NCV77320

Inductive Position Sensor interface; analog, SPI and SENT output; ISO26262 ASIL B (D); Automotive

Product Overview

For complete documentation, see the data sheet.

The NCV77320 is an inductive position sensor interface that, in combination with a PCB, forms a system to measure angular or linear positions accurately. The operating principle of the inductive sensor is based on mutual inductance. The chip contains an excitation source, which generates an AC magnetic field through a primary coil on the PCB. The field mutually couples to the rotor. The rotor on its turn induces voltages in secondary coils. These voltages, measured by the chip, depend on the rotor position and give a measure for the position. The NCV77320 contains 3 interfaces: A single ended analog output, a SENT interface with fast and slow channel and a SPI channel for direct interconnection to a micro controller. The analog output is proportionally ratio metric with the supply voltage. The NCV77320 has several fault detection circuitries. When a fault is detected, fault flags are set and available for readout.

Features

- Integrated DSP Position Calculation with Flexible 15 Point Linearization

- Diagnostics, Including for Missing Wire / Wire Misconnection Tolerant

- Analog Output or SENT Output Configurable

- Temperature Sensor Embedded

- SPI Watchdog Feature

- Supply Voltage 5 V; 15 V to 30 V Tolerant Robustness

- Flexible SPI Operation with 3.3 V or 5 V Micro Controllers

- Maximum Rotational Speed of 10800 rpm

- Operating Ambient Temperature 40 to 150°

- Developed According to the Automotive Safety Standard ISO26262

  For more features, see the data sheet

Applications

- Angular Position Sensors Up to 360°

- Linear Position Sensors

- X-by-Wire

End Products

- Pedal Position, Throttle Position, Chassis Height, Actuators Position Feedback etc.

- Lever Position, Linear Actuator, Level Sensors etc.

Part Electrical Specifications

Product	Status	Compilance	$V_{CC(max)}$ (V)	$V_{CC(min)}$ (V)	$T_{A(min)}$ (°C)	$T_{A(max)}$ (°C)	$I_{BAT(min)}$ (µA)	$I_{BAT(max)}$ (mA)	$I_{CC(min)}$ (mA)	$I_{CC(max)}$ (mA)	Resolution (bits)	Package Type	Case Outline	MSL Type	MSL Temp (°C)	Container Type	Container Qty.
NCV77320DB0R2G	Active	H Pb A P	5.5	4.5	-40	160	–	–	0	11	12	TSSOP-16 WB	948.PDF	2	260	REEL	4000