# Honeywell

## Interactive Catalog Replaces Catalog Pages

Honeywell Sensing and Control has replaced the PDF product catalog with the new Interactive Catalog. The Interactive Catalog is a power search tool that makes it easier to find product information. It includes more installation, application, and technical information than ever before.



Click this icon to try the new Interactive Catalog.

#### **Sensing and Control**

Honeywell Inc.
11 West Spring Street
Freeport, Illinois 61032

## Miniature Ratiometric Linear



#### **FEATURES**

- Small size (.160 × .118")
- Low power consumption typically 7 mA at 5 VDC
- Single current sinking or current sourcing linear output
- Built-in thin-film resistors laser trimmed for precise sensitivity and temperature compensation
- Rail-to-rail operation provides more useable signal for higher accuracy
- Operating temperature range of –40 to +150°C
- Responds to either positive or negative gauss
- Quad Hall sensing element for stable

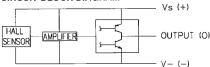
SS490 Series MRL (Miniature Ratiometric Linear) sensors have a ratiometric output voltage, set by the supply voltage. It varies in proportion to the strength of the magnetic field.

A new Hall effect integrated circuit chip provides increased temperature stability and sensitivity. Laser trimmed thin film resistors on the chip provide high accuracy (null to ±3%, sensitivity up to ±3%) and temperature compensation to reduce null and gain shift over temperature. The quad Hall sensing element minimizes the effects of mechanical or thermal stress on the output. The positive temperature coefficient of the sensitivity (+0.02%/°C typical) helps compensate for the negative temperature coefficients of low cost magnets, providing a robust design over a wide temperature range.

### NOTICE

Products ordered in bulk packaging (plastic bags) may not have perfectly straight leads as a result of normal handling and shipping operations. Please order tape packaging option for applications with critical lead straightness requirements.

# CIRCUIT BLOCK DIAGRAM



#### SS495 SPECIFICATIONS, $V_s = 5.0 \text{ V}$ , $T_A = -40 \text{ to } + 125^{\circ}\text{C}$ (unless otherwise noted)

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Catalog Listings		SS495A* Standard	SS495A1* High Accuracy	SS495A2* Basic	
Supply Voltage (VDC)		4.5 to 10.5	4.5 to 10.5	4.5 to 10.5	
Supply Current @ 25°C (mA)	Тур.	7.0	7.0	7.0	
	Max.	8.7	8.7	8.7	
Output Type (Sink or Source)		Ratiometric	Ratiometric	Ratiometric	
Output Current (mA) Typ. Source	Vs>4.5V	1.5	1.5	1.5	
Min. Source	Vs>4.5V	1.0	1.0	1.0	
Min. Sink	Vs>4.5V	0.6	0.6	0.6	
Min. Sink	Vs>5.0V	1.0	1.0	1.0	
Magnetic Range	Тур.	-670 to +670 Gauss (-67 to +67 mT)			
	Min.	-600 to +600 Gauss (-60 to +60 mT)			
Output Voltage Span	Тур.	0.2 to (Vs - 0.2)	0.2 to (Vs - 0.2)	0.2 to (Vs - 0.2)	
	Min.	0.4 to (Vs - 0.4)	0.4 to (Vs - 0.4)	0.4 to (Vs - 0.4)	
Null (Output @ 0 Gauss, V)		2.50 ± 0.075	2.50 ± 0.075	2.50 ± 0.100	
Sensitivity (mV/G)		3.125 ± 0.125	3.125 ± 0.094	3.125 ± 0.156	
Linearity, % of Span	Тур.	-1.0%	-1.0%	-1.0%	
	Max.	-1.5%	-1.5%	-1.5%	
Temperature Error Null Drift (%/°C)		±0.06%	±0.04%	±0.07%	
Sensitivity Drift (%/°C)	≥25°C Max.	-0.01%+0.05%	-0.01%+0.05%	-0.02%+0.06%	
	<25°C Max.	-0.00%+0.06%	-0.00%+0.06%	-0.01%+0.07%	

<sup>\*</sup>Bulk, 1,000 per bag

To order Surface Mount: add -S suffix to listing. Example: SS495A-S.

To order tape in Ammopack style T2: add -T2 suffix to listing.

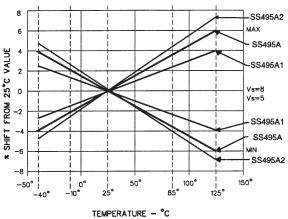
To order tape in Ammopack style T3: add -T3 suffix to listing.

To order tape in reel style P (surface mount): add -SP suffix to listing.

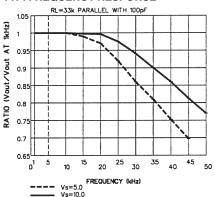
## **Solid State Sensors**

## Miniature Ratiometric Linear

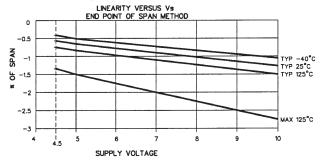
#### **NULL SHIFT VS TEMPERATURE**



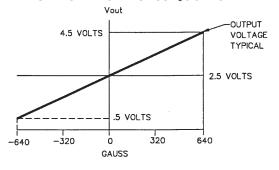
#### TYP. FREQUENCY RESPONSE



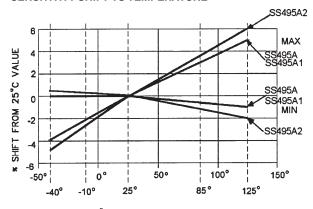
#### LINEARITY VS V<sub>s</sub>



#### TRANSFER CHARACTERISTICS V<sub>s</sub> 5.0 VDC

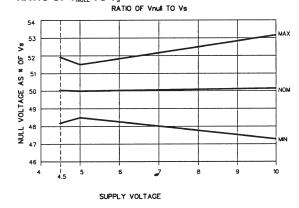


#### **SENSITIVITY SHIFT VS TEMPERATURE**

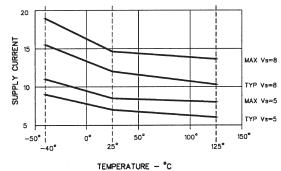


TEMPERATURE - °C

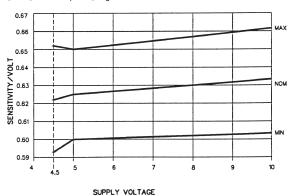
#### RATIO OF $\mathbf{V}_{\text{\tiny NULL}}$ TO $\mathbf{V}_{\text{\tiny S}}$



#### **SUPPLY CURRENT VS TEMPERATURE**



#### SENSITIVITY/V VS Vs



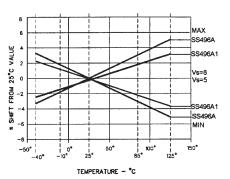
## SS490 Series

## Miniature Ratiometric Linear

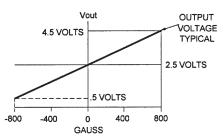
SS496 SPECIFICATIONS,  $V_s = 5.0 \, V$ ,  $T_A = -40 \, to \, +125 ^{\circ} C$  (unless otherwise noted)

Catalog Listings		SS496A Standard	SS496A1 High Accuracy	
Supply Voltage, DC		4.5 to 10.5	4.5 to 10.5	
Supply Current @ 25°C (mA)	Тур.	7.0	7.0	
	Max.	8.7	8.7	
Output Type (Sink or Source)		Ratiometric	Ratiometric	
Output Current, mA Typ. Source	Vs>4.5V	1.5	1.5	
Min. Source	Vs>4.5V	1.0	1.0	
Min. Sink	Vs>4.5V	0.6	0.6	
Min. Sink	Vs>5.0V	1.0	1.0	
Magnetic Range	Тур.	-840 to +840 Gauss (-84 to +84 mT)		
	Min.	-750 to +750 Gauss (-75 to +75 mT)		
Output Voltage Span	Тур.	0.2 to (Vs - 0.2)	0.2 to (Vs - 0.2)	
	Min.	0.4 to (Vs - 0.4)	0.4 to (Vs - 0.4)	
Null (Output @ 0 Gauss, V)		2.500 ± 0.175	2.500 ± 0.075	
Sensitivity (mV/G)		2.500 ± 0.100	2.50 ± 0.075	
Linearity, % of Span	Тур.	-1.0%	-1.0%	
	Max.	-1.5%	-1.5%	
Temperature Error Null Drift (%/°C)		±0.048%	±0.032%	
Sensitivity Drift (%/°C)	≥25°C Max.	-0.01, +0.05	-0.01, +0.06	
	<25°C Max.	-0.00, +0.06	-0.00, +0.06	

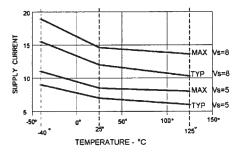
#### **NULL SHIFT VS TEMPERATURE**



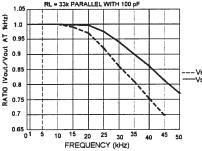
# TRANSFER CHARACTERISTICS @ VS = 5 VDC



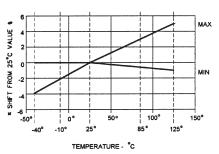
#### SUPPLY CURRENT VS TEMP.



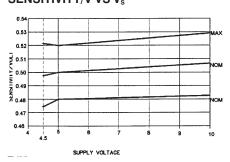
#### TYP. FREQUENCY RESPONSE



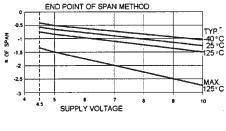
#### **SENSITIVITY SHIFT VS TEMP**



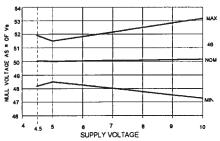
## SENSITIVITY/V VS V<sub>s</sub>



LINEARITY VS Vs



RATIO OF  $V_{\text{NULL}}$  TO  $V_{\text{S}}$ 



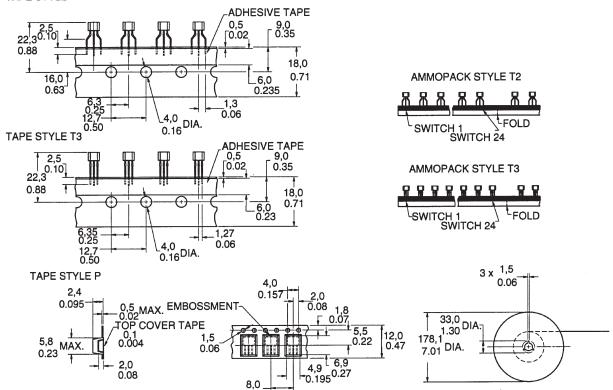
# Analo

## **Solid State Sensors**

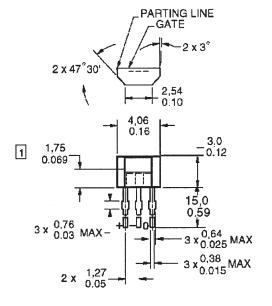
## Miniature Ratiometric Linear

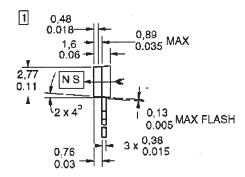
#### **MOUNTING DIMENSIONS** (for reference only)



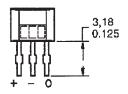


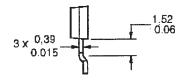
#### **SENSOR PACKAGE**





#### **OPTIONAL SURFACE MOUNT STYLE**





1 Centerline of Hall cell