

Installation Instructions for the Hall-Effect Position Sensors SR3 and SR4 Series

ISSUE 3
PK 87863

GENERAL INFORMATION

Completely sealed in threaded plastic bushings to meet NEMA 3, 3R, 3S, 4, 4X, 12 and 13 requirements.

24 gage stranded leadwires with irradiated Polyethelene insulation.

ELECTRICAL AND MAGNETIC CHARACTERISTICS

		SR3F-A1	SR3B-A1	SR3G-A1	SR3C-A1	SR4P2-A1 (4)
Electrical						
Supply voltage, VDC		4.5 to 24	4.5 to 24	4.5 to 24	4.5 to 24	6 to 24
Supply current, mA max.		18.0	15.0	22.0	19.0	13.5
Output type		NPN (Sink)	NPN (Sink)	NPN (Sink)	NPN (Sink)	NPN (Sink)
Output voltage, V max.		0.40	0.40	0.40	0.40	0.40
Output current, mA max.		10	10	10	10	20
Magnetic	Magnetic Type	Unipolar (1)	Bipolar (2)	Unipolar (1)	Unipolar (1)	Omnipolar (3)
-40 to +85°C (4) (-40 to +185°F)	Max. Operate	450	150	430	190	25
	Min. Release	170	-150	160	60	5
	Min. Differential	20	40	50	10	20
+25°C (+77°F)	Typ. Operate	400	90	350	150	15
	Typ. Release	185	-90	280	100	11
	Typ. Differential	20	80	70	30	4

1. A unipolar sensor has a plus maximum operate point and a plus minimum release point. One magnetic pole (south) is required to operate and release a unipolar sensor.
2. A bipolar sensor has a plus (south pole) maximum operate point and a minus (north pole) minimum release point. Operate and release points can be both positive or both negative. **Latching cannot be guaranteed.** Ring magnets are usually used with bipolar sensors.
3. An omnipolar sensor operates with any magnetic field (north or south pole).
4. SR4P2-A1 operating characteristics are over -20 to +85°C (-4 to +185°F).

ABSOLUTE MAXIMUM RATINGS*

Parameters	4.5 to 24 VDC	6.0 to 24 VDC
Supply voltage (V)	-0.5 to +28 VDC	-1.2 to +24 VDC
Voltage externally applied to output	+26 VDC max. (OFF only)	+24 VDC max. (OFF only)
	-0.5 VDC min. (ON or OFF)	-0.5 VDC max. (ON or OFF)
Output current	20 mA	20 mA
Temperature Operate & Storage	-40 to +85°C (-40 to +185°F)	-20 to +85°C (-4 to +185°F)
Magnetic flux	No limit. Circuit cannot be damaged by magnetic overdrive.	

* Absolute maximum ratings are the extreme limits that the device will withstand without damage to the device. However, the electrical and mechanical characteristics are not guaranteed as the maximum limits (above recommended operating conditions) are approached, nor will the device necessarily operate at absolute maximum ratings.

NOTICE

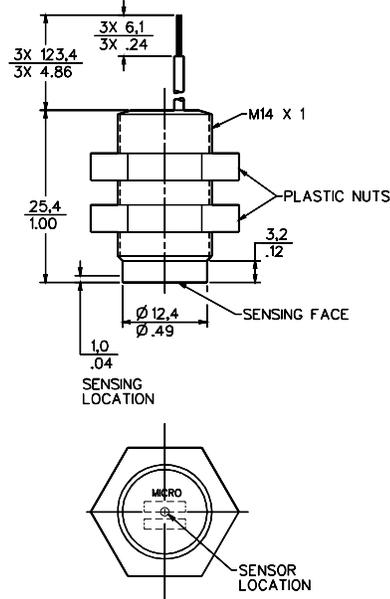
Do not reverse supply voltage polarity.
Do not exceed maximum ratings.
Torque on plastic nuts must not exceed 12 inch pounds (1,356 Nm).

TROUBLESHOOTING

- If sensor does not operate, follow these steps.
1. Check wiring. Load must be connected.
 2. Measure supply voltage across Red (+) and Black (-) leads to verify proper voltage presence.
 3. Connect positive voltmeter lead to Green (output), negative voltmeter lead to Black (ground). Remove magnet (or present north pole). Reading should equal V_s .
 4. Move magnet (or south pole) toward sensing face (beyond operating point). Output should change state. Voltage should be 0.40 VDC maximum.

MOUNTING DIMENSIONS

(for reference only)

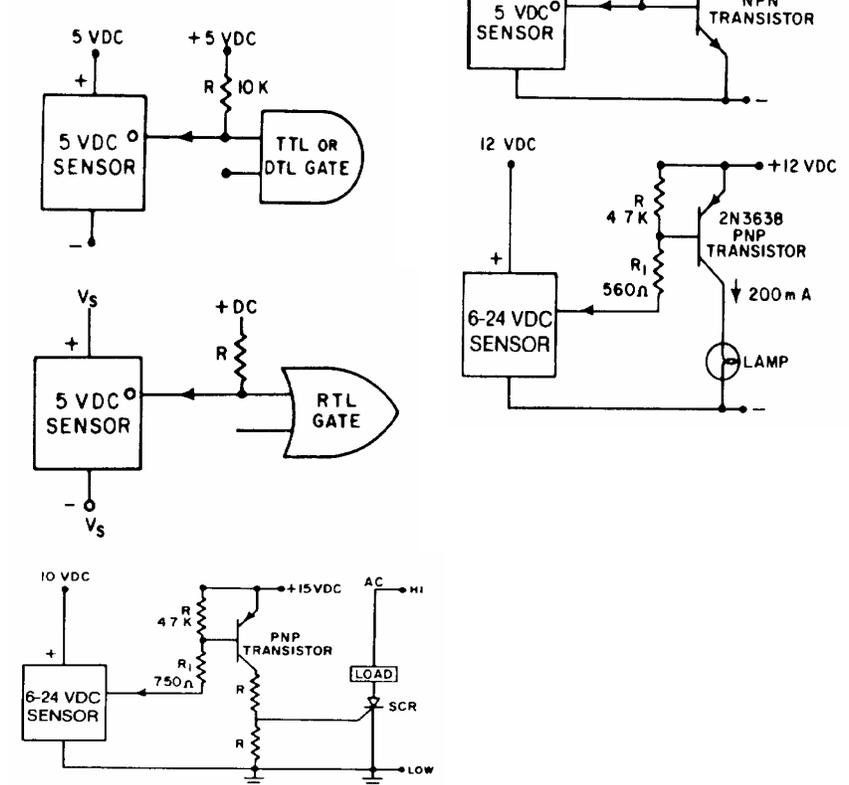


LEADWIRE COLOR CODE

Red	Vs
Black	Ground (-)
Green	Output (Digital)

CONNECTING SENSOR

Typical schematics with representative values are shown below. Current flow is through load into sensor, open collector output.



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