

# Technical Disclosure Commons

---

Defensive Publications Series

---

December 05, 2017

## THROTTLE GRIP: POTENTIOMETER WITH INTEGRATED

Daniel Hoppe

*Bertrandt Ingenieurbüro GmbH*

Follow this and additional works at: [http://www.tdcommons.org/dpubs\\_series](http://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

Hoppe, Daniel, "THROTTLE GRIP: POTENTIOMETER WITH INTEGRATED", Technical Disclosure Commons, (December 05, 2017)

[http://www.tdcommons.org/dpubs\\_series/856](http://www.tdcommons.org/dpubs_series/856)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## THROTTLE GRIP: POTENTIOMETER WITH INTEGRATED RESET SPRING IN HANDLE VARIANT 2

### Technical task:

The task of the technical innovation is to save space in the throttle grip and thereby minimize the complexity.

### Initial situation:

In electric two-wheeled the throttle grip next to the actual handle of a sleeve which carries this and a housing which rotatably supports the sleeve. In addition, a further space is required, which contains the electronics. Among other things, there is an angle / distance sensor attached, which detects the rotational position of the handle. This signal is then converted by the control unit and delivered to the power electronics. This will control engine performance. With decreasing tensile force, the spring relaxes in the housing and thus returns the throttle grip to its original position.

### Solution:

The installation space can be reduced by unifying two functions. In this case, the change in the specific resistance of the spring element by the elastic deformation can be used as a resistor in a measuring bridge circuit. Thus, the return element is used directly as an angle sensor to transmit the user's request for acceleration to the motor.

The throttle grip is located between two struts of a scooter handle and is rotatably mounted on a connecting bolt. In the system, a spring is installed, which builds up a restoring moment with relative movement between throttle and torque. The restoring force is realized by mechanical deformation of the spring element, which simultaneously changes the specific electrical resistance of the spring element. This resistor can be used in a measuring bridge as an angle sensor. This signal is then converted by the control unit and delivered to the power electronics. This will control engine performance. With decreasing tensile force, the spring relaxes in the housing and thus returns the throttle grip to its initial position and the specific resistance again reaches the neutral initial value.

With this device can be realized, for example, the throttle grip of an electric scooter.

### Advantages:

- The return spring as a potentiometer combines two functions in one component. First, the gas position is determined by the spring. On the other hand, the provision of the throttle grip is ensured by the same spring.
- As a result, the concept requires less space, components and moving elements that are subject to wear.

### Possible application:

- All vehicles with throttle grip.

