless power transmitter you must have a good understanding of electrical procedures and systems, along with proficiency in the installation and service of automotive environment. There are no adjustments required at any time of the electrical components within the charging mount. ***OEMs and installers should not open the Helios™ wireless power transmitter housings or make modifications to the transmitter or its components unless expressly approved in writing by an authorized representative of Leggett & Platt, Incorporated. Any changes or modifications will void the product warranty.***

### During Installation

- **DO NOT** connect this wireless power transmitter to a power supply, until:
  1. **ALL** other electrical connections are made
  2. Mounting of **ALL** components is complete
  3. **VERIFICATION** that no short circuit exists in the entire system
  4. The supply voltage is correct
- **DO NOT** install wireless power transmitter or route wiring cords in the path of any walkways or moving components.
- When installing into the desired surface, **DO** make sure that both sides of the surface are clear of anything that could be damaged

### After Installation

- Test the wireless power transmitter to ensure that it is working properly (see LED Indicator Lighting)
- File these instructions in a safe place and refer to them when performing maintenance or re-installation, if applicable

***WARNING: Failure to follow all safety precautions and instructions may result in death, serious injury, or property damage. The OEM assumes sole responsibility for such precautions and instructions and for any failure to follow them.***

### Disclaimer

By proceeding with installation of Helios™ wireless power transmitter in OEM wireless power system, the OEM agrees that: (i) L&P is not liable under any theory of contract, tort law, or otherwise for any loss, damage, death, personal injury, special, incidental, or consequential damages, or any other damage of any nature arising directly or indirectly from or relating to the improper installation or use of L&P wireless power transmitter in automotive environment; and (ii) the OEM will defend, indemnify, protect, and hold harmless L&P and each of its affiliates, officers, directors, agents, and employees from and against any such liability, claims, injuries, losses, and damages. In order to safely install and use L&P wireless power transmitter, full consideration of the real environment (e.g., location of electrical wiring, support members, surface thicknesses, and other electrical and structural components) is required. L&P disclaims responsibility for improper use or installation of wireless power transmitter and use or installation not consistent with the original manufacturer specifications and recommendations (if any) for such wireless power transmitter.

### Warranty Information

Neither this document nor the statements in this document create any warranties, express or implied, regarding Helios™ wireless power transmitter. All information regarding any warranties made by L&P to the OEM purchaser of Helios™ wireless power transmitter is located in separate documentation provided by L&P to the OEM. L&P makes no other warranties and specifically disclaims any express or implied warranties of merchantability or fitness for purpose. No warranty shall extend to any person other than the OEM who purchases the Helios™ wireless power transmitter from L&P.



## CERTAIN PRE-INSTALLATION CONSIDERATIONS

The OEM is solely responsible for taking all steps necessary and appropriate for safe and proper installation of Helios™ wireless power transmitter. These steps include, without limitation, the following:

### **Instructions & Personnel**

The OEM should use only properly trained and qualified personnel for installation. The OEM should assure that all such personnel read and fully understand this document prior to beginning installation.

### **Conduct a “Bench Test”**

The OEM should conduct a “bench test” to verify that all electronic issues are resolved prior to installation:

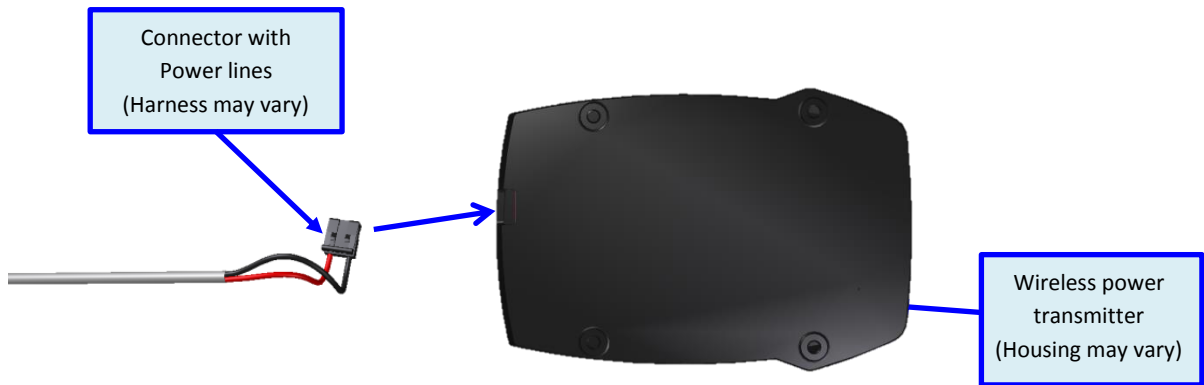
- Make sure the Helios™ wireless power transmitter is operational with a Qi-certified secondary device before being installed
- Check the Power Supply/LED connection for proper fit (see Power Supply/LED Connection)
- Dry-fit the Helios™ wireless power transmitter in the desired mounting surface to make sure there are no obstructions

## INSTALLATION INSTRUCTIONS

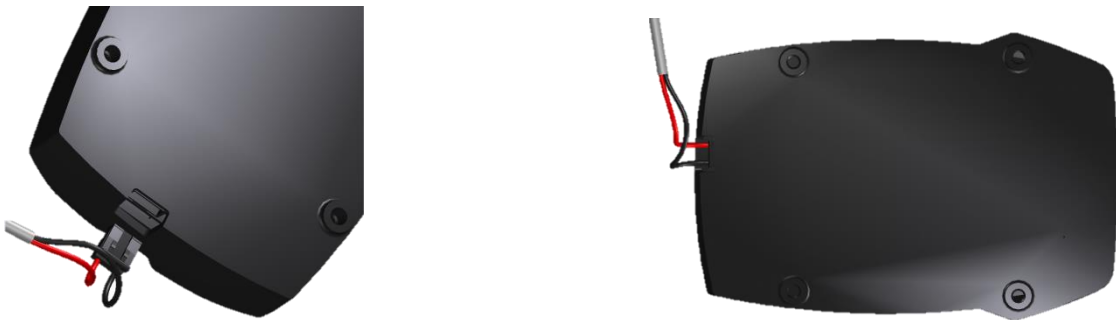
Detailed integration of the wireless power transmitter into the vehicle is customer specific and need to be worked out between L&P and the OEM. The following gives a general instruction of the installation.

Note: It is recommended that the packaging location(s) allow for 10 cm of separation between the transmitter coils and occupants. To safely comply with FCC RF exposure regulations, this separation cannot be less than 2 cm. Integrators should exercise due care in selecting the packaging location to meet this requirement.

Usually, two parts are delivered, as shown in the picture below



The connector is attached to the wireless power transmitter, as shown in the picture. Pay particular attention to the orientation of the “clip” on the Helios™ wireless power transmitter and the tab on the mating connector. The picture below shows the whole assembly



Typically the wireless charger will feature 4 bosses. These bosses serve two purposes: 1) For mounting and 2) Closure of the housing. This can vary depending on OEM installation requirements.



Please note that the housing and wire harness design may vary as the OEM requires and may not appear exactly as shown.

## LED INDICATOR LIGHT

The Helios™ wireless power transmitter is equipped with a bi-color LED indicator light. The LED has four states: Green, slow flashing Green, Red, and Off. Each state communicates the following:

**LED is Off** = Helios™ wireless power transmitter is not charging

- No secondary device is present
- Secondary device is present, but incompatible with the Helios™ wireless power transmitter – not Qi-certified.
- Secondary device is not properly aligned
- Helios™ wireless power transmitter is not properly connected to the power supply
- Power supply is not providing power to wireless power transmitter
- A foreign object has been detected on the pad; foreign object protection has activated.

**LED is Green** = The secondary device is fully charged, and the Helios™ wireless power transmitter is waiting for removal of the secondary device

- Secondary device reported that the battery is fully charged

**LED is flashing Green** = Helios™ wireless power transmitter is providing power to the secondary device

- Secondary device battery is receiving a charge
- Secondary device coils are aligned

**LED is Red** = A condition in the transmitter that doesn't allow transmitter to recover by itself, and that needs involvement of specially trained service personal.

- Module initialization (momentary)
- Acquisition time for power transfer (momentary)
- Secondary device coils are aligned and there is a fault in the Helios™ wireless power transmitter

LED scheme is subject to change from application to application

## POWER SUPPLY INFORMATION

The Helios™ wireless power transmitter is supplied with LEDs, with/without wire harness, with/without cell phone retaining fixture, according to the agreement with the customer.

Supply voltage to the Transmitter: range (adjustable): 9V- 16V, typical 13.5V

Operating Temperature: -40°C to +85°C; for charging: -20°C to +60°C (adjustable)

Operating Humidity: 30% - 85%

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Qi is the universal standard for inductive charging. Qi-enabled devices will work with Qi chargers.