



### SR13C-A1



**SR13 Series Hall-Effect Digital Position Sensor; Snap-in Housing; Sinking Output; unipolar magnetics; 3.8 to 30 Vdc supply voltage**

*Actual product appearance may vary.*

#### Features

- Digital current sinking output
- Quad-Hall design eliminates stress effects
- Temperature compensated magnetics
- High output capability

#### Description

The SR13/15 Series package enhancements permit quick and easy sensor installation, increasing the usability of the SS400 Series. These devices can be installed without additional mounting hardware. The snap-in and flat mount sensor packages can house any of the present SS400 Series sensors or any similarly sized sensing elements.

Product Specifications	
Product Type	Hall-Effect Digital Position Sensor
Package Style	Plastic Snap-in
Supply Voltage	3.8 Vdc to 30.0 Vdc
Output Type	Sink
Termination Type	152,4 mm [6.0 in] stranded lead wires
Magnetic Actuation Type	Unipolar
Operating Temperature Range	-40 °C to 150 °C [-40 °F to 302 °F]
Output Voltage	0.4 Vdc max. (operated)
Switching Time Rise (10 % to 90 %)	1.5 µs max.

Switching Time Fall (90 % to 10 %)	1.5 $\mu$ s max.
Availability	Global
Supply Current (max. @ 25 °C)	13 mA
Output Current (max.)	20 mA
Operate Point @ 25 °C	18.0 mT [180 G] max.
Release Point @ 25 °C	7.50 mT [75 G] min.
Leakage Current max.	5 $\mu$ A
Differential	2.5 mT [25 G] min.
Series Name	SR13

**MAGNETIC CHARACTERISTICS** <sup>2</sup>

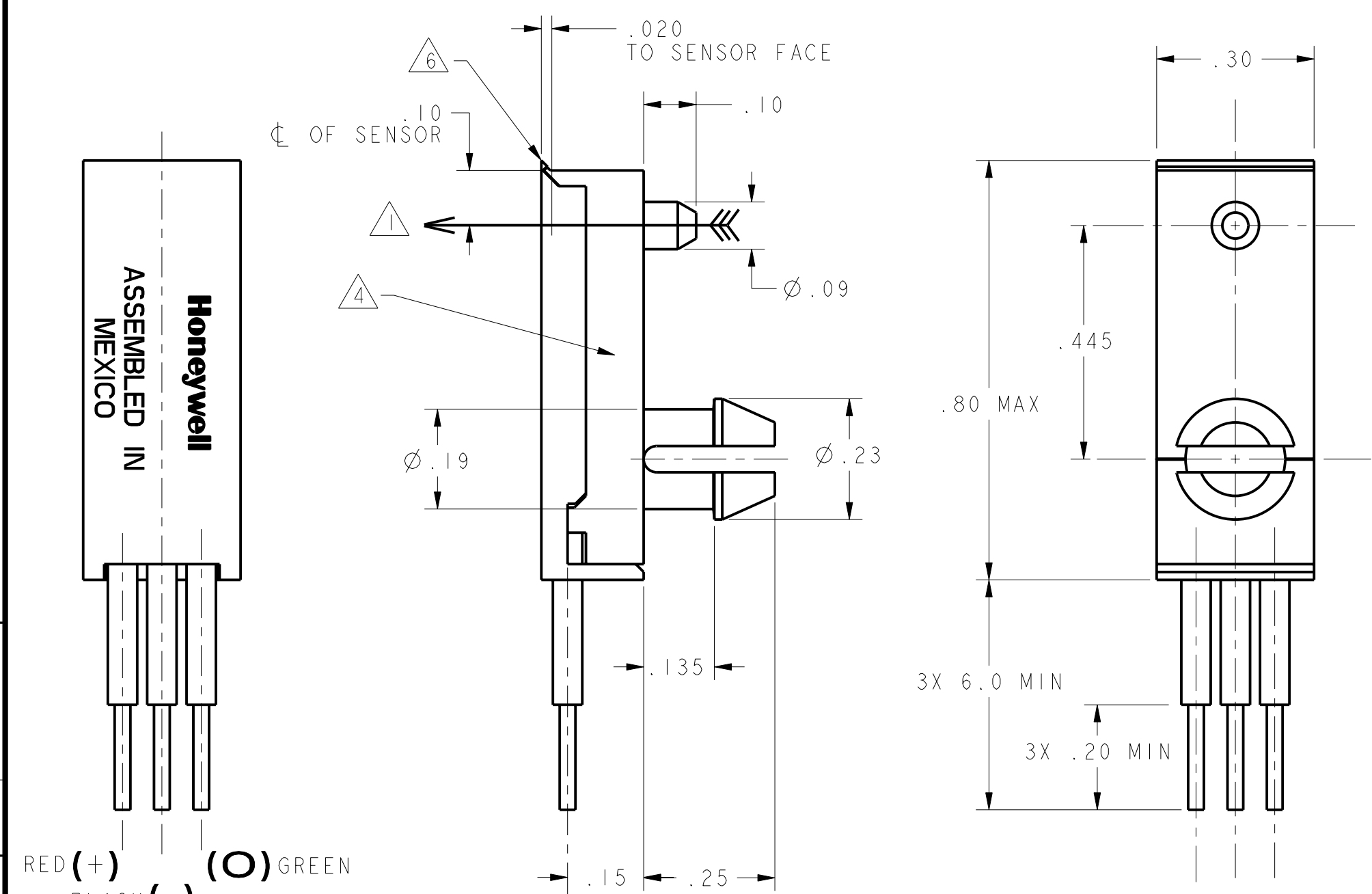
TEMPERATURE RANGE	25°C	-20°C TO 85°C
OPERATING GAUSS MAX	180	215
RELEASE GAUSS MIN	75	60
DIFFERENTIAL GAUSS MIN	25	10

**ELECTRICAL CHARACTERISTICS -40 TO 125°C 4.5 TO 24 VDC**

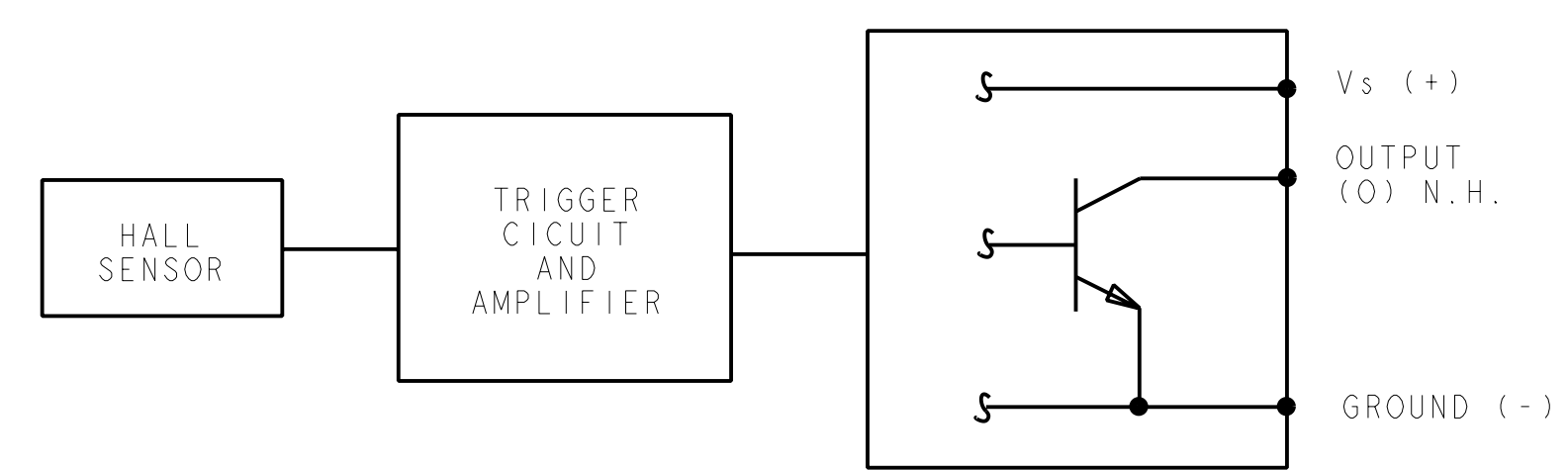
	MINIMUM	MAXIMUM
SUPPLY CURRENT		13 mA
OUTPUT VOLTAGE (ON) (SINKING 10 mA)		0.4 VOLTS
VOLTAGE APPLIED TO OUTPUT (OFF)		24 VOLTS
OUTPUT CURRENT MAX		20 mA
OUTPUT LEAKAGE CURRENT (OFF)		5 µA
OUTPUT SWITCHING TIME		
RISE TIME (10% TO 90%)		1.5 µS
FALL TIME (90% TO 10%)		1.5 µS

**ABSOLUTE MAXIMUM RATINGS** <sup>3</sup>

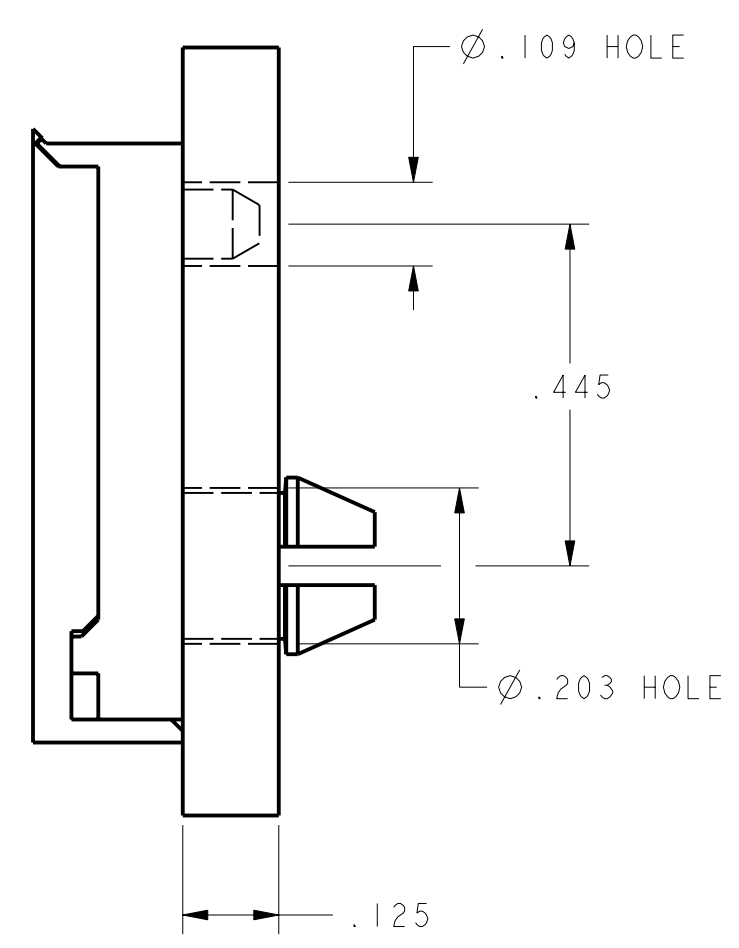
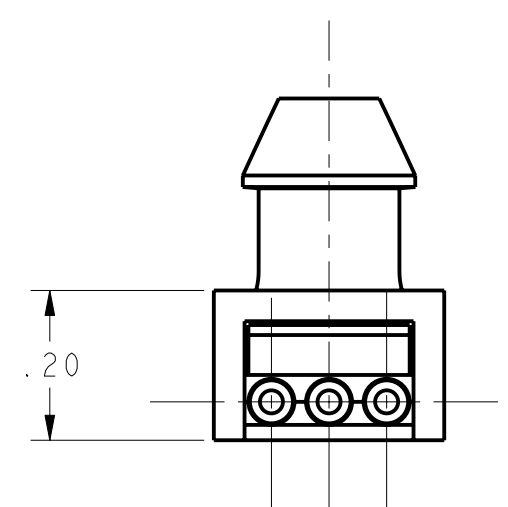
TEMPERATURE	-40°C TO +150°C
SUPPLY VOLTAGE	-1 VDC TO 25 VDC
VOLTAGE EXTERNALLY APPLIED TO OUTPUT	25 VDC WITH SWITCH IN OFF COND. ONLY -0.5 VDC WITH SWITCH IN ON OR OFF COND.
OUTPUT CURRENT	50 mA
MAGNETIC FLUX	NO LIMIT



RED (+) GREEN  
BLACK (-) (O)



**BLOCK DIAGRAM CURRENT SINKING OUTPUT**



**SUGGESTED MOUNTING DETAIL**

**NOTES**

- <sup>1</sup> THE MAGNETIC FLUX USED TO OPERATE THE SWITCH MUST BE IN THE DIRECTION AND LOCATION SHOWN (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)
- <sup>2</sup> THE MAGNETIC FIELD STRENGTH (GAUSS) REQUIRED TO CAUSE THE SWITCH TO CHANGE STATE (OPERATE AND RELEASE) WILL BE AS SPECIFIED IN THE MAGNETIC CHARACTERISTICS. TO TEST THE SWITCH AGAINST THE SPECIFIED MAGNETIC CHARACTERISTICS THE SWITCH MUST BE PLACED IN A UNIFORM MAGNETIC FIELD
- <sup>3</sup> ABSOLUTE MAXIMUM RATINGS ARE NOT GUARANTEED AS THE MAXIMUM LIMITS (ABOVE RECOMMENDED OPERATING CONDITIONS) ARE APPROACHED NOR WILL THE DEVICE NECESSARILY OPERATE AT MAXIMUM RATING
- <sup>4</sup> DATE CODE (YYWW) AND PART NUMBER LOCATED IN THIS AREA
- <sup>5</sup> LEADWIRES ARE 24 GAUGE STRANDED
- <sup>6</sup> AFTER CLOSURE, HINGE BULGING IS ACCEPTABLE, BUT ANY JAGGED TEARING CAUSING LARGE SEPARATIONS GREATER THAN .010 IS UNACCEPTABLE



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**MAGNETICALLY OPERATED HALL SENSOR**

CATALOG LISTING  
**SR13C-A1**

FED. MFG. CODE 91929

THIRD ANGLE PROJECTION		
SCALE 4 : 1		
DO NOT SCALE PRINT		
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE		
ONE PLACE	(.0)	±.030
TWO PLACES	(.00)	±.015
THREE PLACES	(.000)	±.005
ANGLES		±
WEIGHT		

P.T.C./CAD 30  
 DRAWN  
 L.J.K  
 2 MAY 99  
 CHECK  
 J.A.F  
 2 MAY 99  
 REVISIONS  
 A PR 24332  
 JUN 30 99  
 B CO 95556  
 OCT 13 99  
 C 201747  
 NOV 27 00  
 DRAWING NUMBER  
 SR13C-A1  
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 RELEASE NO. DR-5244  
 REPLACES XII11671-SR