KESENS

轮速传感器集成EPB线束

Wheel Speed Sensor Integrated with EPB Harness



产品介绍 Product Description

ABS轮速传感器是汽车电子控制系统中的一个重要组成部分，它通过测量每个车轮的转速，并将数据发送到车辆控制单元（ECU）中，从而实现对车辆制动系统的精准控制。而集成EPB线束的ABS轮速传感器则在此基础上，将EPB电子驻车制动线束集成到ABS轮速传感器中，实现了线路的简化和可靠性的提高。

The ABS wheel speed sensor is an important component of the automotive electronic control system. It measures the rotational speed of each wheel and sends the data to the vehicle control unit (ECU) to achieve precise control of the vehicle braking system. On this basis, the ABS wheel speed sensor with integrated EPB wiring harness integrates the EPB electronic parking brake wiring harness into the ABS wheel speed sensor, achieving simplification of the circuit and improvement of reliability.

产品特征及优势 Feature and Benefits

- 可侦测磁性轮或齿轮的速度和方向，输出信号PWM协议，带方向侦测和气隙报警。
  Can detect the speed and direction of magnetic tone wheels or gears. Output signal PWM protocol with direction detection and air gap warning.
- 传感器头部采用PCB-Less封装。无需复杂内部电路设计。注塑工艺满足IP69防护等级。
  The sensor head is packaged in PCB Less. No need for complex internal circuit design. The injection molding process meets the IP69 protection level.
- 将EPB电子驻车制动线束集成到 ABS轮速传感器中，线路布线简单，降低线束故障率。
  Integrate the EPB electronic parking brake harness into the ABS wheel speed sensor, with simple wiring and reduced harness failure rate.
- 固定胶套注塑工艺，相比于气穿工艺，拉脱力更优。
  The fixed rubber sleeve injection molding process has better pull-out force compared to the air blow process.
- 激光打标以得到更好的追溯性。
  Laser marking for better traceability.
- 根据客户要求，导线长度、扎带型号、固定胶套等都可定制。
  According to customer requirements, cable length, cable tie model, fixing rubber sleeve, etc. can be customized.

产品应用 Application

集成EPB线束的ABS轮速传感器主要应用在部分中高级轿车中。这些中高级轿车 往往同时具备了当前先进的如电子驻车制动EPB、防抱死ABS、电子稳定程序 ESP、自适应巡航ACC、自动保持AUTOHOLD功能。受限于轿车车身和底盘结 构的空间限制，要求EPB卡钳电机线束需要和ABS轮速传感器自身线束集成在一 起。并且轮速传感器必须可以输出带方向的轮速信号，以帮助ACC和 AUTOHOLD系统判断车轮的正反方向的转动。

The ABS wheel speed sensor with integrated EPB wiring harness is mainly used in some mid to high end sedans. These mid to high end sedans often have advanced features such as electronic parking brake (EPB), anti-lock braking system (ABS), electronic stability program (ESP), adaptive cruise control (ACC), and automatic hold (AUTOHOLD) simultaneously. Due to the spatial limitations of the car body and chassis structure, it is required that the EPB caliper motor harness be integrated with the ABS wheel speed sensor harness itself. And the wheel speed sensor must be able to output directional wheel speed signals to assist the ACC and AUTOHOLD systems in determining the forward and reverse rotation of the wheels.

操作 Operation

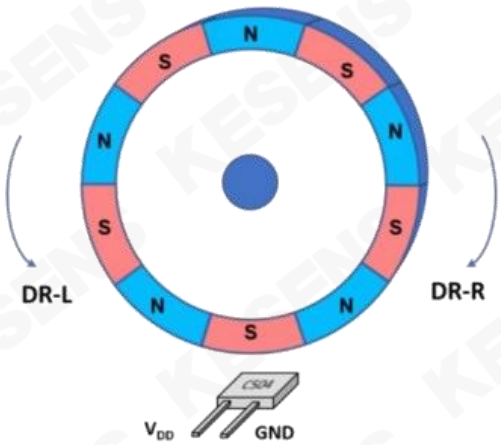
基本原理 Basic Principle

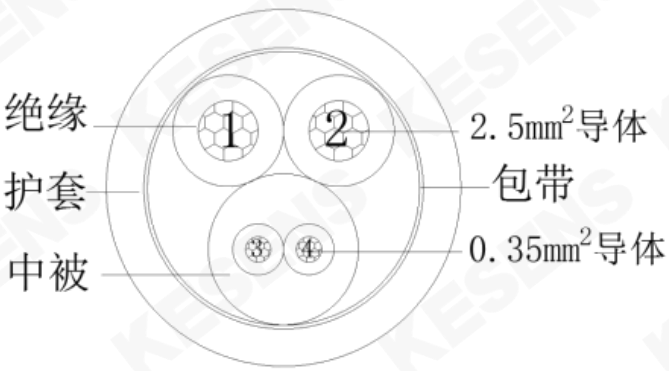
电路中的开和关状态由高和低电流来表示。磁输入信号的每一次过零都会触发一个输出脉冲，通常每个轮齿旋转的周期会产生固定脉冲数，速度信息就可以根据输出脉冲率提供，输出信号的连续上升沿之间的间隔时间就是脉冲率。气隙超出临界值的时候，脉冲宽度变化也会给出警告信息。

EPB线缆规格 2×2.5mm2+2×0.35mm2(Φ8.8)，其中2.5mm2部分连接车身连接器(4PIN)至EPB连接器(2PIN)，0.35mm2连接车身连接器(4PIN)至传感器头部(2PIN)。

The on and off states in a circuit are represented by high and low currents. Each zero crossing of the magnetic input signal triggers an output pulse, and usually a fixed number of pulses are generated for each gear tooth rotation cycle. The speed information can be provided based on the output pulse rate, and the interval time between consecutive rising edges of the output signal is the pulse rate. When the air gap exceeds the critical value, the change in pulse width will also give a warning message.

EPB cable specifications are 2 × 2.5mm2+2 × 0.35mm2 (Φ 8.8), with the 2.5mm2 portion connected to the vehicle body connector (4PIN) to the EPB connector (2PIN), and the 0.35mm2 portion connected to the vehicle body connector (4PIN) to the sensor head (2PIN).





连接选项 Connection Options

根据客户选择定制连接系统。EPB端2PIN连接器通常为TE 2-2439101-2，车身端4PIN连接器可定制。

Customized to customer choice of connection system. The EPB side 2PIN connector is usually TE 2-2439101-2. The 4PIN connector on the car body side can be customized.

包装选项 Packaging Options

可提供定制包装以满足任何需要，请联系KESENS技术部了解详情。

Custom packaging can be provided to meet any need, please contact KESENS Engineering for details.

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技术参数 Functional Characteristics

参数PARAMETER	符号SYMBOL	最小值MIN.	额定值NOM.	最大值MAX.	单位UNITS
工作温度（传感器） TEMPERATURE RANGE（Sensor）	T	-40		150	℃
工作温度（线缆） TEMPERATURE RANGE（Cable）	T	-40		115	℃
气隙 AIR GAP		0.3		2.0	mm
频率 FREQUENCY	f	1		1500	Hz
输出低电平 OUTPUT CURRENT LOW	I_{LOW}	5.9	7	8.4	mA
输出高电平 OUTPUT CURRENT HIGH	I_{HIGH} /I_{LOW}	11.8	14	16.8	mA
输出电流比 CURRENT RATIO	I_{HIGH}	1.9			
Warning脉宽 LENGTH of Warning PULSE	tWarning	38	45	52	μs
DR-L脉宽 LENGTH of DR-L PULSE	tDR-L	76	90	104	μs
DR-R脉宽 LENGTH of DR-R PULSE	tDR-R	153	180	207	μs
DR-L&EL脉宽 LENGTH of DR-L&EL PULSE	tDR-L&EL	306	360	414	μs
DR-R&EL脉宽 LENGTH of DR-R&EL PULSE	tDR-R&EL	616	720	828	μs
Standstill脉宽 LENGTH of Standstill PULSE	tStop	1232	1440	1656	μs
占空比 DUTY CYCLE	DC	40	50	60	%

可根据客户需求定制产品，如有需求请联系我们。
Customized products available upon request. Contact us for details.

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