

Installation Instructions for the SS41F Low Cost Bipolar Hall-Effect Position Sensor

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WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

NOTICE

Bipolar Hall-effect sensors may have an initial output in either the ON or OFF state if powered up with an applied magnetic field in the differential zone (applied magnetic field $>B_{rp}$ and $<B_{op}$). Honeywell recommends allowing 10 μ s for output voltage to stabilize after supply voltage has reached 5 V.

SOLDERING/ASSEMBLY

Support leads during all forming or shearing operations to ensure they are not stressed inside the plastic case. Wave solder at 250 °C to 260 °C (482 °F to 500 °F) for a maximum of 5 s.

CLEANING

CAUTION

IMPROPER CLEANING

Do not use pressure wash. High-pressure stream could force contaminants into the package.

Failure to comply with these instructions may result in product damage.

Use agitated rinse to clean the sensor.



TABLE 1. SPECIFICATIONS (At $V_s = 4.5$ V to 24 V with 20 mA load with $T_a = 25$ °C [77 °F] unless otherwise noted.

Characteristic	Condition	Minimum	Typical	Maximum	Unit
Supply voltage	–	4.5	–	24.0	V
Supply current	–	–	6.8	10.0	mA
Output current	–	–	–	20.0	mA
V_{sat} at 15 mA	gauss >170	–	–	0.4	V
Output leakage	gauss <-170	–	–	1.0	μ A
Rise time	$V_s = 4.5$ V	–	0.5	1.5	μ s
Fall time	$V_s = 4.5$ V	–	0.2	1.5	μ s
Operate (B_{op})	–	–	4.0 (40)	15 (150)	mT (gauss)
Release (B_{rp})	–	-15 (-150)	-4.0 (-40)	–	mT (gauss)
Differential	–	4.0 (40)	–	–	mT (gauss)
Operating temperature	-40 °C to 150 °C [-40 °F to 302 °F]				
Storage temperature	-40 °C to 150 °C [-40 °F to 302 °F]				

TABLE 2. ABSOLUTE MAXIMUM RATINGS*

Characteristic	Minimum	Typical	Maximum	Unit
Supply voltage	-28	–	28	V
Applied output voltage	-0.5	–	28	V
Output current	–	–	20	mA
Magnetic flux	–	–	no limit	gauss

Note:

*Absolute maximum ratings are the extreme limits the device is designed to 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.

FIGURE 1. MOUNTING DIMENSIONS (For reference only: mm/[in].)

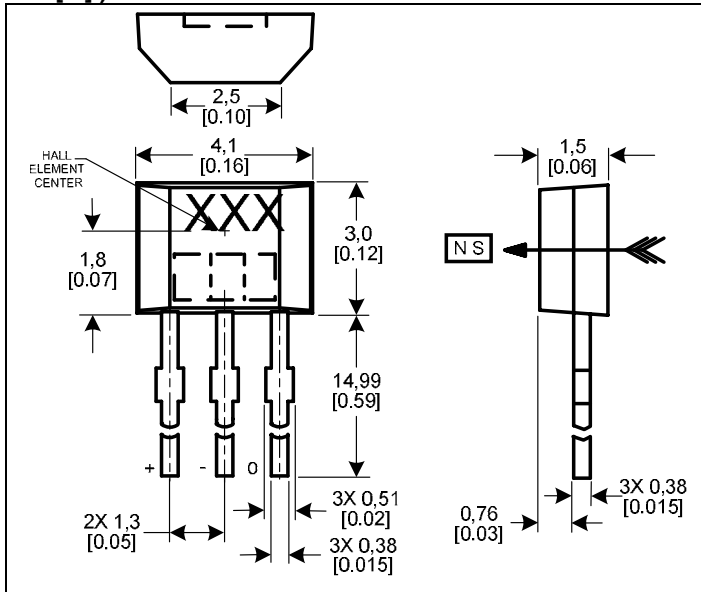
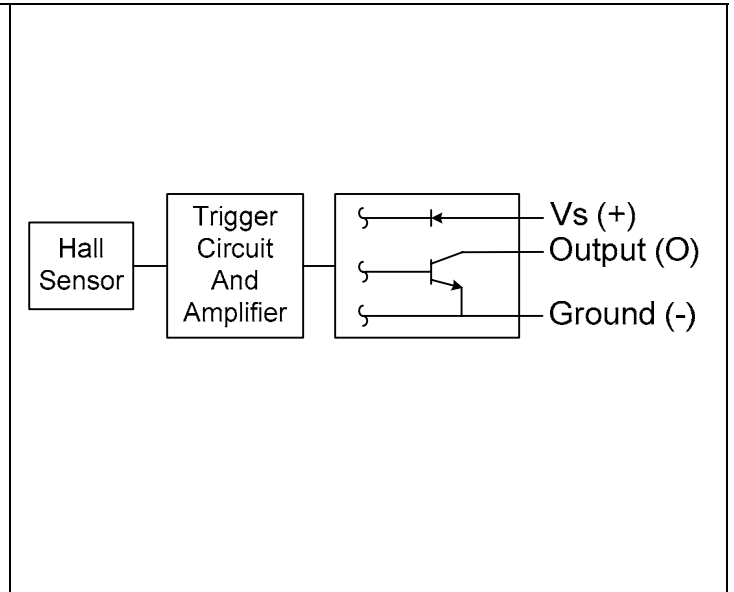


FIGURE 2. BLOCK DIAGRAM: Current Sinking Output



WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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