

# Installation Instructions for the HRS Series Hall-Effect Rotary Position Sensors

**Honeywell**

Issue A

**50099563**

## GENERAL INFORMATION

The HRS Series uses Hall-effect technology to supply reliable and repeatable angular position information. The use of this magnetically coupled information, in place of a mechanical wiper assembly, provides long life and a cost-effective solution for harsh environments that include temperature, vibration, shock, dither, moisture and dirt.

The HRS Series is packaged in a stainless steel metal housing with a 9,5 mm [0.375 in] diameter unthreaded or threaded bushing and a 6,35 mm [0.25 in] diameter stainless steel shaft. A variety of termination types are available. Mounting hardware is available on some catalog listings.

**Table 1. Electrical Specifications**

Characteristic	Parameter			
	HRS100SSAB090	HRS100SSAB180	HRS100SWAB090	HRSRES05A090
Electrical angle	90° ±2° CW	180° ±2° CW	90° ±2° CW	
Output voltage	CW: 4.750 V min., 4.850 V max. CCW: 0.150 V min., 0.250 V max.	CW: 4.750 V min., 4.850 V max. CCW: 0.050 V min., 0.150 V max.	CW: 4.750 V min., 4.850 V max. CCW: 0.150 V min., 0.250 V max.	CW: 2.095 V min., 2.205 V max. CCW: 0.245 V min., 0.294 V max.
Linearity (% of span)	±2% typ.	±4% typ.	±2% typ.	
Output current	2 mA max.			
Output type	sink/source			
Overvoltage protection	18 Vdc. max.			
Supply voltage	5 Vdc			
Supply current	5 mA typ.			

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**Table 2. Mechanical Specifications**

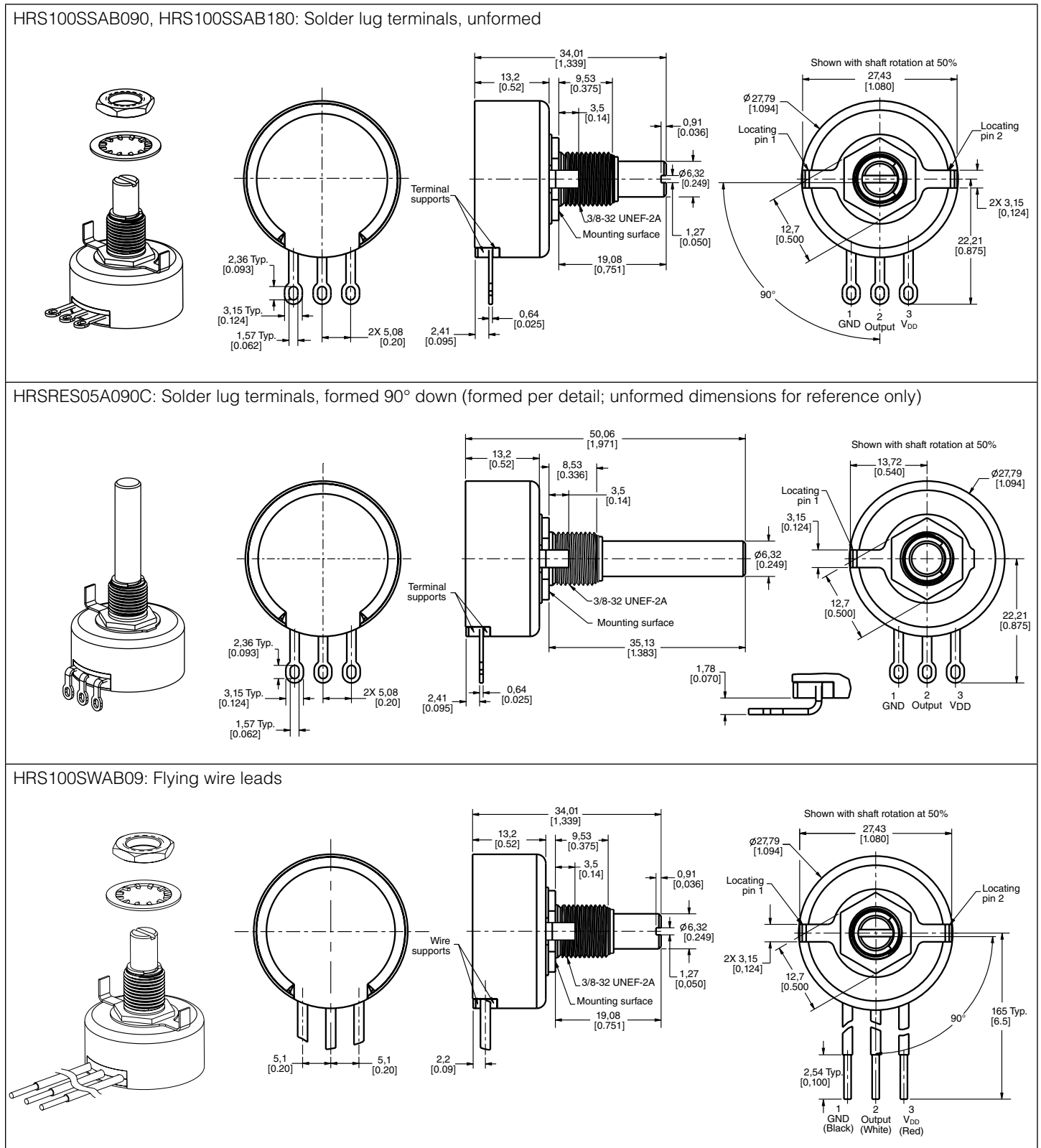
Characteristic	Parameter			
	HRS100SSAB090	HRS100SSAB180	HRS100SWAB090	HRSRES05A090
Mechanical angle of rotation	90° ±2°	180° ±2°	90° ±2°	
Rotational cycles	10 million typ.			
Rotational torque	0.014 N m [2.0 in oz] max. at 25 °C [77 °F]			
Stop torque	0,56 N m [5 in-lb] min.			
Push out	89 N m [20 in lb] min.			
Pull out	44 N m [10 in lb] min.			
Shaft: diameter material	6,35 mm [0.25 in] stainless steel			
Bushing: diameter material	9,5 mm [0.375 in] nickel-plated brass			
Housing material	stainless steel			
Terminal material: solder lug terminals flying wire leads	tin-plated brass, SAC305 solder dip —	—	XL insulated, 20 AWG stranded	tin-plated brass, SAC305 solder dip —
Terminal support material	thermoplastic			
Mounting hardware material: mounting nut lock washer	nickel-plated brass nickel-plated brass			

**Table 3. Environmental Specifications**

Characteristic	Parameter
Operating temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Storage temperature	105 °C [221 °F] max.
Shock	50 g, 11 ms
Vibration	15 G, 10 Hz to 2000 Hz
ESD sensitivity	±7 kV max. (human body model)
EMI	30 V/m, 10 kHz to 1000 MHz at 3 m

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Figure 1. Dimensional Drawings (For reference only: mm [in.] )



## **▲ 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.**

## **WARRANTY/REMEDY**

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