

# M12-HS1-5KCB2

## 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
- Integral 4 pin male 12mm micro connector



### CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **M12-HS1-5KCB2**

| Housing                       | Sensor Type & Function                           | Electrical Option        | Connection Type                                   |
|-------------------------------|--------------------------------------------------|--------------------------|---------------------------------------------------|
| Plastic<br>12x1mm x 35mm Long | Hall Switch 1 Digital Output<br>Sensitive S-Pole | NPN, 5k Pull Up Resistor | CB2 = Integral 4 Pin Male<br>12mm Micro Connector |

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

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

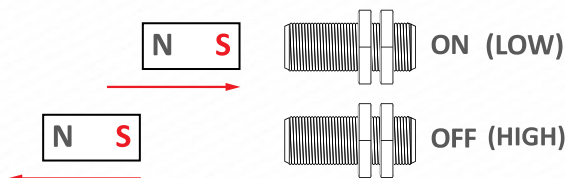
**ELECTRICAL** -Every sensor function available in various electrical options (NPN, PNP, TTL, etc.)

**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



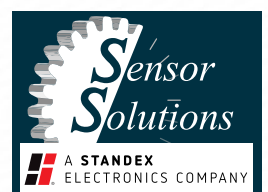
Type - HS

### 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



# M12-HS1-5KCB2

## Hall or Magneto Resistive Switch Sensor

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    |

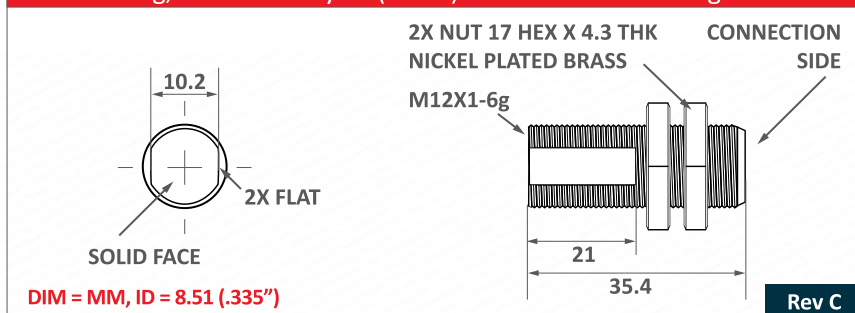
Rev C

| Absolute Max Limits<br>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 Sinusoidal  |
| Mechanical Shock     | 100 G's, 11 mS Half-Sine        |

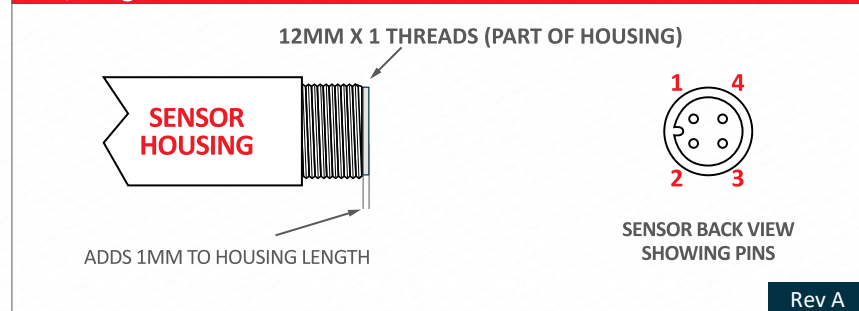
### M12 Housing, Glass Filled Nylon (150°C) 12X1mm x 35mm Long



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 |

### CB2, Integral 4 Pin Male 12mm Micro Connector



Rev A

### Connections Chart

|       |     |       |              |
|-------|-----|-------|--------------|
| Pin 1 | Vcc | Pin 3 | Ground       |
| Pin 2 | n/c | Pin 4 | Digital Vout |

CB2-HS1

OTHER MATING CONNECTORS AND CABLES AVAILABLE

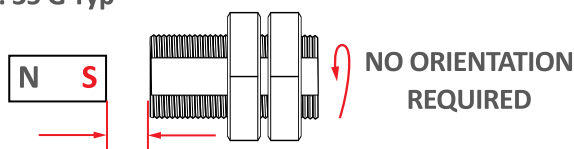
# M12-HS1-5KCB2

## Hall or Magneto Resistive Switch Sensor

### Sensor Function

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

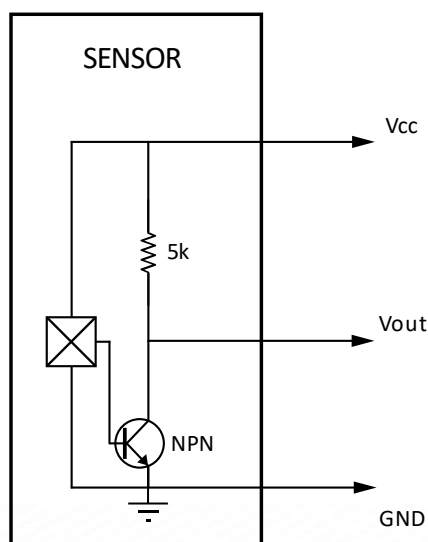
EXAMPLE MAGNET  
P/N RM-01-020



.60 TYP DETECT GAP  
1/4" Ø NEO MAGNET

DIM = INCH

### 5K, 5k Pull-up Resistor



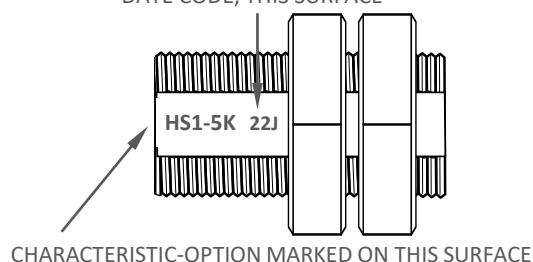
### Date Code 'YYM'

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 |

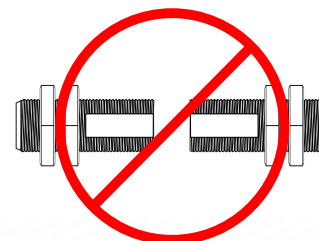
### Marking

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.