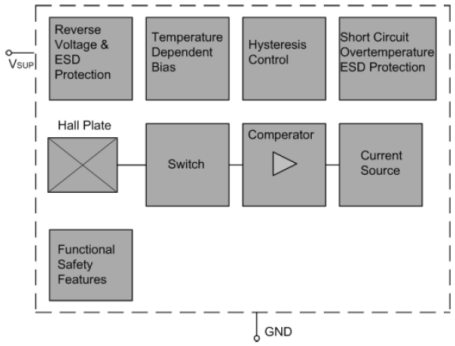
Flange Mount Hall Effect Sensor

Features

- Flange Mount Hall Sensor
- Compact size
- Unipolar, 2 Wire
- Easy to mount
- Hall Sensors are ideal for high frequency applications where accuracy and product life are critical.
- Typical applications include position control, speed measurement RPM, non-touch switching, level sensing and flow detection.

Specification

Block Diagram



Approvals

RoHS REACH IP67

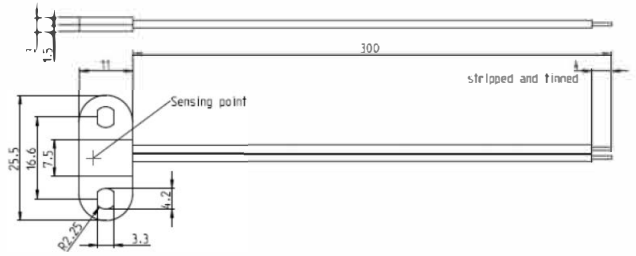
Absolute Maximum Ratings

Stresses beyond those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device
Functional operation of the device at these conditions is not implied. Exposure to the absolute rating conditions for extended periods will affect device reliability

Symbol	Parameter	wire colour	Min.	Max.	Unit	Conditions
V_{SUP}	Supply voltage	red	- 18		V	t < 1000 h [1]
			-	28	V	t < 96 h [1]
			-	32	V	t < 5 min [1]
			-	40	V	t < 5 x 400 ms [1] with series resistor Rv > 100 Ohm
V_{OUT}	Output voltage	red	- 0.5		V	t < 1000 h [1]
			-	28	V	t < 96 h [1]
			-	32	V	t < 5 min [1]
			-	40	V	t < 5 x 400 ms [1] with series resistor R_V > 100 Ohm
I_O	Output current	red	-	65	mA	
I_{OR}	Reverse output current	red	- 50		mA	

[1] No cumulative stress All voltages listed are referenced to ground (GND)

Dimensions



Wire Assignment

Name	Function	Cable colour
VSUP	Supply voltage and output	red
GND	Ground	black

HS-3511-05-0300
L___ wire length [mm]

Material Information

	Material	Colour
Housing	PA6	black
Cable	UL1007/1569, AWG 24	red, black
Potting compound	Epoxy	black

Environmental Characteristics

Operating temperature	°C	- 20 to + 85

Characteristics

At recommended operation conditions if not otherwise specified in the column "Conditions".
Typical characteristics for T_J = 25 °C and V_{SUP} = 12 V

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
Supply							
I_{SUPlo}	Low supply current	red	2		5	mA	
I_{SUPlo}	High supply current	red	12		17	mA	
I_{SUPrii}	Reverse current	red			1	mA	for V_{SUP} = - 18 V
Output							
t_f	Output fall time [1]				1	µs	[1] V_{SUP} = 12 V;
t_r	Output rise time				1	µs	
t_d	Delay time [1]			16		µs	
t_{samp}	Output refresh period		1.6	2	2.66	µs	
t_{en}	Enable time of output after settling of V_{SUP}			50		µs	V_{SUP} = 12 V B > B_{on} + 2 mT or B < B_{off} - 2 mT
Power-on-self-test							
Self test can be triggered externally; details on request							
[1] Guaranteed by design							

Recommended Operating Conditions

Symbol	Parameter	wire colour	Min.	Max.	Unit	Conditions
V_{SUP}	Supply voltage	red	3.0	24	V	

Magnetic Characteristics Overview

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
B_{onth}	ON threshold range [1]	-	-30		30	mT	
B_{offth}	OFF threshold range [1]	-	-30		30	mT	
B_{th}	Adjustable step size [2]	-		0.5		mT	
T_C	Temperatur compensation of magnetic thresholds [3]	-	0		-3000	ppm/K	

[1] Available range

[2] Small steps at small values, bigger steps at higher values. May not be undercut

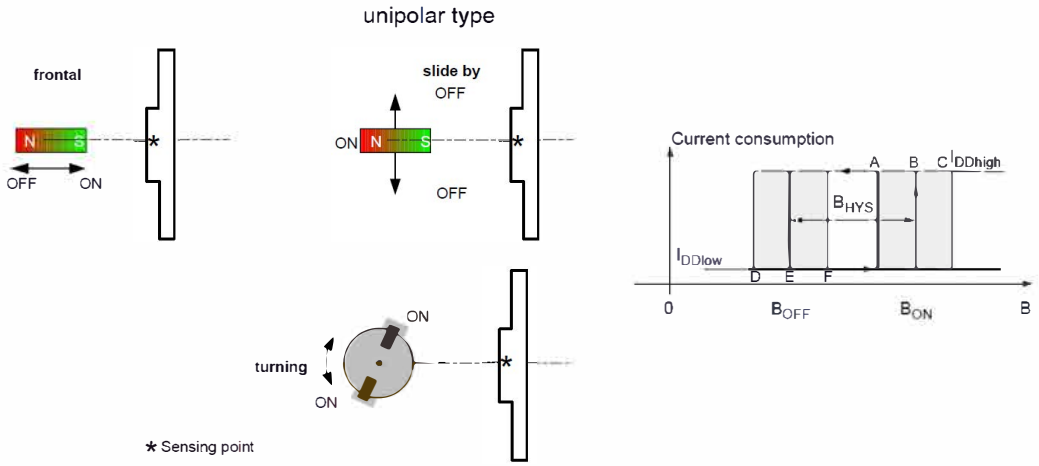
[3] Different temperature compensation available on request

Magnetic Characteristics

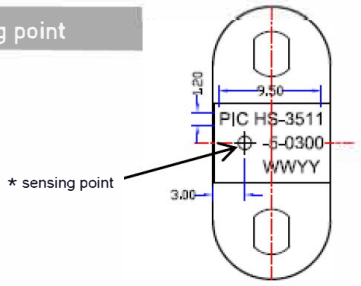
Switching Type	Temp. koeff. of magnetic thresh.	On point B_{ON} [mT]			Off point B_{OFF} [mT]			Hysteresis BHYS [1] [mT]		
	TC [ppm/K]	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
unipolar	0	4.3	6.0	7.7	2.9	4.1	6.1	-	1.9	-
		A	B	C	D	E	F			

[1] The hysteresis is the difference between the switching points $B_{HYS} = B_{ON} - B_{OFF}$

Magnetic Approach (for example)



Off-center position of sensing point



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