



103SR13A-1



Actual product appearance may vary.

103SR Series Unipolar Hall-Effect Digital Position Sensor with 15/32 in cylindrical aluminum housing; two hex nuts; 152,4 mm [6 in] lead wires; current sinking output; and Vdc supply voltage

Features

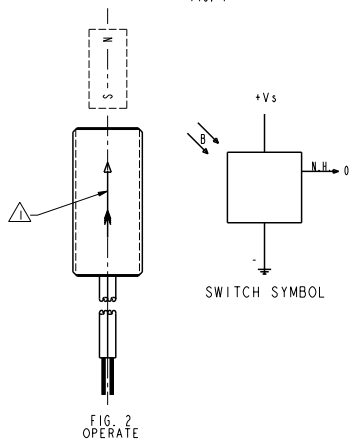
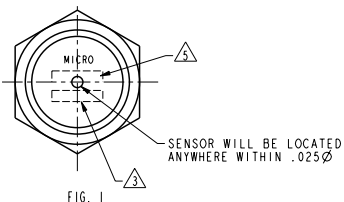
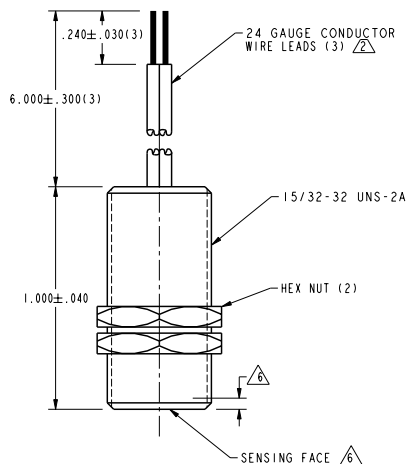
- Current sinking output
- Rugged, sealed threaded aluminum housing NEMA 3, 3R, 3S, 4, 12 and 13 requirements
- 24 gauge, 152,4 mm [6 in] stranded leadwires, color coded and irradiated polyethylene insulated
- Adjustable mounting

Product Specifications	
Product Type	Hall-Effect Digital Position Sensor
Package Style	Metal Cylindrical
Supply Voltage	4.5 Vdc to 24.0 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 100 °C [-40 °F to 212 °F]
Storage Temperature	-40 °C to 100 °C [-40 °F to 212 °F]
Output Voltage	0.4 Vdc max. (operated)
Switching Time Rise (10 % to 90 %)	1.5 µs max.
Switching Time Fall (90 % to 10 %)	0.5 µs max.
Sealing	NEMA 3, 3R, 3S, 4, 12, 13
Availability	Global
Supply Current (max. @ 25 °C)	10 mA
Output Current (max.)	20 mA
Operate Point @ 25 °C	49,5 mT [495 G] max.

Release Point @ 25 °C	20,0 mT [200 G] min.
Leakage Current max.	20 µA
Probe Length	25,4 mm [1 in]
Differential	3.5 mT [35 G] min.
Series Name	103SR

4.5 TO 24 VDC UNIPOLAR DEVICE

103SR13A-1



OPERATING CHARACTERISTICS

GAUSS	
OPERATE MAX	495
RELEASE MIN	200
DIFF MIN	35

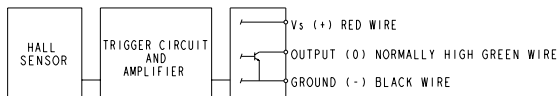
ABSOLUTE MAXIMUM RATINGS

SUPPLY VOLTAGE (Vs)/8	-1.0 VDC TO +25.0 VDC
VOLTAGE EXTERNALLY APPLIED TO OUTPUT	+25 VOLTS DC MAX WITH SWITCH IN "OFF" CONDITION ONLY -0.5 VOLTS MAX WITH SWITCH IN "OFF" OR "ON" CONDITION
OUTPUT CURRENT	40 mA (SINK PER OUTPUT)
TEMPERATURE OPERATE AND STORAGE	-40°C TO 100°C
MAGNETIC FLUX	NO LIMIT, THE CIRCUIT CANNOT BE DAMAGED BY MAGNETIC OVERDRIVE

ELECTRICAL CHARACTERISTICS

	MIN	TYP	MAX	REMARKS
SUPPLY CURRENT			10.0 mA	ON CONDITION
OUTPUT VOLTAGE (OPERATED)			0.4 V	SINKING 20 mA PER OUTPUT
OUTPUT LEAKAGE CURRENT (RELEASED)			20µ A	LEAKAGE INTO SWITCH OUTPUT
OUTPUT SWITCHING TIME (SINKING 20 mA)				
RISE TIME			1.5µ SEC	10% TO 90%
FALL TIME			0.5µ SEC	90% TO 10%

NOTE: THIS DEVICE IS NOT PROTECTED AGAINST HIGH ELECTRICAL NOISE. IF ERRATIC OPERATION OCCURS AFTER INSTALLATION, INSTALL A CAPACITOR ACROSS THE INPUT TERMINALS (0.1 MFD). IF ERRATIC OPERATION CONTINUES, YOU MAY HAVE TO USE THE INDUSTRIAL DEVICES THAT MICRO SWITCH MANUFACTURES. PLEASE CONTACT YOUR LOCAL FIELD REPRESENTATIVE FOR INFORMATION.



BLOCK DIAGRAM SHOWING CURRENT SINKING OUTPUTS

NOTES

- △ FLUX ENTERING THE SOUTH POLE OF THE MAGNET WILL OPERATE THE SENSOR WHEN MAGNET IS POSITIONED AS SHOWN IN FIGURE 2. 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
- △ LEADWIRES (INDIVIDUAL WIRES) ARE 24 GAUGE STRANDED WITH IRRADIATED POLYETHYLENE INSULATION
- △ DATE CODE LOCATED IN THIS AREA
- △ FROM -40°C TO 100°C AND 4.5 TO 24 VOLTS
- △ CATALOG LISTING LOCATED IN THIS AREA
- △ SENSITIVE AREA IS LOCATED .050 BEHIND THE SENSING FACE
- △ AT 24 ± 2°C
- △ Vs IS THE UNREGULATED SUPPLY VOLTAGE

THIRD ANGLE PROJECTION		
SCALE 3" = 1"		
DO NOT SCALE PRINT		
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE		
ONE PLACE	(.01)	±.030
TWO PLACES	(.001)	±.015
THREE PLACES	(.0001)	±.005
ANGLES		±
WEIGHT		

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MICROSWITCH a Honeywell Division	MAGNETICALLY OPERATED CYLINDRICAL HALL SWITCH	CATALOG LISTING 103SR13A-1
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FED. MFG. CODE 91229

ANSI Y14.5M-1982 APPLIES

103SR13A-1
REV. 10/83
DATE 27 JUL 83
DESIGNER JNF
CHECKER JNF
DATE 27 JUL 83
DRAWN TSM
DATE 27 JUL 83
PTC/CAD 20

