

Connect S | Connect L

Asset Monitoring and Tracking Gateway



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Table of contents

1	Introduction	4
2	Technical Specifications	4
3	Ordering Information	6
4	Mounting	6
5	Operations	7
6	Dimensions	8
7	Handling and Shipping Information	8
8	Support	8
9	Regulatory Notes	9
10	Intended Use	10
11	Safety Notes	11

1 Introduction

The Bosch Track & Trace Connect Gateway is the connectivity unit between asset tagging and monitoring solutions like Sense S, Sense T and Sense H and the Bosch Internet Cloud. The connectivity gateways Connect collects data generated by asset tags and sensors, enriches information with position data and uploads this data to the Bosch backend.

The Connect gateway

- ▶ Creates transparency within the supply chain
- ▶ Simple and fast to mount
- ▶ No configuration required
- ▶ Long battery lifetime resulting in less handling effort

Features

- ▶ Extremely compact, maintenance free device
- ▶ Location based on GPS and GSM cell
- ▶ Detection and data upload for Sense S, Sense T, Sense H and optional 3rd party tags and sensors
- ▶ Operated device offering including
 - Device operation
 - Device monitoring
 - Mobile connectivity
 - Firmware maintenance
 - Security updates
- ▶ Configuration pre-sets based on use cases and requirements

2 Technical Specifications

TECHNICAL DATA	
Dimension (L x W x H)	136mm x 69mm x 36mm
Weight	approx. 480g
Power Supply	
Connect S	Lithium-ion 3.2V, 6000mAh
Connect L	Lithium-metal 3.6V, 18000mAh
Battery life	
Connect S	1.800 ... 6.000 uploads depending on configuration, number of sensors and operating conditions Note: based on ambient temperature conditions (~25°C) and good cellular network conditions
Connect L	7.200 ... 14.000 uploads, depending on configuration, number of sensors and operating conditions Note: based on ambient temperature conditions (~25°C) and good cellular network conditions
GNSS	Global Positioning System (GPS)
Assisted GPS	yes

Wireless Transmission		
Technology	802.15.1	2.4GHz
Protocol	Proprietary	
Range	>50m free line of sight	
Scanning Interval	configurable	
Scanning Duration	configurable	
Data Processing		
Data Buffer Capacity	> 200.000 data sets	
Maximum Beacons in Range	1.000	
Mobile Connectivity		
Network	2G GSM/GPRS, Quad Band	
SIM	Integrated SIM chip	
Charging Voltage	Connect S	12V ... 28V DC
Charging Duration	Connect S	approx. 8h for full charge
Housing material	PA6	
EN 60529 Protection category	IPx7, IPx8 (with closed connector)	
Certifications	RoHS, CE, FCC, further on request	

OPERATING CONDITIONS

Operating Temperature

Connect S	-25°C ... +65°C
Connect L	25°C ... +75°C
Storage Temperature	+10°C ... +30°C
Storage Time	6 months
Charging Temperature	Connect S -25°C ... 45°C, (integrated protection circuit)
Humidity	20% rH ... 100% rH, (non condensing)

3 Ordering Information

Product number:	Connect S	3843.AU0.424	Order Code:	3843.AU5.495
	Connect L	3843.AU5.147	Order Code:	3843.AU5.500

For any sales information or support, please contact Bosch Connected Industry at Support.TnT@de.bosch.com

Package contents:

	CONNECT S (3843.AU5.495)	CONNECT L (3843.AU5.500)
Gateway	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Charger	<input checked="" type="checkbox"/>	
Mounting Magnets (2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mounting Materials	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4 Mounting

With magnets

Note: Please ensure that the device has sufficient mobile network coverage when selecting the mounting location. Also, if you want to use the GPS location function please ensure a good GPS signal reception.

5 Operations

Activation:

To activate a new Connect gateway hold an active NFC scanning device on top of the housing. The gateway will start automatically and connect to the Bosch server for firmware download and configuration.

Device status:

Some battery status information can be read from the LED:

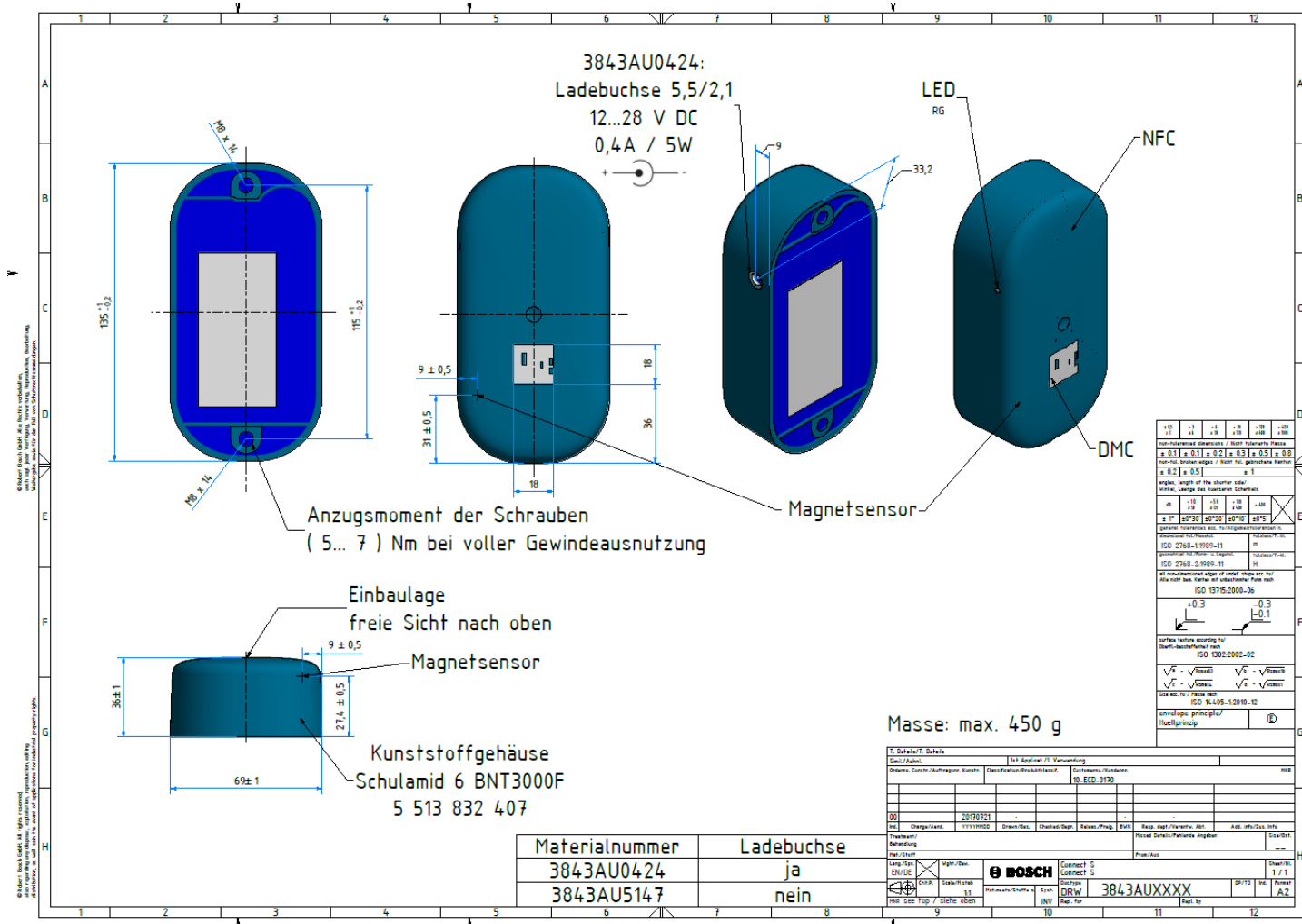
LED		BATTERY STATUS
flashing green,	1s interval	Device is in standby
flashing red,	1s interval	Device is operating: scan, GPS or upload running
flashing red,	15s interval	Battery too low, device is in battery protection mode, no operation possible
flashing green,	30s interval	Device is off, no operation. Battery ok. Device can be started by NFC activation.
flashing red,	30s interval	Device is off, no operation. Battery low, device can be started after re-charge.
no signal		Battery too low, device is off. Recharge device.
red 1s + green 1s	once	Start triggered. device is starting application
green	constant	With power supply connected. Battery charging. battery state > 90%
red	constant	With power supply connected. Battery charging. battery state < 90%

The Connect does not support a shutdown button. The device can only be turned off remotely.

Note: Connect Gateways must be off during flight transport!

6 Dimensions

The following graphic shows the dimensions of the Connect S and Connect L.



7 Handling and Shipping Information

Please contact Bosch Track & race support at Support.TnT@de.bosch.com.

8 Support

For any question or inquiries please contact Bosch Track & race support at Support.TnT@de.bosch.com.

9 Regulatory Notes

Disposal according to the WEEE Directive 2012/19/EU



The unit, accessories and packaging should be sorted for environmental-friendly recycling. Do not dispose of the device into the household waste! According to the European Guideline 2012/19/EU, electric and electronic devices that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

Bosch Connected Industry will collect, reuse or recycle all used Connect gateway units. To have your Connect collected, please contact us at: Support.TnT@de.bosch.com.

EU Declaration of Conformity

Hereby, Robert Bosch Manufacturing Solutions GmbH – Bosch Connected Industry declares that the radio equipment type Connect is in compliance with Directive 2014/30/EU, 199/5/EG and 2011/65/EU.



The full text of the EU declaration of conformity is available at the following internet address:

Operating the device in countries out of the EU

The Connect gateway carries the CE mark and is certified for operation in the European Union. For countries out of the EU validate that local legal regulation allows the operation of the Connect gateway.

Export Restrictions

Due to legal regulations the device must not be exported into the following countries or regions: Cuba, Crimea, Iran, North Korea, Syria and Ukraine.

Federal Communications Commission (FCC) Notice

FCC has issued an EQUIPMENT AUTHORIZATION to Robert Bosch Manufacturing Solutions GmbH – Bosch Connected Industry for Connect and Connect L according to FCC rule parts 15 with the FCC ID: 2AOSY-CONNECT01

The manufacturer is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications may void the FCC authorization to operate this equipment.

Note:

1. This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:
 - a) This device may not cause harmful interference.
 - b) This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation exposure statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body as well as kept minimum 20cm from radio antenna depending on the portable or Mobile status of this module usage.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▶ Consult the dealer or an experienced radio/TV technician for help.

10 Intended Use

The housing of the Connect gateway is not to be opened or tampered with. The Connect gateway is designed for use within environmental conditions as further detailed in the technical specifications in chapter 2. Any intent to use or operate the product under deviating environmental conditions must be subjected to renewed validation and testing by the customer.

Neither the Connect nor a potential product derivation, are designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Bosch product could create a situation where personal injury or death may occur. The same applies for any kind of weapon, or any device or application which is potentially dangerous to human life.

The Connect gateway is designed for monitoring and tracking purposes and shall not be used as an element of control and safety in machines under the scope of the Machinery Directive 2006/42/EC.

Bosch Connected Industry shall not hold liable for any damages resulting from any use of the Connect gateway outside/beyond the certified types of operation and/or defined field of application.

Radio frequency radiation exposure information: this equipment complies with the radiation exposure limits prescribed for an uncontrolled environment for fixed and mobile use conditions. This equipment is not designed as a portable cellular radio device and should be installed and operated with a minimum distance of 20cm between the radiator and the body of the user or nearby persons.

11 Safety Notes

CAUTION: Lithium Battery!

The device contains a lithium battery. Handling the battery incorrectly could cause fire. Read and follow the valid transportation regulations. Do not damage or cut the device.

CAUTION: Neodymium magnets

For mounting the Connect gateway on metal surfaces strong neodymium magnets are delivered with the device.

Danger



Swallowing

Children could swallow small magnets. If several magnets are swallowed, they could get stuck in the intestine and cause perilous complications. Magnets are not toys! Make sure that children don't play with magnets.

Danger



Electrical conductivity

Magnets are made of metal and conduct electricity. Children might try to put magnets into a power outlet and thereby suffer from an electric shock. Magnets are not toys! Make sure that children don't play with magnets

Warning



Contusions

Big magnets have a very strong attractive force.

- ▶ Unsafe handling could cause jamming of fingers or skin in between magnets. This may lead to contusions and bruises.
- ▶ Powerful, very large magnets could cause bone fractures. Wear heavy protective gloves when handling larger magnets.

Warning



Pacemaker

Magnets could affect the functioning of pacemakers and implanted heart defibrillators.

- ▶ A pacemaker could switch into test mode and cause illness.
- ▶ A heart defibrillator may stop working.
- ▶ If you wear these devices keep sufficient distance to magnets.
- ▶ Warn others who wear these devices from getting too close to magnets.

Warning



Heavy objects

Too heavy loads, symptoms of fatigue as well as material defect could cause a magnet or magnetic hook to loosen from the surface that it was attached to. Falling objects could lead to serious injuries.

- ▶ The indicated adhesive force applies only to ideal conditions. Allow for a high safety cushion.
- ▶ Don't use magnets in places where people could sustain injuries in case of material failure.

Warning



Metal splinters

Neodymium magnets are brittle. Colliding magnets could crack. Sharp splinters could be catapulted away for several meters and injure your eyes.

- ▶ Avoid the collision of magnets.
- ▶ Wear safety glasses when handling larger magnets.
- ▶ Make sure that nearby people are also protected or keep their distance.

Caution

**Magnetic field**

Magnets produce a far-reaching, strong magnetic field. They could damage TVs and laptops, computer hard drives, credit and ATM cards, data storage media, mechanical watches, hearing aids and speakers.

- ▶ Keep magnets away from devices and objects that could be damaged by strong magnetic fields.
- ▶ Please refer to our table of recommended distances.

Caution

**Combustibility**

When machining magnets, the drilling dust could easily ignite.

Stay away from machining magnets or use appropriate tools and sufficient cooling water.

Caution

**Nickel allergy**

Many of our magnets contain nickel, also those without nickel coating.

- ▶ Some people have an allergic reaction when they come into contact with nickel.
- ▶ Nickel allergies could develop from perpetual contact with nickel-plated objects.
- ▶ Avoid perpetual skin contact with magnets.
- ▶ Avoid contact with magnets if you already have a nickel allergy.

Caution

**Airfreight**

Magnetic fields of improperly packaged magnets could influence airplane navigation devices. In the worst case it could lead to an accident.

- ▶ Airfreight magnets only in packaging with sufficient magnetic shielding.
- ▶ Please refer to the respective regulations.

Caution

**Postage**

Magnetic fields of improperly packaged magnets could cause disturbances in sorting machines and damage fragile goods in other packages.

- ▶ Please refer to our shipping tips.
- ▶ Use a large box and place the magnet in the middle surrounded by lots of padding material.
- ▶ Arrange magnets in a package in a way that the magnetic fields neutralise each other.
- ▶ If necessary, use sheet iron to shield the magnetic field.
- ▶ There are stricter rules for airfreight: Refer to the warning notice "Airfreight".

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