RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 5/8 and 3/4 Threads

Specifications

Power Supply

Power Supply Voltage:
4.5 - 24 Vdc

Power Supply Current:
50 mA maximum

Outputs

Output Voltage:
Essentially square wave fanout to 10 TTL inputs

TTL Compatible: (See Figure 1)
50% ±15% duty cycle
Logic 0: +.6 Vdc maximum
Logic 1: +4 to +4.6 Vdc @ 5mA

Supply Tracking: (See Figure 2)
50% ±15% duty cycle
Logic 0: +.6 Vdc maximum
Logic 1: $V_O = \frac{V_S \times R_L}{R_L + 2.2k}$

Output Impedance:
2.2K Ohms ±5%

Output Current:
20 mA sink maximum

Output Current - Short Circuit:
5 mA maximum with 10V power supply

Reverse Battery Voltage:
-30 Vdc

Mechanical

Target Frequency:
0 to 15 kHz

Target Air Gap:
.005 to .020 with a 24 diametral pitch gear
.005 to .030 with a 20 diametral pitch gear
.005 to .050 with a 12 diametral pitch gear
.005 to .075 with an 8 diametral pitch gear

Environmental

Operating Temperature:
-40°C to +125°C

Thermal Shock:
100 cycles air to air (-40° to +130°C)
1 min. ramp time with 30 min. soak

Salt Spray:
Per MIL-STD-202, method 201, test cond. B, 5% NaCl for 48 hrs. No visible corrosion.

Humidity:
92% RH@ 40°C for 90 hrs.
No visible corrosion.

Dielectric Strength:
Per MIL-STD-202, method 301, 1000 Vrms (60Hz) for 5 sec. leads to case. 1.0 mA max. leakage.

Insulation Resistance:
Per MIL-STD-202, method 302, 500 Vdc for 30 sec. leads to case. 100 mega-ohm min.

Vibration:
Per MIL-STD-202, resonant frequency search, sine method 204, test cond. C&D (20g); random method 214a, test cond. A&B (7.56g) for 15 min.

Shock:
Per MIL-STD-202, method 213b (sawtooth), test cond. H&I (1 00g, 6 ms), 3 shocks, mutually perpendicular planes

Materials

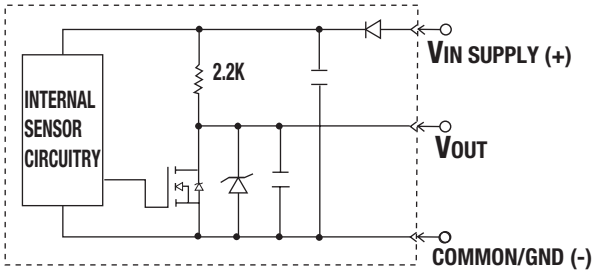
Housing:
300 series stainless steel

Leads:
AWG #24 Teflon, 200°C

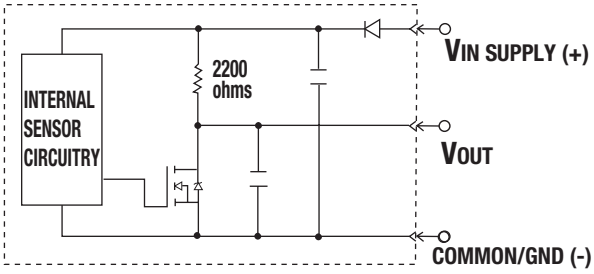
Cable:
AWG #20 Irradiated cross-linked polyolefin, 125°C

Rotational alignment of sensing face is not required for optimum output signal.

TTL Compatible Fig. 1



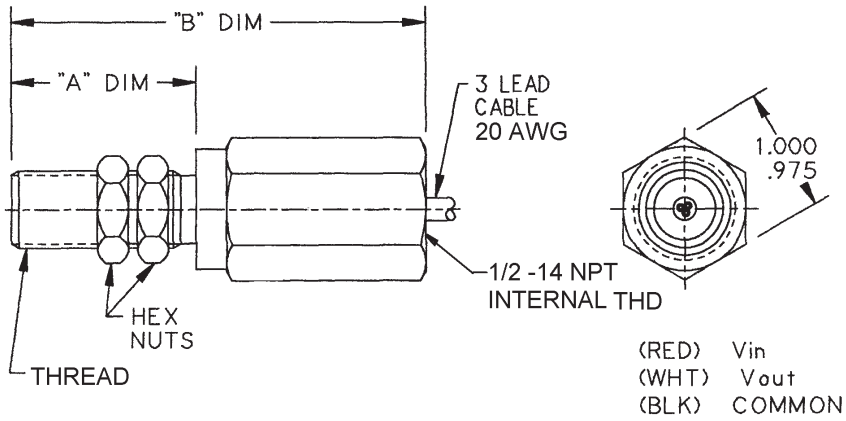
Supply Tracking Fig. 2



Note: Either output will work with any AI-Tek Tachometer.

RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 5/8 and 3/4 Threads

Hex Body with Cable



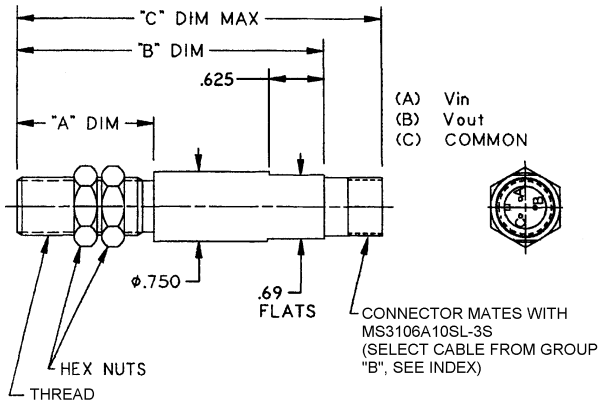
Part Num.	Thread	"A" Dimension	"B" Dimension	Cable Length	Output
RH1512-013	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	TTL Compatible
RH1522-013	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	Supply Tracking
RH1512-014	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	TTL Compatible
RH1522-014	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	Supply Tracking
RH1612-013	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	TTL Compatible
RH1622-013	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	Supply Tracking
RH1612-014	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	TTL Compatible
RH1622-014	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	Supply Tracking

Net Weight: 9 oz. max.

Dimensions in inches and (mm).

RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 5/8 and 3/4 Threads

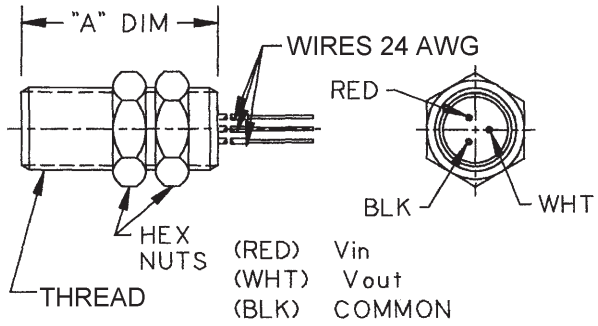
Round Body with Connector



Part Num.	Thread	"A" Dimension	"B" Dimension	"C" Dimension	Output
RH1512-005	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	4.012 (101.905)	TTL Compatible
RH1522-005	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	4.012 (101.905)	Supply Tracking
RH1512-006	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	5.262 (133-655)	TTL Compatible
RH1522-006	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	5.262 (133.655)	Supply Tracking
RH1512-007	.625-18 UNF-2A	4.000 (101.600)	5.875 (149.225)	6.512 (165.405)	TTL Compatible
RH1522-007	.625-18 UNF-2A	4.000 (101.600)	5.875 (149.225	6.512 (65.405)	Supply Tracking
RH1612-005	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.725)	4.012 (101.905)	TTL Compatible
RH1622-005	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.725)	4.012 (101.905)	Supply Tracking
RH1612-006	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	5.262 (133.655)	TTL Compatible
RH1622-006	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	5.262 (133.655)	Supply Tracking
RH1612-007	.750-20 UNEF-2A	4.000 (101.600)	5.875 (149.225)	6.512 (165.405)	TTL Compatible
RH1622-007	.750-20 UNEF-2A	4.000 (101.600)	5.875 (149.225)	6.512 (165.405)	Supply Tracking

Net Weight: 7 oz. max.

Fully Threaded with Leads



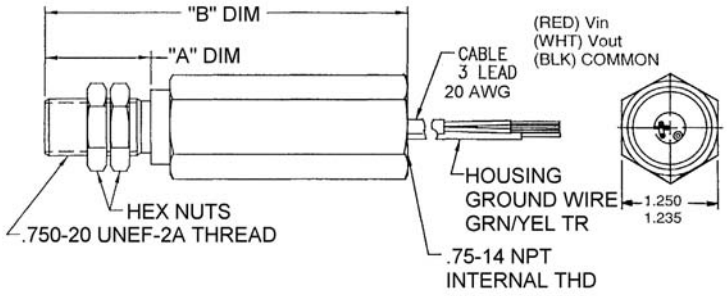
Part Num.	Thread	"A" Dimension	Lead Length	Output
RH1512-009	.625-18 UNF-2A	1.500 (38.100)	12(304)	TTL Compatible
RH1522-009	.625-18 UNF-2A	1.500 (38.100)	12(304)	Supply Tracking
RH1512-010	.625-18 UNF-2A	2.750 (69.850)	12(304)	TTL Compatible
RH1522-010	.625-18 UNF-2A	2.750 (69.850)	12(304)	Supply Tracking
RH1612-009	.750-20 UNEF-2A	1.500 (38.100)	12(304)	TTL Compatible
RH1622-009	.750-20 UNEF-2A	1.500 (38.100)	12(304)	Supply Tracking
RH1612-010	.750-20 UNEF-2A	2.750 (69.850)	12(304)	TTL Compatible
RH1622-010	.750-20 UNEF-2A	2,750 (69.850)	12(304)	Supply Tracking

Net Weight: 3 oz. max.

Dimensions in inches and (mm).

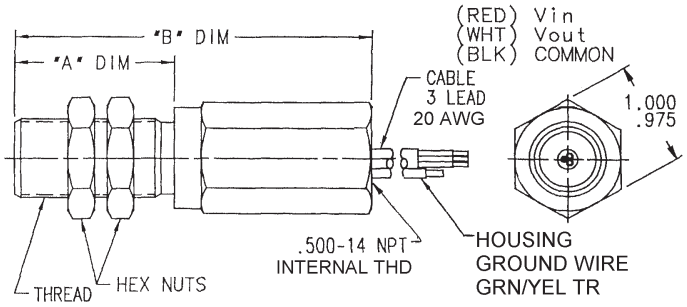
RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 5/8 and 3/4 Threads

UL/CSA Explosion Proof Sensors



Part Num.	Thread	Thread Length	Overall Length	Cable Length	Output
RH1612-025	.750-20 UNEF-2A	1.375 (34.92)	4.750 (120.65)	10 ft. (3. 0 m)	TTL Compatible

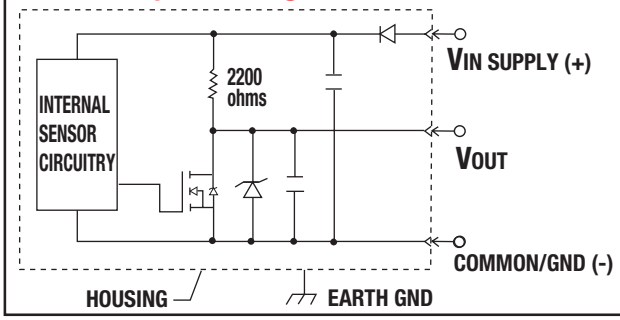
Rating: UL & CSA listed for hazardous locations. Class I, Div. 1, Groups A, B, C & D; Class II, Div., 1, Groups E, F & G. Temp Code T4A. Connect only to NEC Class 2 circuits.
Net Weight: 23 oz. max.



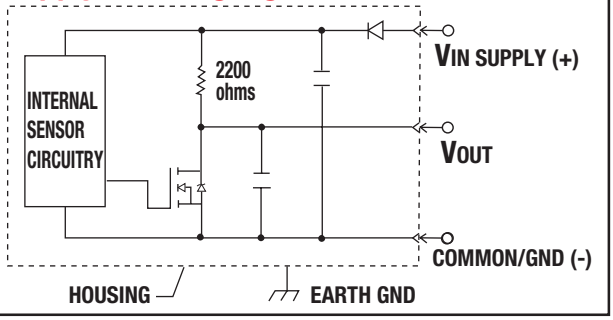
Part Num.	Thread	"A" Dimension	"B" Dimension	Cable Length	Output
RH1512-026	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	TTL Compatible
RH1522-026	.625-18 UNF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	Supply Tracking
RH1512-027	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	TTL Compatible
RH1522-027	.625-18 UNF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	Supply Tracking
RH1612-026	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.72.5)	10 ft (3.05m)	TTL Compatible
RH1622-026	.750-20 UNEF-2A	1.500 (38.100)	3.375 (85.725)	10 ft (3.05m)	Supply Tracking
RH1612-027	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	TTL Compatible
RH1622-027	.750-20 UNEF-2A	2.750 (69.850)	4.625 (117.475)	10 ft (3.05m)	Supply Tracking

Rating: UL & CSA listed for hazardous locations. Class I, Div. 1, Groups A, B, C & D; Class II, Div., 1, Groups E, F & G. Temp Code T4A. Connect only to NEC Class 2 circuits.
Net Weight: 9 oz. max.

TTL Compatible Fig. 1



Supply Tracking Fig. 2



Dimensions in inches and (mm).

RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 3/8 Diameter

Specifications

Power Supply

Power Supply Voltage:
4.5 - 24 Vdc
Power Supply Current:
50 mA maximum

Outputs

Output Voltage:
Essentially square wave fanout to 10 TTL inputs

Supply Tracking: (See Figure 1)
50% ±15 % duty cycle
Logic 0: +.6 Vdc maximum
Logic 1: $V_O = \frac{V_S \times R_L}{R_L + 2.2k}$

Output Impedance:
2.2K Ohms ±5%
Output Current:
20 mA sink maximum
Output Current - Short Circuit:
5 mA maximum with 10V power supply

Mechanical

Target Frequency:
0 to 15 kHz
Target Air Gap:
.005 to .015 with a 24 diametral pitch gear
.005 to .025 with a 20 diametral pitch gear
.005 to .050 with a 12 diametral pitch gear
.005 to .065 with an 8 diametral pitch gear

Environmental

Operating Temperature:
-25°C to + 125°C (105°C Cable)

Materials

Housing:
300 series stainless steel
Leads:
AWG #24 Teflon, 200°C
Cable:
AWG #26 PVC, 105°C
Rotational alignment of sensing face is not required for optimum output signal

Supply Tracking

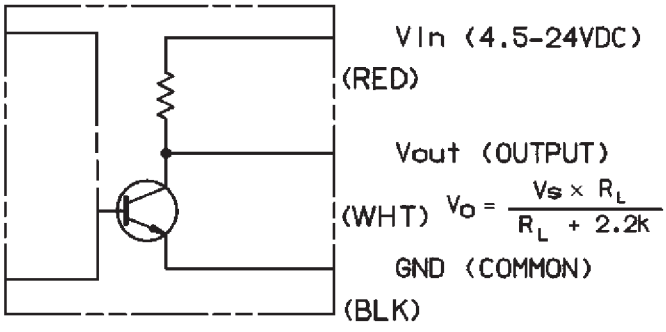


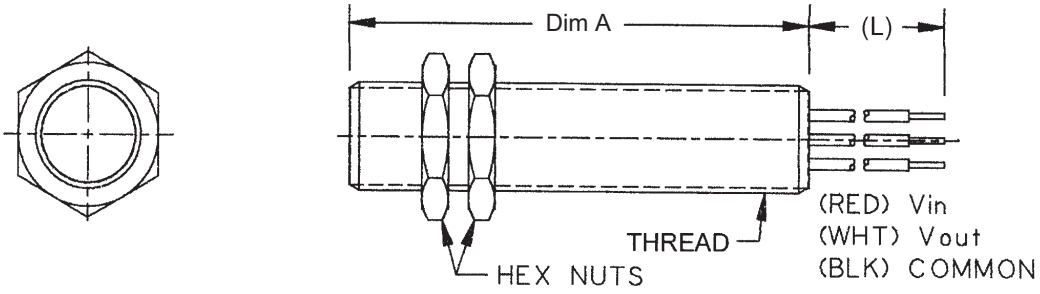
Figure 1

Note: Will work with any Al-Tek Tachometer.

Dimensions in inches and (mm).

RH Series
Zero Velocity - Magnetic Hall Effect Sensors - 3/8 Diameter

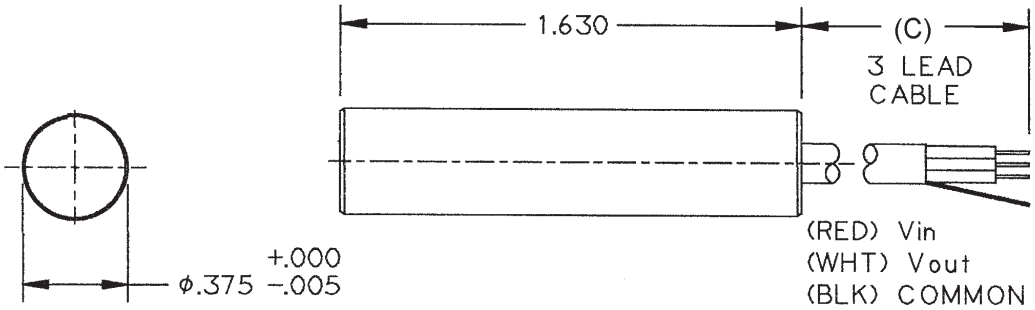
Fully Threaded



Part Num.	Thread	Cable Length (C)	Lead Length (L)	Dimension A
RH1320-001	.375-32 UNEF-2A	—	12 (304)	1.630
RH1320-003	.375-32 UNEF-2A	10 ft. (3.05 m)	—	1.630
RH1320-009	.375-24 UNF-2A	—	12 (304)	1.630
RH1320-010	.375-24 UNF-2A	10 ft. (3.05 m)	—	1.630
RH1320-012	.375-24 UNF-2A	10 ft. (3.05 m)	—	3.000

New Weight: 0.7 oz. max.

Round Body



Part Num.	Cable Length (C)	Lead Length (L)
RH1320-005	—	12 (304)
RH1320-006	10 ft. (3.05 m)	—

Dimensions in inches and (mm).