

GEARSENSOR.COM

SINCE 2013

# A SMART DEVICE THAT IMPROVES THE RIDING EXPERIENCE

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COMPANY PROFILE AND A BRAND INTRODUCTION

# WHO WE ARE

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AGENTURA REPRO SPOL. S R.O.

- Founded in 1993
- Based in the Czech Republic, Europe
- Inventor of the shift sensor products
- Owner of the gearsensor.com brand
- Official partner of mid drive unit producers
- Supplier of more than 120 e-bike brands worldwide

# WHAT WE DO

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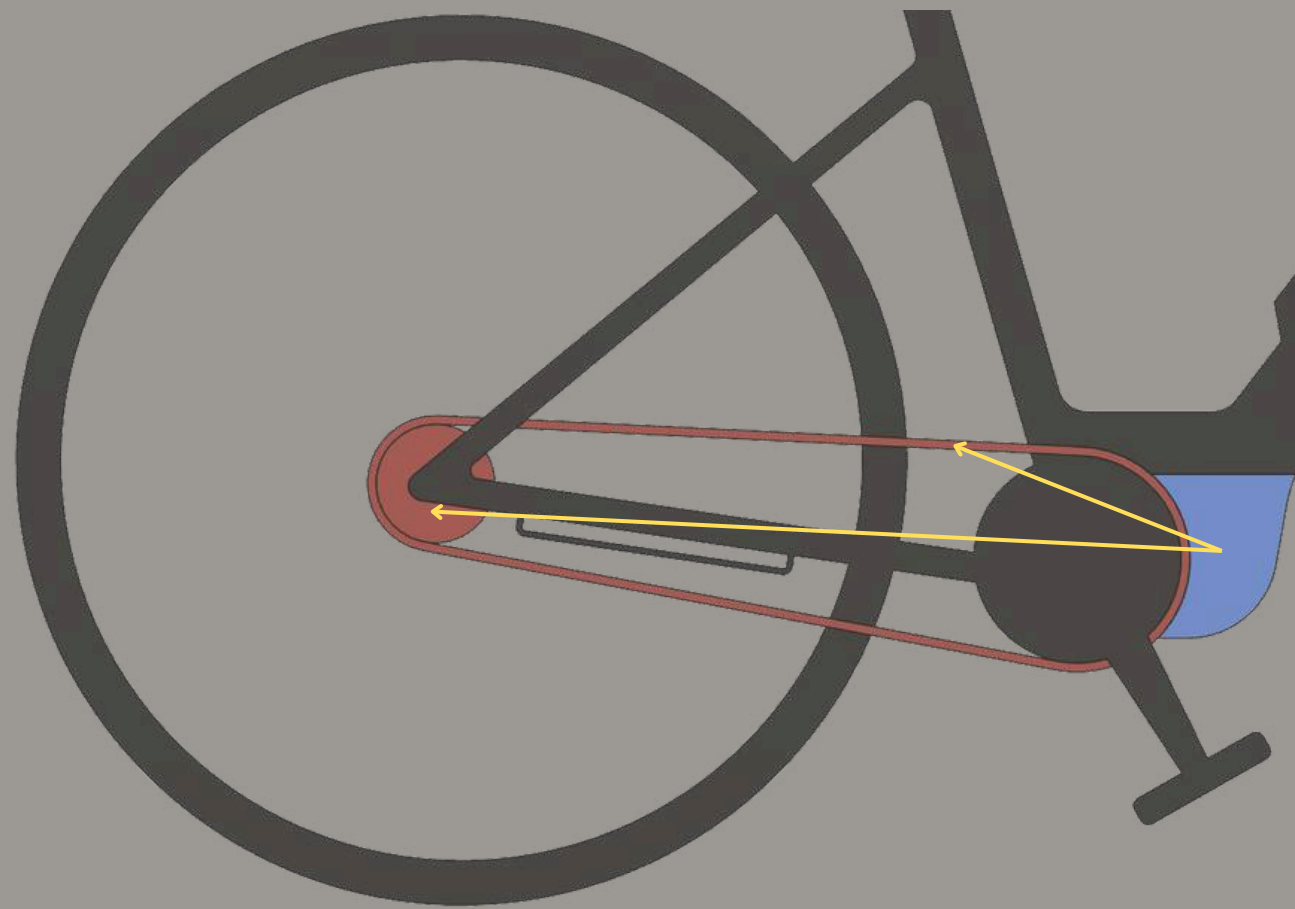
## ELECTRIC BICYCLES POWERED BY A MID DRIVE UNIT SUFFER FROM THE NEGATIVE EFFECT OF THE MOTOR TORQUE POWER

Due to the central position of the drive unit, its torque power is always transmitted to the chain/belt and a rear shifting mechanism (rear derailleur or internal gear hub).

As a result, both the chain/belt and a shifting mechanism are under the significant pressure coming from the motor that they cannot handle (components marked in red).

The standard torque power of a mid drive unit is between 80 – 110Nm, the same values affect chain/belt and a shifting system.

Most of internal gear hubs are very sensitive, can handle only a very low torque power to shift up or down, otherwise the shifting is not functional at all. The standard rear derailleurs have a higher range for a functional shifting, nevertheless shifting itself is loud, uncomfortable and non-functional in some situations.



# WHAT WE DO

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## GEARSENSOR.COM - SPECIAL SHIFT SENSOR FOR ELECTRIC BICYCLES

We believe that every user of the electric bicycle powered by the mid drive unit should have as comfort ride as possible. Therefore we developed a product called gearsensor.com in the beginning of 2013.

The gearsensor.com is a special sensor fixed on a shifting cable that detects shifting process activated by the rider and reduces the motor torque power for a necessary period of time to shift up or down without any pressure on the components. It means there is no longer any pressure on the chain/belt and shifting mechanism, shifting process is comfortable and the rider can shift in any situation.

The gearsensor.com brand products are developed and made in the Czech Republic, with a European origin.



# WHAT WE DO

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## GEARSENSOR.COM - HOW IT WORKS AND WHY TO USE IT

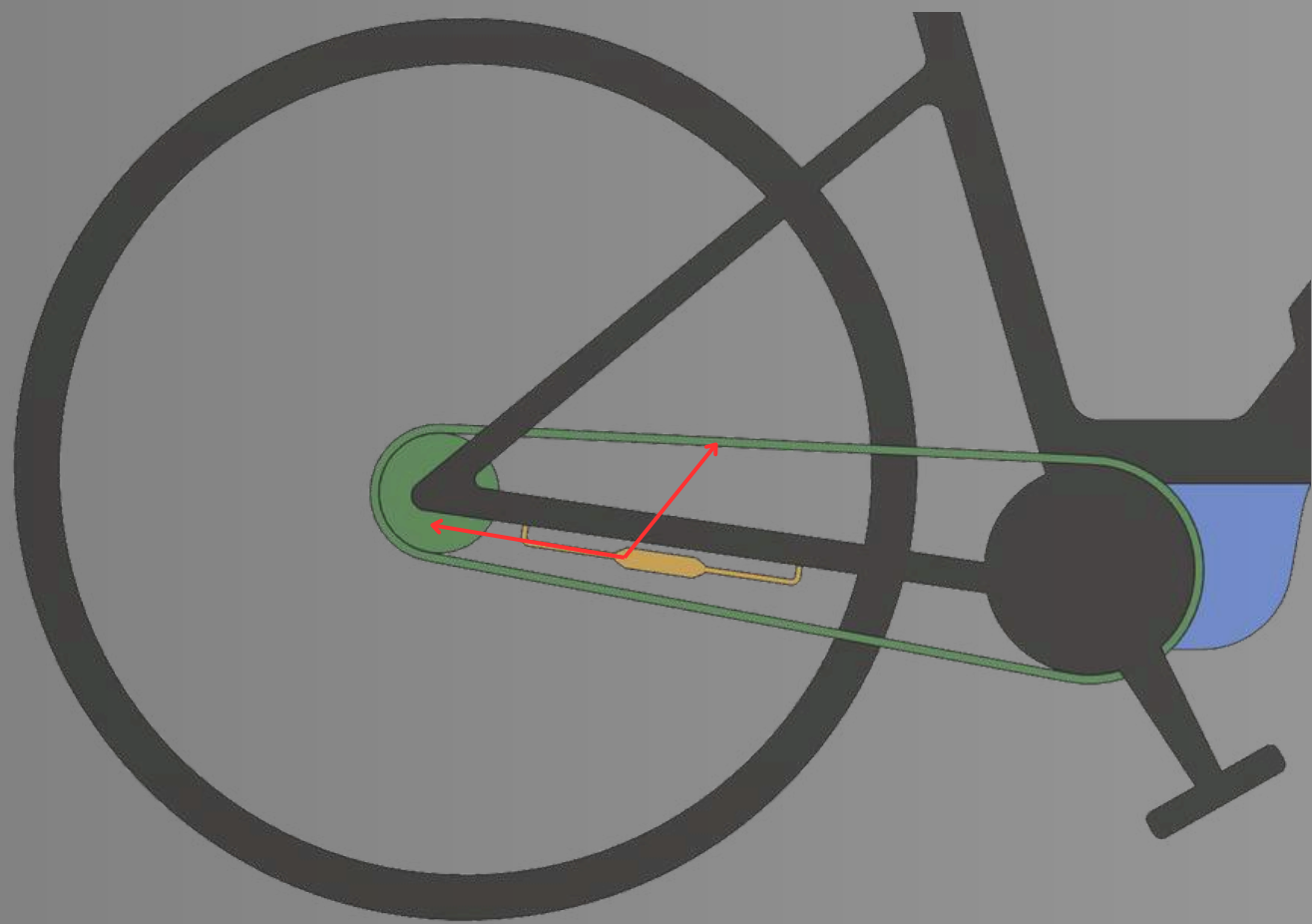
The gearsensor.com must be mounted on the shifting cable; anywhere on the bike where the cable is straight. The most used position is on/behind the chainstay.

The gearsensor.com reduces torque power of the motor when the rider needs to shift up or down. As a result, there is no longer any pressure on the chain/belt and shifting mechanism (components marked in green).

The gearsensor.com improves quality of the shifting process and prolongs lifetime of all related components.

The gearsensor.com products can be used for both chain or belt mechanism.

All offered products are well tested and approved directly by compatible mid drive unit producers, we are their official business partner.



# A MUST FOR INTERNAL GEAR HUBS, HIGHLY RECOMMENDED FOR REAR DERAILLEURS

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Electric bicycles equipped with mid drive units face a significant motor and human torque power while riding - the torque power is a huge problem especially while shifting.

## Internal gear hubs

- Internal gear hubs are a very sensitive shifting system - these hubs can handle only a very low torque power, otherwise the shifting is non-functional. As a combination of mid drive unit torque power and a human torque power while pedalling creates a high level of torque, the gearsensor.com function is necessary to provide a smooth and comfortable riding experience all the time.


## Standard rear derailleurs

- Standard rear derailleurs can handle a higher range of torque power for a functional shifting, nevertheless shifting itself is loud, uncomfortable, non-functional in some situations and rider can break the chain or damage the shifting system.

Therefore there is a gearsensor.com that reduces tension on the chain, provides smooth and comfortable shifting and prolongs lifetime of the whole shifting system.

# ADVANTAGES OF THE GEARSSENSOR.COM

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- **Solves problems of a mechanical shifting related to a mid drive unit** (\*gearsensor.com works similar as a clutch in the car. When the user starts with a shifting, the motor torque power is reduced for a necessary period of time that is required for a smooth and comfortable shifting).
  - **Provides perfect shifting in any situation** (for all standard rear/front derailleurs and internal gear hubs).
  - **Prolongs lifetime of the whole shifting system** (as there is no longer any pressure applied to these components from the motor torque while shifting).
  - **Removes loud shifting and decreases chance to break a chain/belt during the shifting.**
  - **Provides easy shifting as on a normal bicycle.**
-  **The gearsensor.com brand products are developed and made in the Czech Republic, with a European origin.**

# PRODUCT RANGE: MODEL GS

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- The standard gearsensor.com provides comfortable shifting.
- The GS model provides a signal about the shifting activity directly to the controller of the mid drive unit. The result is temporary reduction of the current motor torque.
- It is a necessary part for internal gear hubs and highly recommended for rear derailleurs.
- Prolongs lifetime of the whole shifting system.



# PRODUCT RANGE: MODEL GSSS

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- This model uses features of the standard gearsensor.com model „GS“ and provides an additional speedsensor function in the same time. It means that the GSSS model has 2 functions in 1 device (gearsensor and speedsensor).
- The GSSS model is delivered including the magnet on (for) spoke.
- The GSSS has a strict installation position on a chainstay because of the speedsensor function.
- The GSSS provides two types of signal. The first one is for the shifting activity and the second one is for the speedsensor function.



# PRODUCT RANGE: MODEL GSGL

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- This new model uses features of the standard gearsensor.com model „GS“ as well as constantly recognizes current gear position.
- The GSGL model must be learned how many levels of shifting (speeds) has rear derailleur or internal gear hub used on each electric bicycle. We call this process „the calibration“ and it can be done within 1 minute.
- The GSGL has an automatic function „the recalibration“ (this function is fully automatic and the user will not even notice it).
- The GSGL provides two signals. The first one is for the shifting activity and the second one is for the current shifted position.



# PRODUCT RANGE: MODEL GSGL

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**Because of the GSGL (which provides information about the shifting activity and the current gear position directly to the controller) the mid drive unit:**

- can show current shifted position on e-bike display or phone app.
- can recommend optimal gear position according to the user's riding style.
- has a specific time value for the motor reduction while shifting for each sprocket (bigger sprocket needs a longer period of time for a smooth shifting than a smaller one; \*you can use only one time parameter for all sprockets with the standard „GS“ model).
- can react on a current pedalling cadence and adjust time values necessary for a smooth shifting (higher cadence = shorter necessary time value for a smooth shifting and vice versa).
- allows to set required value of the motor power reduction while shifting.



## GEARSENSOR.COM BRAND IN NUMBERS

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14

years on the market

19

countries with an official distribution partner

27

compatible motor producers

120+

e-bike brands that use our sensor

# COMPATIBLE MOTOR PRODUCERS, THE OFFICIAL BUSINESS PARTNERS

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BOSCH

BROSE

BAFANG

ANANDA

PANASONIC

POLINI

OLIEDS

FAZUA

TQ

PROMOVEC

DAPU

OKAWA

MOTINOVA

MPF

SPORT DRIVE

VINKA

ANSMANN

TONGSHENG

AEG

CYC MOTOR

BOFEILI

BINOVA

TRUCKRUN

SHENGYI

VIRVOLT

SINCE 2013  
GEARSENSOR.COM

THANK YOU FOR YOUR INTEREST  
IN OUR PRODUCTS

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