HS-2212M-05-0300

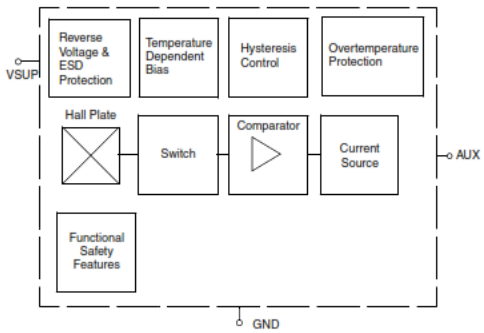
Product image serves as example only.

HS-2212M-05-0300

Unipolar 2 - Wire

Hall Effect Sensor M12 thread

Block Diagram



Features

- Customized types available
- Operates with magnetic fields up to 12 kHz
- Current interface
- Threaded housing

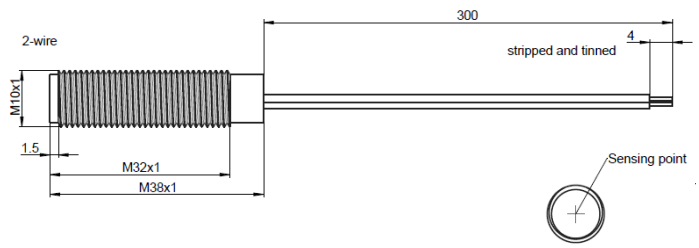
Approvals

RoHS REACH IP67

Recommended Operating Conditions

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_{SUP}	Supply voltage	3	–	24	V	

Dimensions



Wire Assignment

Name	Function	Cable colour
V_{SUP}	Supply voltage and output	red
GND	Ground	black

HS-2210M-05-0300 → wire length (mm)

Material Information

	Material	Colour
Housing	Nickel plated brass	nickel
Cable	UL 1007 AWG 24	red, black
Potting	Epoxy	black

Environmental Characteristics

Operating temperature	°C	- 20 to + 85

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Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
Supply						
V_{UV}	Undervoltage threshold	2	–	3	V	
I_{SUPlo}	Low supply current 1	2,5	–	5	mA	
I_{SUP}	Error current	0,8	–	1,9	mA	
			–		mA	
I_{SUPhi}	High supply current	12	–	17	mA	
I_{SUPR}	Reverse current	–	–	0,6	mA	for V_{SUP} = –18 V
Port Output						
B_{noise}	Effective noise of magnetic switching points (RMS)[2)]	–	72	–	µT	For square wave signal with 12 kHz
t_j	Output jitter (RMS)[1)]	–	±0.58	±0.72	µs	For square wave signal with 1 kHz. Jitter is evenly distributed between –1 µs and +1 µs
t_d	Delay time[2)3)]	–	16	21	µs	
t_{samp}	Output refresh period[2)]	1,6	2,2	3	µs	
t_{en}	Enable time of output after exceeding of V_{UV}	20	50	60	µs	V_{SUP} = 12 V B > Bon + 2 mT or B < Boff – 2 mT

1) Characterized on small sample size, not tested

2) Guaranteed by design

3) Systematic delay between magnetic threshold reached and output switching

Absolute Maximum Ratings

Symbol	Parameter	Min.	Max.	Unit	Conditions
V_{SUP}	Supply voltage	–18	28	V	t < 96 h[1)]
		–	32	V	t < 5 min[1)]
		–	40	V	t < 10 x 400 ms “Load- Dump”[1)] with series resistor RV > 100 Ω.

1) No cumulative stress

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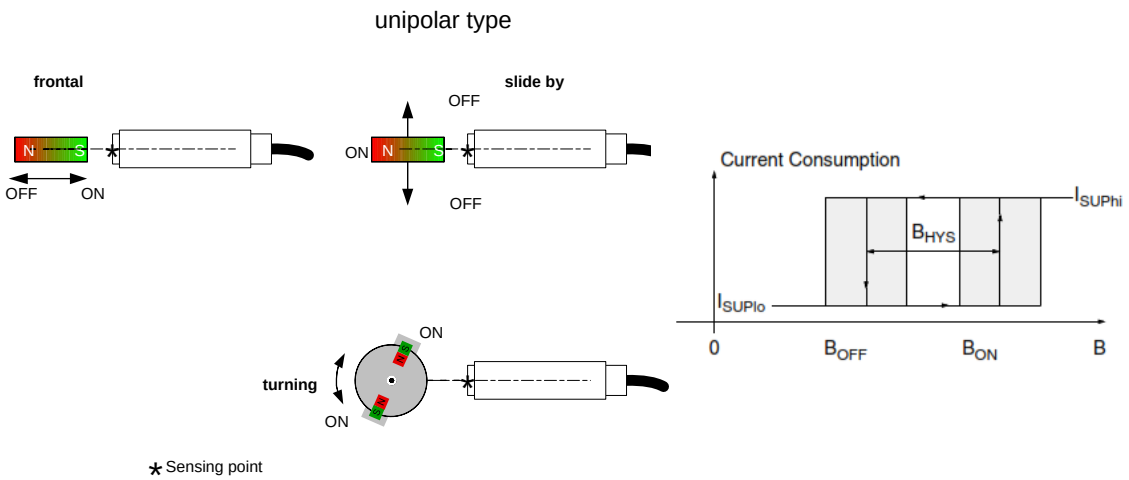
Magnetic Characteristics

Parameter	On point B_{ON}			Off point B_{OFF}			Hysteresis B_{HYS}		Unit
TJ	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	
–40 °C	5.0	6,4	8,5	3,2	4,5	6,7	–	1,9	mT
25 °C	4,3	6	7,7	2,9	4,1	6,1	–	1,9	mT
170 °C	3,7	5,6	7,7	2,4	4.0	6,4	–	1,9	mT

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

Note: The sensor turns to high current consumption I_{SUPhi} with the magnetic north pole on the top side of the package and turns to low current consumption I_{SUPlo} if the magnetic field is removed.
It does not respond to the magnetic north pole on the top side of the package.
For correct function in the the application, the sensor requires only the magnetic south pole on the top side of the package.

Magnetic Approach (for example)



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