

High-accuracy collection of wheel position data under real-world conditions

Understanding vehicle behavior under real driving conditions is essential to optimizing the chassis and powertrain design. Ever-growing requirements for vehicle performance and fuel economy create many challenges for vehicle dynamics research.

The Wheel Position Sensor (WPS), part of A&D's Vehicle Measurement System (VMS), is a high-accuracy system that records tire position by gathering data measured against a reference point on the vehicle body. Position is calculated using an

original A&D model, which eliminates the need for calibration. The system includes multiple high-resolution 17-bit rotary encoders that output the angle data which is then converted to displacement and angle values.

Six individual sensors simultaneously measure the angles independently. The data is then integrated into absolute values by the WPS indicator, eliminating the need for relative data. The WPS can be attached to most standard wheels, and has an IP65 waterproof rating.



The WPS Wheel Position Sensor measures the six-component position of a wheel in dynamic conditions.

Highlights

- Measured variables:
 - Vehicle direction displacement
 - Shaft direction displacement
 - Gravity direction displacement
 - Angle of gravity vs wheel diameter direction
 - Wheel rotation angle
 - Angle of vehicle direction vs tire direction
- High-resolution 17-bit encoder
- Two types of available sensors:
 - Parallel link for standard measurements
 - Single-rod for high-speed applications
- Maximum operational speed:
 - Parallel link: 120km/k
 - Single-rod: 180km/h
- Absolute value measurement system eliminates the need for calibration
- Attaches to most standard wheels
- IP65 waterproof rating
- Connects to optional CAN data logger

WPS

Wheel Position Sensor

Parallel Link Design

The reference point and measurement point are kept at the same angle, remaining level even if the steering wheel is turned. Using the ground as a reference, body position data can be recorded.

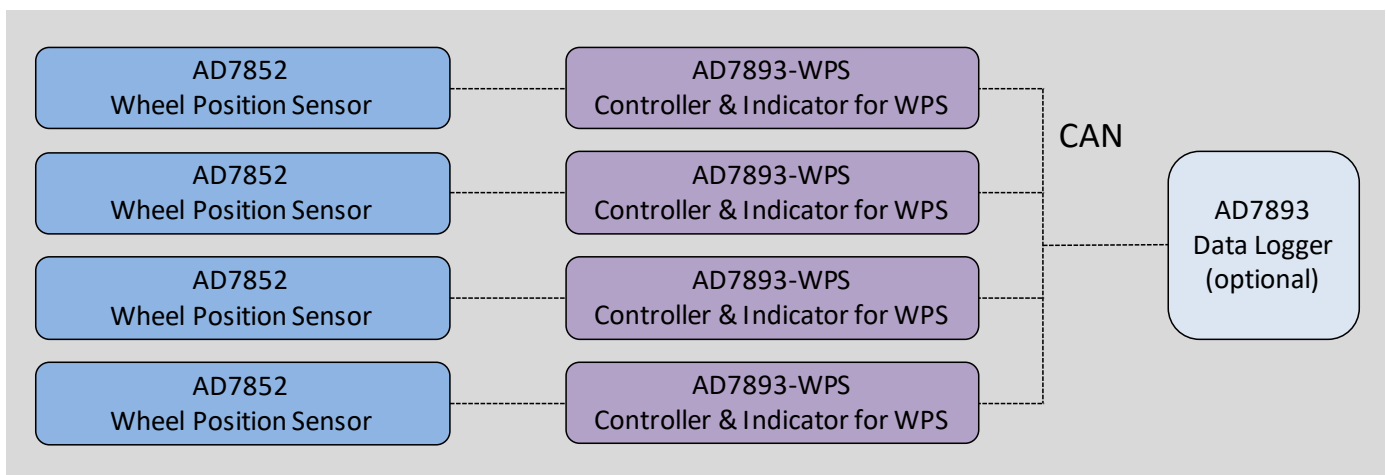


Single Rod Design

The single rod design uses a higher-resolution encoder which improves responsiveness, supporting high-speed measurement applications.



System Configuration



Americas

A&D Technology, Inc.
Ann Arbor, MI USA
Ph: +1 (734)973-1111
www.AandTech.com

Europe

A&D Europe, GmbH
Darmstadt, Germany
Ph: +49 (6151) 3975-250
www.AandDEurope.com

A&D Europe - UK Branch
Abington, Oxon, UK
Ph: +44 (0)1235-550 420
www.AandDEurope.com

Asia

A&D Company, Ltd.
Tokyo, Japan
Ph: +81 (0)3-5391-2753
www.AandD.co.jp

A&D Technology Trading Co.
Shanghai, China
Ph: +86 (0)21-3393 2340
www.AandTech.cn

A&D Korea, Ltd.
Seoul, Korea
PH: +82 (0)2-780-4101
www.andk.co.kr

