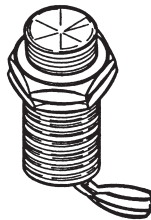


## SOLID-STATE SENSORS SS94 SERIES LINEAR HALL-EFFECT TRANSDUCERS

Operated by a magnetic field, the output voltage varies proportionally to the field strength. All sensors feature temperature compensation circuitry. SS94A2 features silver back for improved noise immunity. Gauss range of -500 to +500 except SS94A1F all -100 to +100. SS94A1F—High sensitivity.

Cat. No.	Supply VDC	Supply mA	MV/Gauss Output @ 25°C*	Linearity % of Span	Net Price
SS94A1	6.6-12.6	30.0	5.000	1.5% max	<b>\$15.02</b>
SS94A1B	4.5-8.0	17.5	1.875	1.5% max	<b>15.60</b>
SS94A1F†	6.6-12.6	30.0	25.000	1.5% max	<b>17.55</b>
SS94A2	6.6-12.6	30.0	5.000	1.5% max	<b>18.71</b>

\*Nominal at 8 VDC Supply except SS94A1B at 5VDC.  
†High sensitivity.



## SR4 SERIES MAGNETICALLY-OPERATED SENSORS

SR4 magneto resistive position sensor is completely sealed in a threaded plastic bushing and meets NEMA 3, 3R, 3S, 4, 4X, 12 and 13. The 15 gauss typical operate point at 25°C allows sensing distances of 0.5 inches with the standard 102MG11 and over 1 inch with slightly stronger magnets. Can be operated with either the North or South magnetic pole.

Cat. No.	Supply VDC	Supply mA	Output VDC	Net Price
SR4P2-A1	6 to 24	13.5	0.4	<b>\$26.51</b>



FIG. 1



FIG. 2

## TYPES SS4/SS5 MAGNETICALLY OPERATED, SMALL-SIZE SENSORS

Position sensors have digital current sink output. Types SS4 are for through hole TO92 PC board mounting. Types SS1 have SOT89 package for surface mount. SS400 and SS100 series feature temperature compensation. Operating speed: 0 to over 100kHz. Supply voltage: 3.8-24VDC. Output voltage: 0.4V max. Dimensions: PC board packages are 0.160 x 0.118" (4.06 x 3.00); surface mount packages are 0.177 x 0.136 x 0.059" (4.50 x 3.45 x 1.50). Type SS19 is SOT89 package for surface mount.

Cat. No.	Fig.	Magnetics	Supply Current	Gauss Level @ 25°C		Net Price
				OP	RP	
<b>PC BOARD</b>						
SS41	1	Bipolar	8.7mA	40	-40	<b>\$1.53</b>
SS411A	1	Bipolar	10.0mA	60	-60	<b>1.95</b>
SS443A	1	Unipolar	10.0mA	180	75	<b>1.63</b>
SS441A	1	Unipolar	10.0mA	115	20	<b>1.95</b>
SS461A	1	Latch	10.0mA	85	-85	<b>1.95</b>
SS466A	1	Latch	10.0mA	180	-180	<b>1.69</b>

### SURFACE MOUNT

SS511AT	2	Bipolar	10.0mA	60	-60	<b>2.06</b>
SS543AT	2	Unipolar	10.0mA	—	—	<b>2.06</b>
SS561AT	2	Latch	10.0mA	85	-85	<b>2.06</b>
SS566AT	2	Latch	10.0mA	—	—	<b>2.06</b>

## MINIATURE LINEAR PC BOARD SENSORS

Cat. No.	Supply VDC	Supply mA	Sensitivity* MV/Gauss	Net Price
SS19	4-10	4.0	0.9	<b>\$1.69</b>
SS49	4-10	4.0	0.9	<b>1.48</b>
SS495A	4.5-10.5	7.0	3.125±0.125	<b>2.74</b>
SS495A1	4.5-10.5	7.0	3.125±0.094	<b>3.43</b>

\*Nominal @ 5.0VDC supply.



2SSP



SS2

Feature magneto-resistive sensor with digital current sink output. Can be operated with either north or south magnetic pole, 3-pin, in-line PC board terminals on 0.100" (2.54) mounter centres. For SS21 and SS22 output voltage: 0.4V max. Typical OP @ 25°C: 15 gauss. Typical RP @ 25°C: 11 gauss. 0.3" x 0.3" (7.62 x 7.62), with epoxy chip protection. Type 2SSP 0.18" x 0.18" (4.57 x 4.57) plastic package.

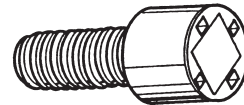
Cat. No.	Operate Gauss	Supply Voltage	Supply Current	Net Price
SS21PE	15	4.5-5.5VDC	10mA	<b>\$7.64</b>
SS22PE	15	6-24VDC	13.5mA	<b>7.64</b>



101MG7



102MG11  
(8-32 ALUMINUM THREAD)

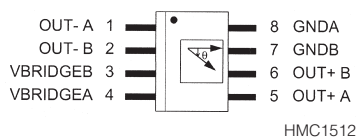
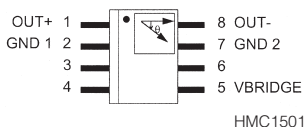


106MG10  
(1/4-20 PLASTIC THREAD)

Bar magnets are ideal for sensors with unipolar magnetic characteristics. Gauss level @ 25°C: 470. Gap distance: 0.100" (2.54). Other threaded bushing, bar, ring magnets, and ring magnets with alternate North and South poles for use with bipolar magnetic sensors are available.

Cat. No.	Dimensions		Gauss Level @		Net Price
	Length	Outside Dia.	0.050"	0.100"	
101MG7	0.25" (6.35)	0.25" (6.35)	755	470	<b>\$4.32</b>
102MG11	0.67" (17.02)	0.31" (7.87)	755	205	<b>7.80</b>
106MG10	0.93" (23.62)	0.40" (10.16)	1600	940	<b>11.23</b>

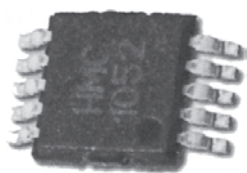
## Honeywell



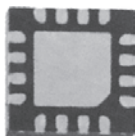
### LINEAR/ANGULAR/ROTARY DISPLACEMENT SENSORS

High resolution, low power MR sensor capable of measuring the angle direction of a magnetic field from a magnet with  $<0.07^\circ$  resolution. Direction versus field strength include: insensitivity to the tempo of the magnet, less sensitivity to shock and vibration, and the ability to withstand large variations in the gap between the sensor and magnet. These sensors may be operated on 3 volts with bandwidth response of 0-5 MHz. Output is typical Wheatstone bridge. **FEATURES AND BENEFITS:** The HMC1501 and HMC1512 can function with Alnico or ceramic type magnets HMC1501—angular range of  $\pm 45^\circ$  with  $<0.07^\circ$  resolution, HMC1512—angular range of  $\pm 90^\circ$  with  $<0.07^\circ$  resolution. Linear range of 8mm with two sensors mounted on two ends; range may be increased through multiple sensor arrays operating together. Sensors know the exact position and require no indexing for proper positional output. No moving parts to wear out; no dropped signals from worn tracks. Available in an 8-pin surface mount package with case dimensions (exclusive of pins), of 5mm x 4mm x 1.2mm total mounting envelope, with pins of less than 6mm square.

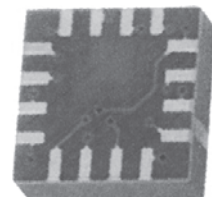
Cat. No.	Power Supply	Full Scale Output Range	Net Price
<b>HMC1501</b>	5V	120mV	<b>\$24.94</b>
<b>HMC1512</b>	5V	120mV	<b>24.94</b>



HMC 1052



HMC 1052L

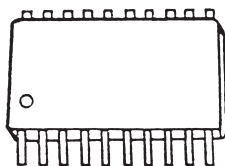


HMC 1053

### ULTRA SMALL MAGNETIC SENSORS TWO AND THREE AXIS

The HMC105X family of magnetoresistive sensors is the ideal solution for applications requiring ultra small sensors. In addition to being the smallest size sensor available from Honeywell, they are capable of sensing fields below 100 micro-gauss. The HMC105X family of sensors are optimized for low-cost compassing and include several miniature package configurations. Applications include: compassing, navigation systems and heading/pointing.

Cat. No.	Package Style	Field Range	Resolution	Linearity	Net Price
<b>HMC 1052</b>	Two axis—MSOP10	$\pm 6$ Gauss	120 Micro gauss	0.05% Full Scale over the $\pm 1$ gauss midpoint	<b>\$24.94</b>
<b>HMC 1052L</b>	Two axis—16-pin LCC	$\pm 6$ Gauss	120 Micro gauss	0.05% Full Scale over the $\pm 1$ gauss midpoint	<b>24.94</b>
<b>HMC 1053</b>	Three axis—16-pin LCC	$\pm 6$ Gauss	120 Micro gauss	0.05% Full Scale over the $\pm 1$ gauss midpoint	<b>76.89</b>

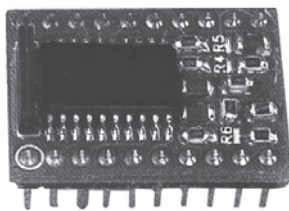


HMC1002  
HMC1001

### MAGNETIC SENSORS AND HIGH-TEMP ICs TYPE HMC1 SINGLE AND DUAL AXIS MAGNETIC SENSOR

Single and dual axis magnetic sensor for use in highest precision applications, such as currency detection, virtual reality headsets and compass heading electronics where precise understanding of direction or position is required. Two solid state sensors in single plastic package provide 0-10 MHz frequency response, operation over  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$  and patented set/reset function for nulling out the effects of unwanted ambient magnetic fields. Unamplified voltage output.

Cat. No.	Field Range	Resolution	Full Scale Output	Net Price
<b>HMC1002</b>	$\pm 2$ Gauss	40 $\mu$ Gauss	50mV	<b>\$27.43</b>
<b>HMC1001</b>	$\pm 2$ Gauss	40 $\mu$ Gauss	50mV	<b>24.94</b>

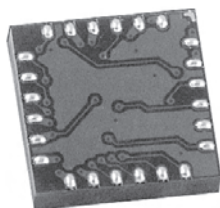


HMC2003

### TYPE HMC2003 MAGNETIC SENSOR HYBRID

For use in high-precision applications such as vehicle control, compass heading detection or medical instruments where accurate position detection is required. Special packaging techniques provide high-resolution, temperature-compensated, amplified voltage outputs operating from single 6-15V supply. Single 20-pin DIP package. Integrated offset coils allow closed loop operation.

Cat. No.	Field Range	Resolution	Full-Scale Output	Net Price
<b>HMC2003</b>	±2 Gauss	70 μ Gauss	4.5V	<b>\$248.15</b>

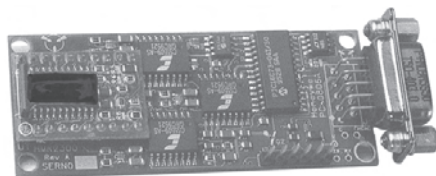


HMC6352

### HMC6352 DIGITAL COMPASS SOLUTIONS

The HMC6352 compass solutions are miniature chip-scale modules that drop-in to your platforms with a 12C interface for the ultimate in electronic functionality. Accuracy: 3° heading accuracy, 0.3° resolution and 1° repeatability. Size: 6.5 × 6.5 × 1.4 mm LCC package. Calibration: embedded hard iron calibration compensates for distortions due to ferrous objects and stray fields. Applications include: compassing, platform leveling, integration with GPS, and dead reckoning.

Cat. No.	Net Price
<b>HMC6352</b>	<b>\$248.49</b>



HMR2300

### HMR2300 SMART DIGITAL MAGNETOMETER

Card-level products are for industrial applications such as avionics and marine compassing, process control, vehicle detection, and security systems where highest resolution and direct digital interface is required. Embedded microcontroller enables combined error (non-linearity, hysteresis, repeatability, and temperature effects) band of 1% FSO over -55°C to +125°C range. Selectable features include: sampling rate, baud rate and output. Demo kit includes all cabling, complete user's manual, and DOS-based evaluation software.

Cat. No.	Field Range	Output	Enclosure	Net Price
<b>HMR2300-DEMO</b>	±2 Gauss	RS232	Yes	<b>\$935.25</b>
<b>HMR2300-D21-232</b>	±2 Gauss	RS232	Extended	<b>871.65</b>
<b>HMR2300R</b>	±2 Gauss	RS232	Extended	<b>997.60</b>

\*One HMR2300 is in enclosure with HMPRC-001 cable, demonstration software, and ADS-14053 users manual.

**NOTE:** RS485 also available.

### HMR3000 DIGITAL COMPASS MODULE

The HMR3000 is an electronically gimballed 3 axis compass that provides heading and tilt output via RS232 or RS485 protocols in an NMEA0183 format. Built with our own magnetoresistive sensors, the HMR3000 provides fast response time. Built in software auto-compensation techniques ensure that heading is accurate to 0.5 degrees with 0.1 degree resolution. Applications include marine and aviation compassing, oceanographic buoys, platform orientation, and backup GPS systems. Can be battery operated in remote locations.

Cat. No.	Field Range	Output	Enclosure	Net Price
<b>HMR3000-DEMO*</b>	±2 Gauss	RS323	Yes	<b>\$935.25</b>
<b>HMR3000-D21-232</b>	±2 Gauss	RS323	Extended	<b>871.09</b>

\*One HMR3000 is in enclosure with HMPRC-001 cable, demonstration software, and ADS-14053 users manual.