

Product Information Sensor Interface – CY30



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Sensor interface for an inductive engine wheel speed single rotation sensor

The integrated circuit CY30 contains an evaluation circuit for potential-free input signals of an inductive sensor. The circuit evaluates the negative zero crossing of the sensor signal.

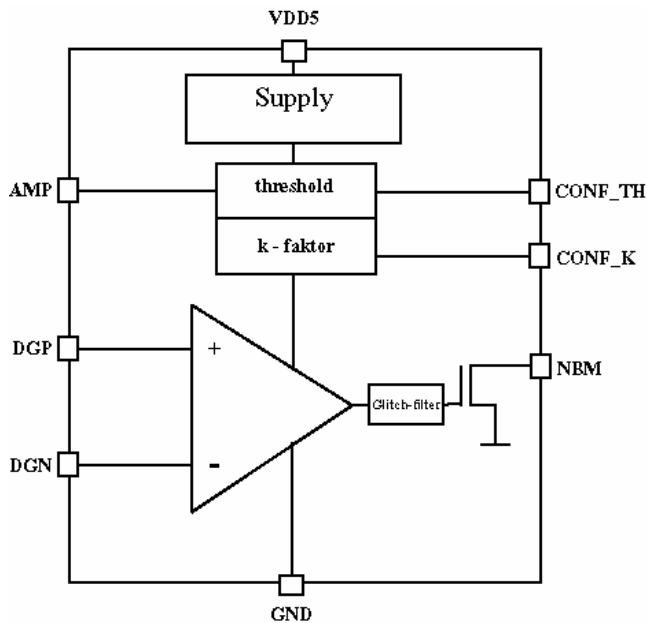
Features

- ▶ Differential input
- ▶ Single channel
- ▶ Two basic thresholds
- ▶ Amplitude-dependent part k-tracking with two possible adjustable factors
- ▶ Switching at negative zero crossing
- ▶ Glitch filtered open drain output
- ▶ Package : SOIC8

Customer benefits:

- ▶ Excellent system know-how
- ▶ Smart concepts for system safety
- ▶ Secured supply
- ▶ Long- term availability of manufacturing processes and products
- ▶ QS9000 and ISO/TS16949 certified

Block diagram



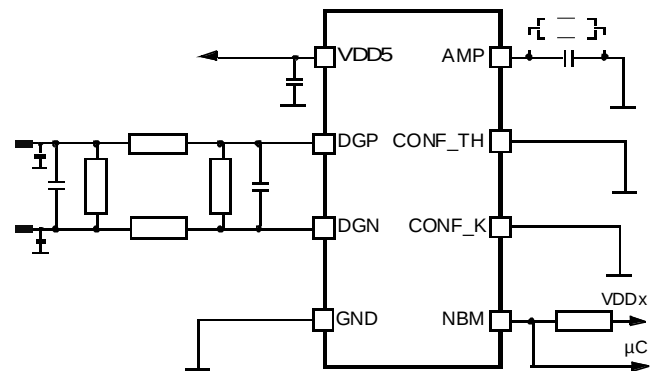
Detailed description

The inductive-sensor signal applied to DGP and DGN is raised by an internal voltage divider to a bias voltage of approximately 2.5 V. An internal clamp structure limits the voltage at DGP/ DGN between - 0.7 V and VDD5 + 0.7 V typically. The inductive sensor signal is then fed to the internal comparators. With a positive inductive sensor signal which exceeds the positive threshold, the output signal NBM is set to High (corresponds to preparing for the negative zero crossing). The analogue glitch filter suppresses short disturbance pulses smaller than 3µs. The NBM signal is reset to low at the negative zero crossing.

Pin description

Pin	Name	Function
1	VDD5	5 V Supply voltage
2	DGP	Positive input inductive sensor signal
3	DGN	Negative input inductive sensor signal
4	GND	Ground
5	NBM	Open drain output rotation speed signal
6	CONF_K	Configuration pin for amplitude dependent part k factor
7	CONF_TH	Configuration pin for basic threshold
8	AMP	Pin for amplitude dependent threshold tracking

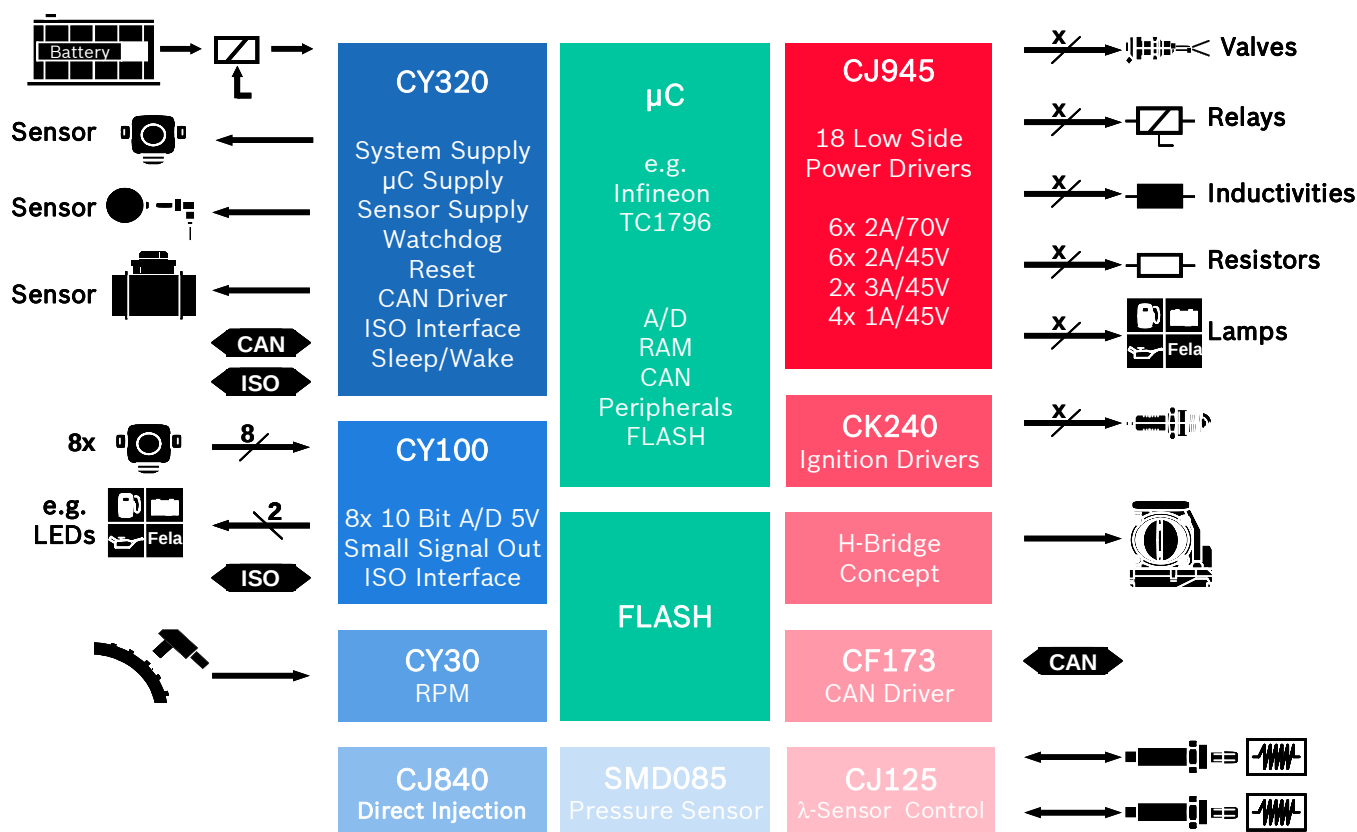
Application example



The resistor network is necessary for sensor adapting.

Maximum ratings

Parameter	Min	Max	Unit
Supply voltage	4.5	5.5	V
Voltage resistance, all pins	-0.3	6	V
Current DGN, DGP	-20	20	mA
Operating ambiente temperature	-40	125	°C
Thermal resistance		160	K/W
ESD HBM 100pF / 1.5k	- 2	+ 2	kV



Contact

Robert Bosch GmbH
Sales Semiconductors
Postbox 13 42
72703 Reutlingen
Germany
Tel.: +49 7121 35-2979
Fax: +49 7121 35-2170

Robert Bosch Corporation
Component Sales
38000 Hills Tech Drive
Farmington Hills, MI 48331
USA
Tel.: +1 248 876-7441
Fax: +1 248 848-2818

Robert Bosch K.K.
Component Sales
9-1, Ushikubo 3-chome
Tsuzuki-ku, Yokohama 224
Japan
Tel.: +81 45 9 12-83 01
Fax: +81 45 9 12-95 73

E-Mail: bosch.semiconductors@de.bosch.com

Internet: www.bosch-semiconductors.de

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