

M12-HS1-5KP21

Hall or Magneto Resistive Switch Sensor

- Sensitive S-pole hall switch
- 55 gauss operate
- NPN w/5k pull up resistor
- Plastic 12x1mm x 35mm housing
- Free end PVC 22 AWG wires (1 foot length)



CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **M12-HS1-5KP21**

Housing	Sensor Type & Function	Electrical Option	Connection Type
Plastic 12x1mm x 35mm Long	Hall Switch 1 Digital Output Sensitive S-Pole	NPN, 5k Pull Up Resistor	P21 = Free End PVC 22AWG Wires

Modify, update, or enhance any sensor with our modular features and functionality.

HOUSING -Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

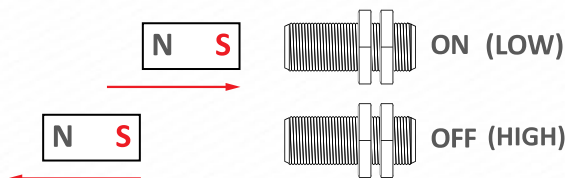
ELECTRICAL -Every sensor function available in various electrical options (NPN, PNP, TTL, etc.)

CONNECTION -Deutsch, Amphenol, many other brands, free end wires, pigtails, any length

Need a Custom Sensor Solution?... Send us your application specific requirements at [sensorso.com](https://www.sensorso.com)

'1 Digital Output' Sensitive S-Pole Hall Switch Sensor

Digital Output Switches On and Off with a Magnet



Type - HS

DESCRIPTION

- Sensor triggers ON (LOW) when a South Pole magnet field is present and turns OFF (HIGH) when the South Pole magnetic field retracts.
- Sensor does not respond to North Pole magnetic fields. Contact Sensor Solutions for alternative sensors.
- No orientation required. Use lock nuts to set air gap within range of target magnets.
- Square wave output pulses can be used to detect speed, position, proximity, or count.
- Note: Operate and release gaps are dependent on the size, material, grade, and temperature of the target magnet.

FEATURES

- Internal Hysteresis
- Lower Gauss Operation than Standard HS Sensor
- Solid State (Nothing to wear out!)
- Temperature Stable



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In addition to the HS1, we offer a variety of South Pole and Either pole Hall Effect and Magnetoresistive sensors including multiple programmable sensors, North and South Pole output sensors, latching sensors, and sensors with speed/count and direction outputs.

Note: Check our website or contact us to discuss all of our magnetic speed, count, and position detection sensors.

Electrical Specifications	Conditions	Min	Max	Unit
Temperature Range*	Operating	-40	+150	Deg C
Supply Voltage, Vcc	Over temperature	+3	+24	Volts DC
Supply Current, Output Off	Into Vcc @ Vcc=12	+2	+7	mA
Chopper Frequency	Typical	333	800	kHz
Frequency Range	8x over sample	0	12	kHz
Saturation Voltage High	Vcc = 12 V	11.5	12	Volts
100% Tested at 20°C before shipping				
Saturation Voltage Low	Vcc = 12 V	0	0.4	Volts
100% Tested at 20°C before shipping				
Internal Pull Up Resistor	Vcc to Vout	4.9	5.1	k Ohms
Output Rise Time 10-90%	C < 100pF	-	2.0	µS
Output Fall Time 90-10%	C < 100pF	-	1.0	µS
ESD (Human Body Model)	Nondestructive	-	8000	Volts
EMI (Human Body Model)	20k to 1 G Hz	-	100	V / M

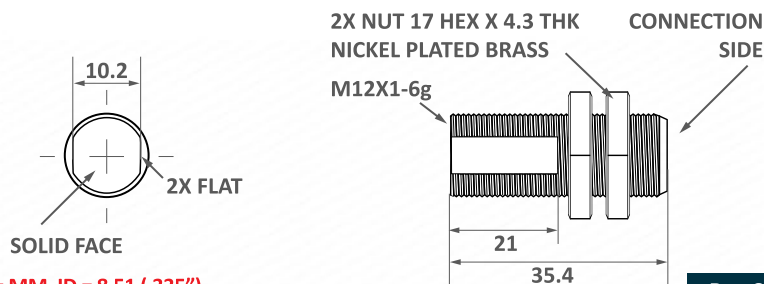
Rev C

Absolute Max Limits T < 5 minutes	Min	Max	Unit
Supply Voltage, Vcc	-32	+32	Volts DC
Voltage Applied to Output	-32	+32	Volts
Current Into Output	-	60	mA
Current Out of Output	-	Vcc/5k	mA
Load Dump, 40 mS Rs = 100 Ω	-	40	Volts

Environmental Specifications

Corrosion Resistance	500 hours salt spray ASTM B-117
Installation Torque	13 Foot-Pounds Maximum
Enclosure	Nema 1,3,4,6,13 & IEC IP67
Vibration	10 G's 2 to 2000 Hz Sinusodal
Mechanical Shock	100 G's, 11 mS Half-Sine

M12 Housing, Glass Filled Nylon (150°C) 12X1mm x 35mm Long



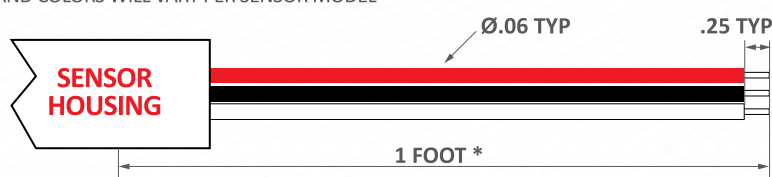
Rev C

Magnetic Characteristics	Min	Typ	Max
Operate Point Over Temp	15 G	55 G	76 G
100% Tested at 20°C before shipping			
Release Point Over Temp	5 G	35 G	57 G
Hysteresis Over Temp	5 G	20 G	28 G

P21, Free End PVC 22 AWG Wires

FREE END WIRE LEADS
22 AWG, 7/30, PVC 80°C
3 WIRES SHOWN. THE NUMBER OF WIRES
AND COLORS WILL VARY PER SENSOR MODEL

OTHER STANDARD LENGTHS:
3", 6", 2', 5', 10', AND 20'



DIM = INCH

Rev A

Connections Chart

Red	Vcc	White	Digital Vout
Black	Ground		
P21-HS1			

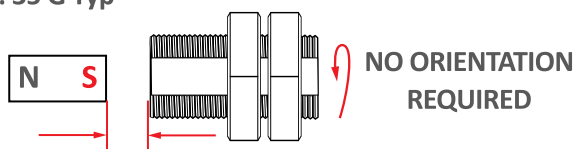
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Sensor Function

HS1 Operate Point: 55 G Typ
Release Point: 35 G Typ

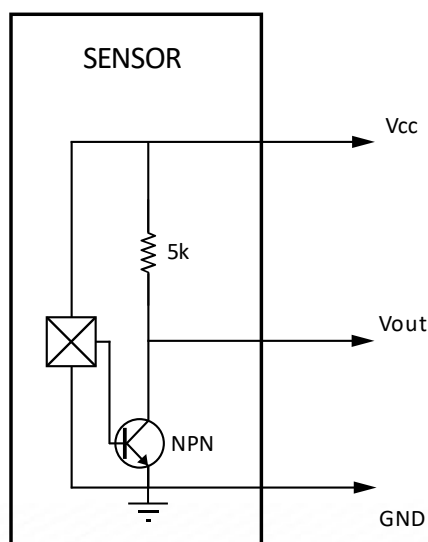
EXAMPLE MAGNET
P/N RM-01-020



.60 TYP DETECT GAP
1/4" Ø NEO MAGNET

DIM = INCH

5K, 5k Pull-up Resistor



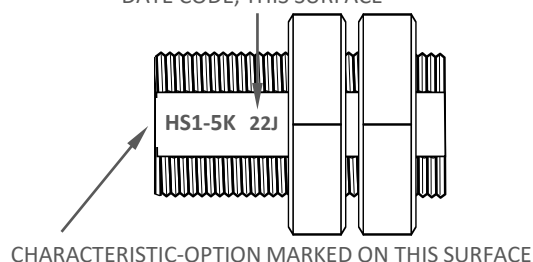
Date Code 'YYM'

YY = YEAR, M = MONTH

A JAN	D APR	H JUL	L OCT
B FEB	E MAY	J AUG	M NOV
C MAR	G JUN	K SEP	N DEC

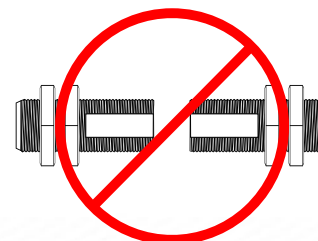
Marking

DATE CODE, THIS SURFACE



Handling Instructions

**DO NOT CONTACT
FACE TO FACE**



**CONTACT WITH OTHER MAGNETS MAY
REDUCE THE MAXIMUM OPERATING GAP**

Please note: All technical specifications on this series datasheet refer to the standard product range. Modifications in the sense of technical progress are reserved. For general information only. For more specific information, please consult the product datasheet, available upon request.

This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These change will be incorporated in future revisions.

For deviating values, most current specifications and products please contact your nearest sales office.