

SIZE 31 SERIES HS31

INCREMENTAL HOLLOW SHAFT ENCODER / Thru-Hub

Starting at US \$325.00 List Price
(w/cable model - A ch. only)



MS connector w/ L.D. US \$430.00 List Price

SPECIFICATIONS

Mechanical

Shaft Bore/Tolerance	5/8", 3/4", 7/8", 1" Hub I.D. / 0.001" T.I.R. Max	
Shaft Speed	Base 1800 rpm, *Max 3600 rpm	
Bearings	# 6807 35mm, abec 1, Double Shielded, AV2 grease (Shell Alvania #2)	
Bearing Life	at 1800 rpm	25,000 hrs
	at 3600 rpm	12,000 hrs
Bearing Temp.	5/8" Hub	Derating 5°C/1000 rpm over *1800 rpm
	1" Hub	Derating 10°C/1000 rpm over *1800 rpm
Shaft Loading	Radial: 40 lbs. Runout: 0.005" T.I.R. Max on Mating Shaft. Axial: 30 lbs. Endplay: 0.05" T.I.R. Max on Mating Shaft	
Materials	Body: Anodized Aluminum with anodized protective finish Hub: Aluminum with anodized protective finish, Option-Stainless Steel, Seals- Teflon, N.B.R.	
Weight	16 oz.	

*Over 1800-Max-3600 rpm speed reduces the bearing life by its heating and brown

Electrical

Supply Voltage	5-26 Vdc
Current	50mA Max. No Load 100mA Max. (Line Driver)
Pulse Rate	0-40 kHz
Pulses per Revolution	up to 1024
Output Circuit	Single-ended, TTL Outputs • 7272 Push-Pull 50 mA max source or sink (Std.) • 7273 open collector 50 mA max, 30VDC max (option) Differential Line Driver • 7272Super Linedriver / 100 mA Max, 5-26VDC Max (Std.) • 7272 Linedriver 50 mA max, 5VDC (option)
Output Wave	Square wave outputs A, B are 50/50 duty cycle nominal. Output Z index is approximately the width of one cycle on outputs A or B. • Pulse symmetry: 180 ±30% • Pulse interval jitter: 30% max • Quadrature: 90° ±30% max • Phase jitter: 30% max

FEATURES

WORLD ENCODERS

brand, Made in USA

- Size 31 Housing, NEMA4/IP66 Heavy-duty Enclosure.
- Std. Electrically, Thermally Insulated & Isolated Hub.
- Std. Equipped with 56C Cover & Tether Mtg. Bracket.
- Hub I.D. 5/8", 3/4", 7/8", 1", Thru-hub design.
- Up to 2048 ppr and Unbreakable Code Disk.
- Electrical Protection Std.: Voltage Transients, Reverse Voltage, Output Short Circuit Proof.
- Super Linedriver 5-26v, Push-Pull 5-26v TTL outputs.
- Military Std. 7 pin, 10 pin, Conn. NEMA4/IP66
- D-sub 9 pin, 10ft. Cable w/Straight Plug. NEMA12/IP50

Environmental

Temperature	Operating: 0 ~ 70°C Storage: -10 ~ 85°C
Humidity	98% RH without condensation
Vibration	20 G's at 5 tp 2000Hz
Shock	50 G's at 11 ms duration
Enclosure	NEMA4/IP66: MS 7-pin, 10pin Conn. NEMA 12/IP50; D-sub 9 pin, 10 ft Cable w/straight Plug
Sealing	Shaft Gaskets-Teflon, NBR, Viton, Neoprene. Sleeve-Delrin™ (DuPont® plastic), Washer-Teflon
Isolation	Encoder to be electrically isolated from motor by using insulating shaft sleeve and insulating washers on Flexible Tether Mtg. Bracket

Electrical Connections

Push-Pull Outputs:

MS 7-Pin Connector	Function	Wire Color	DB9 Conn.
F	Common	Black	1
D	+vdc	Red	2
C	Output Z	Brown	5
A	Output A	White	3
B	Output B	Green	4
G	Case Ground	Shield	6
E	not used	—	7,8,9

Differential Line Driver Outputs:

MS 10-Pin Connector	Function	Wire Color	DB9 Conn.
A	Output +A	White	3
B	Output +B	Green	4
C	Output +Z	Yellow	5
D	Supply Voltage	Red	2
F	Common	Black	1
H	Output -A	Blue	6
I	Output -B	Brown	7
J	Output -Z	Orange	8
G	Case Ground	Shield	9
E	not used	—	—

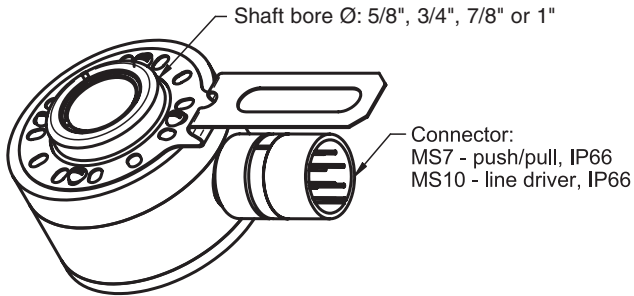
Standard Cable length is 10 ft / 3 meters.

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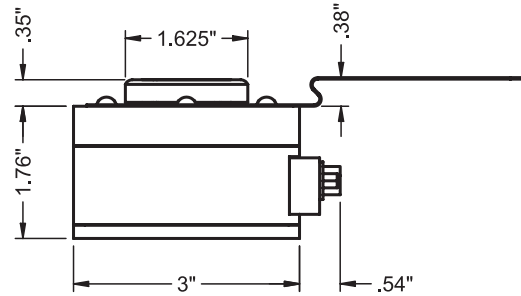
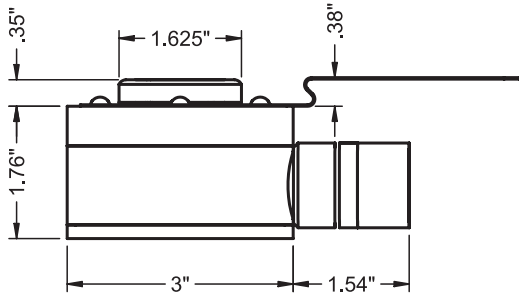
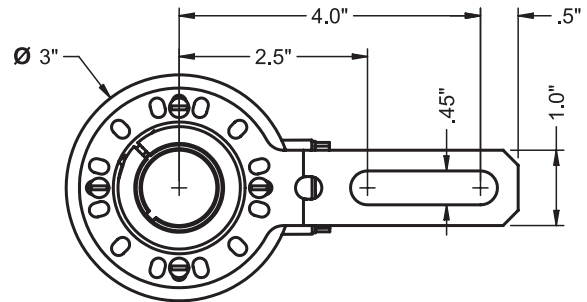
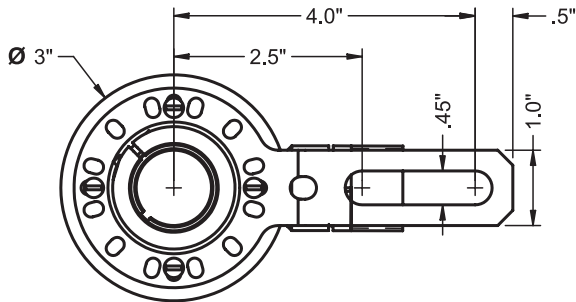
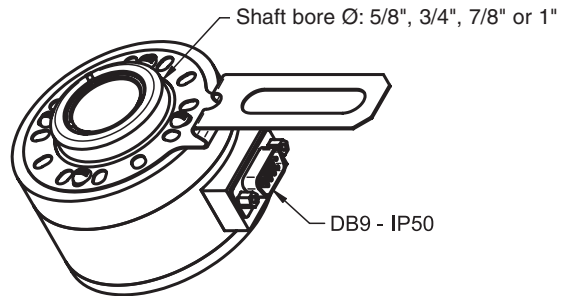
INCREMENTAL HOLLOW SHAFT ENCODER / Thru-Hub / with Tether Mtg. 5"-8" B.C.

DIMENSIONS

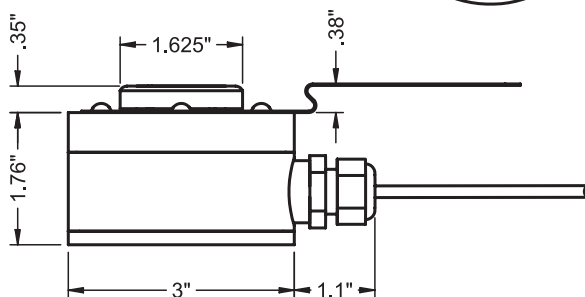
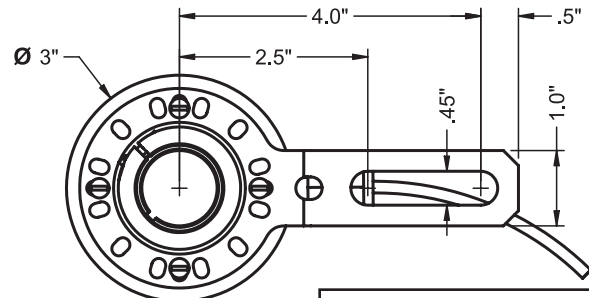
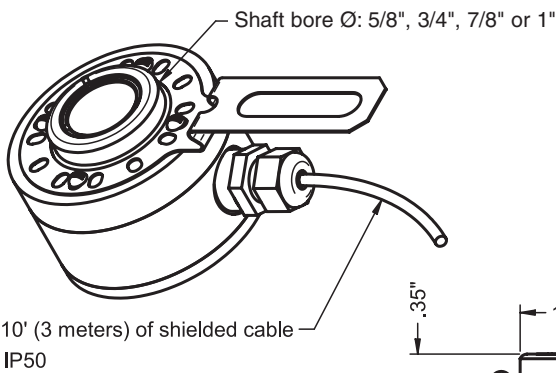
MS Conn. (MS7, MS10 pin)



D-sub (DB9) Conn.



Std. 10 ft Cable w/ Straight Plug Cap



Std. 56C Protection Cover



Due to circumstances beyond World Encoders' control, small quantities of In-Stock items will be shipped immediately, and lead time on Non-Stock items is up to a few weeks.

1-800-903-9093

Size 31 Series HS31 Hollow Shaft Encoder/Thru-Hub/NEMA 4

Model	Hub I.D.	Channels	Pulse	Voltage/Output	Cable/Connector	Mtg. Spring	56C Cover
HS31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Blank	Blank
ORDERING INFORMATION							
HS31	.625 = 5/8" .75=3/4" .875=7/8" 1.00 = 1" with Std. Electrical Insulated & Isolated Plastic Sleeve	Blank: Sgl. Ended (A ch.) Q: Quadrature (A, B ch.) QZ: Quadrature (A, B, Z ch. w/Index)	100 360 500 1000 1024 2048	5-26: Push-Pull Sgl. Ended 7272 5-26v TTL (Std.) 5-26D: Super Line driver 7272 compatible 5-26v (Std.)	Blank: 10 ft. Cable w/Straight Plug MS10: L.D. MS 10 pin Conn. MS7: TTL MS 7 pin Conn. DB9: D-sub 9 pin Conn.	Blank: Std. Flex Tether Mtg. Spring (1) slot hole @ 5"-8" B.C.	Blank: Std. 56C Protection Cover

PRICING INFORMATION							
Model	Hub I.D.	Hub I.D.	Pulse	Voltage/Output	Cable/Connector	Mtg. Spring	56C Cover
HS31 Base Price \$325.00	.625 = 5/8" .75=3/4" .875=7/8" 1.00 = 1" with Std. Electrical Insulated & Isolated Plastic Sleeve	Blank: N/C Sgl. Ended. A ch. Q: Add \$20.00 Quadrature A, B Ch. QZ: Add \$30.00 Quadrature A, B, Z Ch. w/index	100 Thru 1024 N/C 2048 Add \$30.00	5-26: N/C Push-Pull Sgl. Ended 7272 5-26v TTL (Std.) 5-26D: Add \$25.00 Super Linedriver 7272 compatible 5-26v (Std.)	Blank: N/C 10 ft. Cable w/Straight Plug MS10: Add \$50.00 MS 10 pin Conn. MS7: Add \$50.00 MS 7 pin Conn. DB9: Add \$30.00 D-sub 9 pin Conn.	Blank: N/C Std. Flex Tether Mtg. Spring (1) slot hole @ 5"-8" B.C. N/C	Blank: N/C Std. 56C Protection Cover N/C

Standard Stock Items: Shipped immediately. Non Stock Items: 2-3 weeks Lead Time

PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE
HS31.625QZ100/5-26DMS10	\$430.00	HS311.00QZ500/5-26DMS10	\$430.00
HS31.625QZ100/5-26MS7	\$405.00	HS311.00QZ500/5-26MS7	\$405.00
HS31.625QZ360/5-26DMS10	\$430.00	HS311.00QZ1000/5-26DMS10	\$430.00
HS31.625QZ360/5-26MS7	\$405.00	HS311.00QZ1000/5-26MS7	\$405.00
HS31.625QZ500/5-26DMS10	\$430.00	HS311.00QZ1024/5-26DDB9	\$410.00
HS31.625QZ1000/5-26MS7	\$405.00	HS311.00QZ1024/5-26DMS10	\$430.00
HS31.625QZ1000/5-26DMS10	\$430.00	HS311.00QZ1024/5-26MS7	\$405.00
HS31.625QZ1024/5-26DDB9	\$410.00	Mating Connector	
HS31.625QZ1024/5-26DMS10	\$430.00	DMS3106E18-1S (10pin Linedriver)	\$38.00
HS31.625QZ1024/5-26MS7	\$405.00	DMS3106E16-1S (7pin TTL)	\$30.00
HS31.75QZ1000/5-26DMS10	\$430.00	MS mating w/10ft Cable Assemblies	
HS31.75QZ1000/5-26MS7	\$405.00	C10-9-10LD (Linedriver)	\$75.00
HS31.75QZ1024/5-26DMS10	\$430.00	C7-5-10RC(TTL Sgl.ended)	\$70.00
HS31.75QZ1024/5-26MS7	\$405.00	Cables	
HS31.875QZ1000/5-26DMS10	\$430.00	CBL-2025N-XXX FT	\$3.00 per Ft.
HS31.875QZ1000/5-26MS7	\$405.00	D-sub conn.w/10ft. Cable Assemblies	
HS31.875QZ1024/5-26DMS10	\$430.00	DB9-8-10 (Linedriver)	\$45.00
HS31.875QZ1024/5-26MS7	\$405.00	D-sub 8pin w/10ft.cable	
HS311.00QZ100/5-26DMS10	\$430.00	DB9-5-10 (TTL Sgl.ended)	\$40.00
HS311.00QZ100/5-26MS7	\$405.00	D-sub 5pin w/10ft.cable	
HS311.00QZ360/5-26MS7	\$405.00		

Standard Stock Items: Shipped immediately. Non Stock Items: 1 week Lead Time