



SS94A1



**SS94 Series General Purpose
Ratiometric Linear Sensor; Vdc supply
voltage**

Actual product appearance may vary.

Features

- Single current sinking or current sourcing linear output
- Improved temperature stability
- Standard mounting centers
- Laser trimmed thin film and thick film resistors minimize sensitivity variations and compensate for temperature variations

Potential Applications

- Ignition timing
- Power sensing
- Valve position
- Robotics control
- Current sensing
- Linear or rotary motion detection
- Length measurement
- Flow sensing
- RPM sensing
- Security systems

Description

The SS9 utilizes a Hall effect integrated circuit chip which provides increased temperature stability and performance. Laser trimmed thick film resistors on the ceramic substrate and thin film resistors on the integrated circuit reduce null and gain shifts over temperature which results in consistent sensitivity from one device to the next.

APPLICATION CONSIDERATION: The output is clamped at the high end. Clamping voltage may be as low as 9 Vdc. The output will not exceed the clamping voltage regardless of field strength or power supply.

Product Specifications	
Product Type	Hall-Effect Linear Position Sensor
Package Style	Ceramic SIP
Supply Voltage	6.6 Vdc to 12.6 Vdc
Output Type	Sink/Source
Termination Type	PC Board
Magnetic Actuation Type	Ratiometric Linear
Operating Temperature Range	-40 °C to 125 °C [-40 °F to 257 °F]
Linearity (% of Span)	-1.5 % max.
Availability	Global
Supply Current (max. @ 25 °C)	30 mA
Output Current (max.)	1 mA
Sensitivity @ 25 °C	5.0 mV ± .1 mV/G
Temperature_Error_25_Null_Shift_2	± 0.02%
Temperature_Error_25 Sensitivity_1	± 0.02%
Magnetic Range (min.)	-50 mT to 50 mT [-500 G to 500 G]
Output Voltage Span (typ.)	5.0 Vdc @ 8 Vdc
Response Time (µs)	3 ms (typ.)
Vout (0 G @ 25 °C)	4.00 Vdc ± 0.04 Vdc
Series Name	SS94

CATALOG LISTING
SS94A1

THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF MICRO SWITCH. A DIVISION OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF MICRO SWITCH

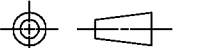
PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS/REMARKS
SUPPLY VOLTAGE	6.6	8.0	12.6	VOLTS	-40°C TO +125°C
SUPPLY CURRENT		13	30	mA	MAX @ 12.6 V @ -40°C
OUTPUT CURRENT			1	mA	SINKING OR SOURCING
OUTPUT SPAN		.625 V _S		VOLTS	-500G TO +500G @ 25°C $\sqrt{5}$
SENSITIVITY	4.90	5.0	5.10	mV/g	@ 8.0 V _S & 25°C
LINEARITY	-1.5	-.8	0	% OF SPAN	DEV FROM STR LINE THRU -500 AND +500
V _{OUT} @ 0 GAUSS	3.960	4.000	4.040	VOLTS	25°C
TEMP ERROR-NULL	-.02		+.02	%/°C	-40°C TO +125°C
TEMP ERROR-GAIN	-.02		+.02	%/°C	-40°C TO +125°C

Block diagram of a Hall effect sensor circuit. The circuit includes a **HALL SENSOR**, an **AMPLIFIER**, and an output driver stage. The output driver stage consists of a PNP transistor and an NPN transistor. The circuit is powered by a supply voltage $V_s (+)$ and a ground reference $V_- (-)$. The output of the driver stage is labeled **OUTPUT (0)**.

A graph showing the relationship between Output Voltage (V OUT) and Gauss for the ADXL045 accelerometer. The x-axis is labeled 'GAUSS' and ranges from -500 to +500. The y-axis is labeled 'V OUT' and ranges from 1.5 VOLTS to 4 VOLTS. The graph shows a linear relationship passing through the origin (0, 0). Key points on the graph are marked: (-500, 1.5 VOLTS), (0, 0), and (+500, 4 VOLTS). A dashed line connects the point (-500, 1.5 VOLTS) to the y-axis at 1.5 VOLTS. Another dashed line connects the point (+500, 4 VOLTS) to the y-axis at 4 VOLTS. An arrow points to the line with the label 'OUTPUT VOLTAGE'.

1 - CENTERLINE OF HALL CELL
2 - THE + MAGNETIC FLUX IS IN THIS DIRECTION (THIS ASSUMES THE CONVENTION THAT THE DIRECTION OF THE EXTERNAL FLUX OF A MAGNET IS FROM THE NORTH TO THE SOUTH POLE OF THE MAGNET)
3 - THE DEVICE CANNOT BE DAMAGED BY MAGNETIC OVERDRIVE
4 - OUTPUT TYPE - RATIOMETRIC
5 - THE OUTPUT IS CLAMPED AT 9.0 VDC MINIMUM, 9.5 VDC TYPICAL
6 - ARTWORK TYPICAL

THIRD ANGLE PROJECTION



SCALE 5 : 1

DO NOT SCALE PRINT

**UNLESS OTHERWISE SPECIFIED
TOLERANCES ARE**

ONE PLACE (.0) $\pm .030$

TWO PLACE (.00) $\pm .015$

THREE PLACE (.000) $\pm .005$

ANGLES $\pm$

WEIGHT

