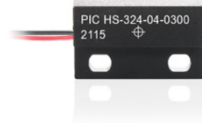
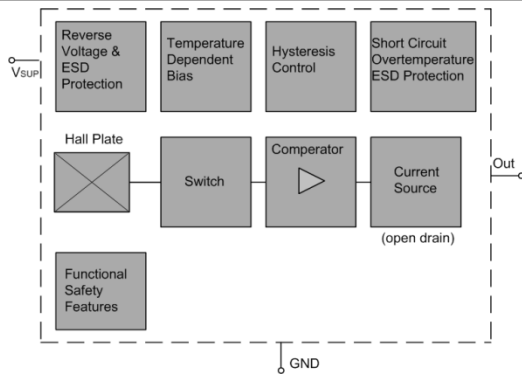


## HS-324-04-0300



Product image serves as example only.

### Block Diagram



## HS-324-04-0300

Latching 2 - Wire  
Flatpack Hall Effect Sensor

### Features

- › Compact size
- › Various switching sensitivity
- › Various switching points available
- › Customized types available

### Approvals

RoHS

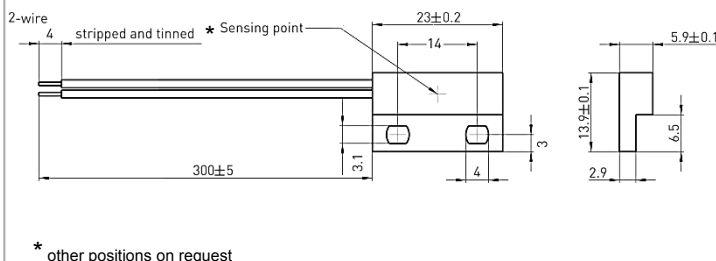
REACH

### Absolute Maximum Ratings

Symbol	Parameter	wire colour	Min.	Max.	Unit	Conditions
V <sub>SUP</sub>	Supply voltage	red	- 18		V	t < 1000 h <sup>1)</sup>
			-	28	V	t < 96 h <sup>1)</sup>
			-	32	V	t < 5 min <sup>1)</sup>
			-	40	V	t < 5 x 400 ms <sup>1)</sup> with series resistor R <sub>V</sub> > 100 Ohm
V <sub>OUT</sub>	Output voltage	red	- 0.5		V	t < 1000 h <sup>1)</sup>
			-	28	V	t < 96 h <sup>1)</sup>
			-	32	V	t < 5 min <sup>1)</sup>
			-	40	V	t < 5 x 400 ms <sup>1)</sup> with series resistor R <sub>V</sub> > 100 Ohm
I <sub>O</sub>	Output current	red	-	65	mA	
I <sub>OR</sub>	Reverse output current	red	- 50		mA	

<sup>1)</sup> 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-324-04-0300  
\_\_\_\_\_ wire length [mm]

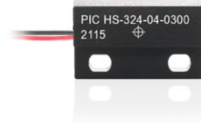
### Material Information

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

### Environmental Characteristics

Operating temperature	°C	- 20 to + 85
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HS-324-04-0300



**HS-324-04-0300**

Latching 2 - Wire  
Flatpack Hall Effect Sensor

### Characteristics

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

Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
<b>Supply</b>							
$I_{SUPlo}$	Low supply current	red	5		7	mA	
$I_{SUPlo}$	High supply current	red	12		17	mA	
$I_{SUPhi}$	Reverse current	red			1	mA	for $V_{SUP} = -18\text{ V}$
<b>Output</b>							
$t_f$	Output fall time <sup>1)</sup>				1	$\mu\text{s}$	<sup>1)</sup> $V_{SUP} = 12\text{ V}$ ;
$t_r$	Output rise time				1	$\mu\text{s}$	
$t_d$	Delay time <sup>1)</sup>			16		$\mu\text{s}$	
$t_{samp}$	Output refresh period		1.6	2	2.66	$\mu\text{s}$	
$t_{en}$	Enable time of output after settling of $V_{SUP}$			50		$\mu\text{s}$	$V_{SUP} = 12\text{ V}$ $B > B_{on} + 2\text{ mT}$ or $B < B_{off} - 2\text{ mT}$

### Power-on-self-test

Self test can be triggered externally; details on request  
<sup>1)</sup> 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

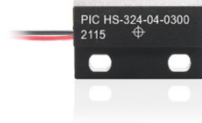
Symbol	Parameter	wire colour	Min.	Typ.	Max.	Unit	Conditions
$B_{ONth}$	ON threshold range <sup>1)</sup>	-	-30		30	mT	
$B_{OOff}$	OFF threshold range <sup>1)</sup>	-	-30		30	mT	
$B_{th}$	Adjustable step size <sup>2)</sup>	-		0.5		mT	
$T_C$	Temperatur compensation of magnetic thresholds <sup>3)</sup>	-	0		-3000	ppm/K	

<sup>1)</sup> Available range

<sup>2)</sup> Small steps at small values, bigger steps at higher values. May not be undercut

<sup>3)</sup> Different temperature compensation available on request

HS-324-04-0300



**HS-324-04-0300**

Latching 2 - Wire  
Flatpack Hall Effect Sensor

**Magnetic Characteristics**

Switching Type	Temp. coeff. of magnetic thresh. TC [ppm/K]	On point $B_{ON}$			Off point $B_{OFF}$			Hysteresis $B_{HYS}$ <sup>1)</sup>		
		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.
latching	0	tdb.	12.0	tdb.	tdb.	- 12.0	tdb.	-	24.0	-
		A	B	C	D	E	F			

<sup>1)</sup> The hysteresis is the difference between the switching points  $B_{HYS} = B_{ON} - B_{OFF}$

**Magnetic Approach (for example)**

**latching type**

**frontal**

ON: Magnet (N-S) approaches sensor from the left.

OFF: Magnet (S-N) approaches sensor from the left.

**slide by**

ON: Magnet (S-N) slides past the sensor from left to right.

OFF: Magnet (S-N) slides past the sensor from right to left.

**turning**

ON: Magnet (S-N) turns around the sensor.

OFF: Magnet (S-N) turns around the sensor in the opposite direction.

\* Sensor center point

**Current consumption (frontal)**

The graph shows current consumption  $I_{DD}$  versus magnetic field  $B$ . The current is low ( $I_{DDlow}$ ) until point E, then rises to a high level ( $I_{DDhigh}$ ) between points A and B. The hysteresis  $B_{HYS}$  is the width of the high-current region. Points F, E, D, 0, B<sub>ON</sub>, and B are marked on the x-axis.

**Current consumption (turning)**

The graph shows current consumption  $I_{DD}$  versus time  $t$ . The current is low during the approach and high during the turning event.