

# Avtron HS4 Encoders



**Magnetic Light Mill Duty Hollow Shaft Encoder, [36, 42, 58mm body size]**

## Magnetic Durability in a Compact Encoder

- | Bore Sizes Include 6-15mm and 3/8", 1/2" and 5/8"
  - | No Optical Glass Disk
  - | Resists Dust, Dirt, and Liquids
    - | Up to 16384 PPR
- | Drop-in Mechanical Replacement for Any Optical Encoder
- | Compatible Pinouts: No Rewiring
  - | Up to IP69K Rating Available
    - | -40°C to +85°C Operation
    - | 2 Year No-Hassle Warranty

## HS4

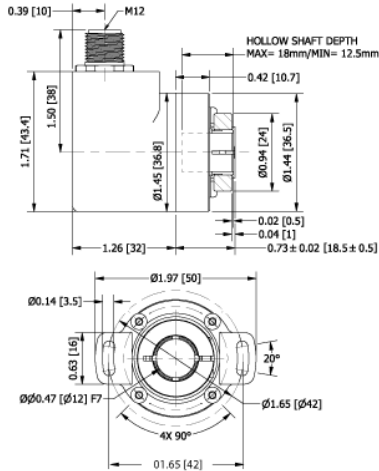
Avtron HS4 encoders are setting THE industry standard for incremental quadrature rotary encoders. This versatile lineup fits the same mounting patterns on all motors and machines as competitor units, but that's where the similarities end. We've incorporated Avtron magnetic sensing technology to this affordable set of encoders! This makes HS4 more resistant to dust, dirt, oil and other liquids that make ordinary optical encoders fail.

Our Wide-Gap technology provides for 10-20X larger air gap between sensor and rotor than ordinary optical encoder designs. Consider the resistance to vibration when you compare our 0.060" air gap to the typical 0.004" clearance from the thin, often flexible, optical disk spinning at full motor speeds. Our high-accuracy magnetic sensors provide high quality quadrature signals for precise velocity and position control with the durability of magnetic sensing technology.

Our magnetic HS4 encoders are setting a new standard for quality, durability, and performance. Select an Avtron HS4 today!

# OUTLINE DRAWING

**Tether Option "A" - Dual-Tab Tether: 1.65" [42mm] BC, 0.14" [3.5mm] slot**



**FOR COMPLETE LIST OF FLANGE STYLES PLEASE REFER TO INSTRUCTION SHEET**

# MORE HS4 ADVANTAGES

- ▮ Digital mapping technology for high accuracy
- ▮ All-digital design, no trim pots or adjustments for longer life
- ▮ Advanced magnetic sensor technology

# HS4 SPECIFICATIONS

Operating Power: Volts: 5 - 30 VDC; Current: 140mA @ 5V, 70mA @ 10V DC, 40mA @ 24V DC, no load  
 Output Format: A Quad B with marker (A,A-, B,B-, Z,Z-) available  
 Frequency Range: 0 to 1mHz  
 PPR: 1 - 16,384 Standard (for other PPR needs consult factory)  
 Speed: 6000 RPM Max., (for higher speeds, consult factory)  
 Axial Load: 9lbs [40 N], Radial 25lbs [110 N]  
 Max. Temperature: -40° to +85°C

Environment: up to IP69K (when provided with shaft seals, ss housing)  
 Vibration: 10 g (10 Hz – 1000 Hz, EN 60068-2-6)  
 Shock: 100 g (half sine 6 ms, EN 60068-2-27)  
 Weight: 0.44-1.76 lbs [200-800g]

Check out our website for more detailed specifications, drawings, and installation instructions. [www.avtronencoders.com](http://www.avtronencoders.com)

# SELECTION GUIDE

MODEL	PPR	LINE DRIVER	SHAFT BORE	CONNECTOR*	IP RATING	HOUSING SIZE	PROTECTION	TETHER	CHANNEL	MOD CODE
HS4	BA - 30 AA - 32 AK - 80 BC - 100 AH - 120 AC - 128 AM - 200 AL - 240 AN - 256 AE - 360 AG - 400 AB - 480 AQ - 500 AR - 512 AS - 600 AP - 720	AJ - 960 AW - 1000 AY - 1024 AZ - 1200 AV - 1440 AU - 1800 AA - 2000 AA - 2048 AT - 3072 AA - 3600 AD - 4096 AA - 4800 AA - 5000 CA - 12700 CB - 10000	1 - 5-30V In & Out 4 - 5-30V In / 5V Out	D - 1/4" A - 3/8" B - 1/2" C - 5/8" L - 6mm M - 8mm N - 10mm P - 12mm Q - 14mm R - 15mm *Native Bore / No Insert	See Connector Codes table for compatible Connector & Housing	A - IP65 Seals, Alum G - IP67 Seals, Alum J - IP67 Seals, SST K - IP69K Seals, SST	3 - 36mm 5 - 58mm	0 - No Basket 1 - Protective Basket	A - All Channels (A, A, B, B, Z, Z) B - A, A, B, B, No Marker E - A, B, Z, No Compliments	000 - NONE 901 - 1' [0.3m] cable 902 - 2' [0.6m] cable 903 - 3' [0.9m] cable 905 - 5' [1.5m] cable 910 - 10' [3m] cable 915 - 15' [4.5m] cable 920 - 20' [6m] cable 925 - 25' [7.5m] cable 930 - 30' [9m] cable

Note: Some combinations of seals, bore size and housing size are not possible. See online Configurator for options selections.

CONNECTOR CODES	HOUSING
A, B, C, D, E, F, G, H, J, K, M, N, R	3
2, 3, 5, 7, T, U, W	3.5

CONNECTOR CODES	CHANNEL
A, B, C, D, R, T, U, 2, 3, 7, W	A
E, F, G, H, J, K, M, N	B, E
5	E

TETHER OPTIONS
A - Dual-Tab Tether: 1.65" [42mm] BC, 0.14" [3.5mm] slot B - Dual-Tab Tether: 2.48" [63mm] BC, 0.13" [3.2mm] slot C - Dual-Tab Tether: 1.65"-2.48" [42-63mm] BC, 0.14" [3.6mm] slot D - Fan Cover Tether: 1.57-2.95" [40-75mm] BC, 0.45" [11.4mm] slot X - No Tether

CONNECTOR					
A - 10 pin MS w/o Plug, Avtron/BEI Pinout B - 10 pin MS w/o Plug, Dynapar HS35 pinout (Rev Phasing) C - 10 pin MS with Plug, Avtron/BEI Pinout D - 10 pin MS with Plug, Dynapar HS35 pinout (Rev Phasing)	E - 6 pin MS w/o Plug, BEI/Avtron HS35 pinout F - 6 pin MS w/o Plug, Dynapar HS35 Pinout (Rev Phasing) G - 6 pin MS with Plug, BEI/Avtron HS35 pinout H - 6 pin MS with Plug, Dynapar HS35 Pinout (Rev Phasing)	J - 7 pin MS w/o Plug, Avtron/BEI HS35 Pinout K - 7 pin MS w/o Plug, Dynapar HS35 Pinout (Rev Phasing) M - 7 pin MS with Plug, Avtron/BEI HS35 Pinout N - 7 pin MS with Plug, Dynapar HS35 Pinout (Rev Phasing)	R - 10 Pin Mini Twistlock with Plug T - M12-8 pin w/o Plug, Global Pinout 7 - M12-8 pin w/o Plug, Global Pinout (Rev Phasing) U - M12-8 pin w/o Plug, USA Pinout	2 - M23-12 Pin w/o Plug, Leine & Linde and Hubner pinout 3 - M23-12 Pin w/o Plug, Inverted Hubner Signals 5 - M12-5 Pin w/o Plug W - 3.2ft [1m] Cable (also use with special mod 900)	



All dimensions are in inches [millimeters].  
 Specifications and features are subject to change without notice.  
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Nidec-Avtron Makes the Most Reliable Encoders in the World  
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