



SR3F-A1



SR3 Series Hall-effect Digital Position Sensor with 14 mm cylindrical plastic housing; 152,4 mm [6 in] lead wires; current sinking output; and Vdc supply voltage

Features

- Current sinking output
- Rugged, Epoxy filled 14mm threaded plastic housing NEMA 3, 3R, 3S, 4, 4X, 12 and 13 requirements
- 24 AWG, 152,4 mm [6 in] stranded leadwires, color coded and XLPE insulated wires
- Adjustable mounting

Product Specifications	
Product Type	Hall-Effect Digital Position Sensor
Package Style	Plastic Cylindrical
Supply Voltage	4.5 Vdc to 24.0 Vdc
Output Type	Sink
Termination Type	152,4 mm [6 in] stranded lead wires
Magnetic Actuation Type	Unipolar
Operating Temperature Range	-40 °C to 85 °C [-40 °F to 185 °F]
Storage Temperature	-40 °C to 85 °C [-40 °F to 185 °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 µs max.
Sealing	NEMA 3, 3R, 3S, 4, 4X, 12, 13
Availability	Global
Supply Current (max. @ 25 °C)	18 mA
Output Current (max.)	20 mA
Operate Point @ 25 °C	45 mT [450 G] max.
Release Point @ 25 °C	17 mT [170 G] min.
Leakage Current max.	10 µA

Probe Length	25,4 mm [1 in]
Differential	2 mT [20 G] min
Series Name	SR3

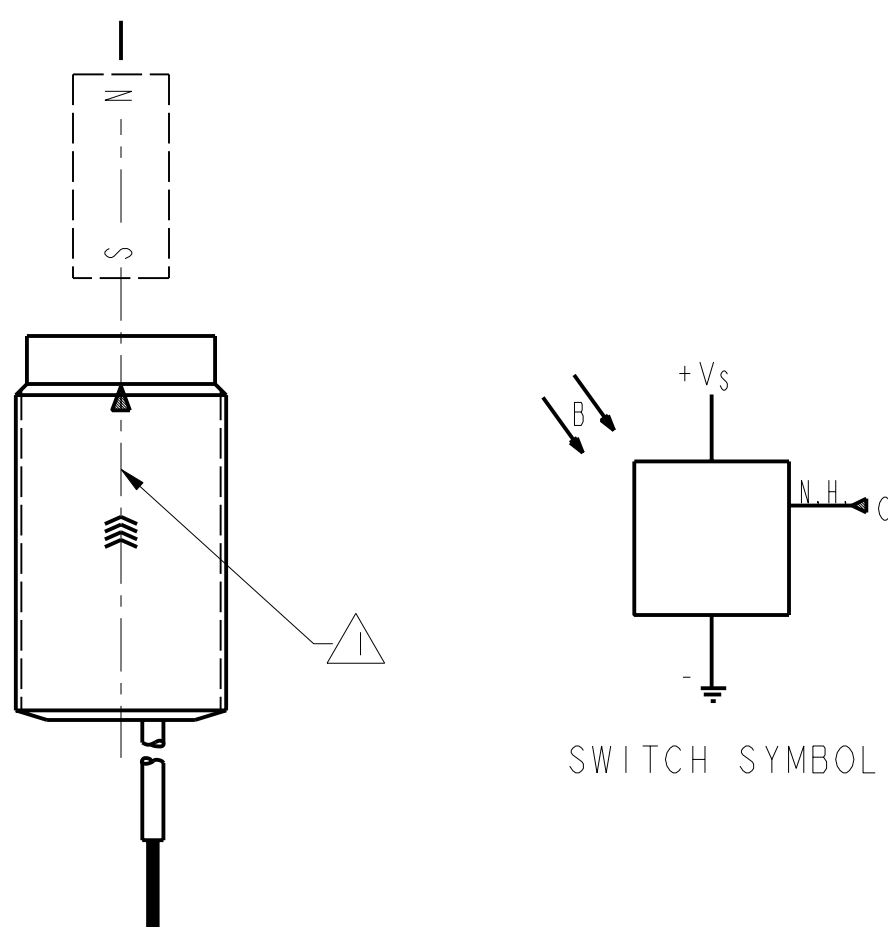
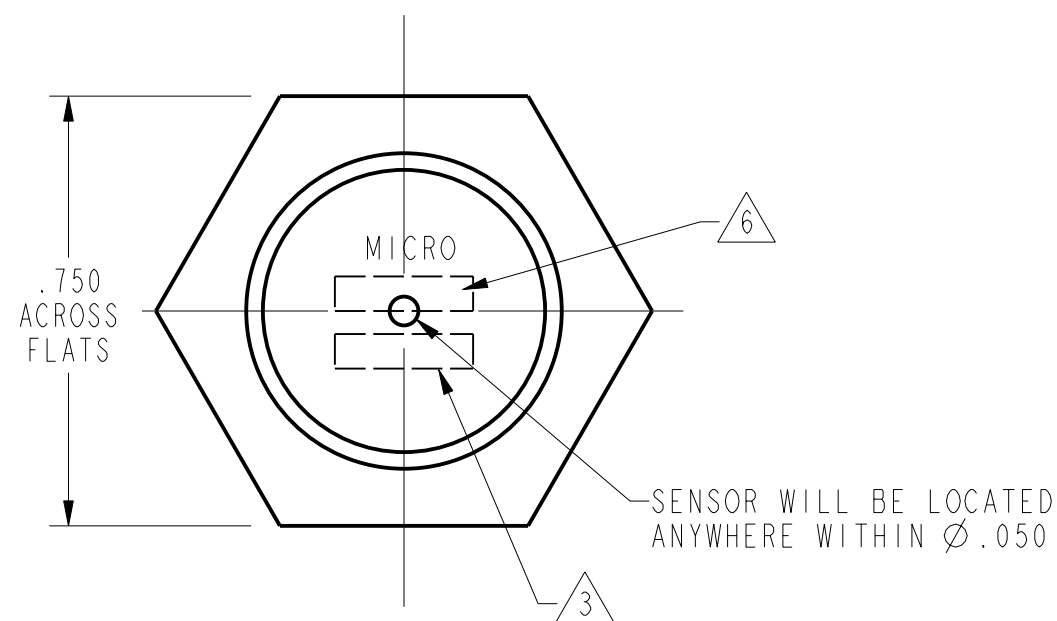
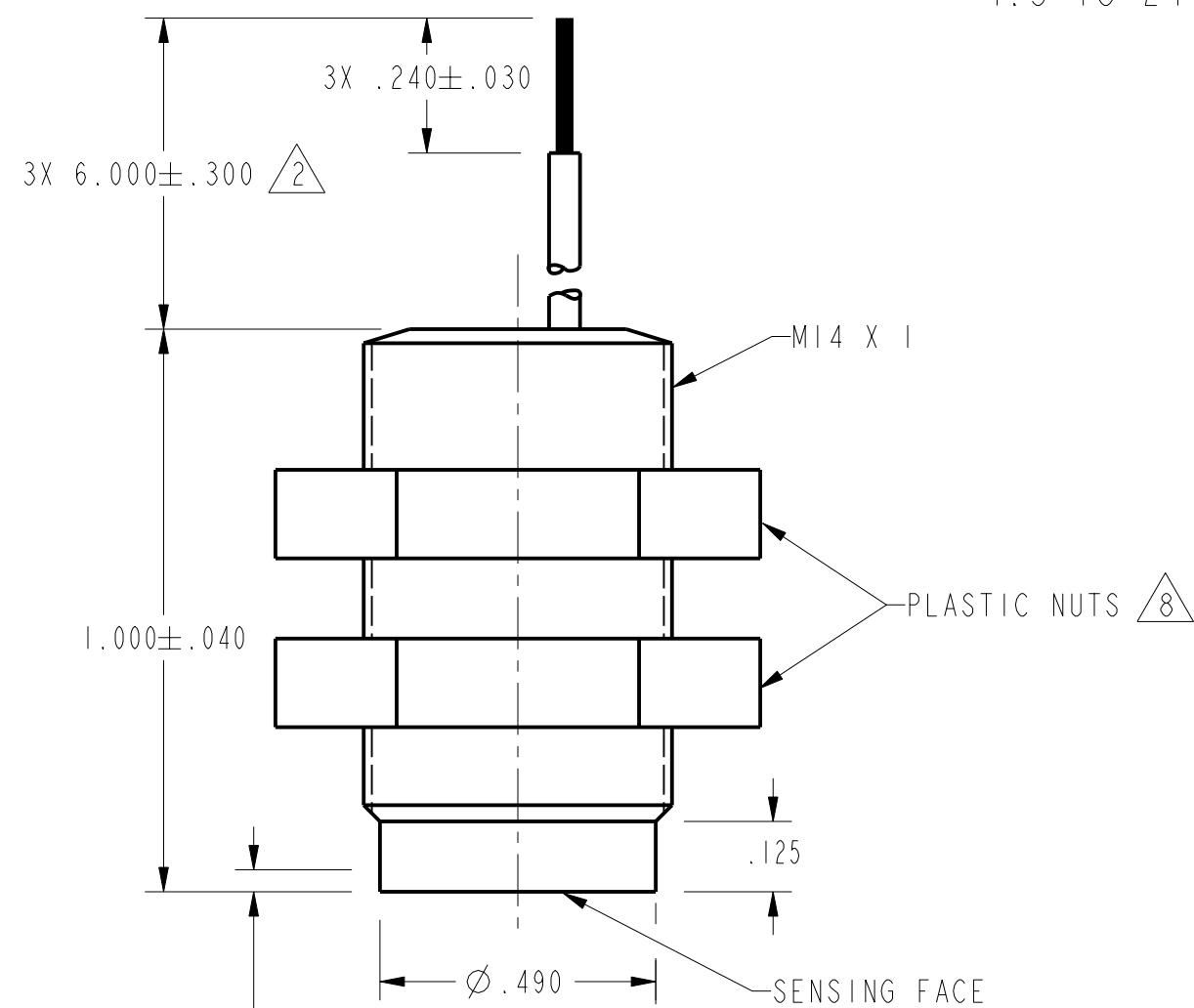


FIG. 2 OPERATE

MAGNETIC CHARACTERISTICS $\triangle 1$ $\triangle 5$

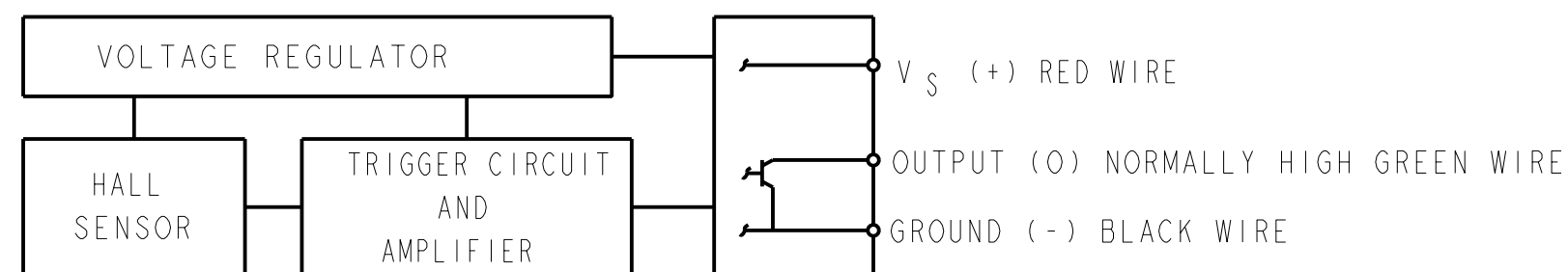
OPERATE MAX	450
RELEASE MIN	170
DIFF MIN	20
(TEMP RANGE -40° C TO 85° C)	

ABSOLUTE MAXIMUM RATINGS $\triangle 9$

SUPPLY VOLTAGE (V_S) $\triangle 7$	-28 VDC TO +28 VDC
VOLTAGE EXTERNALLY APPLIED TO OUTPUT	+28 VOLTS DC MAX WITH SWITCH IN "OFF" CONDITION ONLY -0.5 VOLTS DC MIN WITH SWITCH IN "OFF" OR "ON" CONDITION
OUTPUT CURRENT	20 mA
TEMPERATURE OPERATE AND STORAGE	-40° C TO 125° C
MAGNETIC FLUX	NO LIMIT, THE CIRCUIT CANNOT BE DAMAGED BY MAGNETIC OVERDRIVE

ELECTRICAL CHARACTERISTICS

	MIN	TYP	MAX	REMARKS
SUPPLY CURRENT $\triangle 4$		8 mA	18.0 mA	$V_S = 4.5-24$ VOLTS $\triangle 7$
OUTPUT VOLTAGE (OPERATED) $\triangle 5$		0.15 V	0.4 V	SINKING 10 mA PER OUTPUT
OUTPUT LEAKAGE CURRENT (RELEASED) $\triangle 5$			10 μ A	LEAKAGE INTO SWITCH OUTPUT
OUTPUT SWITCHING TIME				
RISE TIME $\triangle 5$		0.2 μ SEC	1.5 μ SEC	10% TO 90%
FALL TIME		0.1 μ SEC	1.5 μ SEC	90% TO 10%



BLOCK DIAGRAM SHOWING CURRENT SINKING OUTPUTS

NOTES

- $\triangle 1$ 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
- $\triangle 2$ LEADWIRES (INDIVIDUAL WIRES) ARE 24 GAGE STRANDED WITH XLPE INSULATION
- $\triangle 3$ DATE CODE LOCATED IN THIS AREA
- $\triangle 4$ AT $24 \pm 2^\circ$ C
- $\triangle 5$ AT SUPPLY VOLTAGE OF 4.5 TO 24 VOLTS AND FULL TEMPERATURE RANGE
- $\triangle 6$ CATALOG LISTING LOCATED IN THIS AREA
- $\triangle 7$ V_S IS THE UNREGULATED SUPPLY VOLTAGE
- $\triangle 8$ TORQUE ON PLASTIC NUTS MUST NOT EXCEED 12 INCH POUNDS
- $\triangle 9$ ABSOLUTE MAXIMUM RATINGS ARE THE EXTREME LIMITS THAT THE DEVICE WILL WITHSTAND WITHOUT DAMAGE TO THE DEVICE. HOWEVER, THE ELECTRICAL AND MAGNETIC CHARACTERISTICS ARE NOT GUARENTEED AS THE MAXIMUM LIMITS (ABOVE RECOMMENDED OPERATING CONDITIONS) ARE APPROACHED, NOR WILL THE DEVICE NECESSARILY OPERATE AT ABSOLUTE MAXIMUM RATING



THIRD ANGLE PROJECTION	
SCALE 3:1	
DO NOT SCALE PRINT	
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE	
ONE PLACE (.0)	$\pm .030$
TWO PLACES (.00)	$\pm .015$
THREE PLACES (.000)	$\pm .005$
ANGLES	\pm
WEIGHT	

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MAGNETICALLY OPERATED CYLINDRICAL HALL SWITCH

CATALOG LISTING
SR3F-A1

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 WLS 30NOV89 CHECK 27DEC89
 REVISIONS A 201747 JUL NOV00
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 REPLACES